

OWNER'S MANUAL

Model 474A & 474C Hay Indicator Kit (Crop Eyes)



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Caution:

Unhook the pump leads when testing, aligning, or working around the hay indicator sensors or nozzles. The nozzles will spray if someone or something comes in front of the sensors when the applicator is turned on. Failure to do so may cause injury.

Overview

The hay indicator kit is designed to automatically pause the applicator when no hay is entering into the machine. The hay indicator kit will turn the applicator back on when hay starts entering into the machine. Two photoelectric sensors will mount to the baler's pick-up head, one on each side, to sense whether hay is entering the machine. The hay indicator kits are designed to work with all Harvest Tec Models. The following table shows what hay indicator kit is needed for each applicator:

<u>Year</u>	<u>Applicator Model</u>	<u>Kit Number</u>
2020 - Current	700 Series Only	474C
2006 - 2020	500 & 600 Automatic Controls	474A
2005 - 2020	400 Series Automatic Controls	474A
2004 - Current	457 Electronic Controls	474A
2003 and Older	Old 457 Electronic Controls	474D
2001 and Older	464 Automatic Controls	474A
All	Manual Controls	474D

TOOLS NEEDED

- Standard wrench set
- Standard socket set
- Standard screw driver: Blade and Phillips ends
- Side cutter
- Hole Saw (1-1/4")

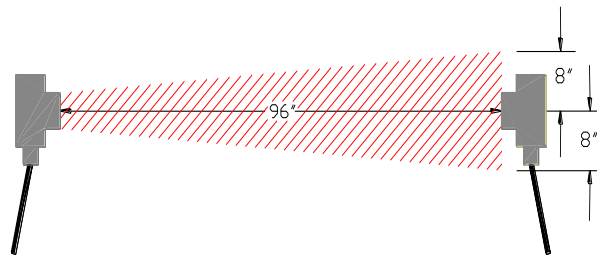
Mounting Instructions for Hay Indicator on the Baler

!! Important!! Keep in mind the following things when selecting a location to mount the hay indicator. One sensor must be mounted on each side of the pick-up head, so that they are lined up directly across from each other, as well as pointing directly toward one another. Also the sensors should be kept clear of all obstructions when moving the pickup head up or down.

The obstructions could be in one or more of the following forms:

1. The wind guard could block the sensor's beam when the pickup head is moved up or down.
2. If the sensors are located too near to the preservative nozzles, drift can travel from the nozzles and hit the sensors. The drift will attract residue and falsely trip the eyes.
3. When positioning the sensors, consider where the hay could have a tendency to wrap up on the sides of the head.
4. Teeth on the pick-up will **NOT** normally trip the sensors. However, if the teeth become out of alignment, they could be staggered enough to cause the hay indicator to trip. If possible mount the eyes in front, above, or behind the teeth, it will eliminate the problems from bent pick-up teeth.

The hay indicator mounting bracket can be used in different combinations to match up to your specific baler. The best mounting locations will use either existing bolt heads on opposite sides of the chamber or holes drilled through the baler's sheet metal facing each other. Make sure the sensors locations are properly aligned, by using a long straight edge that spans the width of the head, such as a PVC pipe. Position the long straight edge so that it is perpendicular to the surface being used to mount the sensors as well as level to the horizontal (or a flat floor). Use a level to serve as a gauge.



Alignment of the sensors

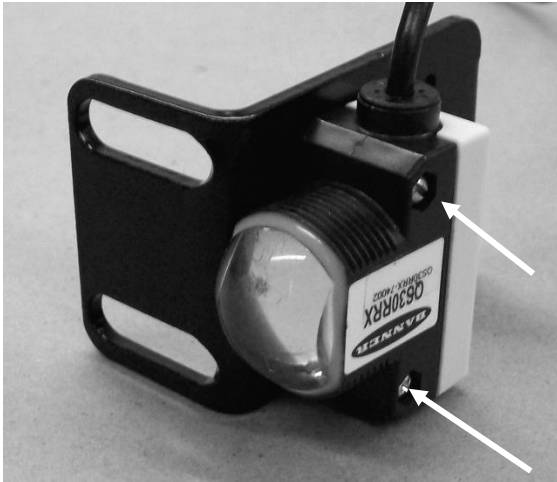


Alignment Sensor

The hay indicators have a built in alignment scale on one the sensors. When the sensors have power to them the letter A will light up and one of the corresponding numbers will also have a light on next to it. The higher the number that is lit the better the alignment is between the two sensors.

The sensors will need to be adjusted until the number 3 light is showing. Aligning to level 4 is not necessary for the application system. Once this alignment is made tighten down all hardware to prevent movement of sensor.

Installation of Sensor to Mounting Bracket



Option 1



Option 2



Option 3

The three most common mounting points for the hay indicator are shown above. Take note of the differences for mounting on your specific baler.

Option 1

Use the two mounting screws supplied with the sensors to attach sensor and bracket together. This mount will require a hole to be drilled in the sheet metal for the sensor to see through, and one or two holes to be drilled (depending on the baler) for the bracket to attach to the baler.

Install the trash plate between the eye and the baler sheet metal to prevent chaff from building around the eye (**only on balers when a 1-1/4" hole must be drilled**).

Option 2 & 3

Connect the sensor to the baler using the 2 plastic nuts supplied in the kit. The mount will require one or two holes to be drilled (depending on the baler) for the bracket to attach to the baler.

