Installation Manual

Model 700J

Moisture Sensor Kit for John Deere Large

HARVEST TEC

Equipment and Products for Quality Hay.™

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

DECLARATION OF INCORPORATION

MANUFACTURER: Harvest Tec Inc.
2821 Harvey St.
P.O. Box 63
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: 700J-INST-20-Imp&Metric
BRAND: Harvest Tec
SERIAL NUMBER:

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

The application of preservatives for hay Harvest Tec system will be turned on after being installed on a farm press has been declard 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

Table of Contents

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 balers 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 must have Software Version 2.0.7 or higher
GreenStar 4th Generation Arm Command Display must have version 8.10.2393-23

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	Side cutter	Hammer
Electric drill and bits	Standard Socket Set	Center Punch

Installation of the Processor (IPM)

The locations shown are on the right twine box (looking form 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.
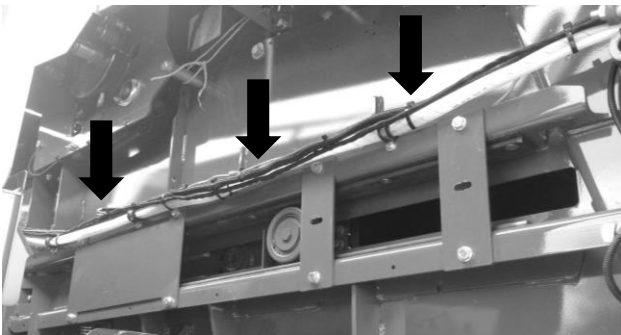
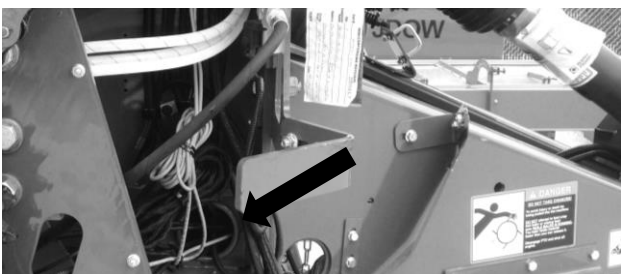## Main Wire Harness and Baler Interface Harness Routing and Connections

### John Deere L330 / L340 Balers Harness Routing and ISOBUS Connection

Route cords 006-765B2 along this path. Keep cords away from moving parts and hydraulic hoses. Secure with existing cable clamps or use cable ties. When all connections are made, secure wires as shown.

Route harness from IPM and ICM as shown in picture left, secure with cable ties.

Route ISO Integration Harness (006-765VA) to opposite side of baler through support cylinder as shown in picture left.
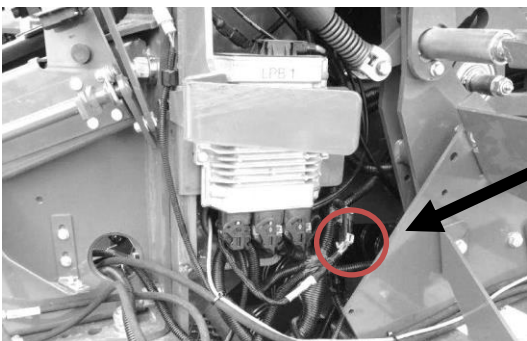
Locate harness 006-765VA and connect to baler interface harness next to baler's processor (below) on front left side of baler.

Remove baler terminating resistor and connect to short pigtail on 006-765VA Harness.

Star Wheel Installation

Remove any material from the bale chute. The star wheels are to be mounted on the transition bracket on both sides of the bale chute located after knotters shown above. Holes have been installed at the factory, however you need to remove bracket and cut 3/4" (19mm) off the bracket as indicated below to allow proper spacing for star wheel assembly.

Once complete, touch up with spray paint to prevent rusting and place the carriage bolts that mount the transition bracket back in original bracket mounting holes (A) before mounting star wheel assembly (C). Insert the 5/16" x 3" Allen head bolts (B) up through the transition bracket. Place the star wheel block over the nuts. Place twine guard on top of star wheel (D).

