OWNER'S MANUAL

Model 566
464 & 465 Update Kit

HARVEST TEC
Equipment and Products for Quality Hay.™

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010-0566
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HARVEST TEC 566 TABLE OF CONTENTS

INTRODUCTION

The Harvest Tec auto upgrade kit is designed to give you all of the advanced features of the new Harvest Tec 565 automatic control system. The 565 applicator will apply preservative from 44 lbs/hr up to 632 lbs/hr. This applicator is designed to apply Harvest Tec buffered propionic acid. The use of other products can cause application problems and damage to system components. The advanced touch screen technology allows for simple operation. Also, the built in modes and settings allow for a user-friendly application process. The following pages will guide you through the setup of the kit and will explain how to operate the 565.

TOOLS NEEDED

- Standard wrench set
- Standard socket set
- Standard screw driver or 5/16” nut driver
- Side cutter
- Hose cutter
- Crescent wrench
- Hammer
- Metal drilling and cutting tools
- Center Punch

INSTALLATION OF APPLICATOR

1. REMOVING 464 COMPONENTS

CONTROL BOX AND MAIN WIRING HARNESS

1. The 464 control box will need to be removed from the cab of the tractor including the mounting bracket.
2. The existing power cable will need to removed and replaced with the one supplied in the kit. Route the new cable from the battery to the drawbar on the tractor.
3. The existing bale rate sensors and moisture harness attached to the start wheels will need to be removed and disconnected from the signal conditioner.
4. The main wiring harness will need to be removed from the cab. Remove the cable on the baler up to the signal conditioner. If crop eyes are attached disconnect from main harness.

PUMP PLATE AND SIGNAL CONDITIONER

1. Remove the wires that are attached to the signal conditioner.
2. Remove the hoses attached to the pumps taking care to mark the hoses to their pumps accordingly. Number the hoses according to the pumps 1,2 and 3 with pump 1 being closest to the filter bowl and pump 3 being farthest away from the filter bowl.
3. Remove the pump plate assembly by removing the 3/8" bolts, locks and nuts.
4. Remove the signal conditioner from the pump plate by removing the screws on all four corners.
5. Do not reinstall the pump plate at this time.

2. REMOVING 465 COMPONENTS

CONTROL BOX AND MAIN WIRING HARNESS

1. The 465 touch screen monitor and will need to be removed from the cab.
2. The existing power cable will need to removed and replaced with the one supplied in the kit. Route the new cable from the battery to the drawbar on the tractor.
3. The existing bale rate sensors and moisture harness attached to the start wheels will need to be removed and disconnected from the baler mounted processor.
4. The communication harness will need to be removed from the cab and from the baler. Remove the harness on the baler up to the baler mounted processor. If crop eyes are attached disconnect from baler mounted processor.

PUMP PLATE AND BALER MOUNTED PROCESSOR (BMP)

1. Remove the wires that are attached to the BMP.
2. Remove the BMP from the pump plate.
3. The new Pump Controller will be installed in place of the BMP. An additional hole may need to be drilled for the pump controller location pin. See the template at the back of the manual for instructions.

3. INSTALLING THE 565 COMPONENTS

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.

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 Precision Information Processor (installed at a later time).

INSTALLATION OF PUMP JUMPER WIRE FOR 464 CONTROLS ONLY

1. Remove existing amp plug and wires, which connect to pumps.
2. Locate wire harness number 006-4660Z
3. The six pigtail wire will need to connected to the pumps in the following order: pump1 (closest to the filter bowl) orange, pump 2 (middle pump) green wires, pump 3 (farthest away from the filter bowl) yellow wires.
4. The amp connection on this harness will attach to the pump controller.

INSTALLATION OF PUMP CONTROLLER 464 CONTROLS ONLY

The pump plate removed earlier will need to be modified to fit the pump controller. Use the supplied diagram found at the end of the manual to drill the holes for the pump controller and filter bowl. Attach the flow meter and pump wires to there respective amp plugs.

INSTALLATION OF PUMP CONTROLLER 465 CONTROLS ONLY

Insert the Pump Controller at the same location of the removed Baler Mounted Processor. Attach the flow meter and pump wires to there respective amp plugs.

INSTALLATION OF PRECISION INFORMATION PROCESSOR

Follow the instructions below to mount the Precision Information Processor (PIP) onto your specific baler model and type. The locations shown are 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.

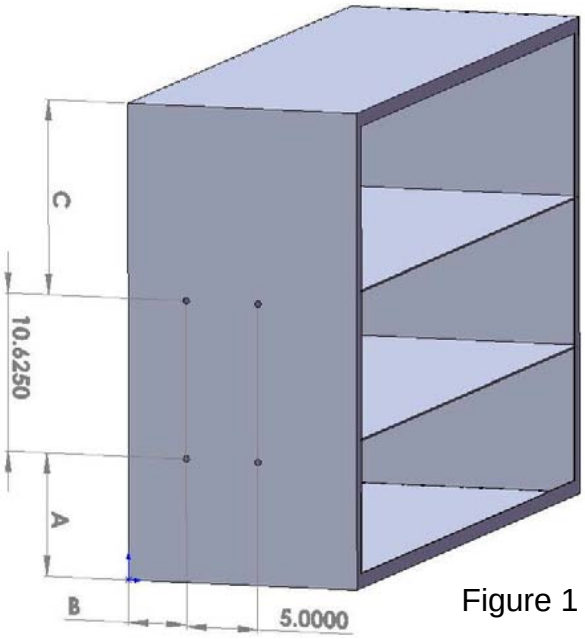


Figure 1

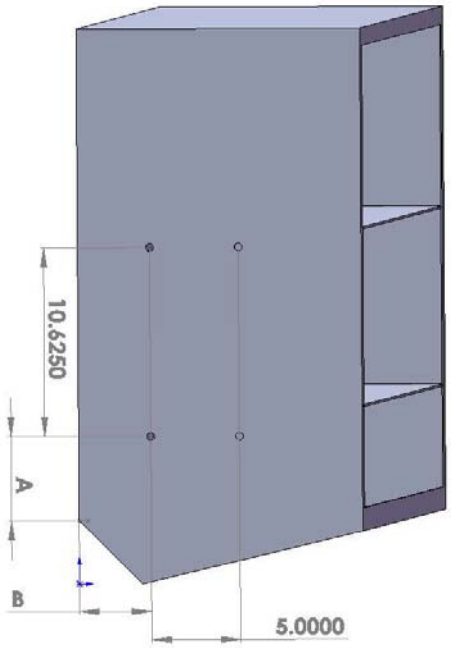


Figure 2

Baler Type	Model number	Figure	A	B	C	Baler Type	Model number	Figure	A	B	C
AGCO Hesston	7433 - 7444	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

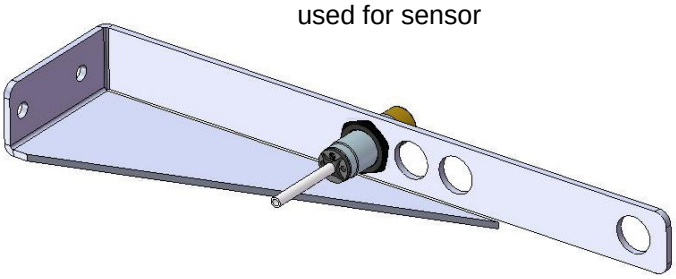
INSTALLATION OF END OF BALE SENSOR

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 system. Follow the steps below for your baler to mount the sensor.

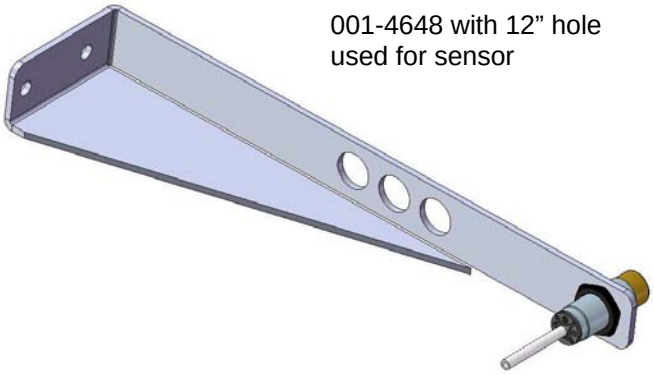
All AGCO 4760 – 4790, 7433 - 7444 AND EQUIVALENTS, CASE IH LBX 331 – LB 433, CLASS 2100, JOHN DEERE 100, NEW HOLLAND 590 – BB 9080

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

001-4648 with 6" hole used for sensor



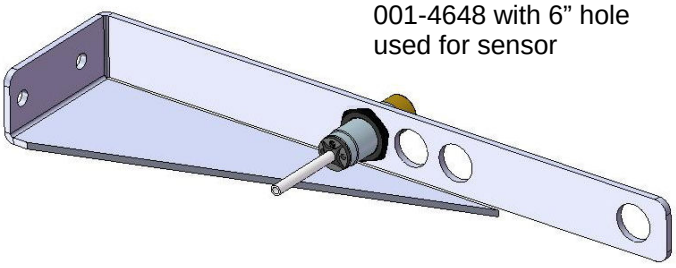
001-4648 with 12" hole used for sensor

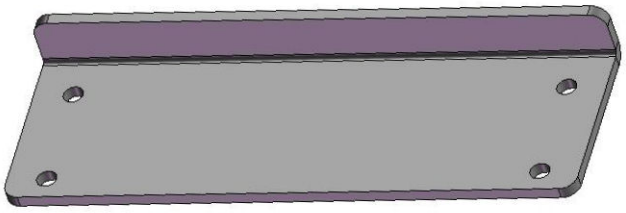


ALL HESSTON 4750 – 4755 & 4900 – 4910

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.

001-4648 with 6" hole used for sensor

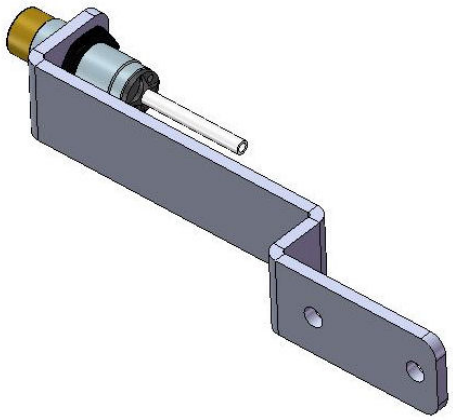




001-4648H mount

ALL KRONE 890 -12130

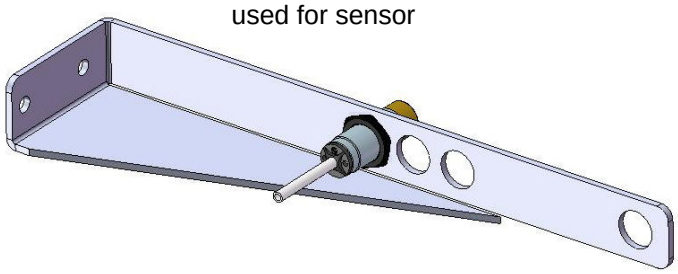
Krone End of bale sensor bracket (001-4648K) be used. The Krone end of bale mount will be found in the installation kit box.