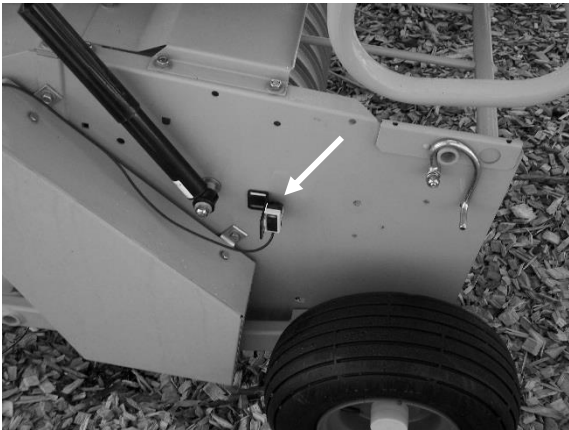
Common mounting locations for Round Balers

AGCO Round Balers



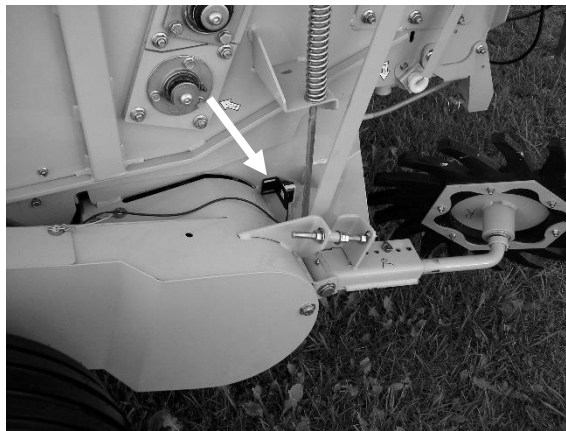
Mount the Hay Indicator as shown on the side of the sheet metal (Option 1 Mounting Style). Mark two holes per side to mount the bracket and one hole for the sensor. The sensor hole will be 1-1/4" diameter; the bracket holes will be 5/16". Attach to the sheet metal using the 5/16" x 3/4" carriage bolts and flange nuts. The head of the bolt will fit into the mounting bracket. Use the alignment tool on the sensor before tightening down bolts. Trash plate will need to be installed.

Claas Round Balers



Mount the Hay Indicator as shown on the side of the sheet metal (Option 1 Mounting Style). Mark two holes per side to mount the bracket and one hole for the sensor. The sensor hole will be 1-1/4" in diameter; the bracket holes will be 5/16". Attach to the sheet metal using the 5/16" x 3/4" carriage bolts and flange nuts. The head of the bolt will fit into the mounting bracket. Use the alignment tool on the sensor before tightening down bolts. Trash plate will need to be installed.

Vermeer Round Balers



Shown above are two common mounting locations on Vermeer balers. Mount the Hay Indicator as shown on the side of the sheet metal (Option 1 Mounting Style). Mark two holes per side to mount the bracket and one hole for the sensor. The sensor hole will be 1-1/4" in diameter; the bracket holes will be 5/16". Attach to the sheet metal using the 5/16" x 3/4" carriage bolts and flange nuts. The head of the bolt will fit into the mounting bracket. Use the alignment tool on the sensor before tightening down bolts. Trash plate will need to be installed.

Common mounting locations for Round Balers (continued)

Krone Round Balers



Mount the Hay Indicator as shown on the side of the sheet metal (Option 1 Mounting Style). Mark two holes per side to mount the bracket and one hole for the sensor.

The sensor hole will be 1-1/4" diameter; the bracket holes will be 5/16". Attach to the sheet metal using the 5/16" x 3/4" carriage bolts and flange nuts. The head of the bolt will fit into the mounting bracket. Use the alignment tool on the sensor before tightening down bolts. Trash plate will need to be installed.

New Holland & Case Round Balers

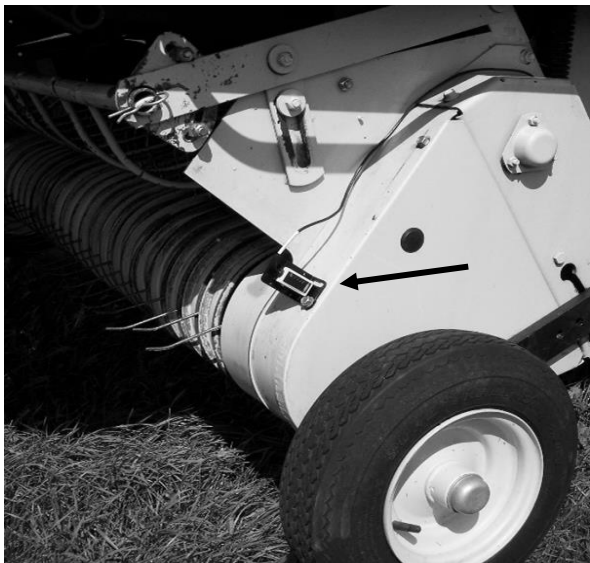


Figure 1



Figure 2

Depending on the type and style of the baler pickup the Hay Indicator will either directly on the baler pickup (Figure 1) or on the side of the head sensing through the sheet metal (Figure 2).

Figure 1: Use one existing bolt on opposite sides of the baler to mount initially (Option 3 Mounting Style). Use a straight edge or the built in alignment tool to mark the hole 5/16" and attach with the 5/16" x 3/4" carriage bolt and flange nut.

Figure 2: Mount the Hay Indicator as shown on the side of the sheet metal (Option 1 Mounting Style). Mark two holes per side to mount the bracket and one hole for the sensor. The sensor hole will be 1-1/4" in diameter; the bracket holes will be 5/16".

Attach to the sheet metal using the 5/16" x 3/4" carriage bolts and flange nuts. The head of the bolt will fit into the mounting bracket. Use the alignment tool on the sensor before tightening down bolts. Trash plate will need to be installed.