Cut 3/4" Off Bracket

D

C

A

B
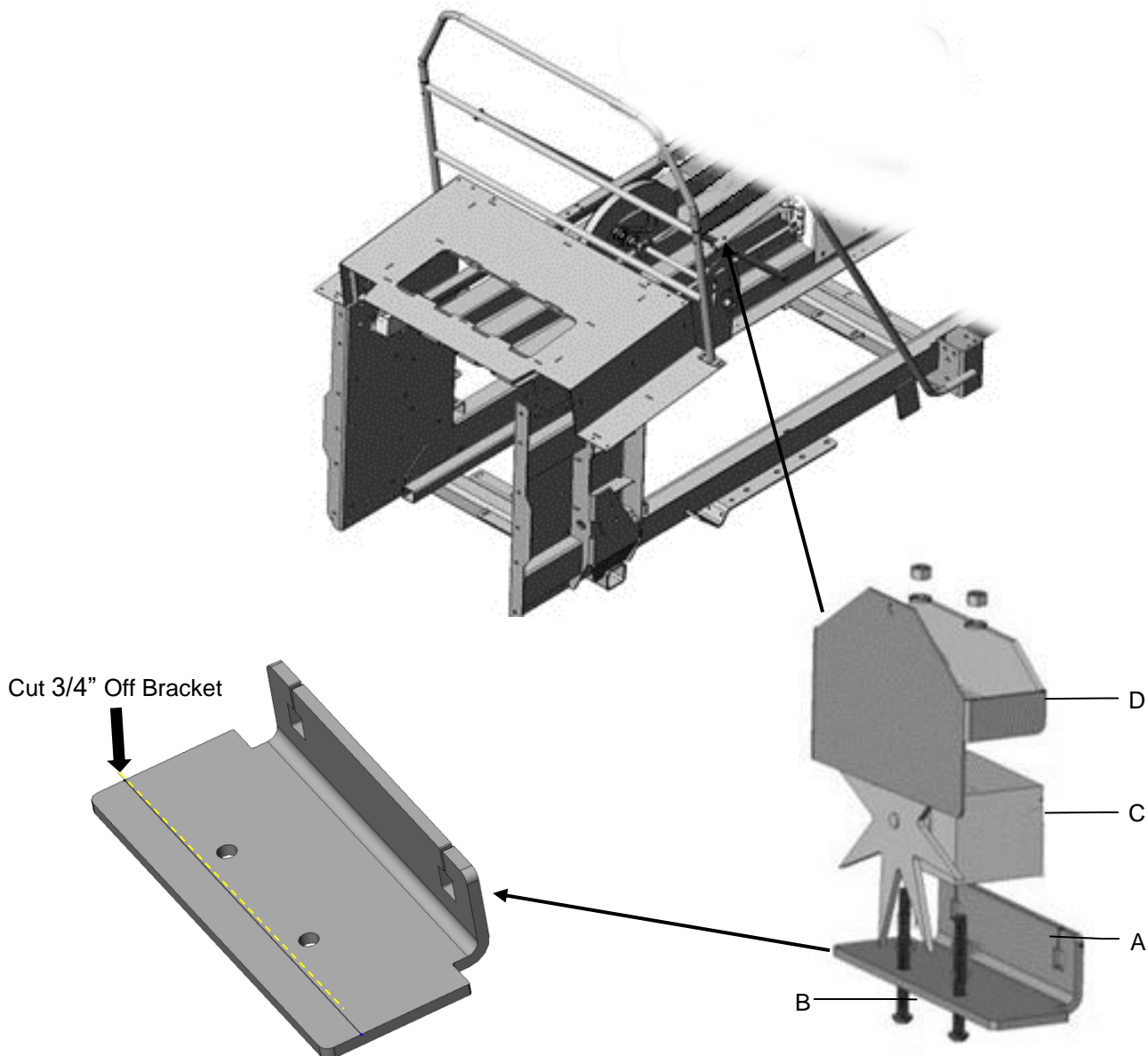
Note: Star wheel with 6 position plug and twine diverter with extra holes needs to be mounted on right side of baler.

End of Bale Sensor Installation

The end of bale sensor determines the position of the needles on the baler. When the needle cycles the sensor communicates this information to the 700 series that a bale has been made. Installation of this sensor is required for use with the Harvest Tec job records. Reference "Sensor Settings" in Operation Manual.

End of bale sensor bracket (001-4648J) will be used.
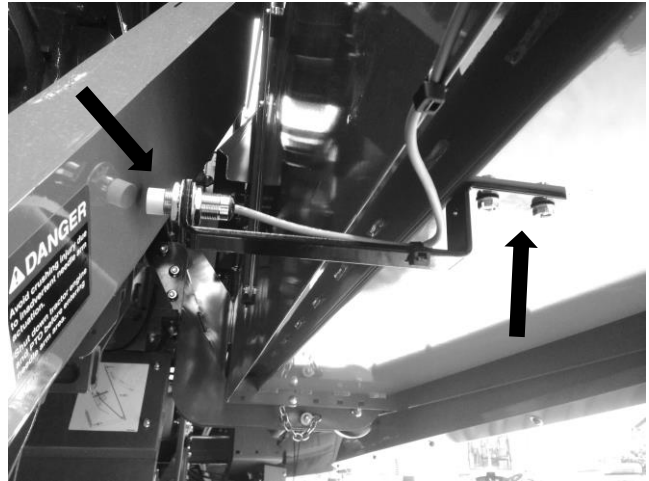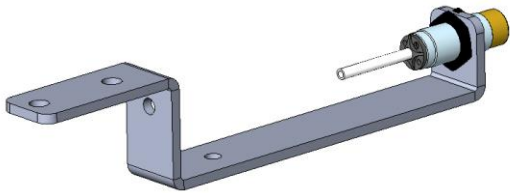
Mount the end of bale sensor bracket (001-4648J) as shown. Under the twine box mark and drill two 3/8" (10mm) holes and attach the bracket using two 5/16" x 1" self-tapping screws, and 5/16" flange nuts. Position the bolts so the bolt heads are inside the twine box, so they do not interfere with the twine. Mount the sensor in hole location centered alongside the needle arm, keep the sensor 1/4" (7mm) from the needle arm and tighten both nuts. Route the sensor wire along the bottom side of the twine box toward the twine box pivot point. Secure the wire to the twine box and around the pivot point to avoid damage to the wire. Once routed around the pivot point, connect the EOB sensor wire to the main baler harness (006-765B2).