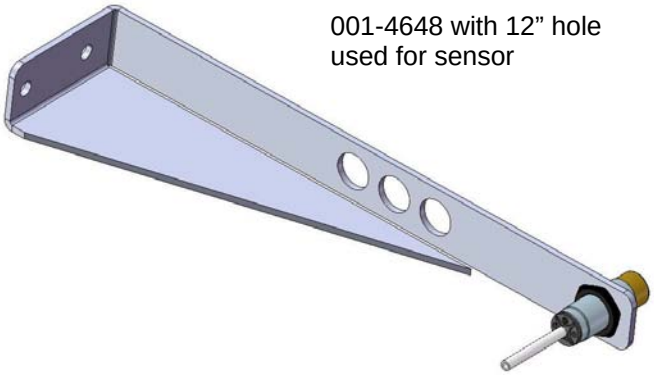
ALL VICON AND TAARUP BALERS

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

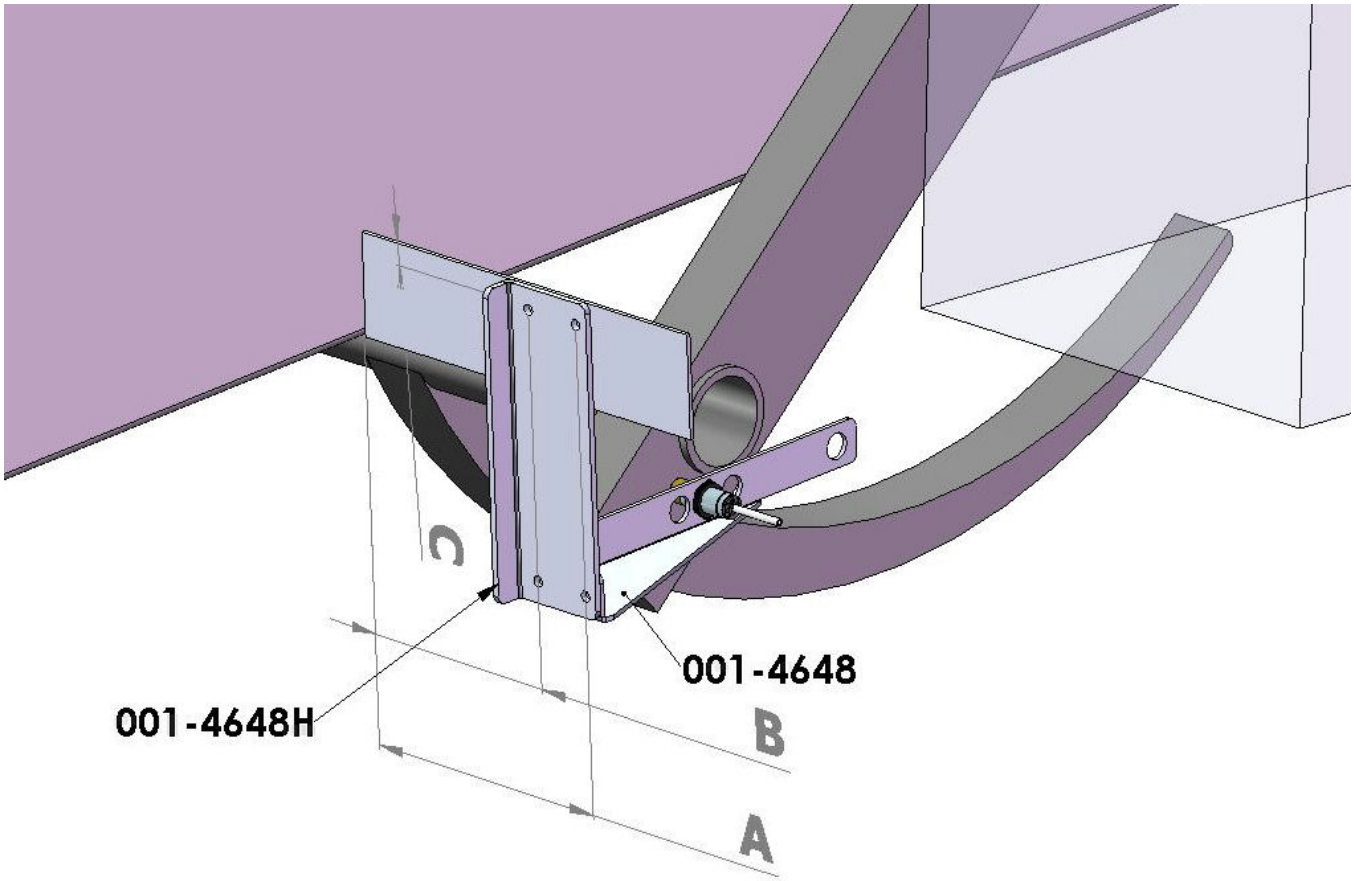


001-4648 with 12" hole
used for sensor



AGCO & HESSTON BALERS

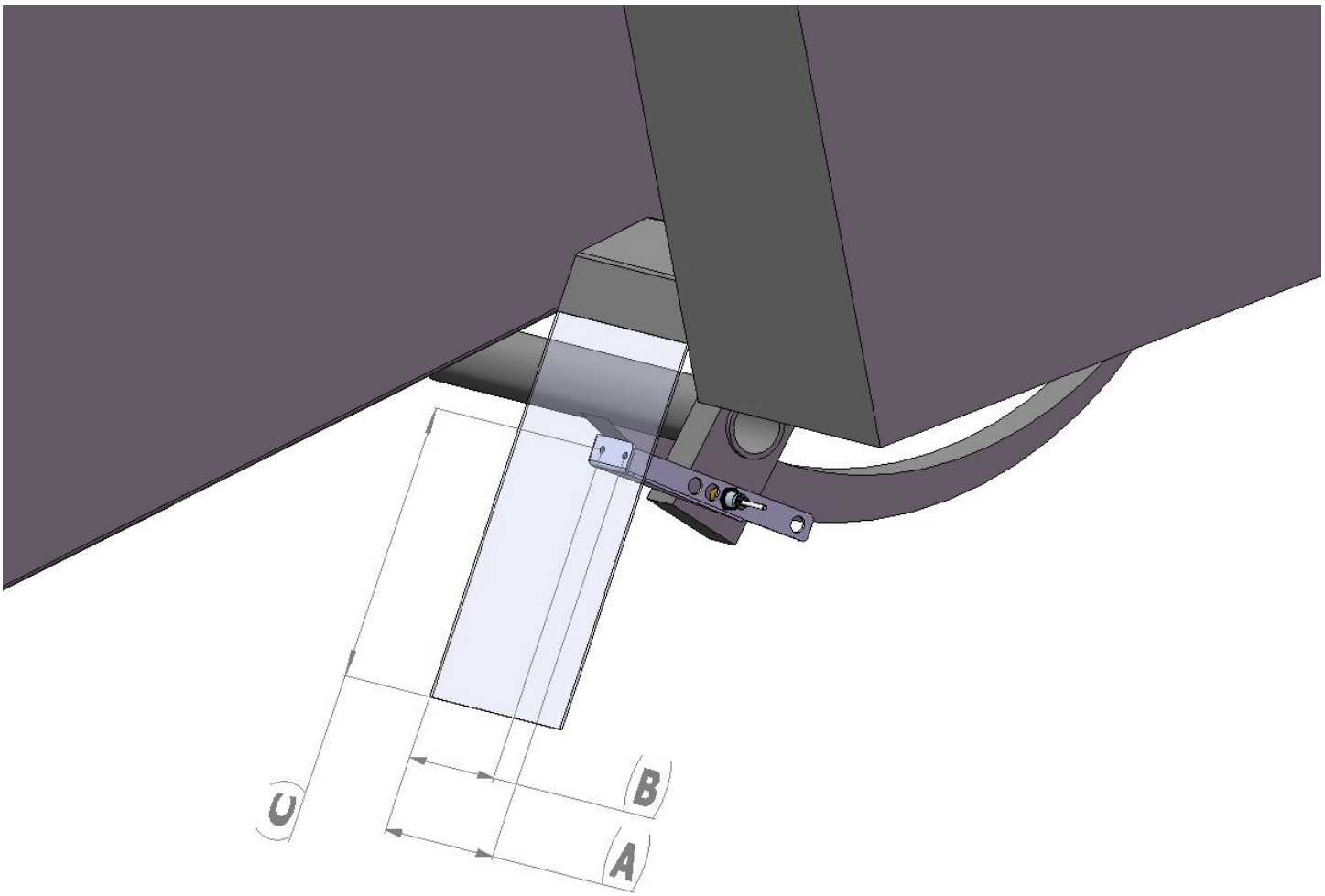
HESSTON 4750-4755 & 4900 – 4910



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.

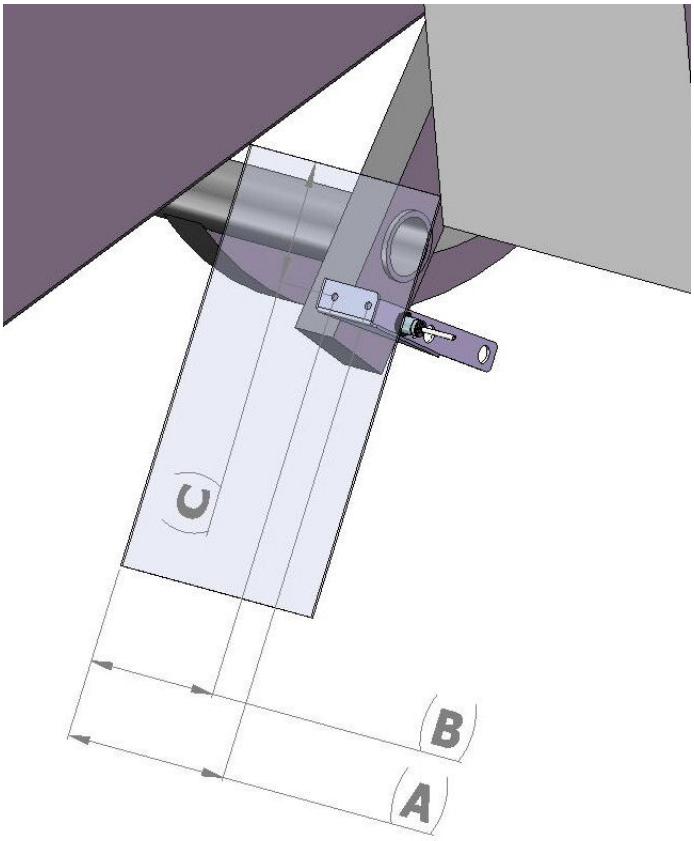
HESSTON 7433 – 7444 & EQUIVALENTS



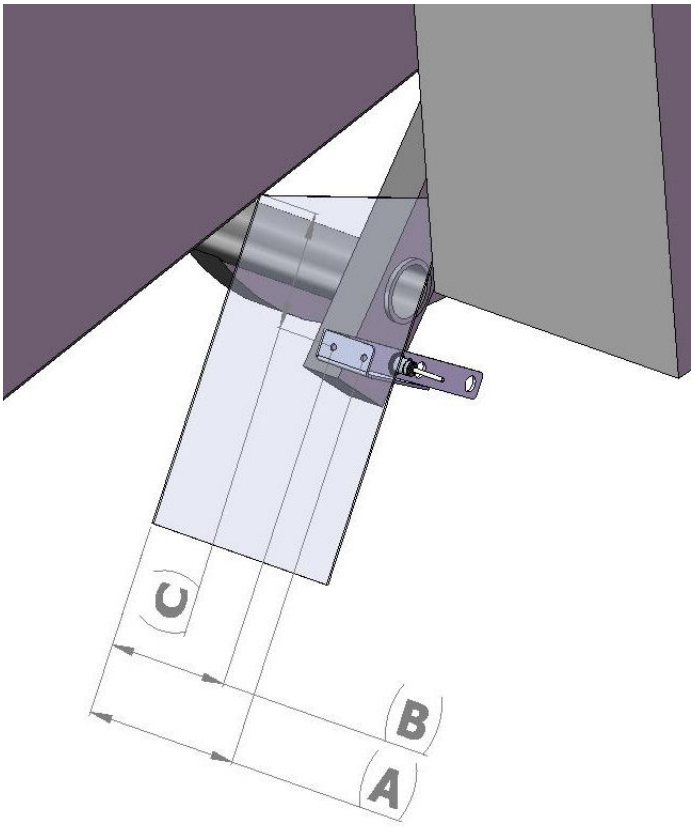
Sensor hole location	A	B	C
8”	4-7/8”	3-1/8”	15”

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

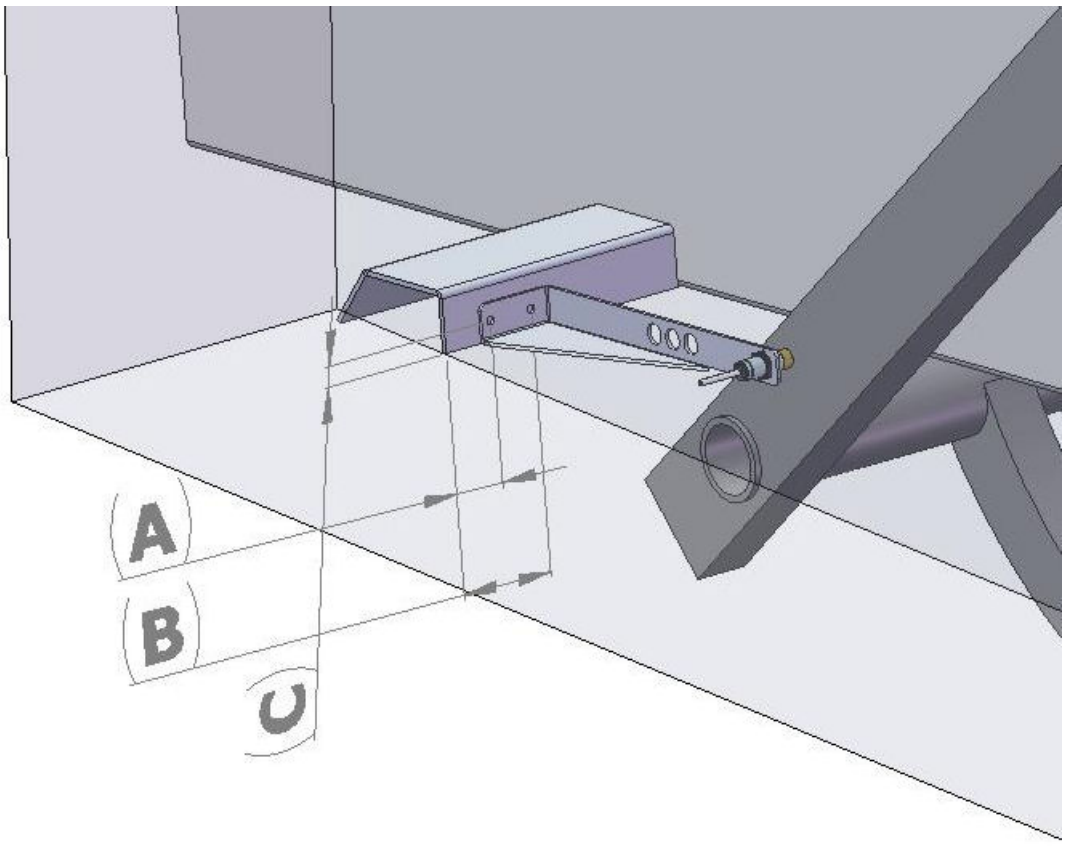


Hesston 4790

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.