Common mounting locations for Round Balers (continued)

New Holland Case Rollbelt Balers

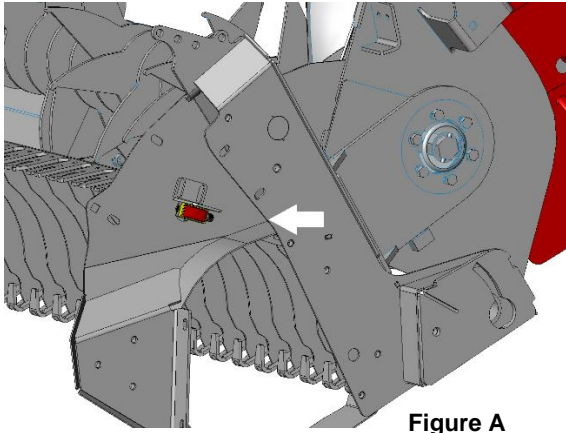


Figure A

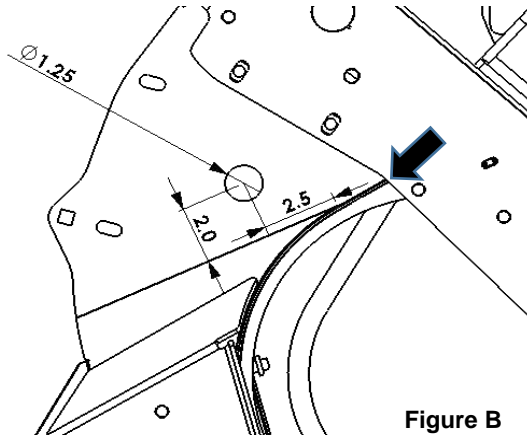
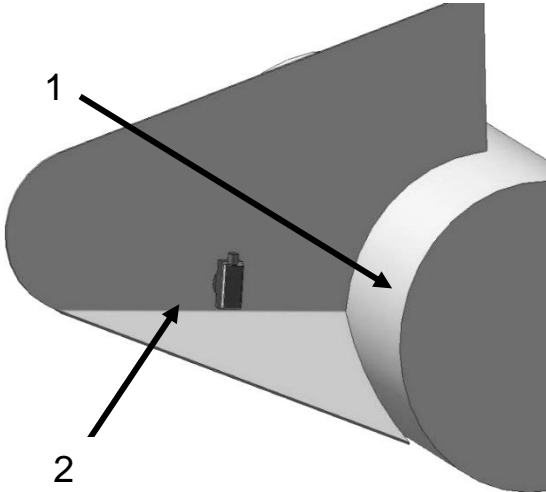


Figure B

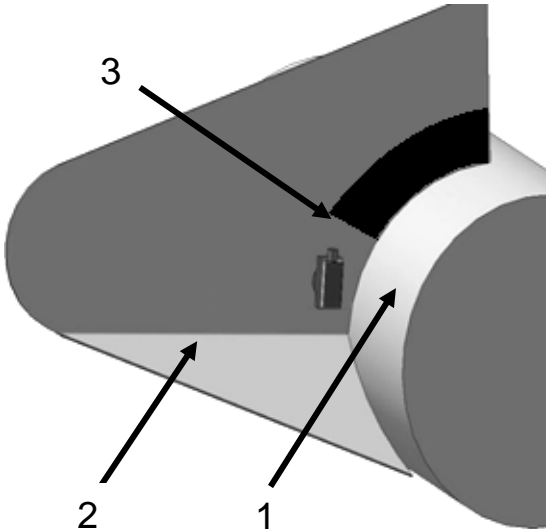
Mount the crop eye as shown in figure A by following the measurements in figure B. Beginning at the location indicated by the arrow, measure 2.5" along bend in pickup sheet metal toward front of pickup. Measure 2" toward top of pickup and drill a 1-1/4" hole. Mount the trash plate (001-5105S) on the outside of pickup sheet metal by drilling two additional 5/16" holes. Install the plastic nut on the end of the hay indicator and use the alignment tool on sensor before tightening the nuts.

John Deere 5-8 Series Round Balers



Mount the Hay Indicator as shown on the side of the sheet metal. Drill a 1-1/4" hole 5" from (1) towards the front of the baler and one inch up from (2). Mount the trash plate (001-5105S) on the outside of pickup sheet metal by drilling two additional 5/16" holes. Install the plastic nut on the end of the hay indicator and use the alignment tool on sensor before tightening the nuts.

John Deere 9 and 0 Series Round Balers



Mount the Hay Indicator as shown on the side of the sheet metal. Drill a 1-1/4" hole 2" from (1) towards the front of the baler and one inch up from (2). Prior to installation remove 2" from rotating sheet metal, shown at location (3), on baler which would hit crop eye as pickup is raised. Mount the trash plate (001-5105S) on the outside of pickup sheet metal by drilling two additional 5/16" holes. Install the plastic nut on the end of the hay indicator and use the alignment tool on sensor before tightening the nuts.

Common mounting locations for Large Square Balers

AGCO Large Square



Mount the Hay Indicator as shown on the side of the sheet metal (Option 1 Mounting Style). Mark two holes per side to mount the bracket and one hole for the sensor. The sensor hole will be 1-1/4" in diameter; the bracket holes will be 5/16". Attach to the sheet metal using the 5/16" x 3/4" carriage bolts and flange nuts. The head of the bolt will fit into the mounting bracket. Use the alignment tool on the sensor before tightening down bolts. Agco balers manufactured after January 2007 will have the mounting holes already in the pickup shield. The sensor hole will need to be knocked out for the sensor to fit properly.

