

YieldSense™

Installation Guide

John Deere 9x00 and 9x10 Series Combines

Precision Planting®

Note: The information presented in this document was accurate at the time of publishing. The most current revision of this document can be found at <http://cloud.precisionplanting.com/pubs>

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System Overview

Qty.	Part #	Description
1	750828	Flow Sensor
1	750792	Flow Sensor Mount—9400/9500
1	750929	Flow Sensor Mount—96x0
2	750190	YSM on Mounting Plate
1	750819	Secondary YSM Base Harness
1	750850	YSM 1+1 Harness
1	750822	Elevator Speed Harness
1	750823	Wheel Speed Harness
1	750885	Head Height Sensor Kit
1	750841	Power Harness
1	750787	Cab Harness
1	750217	Flow Sensor Harness
1	750788	Bulkhead Harness
1	750886	Sensor Install Template Kit
1	750887	Hardware Kit
1	725708	Standard RAM Kit
1	725822	RAM Triple Suction Cup Base
1	728028	Long Arm RAM Kit

Tools for Install

Drill

Hammer

1 3/8" Step Bit

SAE and Metric Socket or Nut Driver Sets

Tape Measure

Grinder

Thin cut-off wheel

Side Cutter

Cutting Oil

Torque Wrench Capable of 8 ft-lbs

Reciprocating Saw

Quick Start Guide

Complete the following steps in order to make the YieldSense system operational.

*** For Further Information on each step, see the Operator's Guide.**

- 1. Ensure all Current Season Planting Data is in FieldView.** If FieldView is missing any Planting Maps, connect the iPad to the 20/20 and open the FieldView app. Any current year data will sync to the FieldView app and planting maps will automatically be built.
- 2. Backup Current Season Planting Data and Delete from 20/20 SeedSense.** Ensure all planting data is backed up in the Precision Cloud or export it to a USB drive. Then, delete planting data from the 20/20 Display to ensure adequate space is available for YieldSense data.
- 3. Install the latest iPad iOS software.** Make sure that your iPad software is up to date. If your iPad software is not up to date, you might not see the latest version of FieldView in the App store.
- 4. Download the latest FieldView app from the App Store.** Press the App Store button on the iPad home screen and either search for FieldView in the top right search box or, if you already have FieldView, press the Updates button in the bottom right.
- 5. Connect your iPad to the 20/20 Display and launch the FieldView app.** For Gen 1 displays, a FieldView module is required. For Gen 2 displays, connect cable from the iPad to the middle USB port on the back of the 20/20.
- 6. Update your 20/20 display with YieldSense software from USB or FieldView.** The current version of YieldSense is available on FieldView under **Tools, 20/20 Software Update**, and **YieldSense Updates**. It is also available on the YieldSense Support page at <http://www.precisionplanting.com>. Copy the file to a USB drive and insert it into the 20/20 display. Press **Setup, Data**, and **Software Update**. Select YieldSense on the bottom of the screen and update to the current version available on the USB.
- 7. On the 20/20 display, enter your combine configuration.** Press **Setup** and under the **Harvest** Tab select **Combine**. Enter the make, series, and model of the combine as well as the four required GPS measurements.
- 8. Enter your head configuration.** Press **Setup** and under the **Harvest** Tab select **Head**. Enter the make, model, and crop for the head. Each crop requires its own head setup. If the head is used for both wheat and soybeans, 2 separate heads need to be setup. Also complete the Harvesting Height Setup for the head/crop.
- 9. Ensure the 20/20 contains the correct Client, Farm, and Field List.** Upon loading YieldSense Software, the field list from SeedSense will copy to YieldSense. If other fields exist in FieldView, they will transfer automatically to the 20/20 display.
- 10. In YieldSense, select the correct Client, Farm, and Field.** From the home screen, press **Setup** and then press **Field** under the **Harvest** tab. Select the correct Client, Farm, and Field and press **Make Active** on the field setup page.
- 11. Complete Crop Setup.** After opening the first field, follow the on screen instructions to continue harvesting while waiting for actual elevator scale weight. Enter actual weight to complete crop setup. Remember that the setup load must be at least 25,000 pounds.
- 12. Enter Moisture Offset.** Obtain the actual moisture reading and compare it to your Moisture Sensor results. Press **Setup, Systems**, and **Moisture Sensor**. Then, enter an offset amount. If using an aftermarket AL yield monitor, enter in both the AL display and YieldSense.
- 13. GPS Setup Guides.** These can be found in the Cloud under Tech Docs—2020 Products—GPS Setup Guides.

Pre-Installation/Elevator Health Check

Note A: IMPORTANT! YieldSense installation in 9x00 and 9x10 combines requires the top and lower bearing in the elevator shaft to be adjustable. If your combine does not have these adjustable bearings an elevator adjustment kit is required. Refer to the adjustment kits listed below.

Adjustable 00-Series



Figure A1

Lower Bearing Adjustment



Figure A2

Non-Adjustable 10-Series



Figure A3

Elevator Adjustment kits for 9x00, 9x10 JD combines

Note 1: For a 00/10 Series JD combine, you need both upper and lower elevator adjustments. If it does not have both, order accordingly to ensure that both adjustments are installed on the combine.

