Installation Manual

Model 600A

Moisture Sensor Kit for Large Square Balers

AGCO PARTS

HayBoss™ G2

600A-16-INST-BLE
9/16

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Introduction

Thank you for purchasing a Harvest Tec Model 600A Moisture Monitor System. This 600A Moisture Monitoring System has been designed to be operated through the baler's ISOBUS system and/or an Apple iPad (not included) using the Hay App. The 600A Moisture Monitoring System offers these advantages:

1. Operation coordinated with baler operation
2. Less cab clutter providing better visibility
3. Ease of use with all information on one screen
4. Records kept together
5. The system is ready for future updates

The 600A Moisture Monitor kit includes the following parts: Dual Channel Processor (DCP), Moisture Sensors, Harnesses, Bluetooth receiver and Miscellaneous Hardware. For your convenience a parts break down for the 600A Moisture Monitoring System is included in the back of this manual. If you do have questions please bring this manual into the dealership. They can assist you in ordering the correct replacement parts.

Right and Left sides are determined by facing in the direction of forward travel.

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.

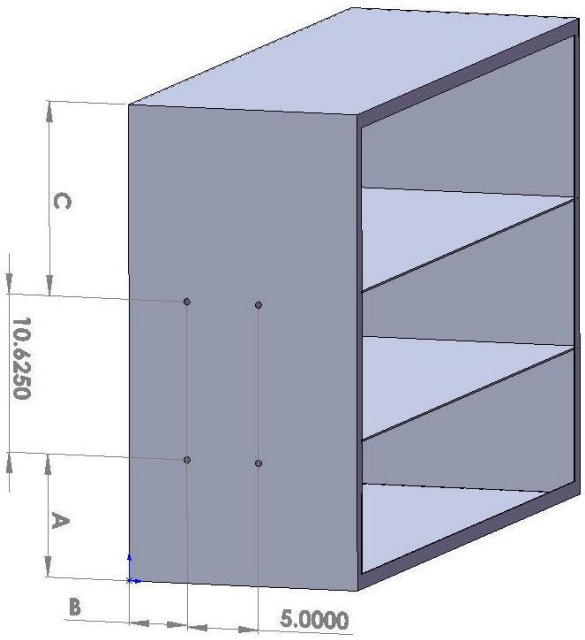
***Requirement to run iPad option are 3rd Generation iPad (2012) or newer with iOS8 or greater operating system, plus the Hay App.**

Tools Needed:

- Standard wrench set
- Electric drill and bits
- Side cutter
- Standard nut driver set
- Standard socket set
- Hammer
- Center punch

Installation of the Dual Channel Processor

Follow the instructions below to mount the Dual Channel Processor (DCP) on to your specific baler model and type. The locations shown are on the right twine box (looking at the back of the baler). Mark and drill the four 3/8 (10mm) holes and install DCP with four 5/16 x 1 bolts, locks, flats and nuts. If your baler is not listed below mount the DCP on the back of the twine box on the right side.



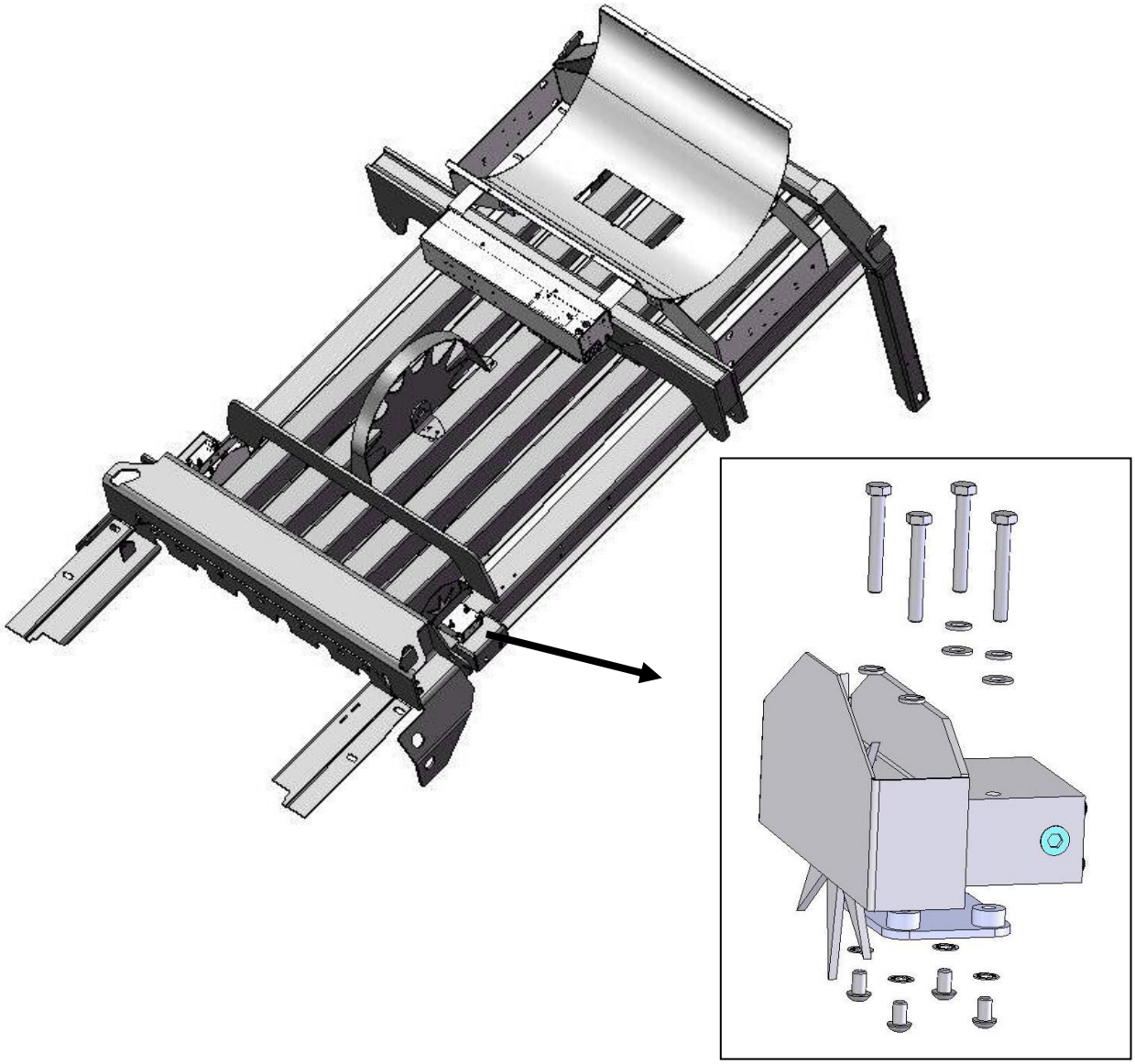
Baler Type	A	B	C
AGCO Hesston	12" (30cm)	3" (70mm)	N/A
Challenger	12" (30cm)	3" (70mm)	N/A
Massey Ferguson	12" (30cm)	3" (70mm)	N/A

