

OWNER'S MANUAL

Model 500 *Moisture Monitor*



*Equipment and Products
for Quality Hay.™*

P.O. Box 63 • 2821 Harvey Street • Hudson, WI 54016
800-635-7468 • www.harvesttec.com

010-0500

REVISED 04/12

HARVEST TEC 500 TABLE OF CONTENTS

	<u>PAGE</u>
INTRODUCTION	3
TOOLS NEEDED	3
INSTALLATION OF APPLICATOR	4-26
1. INSTALLATION OF PRECISION INFORMATION PROCESSOR	4
2. INSTALLATION OF STAR WHEELS	5-13
NEW HOLLAND 590 THROUGH BB9080 & CASE IH LBX331 THROUGH LB433 BALERS	6
CASE IH 8570, 8575, & 8585, CHALLENGER LB33, LB34, & HESSTON 7430, 4750, 4755, 4760, 4790, & MASSEY FERGUSON 2050, & NEW IDEA 7233, 7333, & 7234 BALERS	7
CASE IH 8580, 8590 & HESSTON 4900, 4910 & CHALLENGER LB 44 & NEW IDEA 7244 BALERS	8
AGCO HESSTON 7433, 7434, 7444, 2150, 2170, 2190 & CHALLENGER LB33B, LB34B & MASSEY FERGUSON 2150, 2170, & 2190 BALERS	9
VERMEER BALERS	10
CLAAS 2100 & 2200 BALERS	11
KRONE BALERS	12
VICON LB 8200 & LB 12200 BALERS & TAARUP 6570 – 6690 OC	13
3. INSTALLATION OF END OF BALE SENSOR	14-24
ALL BALERS END OF BALE SENSOR BRACKET INSTALLATION GUIDE	14-15
HESSTON 4750-4755 & 4900-4910	16
AGCO HESSTON & MASSEY FERGUSON 2150 - 2190 AND EQUIVALENTS	17
HESSTON 4760 & 4790	18
NEW HOLLAND 590-BB960, BB9060-BB9080 & CASE IH LBX 331-431, LB333-LB433	19
NEW HOLLAND BB940A-BB960A & CASE IH LBX 332-432	20
CLAAS 2100	21
JOHN DEERE 100	22
KRONE 890 – 1290	23
KRONE 12130	24
ALL KUHN, VICON & TAARUP BALERS	25
4. INSTALLATION OF STAR WHEEL AND BALE RATE HARNESS	26
5. INSTALLATION OF CONTROLS	26
6. INSTALLATION OF DISPLAY CABLE HARNESS	26
7. MAIN WIRING HARNESS AND POWER CORD INSTALLATION	26
11. MAIN WIRING HARNESS AND POWER CORD INSTALLATION	26
WIRING INSTALLATION	27
8. DESCRIPTION OF BUTTONS	28
9. SETUP INSTRUCTIONS	29
OPERATING INSTRUCTIONS	30-33
AUTOMATIC MODE	30
JOB RECORDS	31-32
DIAGNOSTICS	33
COMMON QUESTIONS ABOUT THE 565	34
TROUBLE SHOOTING CHECKS	35-36
STATUS ALERTS	36
WIRING DIAGRAMS	37
PARTS BREAKDOWN	38-39
STARWHEELS	38
CONTROL BOXES AND WIRING HARNESSES	39
NOTES	40
TEMPLATE	41
WARRANTY STATEMENT	BACK PAGE

INTRODUCTION

Congratulations on purchasing a Harvest Tec Model 500 moisture monitor. This system is designed to monitor the moisture and tonnage of the forage crop. The model 500 kit includes the following parts: Precision Information Processor (PIP), Touchscreen Display, Moisture Sensors, Harnesses and Miscellaneous Hardware. For your convenience we have included a parts break down for the model 500. If something goes wrong, bring this manual into the dealership so they can order the correct parts for you. Ordering the correct part number is very important. It will save you time, money, and your crop.

The Harvest Tec model 500 can also have a preservative and tagging option installed to complete the applicator at anytime. Contact your local dealer for information.

TOOLS NEEDED FOR INSTALLATION:

- Standard wrench set
- Electric drill and bits
- Side cutter
- Crescent wrench
- Standard screwdriver
- Standard nut driver set
- Standard socket set
- Hammer
- Metal cutting tools
- Hose cutter
- Center punch

ATTENTION:

For kits on 2010 Krone HDP balers Krone part number 20 073 194 0 must be ordered to mount the starwheels.

If you are mounting the Model 500 on a 2010 or later Krone HDP please call Harvest Tec for a supplemental manual for further instructions.

INSTALLATION OF PRECISION INFORMATION PROCESSOR

Follow the instructions below to mount the Precision Information Processor (PIP) on to your specific baler model and type. The locations shown are on the right twine box (looking at the back of the baler). Mark and drill the four 3/8 holes and install PIP with four 5/16 x 1 bolts, locks, flats and nuts. If your baler is not listed below mount the PIP on the back of the twine box on the right side.

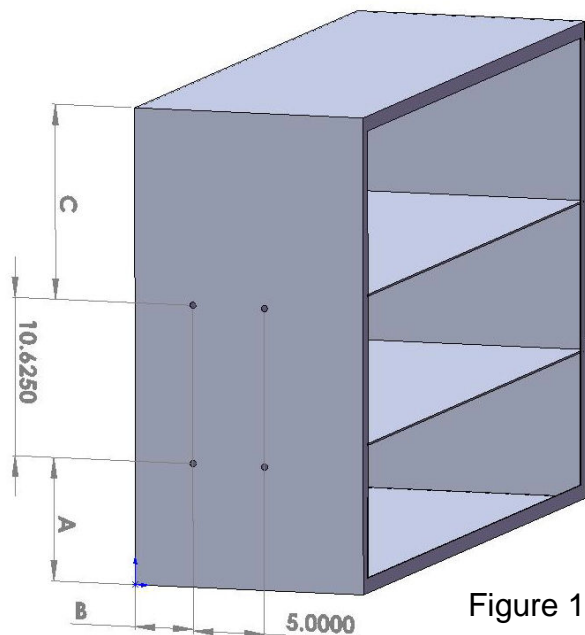


Figure 1

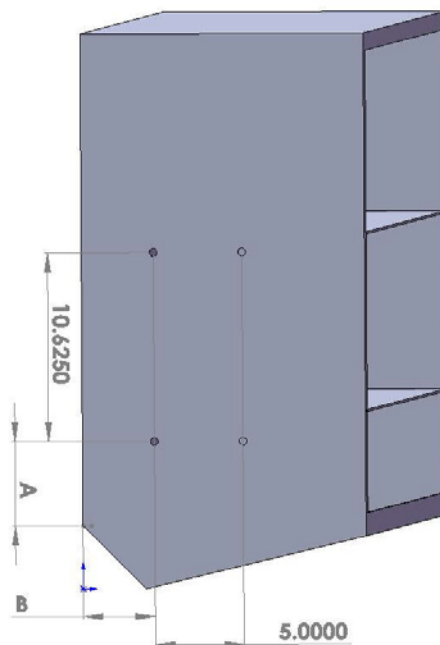


Figure 2

Baler Type	Model number	Figure	A	B	C	Baler Type	Model number	Figure	A	B	C
AGCO Hesston	7433 – 7444 2150 - 2190	2	12"	3"	N/A	Hesston	4790	1	4"	2.5"	N/A
Case IH	LBX 331 – 431	1	4"	2"	N/A		4800-4910	1	16"	2"	N/A
Case IH	LBX 332-432 & LB 333 - 433	1	N/A	2"	2"	John Deere	100	1	18"	6.5"	N/A
Challenger	LB 33B – 44B	2	12"	3"	N/A	Krone	890 - 12130	1	3"	4"	N/A
	LB33	1	2"	2"	N/A	New Holland	590 – BB940	1	4"	2"	N/A
	LB34	1	4"	2.5"	N/A	New Holland	BB940A – 960A & BB9060-BB9080	1	N/A	2"	2"
	LB44	1	16"	2"	N/A	Massey Ferguson	2050	1	2"	2"	N/A
Hesston	4750 – 4755	1	16"	2"	N/A	Massey Ferguson	2150 - 2190	2	12"	3"	N/A
	4760	1	2"	2"	N/A	Claas	2100	1	4"	2"	N/A

2. INSTALLATION OF STAR WHEELS

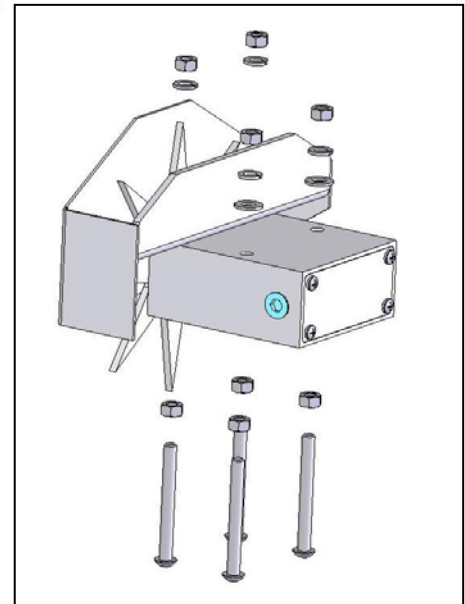
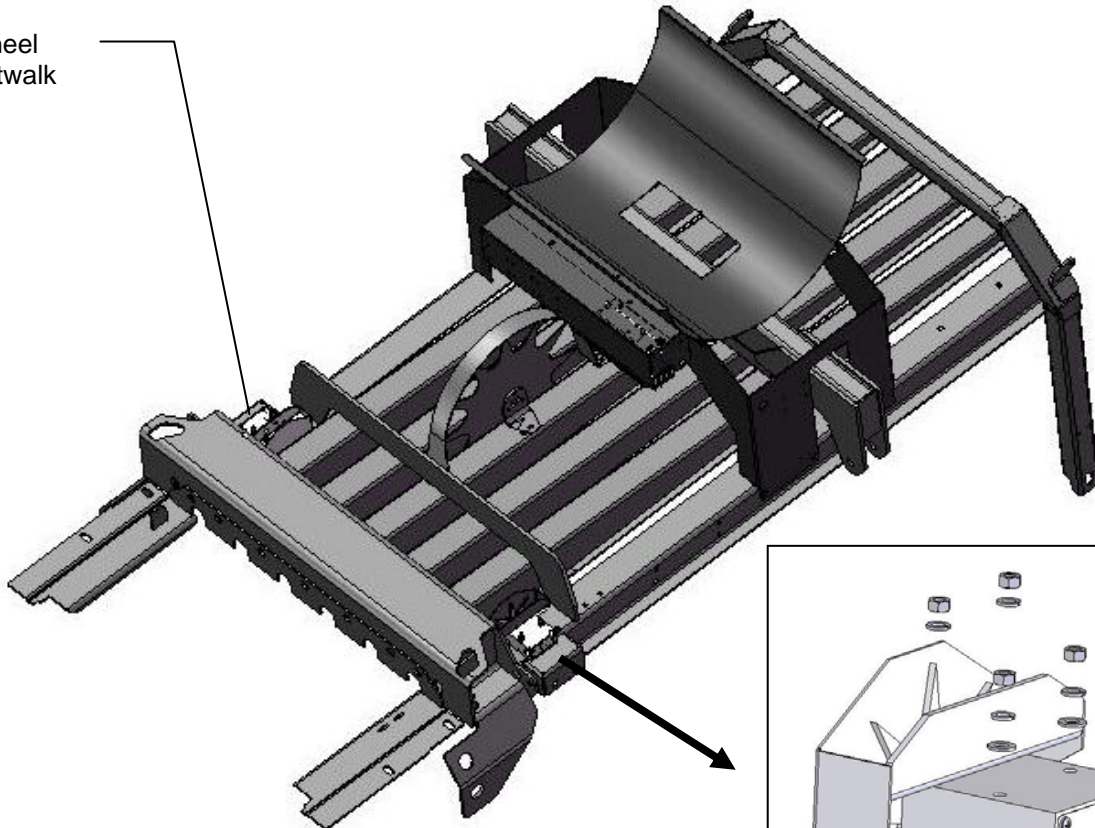
Use the template located in the back of this manual as a guide for cutting a notch and locating the mounting holes for the star wheels. Carefully mark the location of the star wheel holes using the template and a center punch so the star wheels will run true to the direction of the bales, otherwise, the star wheels may work themselves out of the block, damaging the sensor itself or the bale rate sensors. The star wheels must be mounted so that they are no closer than 3/8" from any metal parts of the baler and come in contact only with the bale. Four 5/16 X 3" allen headed bolts will be used to mount the star wheel block and twine guard to the baler. The bolts must be inserted from the inside of the baler chamber. Use nuts and lock washers to hold the bolts in place before putting on the star wheel block, the block is counter-bored on one side so the block will fit over the nuts. The star wheel block has a plug on one side and a wire grommet on the other side. If there are interference problems with the star wheel wires on one side of the block, exchange the wire grommet with the plug so the wire can exit the block on the other side. Mount the twine guards using the two inner holes on the star wheel block. **The twine guard containing the bale rate sensors should be placed on the baler's right side, when looking from the back of the baler.

The following pages will contain detailed instructions for your baler. Please refer to the table of contents for you exact listing.

New Holland 590 through BB9080 and Case IH LBX331 through LB 433 balers

Use the template located in the back of the manual as a guide for cutting the notch and mounting holes for the star wheels. The star wheels are to be mounted on top of the baler, just behind the knotters and under the walkway on both sides. Remove the bale from the chute, tip the walkway up and locate the wheels on the top outside corner angels of the bale chute, one on each side. Some balers may already have the notch cut and square holes. If so, the holes will need to be drilled round with a 5/16" drill bit. A 1/2" x 1/2" cut may also need to be made at the base of the twine arm mounting bracket for the star wheel to sit correctly on the bale chamber. Mark the location of the notch (5/8" wide and 9" long) and the location of the four 5/16" holes for the star wheel base. After cutting the notch and drilling the hole, insert the 5/16" by 3" black allen head bolts up through the chute and use nuts to hold the bolts in place. Place the star wheel block over the nuts and install the twine guards using the two inner holes of the star wheel block. **The twine guard containing the bale rate sensors will be placed on the right side.** See Step 4 for directions on how to hook-up the star wheel wires.

Star wheel
with catwalk
open



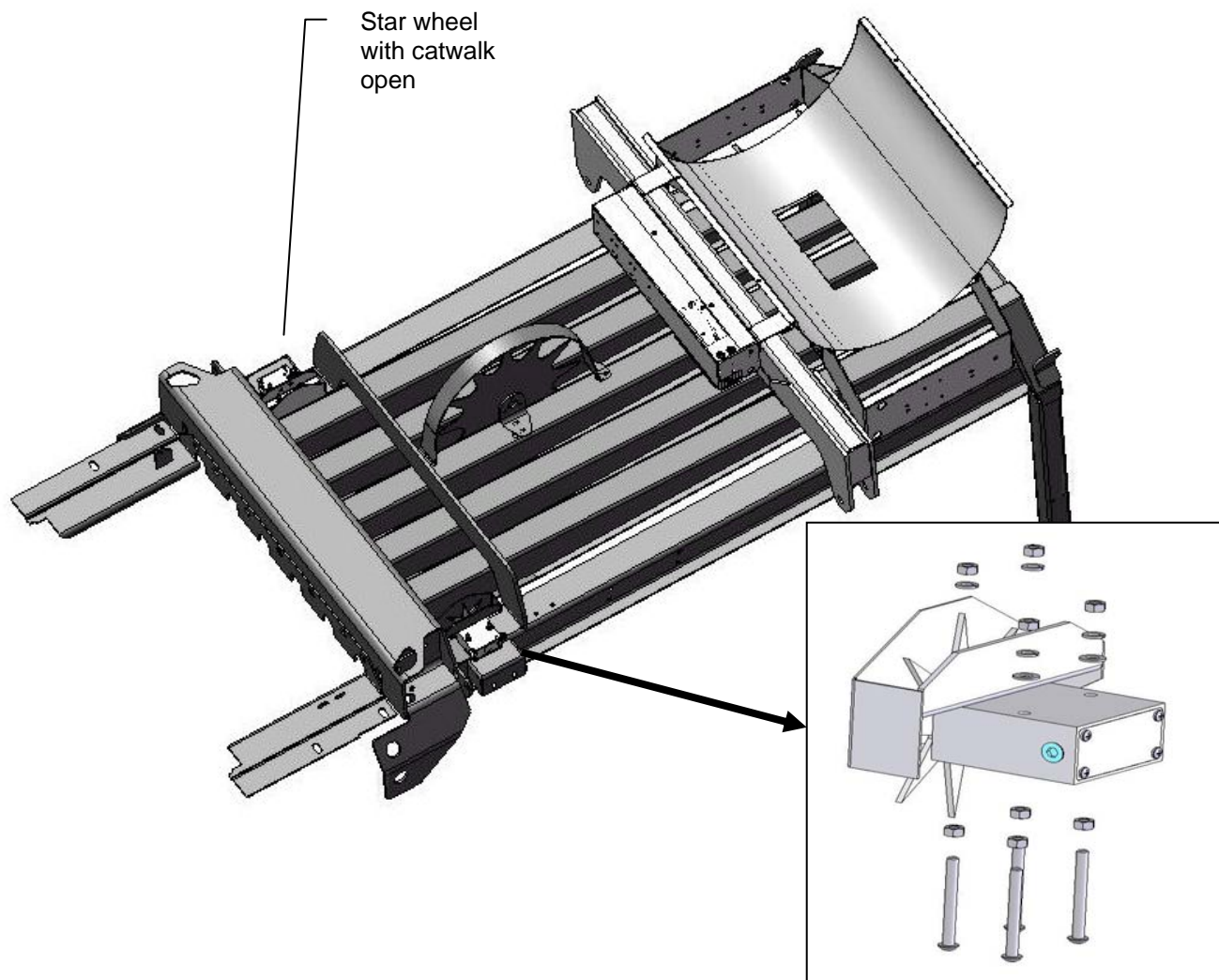
Case IH 8570, 8575, and 8585, Challenger LB33, LB34, and Hesston 7430, 4750, 4755, 4760, and 4790, and Massey Ferguson 2050, and New Idea 7233, 7333, 7234 balers

The star wheels are mounted under the walkway on top of the baler behind the knotters. Remove the bale from the chute and tip the walkway up. Locate the star wheel template on the outside corner angles of the bale chute on the left and right side of the baler. The center of the wheel shaft will be approximately 5½ inches in front of the walkway support or about halfway between the walkway support and the cross frame almost directly in front of it. The notch will start just in front of the walkway support.

