

Installation Manual

Model 700A & 700UHD ***Moisture Sensor Kit for Large Square Balers***



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800-635-7468 • www.harvesttec.com

DECLARATION OF INCORPORATION



MANUFACTURER:

Harvest Tec Inc.
2821 Harvey St.
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Hudson, WI 54016, U.S.A.

REPRESENTATIVE ESTABLISHED IN COMMUNITY: Profitable Farming Company
Middle Barlington, Roborough
Winkleigh, Devon, EX19 8AG
ENGLAND

The person above certifies and declares that:

VIRTUAL MACHINE: Equipment mounted on a farm press and for the application of inoculants onto forage crops.

MODEL: 700A & 700UHD-20-INST-Non-AGCO - Imp&Metric

BRAND: Harvest Tec

SERIAL NUMBER:

This application preservatives for hay Harvest Tec system meets the Directive 2006/42/EC of the European Parliament and the Council of 17 May 2006 and other applicable European Directives including Directive 2004/108/EC on the Electromagnetic compatibility.

The application of preservatives for hay Harvest Tec system will be turned on after being installed on a farm press has been declared in conformity with the Machinery Directive.

Person in the community authorized to provide information on the partly completed machinery and making this statement:

Richard Snell, President, Profitable Farming Company
Signed on May 21, 2011: Middle Barlington, Roborough
Winkleigh, Devon, EX19 8AG
ENGLAND

Installation Manual Table of Contents

	<u>PAGE</u>
Introduction	4
System Requirements	4
Tools Needed	4
Installation of the Moisture Sensor Kit	5-8
Installation of Processor (IPM)	5
Main Wire Harness and Baler Interface Harness routing & Connections	6
Installation of Star Wheels – Non-UHD Baler	7
Installation of Star Wheels – UHD Baler	7
Installation of End of Bale Sensor	8
Tractor Setup	9
Display Options	9
Optional Tablet Display	10
Optional Baler VT Integration	11
Baler Display Integration	11
Baler Monitor Setup	12-14
Baler Monitor Setup – UHD Baler Only	15
Selecting the 700 Series Preservative Applicator	16
Wiring Diagram	17
Pin Outs	18-20
Parts Breakdown	21-22
Star Wheel Sensors, Twine Diverters & Moisture Harness	21
Control Box & Wiring Harnesses	22
End of Bale Sensor Kit	22
Warranty	23

Introduction

Thank you for purchasing a Harvest Tec moisture monitor system. This moisture monitoring system has been designed to be operated through a number of different displays and tablets using the Precision Baling App. These include, the Harvest Tec display, the baler's ISOBUS and display on the baler monitor, or iOS/Android Tablet (not included).

The 700 Series Moisture System is designed to show moisture through the baler's ISOBUS. Failure to follow instructions can result in personal injury or equipment malfunction. If you need parts for the system, please view the Parts Breakdown toward the back of this manual and contact your local authorized dealer to order the parts.

System Requirements



**The Baler Processor must have Version 3.3 or higher.
C1000 monitor must have Version 3.0.1 or higher
If equipped with the SBM, the SBM must have Version 4.0 or higher.**



****Made for Harvest Tec Display, Baler Integration, or Tablet****
For best performance ensure all displays are running the latest operating system

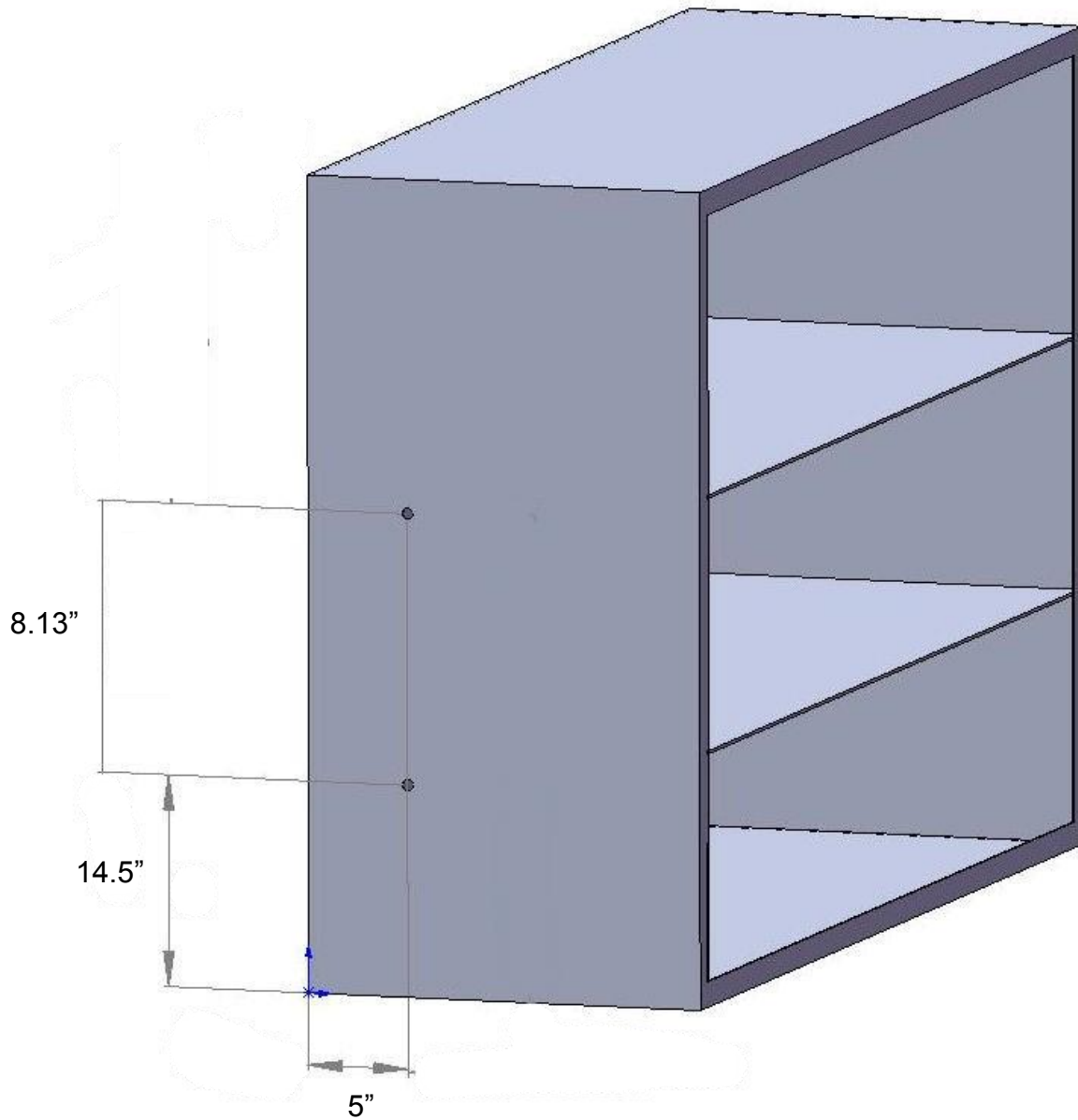
Tools Needed

Standard Wrench set
Electric drill and bits
Side cutter

Standard Socket Set
Hammer
Center punch

Installation of the Processor (IPM) on standard balers

Follow the instructions below to mount the Main Processor (IPM) onto your baler. The locations shown are on the right twine box (looking from the back of the baler). Mark and drill the two 3/8 (10mm) holes and install the (IPM) with two 5/16 x 1 bolts, four 1/4" washers, and two 5/16" nylock nuts. Main harness whip coming out of (IPM) should point to the ground. When attaching other harness make sure to loop them below the (IPM) so as not to funnel water into the control.



Main Wire Harness and Baler Interface Harness Routing and Connections



A. Route harness 006-765B along this path or similar inside of the baler. Keep harnesses away from moving parts and hydraulic hoses. Secure with existing cable clamps or use cable ties. When all connections are made to the IPM secure wires as shown above.



B. Under the chamber locate the Active Terminator from the end of the baler harness. It is located beneath the right rear corner of the baler frame. Attach Baler Interface Harness (006-765VA) to that location. Reconnect Active Terminator to open port of that same harness (006-765VA). If your baler does not have a Terminator at this location, please call Harvest Tec.