Item	Model	Part #
Lower Elevator Adjustment Kit	00/10 John Deere	750996
Upper Elevator Shaft Adjustment Kit	9400, 9410, 9500, 9510 John Deere	750998
Upper Elevator Shaft Adjustment Kit	9600, 9610 John Deere	750999

Elevator Health Check:

- **Check the bottom and top elevator sprocket for wear.** It is recommended that you install a new sprocket for any used elevator. A worn sprocket will cause accelerated wear to the new YieldSense chain and can affect the accuracy of the YieldSense system.
- **Check middle divider plate.** At the bottom of the elevator verify there is no damage to the divider plate. Repair or replace as necessary. A damaged or missing divider plate will cause potential failure to the chain and paddles.

Reference document number 955557 John Deere Lower boot assembly procedure for instructions on sprocket replacement and divider plate repair.

Preparing For Installation

Step 1: Locate the tension spring behind the clean grain elevator and release the tension by pulling out on the elevator drive belt. This will bring the tension spring up and provide clearance to insert a pin to secure the tensioning spring in the locked position.

Install Tip: Use a ratchet strap to release the tension on the elevator drive belt.



Figure 1

Step 2: Inside the grain tank, remove the belt cover using a 13mm wrench and take the belt off of the drive pulley at the top of the elevator.

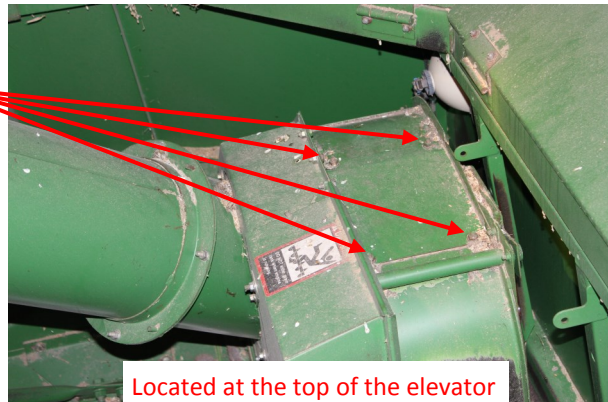


Figure 2

Step 3: Remove the top deflector plate by removing the four (4) nuts using a 13mm wrench.

Install Tip: Apply penetrating oil before removing the nuts. The front two studs will be reused during the installation procedure.

Remove Nuts



Located at the top of the elevator



Figure 3

Flow Sensor Installation

Note B: Be aware of the differences in the mounting plate between 9400/9500 (figure B1) and the 9600 (figure B2). The 9600 elevator is wider than the 9400/9500 elevator.

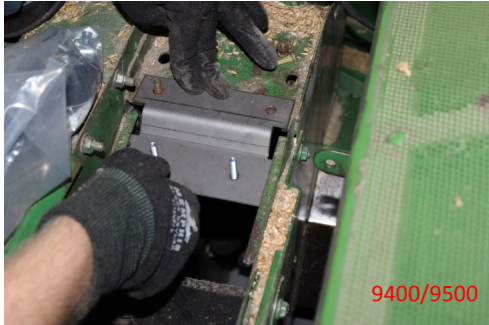


Figure B1



Figure B2

Step 4: For **9400/9500** only. With the deflector plate removed, set the mounting plate in place on the studs. Use a cutting wheel to cut from the mounting template back to the shaft. When installing the mounting plate, start with the mounting plate below the two housing rails and then angle the plate over the two studs.



Figure 4

Step 5: For **9600** only. With the deflector plate removed set the mounting plate in place on the studs. Draw a line from the inside of the plate extending to the shaft. Use a reciprocating saw and/or an angle grinder to cut down your lines and along the shaft. Your elevator will look like the elevator pictured on the right after cutting.

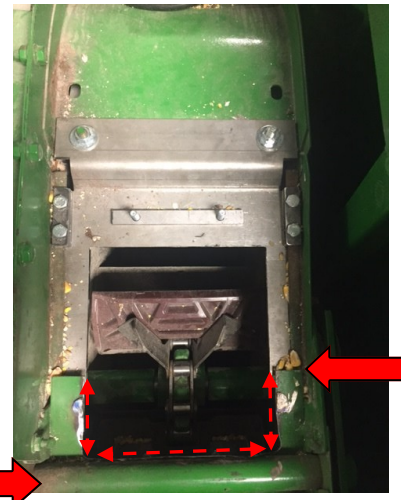


Figure 5

Flow Sensor Installation

Step 6: Remove the mounting plate. Set the template in place on the existing studs and tighten it down to ensure it does not move. Using the provided center punch, mark the four (4) holes on the template. Drill the four holes with the letter H drill bit provided in the kit.



Figure 6

Step 7: Install the flow sensor mounting plate and fasten the plate to the threaded studs. Position the four (4) mounting blocks on each side of the elevator rail. Thread the 1/4" x 1" bolts through the holes and tighten using a 7/16" wrench.