New Holland & Case Large Square



Mount the sensor on the sides of the pickup as shown above (Option 3 Mounting Style). The existing bolts **cannot** be used because of the stagger between the bolts. Mount the bracket on the flat sheet metal on opposite sides of the pickup. Mark and drill one hole 5/16" and loosely attach with a 5/16" x 3/4" carriage head bolt and flange nut. The sensors will need to be aligned before the second hole can be marked. Tighten down all four screws when sensors have been aligned.

New Holland BB330/BB340 and Case LB334/LB434



Drill 3/4" holes in locations indicated by triangles to run cable through. Attach cable via wide clips to bolts indicated by arrows. Use hole saw to cut 1/4" hole in location indicated by black circle for mounting hay indicator through flange.

Common mounting locations for Large Square (continued)

Claas & Krone Large Square



Mount the Hay Indicator as shown on the side of the sheet metal (Option 1 Mounting Style). Mark two holes per side to mount the bracket and one hole for the sensor. The sensor hole will be 1 1/4" diameter; the bracket holes will be 5/16". Attach to the sheet metal using the 5/16" x 3/4" carriage bolts and flange nuts. The head of the bolt will fit into the mounting bracket. Use the alignment tool on the sensor before tightening down bolts. Trash plate will need to be installed.

John Deere L330 Large Square Baler

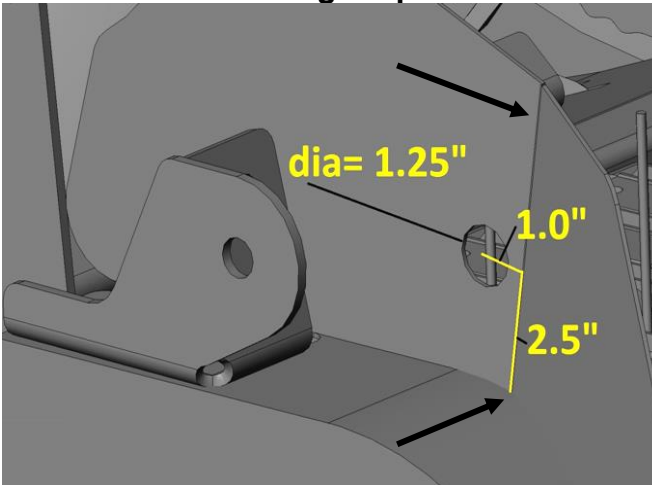


Figure 1

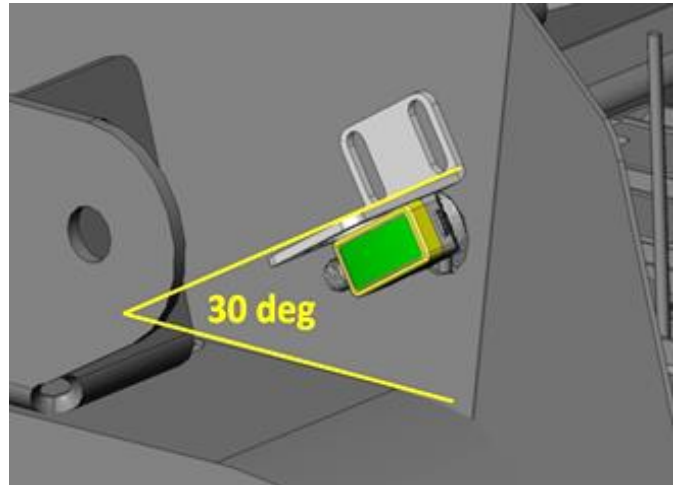


Figure 2



Figure 3

Locate the sheet metal bend in the pickup side shield indicated in Figure 1. Measure 2-1/2" from bottom toward top of shield. Measure 1" back (toward rear of baler) and cut a 1-1/4" diameter hole for the sensor eye. Attach L-bracket to sheet metal using the 5/16" x 3/4" carriage bolts and flange nuts. The head of the bolt will fit into the mounting bracket. Eyes should be positioned at a 30 degree angle to the bend (Figure 2). Use alignment tool on the sensor before tightening down bolts. Figure 3 indicates recommended wiring path. Repeat on other side of baler pickup.

Common mounting locations for Large Square (continued)