If your baler has the White Terminating Resistor you will need to attach the Pre 2012 AGCO Integration Harness (006-6650VAX) to the end of the Baler Interface harness (006-765VA). Please contact Harvest Tec for this harness. This style terminator may be next to the Baler's Main Processor.

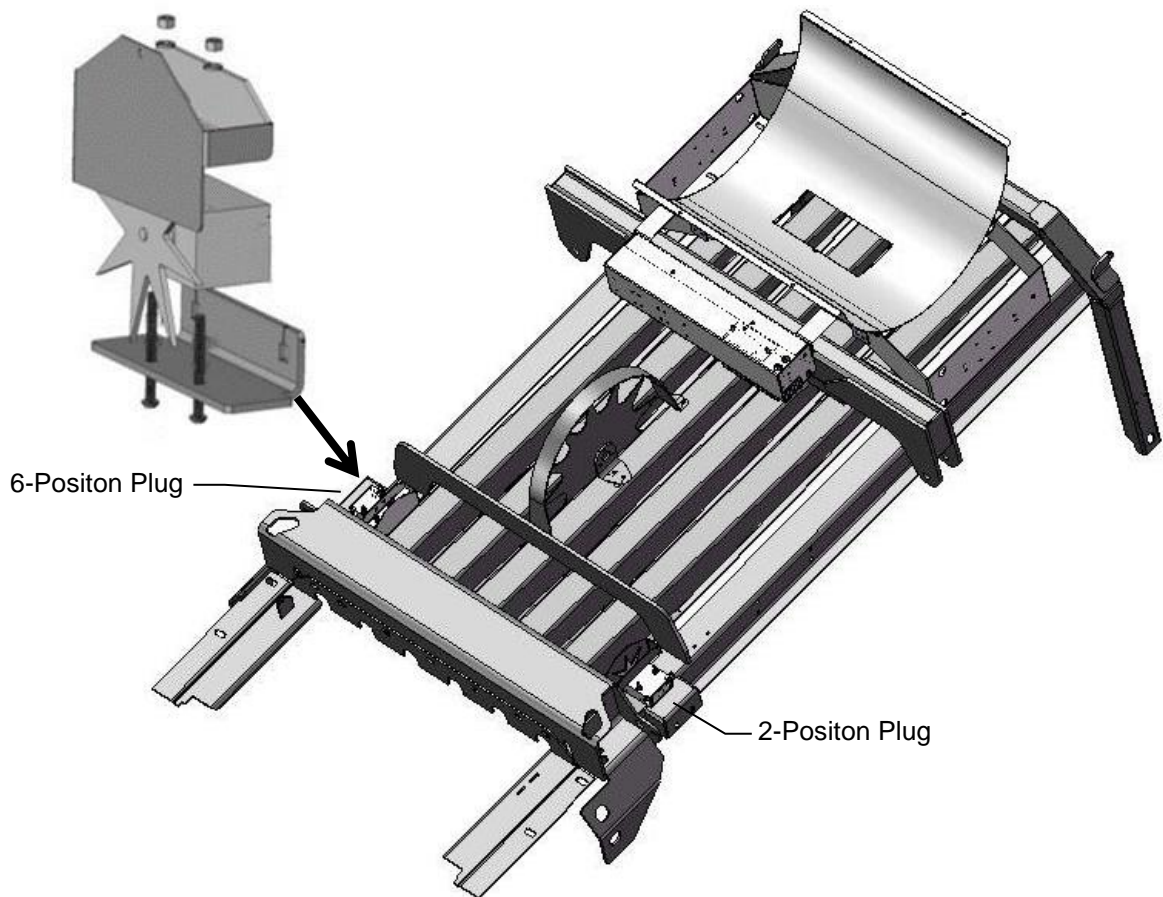


UHD Baler ISOBUS Integration Connection

Beneath the right rear chamber locate the harness labeled (LHR-C72 ISOBUS Term). It is located at the right rear corner of the baler frame. Attach Baler Interface Harness (006-765VA) to that location

Installation of the Star Wheels – Non-UHD Balers

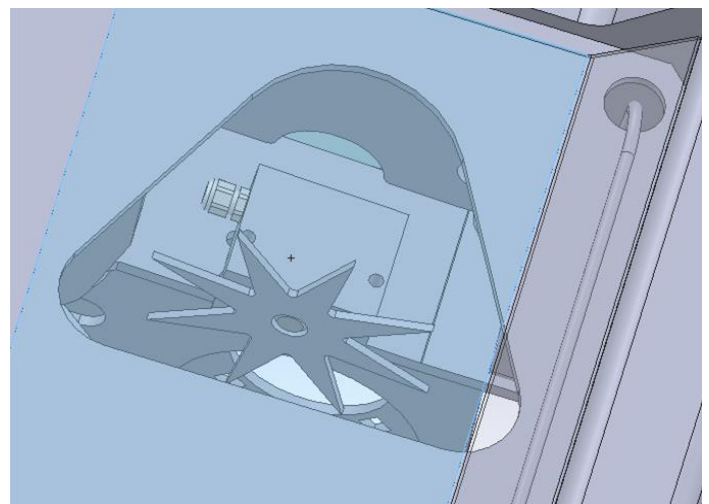
Locate parts bag E and mount star wheels on top of the baler, just behind the knotters and under the walkway on both sides. The notch and holes for the star wheel are precut, secure the star wheels with 5/16" x 3" BHCS (x2 each side) from the bottom. Blocks are dropped down on the bolts and secured in place with the star wheel twine guards (001-4645, 001-4644). Verify that star wheels align with bale chamber before tightening down all hardware. Connect star wheel harness (006-7307EM2) to the star wheels and route back to IPM on the side twine box. Attach to square plug on bottom of IPM control module installed on side twine box



Star Wheel Mounting – UHD Balers

Locate parts bag E. The star wheels are to be mounted on top of the baler, just behind the knotters and under the walkway on both sides. The holes for the star wheel are precut. Remove the plate on top of the catwalk covering the triangle shaped access cutout. Place star wheel over the predrilled holes on both sides of the bale chamber, (shown below).