Tractor Setup
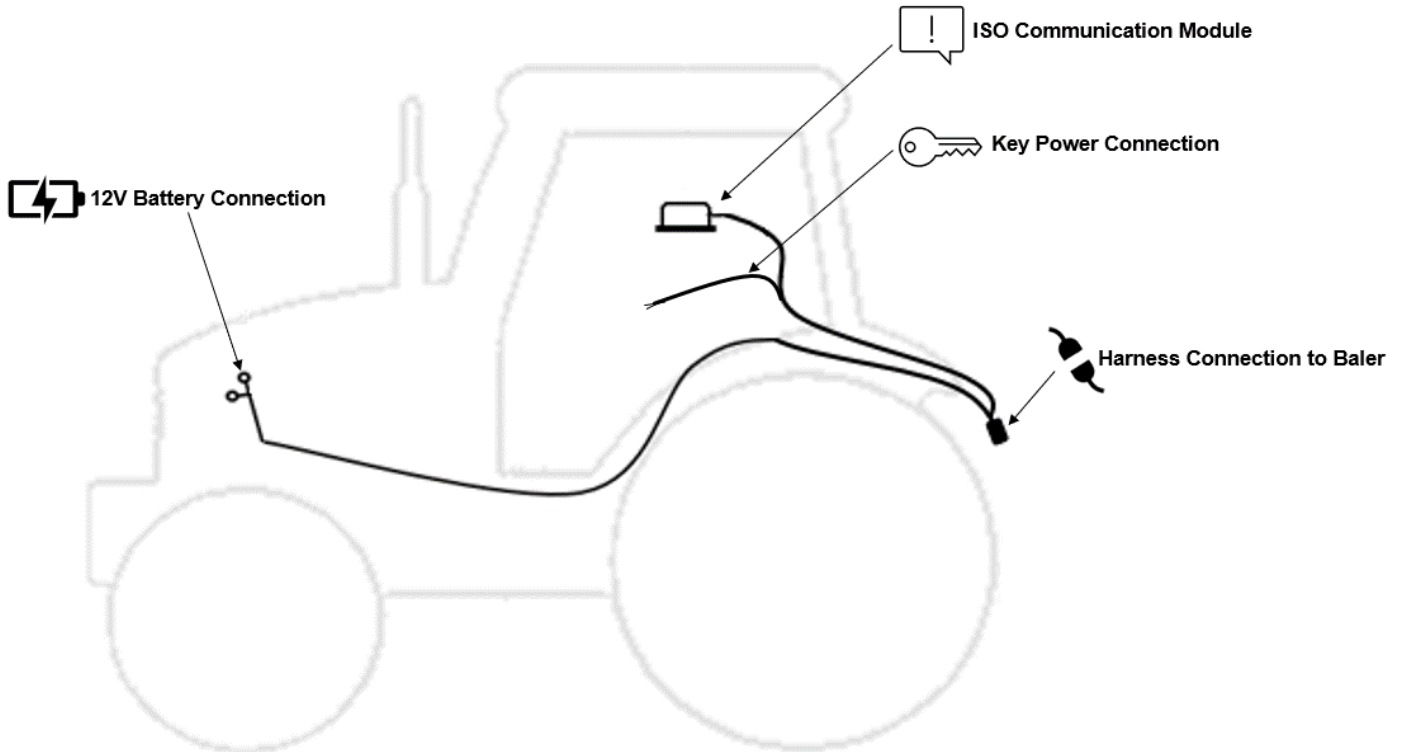
The general tractor setup of the 700 Series applicator can be seen above. The main harness of interest is the tractor power/communication harness (006-765IC). This harness will connect at the tractor battery, to the ISO Communication Module (ICM) mounted in the cab, a keyed power connection point, and connect at the hitch area to the baler power/communication harness (006-765B2). View below to see highlighted installation instruction:

12V Battery Connection
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.
MUST BE CONNECTED DIRECT TO TRACTOR BATTERY TERMINALS

ISO Communication Module
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.

Key Power Connection
Ensure a solid keyed connection is found inside the cab and wired into. Poor keyed power connection can result in applicator system issues.
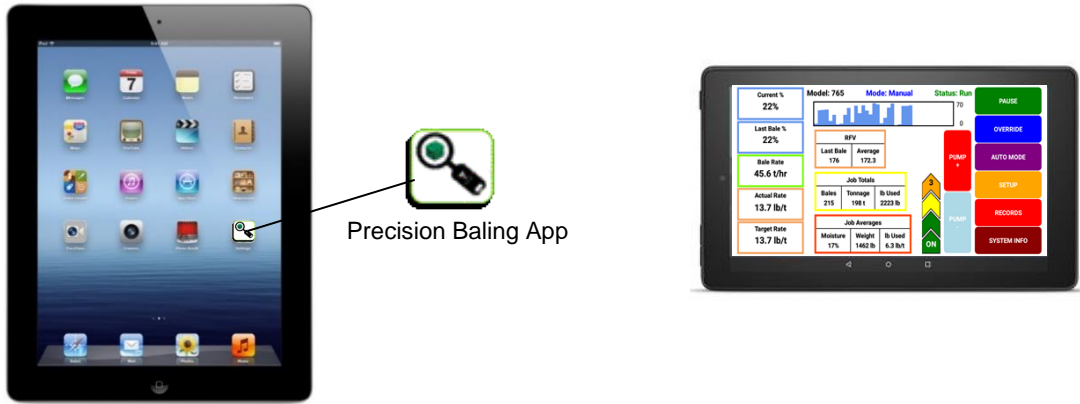
Harness Connection to Baler
The tractor harness connects at the hitch to baler power/communication harness (006-765B2). This will allow the system components to communicate with one another. Ensure connections are debris and corrosion free.

Display Options

Optional Tablet Display

Precision Baling App

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).
Required to be running the most current operating system or one version previous.
*iPad is a trademark of Apple Inc., registered in the U.S. and other countries.

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 integration harness is required when equipped.