Two parts of the baler frame will have to be trimmed off on both sides to mount each star wheel.

The first is the outside corner angles of the chute. Use the template to mark the location of the star wheel notch as well as the location of the four holes for the star wheel base. The notch will be 5/8" by 9" long and will help keep the wheel away from the twine. Spray the ground areas with touch up paint to prevent rusting. The second portion of the baler to trim off is the end of the gusset that may interfere with the star wheel's plastic base support. Center the star wheel in the slots that was just notched and check for interference with the gusset.

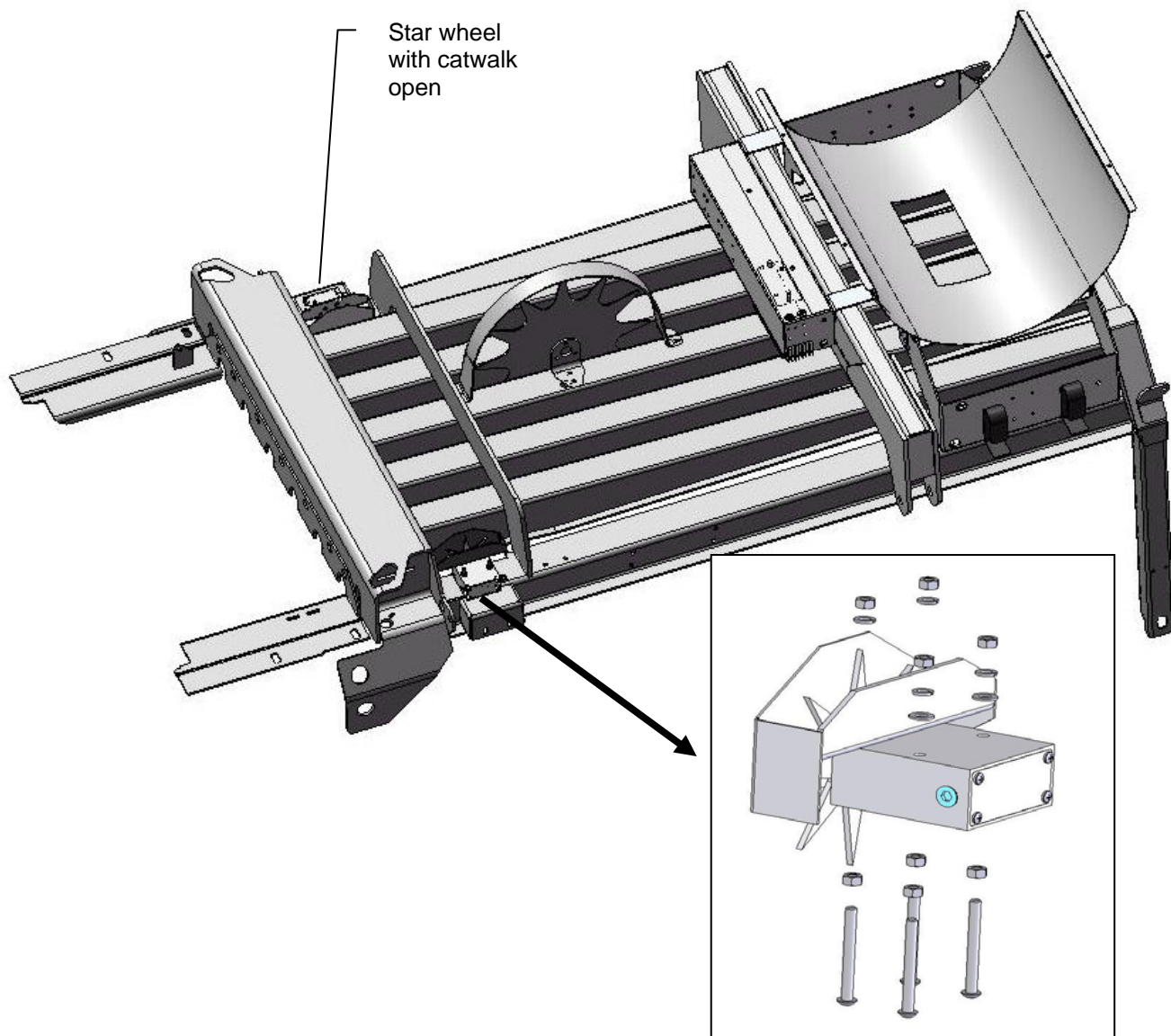
Drill 5/16" holes for the star wheel block. Insert the 5/16" by 3" bolts up through the chute and use nuts to hold the bolts in place. Place the star wheel block over the nuts and install the twine guards using the two inner holes of the star wheel block. **The twine guard containing the bale rate sensors will be placed on the right side of the baler.** See Step 4 for directions on how to hook-up the star wheel wires.



Case IH 8580 and 8590, Hesston 4900 and 4910, Challenger LB44, and New Idea 7244 balers

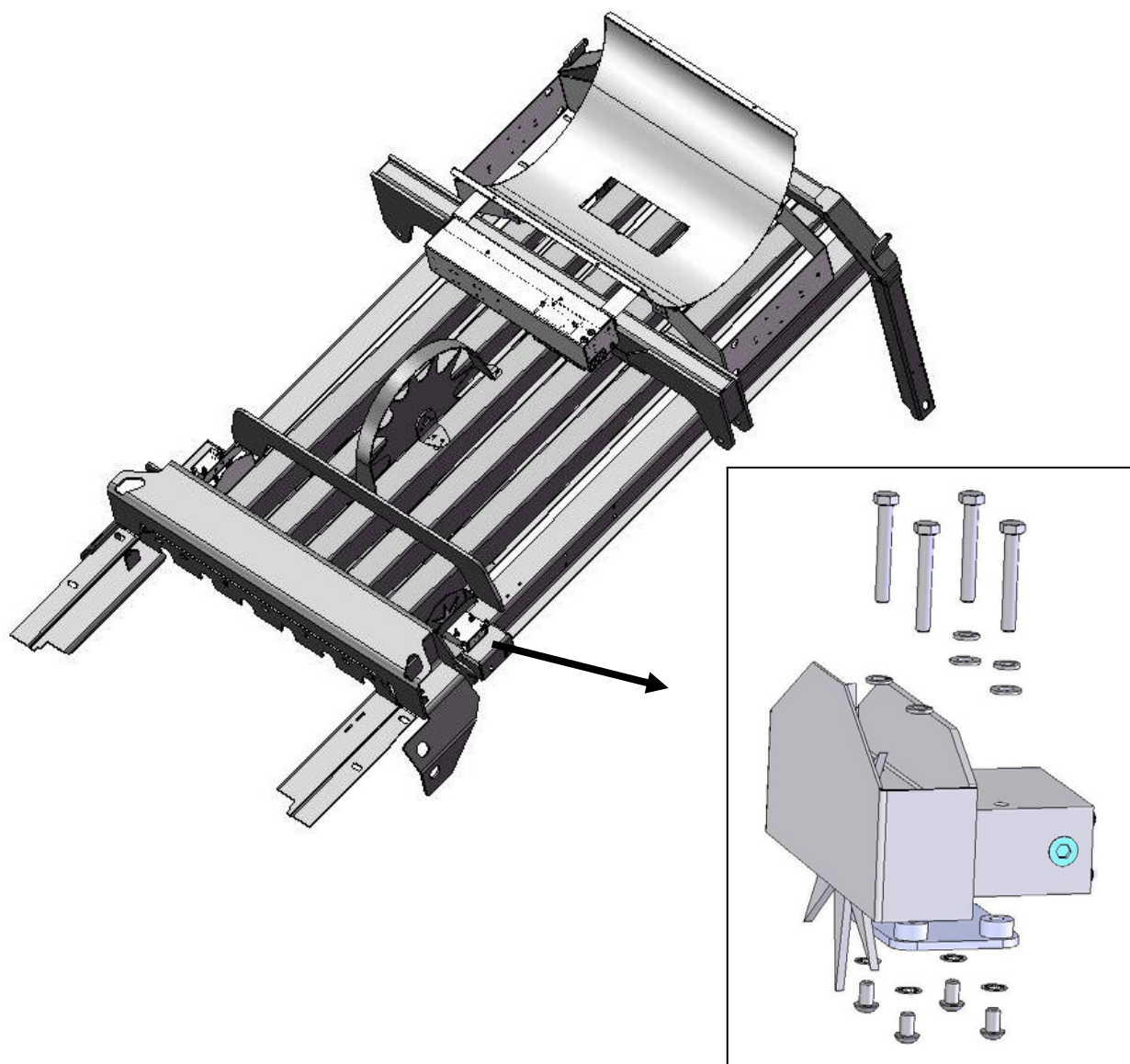
The star wheels are mounted on top of the baler, just behind the knotters under the walkway on both sides. Use the template at the back of the manual to mark the location and dimension of the notch and holes. Remove the bale from the chute. Tip the walkway up and locate the wheels on the top outside corner angles of the bale chute, one on each side. The star wheel block is located just in front of the horizontal channels holding the twine boxes. Using the template, mark the location of the notch (5/8" wide and 9" long) and the location of the four 5/16" holes for the star wheelbase using a center punch. The bare metal edge of the angle should be sprayed with touch up paint to prevent corrosion.

Once the above modification to the baler is made on both sides of the chute, the wheels can be mounted. Insert the 5/16" by 3" bolts up through the chute and use nuts to hold the bolts in place. Place the star wheel block over the nuts and install the twine guards using the two inner holes of the star wheel block. **The twine guard containing the bale rate sensors will be placed on the right side of the baler.** See Step 4 for directions on how to hook-up the star wheel wires.



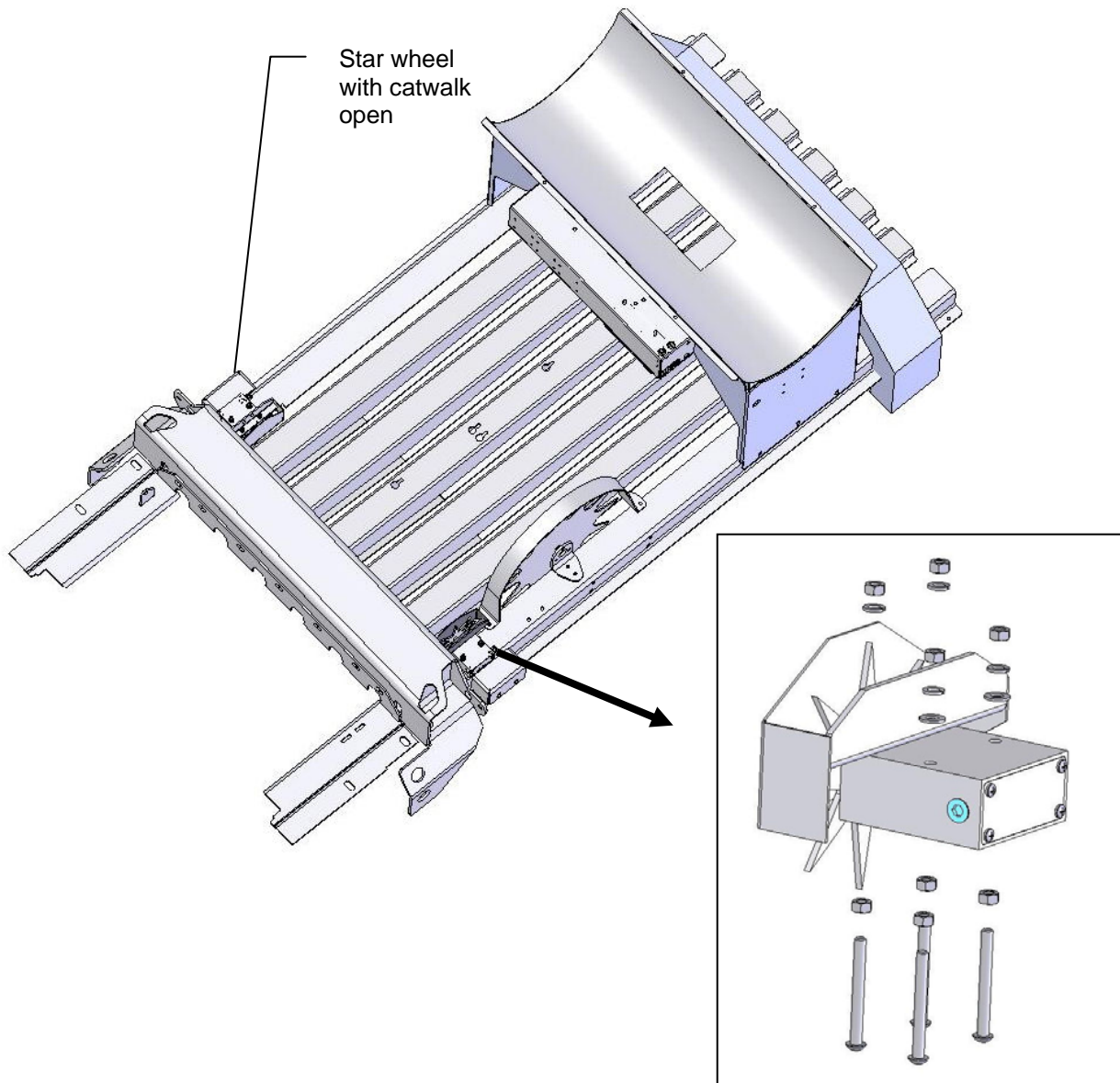
Agco Hesston 7433, 7434, 7444, 2150, 2170, 2190, and Challenger LB33B, LB34B, LB44B, and Massey Ferguson 2150, 2170, 2190

The star wheels are to be mounted on top of the baler, just behind the knotters and under the walkway on both sides. The notch and holes for the star wheel are pre cut. **If the star wheels are cutting the twine the sensors and notch must be moved out an additional 1/2 inch. Use the template in the back of the manual for hole spacing.** Place the spacer plate (001-6707E) over the pre cut holes. Attach with 5/16 x 1/2 allen head bolts and internal star washers from inside the bale chamber. Center the star wheels over the top of the spacer plate, place the twine diverters on top of the star wheel and attach with 5/16 x 2 1/4 hex bolt and lock washers. For remainder two holes per star wheel attach with 5/16 x 2 1/4" hex bolt, lock washer, and one 5/16" thick flat washers per bolt. Verify that star wheels align with bale chamber before tightening down all hardware. **The twine guard containing the bale rate sensors will be placed on the right side of the baler.** See Step 4 for directions on how to hook-up the star wheel wires.