Installation of the Star Wheels

The star wheel block has a plug on one side and a wire grommet on the other side. If there is interference or problems with the star wheel wires on one side of the block, exchange the wire grommet with the plug so the wire can exit the block on the opposite side. Mount the twine guards using the two inner holes on the star wheel block.

The star wheels are to be mounted on top of the baler, just behind the knotters and under the walkway on both sides. The notch and holes for the star wheel are precut. **If the star wheels are cutting the twine the sensors and notch must be moved out an additional 1/2" (13mm). Use the template in the back of the manual for hole spacing.** Place the spacer plate (001-6707E) over the precut holes.

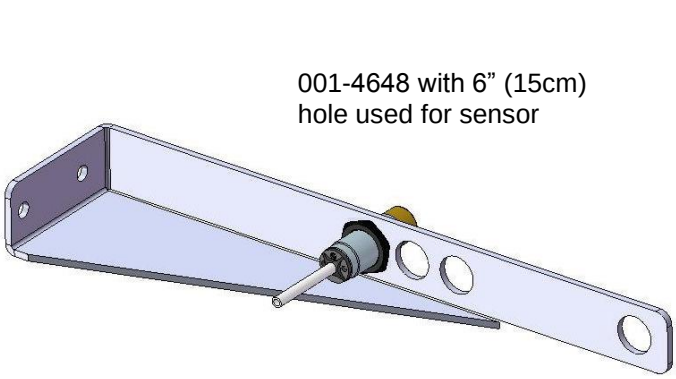
Attach with 5/16 x 1/2 Allen head bolts and internal star washers from inside the bale chamber. Center the star wheels over the top of the spacer plate, place the twine diverters on top of the star wheel and attach with 5/16 x 2 1/4 hex bolt and lock washers. For remainder two holes per star wheel attach with 5/16 x 2 1/4" hex bolt, lock washer, and one 5/16" (8mm) thick flat washers per bolt. Verify that star wheels align with bale chamber before tightening down all hardware. **The twine guard containing the bale rate sensors will be placed on the right side of the baler.** See Step 4 for directions on how to hook-up the star wheel wires.

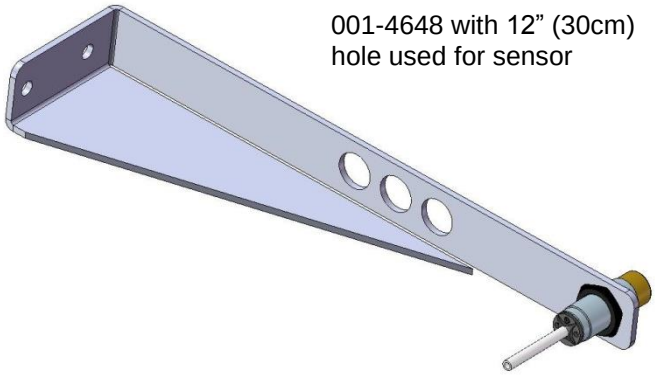


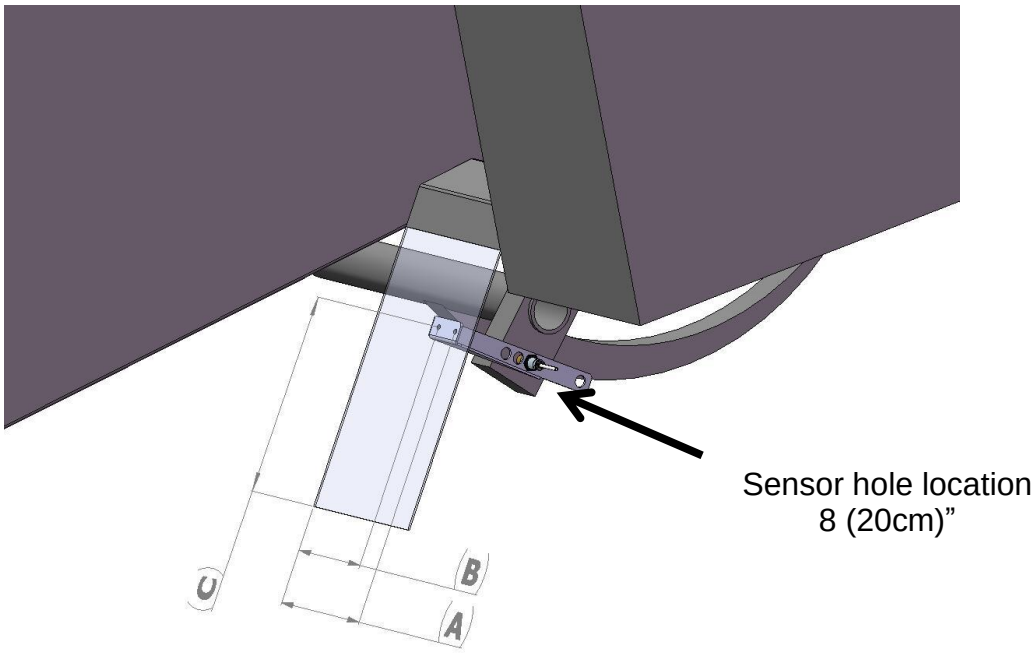
Installation of End of Bale Sensor

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.