Figure 7

Note C: One block will go in between the existing combine rail and the mounting plate. The other block will go on top of the combine rail and the bolts will thread through the aligned holes.

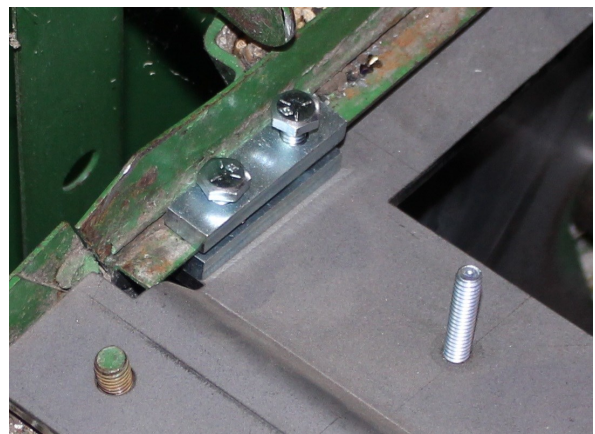


Figure C

Flow Sensor Installation

Step 8: 9600/9610 installs only. Thread a 1/4" x 5/8" bolt and washer on each side of the elevator in the remaining two holes. The washer will rest on the top of the side rail on each side. Tighten the bolts with a 7/16" wrench.



Figure 8

Step 9: With the adjustment tool sitting on the shaft, adjust the bearing height so the curved surface sits and contacts the inside elevator surface. The bolt alignment indicator on the adjustment tool will give you a line of sight to the elevator where the bolts will secure the flow sensor. If that line hits the shaft the bearing needs to be adjusted down.

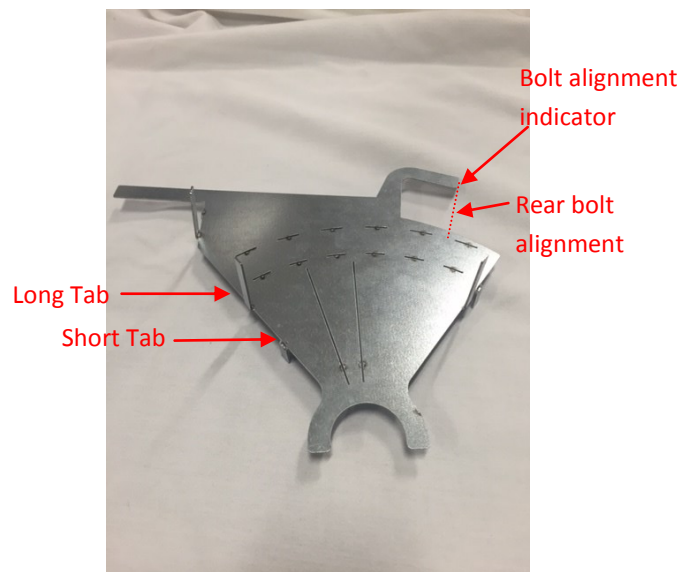


Figure 9

Step 10: The tabs are used to keep the alignment tool parallel to the elevator. Bend the short tabs to the right and the long tabs to the left.

Note D: For a 9400/9500 use the short tabs on the alignment tool.

Note E: For 9600 use the long tabs on the alignment tool.

9600 alignment
tool placement



Figure E

Flow Sensor Installation

Note F: The bearing adjustment rod is adjusted from the bottom of the elevator while standing on the ground. It is easiest to have one person using the shaft adjustment tool from the top while another person adjusts the rod from the bottom. The chain may need to be rotated so that the shaft adjustment tool can be inserted.



Figure F

Note G: Once the bearing height has been set DO NOT adjust the chain by moving top shaft adjustment rod. Apply the provided sticker on the side of the elevator as a reminder.



Figure G



Flow Sensor Installation

Step 11: Once the bearing height has been set, use the shaft alignment tool to determine the amount of shims you will need by placing the number of shims that will easily fit between the mounting plate and the shaft adjustment tools. You should not move the shaft alignment tool during this step. (Note: do this before drilling out the rear holes.)



Figure 10

Step 12: Place the required number of shims on the flow sensor studs. Then locate the rear punch guide tool shown to the right. The sides of the guide will need to be bent 90 degrees upward as shown in the picture. Bend the top and bottom of the guide so it will sit flush on the elevator housing.

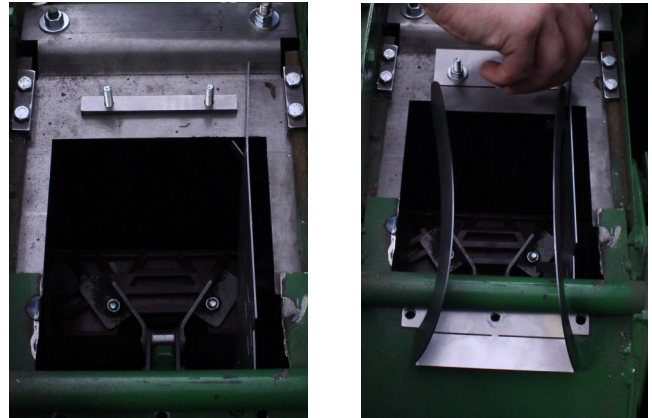


Figure 11

Note H: When using the rear punch guide tool, ensure that the front of the template lines up with the tip of the shaft locating tool. Then use the nuts to hold the rear punch guide tool in place.