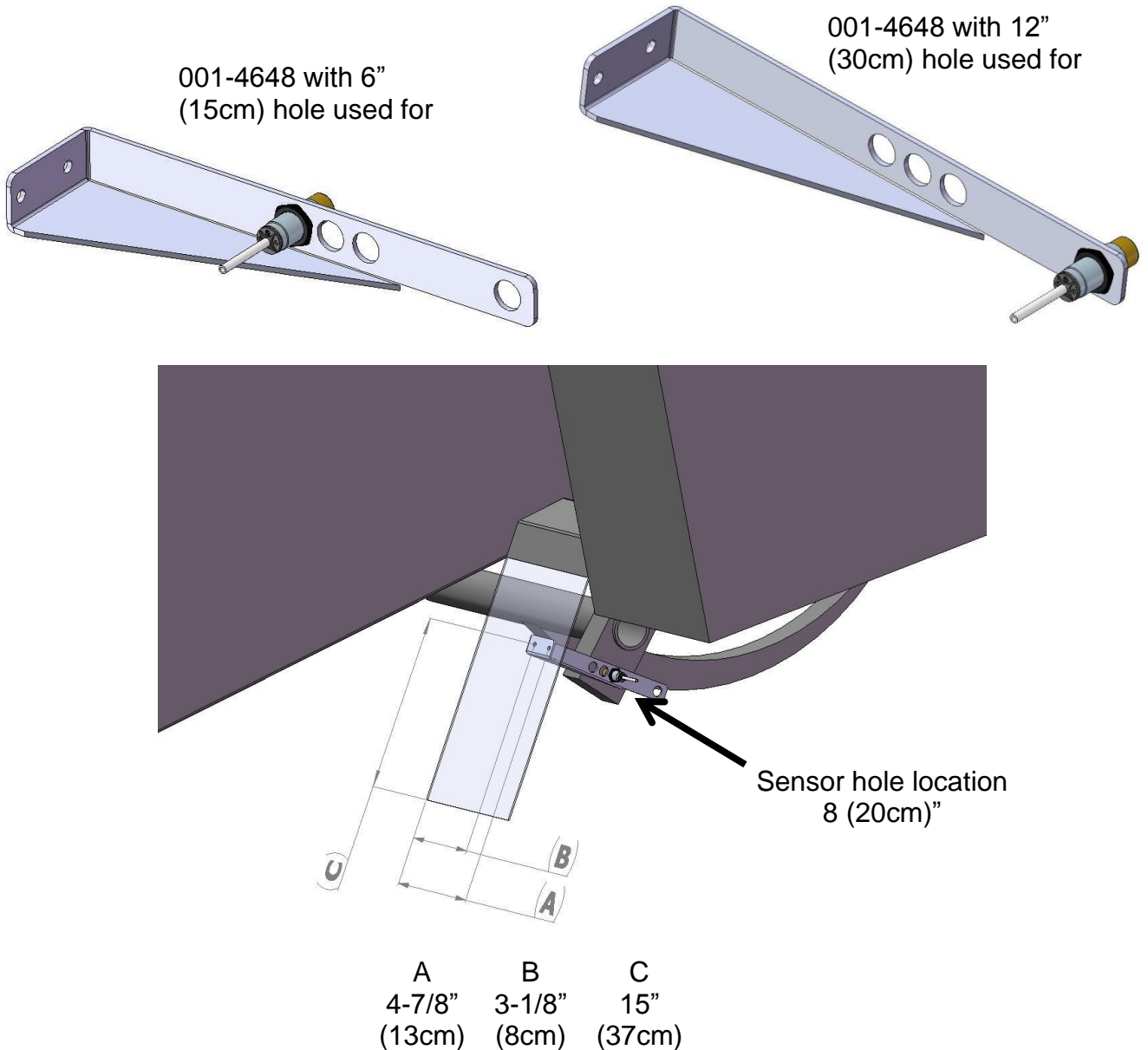
Secure the star wheels with 5/16" x 3" BHCS (x2 each side) from the bottom side. Blocks are dropped down on the bolts and secured in place with the star wheel twine guards (001-4645, 001-4644). Connect star wheel harness (006-7307EM2) to the star wheels and route to the IPM. Attach to square plug on bottom of IPM control module installed on side twine box.



Installation of End of Bale Sensor

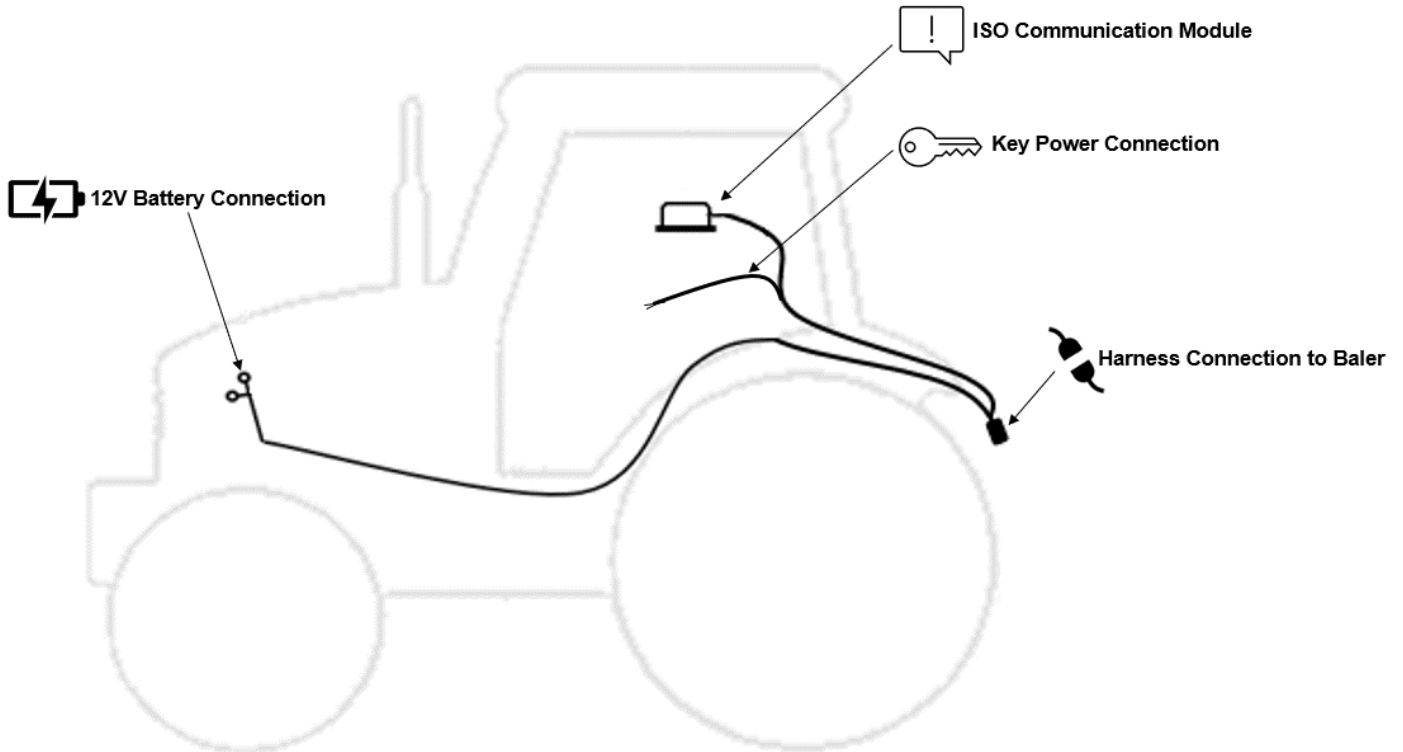
The end of bale sensor determines the position of the needles on the baler. When the needles cycle the sensor communicates this information to the Dual Channel Processor. This information is used for job records and will be used by the optional Bale Identification systems. Follow the steps below to mount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





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



Mount the end of bale sensor bracket (001-4648) as shown in the 8" (20cm) hole position. Mark and drill two 3/8" (10mm) holes and attach the bracket using two 5/16" x 1" self-tapping screws, and 5/16" flange nuts. Mount the sensor in the 8" (20cm) hole location, keep the sensor 1/4" (7mm) from the needle arm and tighten both nuts. Cut off excess metal past the sensor. Run the sensor cable up to the main harness (006-765B). Attach to the plug labeled EOB.

Tractor Setup



	12V Battery Connection	<p>The 12V battery connection must be at the tractor battery. Connection to alternative locations such as an accessory port can cause problems with applicator system.</p> <p>*MUST BE CONNECTED DIRECT TO TRACTOR BATTERY TERMINALS*</p>
	ISO Communication Module	<p>The ISO communication module is to be mounted inside the cab. Other mounting locations can lead to issues with weathering and operation. Once installed and the system is powered, a green light will turn on the ICM module.</p>
	Key Power Connection	<p>Ensure a solid keyed connection is found inside the cab and wired into. Poor keyed power connection can result in applicator system issues.</p>
	Harness Connection to Baler	<p>The tractor harness connects at the hitch to baler power/communication harness (006-765B). This will allow the system components to communicate with one another. Ensure connections are debris and corrosion free.</p>

Display Options

Optional Harvest Tec Display



The 700 series Harvest Tec Display will allow you to set your real time baling parameters to ensure the most precise application to every bale. This is done by utilizing the improved touch technology to select objects, enter data, and swipe through operational screens.

The Harvest Tec Display offers easy integration by connecting to the additional CAN plug on the 006-765IC harness. Once, connected the Harvest Tec display will power up with applicator system.

Note: The Harvest Tec Display must be used as a standalone display, the baler cannot run both integrated and on the Harvest Tec Display. Must be one or the other. Removal of the 006-765VA or 006-765VAU (UHD balers) integration harness is required when equipped.

Optional Tablet Display



The iOS or Android Tablet displays offer the ability to communicate with the 700 series applicator system via hard-wired connection to the ISO Communication Module (ICM). Through the free Precision Baling App, the operator can set real time baling parameters to ensure the most precise application to every bale. This provides a multi-use option while utilizing the improved app to select objects, enter data, and easily switch through operational screens.