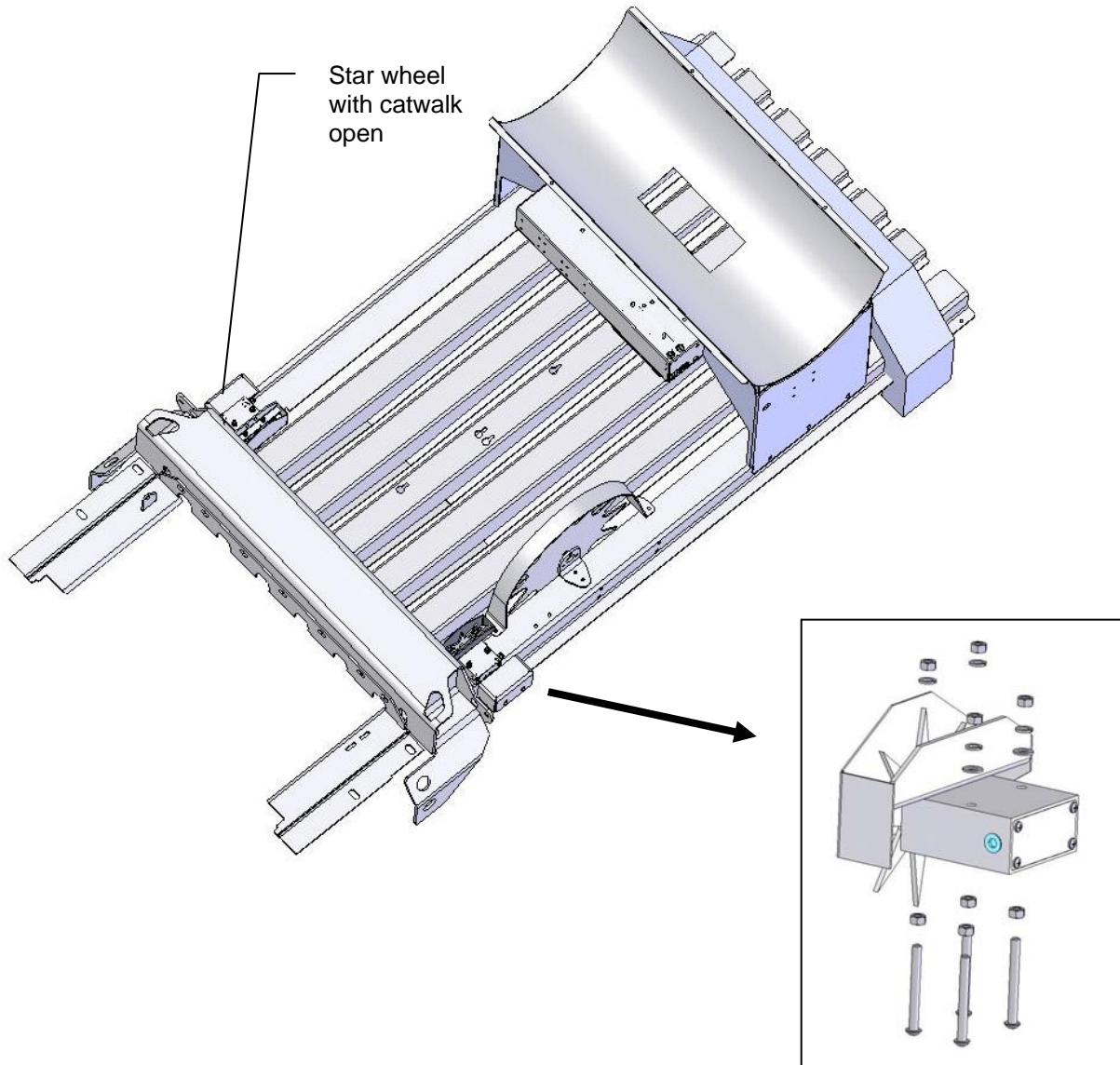
Vermeer SQ2731 and SQ3347 balers

Locate the steel crossbeam that goes across the bale chamber in between the knotters and shield for the hydraulic cylinder. The yellow shield is located in the middle and runs in the same direction as the bale chamber. Using the provided star wheel template, locate the template as far forward as possible behind the crossbeam. Position the template so the edge of the star wheel base is aligned with the outside of the bale chamber. Mark the hole positions for drilling and also mark the notch for the star wheels. The notch will be $5/8$ " by 9" long and will help keep the wheel away from the twine. Repeat this process on the other side of the bale chamber for the second star wheel. Insert the $5/16$ " by 3" bolts up through the chute and use nuts to hold the bolts in place. Place the star wheel block over the nuts and install the twine guards using the two inner holes of the star wheel block. **The twine guard containing the bale rate sensors will be placed on the right side of the baler.** See Step 4 for directions on how to hook-up the star wheel wires.



Claas 2100 and 2200 balers

Use the template located in the back of the manual as a guide for cutting the notch and mounting holes for the star wheels. The star wheels are to be mounted on top of the baler, just behind the knotters and as far forward as possible. Remove the bale from the chute. Locate the wheels on the top outside corner angles of the bale chute, one on each side. Mark the location of the notch (5/8" wide and 9" long) and the location of the four 5/16" holes for the star wheel base. After cutting the notch and drilling the hole, insert the 5/16" by 3" black allen head bolts up through the chute and use nuts to hold the bolts in place. Place the star wheel block over the nuts and install the twine guards using the two inner holes of the star wheel block. **The twine guard containing the bale rate sensors will be placed on the right side.** See Step 4 for directions on how to hook-up the star wheel wires.

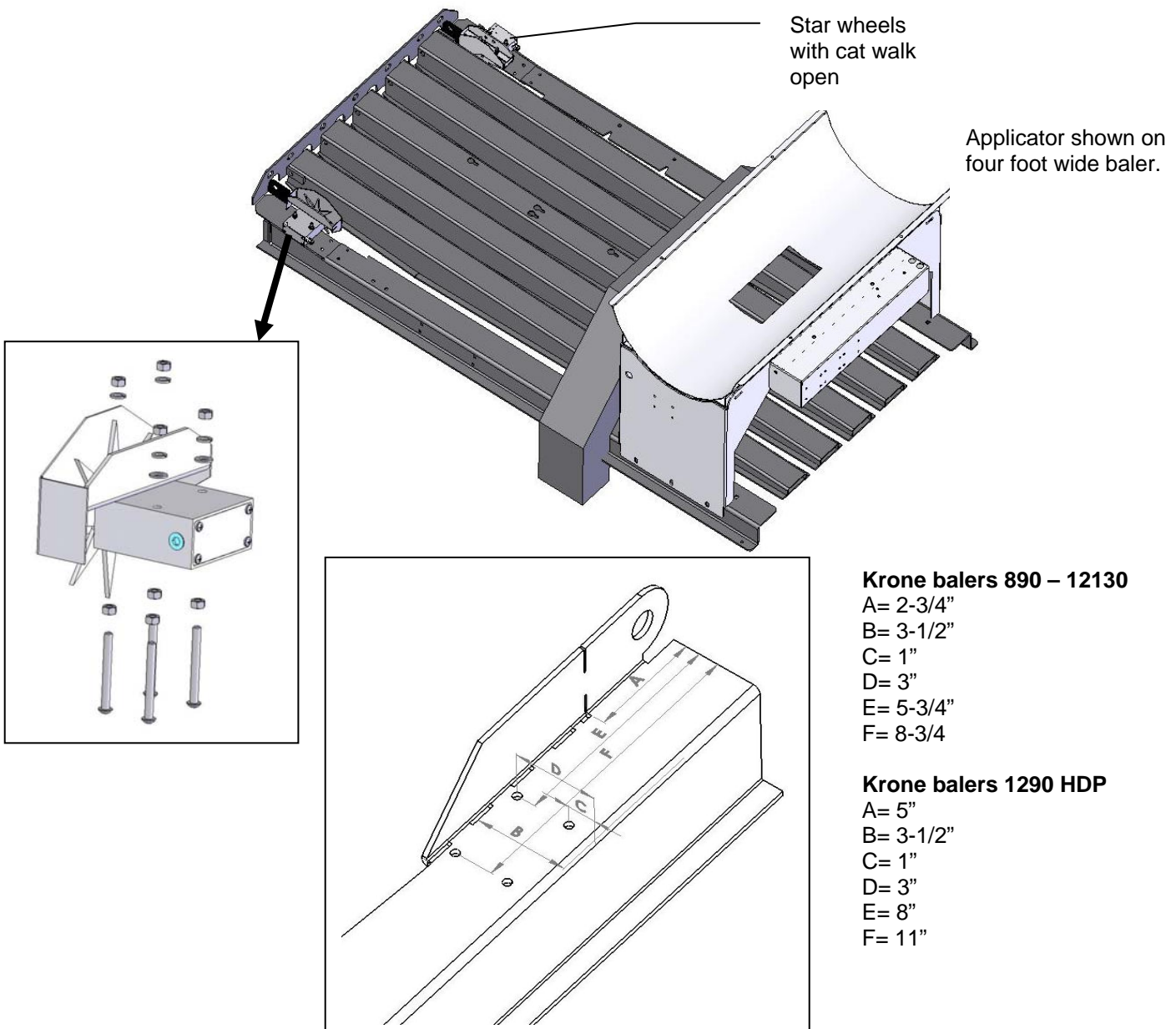


Krone large square

Mount the tank legs and saddle on the baler as shown below. The tank legs bolt to the baler with $\frac{1}{2}$ " carriage bolts (qty 6). You will need to drill $\frac{9}{16}$ " holes (3 per side) in the baler to bolt down the tank legs. The bolts should be inserted from inside the baler.

The saddle is intentionally tipped forward by 5° so that the tank cap will be parallel to the ground. There is a small cut out "V" where the tank sump fits in the saddle and this cut out should face the back of the baler for the tank to be level when installed on the baler.

Remove the bale for the bale chute. The star wheels are to be mounted on top of the baler, just behind the knotters and as far forward as possible. Use the table and diagram below to mark the four bolt hole locations on the bale chamber (C,D,E,F). Use the template in the back of the manual to mark the location of the notch to be cut. When cutting the notch both the vertical brace and the bale chamber will need to be cut. Before cutting verify the notch measurement with the below diagram using marks A & B. After cutting the notch and drilling the holes, insert the $\frac{5}{16}$ " by 3" black allen head bolts up through the chute and use nuts to hold the bolts in place. Place the star wheel block over the nuts and install the twine guards using the two inner holes of the star wheel block. **The twine guard containing the bale rate sensors will be placed on the right side.** See Step 8 for directions on how to hook-up the star wheel wires.

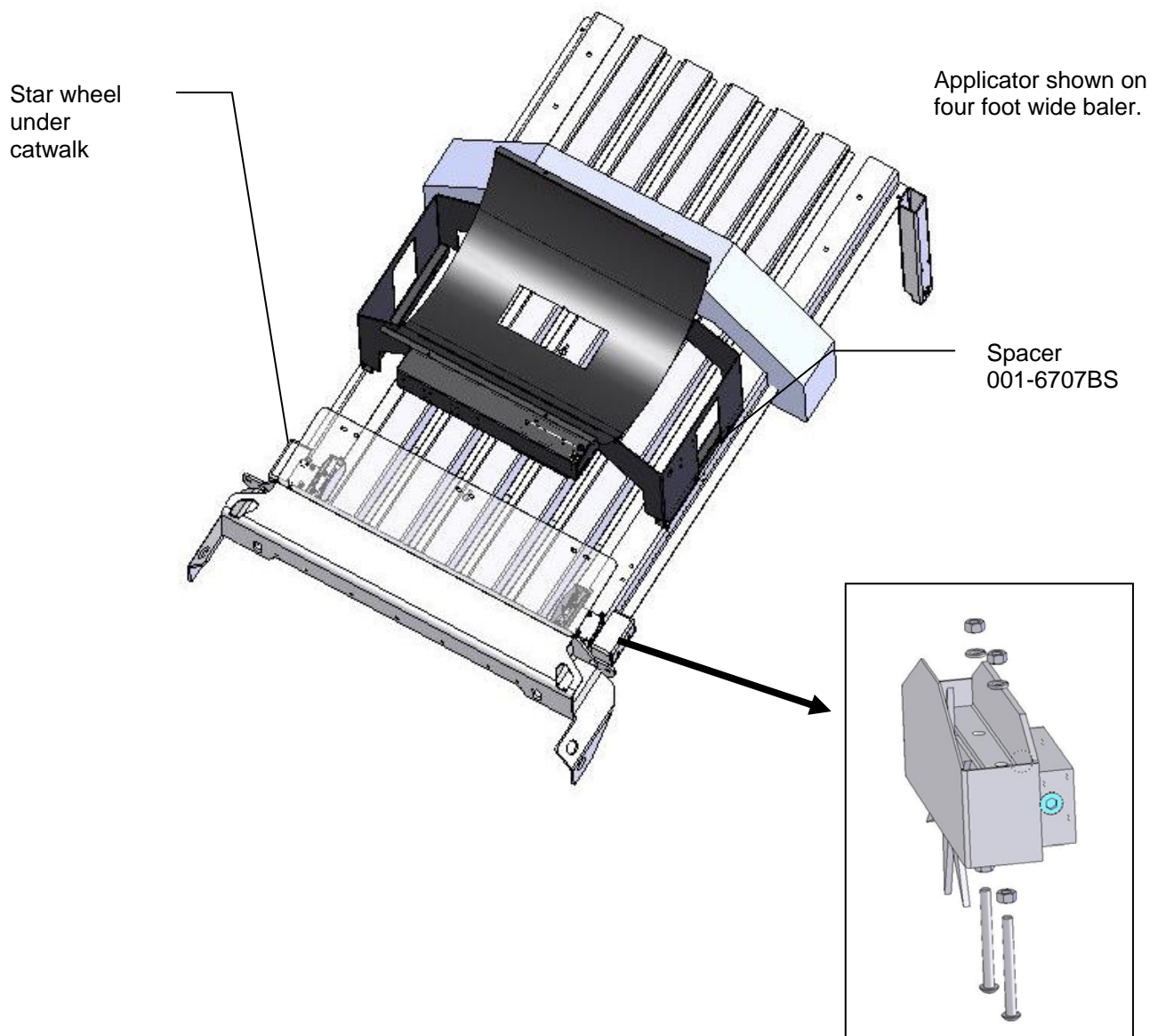


Kuhn LSB 870 – 1290, Vicor LB 8200 and LB 12200 & Taarup 6570 – 6690 OC

Mount the tank legs and saddle on the baler as shown below. Insert the two 001-6707BS spacers between the legs and saddle legs. The tank legs bolt to the baler with 1/2" carriage bolts (qty 6). The bolts should be inserted from inside the baler.

The saddle is intentionally tipped forward by 5° so that the tank cap will be parallel to the ground. There is a small cut out "V" where the tank sump fits in the saddle and this cut out should face the back of the baler for the tank to be level when installed on the baler.

Use the template in the back of the manual labeled Vicor large square balers for this installation. The star wheels are to be mounted on top of the baler, just behind the knotters and under the walkway on both sides. Remove the bale from the chute, mount the star wheels flush with the back of the walkway with one star wheel on each side. Mark the holes inside the chamber, and drill the two holes per side, for mounting from inside the chamber. Insert the 5/16" by 3" black allen head bolts up through the chute and use nuts to hold the bolts in place. Place the star wheel block over the nuts and install the twine guards using the two inner holes of the star wheel block. **The twine guard containing the bale rate sensors will be placed on the right side.** See Step 8 for directions on how to hook-up the star wheel wires.

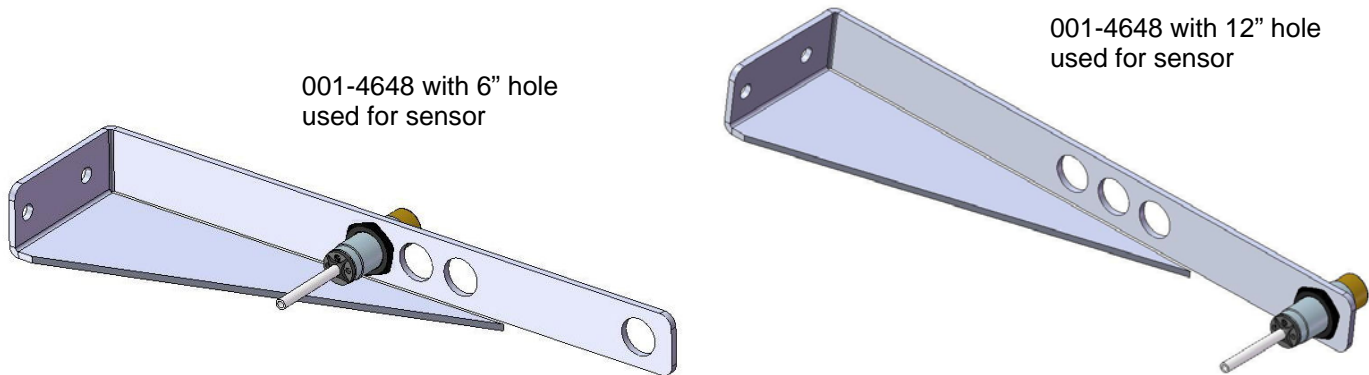


3. INSTALLATION OF END OF BALE SENSOR

The end of bale sensor determines the position of the needles on the baler. When the needles cycle the sensor communicates this information to the Precision Information Processor. This information is used for job records and will be used by the optional Bale Identification systems. Follow the steps below for your baler to mount the sensor.

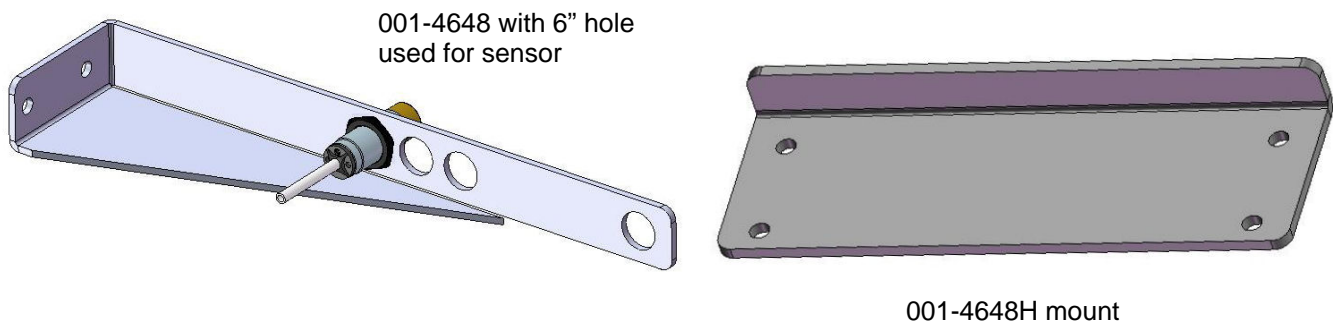
ALL AGCO 4760 – 4790, 2150 - 2190 AND EQUIVALENTS, CASE IH LBX 331 – LB 433, CLASS 2100, JOHN DEERE 100, NEW HOLLAND 590 – BB 9080

End of bale sensor bracket (001-4648) will be used. Cutoff excess metal not used during installation.