John Deere L340 Large Square Baler

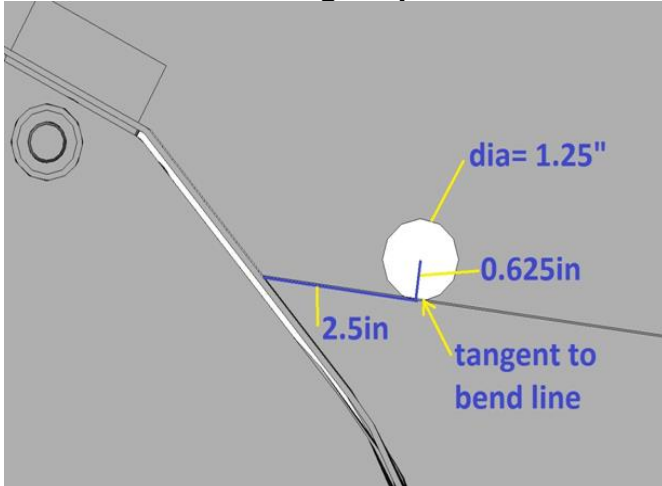


Figure 4

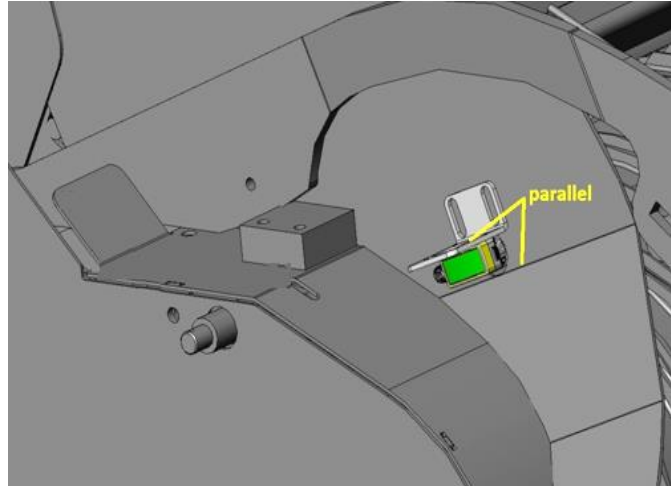


Figure 5



Figure 6

Locate the sheet metal bend in the pickup side shield indicated in Figure 4. Measure 2-1/2" from bottom toward front of shield. Measure 5/8" up (toward top of pickup) and cut a 1-1/4" diameter hole for the sensor eye. Attach L-bracket to sheet metal using the 5/16" x 3/4" carriage bolts and flange nuts. The head of the bolt will fit into the mounting bracket. Eyes should be positioned parallel to bend in sheet metal (Figure 5). Use alignment tool on the sensor before tightening down bolts. Figure 6 indicates recommended wiring path. Repeat on other side of baler pickup.

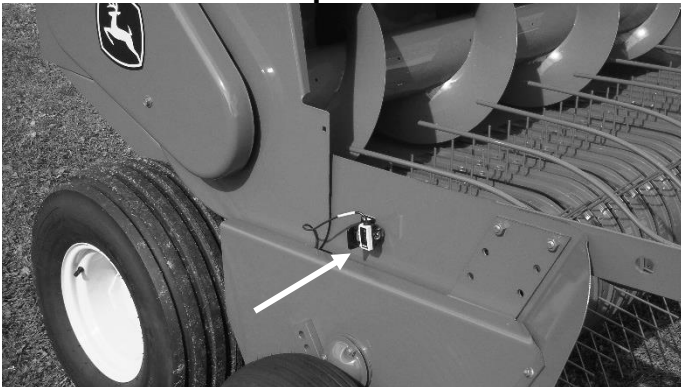
Common mounting locations for Small Square

AGCO Small Square Baler



Mount the sensor on the sides of the pickup as shown above (Option 3 Mounting Style). The existing bolts **cannot** be used because of the stagger between the bolts. Mount the bracket on the flat sheet metal on opposite sides of the pickup. Mark and drill one hole 5/16" and loosely attach with a 5/16" x 3/4" carriage head bolt and flange nut. The sensors will need to be aligned before the second hole can be marked. Tighten down all four screws when sensors are aligned.

John Deere Small Square Baler



Mount the Hay Indicator as shown on the side of the sheet metal (Option 1 Mounting Style). Mark two holes per side to mount the bracket and one hole for the sensor. The sensor hole will be 1-1/4" in diameter; the bracket holes will be 5/16". Attach to the sheet metal using the 5/16" x 3/4" carriage bolts and flange nuts. The head of the bolt will fit into the mounting bracket. Use the alignment tool on the sensor before tightening down bolts. Trash plate will need to be installed.