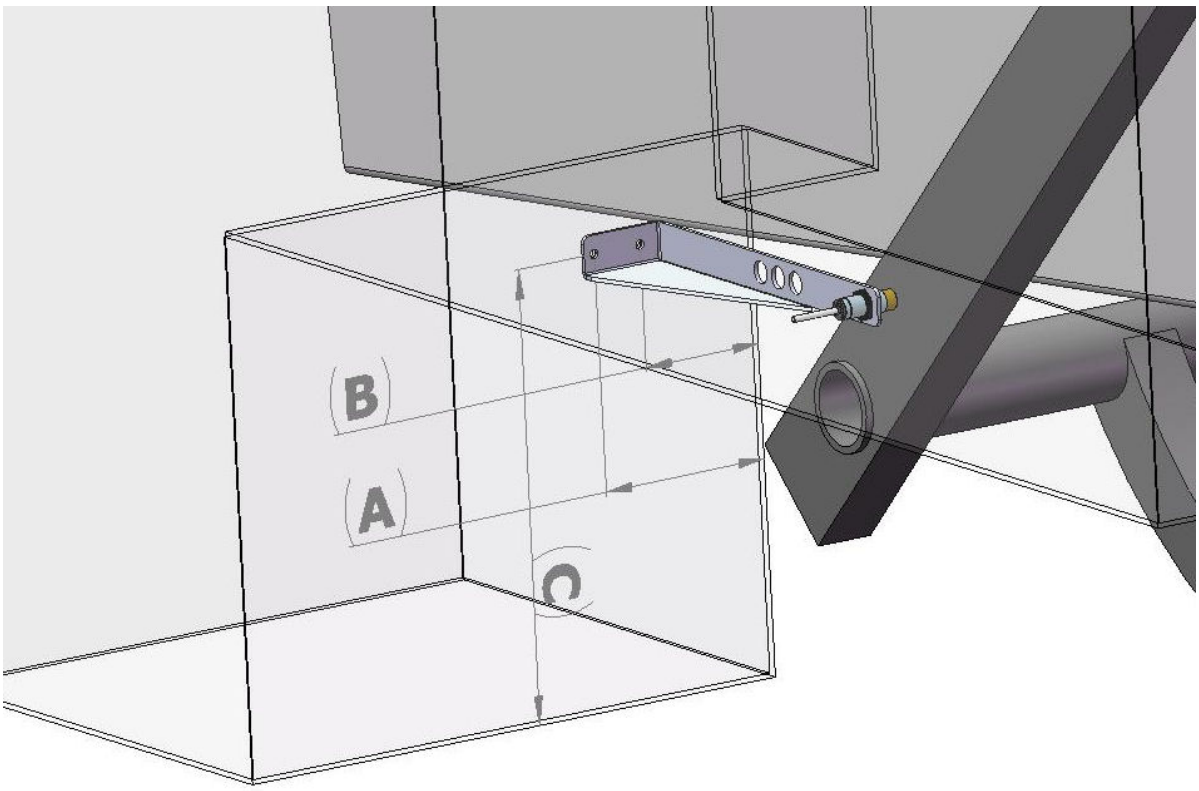
NEW HOLLAND 590 – BB 960, BB 9060 – BB9080 & CASE IH LBX 331-431, LB 333 -433



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.

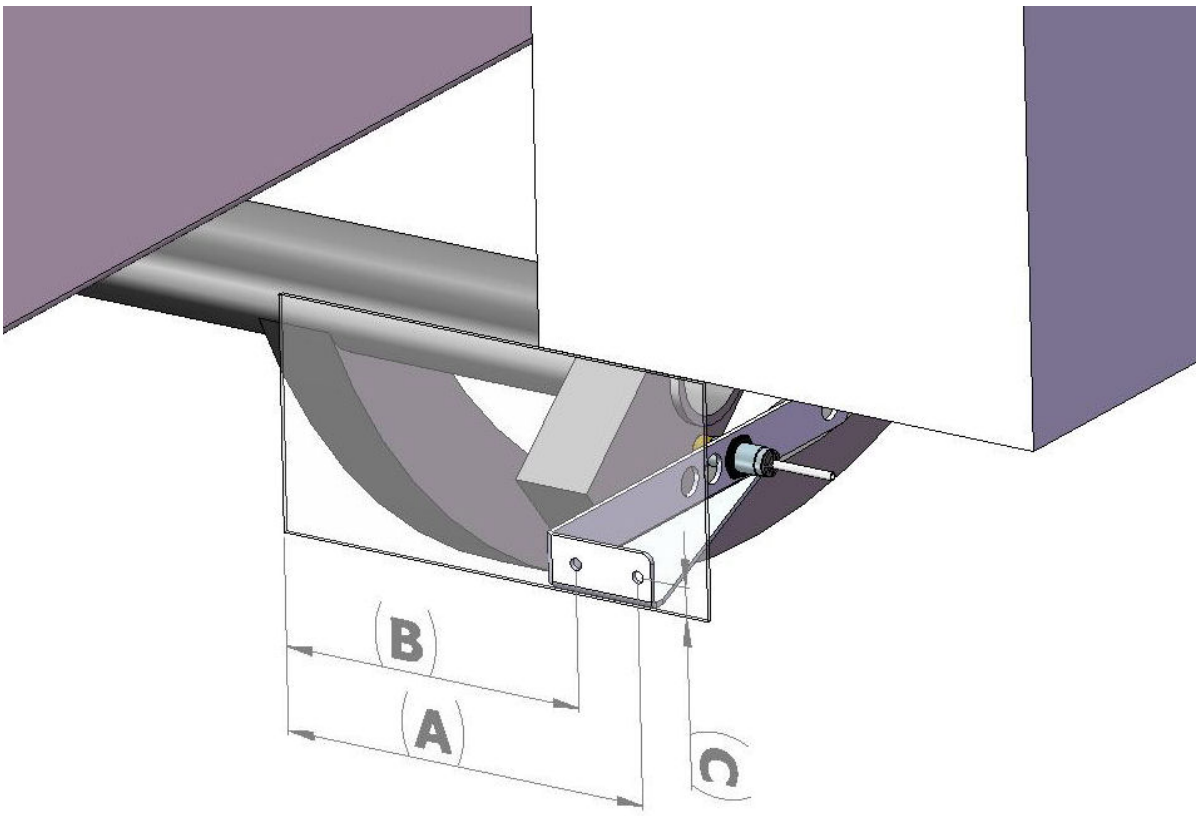
NEW HOLLAND BB 940A- BB 960A & CASE IH LBX 332 – 432



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.

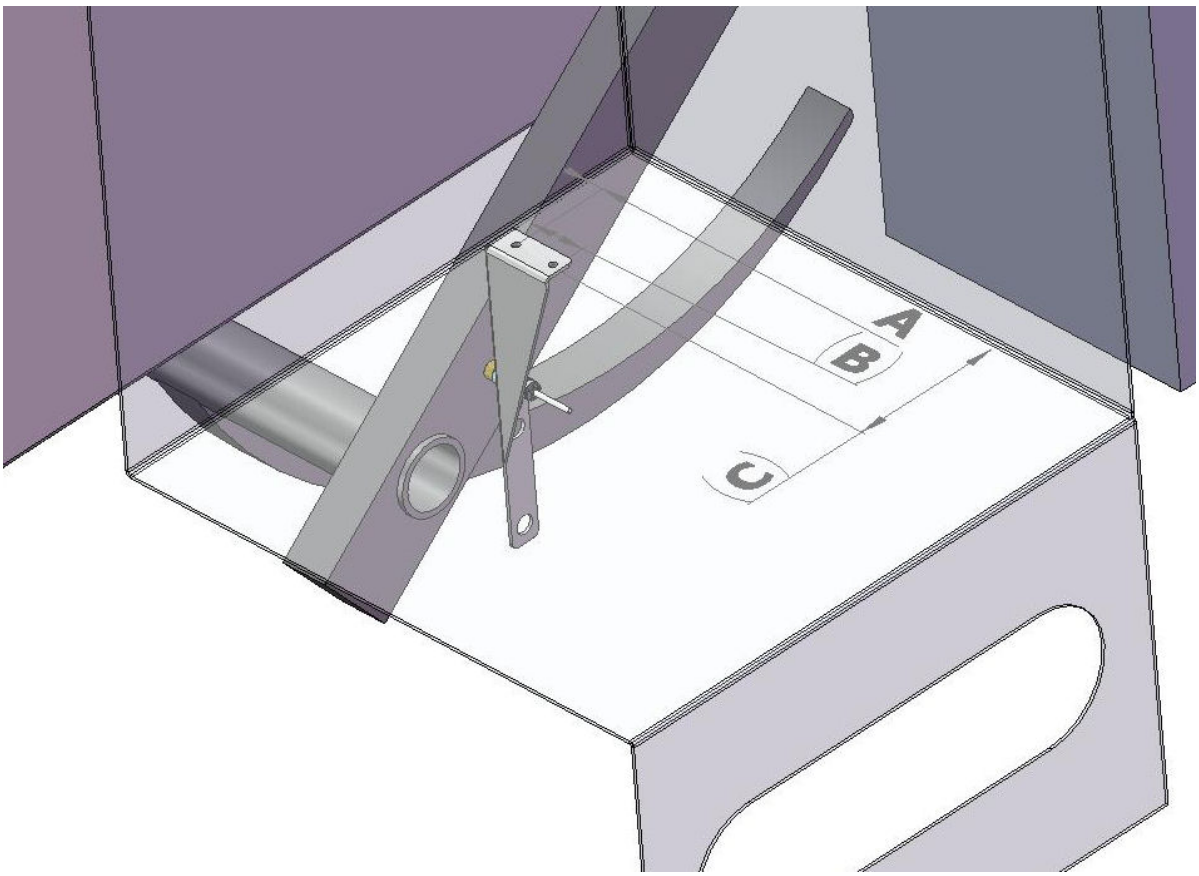
CLAAS 2100



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.

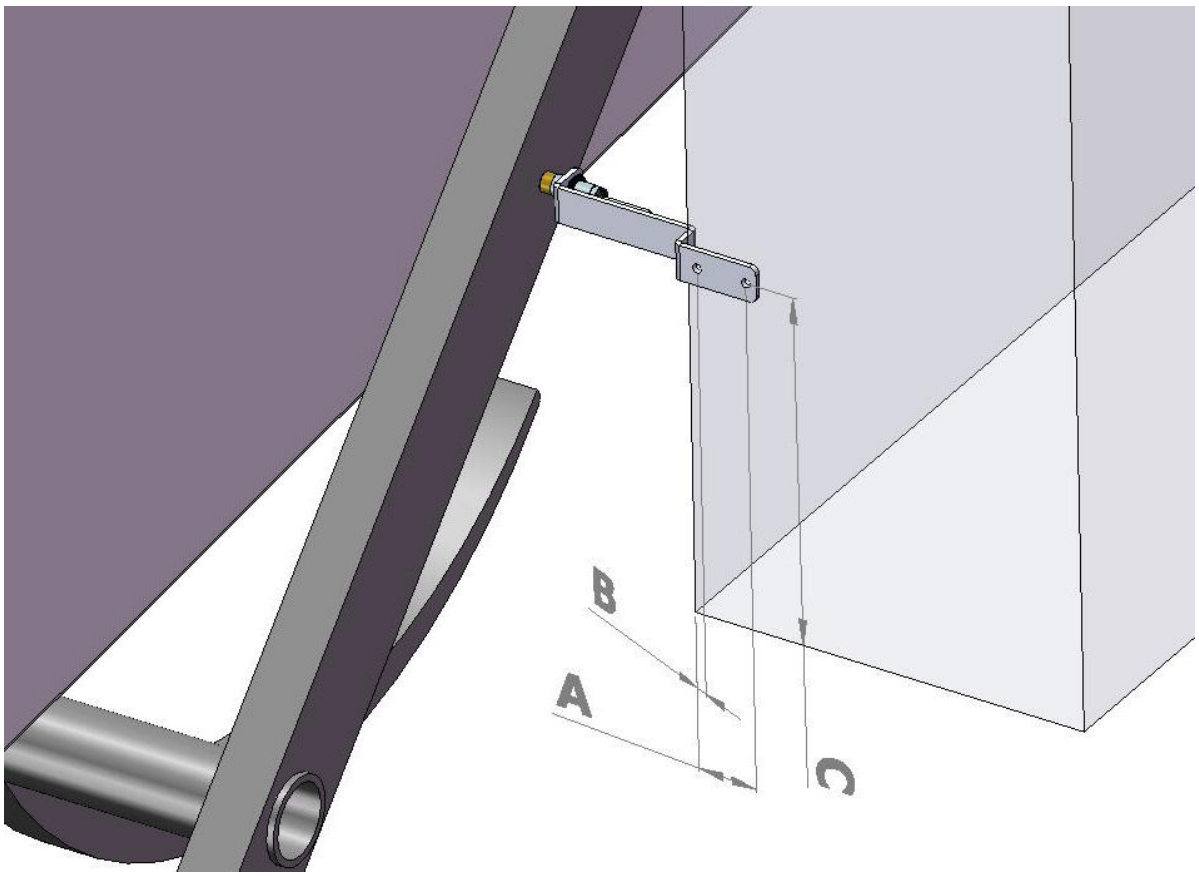
JOHN DEERE 100



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.