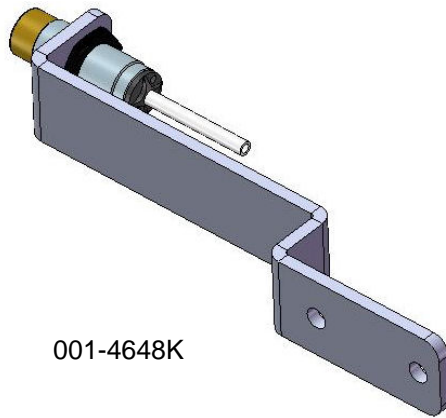
ALL HESSTON 4750 – 4755 & 4900 – 4910

End of bale sensor bracket (001-4648) and Hesston end of bale mount (001-4648H) will be used. The Hesston end of bale mount will be found in the installation kit box. Cutoff excess metal not used during installation.

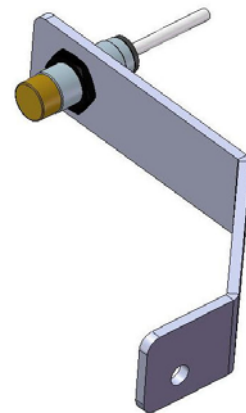


ALL KRONE 890 -12130

Krone End of bale sensor bracket (001-4648K or 001-4648K2) be used. The Krone end of bale mount will be found in the installation kit box. The 001-4648K will be used with balers 890 – 1290. The 001-4648K2 will be used with the 12130 baler.



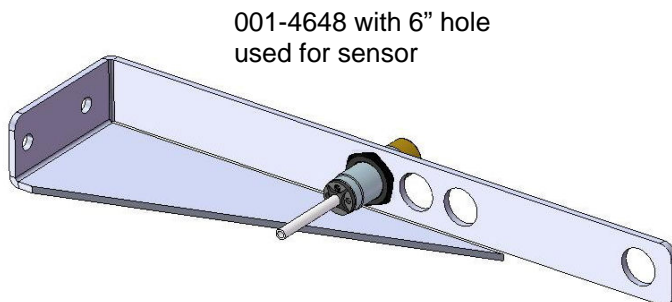
001-4648K



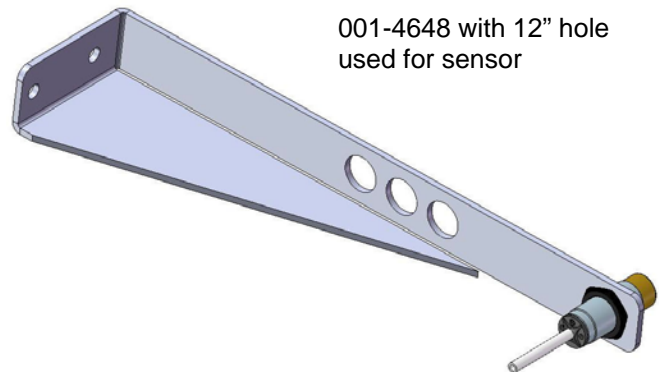
001-4648K2

ALL KUHN, VICON, AND TAARUP BALERS

End of bale sensor bracket (001-4648) will be used. Cutoff excess metal not used during installation.



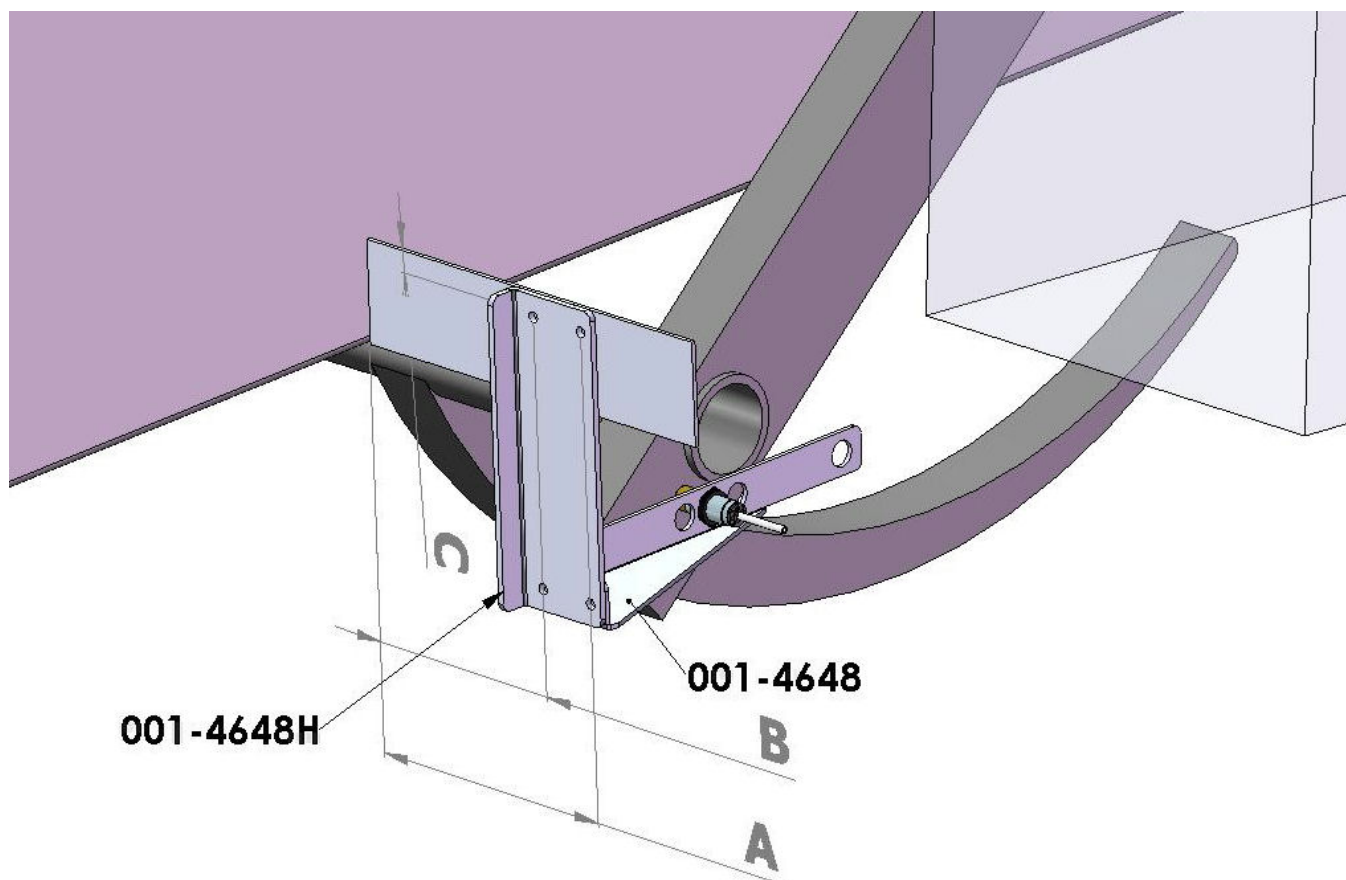
001-4648 with 6" hole
used for sensor



001-4648 with 12" hole
used for sensor

AGCO & HESSTON BALERS

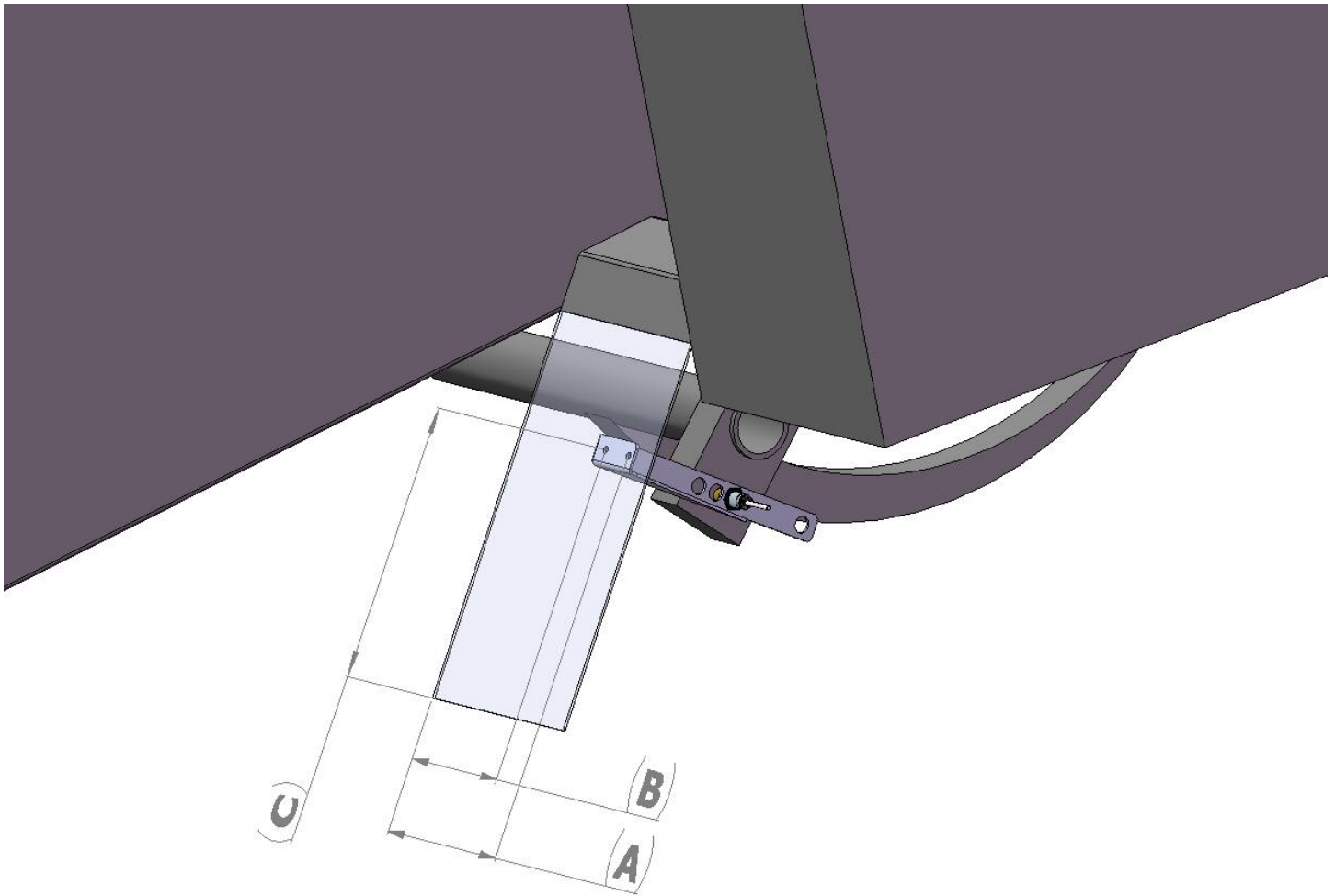
HESSTON 4750-4755 & 4900 – 4910



Sensor hole location	A	B	C
7"	7-7/8"	9-5/8"	5/8"

Attach the Hesston end of bale mount (001-4648H) as shown. Attach the end of bale sensor bracket (001-4648) to the Hesston end of bale mount (001-4648H) using two 1/4" x 1" bolts, lock and flat washers, and nuts. Align the brackets and mark the two 5/16 holes to be drilled. Attach the brackets to the baler using two 1/4" x 1" bolts, lock and flat washers, and nuts. Mount the sensor in the 7" hole location, keep the sensor 1/4" from the needle and tighten both nuts. Cutoff excess metal past the sensor. Run the sensor cable up to the Precision Information Processor and secure to the baler.

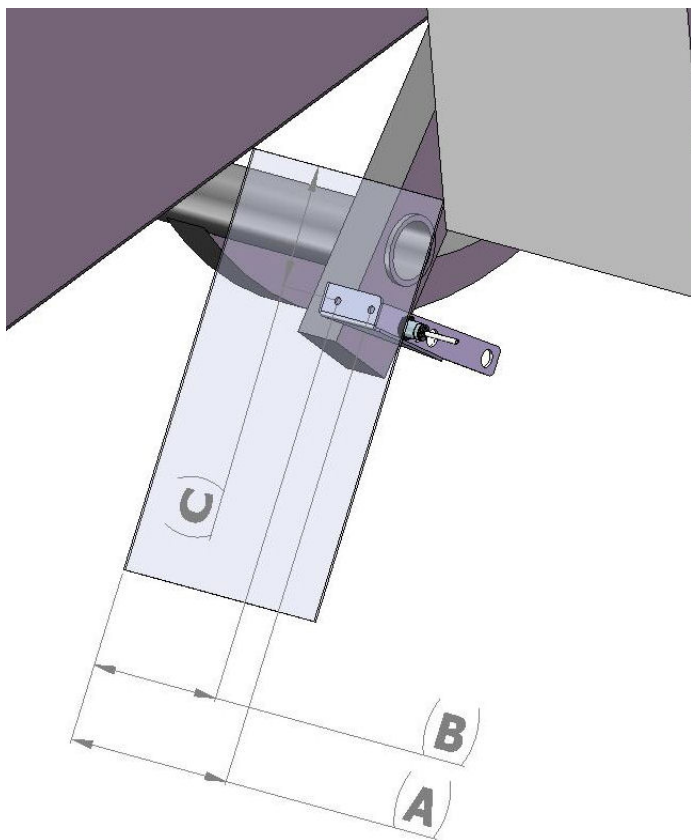
HESSTON 7433 – 7444 & EQUIVALENTS



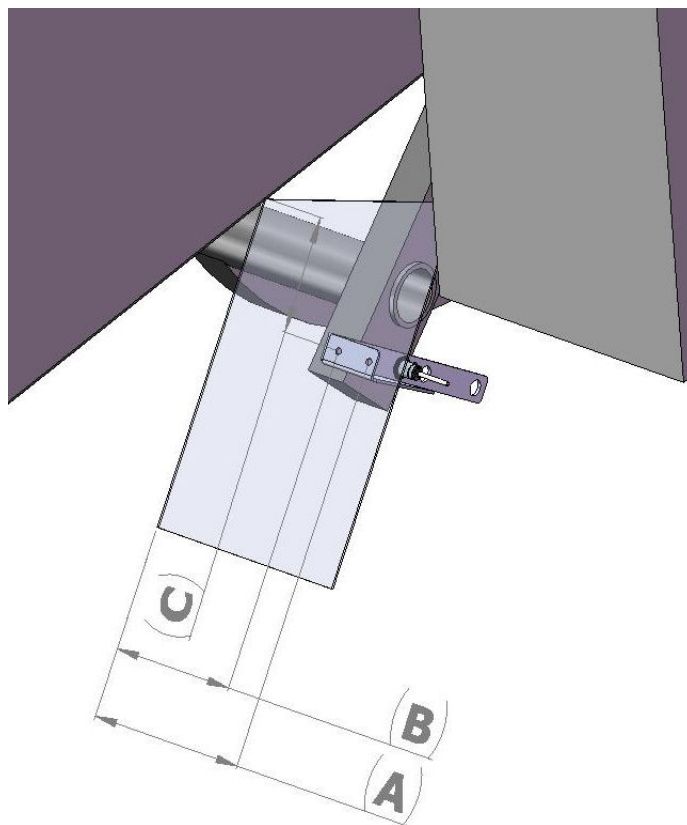
Sensor hole location	A	B	C
8"	4-7/8"	3-1/8"	15"

Mount the end of bale sensor bracket (001-4648) as shown. Mark and drill two 5/16" holes and attach the bracket using two 1/4" x 1" bolts, locks, flats, and nuts. Mount the sensor in the 8" hole location, keep the sensor 1/4" from the needle and tighten both nuts. Cutoff excess metal past the sensor. Run the sensor cable up to the Precision Information Processor and secure to the baler.