The Tablet Display offers easy integration by connecting a charging cable to the USB port on the ICM module (USB port closest to LED light). Once, connected the Harvest Tec applicator will display upon opening the app and powering up the applicator system. Tablets can be used in addition to integrated baler VT display.

***Made for iPad® (3rd generation minimum) or Android Tablet (Does not work with Amazon Fire).**

*iPad is a trademark of Apple Inc., registered in the U.S. and other countries.

Optional Baler VT Integration



The 700 series integration to the Baler VT allows for the ability to set your real time baling through the baler VT and monitor both baler settings and Harvest Tec system parameters on one screen to ensure the most precise application to every bale.

The 700 series offers easy integration by connecting to the additional CAN plug on the 006-765B harness. Once connected the Harvest Tec system will display with power up of the baler and applicator system.

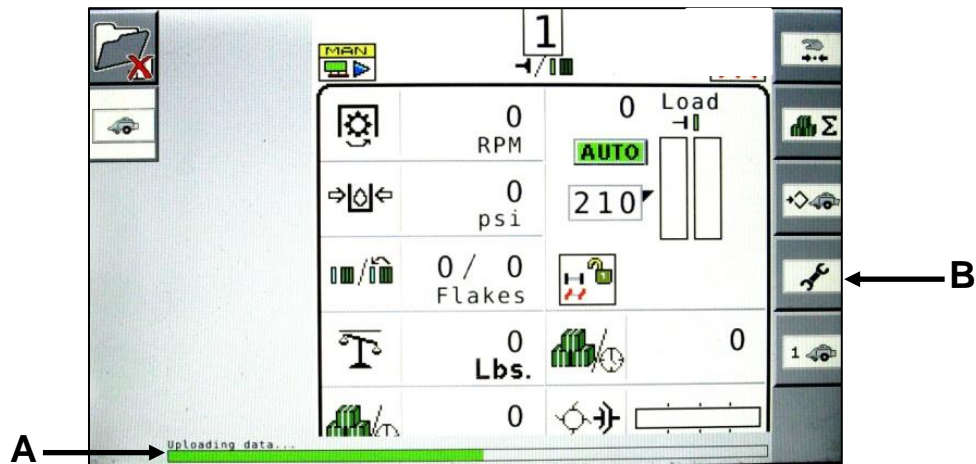
Baler Display Integration

The ISOBUS Monitor utilizes a combination of soft keys, number menus, and the scroll wheel on the upper right side of the actual monitor to make selections. Selections are made by scrolling the Thumb Wheel and pressing in once the selection is highlighted. All buttons are labeled and color coded.

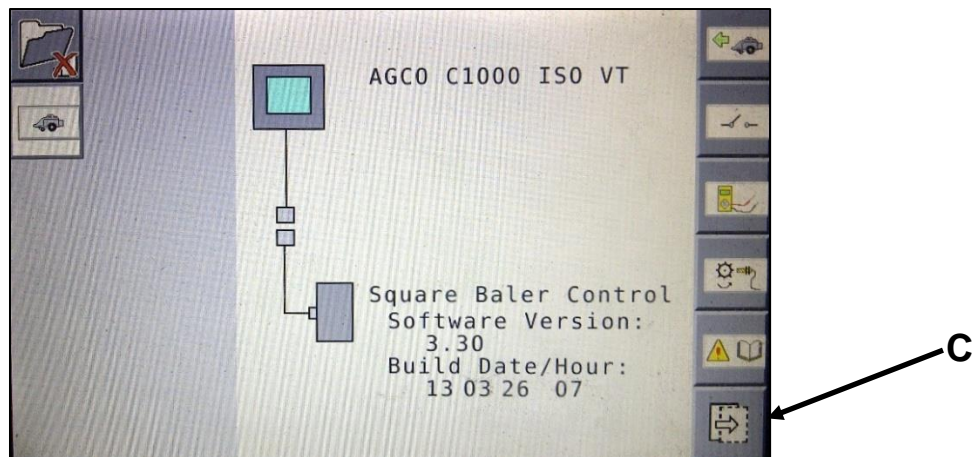


Baler Monitor Setup

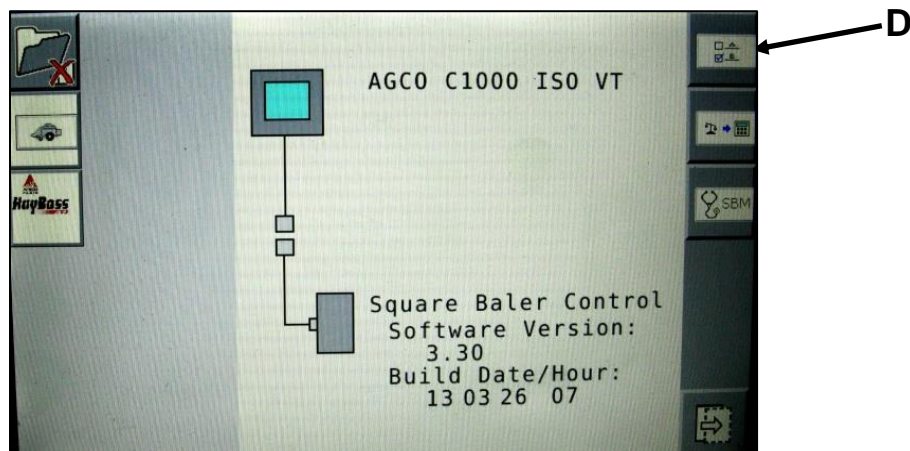
At any time after the initial Start Up/Power On the green “uploading data status bar (arrow A) may begin to fill. However, due to software version changes a status does not appear on all monitors. To begin setup of the HayBoss Preservative Applicator System select the fourth icon down on the right screen menu-the wrench icon (arrow B).



The service screen displayed below will appear. Here you can see the Version of Software for your baler which should be 3.30 or higher to enable working with the Preservative Applicator. Select the icon (arrow C) located at the bottom of the right selection menu to move to the next options menu.

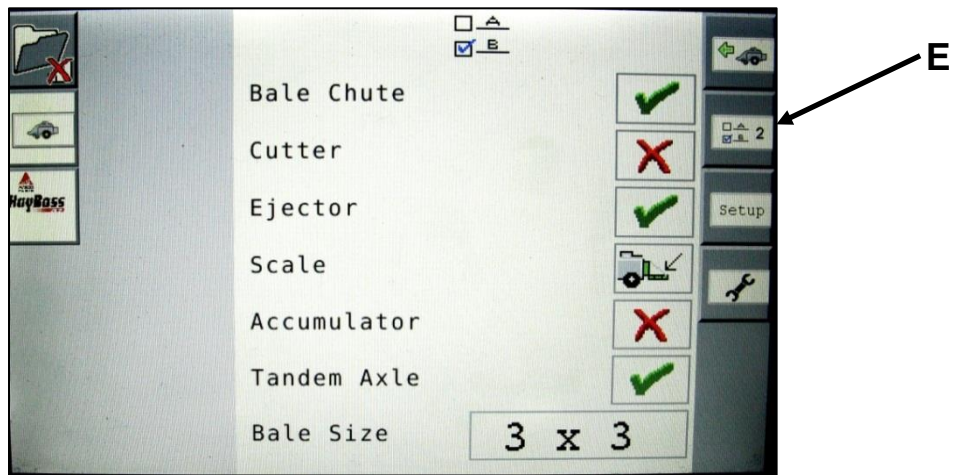


Then select the 'A B' icon (arrow D) on the right side, this should be the top button.