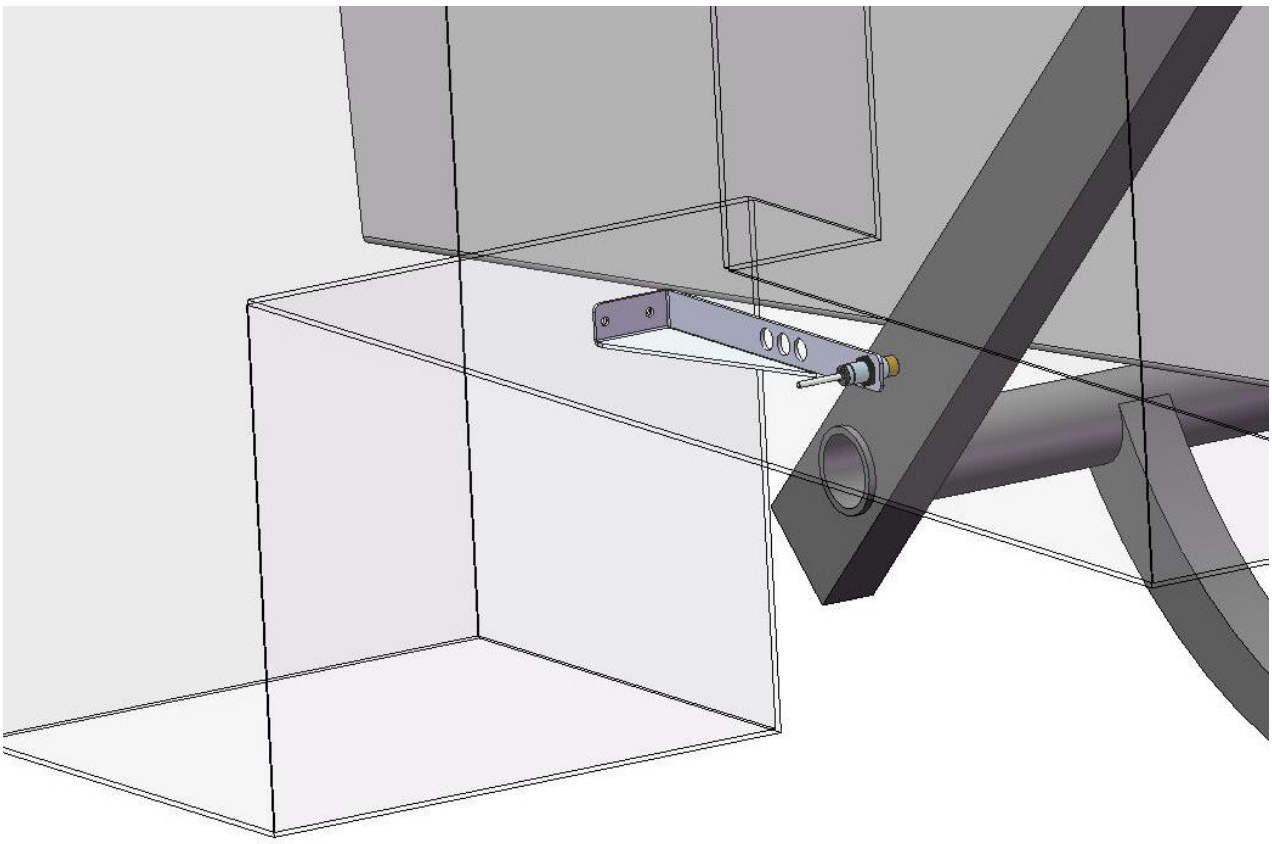
KRONE 890 – 12130



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.

ALL 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.

INSTALLATION OF STAR WHEEL AND BALE RATE HARNESS

First, remove the cover from the star wheel block and use a ¼" 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 ¼" 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 Precision Information Processor (PIP). (See wiring installation on the following page.) The Precision Information Processor is located on the back of the right twine box.

INSTALLATION OF CONTROLS

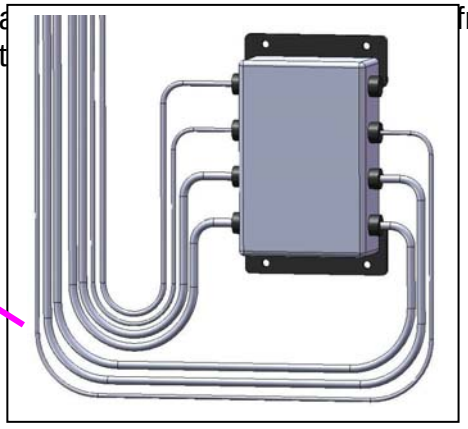
Use the four mounting screws to mount the round base in a convenient area in your cab or on your fender. If unit is mounted on fender it will need to be removed at night and stored in a clean, dry area. Use the Ram mount swivel-positioning nut to tighten the entire assembly. Adjust it so that you can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

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.

MAIN WIRING HARNESS AND POWER CORD INSTALLATION

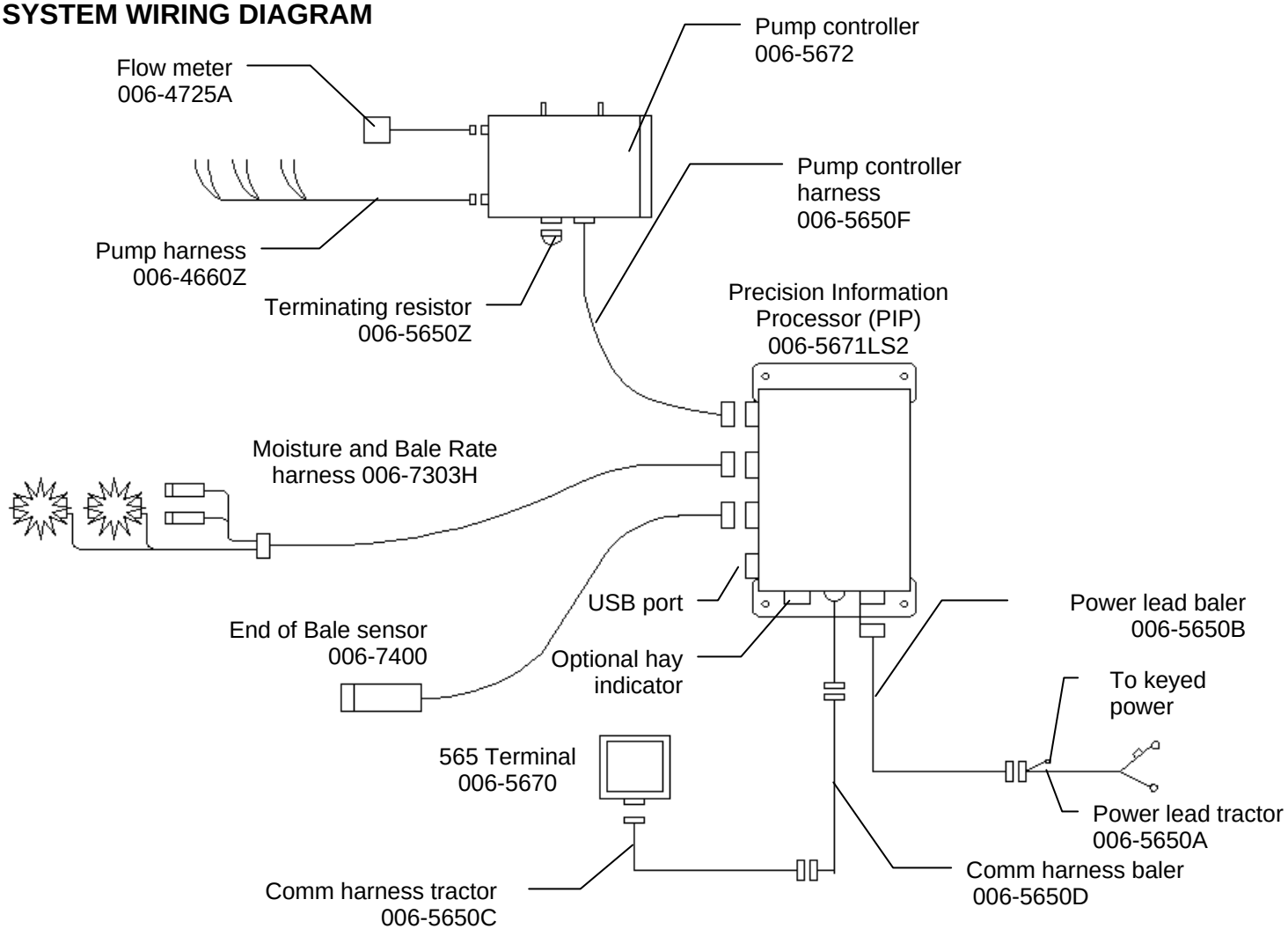
Route cords 006-5650B and 006-5650D along this path or similar inside of the baler. Keep cords away from moving parts and hydraulic hoses. Secure with existing cable clamps or use cable ties. When all connections are made to the PIP secure wires as shown below to a from t



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 individual bale records.**
3. The power harness (006-5650A) will run from the tractor battery to the hitch. The orange pigtail 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 (006-5671LS2).
4. Connect flow meter (006-4725A) and pump harness (006-4660Z) to the Pump Controller (PIP).
5. Connect the Pump Controller harness to the PIP and Pump Controller.
6. Install the terminating resistor to the pump controller.
7. If you have the optional Hay Indicator kit connect it to the PIP.
8. Attach moisture and bale rate harness (006-7303H) and the end of bale harness (006-7400) to PIP.
9. Install the Pump Controller in pump plate using 5/16" lock, nut and flat washers.
10. 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



PLUMBING

1. Locate the three ¼" hoses. The pumps will need to be connected to specific tips so the pump numbers are as follows: Pump 1 is closest to the filter bowl pump 2 is in the middle and pump 3 is the outside pump.
2. Use warm soapy water when connecting the hose to the pumps located inside the pump plate and install hose clamps at the same time. Because all nozzles on the spray shield are different, the operator will need to install pump 1 to the orange tips, pump 2 to the green tips, and pump 3 to the blue tips. New tips are supplied with the kit
3. **KEEP HOSE AWAY FROM: MOVING PARTS, SHARP METAL, AND HYDRAULIC LINES. WORKING TEMPERATURE FOR THE HOSE IS 140 ^{o}F AND UNDER.**
4. Tie the hose down at secure locations on the baler using the enclosed tie straps and cable clamps.

A. High and Low Output Tips

Your baler comes with two sets of tips: a low set and a high set. The high set comes factory installed.

-The high set will cover outputs of 84 to 632 lbs/hr (Apprx. 21-63 tons/hr) Install the following tips for high output:
Pump 1 to orange tips
Pump 2 to green tips.
Pump 3 to blue tips.

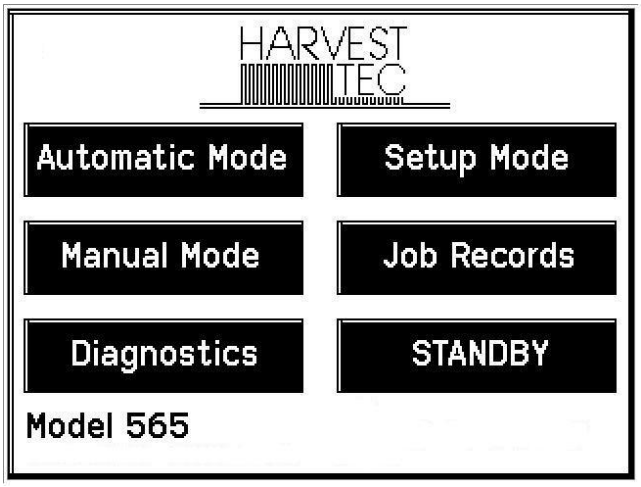
-The low set will cover outputs of 44 to 400 lbs/hr (Apprx. 11-40 tons/hr) Install the following tips for low output:
Pump 1 to brown tips.
Pump 2 to orange tips.
Pump 3 to green tips.

****Refer to Tip Output under APPLICATION RATE of the control unit to calibrate system.**

****If your system does not have three color hoses you must label your clear hoses **for correct pump and tip coordination.**

4. DESCRIPTION OF BUTTONS

This system is calibrated for use with Harvest Tec buffered propionic acid. The use of other products can cause application problems and damage to system components. It is designed to apply rates of 44 to 632 pounds of acid per hour and read moisture levels of 3 to 70 percent. The 565 monitor will allow you to set your bale size, weight, single bale formation time, moisture levels and application rates. The automatic mode will automatically adjust the application rates as the moisture level changes. Manual mode will allow you to control the application rates on the go.



AUTOMATIC MODE This operating mode automatically adjusts preservative application as you bale. The following items are displayed in the mode while baling: Moisture, Baling Rate, Application Rate (actual and target), Last Bale Average Moisture, Ton Baled, and Pounds of Product Used.

MANUAL MODE This operating mode allows the three different pumps to be turned on at a fixed rate as you bale. The following items are displayed in the mode while baling: Moisture, Baling Rate, Application Rate (actual only), Last Bale Average Moisture, Tons Baled, and Pounds of Product Used. This mode can also be used to prime the pumps.

SETUP MODE This mode allows the operator to customize the applicators settings for their baler and baling needs. This mode allows changes to be made to the following areas: Application Rate, Baling Rate, Language, US or Metric units, and turn on/off the optional Hay Indicators.

DIAGNOSTICS Allows operator to automatically check performance and output of pumps as well as set the date and time and calibrate the touch screen. The installed software versions can also be viewed here.

JOB RECORDS Keeps track of up to 300 jobs with total product used, average moisture content, highest moisture content, tons baled, date of baling, and total number of bales made. Individual bales are also able to be viewed and the records can also be downloaded to a USB drive in this mode.