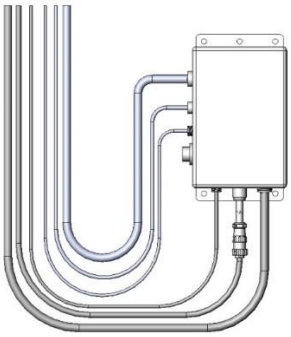
A	B	C
4-7/8”	3-1/8”	15”
(13cm)	(8cm)	(37cm)

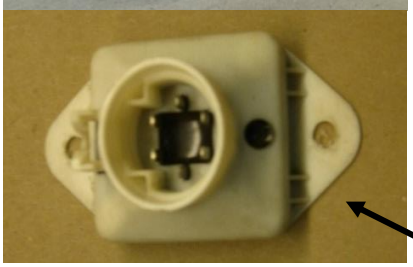
Mount the end of bale sensor bracket (001-4648) as shown. Mark and drill two 5/16” (8mm) holes and attach the bracket using two 1/4” x 1” bolts, locks, flats, and nuts. Mount the sensor in the 8” (20cm) hole location, keep the sensor 1/4" (7mm) from the needle and tighten both nuts. Cut off excess metal past the sensor. Run the sensor cable up to the Dual Channel 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 1/4” nut driver to remove the nut from the electronic swivel. Next, run the star wheel sensor wire through the black grommet and place the eye terminal on the star wheel sensor. Tighten the eye loop with the nut on the sensor and put the star wheel cover back on the base. Next, tighten the grommet to form a tight seal around the wire. The bale rate sensors will be factory installed on the right side twine guard in the correct position. The sensor with the longer sensor wire should say “FRONT”, which indicates it should be placed in the front sensor hole. The sensor wire with the shorter wire should say “BACK.” The tip of the sensor should be placed no more than 1/4” (7mm) away from the star wheel teeth and no less than 1/8” (3mm) 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.

Main Wire Harness and Baler Interface Harness Routing and Connections





A. Route harness 006-6650LS2 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 DCP secure wires as shown above to allow for water to be shed away from the DCP.

B. Under the chamber locate the Active Terminator from the end of the baler harness. It is located at the right rear corner of the baler frame. Attach Baler Interface Harness (006-6650VA) to that location. Reconnect Active Terminator to open port of that same harness (006-6650VA). 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 (006-6650VA). Please contact Harvest Tec for this harness. This style terminator may be next to the Baler’s Main Processor.

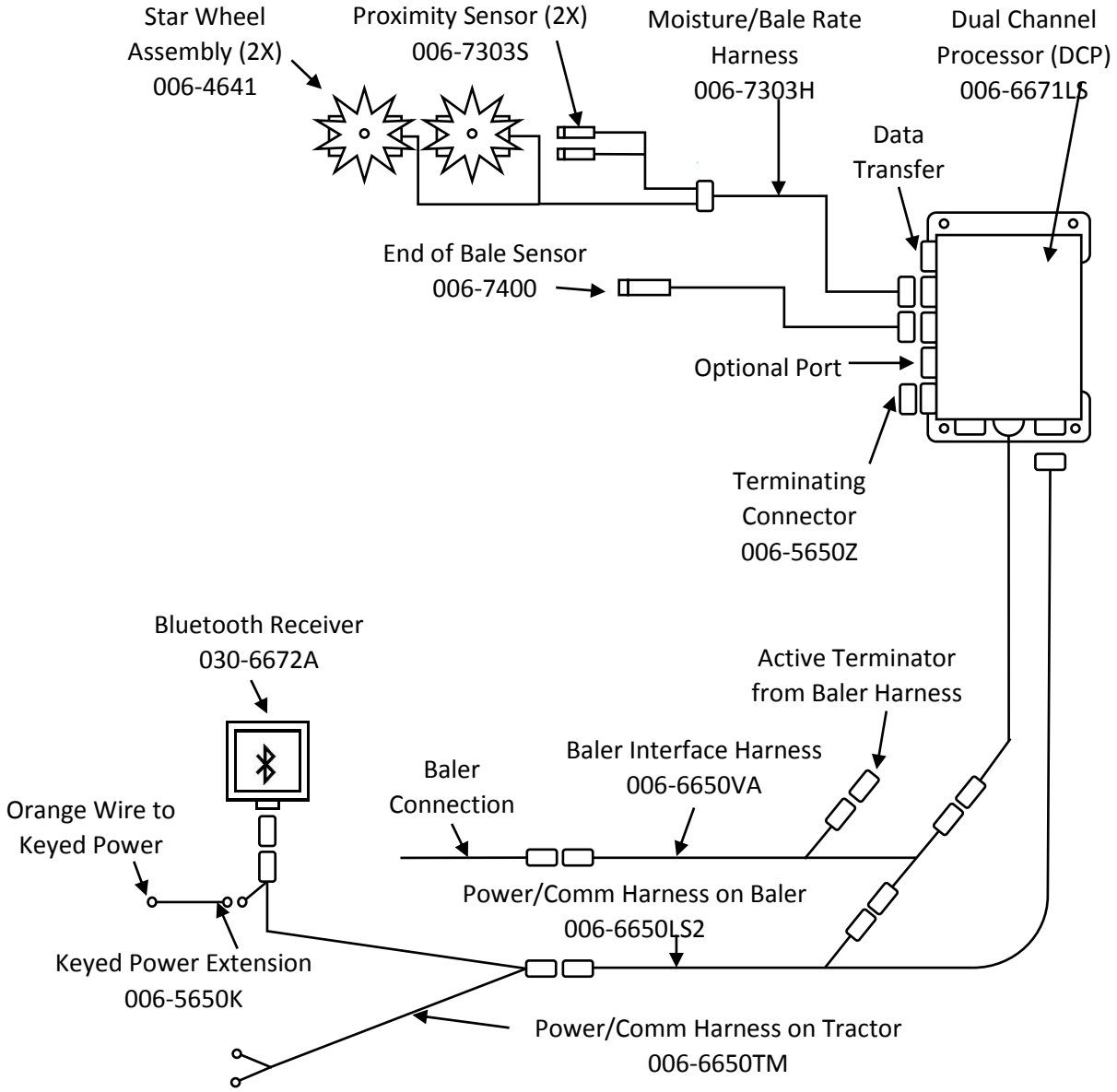
Installation of Bluetooth Receiver

Locate a safe location in the cab of the tractor to place the Bluetooth Receiver (030-6672A). Recommended location is as close to the iPad being used as possible.