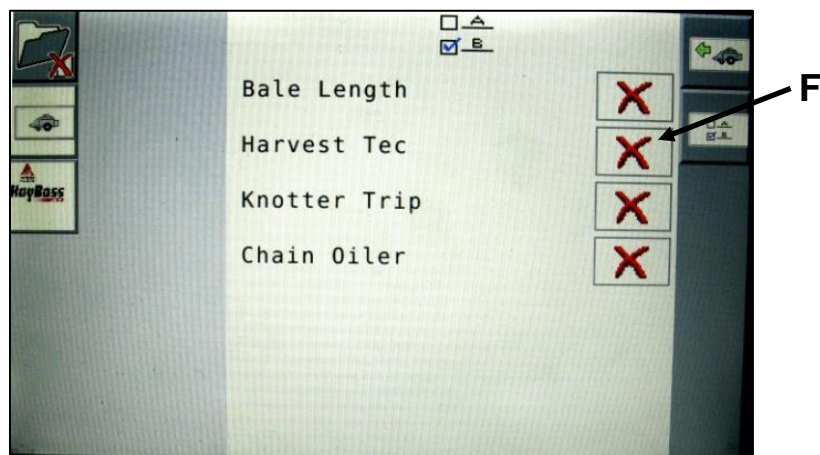


Baler Monitor Setup (continued)

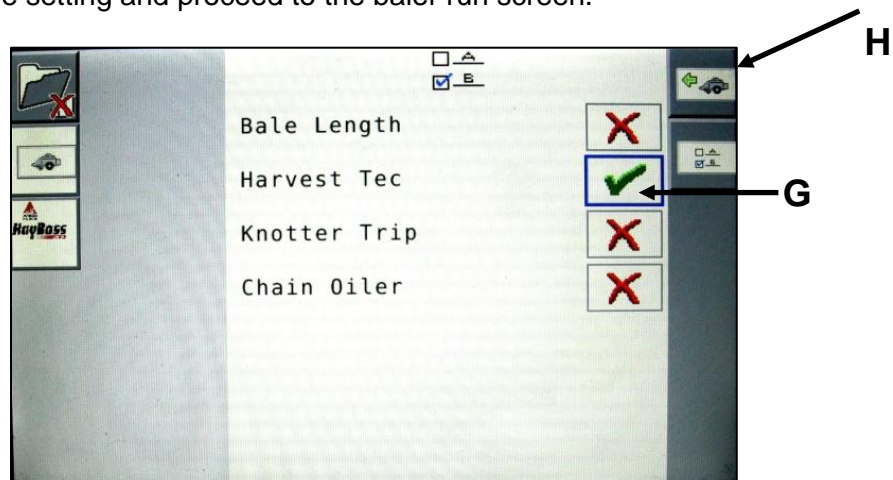
Then select the 'A B 2' icon (arrow E) on the right side to enter the next baler options screen.



Use the thumb wheel to scroll and select the Harvest Tec Option (arrow F). Press the scroll wheel to open the drop-down menu.



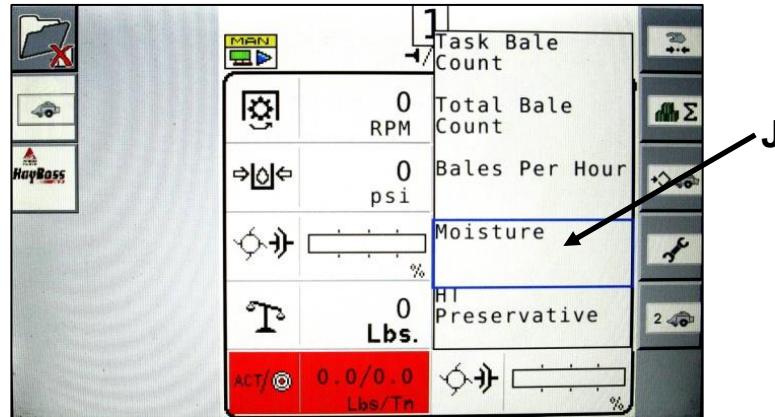
Select the green check mark to turn the Harvest Tec option ON (arrow G). Then select the Baler Run Screen button (arrow H) to save the setting and proceed to the baler run screen.



Baler Monitor Setup (continued)

Use the scroll wheel to select a container option on the baler run screen. Harvest Tec information can be displayed in any container on the baler run screen. Press the scroll wheel to open the drop-down menu and scroll to select the option and press the scroll wheel to select it.

This will place the “Instantaneous” and “Last Bale” moisture values in this position on the screen.

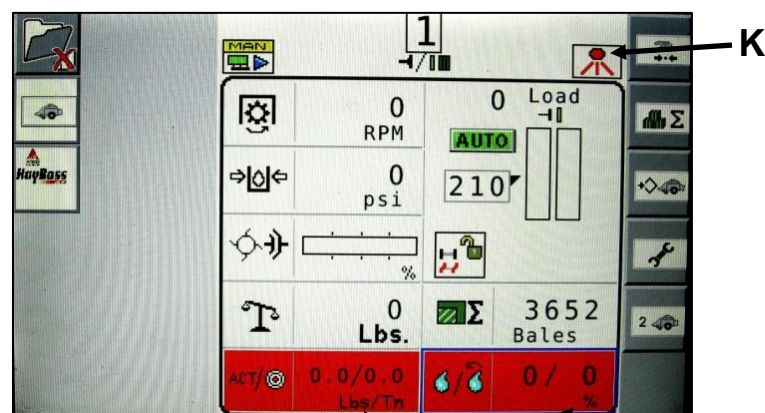


Once the and moisture option is selected, the containers should show with a red background.

The moisture information is denoted by a rain droplet for instantaneous and a rain drop with a back arrow above for the last bale average moisture. These values are separated by a slash. And a preservative sprayer icon will show in the top right corner of the screen (arrow K).

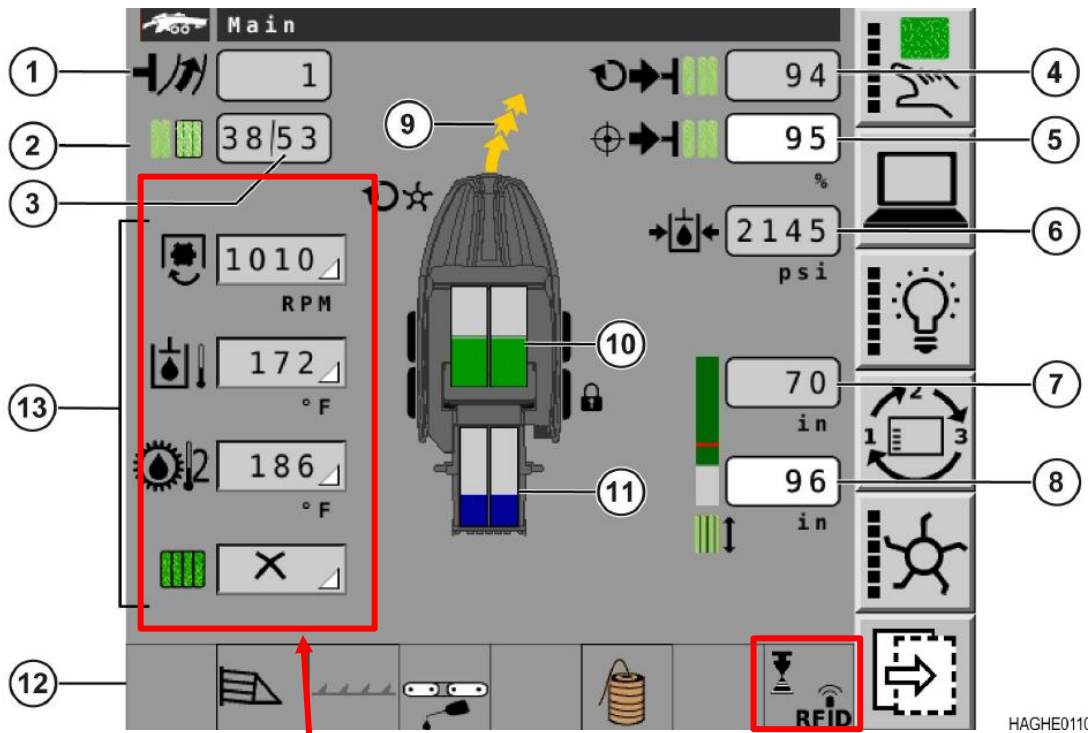
****NOTE:** When the preservative sprayer icon is RED, the preservative system is not in a run mode (Auto or Manual). When the system is in a run mode, the icon will be GREEN. The HT Preservative and Moisture containers will have RED background when the system in not in a run mode.

The background for the preservative and moisture container will be WHITE, matching the rest of the baler run screen when the system is in Auto or Manual mode.



HT Preservative and Moisture Containers

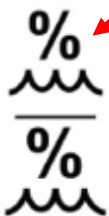
Baler Monitor Setup / View – UHD Baler Only



These four containers can be configured by the operator. In the selectable list are the items for your system. They are Current moisture, average moisture, applicator target rate, and applicator actual rate. When moisture is above your alarm setpoint it will show the moisture value with a red background.