New Holland and Case Small Square Balers

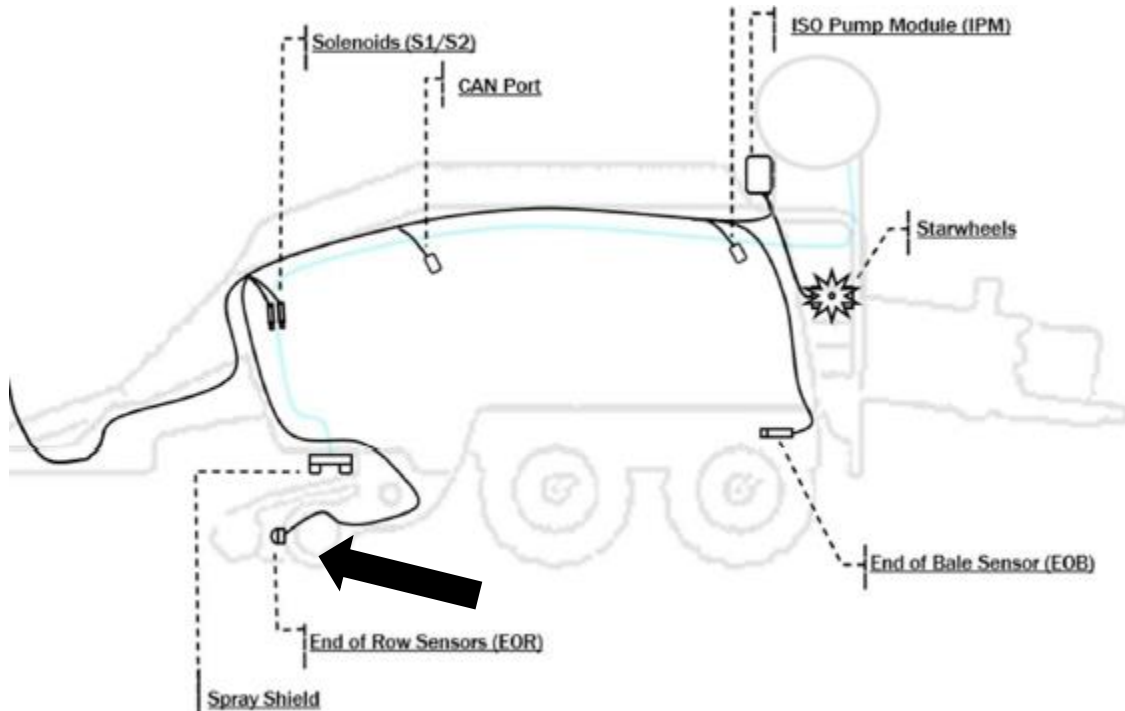


Mount the sensor on the sides of the pickup as shown above (Option 2 Mounting Style). The existing bolts will be used on opposite sides of the pickup. The sensors will need to be pushed up tight against the sides of the pickup. Use one of the existing bolts on the pickup. One 5/16" hole will need to be drilled. Use the 3/4" x 5/16" carriage bolt and flange nut to secure the bracket. The sensors will need to be aligned before the bolts are tightened. After sensors are loosely mounted, the hay diverters (001-5105F) will need to be installed. The diverter will fit directly in front, without touching the sensors. Three 5/16" holes will need to be drilled per side for the diverters. Mark and drill the one hole on top of the diverter and two holes on the bottom. Attach using the 1/4" x 3/4" bolts, locks, nuts, and flats. Align the eyes and tighten all sensor hardware.

Wiring Instructions

Kit 474C for Harvest Tec 700 Series Applicators

700 series models: The hay indicator wire harness (006-7503H) will plug into the baler Power Lead Harness (006-765B) near the pickup on the EOR connection. See below illustration for reference:



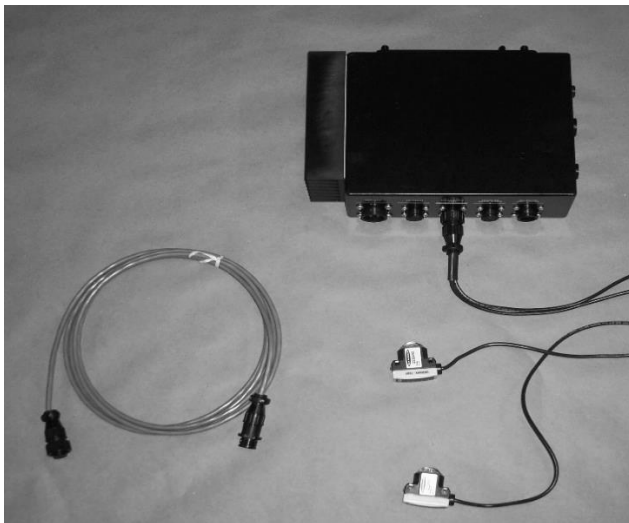
Kit 474A for Harvest Tec Model 400, 500 and 600 Series Applicators

600 series models: The hay indicator wire harness will plug into the Dual Channel Processor into the 4-pin amp plug labeled hay indicator.

500 series models: The hay indicator wire harness will plug into the Precision Information Processor (mounted on the back of the twine box) into the 4-pin amp plug labeled hay indicator.

462, 463, 465 models: The hay indicator wire harness will plug into the Baler Mounted Processor (which is mounted on the pump plate) into the 4-pin amp plug location labeled hay indicator.

*Some balers will need the extension harness 006-7500A.



462 – 465 Serial number 2000 and higher



500 and 600 Series Applicators
(Processor Connection Location Is Different)

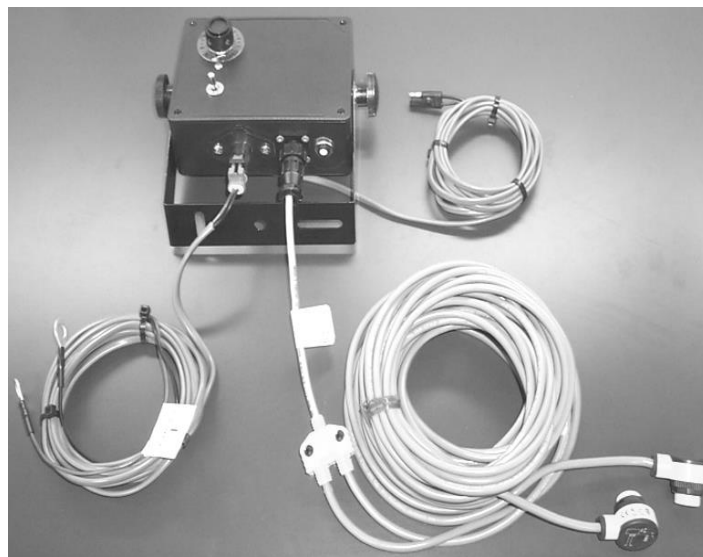
Kit 474A for Harvest Tec Model 464 Applicators 2001 and Newer

The power outlet that the hay indicator will hook into is the 464's baler communication cord (006-4640C3). There is a pigtail with a four-pin connector located near the baler/tractor junction where the end connector of the hay indicator fits into. The connector on the baler's communication cord may have a rubber cap on the end of it that needs to be removed.



Kit 474A for Harvest Tec Electronic Applicators (441, 461, 491 and 675) 2004 and Newer