Connect the Power / Communication harness (006-6650TM) to the bottom of the receiver (right).

Wiring Diagram

1 Locate the tractor power/communication harness (006-6650TM).
2 At the back of the tractor run the power leads to the battery.
3 Connect the red power wire with the 50 amp fuse to the positive side (12 volt) of the battery.
   a. **The power harness must be connected to the battery!** The unit will draw more amps than convenience outlets can handle. Any modifications of the power harness will void systems warranty. IF MODIFICATIONS ARE REQUIRED CONTACT HARVEST TEC FIRST!
   b. **This unit will not function on positive ground tractors.**
   c. **If the unit loses power while operating it will not keep track of accumulated pounds of product used and bale records.**
4 Connect the black ground wire to frame of tractor or negative side of (12 volt) battery.
5 Connect the Bluetooth Receiver (030-6672A) to the Communication Harness (006-6650TM). Place in a safe location in the cab. Behind the seat for example.
6 Connect the orange wires and attach the plug to the tractor's ISOBUS port.
7 Connect the end to the Communication Harness (006-6650TM) to the Bluetooth Receiver.
8 Connect the orange keyed power wires (006-5650K) and attach the plug to the tractor's ISOBUS port.

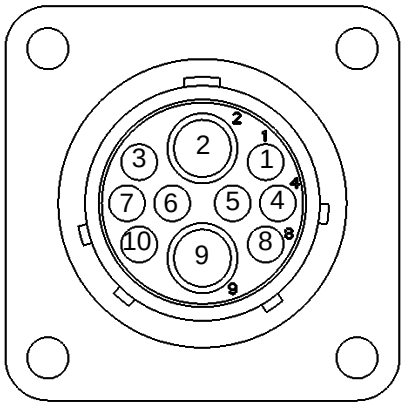


AGCO 2100 Series Balers Pre 2012 need the AGCO Integration Harness (006-6650VAX)

Pin Outs

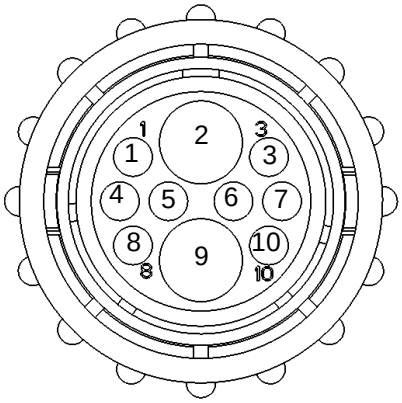
Power/Comm Harness 006-6650TM at Hitch

Pin 1	Red	+12V Power to TSD
Pin 2	Red	+12V Power to DCP
Pin 3	Orange	Keyed Power
Pin 4	Gray	Shield
Pin 5	Green	HT Can Low
Pin 6	Yellow	HT Can Hi
Pin 7	Orange	Can1 Hi
Pin 8	Black	Ground from TSD
Pin 9	Black	Ground from DCP
Pin 10	Blue	Can1 Low



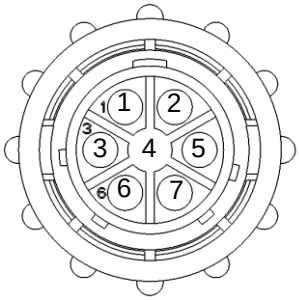
Power/Comm Harness 006-6650LS2 at Hitch

Pin 1	Red	+12V Power to TSD
Pin 2	Red	+12V Power to DCP
Pin 3	Orange	Keyed Power
Pin 4	Gray	Shield
Pin 5	Green	HT Can Low
Pin 6	Yellow	HT Can Hi
Pin 7	Orange	Can1 Hi
Pin 8	Black	Ground from TSD
Pin 9	Black	Ground from DCP
Pin 10	Blue	Can1 Low



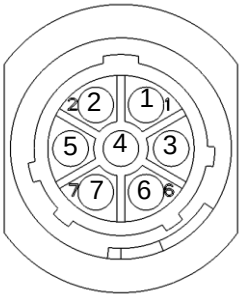
Bluetooth Receiver on Harness 006-6650TM

Pin 1	Red	+12V Power from DCP
Pin 2	Black	Ground from TSD
Pin 3	Yellow	HT Can Low
Pin 4	Gray	Shield
Pin 5	Green	HT Can Hi
Pin 6	Orange	Can1 Hi
Pin 7	Blue	Can1 Low



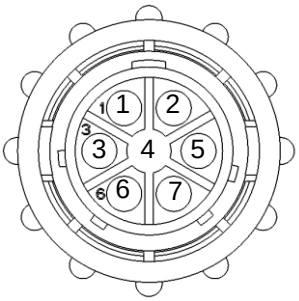
006-6650VA to DCP Whip

Pin 1	Red	Can Power
Pin 2	Black	Can Ground
Pin 3	Yellow	HT Can Hi
Pin 4	Gray	Shield
Pin 5	Green	HT Can Low
Pin 6	Orange	Can1 Hi
Pin 7	Blue	Can1 Low