HESSTON 4760 & 4790



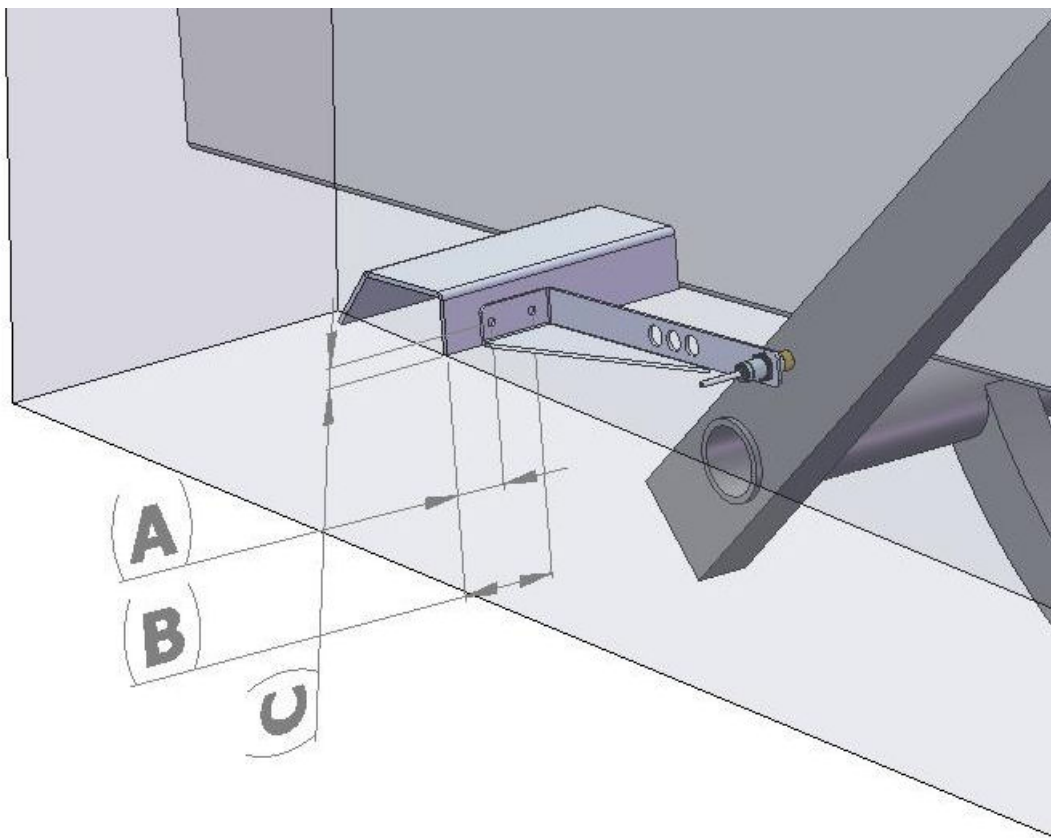
Hesston 4760



Hesston 4790

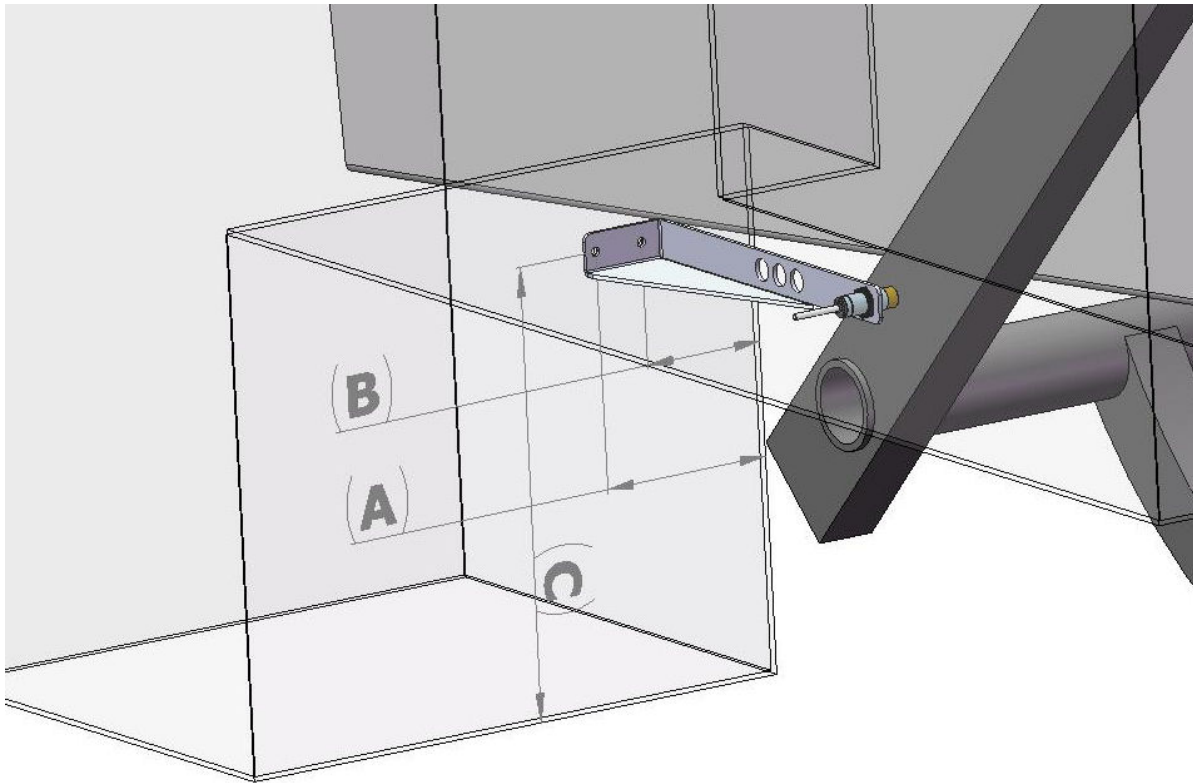
Baler	Sensor hole location	A	B	C
4760	6"	6-5/8"	4-7/8"	4"
4790	6"	4-5/8"	2-7/8"	3"

Mount the end of bale sensor bracket (001-4648) as shown. Mark and drill two 5/16" holes and attach the bracket using two 1/4" x 1" bolts, locks, flats, and nuts. Mount the sensor in the 6" hole location, keep the sensor 1/4" from the needle and tighten both nuts. Cutoff excess metal past the sensor. Run the sensor cable up to the Precision Information Processor and secure to the baler.



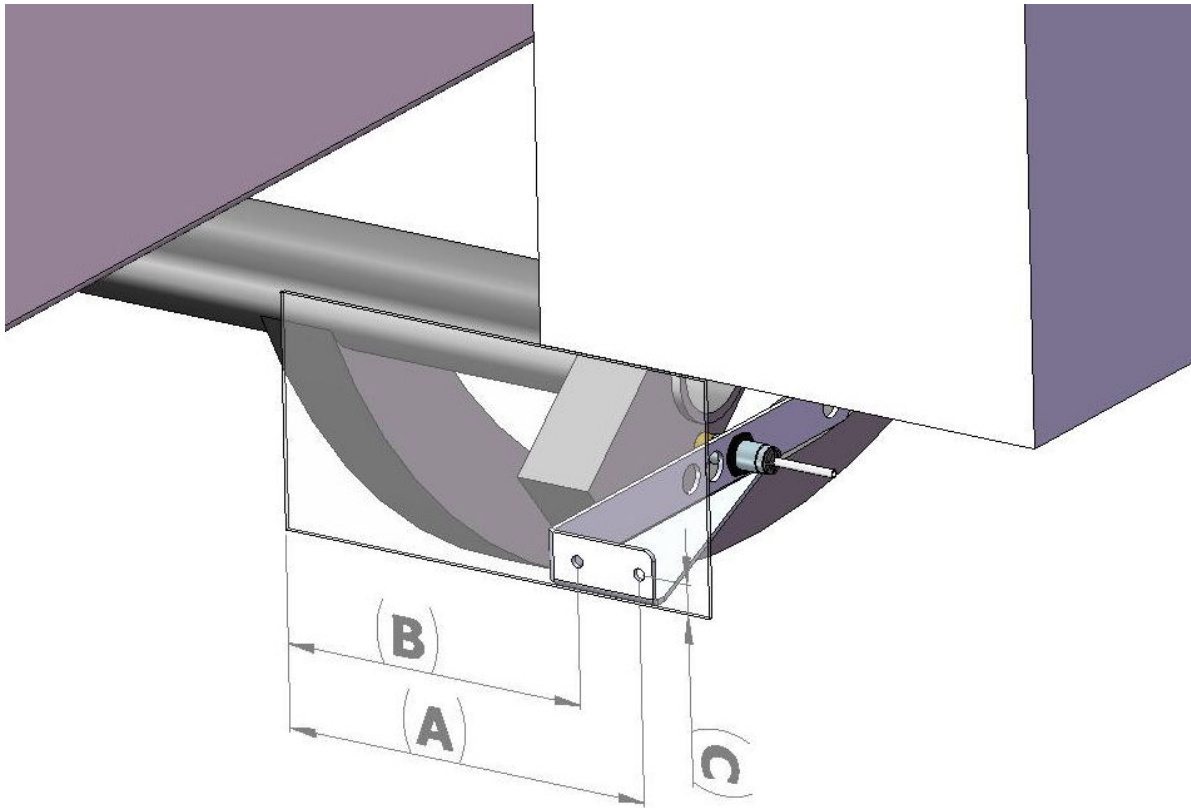
Sensor hole location	A	B	C
12"	2-7/9"	4-3/8"	5/8"

Mount the end of bale sensor bracket (001-4648) as shown. Mark and drill two 5/16" holes and attach the bracket using two 1/4" x 1" bolts, locks, flats, and nuts. Mount the sensor in the 12" hole location, keep the sensor 1/4" from the needle and tighten both nuts. Run the sensor cable up to the Precision Information Processor and secure to the baler.



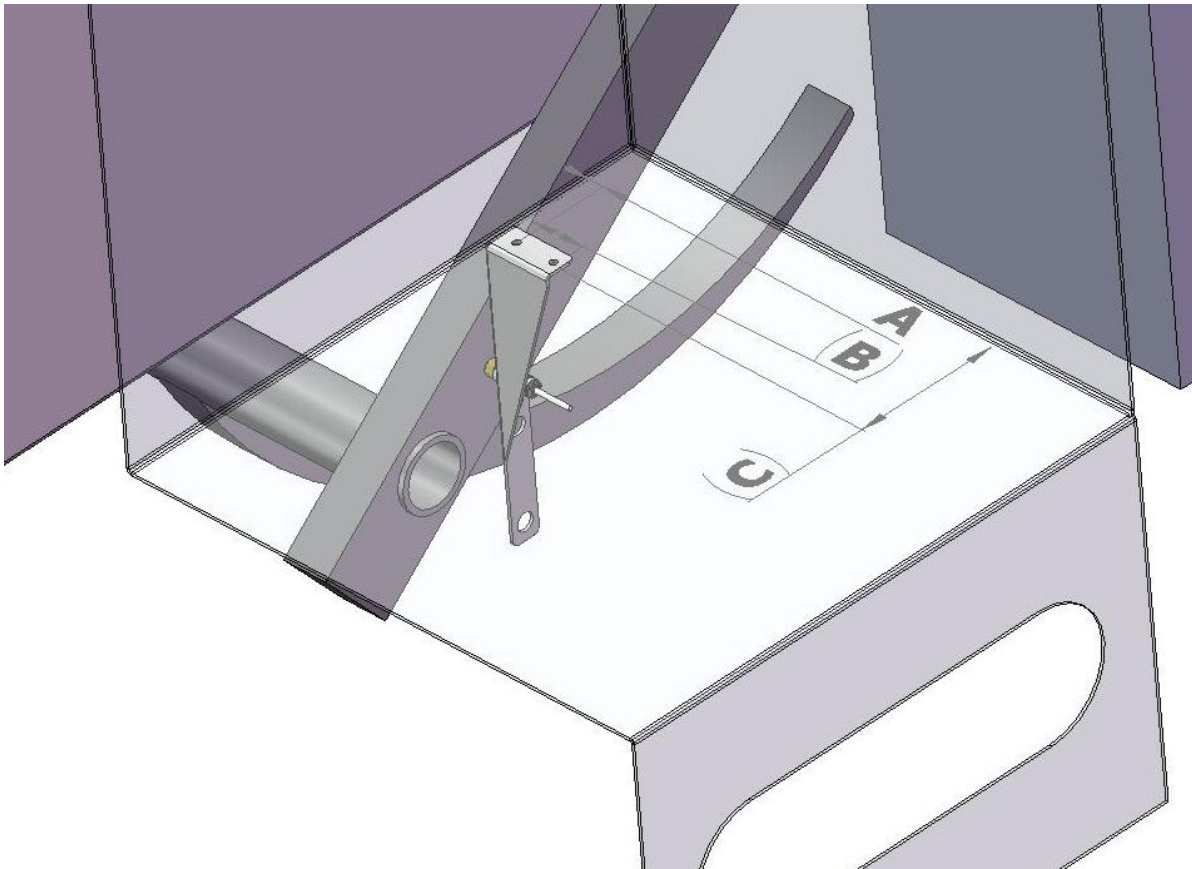
Sensor hole location	A	B	C
12"	6-1/8"	4-3/8"	15"

Mount the end of bale sensor bracket (001-4648) as shown. Mark and drill two 5/16" holes and attach the bracket using two 1/4" x 1" bolts, locks, flats, and nuts. Mount the sensor in the 12" hole location, keep the sensor 1/4" from the needle and tighten both nuts. Run the sensor cable up to the Precision Information Processor and secure to the baler.



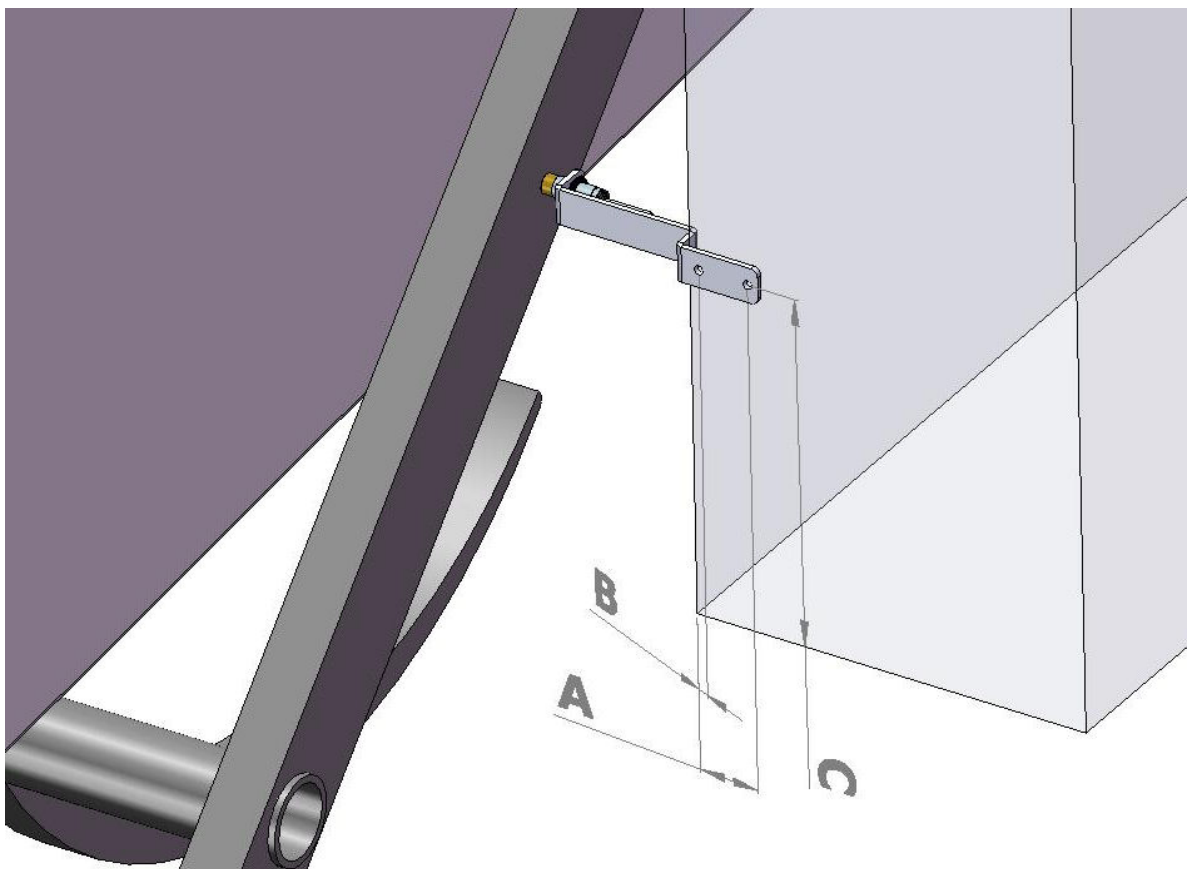
Sensor hole location	A	B	C
8"	5-3/4"	4"	5/8"

Mount the end of bale sensor bracket (001-4648) as shown. Mark and drill two 5/16" holes and attach the bracket using two 1/4" x 1" bolts, locks, flats, and nuts. Mount the sensor in the 8" hole location, keep the sensor 1/4" from the needle and tighten both nuts. Cutoff excess metal past the sensor. Run the sensor cable up to the Precision Information Processor and secure to the baler.



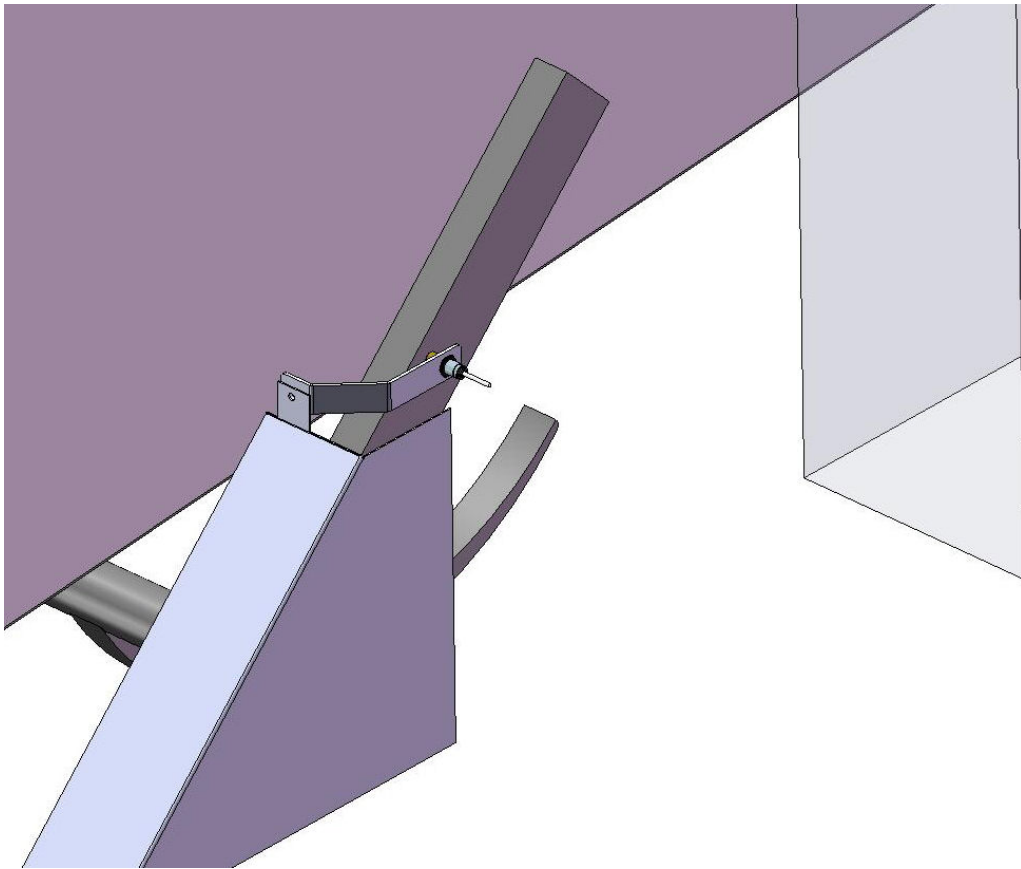
Sensor hole location	A	B	C
6"	2-5/8"	7/8"	7"

Mount the end of bale sensor bracket (001-4648) as shown. Mark and drill two 5/16" holes and attach the bracket using two 1/4" x 1" bolts, locks, flats, and nuts. Mount the sensor in the 6" hole location, keep the sensor 1/4" from the needle and tighten both nuts. Cutoff excess metal past the sensor. Run the sensor cable up to the Precision Information Processor and secure to the baler.