This container is reserved for the moisture system. It shows the tagger status and applicator status. When moisture is above the set point, it will turn the background red and show the percent moisture icon in the upper right corner.

Background turns red when system is on main work screen. The icon will blink when the system is paused.



Current Moisture

Average Moisture



Preservative Applicator Target Rate

Preservative Applicator Actual Rate



Moisture System On. The icon will flash when the system is paused



Moisture System Off



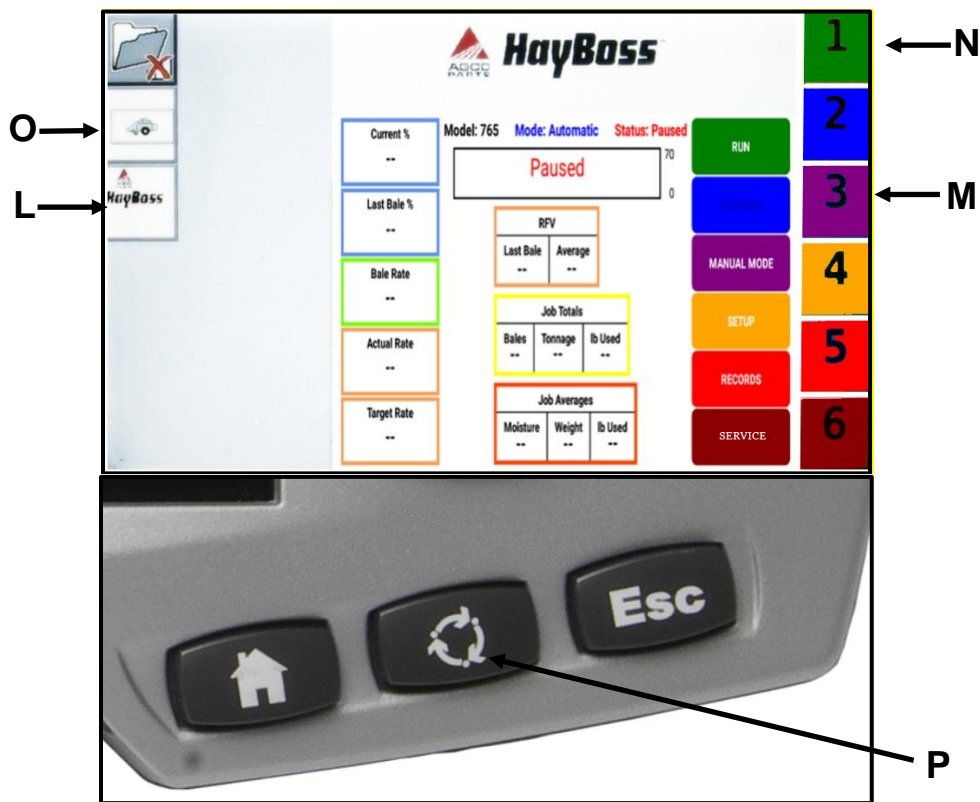
Tagger Installed and On. This icon will flash when a tag is applied. A percent (%) symbol will display if a bale moisture goes over the set limit.

Selecting the 700 Series Preservative Applicator

The soft keys down the left side of the monitor correlate with choosing connected implements or files. Depending on your specific situation this could show your tractor, camera, baler, or the HayBoss Preservative Applicator System, among others. To enter the HayBoss menu screens, select the soft key next to the HayBoss icon (Arrow L). Once the HayBoss option has been selected, the Main Menu screen will show as seen below.

The numbered and colored soft keys on the right side (1-6) correlate to the selection options on the screen. For example, Manual Mode is PURPLE, this correlates to the PURPLE number “3” soft key option on the right side (Arrow M). So, to enter Manual Mode, the scroll wheel can be used to select the button or the soft key next to the PURPLE number “3” option can be pressed. To return to the baler work screen select the baler icon (arrow O).

The cycle button (Arrow P) can be used to toggle between connected implements. This is located at the bottom of the monitor next to the Home and Esc buttons.



Wiring Diagram – 700 Series

1. Connect the power harness (006-7651C) to the tractor 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!

CONTACT HARVEST TEC BEFORE MODIFICATIONS.

The unit will draw more amps than convenience outlets can handle. Any modifications of the power harness will void systems warranty

B. This unit will not function on positive ground tractors.

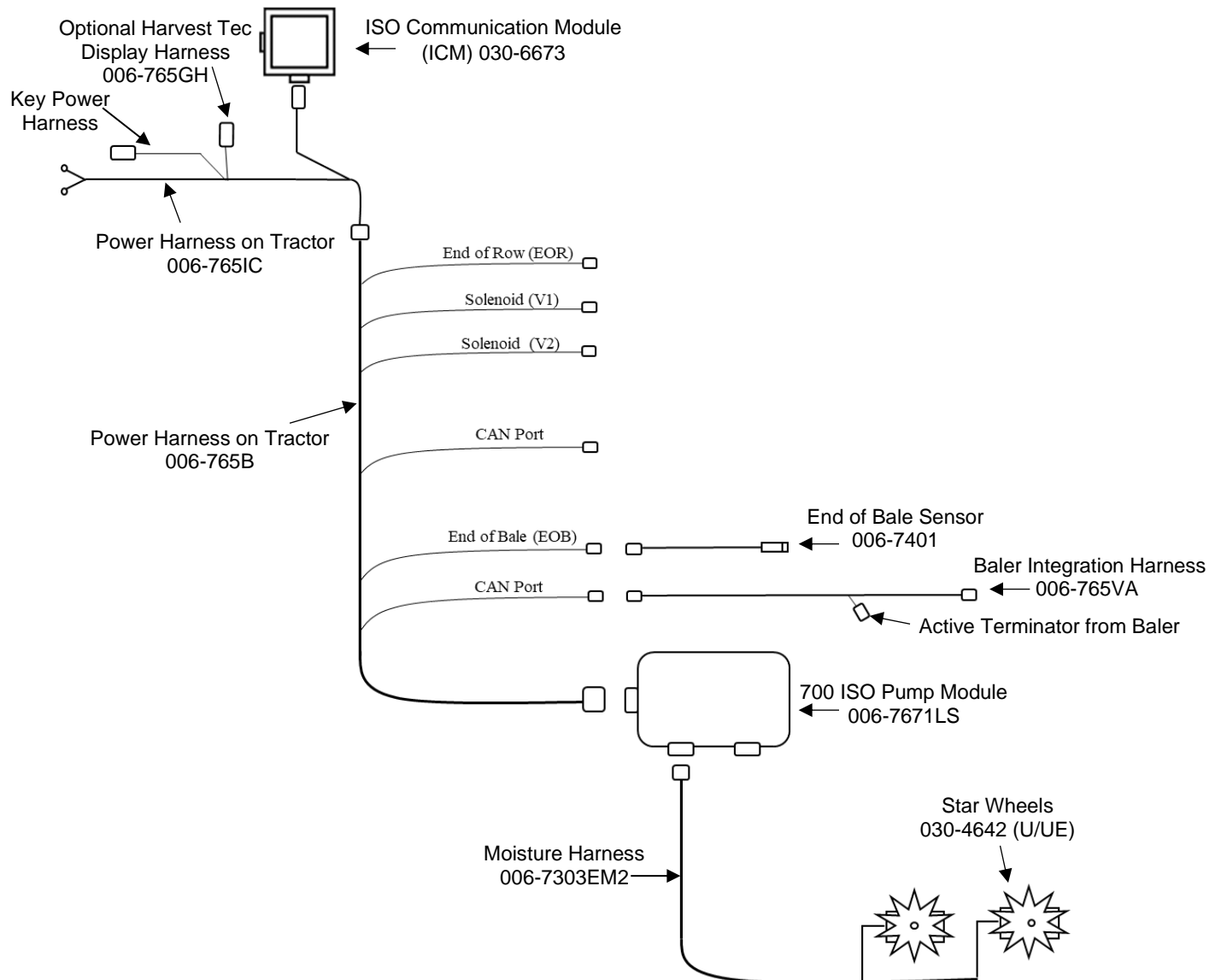
C. If the unit loses power while operating it will not keep track of accumulated pounds of product used.