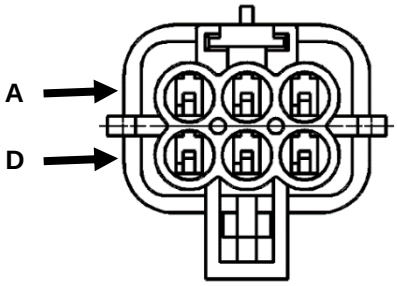
Pin Outs **(continued)**

006-6650VA to 006-6650LS2



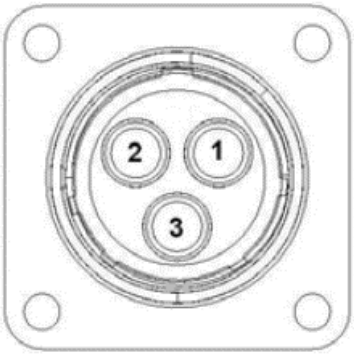
Pin 1	Red	Can Power
Pin 2	Black	Can Ground
Pin 3	Yellow	HT Can Hi
Pin 4	Gray	Shield
Pin 5	Green	HT Can Low
Pin 6	N/A	
Pin 7	N/A	

006-6650VA Harness to Baler Plug



Pin A	N/A	
Pin B	Red	TBC Power
Pin C	N/A	
Pin D	Gray	TBC Ground
Pin E	Orange	Can1 Hi
Pin F	Blue	Can1 Low

Main Power Connector on Dual Channel Processor (DCP)

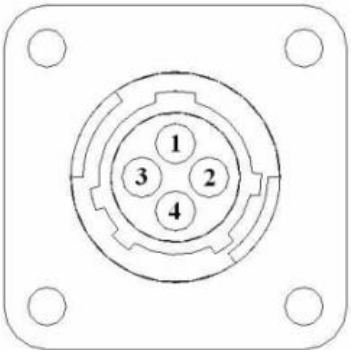


Pin 1	Red	+12V Power from tractor
Pin 2	Black	Ground from tractor
Pin 3	Orange	Keyed power

Star Wheel and Bale Rate Sensor Connector on DCP

Pin 1	Blue	+12V Power
Pin 2	Orange	Ground
Pin 3	Black	Signal for sensor 1
Pin 4	White	Signal for sensor 2
Pin 5	N/A	
Pin 6	N/A	
Pin 7	N/A	
Pin 8	Violet	Star wheel input 1
Pin 9	Brown	Star wheel input 2

End of Bale Sensor on DCP



Pin 1	Brown	Sensor Power
Pin 2	Blue	Sensor Ground
Pin 3	N/A	
Pin 4	Black	Signal from Sensor

Common Questions

1. How do I turn the system on/off?
To turn the system ON open the Hay App, then select the active system for the baler you are using. Press the Wake Up tab if the system was put into Standby mode when last used. If not in Standby mode, select Automatic or Manual mode to begin.

To turn the system OFF click the Standby tab on the Main Menu screen. To close the app double click the home button on the iPad and swipe the app that you would like closed, toward the top of the screen until it is no longer visible. See SHUTTING DOWN THE HAY APP for more details.

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

4. 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. Initially check inside the white star wheel block, to see if the electronic swivel is in the star wheel shaft and that the star wheel shaft is not coming out of the block. Also, check all star wheel wires and connectors to see if there is a continuity of grounding problem.

5. 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.

6. What is the expected battery life of the iPad when baling?
3.5 hours is the expected amount of time the battery when continuously baling. Shut off all other applications, wireless internet, and Wi-Fi signal to reduce the amount of programs iPad is running.
*It is recommended to use an accessory outlet charger when operating (not included with iPad).

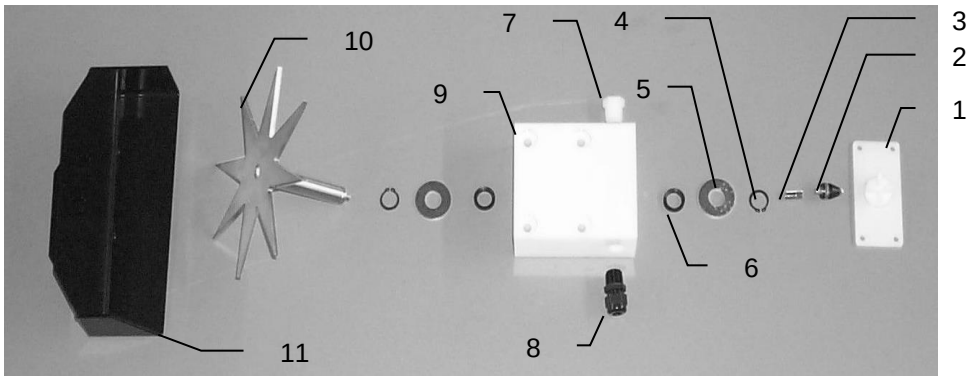
7. What is the max distance for connection between the iPad and the Bluetooth Receiver?
The range for the connection will depend on the amount of equipment (tractor, baler, ect.) between the two devices. The max distance will range between 10' – 20'.

Troubleshooting

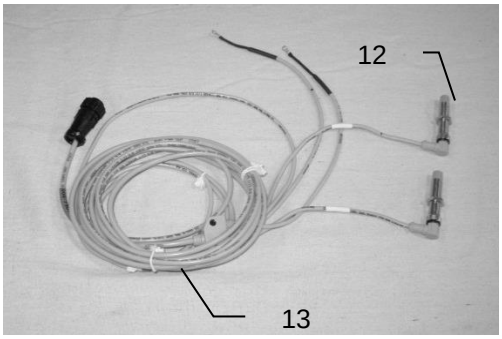
PROBLEM	POSSIBLE CAUSE	SOLUTION
Moisture reading errors (high or low)	1. Wire disconnected or bad connection between star wheels and DCP	1. Reconnect wire.
	2. Low power supply to DCP	2. Check voltage at box. (Min of 12 volts required.) See Diagnostics section of manual.
	3. Dry hay lower than 8% moisture or wet hay over 75%.	3. System reads 8-70% moisture.
	4. Ground contact with one or both star wheels and baler mounted processor.	4. Reconnect.
	5. Short in wire between star wheels and DCP.	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 DCP has more variation than hand tester.	
	2. Check all wiring connections for corrosion or poor contact.	2. Apply dielectric grease to all connections.
	3. Check power supply at tractor. Voltage should be constant between 12 and 14 volts.	3. Install voltage surge protection on tractors alternator.
Terminal reads under or over power.	1. Verify with multi-meter actual voltage. Voltage range should be between 12-14 volts.	1. Clean connections and make sure applicator is hooked to battery. See Diagnostics section of manual.
Bale rate displays zero.	1. Bale rate sensors are reversed. 2. Short in cable. 3. Damaged sensor. 4. Sensor too far from starwheel.	1. Switch the sensors next to the star wheel. 2. Replace cable. 3. Replace sensor. 4. Adjust gap between prox sensor and star wheel so it is 1/8-1/4” away.