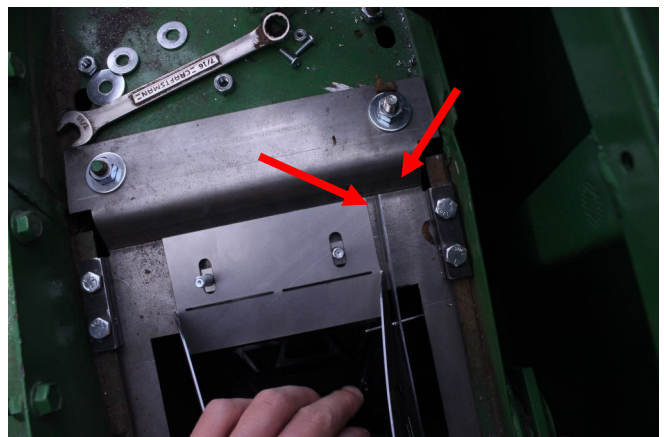


Figure H

Flow Sensor Installation

Step 13: Verify the guide is centered and use a center punch to mark the three holes. Next use the #4 drill bit provided to drill out the middle hole through the elevator housing. Fasten down the middle hole with a bolt before drilling out the outside holes.



Figure 12

Step 14: Insert the flow sensor as shown. The backside of the flow sensor will be inside the elevator while the front will rest on the mounting bracket.



Figure 13

Step 15: Once the flow sensor is in place use the hardware included to mount the flow sensor to the grain elevator. Make sure the elevator reinforcement plate is installed on the outside of the elevator for the three (3) 1/4"-20 x 3/4" bolts at the rear of the flow sensor.



Figure 14

Clean Grain Elevator Install

Perform the Elevator Health Check on page 5 before proceeding.

Step 1: Rotate the OEM chain to find the master link and remove it.

Step 2: Use the old master link to connect the new chain to one end of the OEM chain—attaching to the side that is toward the rear of the combine is preferred.

Note: Make sure that the paddles are facing the correct direction as shown in the picture below.

Step 3: Pull out the old chain and feed in the new one.

Warning: When the loose end of the new chain is close to the bottom drive sprocket, be careful that the chain doesn't go past the bottom sprocket. This may cause the extra weight of the old chain to pull the new chain out of the clean grain elevator.

Step 4: Remove the old master link and connect the two ends of the new chain using the new master link.

Note J: You may need to remove an offset link



Figure 1



Figure 2



Figure 3

Step 5: Adjust tension to the proper setting so that the chain can be slid side to side but not be pulled away from the sprocket.

YieldSense Module (YSM) Installation

Step 1: To mount the two (2) YSM's to the combine, open the right side panel of the combine and find location above the access panel. The YSM will need to be level $\pm 5^\circ$ when bolted in place.

Step 2: Mark two holes and drill out using a #4 drill bit.

Step 3: Mount the lower YieldSense Module using two of the provided self-tapping 1/4" - 20 bolts. Repeat for the second YieldSense Module directly above the lower YieldSense Module.