2. The power harness on the tractor (006-7651C) will run from the tractor battery to the hitch. The power harness on the baler (006-765B) will connect to the tractor power harness (006-7651C) at the hitch.
3. Connect the red keyed power wire (006-765CPH) to a keyed power source on the tractor. Connect the black keyed power wire to ground.

The keyed power wire must connect to a keyed source or the unit will not power up correctly.

4. Attached the ISO Communication Module (006-6673) to the tractor power harness (006-7651C).
5. Attach the End of Bale (EOB) connection on baler harness (006-765B) to the EOB Sensor (006-7401).
6. Attach star wheel (030-4642 U/UE) connection to ISO Pump Module on pump plate assembly.

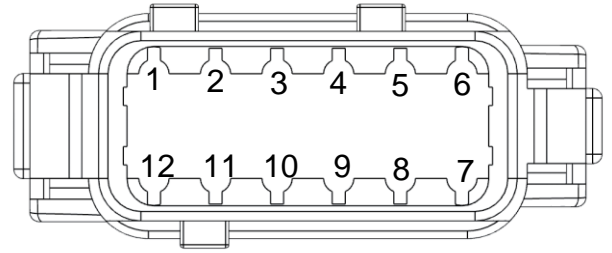
System Wiring Diagram



Pin Outs

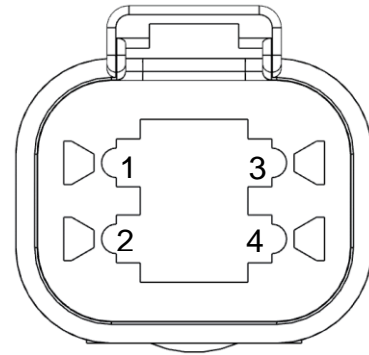
Integrated Control Module (ICM) on harness 006-765IC (Deutsch Plug Number: DTM06-12SA)

Pin 1	Red	+12V from ECU
Pin 2	Purple	Signal Wire
Pin 3	Red/White	+12V CAN X
Pin 4	Black/White	Ground CAN X
Pin 5	Orange	CAN X Hi
Pin 6	Blue	CAN X Lo
Pin 7	Green	ISO CAN Lo
Pin 8	Yellow	ISO CAN Hi
Pin 9	White	GPS Expansion 1
Pin 10	Gray	GPS Expansion 2
Pin 11	Brown	GPS Expansion 3
Pin 12	Black	Ground from ECU



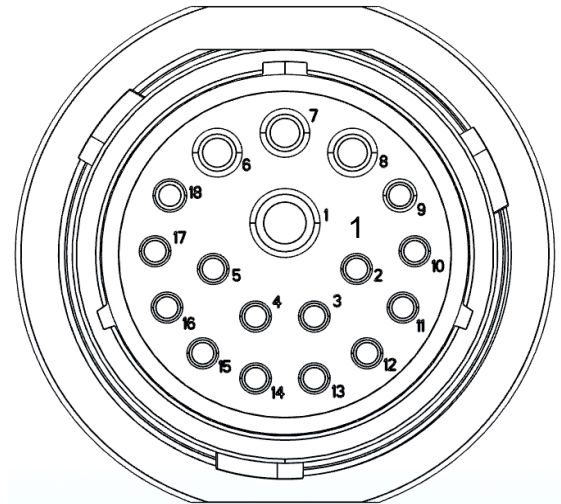
ISOBUS Plug on harness 006-765IC (Deutsch Plug Number: DT04-4P)

Pin 1	Red	+12V from ECU
Pin 2	Yellow	ISO CAN Hi
Pin 3	Green	ISO CAN Lo
Pin 4	Black	Ground from ECU



Power / Communication Harness 006-765IC at Baler Hitch (Deutsch Plug Number: HDP24-24-18PN)

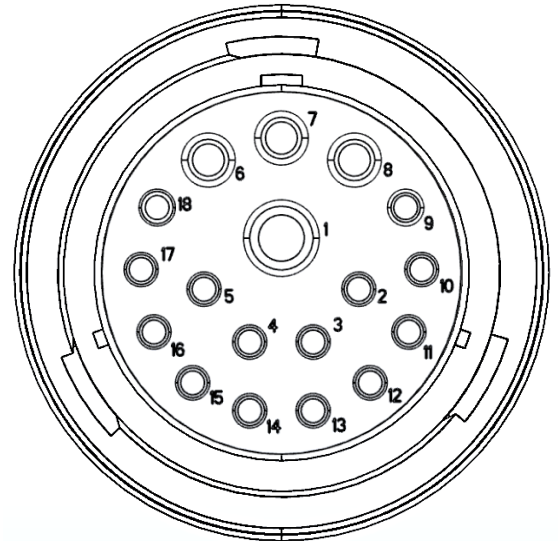
Pin 1	Not Used	----
Pin 2	Yellow	ISO CAN Hi
Pin 3	Green	ISO CAN Lo
Pin 4	Red	+12V Power to ECU
Pin 5	Black	Ground to ECU
Pin 6	Red	+12V From Battery
Pin 7	Not Used	----
Pin 8	Black	Ground From Battery
Pin 9	Not Used	----
Pin 10	Purple	Signal Wire
Pin 11	Red/White	+12V CAN X
Pin 12	Black/White	Ground CAN X
Pin 13	Orange	CAN X Hi
Pin 14	Blue	CAN X Lo
Pin 15	White	GPS Expansion 1
Pin 16	Gray	GPS Expansion 2
Pin 17	Brown	GPS Expansion 3
Pin 18	Not Used	----



Power / Communication Harness 006-765B at Baler Hitch IPM

(Deutsch Plug Number: HDP26-24-18SN)

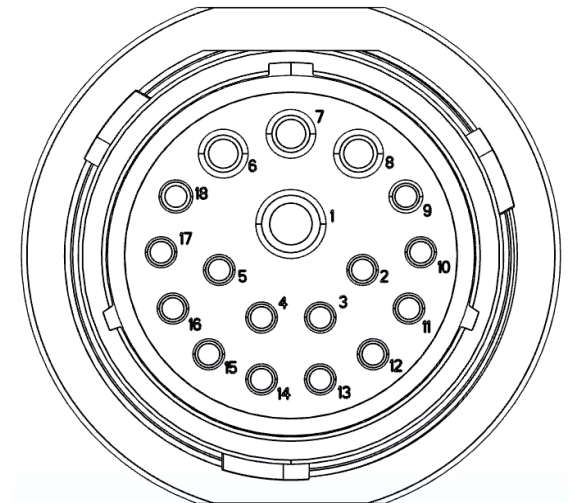
Pin 1	Not Used	----
Pin 2	Yellow	ISO CAN Hi
Pin 3	Green	ISO CAN Lo
Pin 4	Red	+12V Power to ECU
Pin 5	Black	Ground to ECU
Pin 6	Red	+12V From Battery
Pin 7	Not Used	----
Pin 8	Black	Ground From Battery
Pin 9	Not Used	----
Pin 10	Orange/White	+12V Power to EOR
Pin 11	Not Used	----
Pin 12	Not Used	----
Pin 13	Not Used	----
Pin 14	Not Used	----
Pin 15	Not Used	----
Pin 16	Not Used	----
Pin 17	Not Used	----
Pin 18	Not Used	----



Power / Communication Harness 006-765B at IPM Module

(Deutsch Plug Number: HDP24-24-18SN)

Pin 1	Not Used	----
Pin 2	Yellow	ISO CAN Hi
Pin 3	Green	ISO CAN Lo
Pin 4	Red	+12V Power to ECU
Pin 5	Black	Ground to ECU
Pin 6	Red	+12V From Battery
Pin 7	Not Used	----
Pin 8	Black	Ground From Battery
Pin 9	Not Used	----
Pin 10	Orange/White	+12V Power to EOR
Pin 11	Orange/Black	Ground to EOR
Pin 12	Purple/Green	EOR Signal
Pin 13	Blue/White	EOB Signal
Pin 14	Gray/Red	+12V Power to Solenoid 1
Pin 15	White/Black	Ground to Solenoid 1
Pin 16	Orange/Red	+12V Power to Solenoid 2
Pin 17	White/Black	Ground to Solenoid 2
Pin 18	Not Used	----