Parts Breakdown

Star Wheels and Bale Rate Sensors

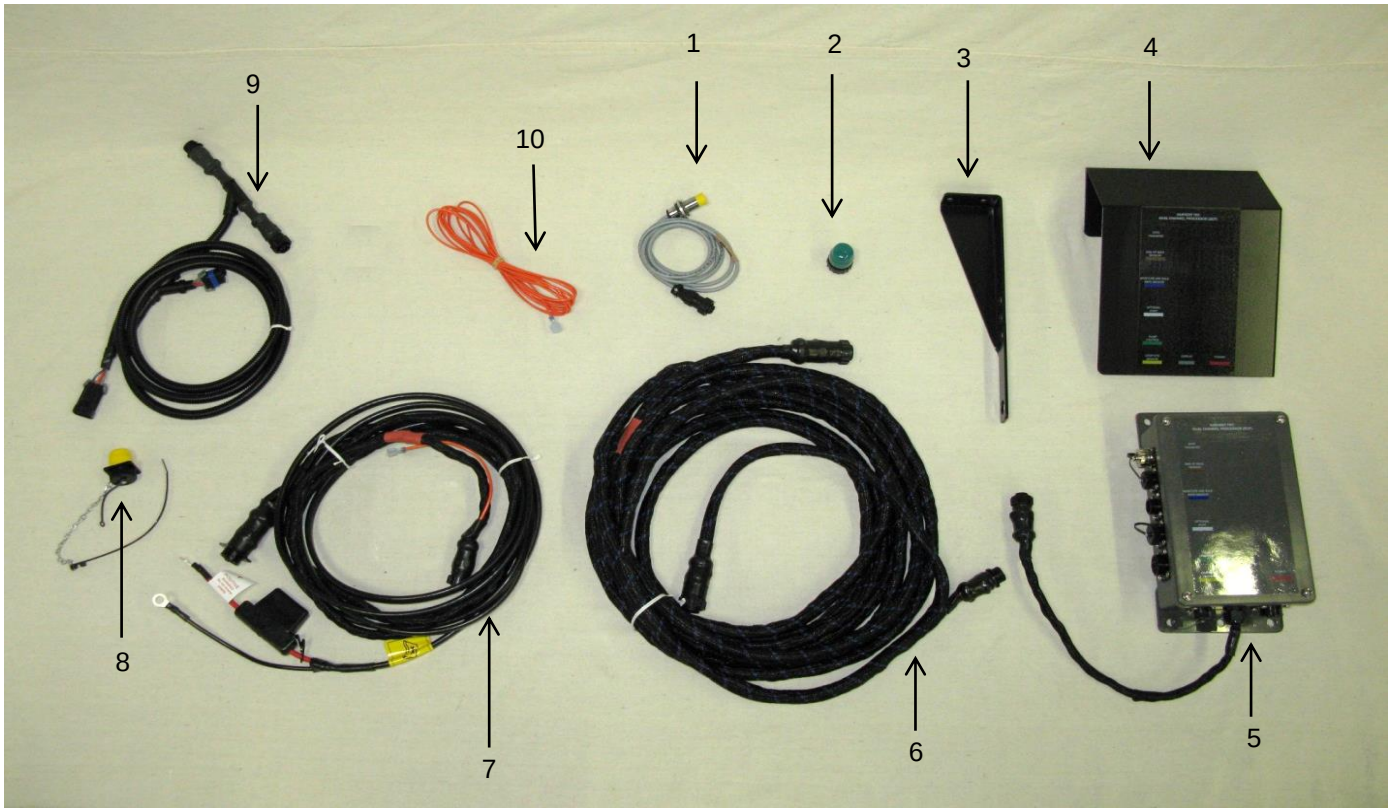


Ref	Description	Part#	Qty	Ref	Description	Part#	Qty
1	Block cover	006-4641B	2	9	Star wheel block	006-4641A	2
2	Electronic swivel	006-4642A	2	10	Star wheel sensor	030-4641C	2
3	Swivel insert	w/ Ref # 10	2	11	Twine guard-left for AGCO	001-4645H	1
4	Snap ring (per side)	006-4641K	2		Twine guard-right for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



Ref	Description	Part#	Qty
12	Bale rate sensor	006-7303S	2
13	Moisture and bale rate harness	006-7303H	1