Figure 1

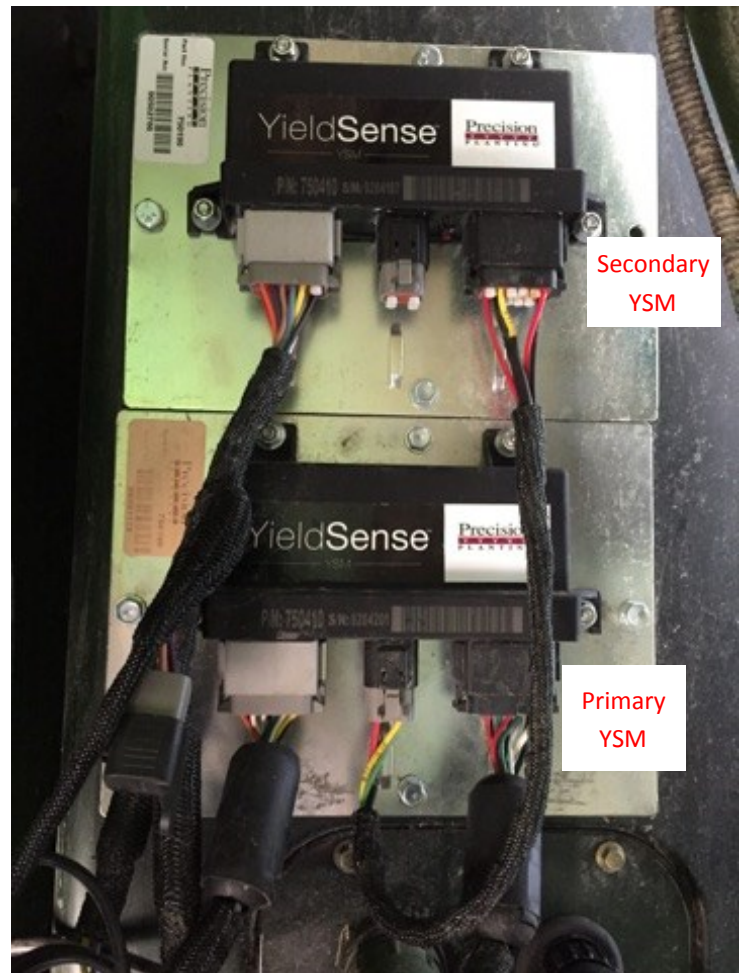


Figure 2

YieldSense Module (YSM) Harness Installation

Step 1: Connect the YSM CAN harness to both YSM's. The 4 pin connector will plug into the middle port on the bottom (primary) YSM and the black 12 pin will connect to the top (secondary) YSM.

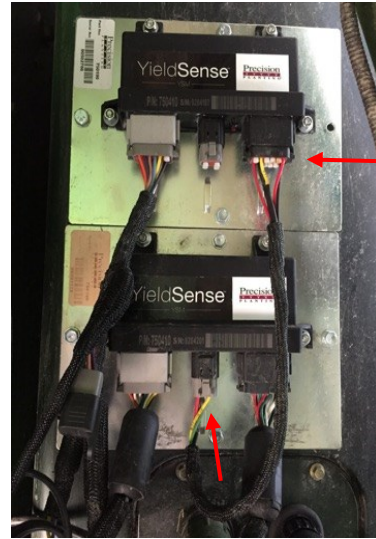


Figure 1

Step 2: Next connect the grey 12 pin Secondary YSM base harness into the grey left plug on the top (secondary) YSM. This harness also has connectors for the elevator speed, ground speed, and height sensor.

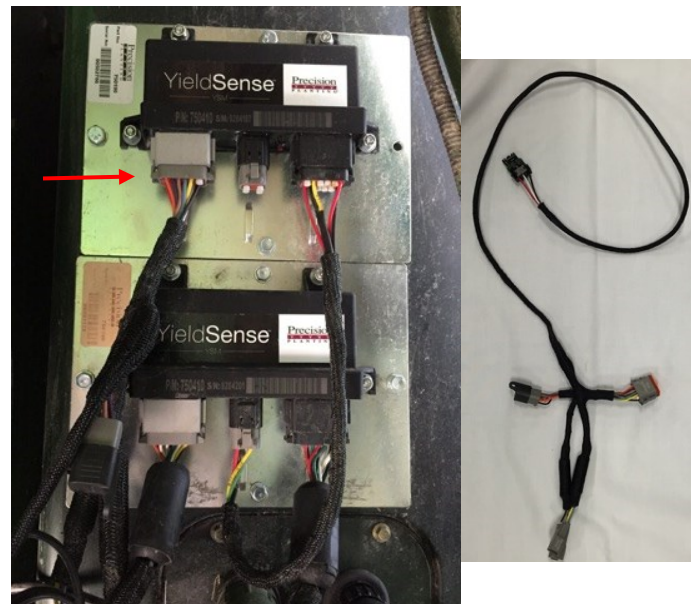


Figure 2

YieldSense Module (YSM) Harness Installation

Step 3: The elevator speed sensor is located on the bottom left hand side of the combine just behind the front tire. Locate the provided elevator speed harness. Unplug the combine harness from the sensor and plug into the elevator speed harness. Then plug the speed harness into the sensor.



Figure 3

Step 4: Remove the shields for along the bottom of the combine. Route the harness up to the front of the combine and route under the cab towards the YSM.



Figure 4

Step 5: Route the harness to the secondary YSM where you will plug into the second YSM base harness at the plug labeled elevator speed. Secure harness to the P-clip with a zip tie as shown.

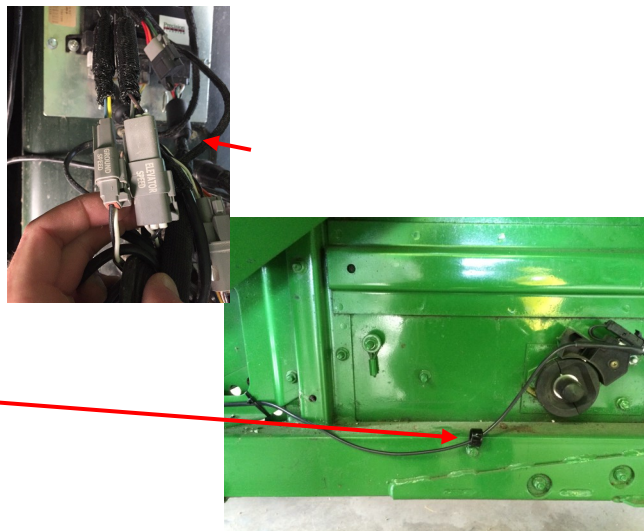


Figure 5

Head Height Sensor Installation

Note K: The head height sensor components will come in 3 parts.