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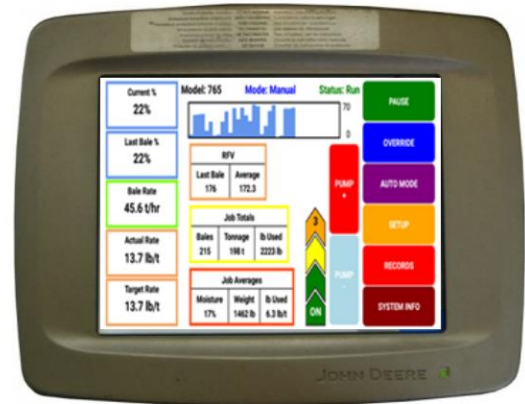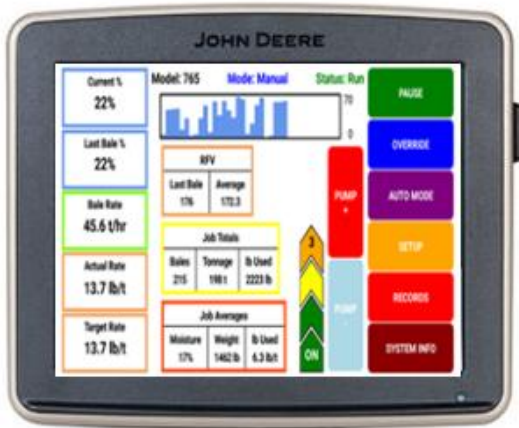
The 700 series integration to the Baler VT allows for the ability to set your real time baling though the baler VT and monitor both baler settings and Harvest Tec system parameters through one monitor to ensure the most precise application to every bale.

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, touch panel, and number menus. All buttons are labeled and color coded.

Baler Monitor Setup

Follow the instructions below to finish setup of the Harvest Tec 700J system through the John Deere ISOBUS monitors.
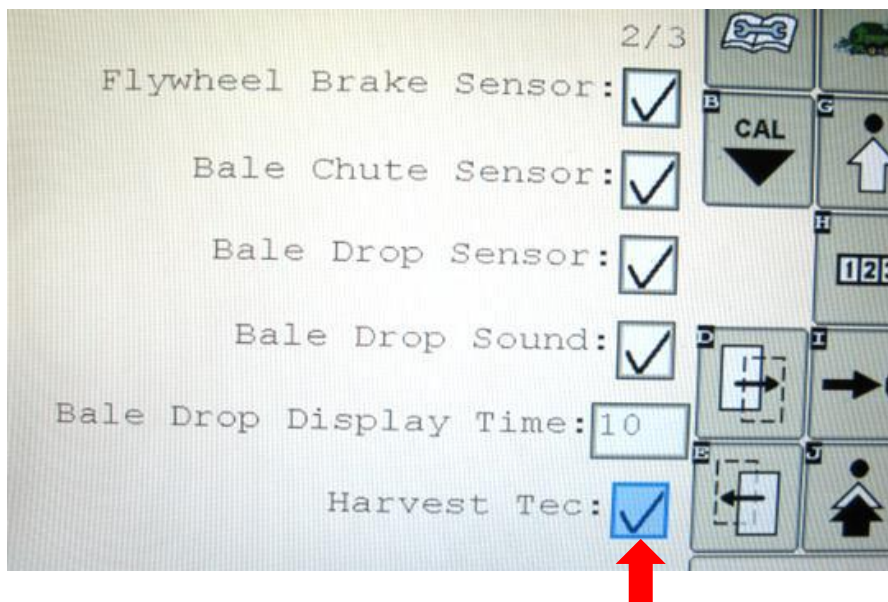
2600 Series Monitors