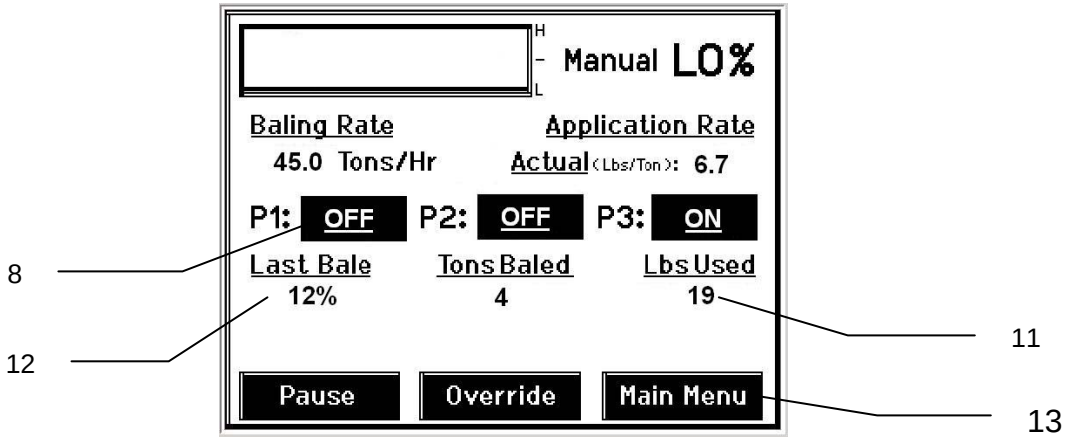
STANDBY This powers down the display only. The application unit will not fully power down unless the keyed power is turned off. Press anywhere on the screen to power back on (with the key on).

5. FIRST TIME AND ANNUAL START UP INSTRUCTIONS

AFTER INSTALLATION THE UNIT MUST BE CHECKED OUT BEFORE FIELD OPERATION!!

CHECKING AND PRIMING THE PUMPS

1. Put 10 gal of water in tank and turn main ball valve on.
2. Inspect for any leaks or drips at this time. If any are found tighten or replace area or fitting.
3. **Turn controller on (**turn on key to the tractor).
4. Press the SETUP MODE key**. (See page 24) Select Sensors are: OFF** to disable bale rate sensors. Make sure the AVG Bale Weight is 1500 lbs and the AVG Baler Length is 96 in. and EST Baling Time is 60 sec. Press the MAIN MENU key to return to the opening screen.
5. Press the MANUAL MODE key.
6. The screen shown below should appear.
7. The rates listed below are for Harvest Tec buffered propionic acid. Other products will need to be collected and weighed to assure proper performance is achieved.



8. **NOTE: THE SYSTEM COMES WITH THE HIGH TIPS ALREADY INSTALLED ON THE SPRAY SHIELD. TEST SYSTEM WITH TIPS YOU WILL USE MOST OFTEN.**

- **With low tips in:** Turn pump 1 on (P1). To do this press the underlined area on the screen which says OFF. The application rate should then read between 1.1 – 1.5 Lbs/Ton. Ideally, at 13.5 volts, the rate would read 1.3 Lbs/Ton.
- Repeat the process for pumps 2 and 3 (P2 and P3). The application rate should read between 1.9 – 2.6 Lbs/Ton and 2.9 – 3.9 Lbs/Ton respectively. Ideally, at 13.5 volts, the rate for pump 2 would be 2.2 Lbs/Ton; pump 3 would be 3.4 Lbs/Ton.
- **With high tips in:** Turn pump 1 on (P1). To do this press the underlined area on the screen which says OFF. The application rate should then read between 1.9 – 2.6 Lbs/Ton. Ideally, at 13.5 volts, the rate would read 2.2 Lbs/Ton.
- Repeat the process for pumps 2 and 3 (P2 and P3). The application rate should read between 2.9 – 3.9 Lbs/Ton and 5.7– 7.7 Lbs/Ton respectively. Ideally, at 13.5 volts, the rate for pump 2 would be 3.4 Lbs/Ton; pump 3 would be 6.7 Lbs/Ton.

9. This process will also be used to prime the pumps whenever needed.
10. While running pumps check for a good spray pattern out of the respective tips and verify that no parts of the system are leaking.
11. While doing these tests the Volume Used on the bottom of the screen should be counting up, this verifies that the flow meter is functioning.
12. Last Bale shows the average moisture content of the last bale made. This information will then be saved in your Job Records.
13. Press the MAIN MENU key to return to the intial start up screen.

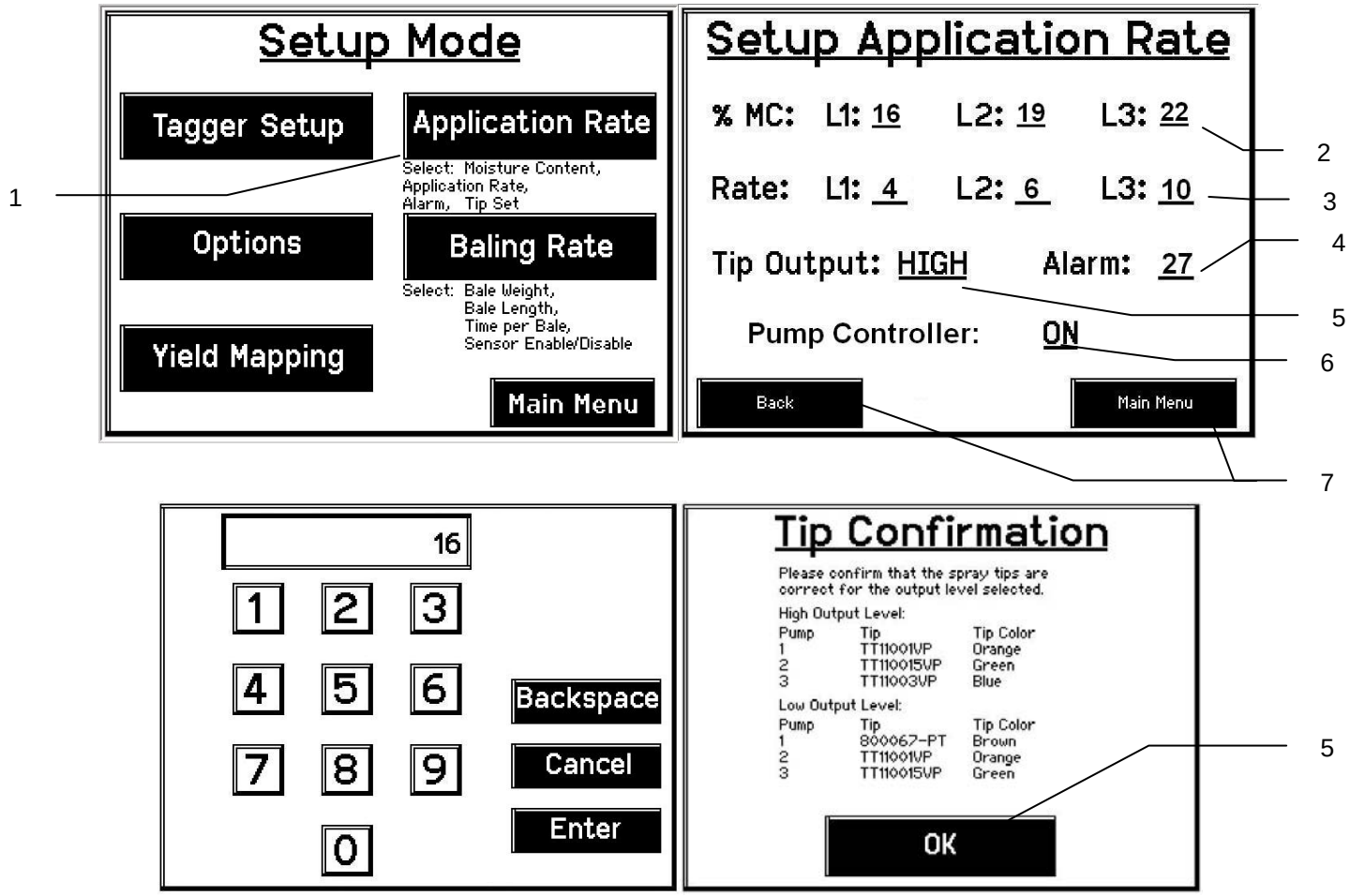
NOTE: It is recommended that the system be run with the bale rate sensors on. Press the SETUP MODE key and turn the bale rate sensors back on for normal operation. (Also see Baling Rate to adjust bale weight, length, and time.)

6. SETTING UP SYSTEM FOR INITIAL USE

In this mode you will setup your initial application rate and baling rate.

APPLICATION RATE

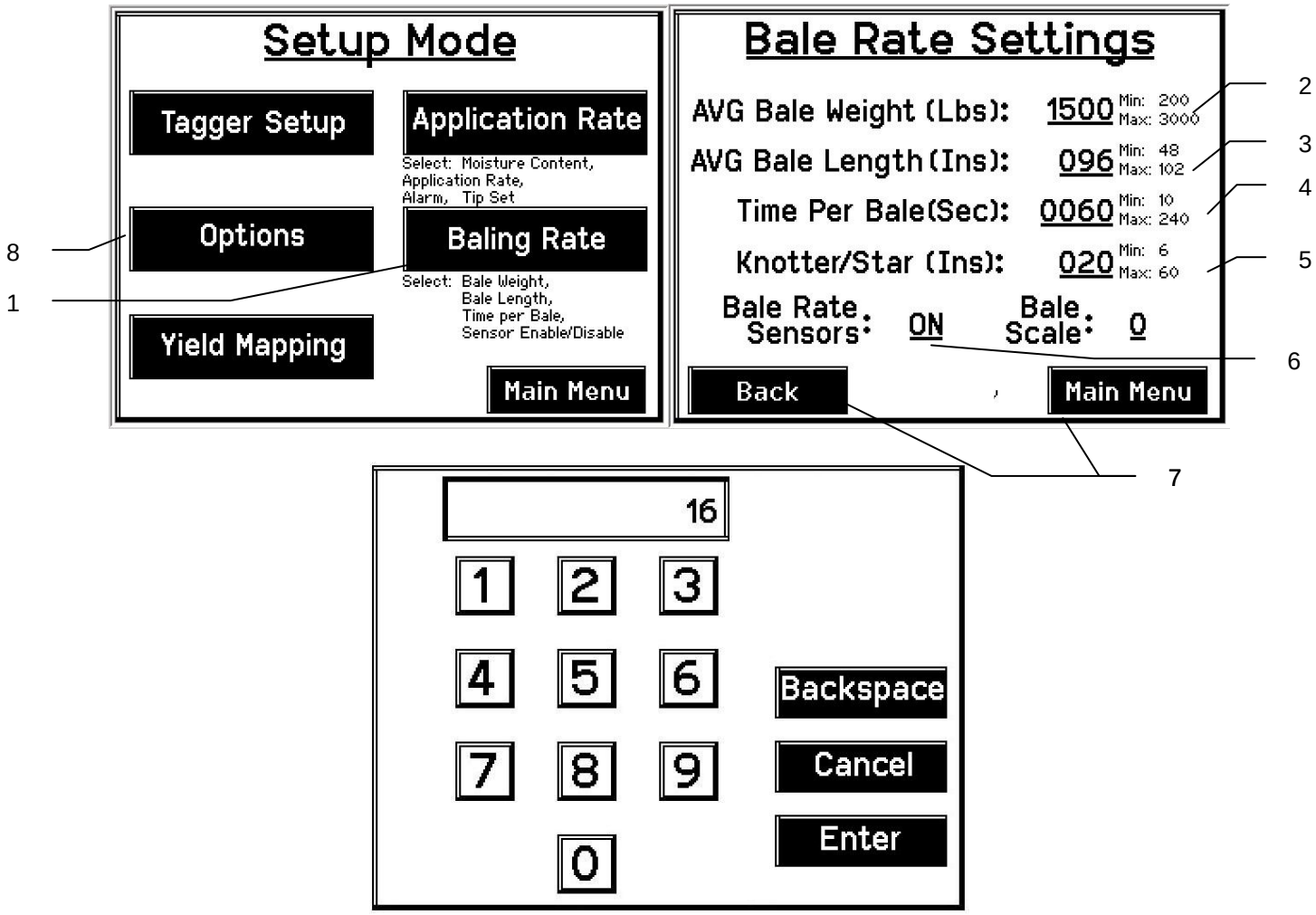
After pushing the SETUP MODE key in the Main Menu screen, the top left screen will show on the display:



1. On this screen the operator will press the APPLICATION RATE key.
2. Press any of the underlined numbers to the right of %MC to adjust their figures. The key pad shown on the bottom left will display. Remember level 1 must be lower than level 2 and level 2 must be lower than level 3. Harvest Tec products recommend set points of 16, 19 and 22% MC levels. These are preset from the factory. Press ENTER to return to previous screen.
3. To change rate of chemical application press any of the underlined numbers to the right of RATE. The key pad shown on the bottom left will display. Remember level 1 must be lower than level 2 and level 2 must be lower than level 3. Harvest Tec products recommend rates of 4, 6, and 10 lbs/ton. These rates are preset from the factory. Press ENTER to return to previous screen. **IT IS THE OPERATORS RESPONSIBILITY TO FOLLOW THE RECOMMENDATIONS OF THE PRESERVATIVE. ONLY THE OPERATOR CAN APPLY THE PROPER RATE.**
4. To set the alarm press on the underlined area and set the level at which you want the alarm to activate. **To turn the alarm off, set level above 80.**
5. To change the tip output setting to either low or high, press the underlined word to the right of Tip Output:. In the TIP CONFIRMATION screen the operator can verify and change tip selection. After tips have been verified or changed press the OK key to return to the previous screen.
6. The Pump Controller needs to be turned ON for the pumps and flow meter to function.
7. Next press the BACK key found on the bottom left hand figure of the screen to return to Setup Mode screen or press the MAIN MENU key on the bottom right hand figure of the screen to return to the opening screen.