1. Feeder house height plate
2. Control rod linkage
3. Angle position sensor

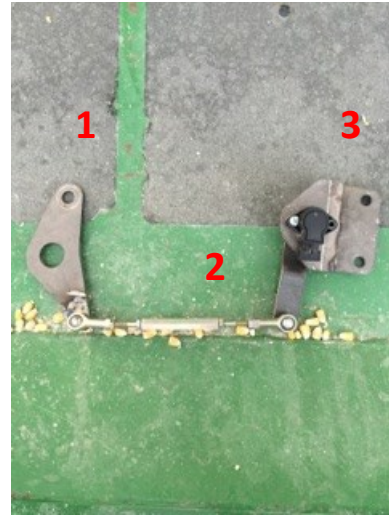


Figure K

Step 1: Lower the feeder house all the way down. Remove the feeder house drive belt shield.



Figure 1

Step 2: Remove the top left nut and bolt. Replace the bolt with the 35mm bolt that is provided.



Figure 2

Head Height Sensor Installation

Step 3: Fasten the turnbuckle to the feeder house height plate and install on the new 35mm bolt.

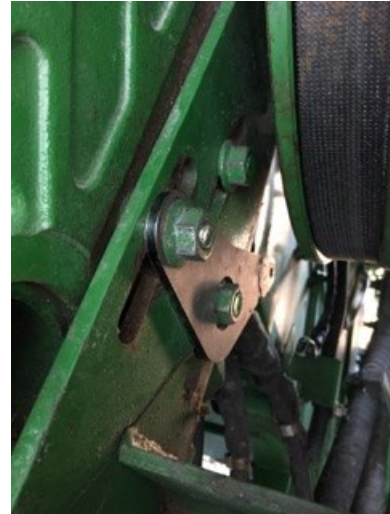


Figure 3

Step 4: Locate the two studs behind the feeder house drive pulley.

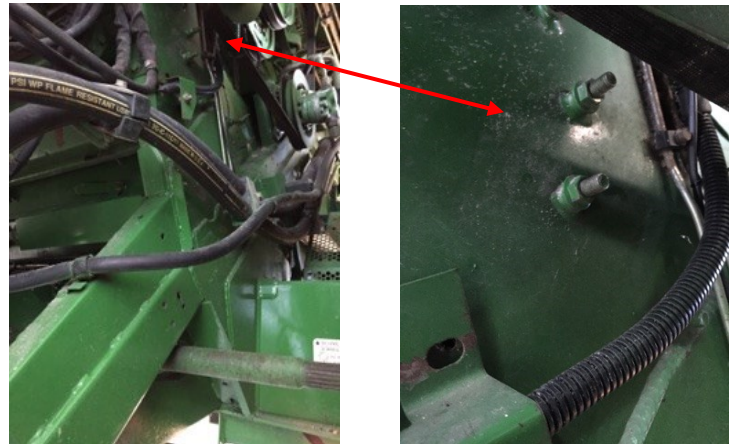


Figure 4

Step 5: Install the angle position sensor on the two studs and use the OEM nuts to tighten the sensor in place. Position the sensor so the connector points down as shown in the picture.



Figure 5

Head Height Sensor Installation

Step 6: Install the control linkage rod connecting the feeder house height plate to the angle position sensor.



Figure 6

Step 7: Plug the 3 pin into the angle position sensor. Guide head height sensor harness upwards to the under side of the cab. Secure harness away from the belts ensuring there will be no interference.

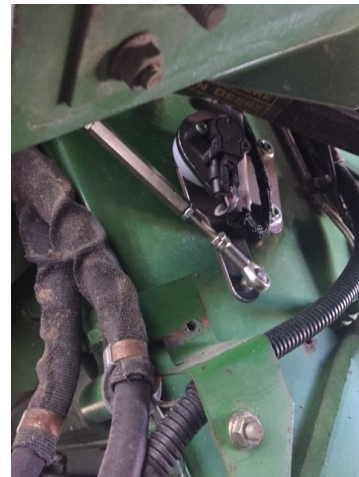


Figure 7

Step 8: Zip tie the harness under the cab. Route the harness to the 3 pin head height sensor coming off the secondary YSM base harness.



Figure 8

Speed Sensor Installation

Step 1: Locate the transmission beneath the feeder house. Locate the 2 pin weatherpack connector and unplug it for the speed sensor. Connect both connections to Y into the existing speed harness.