1. Starting from the Home Page select the Up Arrow with the dot on top.
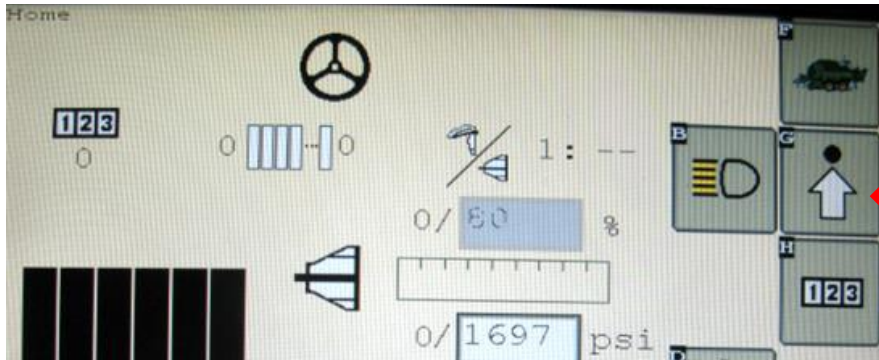
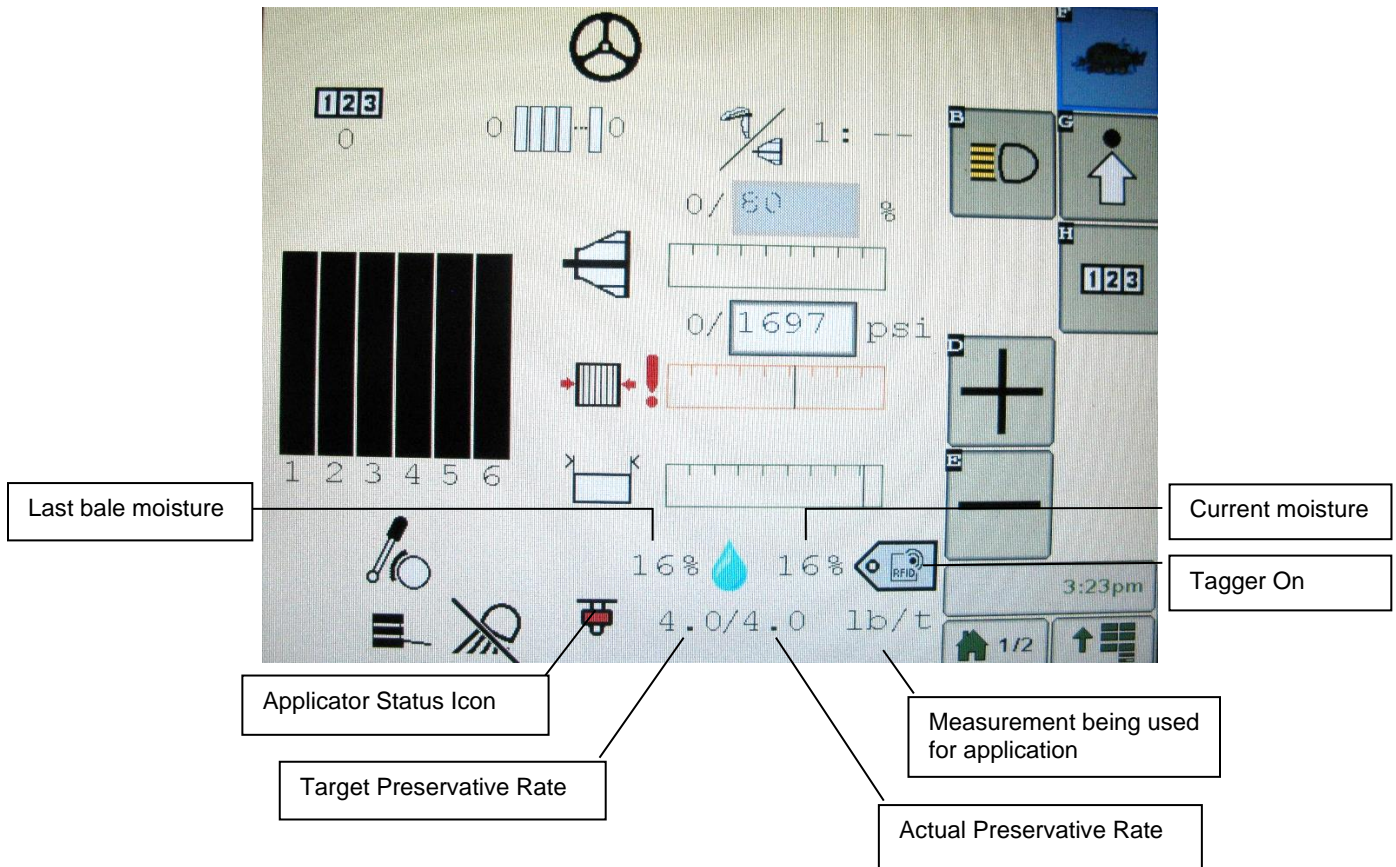2. On the Machine Setup page that will appear, select soft key D (Page Right)
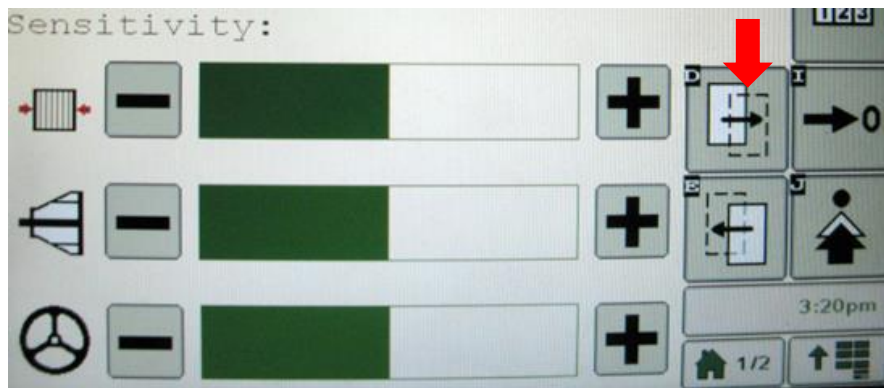
3. On the next page select the Harvest Tec option. The Check mark indicates that the system is now on.

Baler Monitor Setup (continued)

2600 Series Monitor Baler run Screen Details

Harvest Tec information will display on the bottom of screen in the center

Last bale moisture

Current moisture

Tagger On

Applicator Status Icon

Measurement being used for application

Target Preservative Rate

Actual Preservative Rate

Stats Icon Descriptions

Applicator is not in a run mode.

System is at End of Row as indicated by the Optional Hay Indicators (Crop-Eyes).

Applicator is in Automatic or Manual Mode.

System is in Pause Mode from pressing the Pause button.

Baler Monitor Setup

GreenStar 4th Generation Arm Command Display

Display software version **8.10.2393-23 or later,** is required on the display to ensure compatibility. Earlier versions are not all compatible. This information can be found by selecting "Menu" in the lower right-hand corner of the display, select the third tab down labeled "System", press "Software Manager", then the "Version Information" tab and the software versions will be displayed (Figure 1).
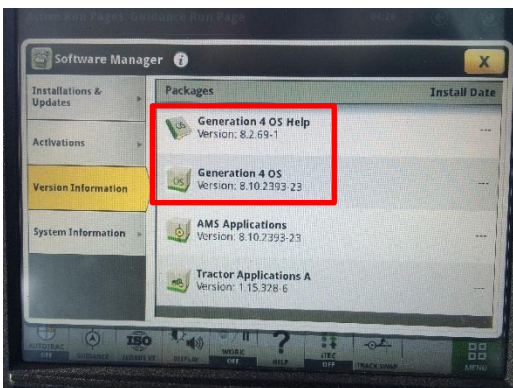