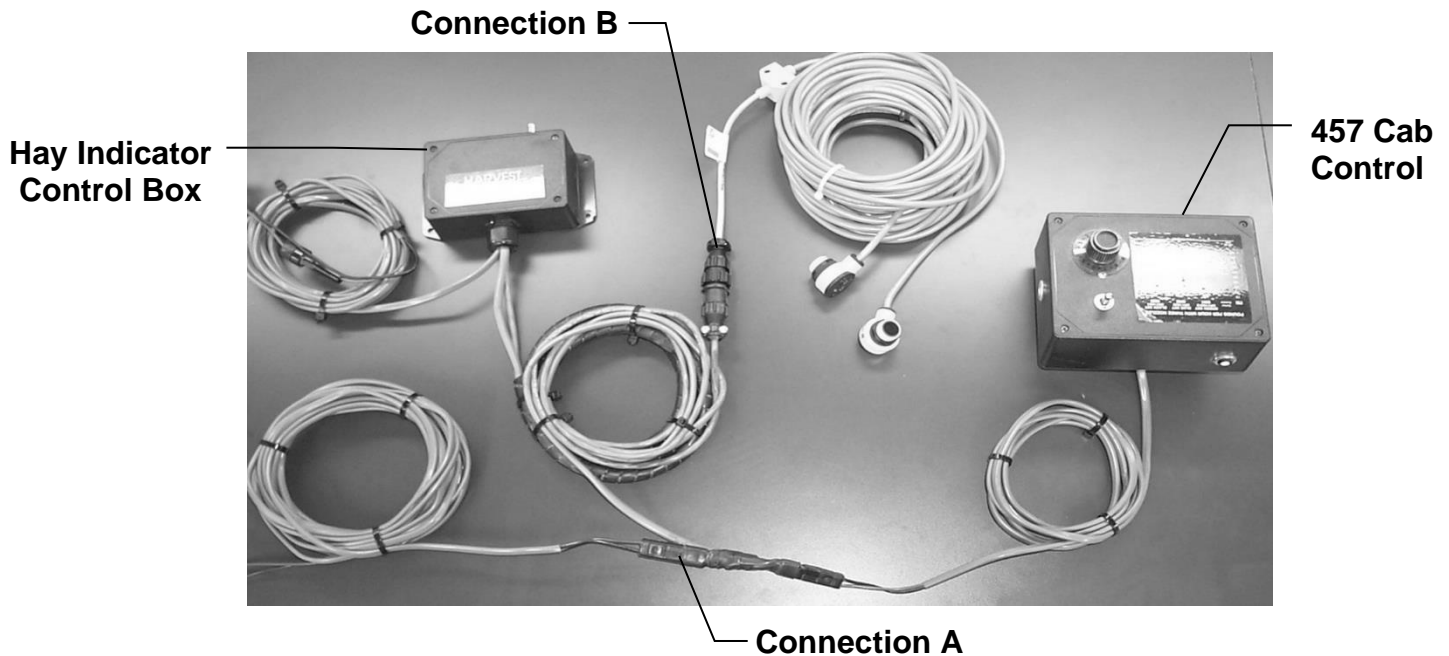
All electronic applicators 2004 and newer are pre-equipped with the necessary power outlet for the hay indicator to automatically pause the applicator. The power outlet the sensors hook into is located on the underside of the 457 control box in-between the circuit breaker and power cord (shown below).



Wiring Instructions (continued)

Kit 474D for Electronic & Manual Applicators (439, 441, 461, 491, and 675) 2003 and Before

The 474D hay indicator kit includes a control box that will provide the necessary power to pause the 457 control box or manual applicator. The 474D control box taps into the pump harness of the 457 control box or manual applicator (Figure 1). The hay indicator harness plugs into the 4 pin connector (labeled **Connection B** below).

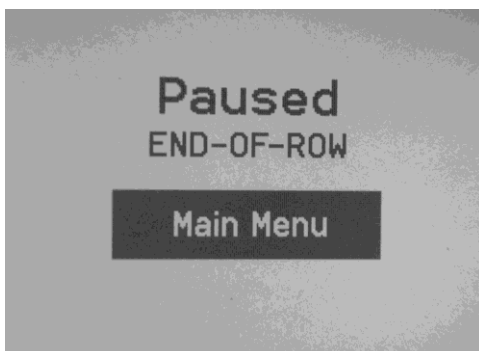


Operating Instructions

CAUTION: Unhook the pump leads when testing, aligning, or working around the hay sensors or nozzles. The nozzles will spray if someone or something comes in front of the hay indicator when the applicator is turned on. Failure to do so may cause injury.

Applicators 2005 and Newer – 400, 500, 600 and 700 Series

With the hay indicator mounted on the baler and the wiring parts connected properly, the hay indicator kit is ready to operate. Power up the applicator and the sensors will automatically turn on. The applicators have to be in an operating mode such as AUTO MODE or MANUAL MODE to go into pause. Whenever the sensors see each other the applicator will automatically pause, ex. After exiting a windrow, the following screen will appear:



After entering the windrow, either the AUTO or MANUAL MODE operating screen will re-appear. This screen will remain until the baler picks up crop and the hay indicator's signal is interrupted. Note: the MAIN MENU key can be pushed to exit this screen as well.

Operating Instructions (continued)

Kit 474A for 2001 and Newer Harvest Tec Model 464 Applicators

With the hay indicator mounted on the baler and the wiring parts connected properly, the hay indicator kit should be ready to go. Power up the 464 applicator and the sensors should automatically turn on. The 464 has to be in an operating mode such as AUTO MODE or MANUAL MODE to go into pause. Whenever the sensors see each other the applicator should automatically pause, after exiting a windrow, the following screen should appear:

			(U	N	I	T		S	T	O	P	P	E	D)			
P	U	S	H		S	T	A	R	T		T	O		R	E	S	U	M	E

After entering the windrow, either the AUTO or MANUAL MODE operating screen should re-appear. Hitting the START STOP button will not resume operation when the system is paused by the hay indicator. When finished baling, the hay indicator will automatically shut-off when the control box is turned off. If you need to work on the applicator, the hay indicator harness will need to be unplugged.

Kit 474A for Harvest Tec Electronic Applicators (441, 461, 491, and 675) 2004 and Newer

With the hay indicator mounted on the baler and the hay indicator cable plugged into the control box, the kit should be ready to go. Turn on the 457 control box. The hay indicator will cut power to the pump when the sensors are able to see each other, ex. after exiting the windrow. When entering the windrow, the sensors will not be able to see each other and will automatically turn the pump back on. Watching the pressure gauge can monitor this. Turn the 457 control box off when done baling or whenever working on the baler.