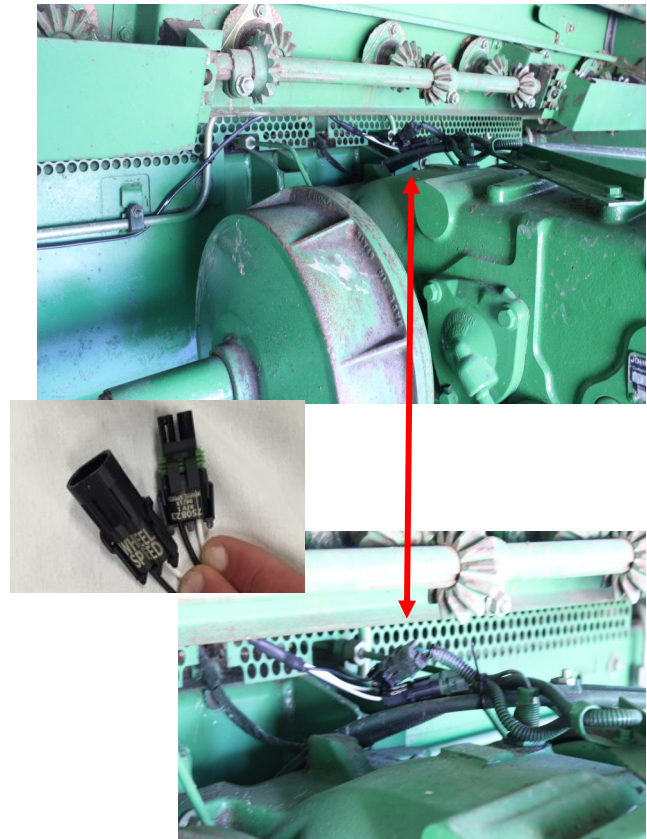


Figure 1

Step 2: Route the harness up and to the secondary YSM base harness. Plug into the connector labeled ground speed.

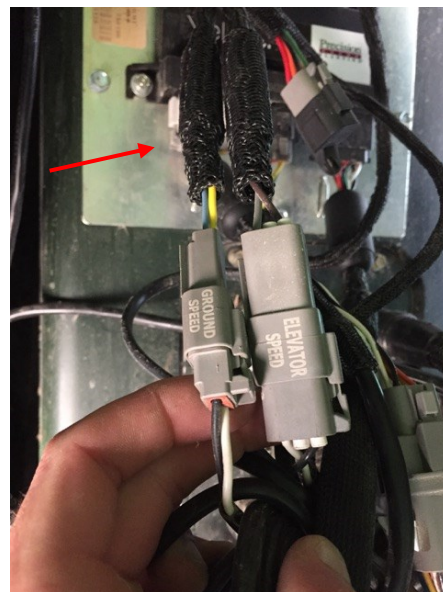


Figure 2

Cab Harness Installation

Step 1: Remove the six screws from the firewall panel located above the front, right tire. Use an 8mm or 10mm nut driver, depending on the size of screws.

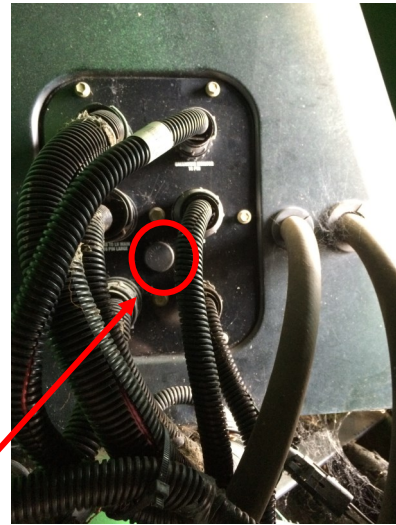


Figure 1

Step 2: Use a 1-3/8" step bit or a hole saw to create a hole in the firewall panel. If all six positions are full, remove the rubber plug circled in figure 1 and use that hole as your pilot hole.



Figure 2

Step 3: Connect the Bulkhead Harness to the bulkhead connector in the firewall panel and route it to the YSM. Connect the bulkhead Harness to the black connector on the YSM.



Figure 3

Cab Harness Installation

Step 4: Inside the cab, route the cab harness out of the kick plate at the rear, right corner of the cab.



Figure 4

Step 5: Route the harness along the corner of the cab and up to the monitor along the front corner post. Connect this harness to the 20/20 monitor.

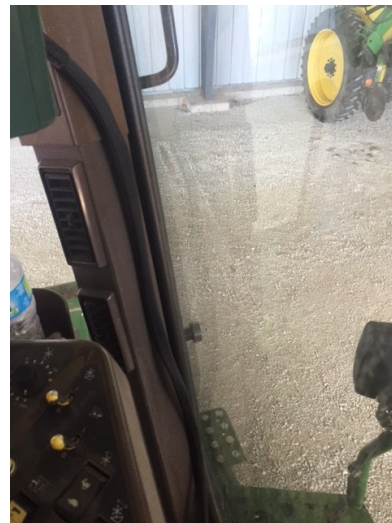


Figure 5

Power Harness Installation

Step 1: To gain access to power locate the 16-pin connector below the left side of the cab.



Figure 1

Step 2: Unplug the 16 pin connector and plug in the YieldSense Y-harness power adapter. Ground the ring terminal on the horn mounting stud.



Figure 2

Step 3: Route the harness to the Bulkhead Harness where you will plug into the 3 pin power connector.



Figure 3

Flow Sensor Harness Installation

Step 1: Plug the Flow Sensor Harness into the matching grey connector on the bottom (primary) YSM. Then route the Flow Sensor Harness towards the Flow Sensor, avoiding any two-way radio cables. Secure the harness with zip ties that are snug.