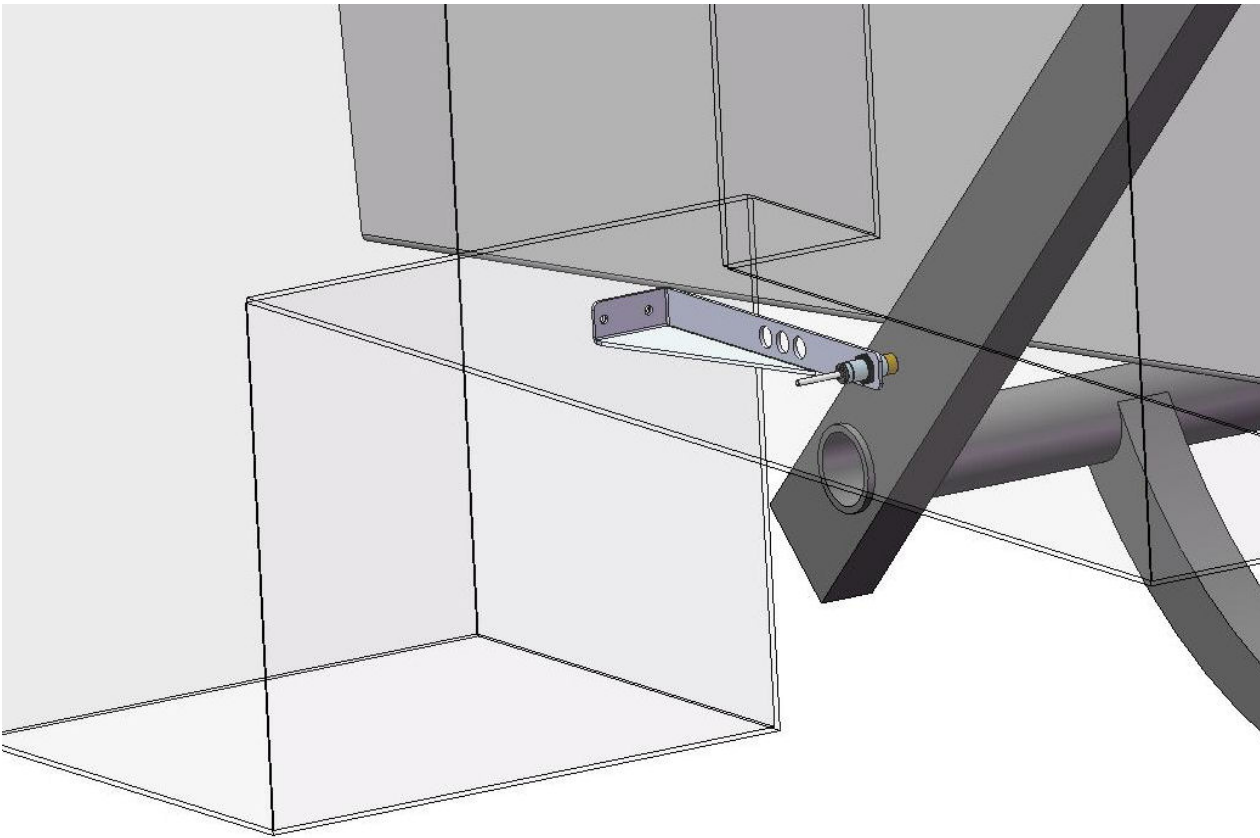
Sensor hole location	A	B	C
N/A	2-1/4"	1/2"	8"

Mount the Krone end of bale sensor bracket (001-4648K) as shown. The Krone mounting bracket can be found in the installation kit box. Mark and drill two 5/16" holes and attach the bracket using two 1/4" x 1" bolts, locks, flats, and nuts. Mount the sensor at the end of the bracket, keep the sensor 1/4" from the needle and tighten both nuts. Run the sensor cable up to the Precision Information Processor and secure to the baler.



Mount the Krone end of bale sensor bracket (001-4648K2) as shown. The Krone mounting bracket can be found in the installation kit box. Directly behind the twine box on the right side of the baler remove the bolt and nut that secures the fiberglass baler shield to the baler. Mount the sensor bracket using the 3/8 x 1 bolt, lock and nut. Mount the sensor at the end of the bracket, keep the sensor 1/4" from the needle and tighten both nuts. Run the sensor cable up to the Precision Information Processor and secure to the baler.

ALL KUHN, VICON AND TAARUP BALERS



Mount the end of bale sensor bracket (001-4648) as shown. Mark and drill two 5/16" holes and attach the bracket using two 1/4" x 1" bolts, locks, flats, and nuts. Mount the sensor in a hole location centered over the needle arm, keep the sensor 1/4" from the needle and tighten both nuts. Run the sensor cable up to the Precision Information Processor and secure to the baler.

4. INSTALLATION OF STAR WHEEL AND BALE RATE HARNESS

First, remove the cover from the star wheel block and use a 1/4" nut driver to remove the nut from the electronic swivel. Next, run the star wheel sensor wire through the black grommet and place the eye terminal on the star wheel sensor. Tighten the eye loop with the nut on the sensor and put the star wheel cover back on the base. Next, tighten the grommet to form a tight seal around the wire. The bale rate sensors will be factory installed on the right side twine guard in the correct position. The sensor with the longer sensor wire should say "FRONT", which indicates it should be placed in the front sensor hole. The sensor wire with the shorter wire should say "BACK." The tip of the sensor should be placed no more than 1/4" away from the star wheel teeth and no less than 1/8" from the star wheel teeth. Each sensor will have an LED light located on the sensor by the diverter. Once the unit is powered up spin the wheel and make sure that both led lights turn on and off. If they don't turn on and off, adjustments may need to be made. Once the star wheel connection is complete, run the harness along the baler frame to the PIP. (See wiring installation on the following page.) The PIP is located on the back of the right twine box.

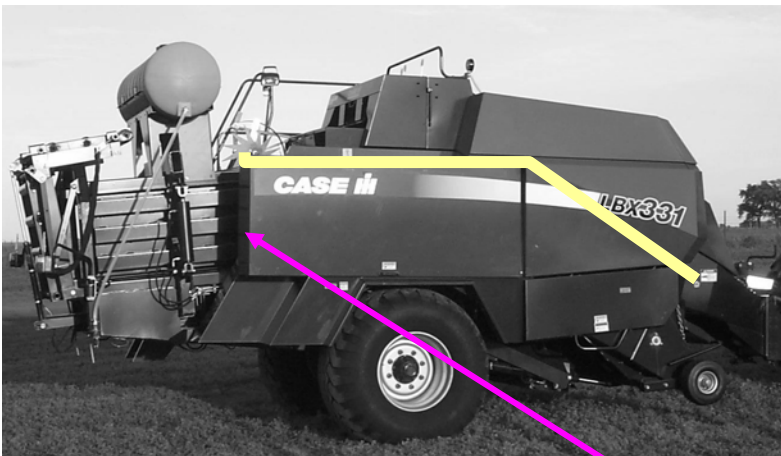
5. INSTALLATION OF CONTROLS

Use the four mounting screws to mount the round base in a convenient area in your cab or on your fender. If unit is mounted on fender it will need to be removed at night and stored in a clean, dry area. Use the Ram mount swivel-positioning nut to tighten the entire assembly. Adjust it so that you can view the entire screen and be able to use the touch screen without interfering with other tractor functions.

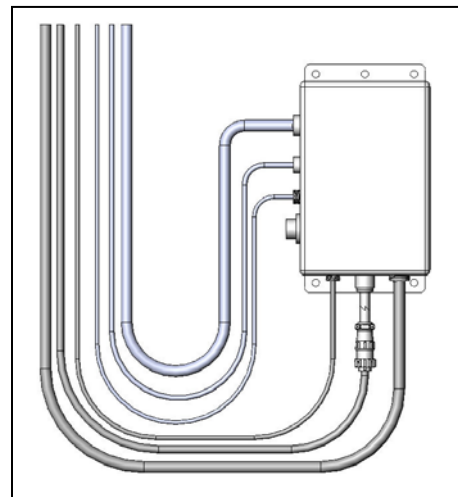
6. INSTALLATION OF DISPLAY CABLE HARNESS

On the bottom of the touch screen display you will find the main display wire plug. The harness (006-5650C) will need to be attached to this plug and run through the cab towards the hitch where it will connect with its matching harness (006-5650D) from the PIP.

7. MAIN WIRING HARNESS AND POWER CORD INSTALLATION



Route cords 006-5650B and 006-5650D along this path or similar inside of the baler. Keep cords away from moving parts and hydraulic hoses. Secure with existing cable clamps or use cable ties. When all connections are made to the PIP secure wires as shown below to allow for water to be shed away from the PIP.

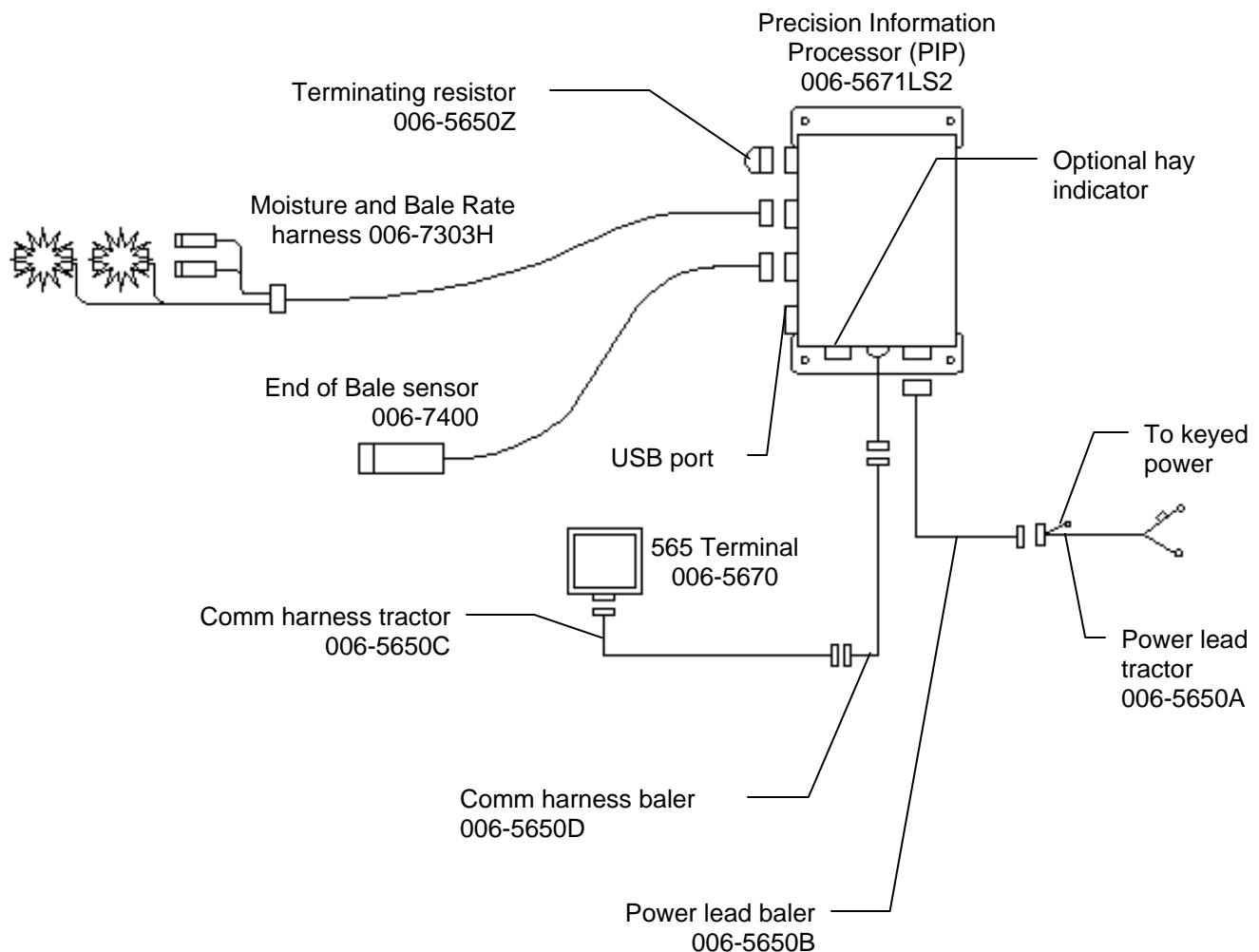


WIRING INSTALLATION

1. Locate the power harness.
2. Connect the power harness (006-5650A) to the battery (12 volt) using the red wire with fuse to the positive side and the black wire to the negative.
 - a. **The power harness must be connected to the battery!** The unit will draw more amps than convenience outlets can handle. Any modifications of the power harness will void systems warranty. IF MODIFICATIONS ARE REQUIRED CONTACT HARVEST TEC FIRST!
 - b. **This unit will not function on positive ground tractors.**
 - c. **If the unit loses power while operating it will not keep track of accumulated pounds of product used and bale records.**
3. The power harness (006-5650A) will run from the tractor battery to the hitch. The orange pig tale from the end of the harness (006-5650A) will need to run to a keyed switch using the supplied wire. The power harness (006-5650B) will connect to the tractor power harness (006-5650A) at the hitch. Run the communication harness (006-5650C) from the cab to the hitch. This wire will connect to the communication harness (006-5650D). These wires will run together to the Precision Information Processor (PIP) (006-5671LS2).
4. Install the Terminating resistor (006-5650Z) on the PIP.
5. Attach moisture and bale rate harness (006-7303H) and the end of bale harness (006-7400) to PIP.
6. Secure all wires and route the PIP wire as shown on the previous page to allow for water to be shed away from the PIP.

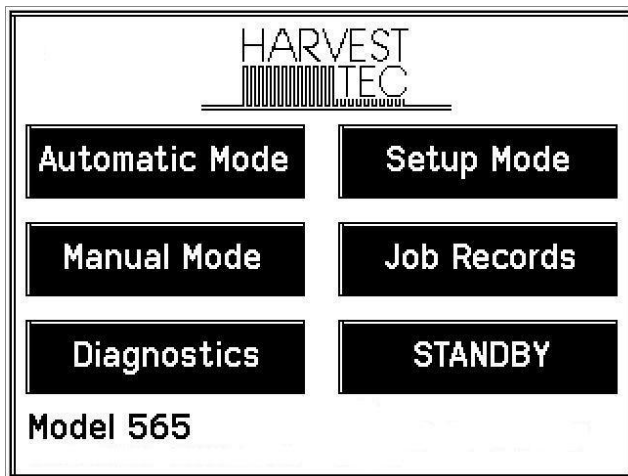


SYSTEM WIRING DIAGRAM



8. DESCRIPTION OF BUTTONS

The Harvest Tec model 565 is designed to read moisture levels of 3 to 70 percent. The 565 monitor will allow you to set your bale size, weight, and single bale formation time.



AUTOMATIC MODE This mode allows you to watch the moisture content of crop and keep individual bale records.

MANUAL MODE This mode allows you to watch the moisture content of crop and keep individual bale records.