Figure 1

Figure 2

Once you have made sure the software version is at or above the recommended version, return to the tractor run screen. When on the run screen, there will be an ISO button (Figure 2) on the bottom toolbar. Pressing this will bring you into the "Connected ISOBUS Implements" page (Figure 3). If Harvest Tec is powered up correctly and active on the ISOBUS, the icon labeled "Forage, Harvest Tec, Inc." will display. If the files are still loading you will see a loading status.
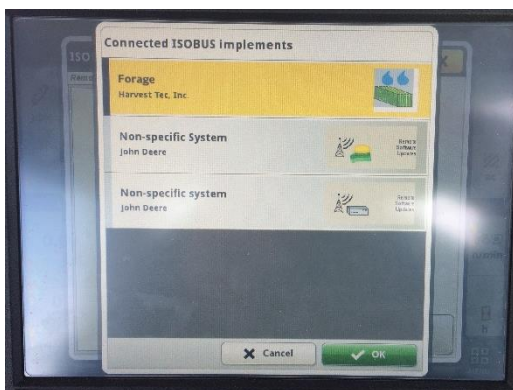

Figure 3

Figure 4

Once the files are loaded onto the display, you will receive a warning (Figure 5) to inform the operator that another device has been added onto the ISOBUS. This can be accepted and then selecting the Harvest Tec device in the ISOBUS menu will bring up the Harvest Tec system.
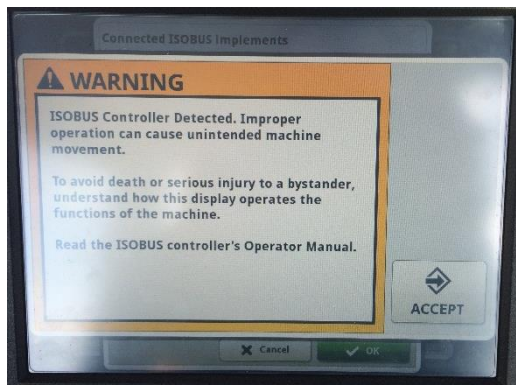

Figure 5

Baler Monitor Setup (continued)

When the Harvest Tec system is connected you can also access the applicator by following these screens:

Wiring Diagram – 700 Series Moisture Only

1. Connect the power harness (006-765IC) 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 (006-765IC) will run from the tractor battery to the hitch. The power harness on the baler (006-765B2) will connect to the tractor power harness (006-765IC) at the hitch.
3. Connect the keyed power wire (006-765CPH) to a keyed power source on the tractor.
   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 (006-765IC).
5. Attach the End of Bale (EOB) connection on baler harness (006-765B2) 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
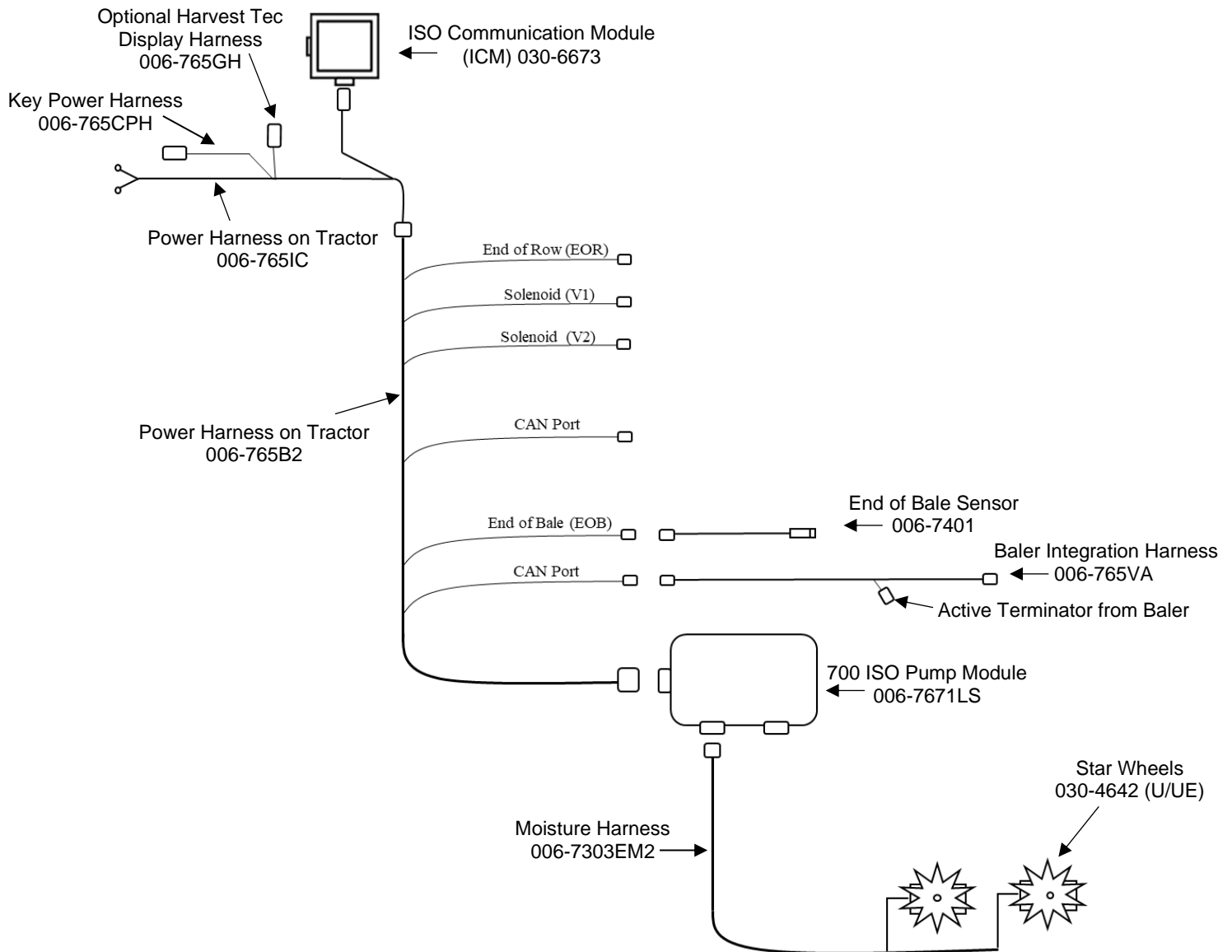
Pin Outs