Kit 474D for Electronic & Manual Applicators (439, 441, 461, 491, 675) Made in 2003 and Before

To turn the hay indicator on, flip the switch on the hay indicator control box to the ON position. The hay indicator will cut power to the pump when the sensors are able to see each other, e.g. after exiting the windrow. When entering the windrow, the sensors will not be able to see each other and will automatically turn the pump back on. The green light on the hay indicator control indicates when the system is on. Note: the light on the 457 control box will not turn off.

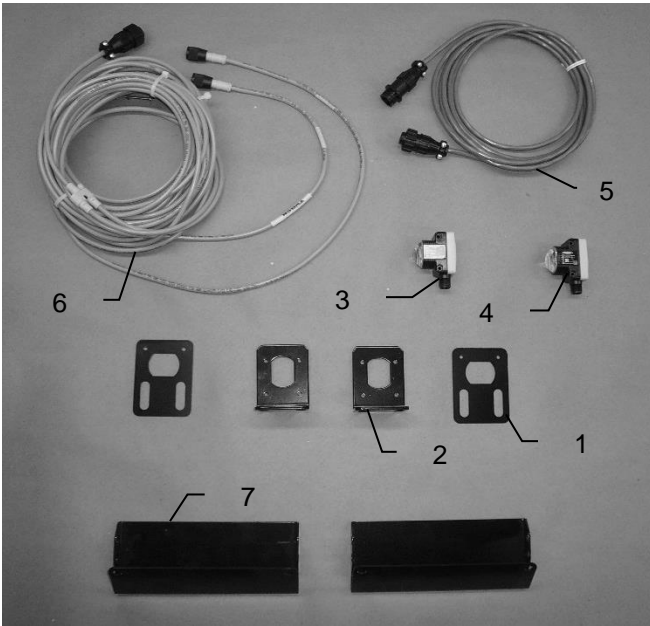
Troubleshooting

Symptom	Problem	Solution
Green lights on and orange light off, but no crop coming into baler “applicator does not pause”	Misaligned sensor	Use alignment lights to aid in realigning sensors
	Hay wrapped around hay indicator sensors	Remove hay Reposition hay indicator sensors to better location and realign
	Misaligned or bent pickup teeth	Straighten pickup teeth Reposition sensors to better location and realign
	Other obstruction get between hay indicator sensors	Reposition hay indicator sensors and realign Raise and lower pickup head to look for other obstructions
	Dirty hay indicator sensors	Clean hay indicator sensors
Green light on and orange light on, but crop is coming into baler “applicator stays paused”	Sensors positioned too high “over crop”	Reposition to lower spot to sense through crop flow
	Pinched or shorted wire	Inspect harness for pinch or rubbed spots
Applicator flickers on and off quickly	Misaligned or bent pickup teeth	Straighten pickup teeth Reposition sensors to better location and realign
	Sensors positioned too high “over crop”	Reposition to lower spot to sense through crop flow
Green light on receiver sensor only and emitter sensor green light off	Loose wire connection	Check all connections
	Pinched or broke wire	Inspect harness for pinch or rubbed spot
Green light on receiver sensor only and emitter sensor green light off	Power supply for hay indicator sensors reversed	Call Harvest Tec for assistance
No green or orange lights on	Control box not on	Turn on control box
	Hay indicator harness not hooked up	Connect hay indicator harness
	Pinched or broke wire	Inspect harness for pinch or rubbed spot
	Harness hooked to wrong sensors	Check to make sure the red and green color coded wires are on the correct colored sensors

Wiring Diagram

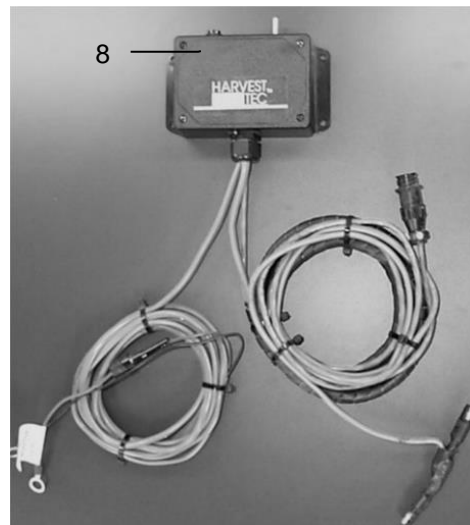
	Main Plug (006-7502H) 400-600 Series	Main Plug (006-7503H) 700 Series	Receiver Plug (Red)	Emitter Plug (Green)
Positive (Brown)	1	1	1	1
Ground (Blue)	2	2	3	3
Signal 12 Volt (Black)	3	3	4	Not used
Not used (White)	4	-	2	Not used

Harvest Tec 474A & 474C Parts Breakdown



<u>Ref#</u>	<u>Description</u>	<u>Part #</u>
1	Trash plate	001-5105S
2	Hay indicator bracket	001-5105E
3	Sensor receiver (red)	006-7502R
4	Sensor emitter (green)	006-7502E
5	Extension wire	006-7500A
6	Hay indicator harness	006-7502H
	Hay Indicator Harness (700 Series Only)	006-7503H
7	Hay diverter (NH and Case IH SBX only)	001-5105F
NP	Hay indicator retaining nut	006-7502N
	Hay indicator complete Includes Ref# 3,4,6	006-7502

<u>Ref</u>	<u>Description</u>	<u>Part #</u>
8	474D control box for standard electronic applicators (441, 461, 491 and 675) made in 2003 and before	030-4728



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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