BALING RATE

After pushing the SETUP MODE key in the Main Menu screen, the top screen should appear:



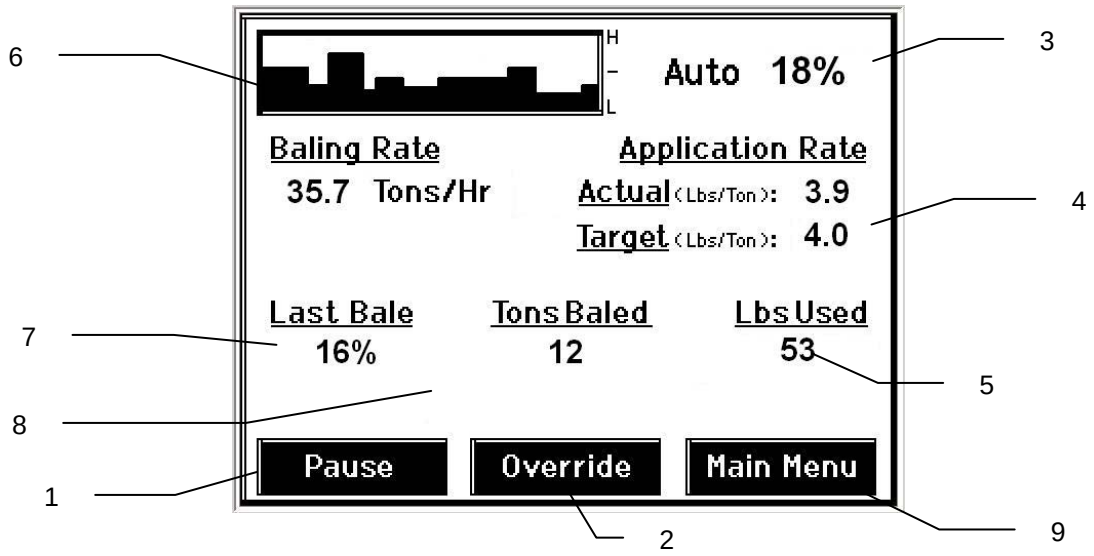
1. On this screen the operator will press the BALING RATE key.
2. Press the underlined number to the right of AVG Bale Weight (Lbs): to adjust the weight of your bales. The key pad shown will display. Press any number combination in this screen within the min/max limits. Press the ENTER key to save this information. The information will remain until it is changed again.
3. 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.
4. 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.
5. 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.
6. If the unit will be operated with the bale sensors on**,** then the bale weight and length will need to be inputed. 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 inputed 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.
7. 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.
8. Press the OPTION key to adjust the touchscreen between metric and standard units and languages. The Hay Indicators can also be turned on or off in the OPTION screen. Press the underlined ON/OFF next to EOR.

OPERATING INSTRUCTIONS

Auto mode will automatically apply product based on both hay moisture content sensed by the star wheels and the operator's presets. (See SETTING UP SYSTEM FOR INITIAL USE to change any of these settings). **Manual mode will apply preservative to the hay at a fixed rate regardless of the moisture content or baling rate.**

AUTOMATIC MODE

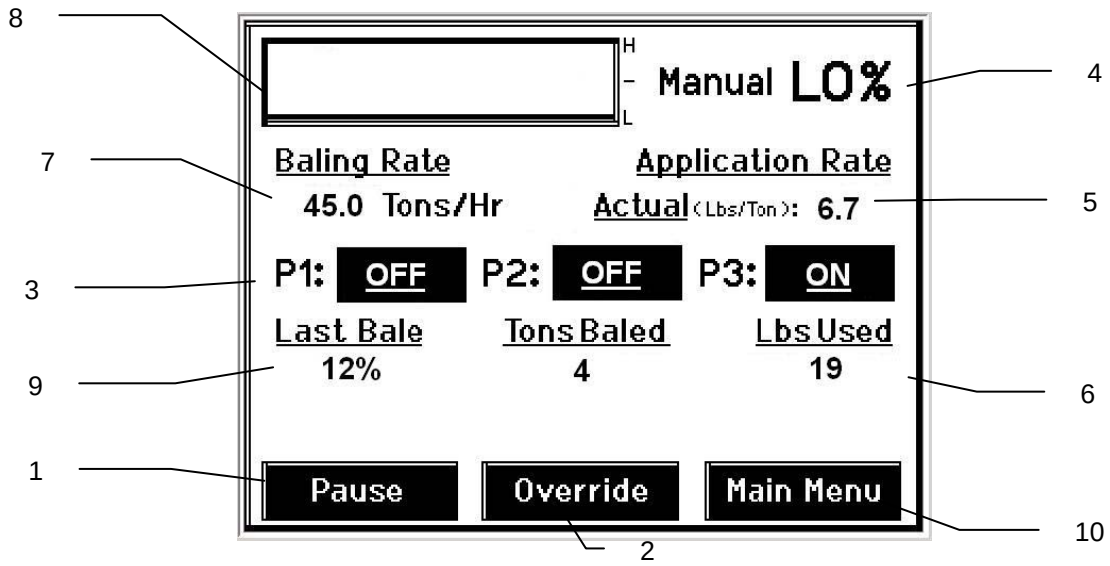
After pushing the AUTOMATIC MODE key in the Main Menu screen, the following screen should appear:



1. Push the Pause key to stop application while in operation.
2. Push the OVERRIDE key to turn on all three pumps at the same time for full output of the system. Use this mode when going through a short area of wet crop.
3. The moisture content is shown in the upper right hand corner.
4. Baling Rate and Application Rate are shown in the middle. The operator sets the target application rate in the setup mode; the actual rate should be within +/- one pound when running. The baling rate is also calculated in the Setup Mode.
5. 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.
6. The graph shows the moisture trend from the past 90 seconds in 3 second intervals.
7. Last Bale shows the average moisture content for the last bale.
8. Any Status Alerts for the system will appear in this area. See the STATUS ALERTS section for information.
9. Press the MAIN MENU key to return to the opening screen.

MANUAL MODE

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



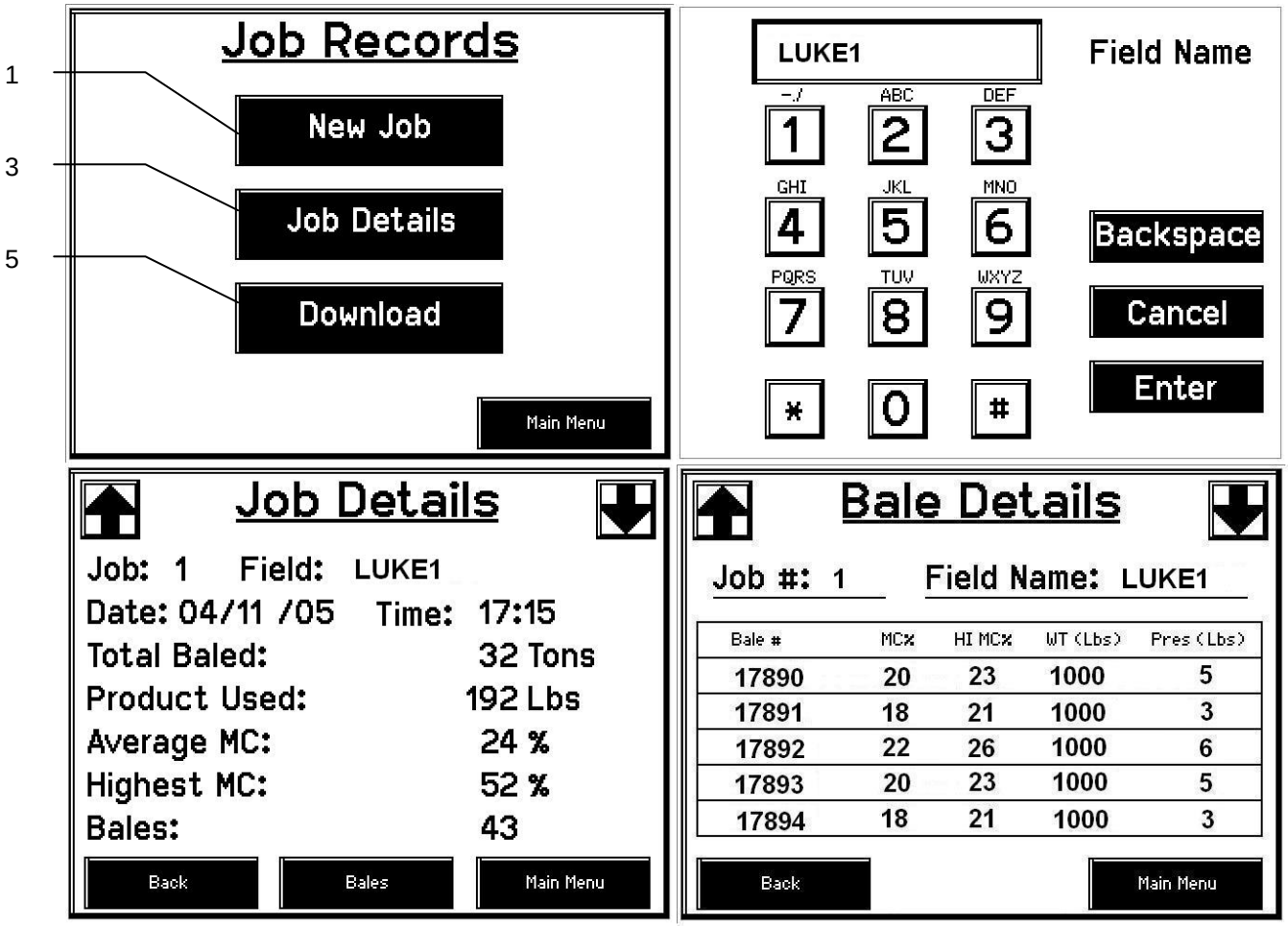
1. Push the Pause key to stop application while in operation.
2. Push the OVERRIDE key to turn on all three pumps at the same time for full output of the system. Use this mode when going through a short area of wet crop.
3. In Manual Mode you can turn the pumps on or off by pressing the underlined area next to the pump numbers. In Manual Mode (regardless of moisture, tons per hour or bale weight) the outputs of the pumps are fixed rates as follows:

Low output tips:	**High output tips**:
Pump 1 = 60 LBS/HR	Pump 1 = 100 LBS/HR
Pump 2 = 100 LBS/HR	Pump 2 = 150 LBS/HR
Pump 3 = 150 LBS/HR	Pump 3 = 300 LBS/HR

4. The moisture content is shown in the upper right hand corner.
5. Baling rate and Application rate are shown in the middle. The output of a pump can be checked by dividing the preset output (shown in step 3) by the baling rate. For example, if you have the high output tips in and are running pump three by itself, your output is 300 lbs/hr. Given the baling rate shown on the above screen (45.0 tons/hr), the application rate should be about 6.7 lbs/ton (300lbs/hr divided by 45.0 tons/hr).
6. The Totals on the bottom of the screen show the total tons 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.
7. The baling rate is set in the Setup Mode menu.
8. This graph shows the moisture trend from the last 90 seconds of baling (one reading every 3 seconds).
9. Last Bale shows the average moisture content for the last bale.
10. Press the MAIN MENU key to return to the opening screen.