Solenoid 1 Plug on Baler Harness 006-765B

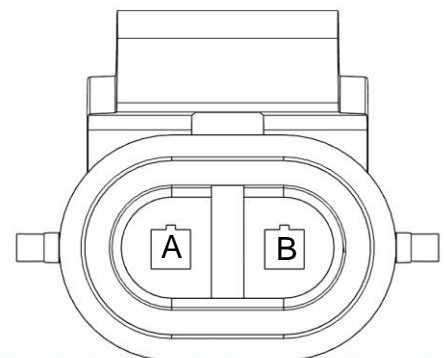
(Deutsch Plug Number: APTIV 12052641)

Pin B	Gray/Red	+12V to Solenoid 1
Pin A	White/Black	Ground to Solenoid 1

Solenoid 2 Plug on Baler Harness 006-765B

(Deutsch Plug Number: APTIV 12052641)

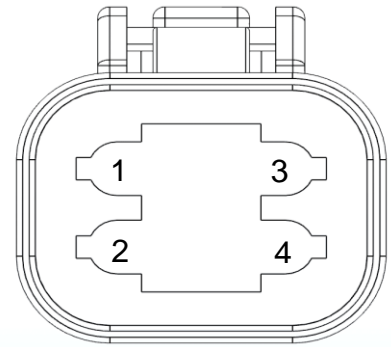
Pin B	Orange/Red	+12V to Solenoid 2
Pin A	White/Black	Ground to Solenoid 2



CAN / IDM on Baler Harness 006-765B

(Deutsch Plug Number: DT06-4S)

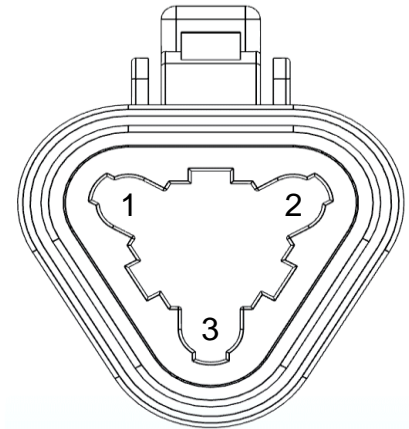
Pin 1	Red	+12V to ECU
Pin 2	Yellow	ISO CAN Hi
Pin 3	Green	ISO CAN Lo
Pin 4	Black	Ground to ECU



End of Bale Sensor Plug on Baler Harness 006-765B

(Deutsch Plug Number: DT06-3S)

Pin 1	Orange/White	+12V to End of Bale Sensors
Pin 2	Orange/Black	Ground to End of Bale Sensors
Pin 3	Blue/White	Signal



End of Row Sensors Plug on Baler Harness 006-765B

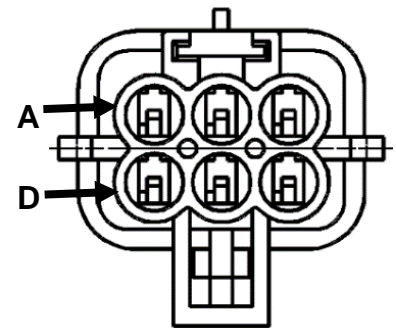
(Deutsch Plug Number: DT06-3S)

Pin 1	Orange/White	+12V to End of Bale Sensors
Pin 2	Orange/Black	Ground to End of Bale Sensors
Pin 3	Blue/White	Signal

Integration Harness Plug on Baler Harness 006-765VA

(Plug: APTIV 12052848)

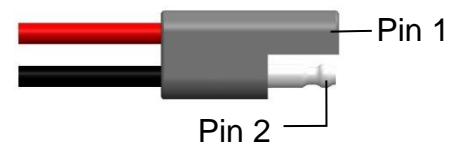
Pin A	Not Used	----
Pin B	Red	TBC Power
Pin C	Not Used	----
Pin D	Gray	TBC Ground
Pin E	Orange	CAN Hi
Pin F	Blue	CAN Lo



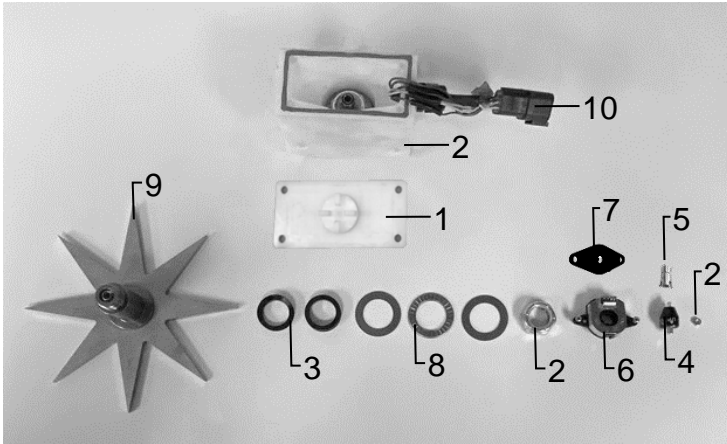
Pump Connection on 700 Controller Harness

(16 AWG Two-Wire Plug)

Pin 1	Red	Power to Pump
Pin 2	Black	Ground to Pump

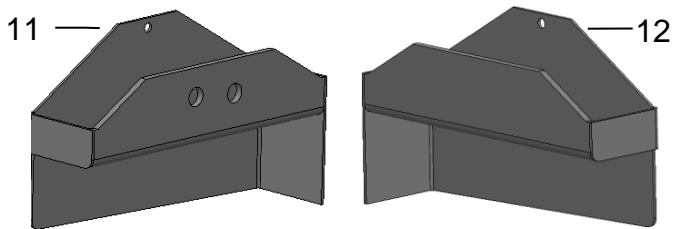


Star Wheel Sensors



<u>Ref</u>	<u>Description</u>	<u>Part#</u>	<u>Qty</u>
1	Block Cover	006-4642UC	1
2	Star Wheel Block	006-4642UB	1
3	Star Wheel Gasket	006-4642UG	1
4	Electric Swivel	006-4642A	1
5	Swivel Insert	006-4642B	1
6	Encoder	006-4512E	1
7	Encoder Mount	006-4512P	1
8	Washers	006-4642K	1
9	Star Wheel	006-4642US	1
10	Encoder Harness (6 pin)	006-7307EM	1
NP	Moisture Harness (2 pin)	006-7307M	1
1-10	Star wheel assembly (w/ Encoder)	030-4642UE	1
1-5 8,9,NP	Star wheel assembly (w/o Encoder)	030-4642U	1

Twine Diverters



<u>Ref</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
11	001-4644H	002-9001	30ft
12	001-4645H	002-9016	6ft

Moisture Harness



<u>Ref</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
13	Moisture Harness	006-7307EM2	1

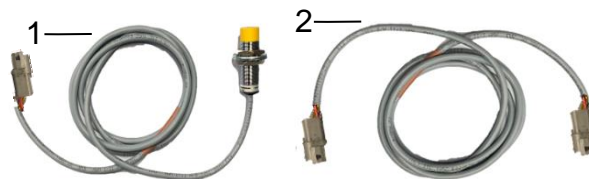
Control Box and Wiring Harnesses



<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	Power Lead Baler 20'	006-765B	1	NP	Baler Integration Harness	006-765VA	1
2	Power lead tractor	006-765IC	1	NP	Dust Plug Kit	006-765DP	1
3	Key Switch Wire	006-765CPH	1				
4	ISO Pump Module	006-7671LS	1				
5	ISO Communication Module	006-6673	1				

AGCO 2100 Series Baler-Pre 2012 will need 006-6650VAX

End of Bale Sensor Kit



<u>Ref</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	End of Bale Sensor	006-7401	1
2	End of Bale Ext.	006-7401EXT	1
	Complete Assembly	EOB-LS-STD	

Harvest Tec Inc. 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. If it is determined that a non-Harvest Tec branded hay preservative has been used inside the Harvest Tec applicator system where the failure occurred, then Harvest Tec reserves the right to deny the warranty request at their discretion. 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 4/17

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