Flow Sensor

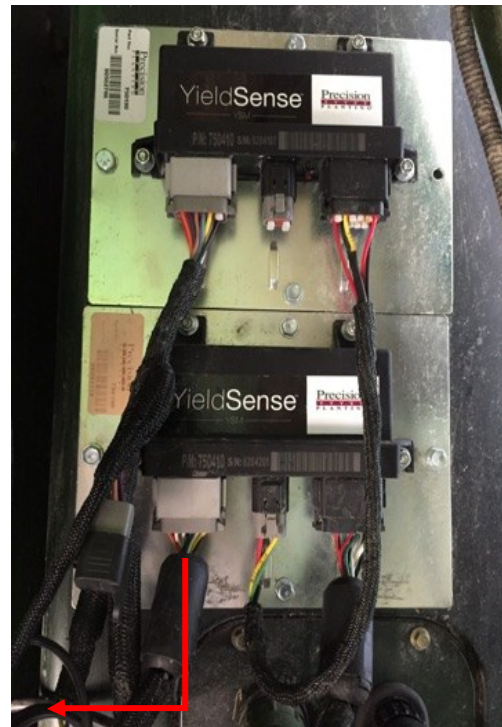


Figure 1

Step 2: Inside the grain tank use step bit to drill a 1.25" hole in the location shown. A grommet is included to fill the hole.



Figure 2

Flow Sensor Harness Installation

Step 3: Feed the flow sensor harness into the grain tank and run it along the edge of the tank and then inside the edge of the elevator to the front side of the Flow Sensor.

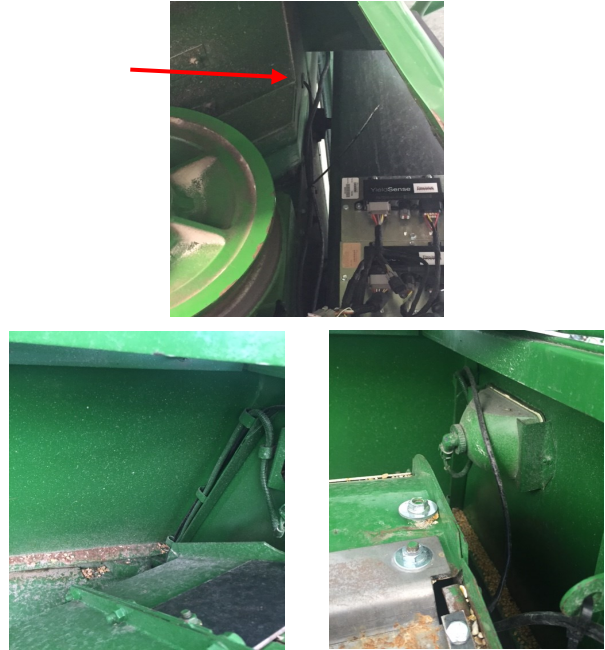


Figure 3

Step 4: Connect the Flow Sensor Harness to the Flow Sensor.

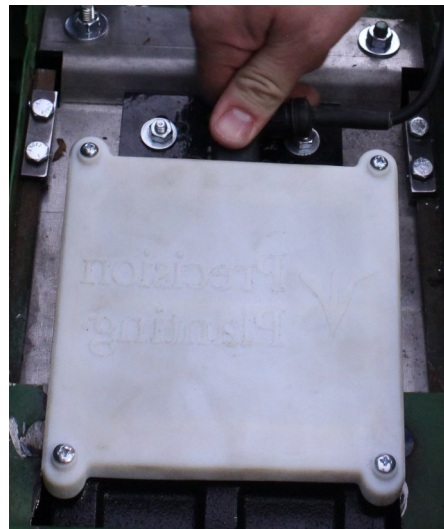


Figure 4

20/20 and iPad Installation

Step 1: Mount the 20/20 display and the iPad RAM mount in the cab as you desire. A display mounting bracket and two mounting options are provided.

- 1) Two 1/4"-20 bolts are provided if drilling and tapping is required.
- 2) Use the triple suction cup mount for the other display.

Step 2: For Gen 1 20/20 displays, connect the Cab Harness to the FieldView Display Harness and then plug the FieldView Display Harness into the 20/20 display. For Gen 2 20/20 displays, plug the cab harness to the back of the 20/20 display.



Warning: Do not connect the Cab Control Module when using YieldSense. All connectors for the CCM should be disconnected.



Figure M: Completed Installation

Connecting to GPS

There are two options for connecting to GPS: the cab harness inside the cab and the bulkhead harness outside of the cab. Both connectors are labeled GPS. Only connect to one of these connectors. Use a StarFire GPS Adapter Harness and the outside connector if using a StarFire Receiver. Use the appropriate GPS adapter and the inside connector for most other GPS sources. If the combine is not providing power to the receiver, plug the adapter harness (not included) into the outside GPS connector and then connect the adapter harness to the 2-pin weather pack on the cab harness.

WARNING: If the GPS is being powered by the combine **DO NOT** connect the 2 pin weather pack. If connected the two-pin weather packs will back feed battery power to the switched power circuit.

After GPS harness is connected verify the GPS signal on both the 20/20 monitor and a combine monitor if applicable.

Inside the cab



Figure 1a

Outside the cab



Figure 1b