JOB RECORDS

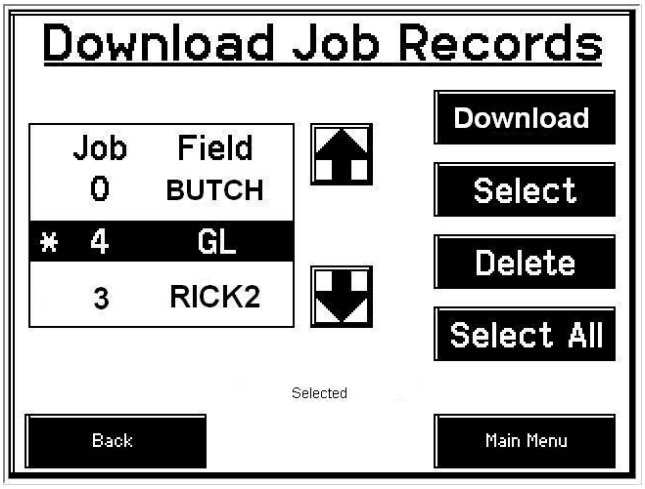
After pushing the JOB RECORDS key in the Main Menu screen, the following screen should appear:

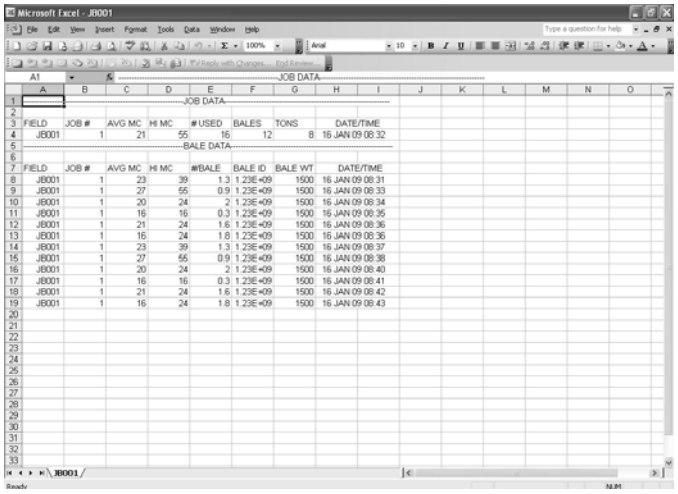


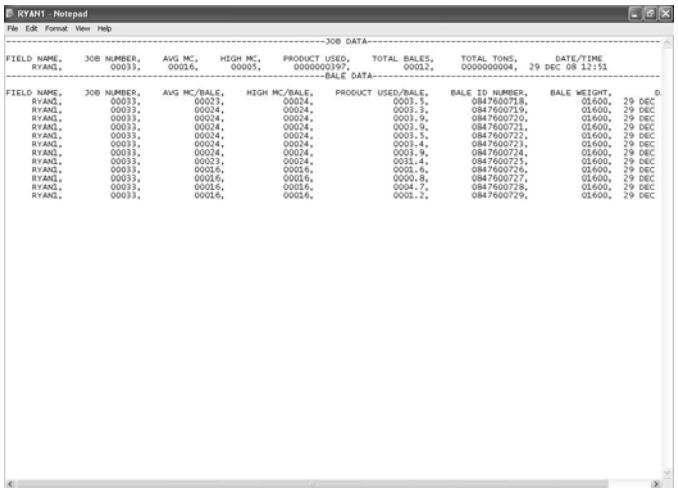
1. Pressing New Job will save all the previous bale records and open the Field Name screen.
2. Use the key pad in the Field Name screen to enter up to an eight character field name. Use the asterisk key to move on to the next letter or number if they are identical. Use the pound sign as a space between 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



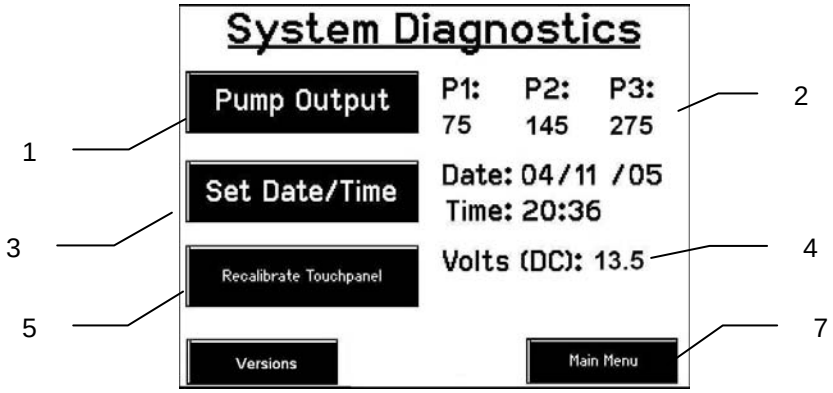




5. Pressing the Download key will open the Download Job Records screen. This screen lets you select jobs to download onto a USB drive. To download insert a USB drive into the port on the Precision Information Processor. Select the job(s) you would like to download using the up and down arrows to highlight 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:



The diagnostic mode will automatically check the pump output and performance of the three pumps. It is recommended to use this mode daily to ensure proper system performance.

Acceptable ranges for output:

Low output tips:	**High output tips**:
Pump 1 = 54 - 67 LBS/HR	Pump 1 = 90 - 110 LBS/HR
Pump 2 = 90 - 110 LBS/HR	Pump 2 = 135 - 165 LBS/HR
Pump 3 = 135 - 165 LBS/HR	Pump 3 = 270 - 330 LBS/HR

1. Once the screen is displayed, press the PUMP OUTPUT key.
   The machine will cycle all three of the pumps for 15 seconds. After the cycles are complete, the system will display a number next to each pump number.
2. **If the system displays within the listed range.**
   A. The system is operating correctly.

   If the system displays higher than the listed range, some common problems could be:
   A. Leak in line. Inspect lines thoroughly.
   B. Tip missing. Check for lost or broken tip on spray shield.
   C. Tip worn. Replace tip.
   D. High tractor voltage.

   If the system displays lower than the listed range, some common problems could be:
   A. Make sure there is preservative in the tank and ball valve is in the open position.
   B. Air in lines. Pump will not prime. Check for leak in lines, or defective check valve.
   C. Pump is working, but not producing desired output. Pump needs to be rebuilt.
   D. Main filter plugged. Check filter by tank and clean if necessary.
   E. Tip or tip screen plugged. Check both tip and tip screen and clean if necessary.
   F. Kink in hose. Straighten or replace hose.
   G. Voltage from tractor is low. Check power cord with multimeter for 12 volts at baler mounted processor. Clean connections on battery. Dielectric grease connections at baler mounted processor and at hitch connection.
   H. Pump is defective. Rebuild pump if motor runs smoothly. Replace pump if motor is bad.
   I. Defective flow meter. Only if all pumps run, product is applied, and all numbers read 0.
3. 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.
4. 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.
5. 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.
6. Press the Versions key to check all software versions of modules attached to the PIP.
7. 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 SETTING UP FOR INITIAL USE for a detailed explanation of this process.

3. **The unit is stuck in the MC% screen.**
   In the MC% screen, level 1 must be less than level 2, and level 2 must be less than level 3. For example, if level 1 is set at 16, level 2 must be set at 17 or higher, and level 3 must be set higher than level 2.

4. **How does OVERRIDE work?**
   Override turns on all three pumps at full output. The pumps will remain at full output until the operator turns these pumps off by pressing the OVERRIDE key again.

5. **The flow meter reading is more or less than the programmed level set in the box.**
   Some variation in flow meter readings compared to the programmed set point is normal due to factory tolerances on the pump motors as well as varying tractor voltages inputted to the control box. The flow meter reading is an accurate measure of how much product is actually being applied. The set points then will need to be adjusted if you want to attain a different flow meter reading.

6. **Why don't all the pumps turn on even at higher application rates?**
   The selections of what pumps turn on when are automatically controlled by the control box's flow rate look up chart. Thus, not all the pumps turn on at once and the combination of what pumps turn on when is automatically controlled by the software. If you want to make sure all three pumps are working, go to the Diagnostics screen and run pump outputs.

7. **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.

8. **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.

9. **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.

10. **How can I turn the optional Hay Indicators on/off from the cab?**
    In the Setup Mode screen press options. Press the on/off underlined area next to EOR sensor.

MAINTENANCE

1. Clean the tip strainers and main strainer every 10 hours of operation or more frequently if required.
2. Depending on the product being used, the system may need to be flushed with water at a regular interval (consult with manufacturer of the chemical.) If Harvest Tec product is being used, flushing is not necessary.
3. Although the pump can run dry, extended operation of a dry pump will increase wear. Watch the preservative level in the tank.
4. Cover the automatic cab terminal on open station tractors if left outside.
5. Pump performance may start to decline after 400 hours (10000 bales on large square balers) of use. Rebuilding the pump is a simple procedure if the motor is not damaged. Order pump rebuilding kit #007-4581 for the automatic unit. A service pack is also available from your dealer. It includes the tips, check valves, and pump rebuild kits.
6. If you are using bacterial inoculants, flush your system daily after every use.
7. Clean tank cap every 10 hours of operation.

Maintenance Schedule

	Daily	10 hrs	400 hrs	Weekly	Monthly	Season
Diagnostics	X					X
Filter bowl cleaning		X				X
Tip screen cleaning		X				X
Tank cap cleaning		X				X
Dielectric grease connections					X	X
Rebuild pumps			X			
Battery connections				X		X
Check valves			X			
Visually inspect hoses				X		X

WINTER STORAGE

1. Thoroughly flush the system with water.
2. Remove the filter bowl and run dry until the water has cleared out of the intake side.
3. Remove the red plug from the bottom of the pump, drain, and run the pump for 30 seconds or until it is dry.
4. Drain all lines on the outlet side.
5. Never use oils or alcohol based anti-freeze in the system.
6. For spring start-up, if the pump is frozen, turn off the power immediately to avoid burning the motor out or blowing a fuse. The pump head can be disassembled and freed or rebuilt in most cases. Check the fuses after the pump has been freed.
7. Disconnect power from the Precision Information Processor.
8. Remove display from tractor and store in a warm, dry place.

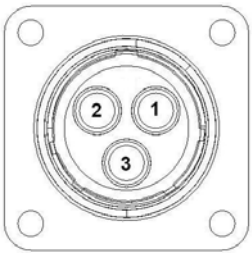
TROUBLE SHOOTING CHECKS:

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pump will not run.	1. No voltage to PIP or Pump controller.	1. Check for short, low voltage, and replace fuse(s) if necessary.
	2. Pump locked up.	2. Clean or rebuild pump if motor is OK.
	3. Damaged wire.	3. Repair damaged wire.
	4. Fuse blown on Pump controller.	4. Replace fuse and check pump for short in wire or locked motor.
Pump runs but will not prime.	1. Air leak in intake.	1. Tighten fittings on intake side.
	2. Clogged intake.	2. Clean.
	3. Restricted outlet.	3. Check and clean tips.
	4. Check valve on the outlet is stuck closed.	4. Clean or repair check valve.
	5. Dirt inside pump.	5. Replace pump check valve.
Pump does not develop enough output.	1. Air leaks or clogs on inlet side.	1. Tighten or clean filter bowl assembly.
	2. Pump worn or dirty.	2. Rebuild pump.
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.
Flow meter readings do not match up with product usage.		
Product is less than actual product used.	1. Voltage supplied to meter is less than 6 volts.	1. Check for a min of 6 volts supplied at Pump controller.
	2. Wiring short in signal to baler mounted processor.	2. Inspect wire and replace if necessary.
	3. Clog in meter.	3. Back flush with water. DO NOT USE AIR.
	4. Using product other than Harvest Tec	4. Catch and weigh product to check outputs.
Product shown is more than actual	1. High voltage supplied to the	1. Check voltage at Pump controller.

product used.	meter.	Max of 18 volts.
	2. Light interference with meter.	2. Reflection into meter can cause a high reading. Move meter or protect from sunlight.
	3. Air leak in intake.	3. Look for air bubbles in line. Replace line or other defective area that is allowing air into the system.
	4. Using product other than Harvest Tec	4. Catch and weigh product to check outputs.
System leaks product out of tips after shut down.	1. Dirty or defective check valves.	1. Clean or Replace.
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.
System does not pause at the end of a row.	1. Short in cable. 2. Damaged sensor. 3. Bad alignment of sensors	1. Replace cable. 2. Replace sensor 3. Check 474 manual for alignment instructions
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.

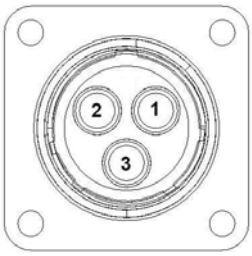
WIRING DIAGRAMS

A. Main power connector mounted on battery



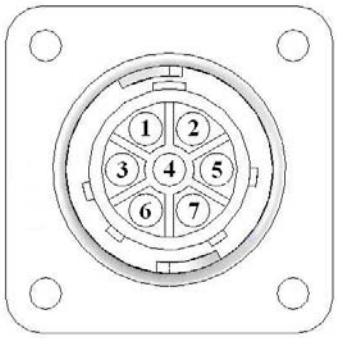
Pin 1	Red	+ 12 V input from tractor supply
Pin 2	Black	Ground from tractor supply
Pin 3	Orange	Keyed power

B. Main power connector mounted on PIP



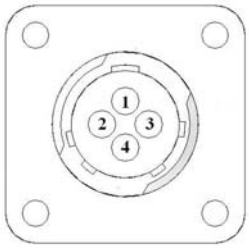
Pin 1	Red	+ 12 V input from tractor supply
Pin 2	Black	Ground from tractor supply
Pin 3	Orange	Keyed power

C. Pump connection colors



Pin 1	Black with orange markings	Pump 1 ground
Pin 2	Black with green markings	Pump 2 ground
Pin 3	Black with yellow markings	Pump 3 ground
Pin 4	Not used	
Pin 5	Orange with black markings	Pump 1 positive
Pin 6	Green with black markings	Pump 2 positive
Pin 7	Yellow with black markings	Pump 3 positive

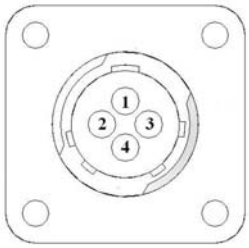
D. Flow meter connection on Pump Controller



Pin 1	White	5 - 12 V (+) supply
Pin 2	Green	Ground
Pin 3	Brown	Signal
Pin 4	Black	Shield

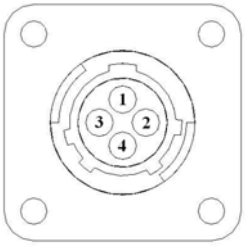
E. Connector for Hay Indicator option on PIP

Note: Hay indicators are an option that will turn the system on and off automatically as hay enters the pickup of the baler.