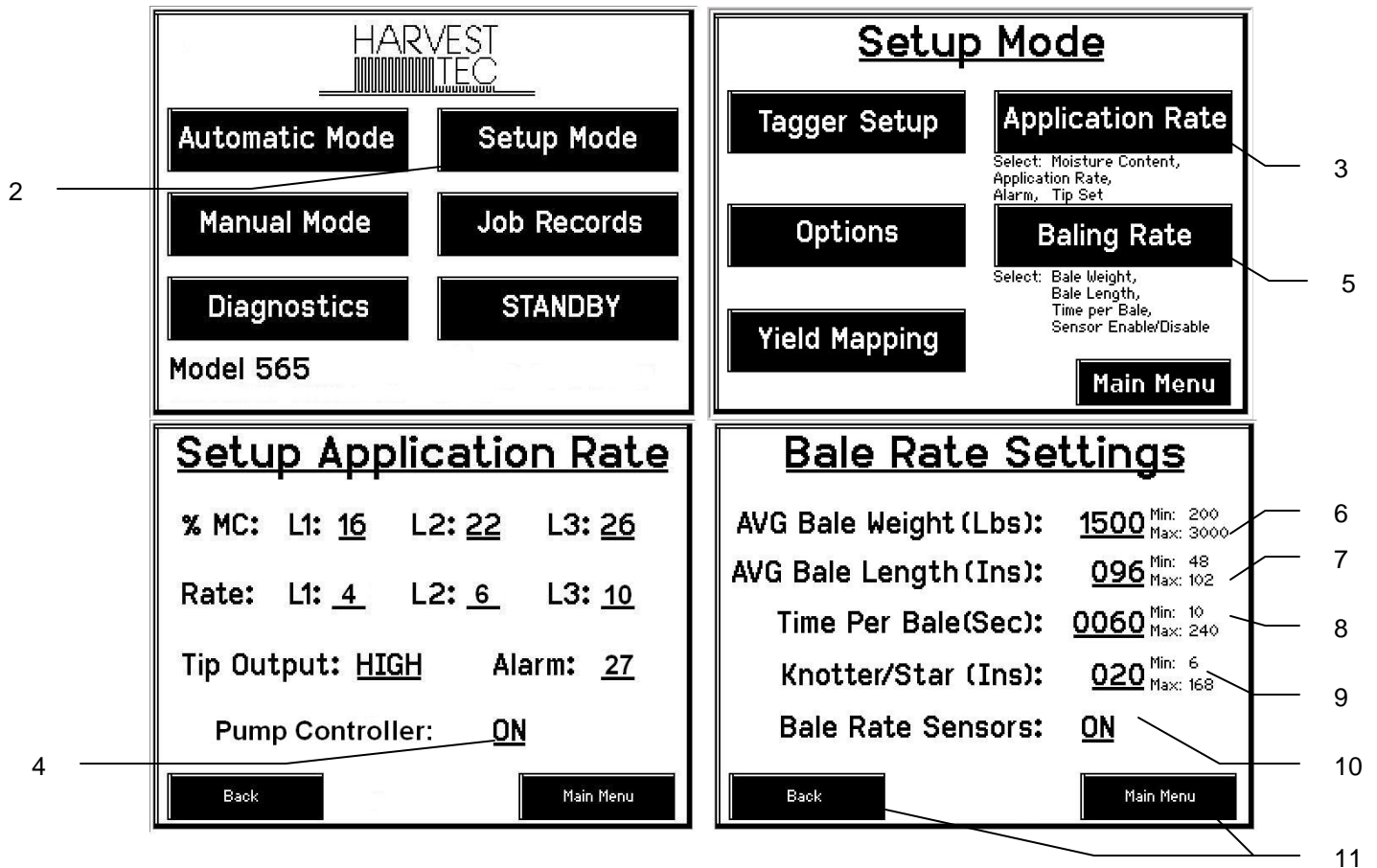
SETUP MODE This mode allows the operator to adjust bale rate and settings.

DIAGNOSTICS Allows operator to set the date and time and calibrate the touch screen.

JOB RECORDS Keeps track of up to 300 jobs with average moisture content, highest moisture content, tons baled, and date of baling. All downloading of Job Records will also be done in this screen.

STANDBY This powers down the display only. The application unit will not fully power down unless the keyed power is turned off. Press anywhere on the screen to power back on (with the key on).

9. SETUP INSTRUCTIONS



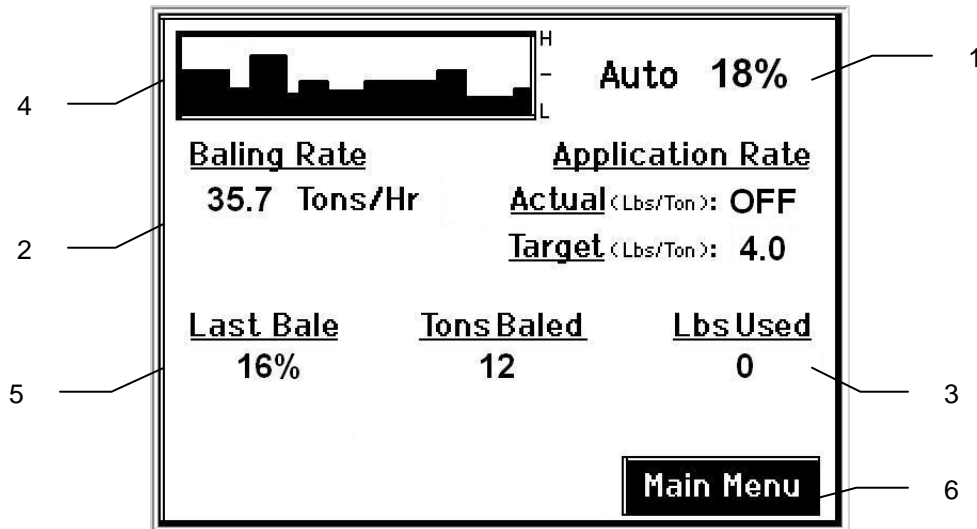
1. Turn the key to the on position and press anywhere on the screen to open the Main Menu.
2. Press the Setup Mode key.
3. Press the Application Rate key followed by pressing the underlined ON next to Pump Controller. Turning the Pump Controller off notifies the system that there is no application system.
4. The system will automatically turn off when the ON is pressed. Press anywhere on the screen to open to the Main Menu.
5. Press the Setup Mode key followed by the Baling Rate key.
6. Press the underlined number to the right of AVG Bale Weight (Lbs): to adjust the weight of your bales. The key pad shown will display. Press any number combination in this screen within the min/max limits. Press the ENTER key to save this information. The information will remain until it is changed again.
7. Press the underlined number to the right of AVG Bale Length (In): to adjust the length of your bales. The key pad shown will display. Press any number combination in this screen within the min/max limits. Press the ENTER key to save this information. The information will remain until it is changed again.
8. Press the underlined number to the right of EST Baling Time (Sec): to adjust the time it takes to make a bale. The key pad shown will display. Press any number combination in this screen within the min/max limits. Press the ENTER key to save this information. The information will remain until it is changed again.
9. Press the underlined number to the right of Knotter/Star to adjust the distance between the knotter and star wheel. To determine the distance, measure between the center of the starwheel and the center of the knotter.
10. If the unit will be operated with the bale sensors on, then the bale weight and length will need to be inputted. When the bale rate sensors are: ON, the applicator will calculate your tons per hour. When the Bale Rate Sensors are: OFF a constant tons per hour (your inputted bale weight and time) will be used. Operating the unit with the Bale Rate Sensors: OFF will cause total tons per hour in Job Records to be left blank. Press the underlined word to toggle between ON or OFF.
11. Next press the BACK key found on the bottom left hand of the screen to return to the Setup Mode screen, or press the MAIN MENU key on the bottom right hand of the screen to return to the opening screen.
12. Press the OPTION key to adjust the touchscreen between metric and standard units and languages.

OPERATING INSTRUCTIONS

Automatic mode will be used in the field to read moisture and tons per hour on the go. The moisture and tons per hour will update every 3 seconds.

AUTOMATIC MODE

After pushing the AUTOMATIC MODE key in the Main Menu screen, the following screen should appear:



1. The moisture content is shown in the upper right hand corner.
2. Baling Rate and Application Rate are shown in the middle. The application rate will always be zero. The target rate will show a number when the moisture of the hay exceeds the initial set point of 16%. The baling rate is calculated in the Setup Mode.
3. The Totals on the bottom of the screen show the total tons baled and pounds of product used for the current job. These numbers will reset to zero when a new Job Record is started. If operating with Bale Rate Sensors: OFF total tons baled will be zero.
4. The graph shows the moisture trend from the past 90 seconds in 3 second intervals.
5. Last Bale shows the average moisture content for the last bale.
6. Press the MAIN MENU key to return to the opening screen.

JOB RECORDS

After pushing the JOB RECORDS key in the Main Menu screen, the following screen should appear:

Job Records

1 **New Job**

3 **Job Details**

5 **Download**

Main Menu

LUKE1 **Field Name**

1	2	3
4	5	6
7	8	9
*	0	#

Backspace

Cancel

Enter

Job Details

Job: 1 Field: LUKE1

Date: 04/11 /05 Time: 17:15

Total Baled: 32 Tons

Product Used: 192 Lbs

Average MC: 24 %

Highest MC: 52 %

Bales: 43

Back **Bales** **Main Menu**

Bale Details

Job #: 1 Field Name: LUKE1

Bale #	MC%	HI MC%	WT (Lbs)	Pres (Lbs)
17890	20	23	1000	5
17891	18	21	1000	3
17892	22	26	1000	6
17893	20	23	1000	5
17894	18	21	1000	3

Back **Main Menu**

1. Pressing New Job will save all the previous bale records and open the Field Name screen.
2. Use the key pad in the Field Name screen to enter up to an eight character field name. Use the asterisk key to move on to the next letter or number if they are identical. Use the pound sign as a space between the characters. When you have completed the field name press enter.
3. Pressing Job Details will open the Job Details screen. Use the up and down arrows to scroll through the different jobs. Job: 0 will always be your current and open job record. Press Back to go to the Job Records screen or Main Menu for the main screen.
4. Pressing Bales on the bottom of the screen will open a Bale Details screen. This screen lets you look at the individual bale records for the first five bales made. Use the up and down arrows to scroll through five bales at a time. Press Back to go to the Job Details screen or Main Menu for the main screen.

Continued on the next page

Continued JOB RECORDS

Download Job Records

Job Field

0 BUTCH

*** 4 GL**

3 RICK2

Download

Select

Delete

Select All

Back

Main Menu

Selected

Microsoft Excel - JB001

JOB DATA							
FIELD	JOB #	AVG MC	HI MC	#USED	BALES	TONS	DATE/TIME
JB001	1	21	55	16	12	8	16 JAN 09 08 32
BALE DATA							
FIELD	JOB #	AVG MC	HI MC	#BALE	BALE ID	BALE WT	DATE/TIME
JB001	1	23	39	1.3	1.23E+09	1500	16 JAN 09 08 31
JB001	1	27	55	0.9	1.23E+09	1500	16 JAN 09 08 33
JB001	1	20	24	2	1.23E+09	1500	16 JAN 09 08 34
JB001	1	16	16	0.3	1.23E+09	1500	16 JAN 09 08 35
JB001	1	21	24	1.6	1.23E+09	1500	16 JAN 09 08 36
JB001	1	16	24	1.8	1.23E+09	1500	16 JAN 09 08 36
JB001	1	23	39	1.3	1.23E+09	1500	16 JAN 09 08 37
JB001	1	27	55	0.9	1.23E+09	1500	16 JAN 09 08 38
JB001	1	20	24	2	1.23E+09	1500	16 JAN 09 08 40
JB001	1	16	16	0.3	1.23E+09	1500	16 JAN 09 08 41
JB001	1	21	24	1.6	1.23E+09	1500	16 JAN 09 08 42
JB001	1	16	24	1.8	1.23E+09	1500	16 JAN 09 08 43

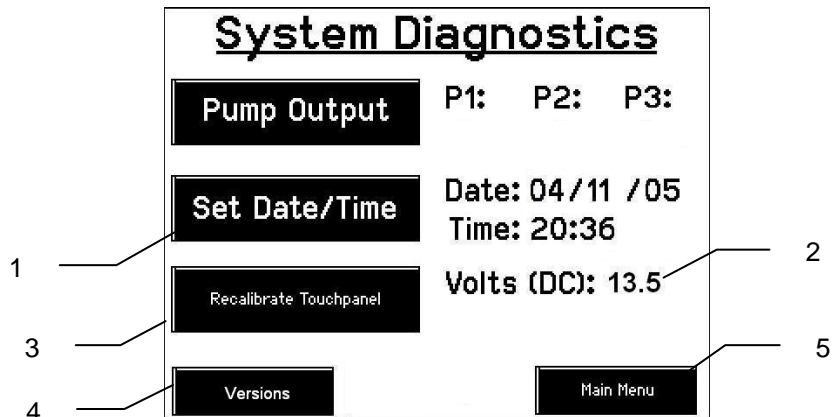
RYAN1 - Notepad

JOB DATA							
FIELD NAME	JOB NUMBER	AVG MC	HIGH MC	PRODUCT USED	TOTAL BALES	TOTAL TONS	DATE/TIME
RYAN1	00033	00016	00009	0000000197	00012	0000000004	29 DEC 08 12:11
BALE DATA							
FIELD NAME	JOB NUMBER	AVG MC/BALE	HIGH MC/BALE	PRODUCT USED/BALE	BALE ID NUMBER	BALE WEIGHT	D
RYAN1	00033	00023	00024	0001.5	0847600718	01600	29 DEC
RYAN1	00033	00024	00024	0001.3	0847600719	01600	29 DEC
RYAN1	00033	00024	00024	0001.6	0847600720	01600	29 DEC
RYAN1	00033	00024	00024	0001.5	0847600721	01600	29 DEC
RYAN1	00033	00024	00024	0001.5	0847600722	01600	29 DEC
RYAN1	00033	00024	00024	0001.4	0847600723	01600	29 DEC
RYAN1	00033	00024	00024	0001.9	0847600724	01600	29 DEC
RYAN1	00033	00023	00024	0001.4	0847600725	01600	29 DEC
RYAN1	00033	00016	00016	0001.6	0847600726	01600	29 DEC
RYAN1	00033	00016	00016	0001.6	0847600727	01600	29 DEC
RYAN1	00033	00016	00016	0004.7	0847600728	01600	29 DEC
RYAN1	00033	00016	00016	0001.2	0847600729	01600	29 DEC

5. Pressing the Download key will open the Download Job Records screen. This screen lets you select jobs to download onto a USB drive. To download insert a USB drive into the port on the Precision Information Processor. Select the job(s) you would like to download using the up and down arrows to highlight the job(s), an asterisk will appear next to all selected jobs. Once all the jobs are selected press the Download key. Press the Download key again to confirm. When the USB drive light goes off all the jobs selected will be saved. The jobs can then be opened on any computer with Excel or Notepad. To delete jobs highlight, select them and press delete followed by pressing delete again for confirmation. Press Back to go to the Job Records screen or Main Menu for the main screen.
6. Pressing the Select key will select or unselect the highlighted job.
7. Pressing the Select All key will select all jobs, except for the current job (0). To unselect press the Back key.
8. The job record in excel will show as above. The Bale ID column will need to be adjusted for proper viewing.
9. The job record in Notepad will show as above. You will need to move right to see all the information.

DIAGNOSTICS

After pushing the DIAGNOSTICS key in the Main Menu screen, the following screen should appear:



1. To set date and time, press the SET DATE/TIME key. In the next screen enter the date (month, day, year format) followed by the time. When done press the ENTER key. NOTE: The clock uses military (or 24 hour) time.
2. The voltage should be between 12.0 to 14.5 volts for the system to work properly. If voltage is not in this range check all power cord connections and the tractors charging system.
3. Press the Recalibrate Touchpad key to realign the screen keys to your preference. When the screen appears follow the directions and press accept when done.
4. Press the Versions key to check all software versions of modules attached to the PIP.
5. When done in this mode, press the MAIN MENU key.

COMMON QUESTIONS ABOUT THE 565

1. How do I turn the system on/off?

Turn the key in the tractor to the on position. If the unit is in Standby Mode, press anywhere on the screen. To turn off, press the Standby key, wait for the screen to power down and turn off the key.

2. How to get in the LBS/TON, MC%, and TONS/HR menus?

In the Main Menu press the SETUP MODE key. From this screen you can change your application rates and how much product is applied. See SETUP INSTRUCTIONS for a detailed explanation of this process.

3. The moisture content displays “LO” or “HI” all the time.

When the moisture content display does not change frequently while baling, there is likely a faulty star wheel connection. One of the first places to check is inside the white star wheel block. Check to see if the electronic swivel is in the star wheel shaft and check to see that the star wheel shaft is not working out of the block. Also, check all star wheel wires and connectors to see if there is a continuity or grounding problem.

4. Should the battery connections be removed before jump starting or charging a battery?

Yes. Anytime the tractor will have voltage going up rapidly the connections should be removed.

5. How do I recalibrate the touch screen display?

In the system diagnostics screen press the Recalibrate Touch screen key and follow the directions on the screen. Press accept when done.

6. Can the Harvest Tec 500 be updated for preservative or a tagger?

Yes. Consult your local dealer for part numbers and pricing.

TROUBLE SHOOTING CHECKS:

<u>PROBLEM</u>	<u>POSSIBLE CAUSE</u>	<u>SOLUTION</u>
Moisture reading errors (high or low)	1. Wire disconnected or bad connection between star wheels and PIP	1. Reconnect wire.
	2. Low power supply to PIP	2. Check voltage at box. (Min of 12 volts required.) See Diagnostics section of manual.
	3. Wet hay over 75% moisture	
	4. Ground contact with one or both star wheels and baler mounted processor.	4. Reconnect.
	5. Short in wire between star wheels and PIP.	5. Replace wire.
	6. Check hay with hand tester to verify.	6. Contact Harvest Tec if conditions persist.
Moisture readings erratic.	1. Test bales with hand tester to verify that cab monitor has more variation than hand tester.	
	2. Check all wiring connections for corrosion or poor contact.	2. Apply dielectric grease to all connections.
	3. Check power supply at tractor. Voltage should be constant between 12 and 14 volts.	3. Install voltage surge protection on tractors alternator.
Terminal reads under or over power.	1. Verify with mult-meter actual voltage. Voltage range should be between 12-14 volts.	1. Clean connections and make sure applicator is hooked to battery. See Diagnostics section of manual.
Bale rate displays zero.	1. Bale rate sensors are reversed. 2. Short in cable. 3. Damaged sensor.	1. Switch the sensors next to the star wheel. 2. Replace cable. 3. Replace sensor.
Display will not power up.	1. Connection broke between the display and the PIP. 2. Short in display cable.	1. Check, clean, and tighten connections. 2. Replace cable.
Display is too dark or light	1. Change in temperature or light conditions.	1. Use the monitors contrast control.
Display is locked up/froze.	1. CAN communication not responding. 2. Broke connection between the display and PIP or Pump control and PIP.	1. Check connections at PIP and Pump controller including the terminating resistors. 2. Check, clean, and tighten connections. 3. Power unit down and restart after steps 1 & 2 are complete.
Display powers up when key is turned and will not go to the Main Menu screen.	1. CAN communication not responding. 2. Broke connection between the display and PIP or Pump control and PIP.	1. Check connections at PIP and Pump controller including the terminating resistors. 2. Check, clean, and tighten connections. 3. Power unit down and restart after steps 1 & 2 are complete.