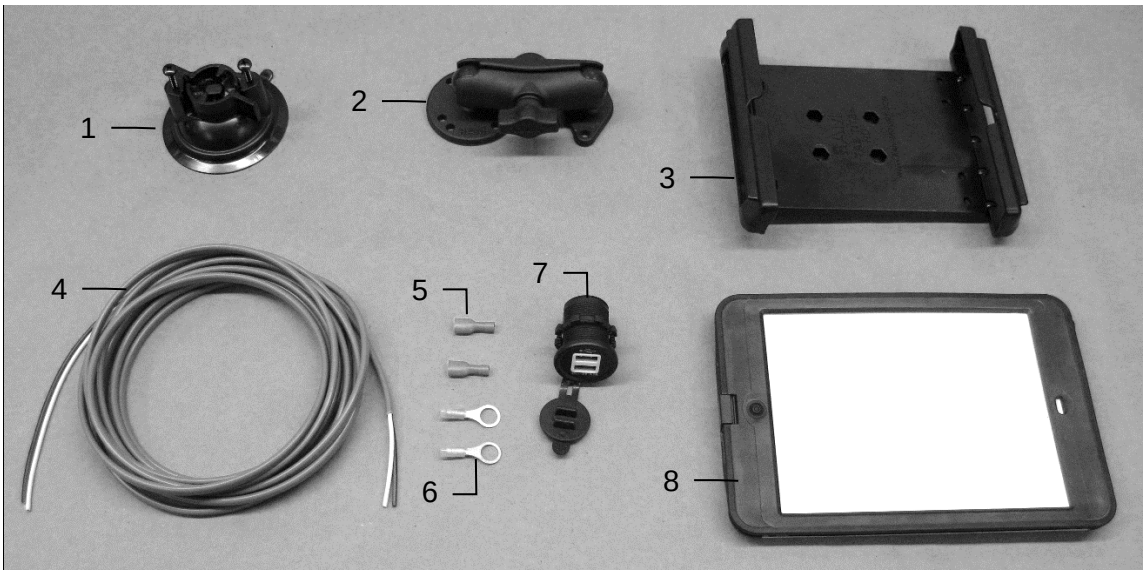
Parts Breakdown for 600A Series Control and Harnesses



Ref	Description	Part Number	Qty
1	End Of Bale Sensor	006-7400	1
2	Terminating Connector w green cap	006-5650Z	1
3	End of Bale Sensor Bracket	001-4648	1
4	DCP Shield/Cover	001-5650X	1
5	DCP Main Control LS 600 AUTO	006-6671LS	1
6	DCP Baler Harness 30 FT	006-6650LS2	1
7	DCP Tractor Harness	006-6650TM	1
8	Dust Plugs	006-5651PLUGS	1
9	DCP Baler Interface Harness	006-6650VA	1
10	Key Switch Wire	006-5650K	1
11	Bluetooth Receiver	030-6672A	1
	AGCO 2100 Series Balers Pre 2012 need	006-6650VAX	

11 →

Optional iPad Mini Mounting Kit (030-2012MK)



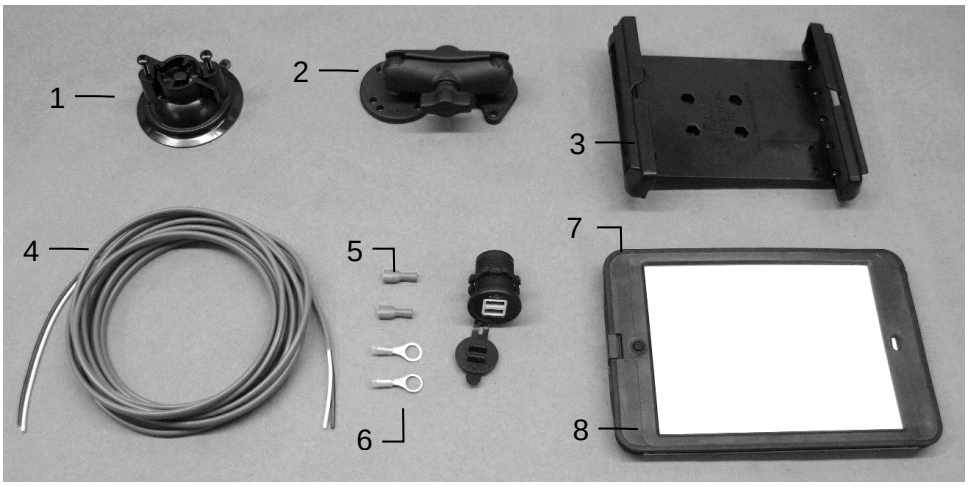
Ref	Description	Part #	Qty
1	Suction cup mount	001-2012SCM	1
2	Ram mount	001-2012H	1
3	iPad Mini spring load cradle (Mini 1,2,3)	001-2012SLC	1
4	16 gauge power wire	006-4723P	1
5	Female spade connector	Hardware	2
6	Eye loop connector	Hardware	2
7	iPad Mini Charger 12V	001-2012P	1
8	iPad Mini 2 case	001-2012C2	1
NP	4 amp fuse	Hardware	1
	Mounting Kit Assembly	030-2012MK (Includes All Parts)	

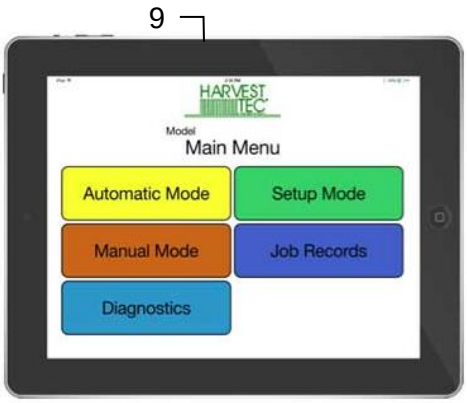
Installation Instructions

1. Identify 12V power source for wires to connect.
    a. Eye loops included if wiring directly to the battery is desired.
    b. Test for key power source if preferred to have power to the USB shut off with the key.
2. Once power source is identified, cut wires to desired length.
3. Crimp the two supplied quick connectors onto each the white and black wire.
4. Remove the round locking plastic nut from USB plug before connecting the wires. Black (+) White (-).
5. The wires will then be hooked to the designated terminals on the bottom of the USB plug
6. Drill a 1 1/8” hole in the preferred mounting location. Be sure to clean any sharp edges after drilling.
7. Feed the wires through the mounting hole.
8. If using the round plastic nut to secure plug in place, slide the nut back over the wiring before connecting the wires to powered source.
9. Connect the wires to the identified power source if easier to do so before tightening the plug into place.
10. Tighten plug using either the round plastic nut or mounting plate and two screws, both options supplied.
11. Once connected, hook a USB charging cord into the plug and connect a mobile device/tablet to ensure the plug is operating as you wish (key power working properly if necessary).

NOTE: This plug is not designed to charge two iPads. System damage could occur if this is attempted. System will charge a mobile phone and iPad simultaneously without problem.