Pin 1	Red	+12V
Pin 2	Black	Ground
Pin 3	White	Signal wire
Pin 4	Not used	

F. End of bale sensor on PIP

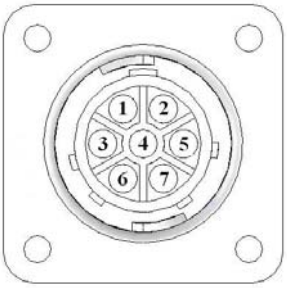


Pin1	Brown	Sensor power
Pin2	Blue	Sensor ground
Pin3	Not used	
Pin4	Black	Signal from sensor

G. Star wheel and Bale rate sensor connector on PIP

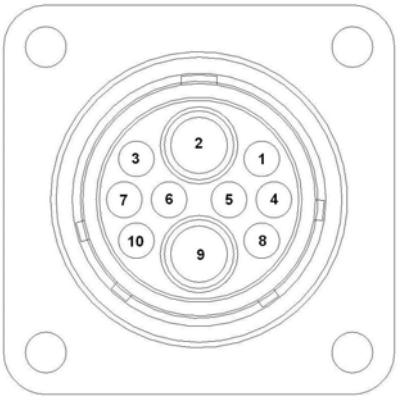
Pin 1	Blue	12 volt power
Pin 2	Orange	Ground
Pin 3	Black	Signal for sensor 1
Pin 4	White	Signal for sensor 2
Pin 5	Not used	
Pin 6	Not used	
Pin 7	Not used	
Pin 8	Violet	Star wheel input 1
Pin 9	Brown	Star wheel input 2

H. Display communication harness on PIP



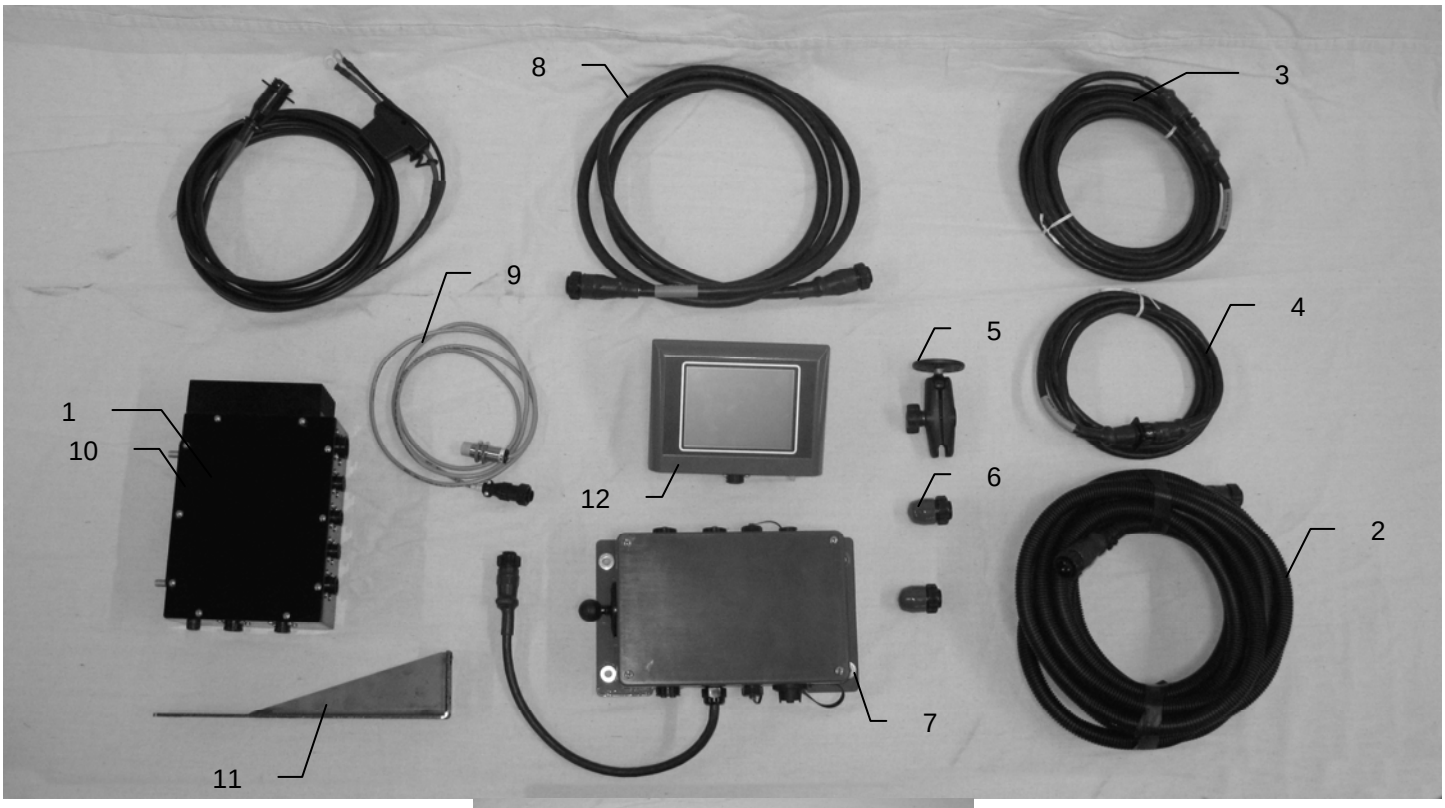
Pin 1	Orange	Power to display
Pin 2	Blue	Ground to display
Pin 3	Green	Comm channel OH
Pin 4	Silver	Shield
Pin 5	Yellow	Comm channel OL
Pin 6	Not used	
Pin 7	Not used	

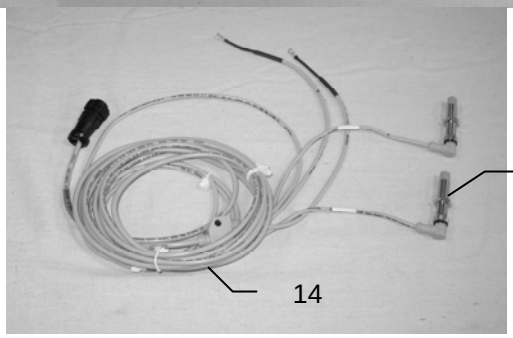
I. Communication harness on PIP and Pump Controller



Pin 1	Red	Can 12 volt
Pin 2	Red	Battery 12 volt
Pin 3	Green	Comm channel OH
Pin 4	Silver	Shield
Pin 5	Yellow	Comm channel OL
Pin 6	Not used	
Pin 7	Not used	
Pin 8	Black	Can ground
Pin 9	Black	Battery ground
Pin 10	Not used	

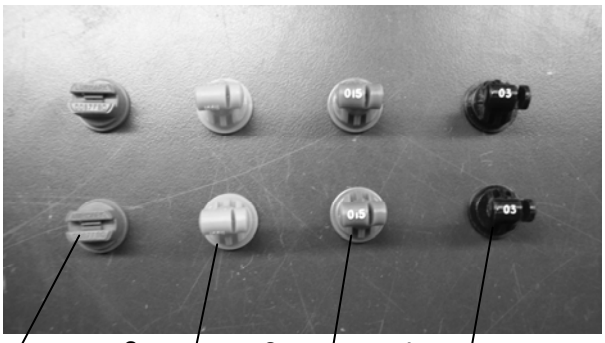
566 PARTS BREAKDOWN
CONTROL BOX AND WIRING



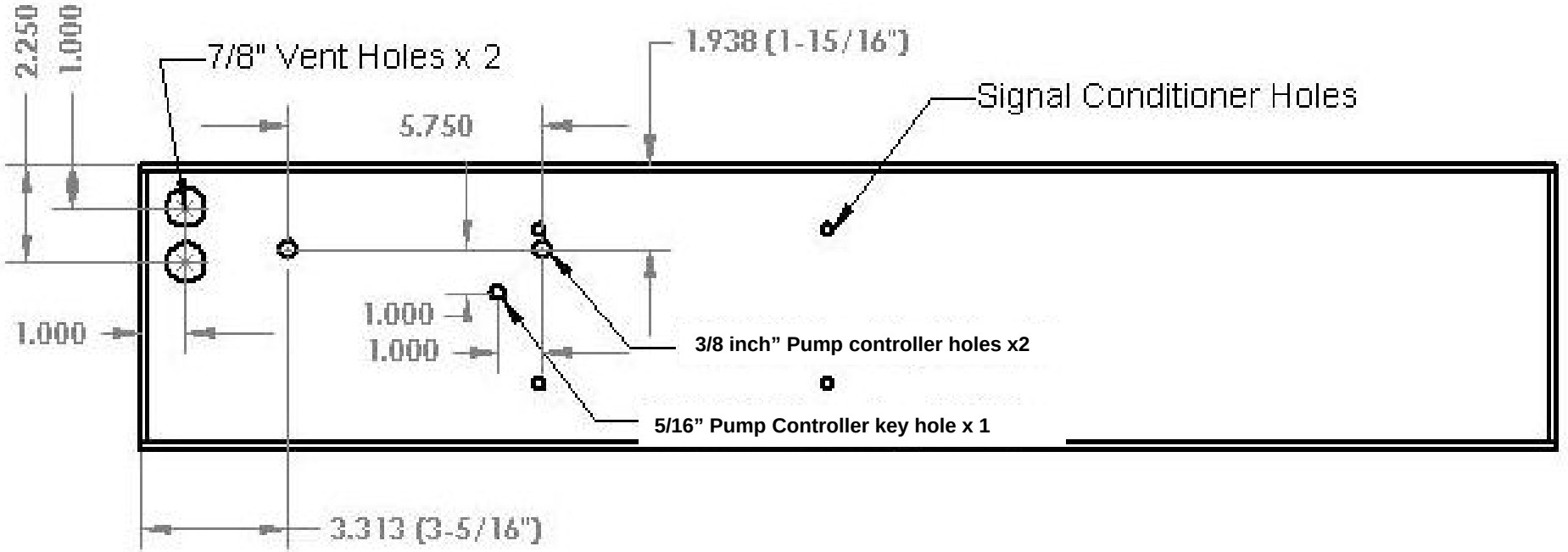


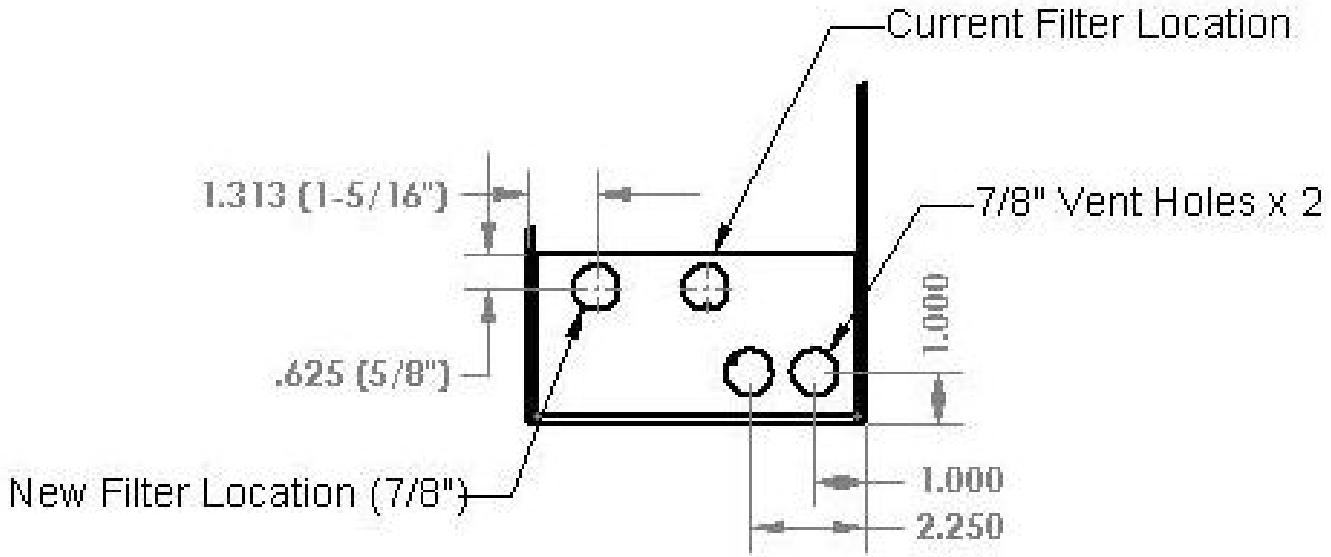
Ref	Description	Part#	Qty
1	Power lead tractor	006-5650A	1
2	Power lead baler	006-5650B	1
3	Communication harness (baler)	006-5650D	1
4	Communication harness (tractor)	006-5650C	1
5	Ram mount	001-2012H	1
6	Terminating resistor	006-5650Z	2
7	Precision information processor	006-5671LS	1
8	Pump controller harness	006-5650F	1
9	End of bale sensor	006-7400	1
10	Pump controller	006-5672	1
11	End of bale sensor bracket	001-4648	1
12	Display	006-5670	1
13	Bale rate sensor	006-7303S	2
14	Moisture and bale rate harness	006-7303H	1

TIPS



Ref	Description	Part #	Qty
1	Poly Tip	004-80067-PT	2
2	Turbo Tip	004-TT11001VP	2
3	Turbo Tip	004-TT110015VP	2
4	Turbo Tip	004-TT11003VP	2


2.250
1.000
7/8" Vent Holes x 2
1.938 (1-15/16")
Signal Conditioner Holes
5.750
1.000
1.000
1.000
3/8 inch" Pump controller holes x2
5/16" Pump Controller key hole x 1
3.313 (3-5/16")


Current Filter Location
1.313 (1-5/16")
7/8" Vent Holes x 2
1.000
.625 (5/8")
New Filter Location (7/8")
1.000
2.250

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

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