Display is locked up/froze and pumps continue to run.	1. CAN communication not responding. 2. Broke connection between the display and PIP or Pump control and PIP.	1. Check connections at PIP and Pump controller including the terminating resistors. 2. Check, clean, and tighten connections. 3. Power unit down and restart after steps 1 & 2 are complete.

STATUS ALERTS

Two Status Alerts will appear on the Auto and Manual mode screens when the Job Records are approaching, or full of records.

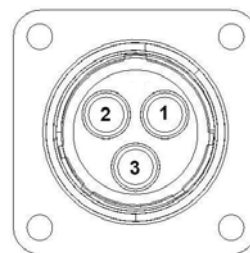
Status Alert “**Bale Records: Less than 1K remaining**”. The system is now approaching the maximum amount of records that can be saved. When this code appears download and delete jobs in the Job Records menu. Follow the instructions in Job Records to accomplish this.

Status Alert “**Bale Records failed – Memory Full**”. The system will not longer accept any new data until jobs in the Job Records menu are downloaded and deleted. Follow the instructions in Job Records to accomplish this.

WIRING DIAGRAMS

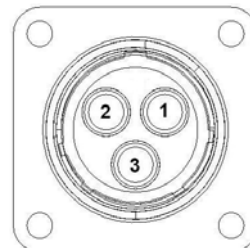
A. Main power connector mounted on battery

Pin 1	Red	+ 12 V input from tractor supply
Pin 2	Black	Ground from tractor supply
Pin 3	Orange	Keyed power



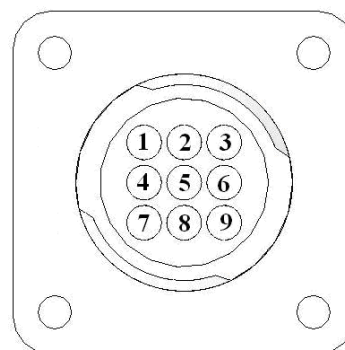
B. Main power connector mounted on PIP

Pin 1	Red	+ 12 V input from tractor supply
Pin 2	Black	Ground from tractor supply
Pin 3	Orange	Keyed power



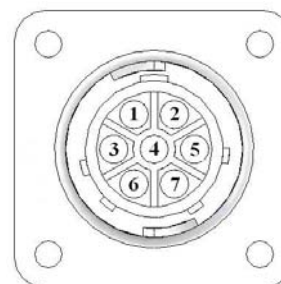
C. Star wheel and Bale rate sensor connector on PIP

Pin 1	Blue	12 volt power
Pin 2	Orange	Ground
Pin 3	Black	Signal for sensor 1
Pin 4	White	Signal for sensor 2
Pin 5	Not used	
Pin 6	Not used	
Pin 7	Not used	
Pin 8	Violet	Star wheel input 1
Pin 9	Brown	Star wheel input 2

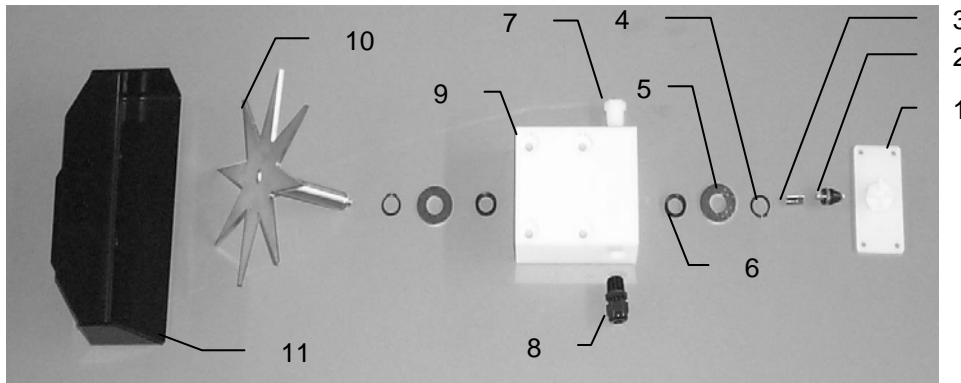


D. Display communication harness on PIP

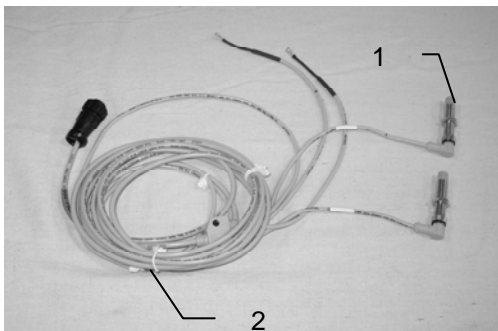
Pin 1	Orange	Power to display
Pin 2	Blue	Ground to display
Pin 3	Green	Comm channel OH
Pin 4	Silver	Shield
Pin 5	Yellow	Comm channel OL
Pin 6	Not used	
Pin 7	Not used	



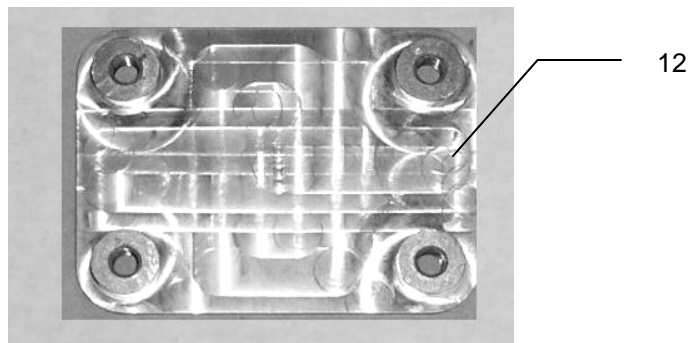
PARTS BREAKDOWN FOR STAR WHEEL SENSOR



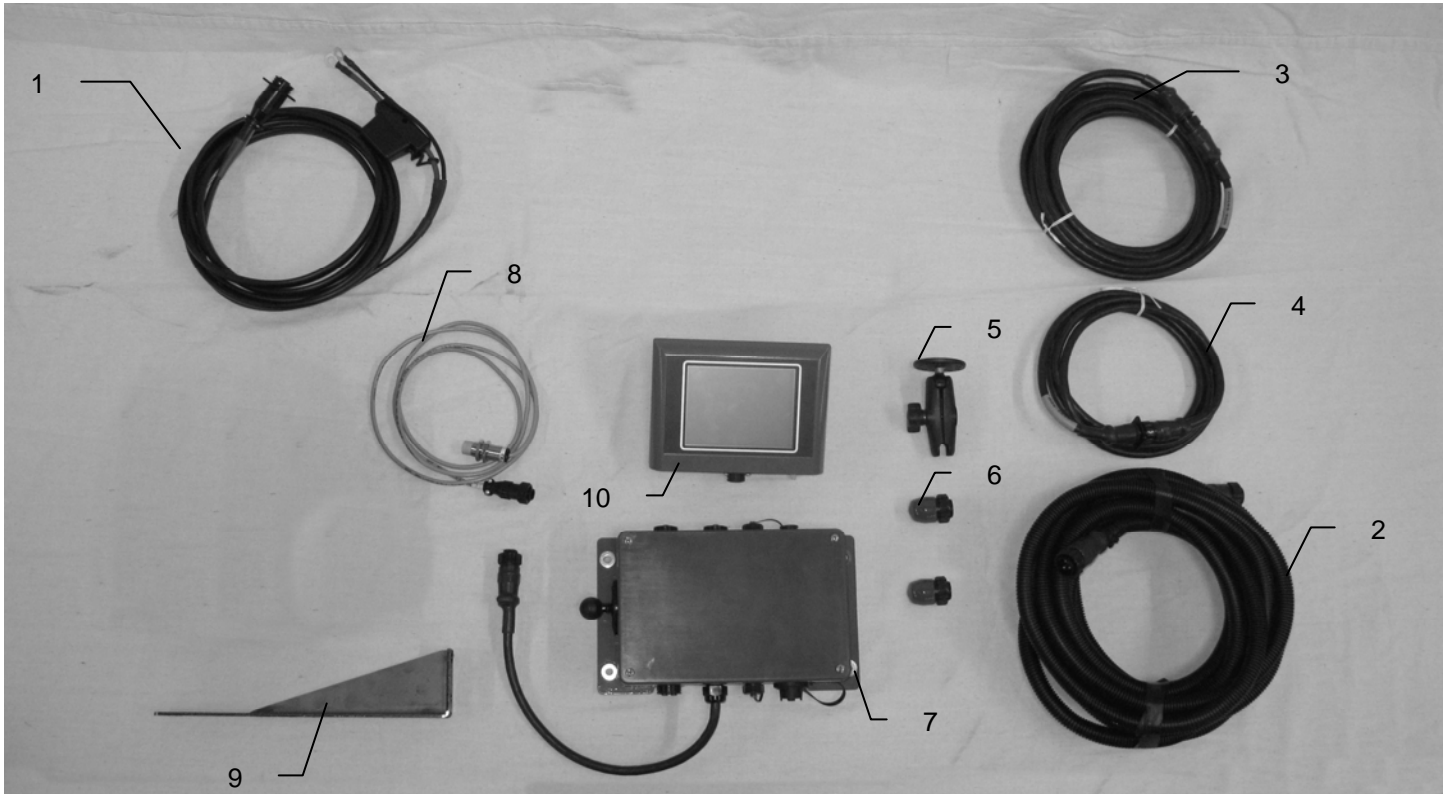
<u>Ref</u>	<u>Description</u>	<u>Part#</u>	<u>Qty</u>	<u>Ref</u>	<u>Description</u>	<u>Part#</u>	<u>Qty</u>
1.	Block cover	006-4641B	2	9.	Star wheel block	006-4641A	2
2.	Electronic swivel	006-4642A	2	10.	Star wheel sensor	030-4641C	2
3.	Swivel insert	w/ Ref # 10	2	11.	Twine guard-left	001-4645	1
4.	Snap ring (per side)	006-4641K	2		Twine guard-right (prox)	001-4644	1
5.	Washer (per side)	w/006-4641K	2		Twine guard-left for Agco	001-4645H	1
6.	Dust seal (per side)	w/006-4641K	2		Twine guard-Right for Agco	001-4644H	1
7.	Plug fitting	003-F38	2	1-10	Star wheel assembly	030-4641	2
8.	Wiring grommet	008-0821A	2	12.	Spacer plate for AGCO	001-6707E	2



<u>Ref</u>	<u>Description</u>	<u>Part#</u>	<u>Qty</u>
1	Bale rate sensor	006-7303S	2
2	Moisture and bale rate harness	006-7303H	1

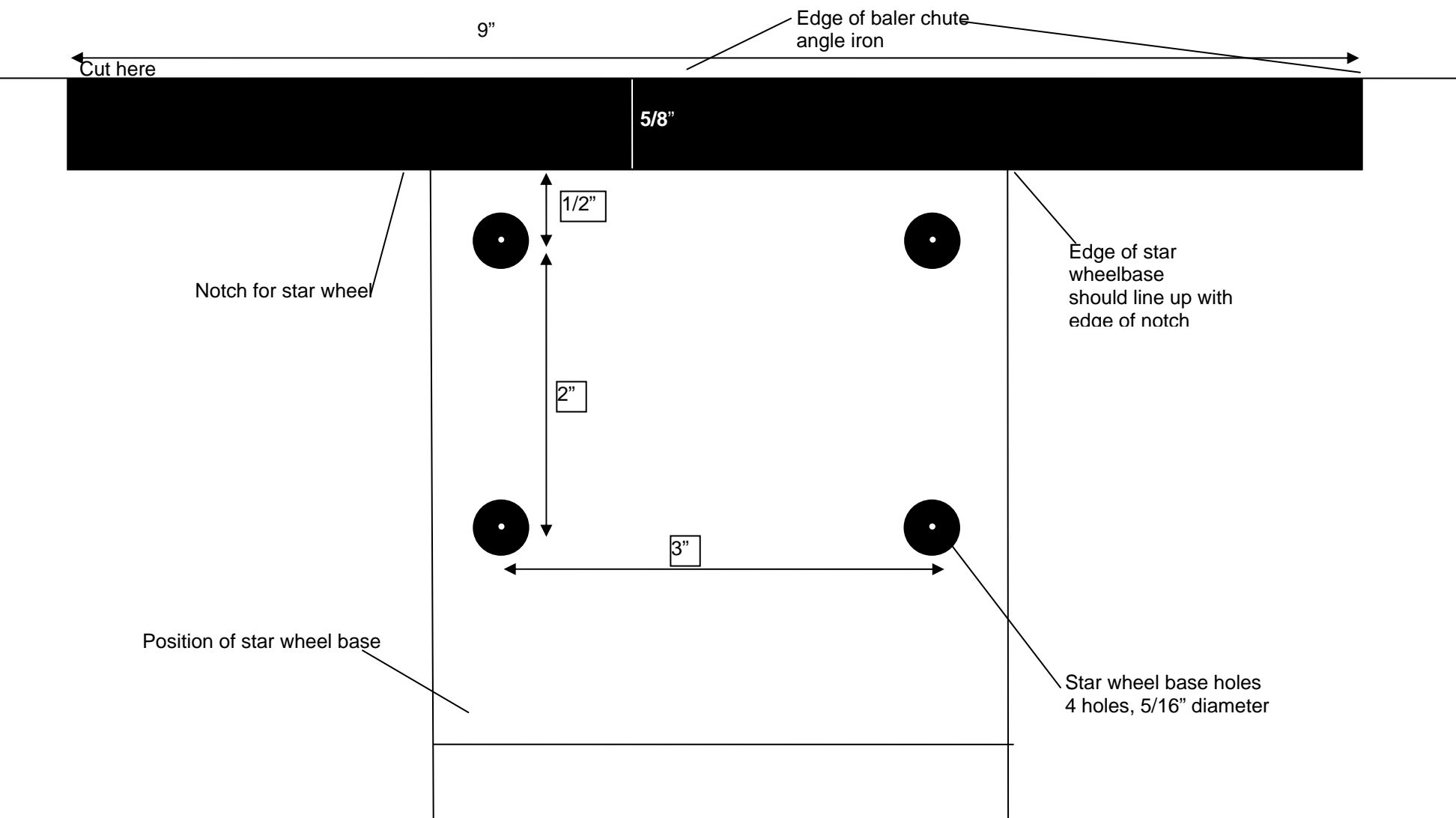


PARTS BREAKDOWN FOR CONTROL BOXES AND WIRING HARNESES



<u>Ref</u>	<u>Description</u>	<u>Part#</u>	<u>Qty</u>
1	Power lead tractor	006-5650A	1
2	Power lead baler	006-5650B	1
3	Communication harness (baler)	006-5650D	1
4	Communication harness (tractor)	006-5650C	1
5	Ram mount	001-2012H	1
6	Terminating resistor	006-5650Z	1
7	Precision information processor	006-5671LS2	1
8	End of bale sensor	006-7400	1
9	End of bale sensor bracket	001-4648	1
10	Display	006-5670	1
NP	Dust cap	006-5650PLUGS	1
NP	End of bale sensor bracket	001-4648K	1
NP	End of bale sensor bracket	001-4648K2	1

NOTES:



WARRANTY AND LIABILITY AGREEMENT

Harvest Tec, Inc. will repair or replace components that are found to be defective within 12 months from the date of manufacture. Under no circumstances does this warranty cover any components which in the opinion of Harvest Tec, Inc. have been subjected to negligent use, misuse, alteration, accident, or if repairs have been made with parts other than those manufactured and obtainable from Harvest Tec, Inc.

Our obligation under this warranty is limited to repairing or replacing free of charge to the original purchaser any part that in our judgment shows evidence of defective or improper workmanship, provided the part is returned to Harvest Tec, Inc. within 30 days of the failure. Parts must be returned through the selling dealer and distributor, transportation charges prepaid.

This warranty shall not be interpreted to render Harvest Tec, Inc. liable for injury or damages of any kind, direct, consequential, or contingent, to persons or property. Furthermore, this warranty does not extend to loss of crop, losses caused by delays or any expense prospective profits or for any other reason. Harvest Tec, Inc. shall not be liable for any recovery greater in amount than the cost or repair of defects in workmanship.

There are no warranties, either expressed or implied, of merchantability or fitness for particular purpose intended or fitness for any other reason.

This warranty cannot guarantee that existing conditions beyond the control of Harvest Tec, Inc. will not affect our ability to obtain materials or manufacture necessary replacement parts.

Harvest Tec, Inc. reserves the right to make design changes, improve design, or change specifications, at any time without any contingent obligation to purchasers of machines and parts previously sold.

Revised 01/03/06

HARVEST TEC, INC.
P.O. BOX 63
2821 HARVEY STREET
HUDSON, WI 54016
PHONE: 715-386-9100
1-800-635-7468
FAX: 715-381-1792
Email: info@harvesttec.com