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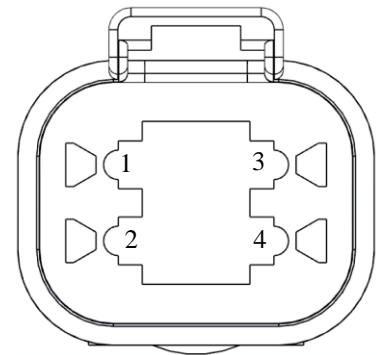(Deutsch Plug Number: DTM06-12SA)

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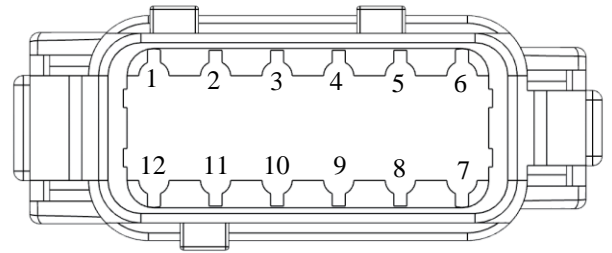
ISOBUS Plug on harness 006-765IC
(Deutsch Plug Number: DT04-4P)

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)

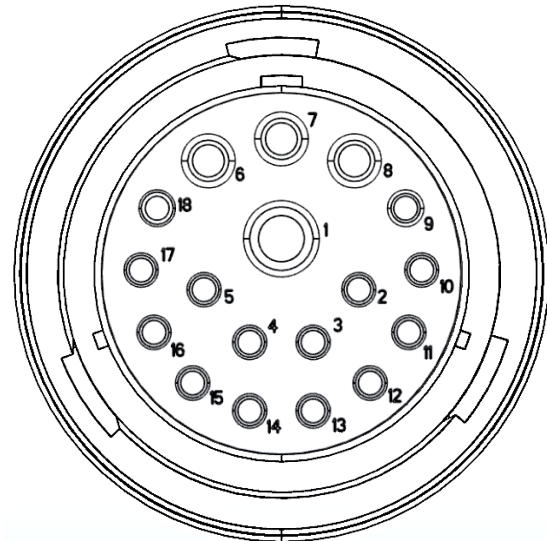| Pin 1	Not Used	----
Pin 2	Yellow	ISO CAN Hi
Pin 3	Green	ISO CAN Lo
Pin 4	Red	+12V Power to ECU
Pin 5	Black	Ground to ECU
Pin 6	Red	+12V From Battery
Pin 7	Not Used	----
Pin 8	Black	Ground From Battery
Pin 9	Not Used	----
Pin 10	Purple	Signal Wire
Pin 11	Red/White	+12V CAN X
Pin 12	Black/White	Ground 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	----
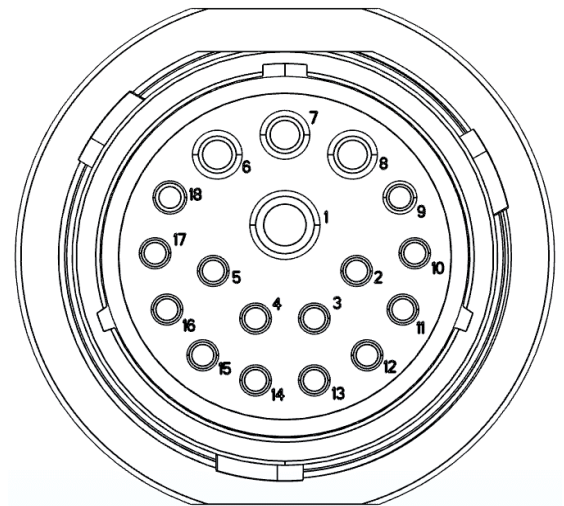
Pin Outs (continued)

Power / Communication Harness 006-765B2 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 006-765B2 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	----
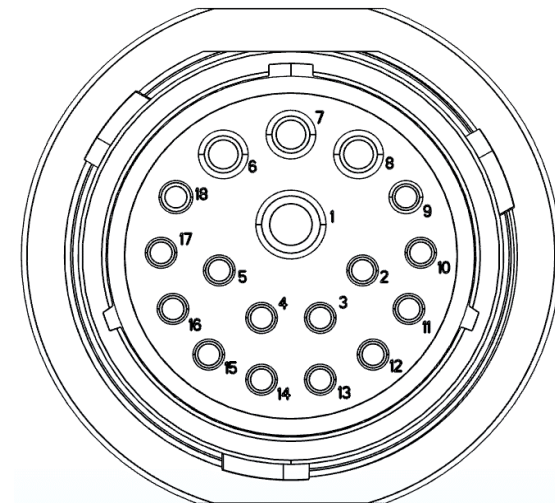
*IPM Module Whip Plug- Pin # 5 Not Used
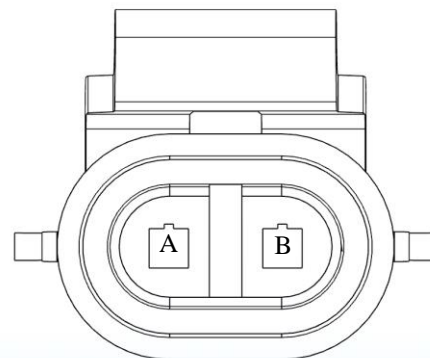
Solenoid 1 Plug on Baler Harness 006-765B
(Deutsch Plug Number: APTIV 12052641)