Optional iPad Display Kit (030-2670DK)





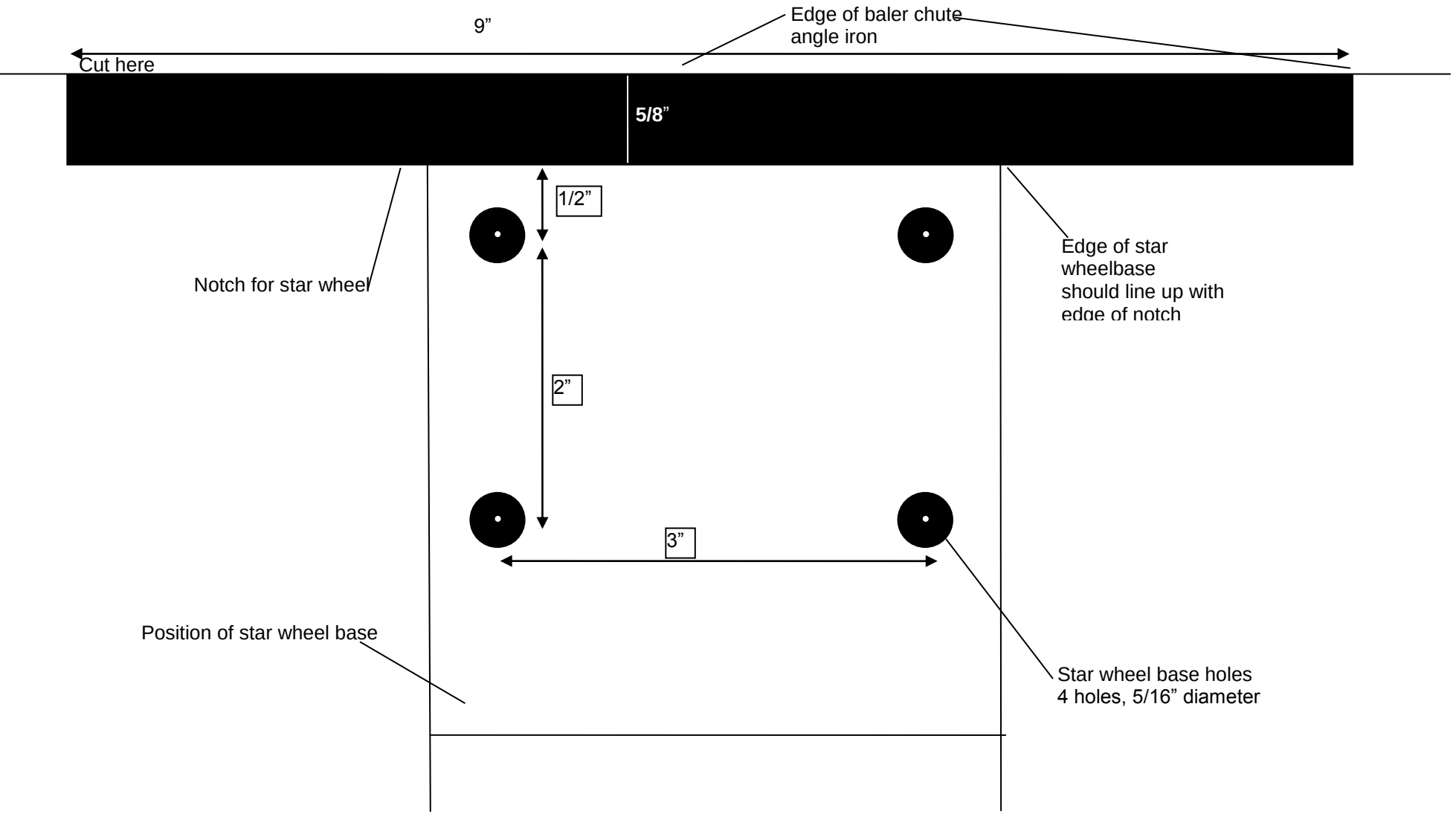
Ref	Description	Part #	Qty	Ref	Description	Part #	Qty
1	Suction cup mount	001-2012SCM	1	7	iPad Mini Charger 12V	001-2012P	1
2	Ram mount	001-2012H	1	8	iPad Mini 2 case	001-2012C2	1
3	iPad Mini spring load cradle (Mini 1,2,3)	001-2012SLC	1	9	iPad Mini 2	006-2670IP	1
4	16 gauge power wire	006-4723P	1	NP	4 amp fuse	Hardware	1
5	Female spade connector	Hardware	2				
6	Eye loop connector	Hardware	2		Mounting Kit Assembly	030-2670DK (Includes All Parts)	

Installation Instructions

12. Identify 12V power source for wires to connect.
    a. Eye loops included if wiring directly to the battery is desired.
    b. Test for key power source if preferred to have power to the USB shut off with the key.
13. Once power source is identified, cut wires to desired length.
14. Crimp the two supplied quick connectors onto the white and black wire.
15. Remove the round locking plastic nut from USB plug before connecting the wires. Black (+) White (-).
16. The wires will then be hooked to the designated terminals on the bottom of the USB plug
17. Drill a 1 1/8” hole in the preferred mounting location. Be sure to clean any sharp edges after drilling.
18. Feed the wires through the mounting hole.
19. If using the round plastic nut to secure plug in place, slide the nut back over the wiring before connecting the wires to powered source.
20. Connect the wires to the identified power source if easier to do so before tightening the plug into place.
21. Tighten plug using either the round plastic nut or mounting plate and two screws, both options supplied.
22. Once connected, hook a USB charging cord into the plug and connect a mobile device/tablet to ensure the plug is operating as you wish (key power working properly if necessary).

NOTE: This plug is not designed to charge two iPads. System damage could occur if this is attempted. System will charge a mobile phone and iPad simultaneously without problem.

Star Wheel Installation Template



This guide is to be used as a visual aid for star wheel installation. Exact measurements on baler are determined by operator

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.

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