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)

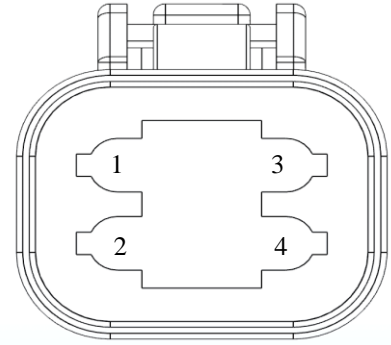|		
Pin B	Orange/Red	+12V to Solenoid 2
Pin A	White/Black	Ground to Solenoid 2

Pin Outs (continued)

CAN / IDM on Baler Harness 006-765B
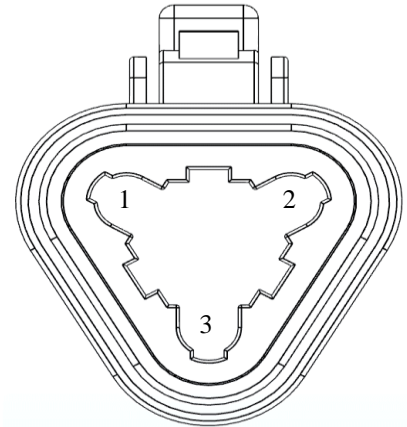(Deutsch Plug Number: DT06-4S)

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
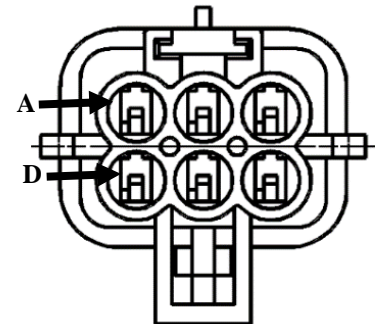
End of Row Sensors Plug on Baler Harness 006-765B
(Deutsch Plug Number: DT06-3S)

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

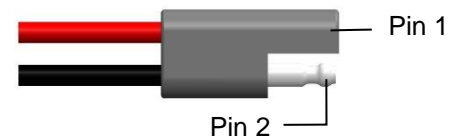### Integration Harness Plug on Baler Harness 006-765VA
(Plug: APTIV 12052848)

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
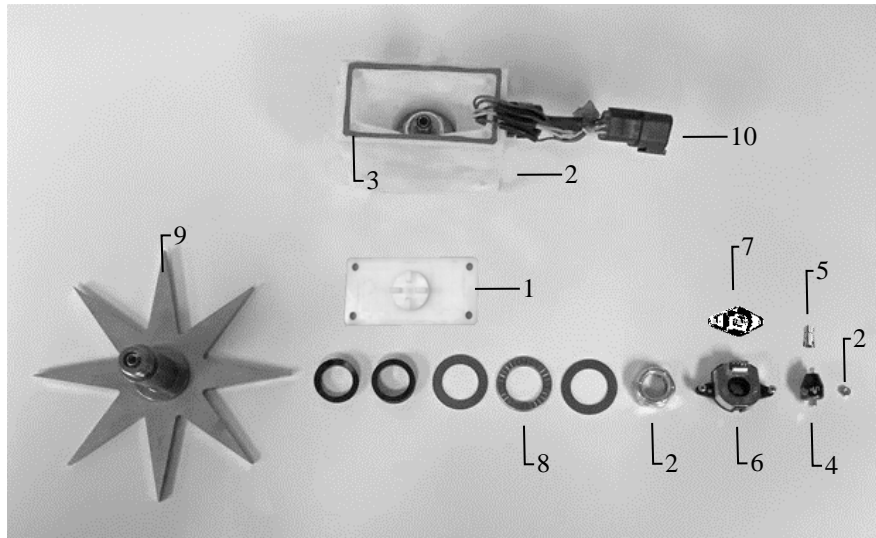
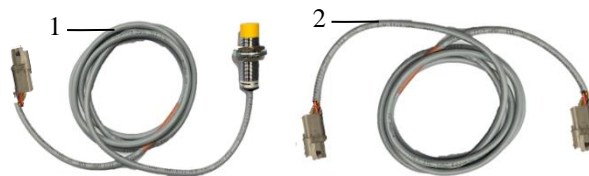| Ref	Description	Part#	Qty
1	Block Cover	006-4642UC	1
2	Star Wheel Block	006-4642UB	1
3	Star Wheel Gasket	006-4642UG	1
4	Electric Swivel	006-4642A	1
5	Swivel Insert	006-4642B	1
6	Encoder	006-4512E	1
7	Encoder Mount	006-4512P	1
8	Washers	006-4642K	1
9	Star Wheel	006-4642US	1
10	Encoder Harness (6 pin)	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

Moisture Harness

Ref	Description	Part #	Qty
11	Moisture Harness	006-7307EM2	1

Control Box and Wiring Harnesses

Ref	Description	Part#	Qty		Ref	Description	Part#	Qty
1	Power Lead Baler 20'	006-765B2	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					

End of Bale Sensor Kit

Ref	Description	Part #	Qty
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.

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