

YieldSense™

Installation Guide **Case IH Midrange Combines** **x088, x130, x140**

Precision Planting®

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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>.

System Overview

YieldSense Base Kit (750004)		
Qty.	Part #	Description
1	750106	Flow Sensor Assembly
1	750190	YieldSense Module (YSM) Assembly
1	750523	Cab Harness
1	750771	Cab Power Harness
1	750411	Flow Sensor Harness
1	750528	Installation Hardware Kit
1	725822	RAM Mount Base - Triple Suction Mount
1	725821	RAM Kit Arm (10in) with Ball Mounts
1	725708	RAM Kit Arm (6in) with Ball Mounts
1	750359	Display Mounting Bracket
Chain & Paddle Kit		
1	750750	Chain Assembly with Paddles

Tools for Install

Drill
 Needle Nose Pliers
 9/16" Socket or Nut Driver
 7/16" Socket or Nut Driver
 13 mm Deep Socket
 Ratchet
 #2 Phillips Screw Driver
 16 mm Wrench (Qty. 2)
 24 mm Wrench (Qty. 2)
 1 3/4" Hole Saw
 1 1/4" Hole Saw
 Cutting oil
 Side cutters
 Tape Measure
 Vise Grips
 Hammer
 Pry Bar
 File (optional)

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.

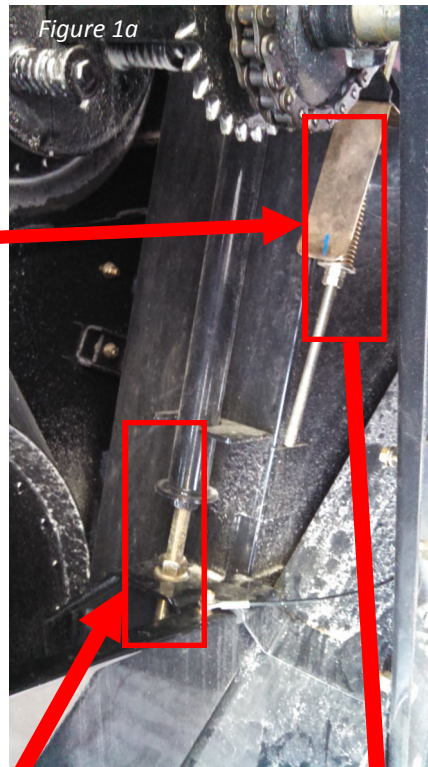
11. Complete Crop Setup. After opening the first field, follow the on screen instructions to continue harvesting while waiting for actual elevator scale weight. Enter actual weight to complete crop setup. Remember that the setup load must be at least 25,000 pounds.

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.

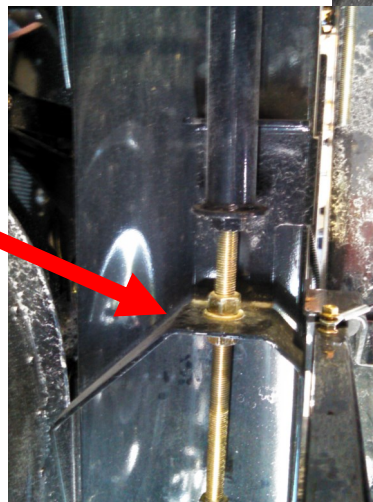
13. GPS Setup Guides. These can be found in the Cloud under Tech Docs—2020 Products—GPS Setup Guides.

Clean Grain Elevator Chain Installation

Step 1: Locate the tensioning spring for the clean grain elevator chain between the elevator and the separator. Use two 16mm wrenches to remove the tension on the elevator chain. Once the tension is relieved, remove the chain from the tension pulley.



Step 2: Locate the tensioning bolts on the back of the elevator. Use a 24 mm wrench to loosen the two nuts and adjust the elevator downwards.



Clean Grain Elevator Chain Installation

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.

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

Step 2: Use the old master link to connect the YieldSense Chain to the open end of the OEM chain that is towards the rear of the combine.

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.

Final Checks

- **Check for paddle contact in the elevator.** Locate the Grain Property bucket on the chain. Then spin the chain by hand one revolution until the bucket has come back around. This is to insure that no paddles are making contact with anything in the elevator.

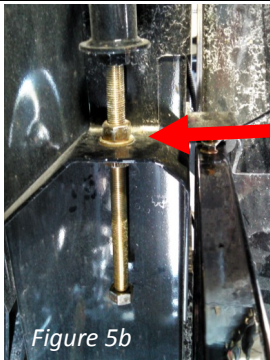
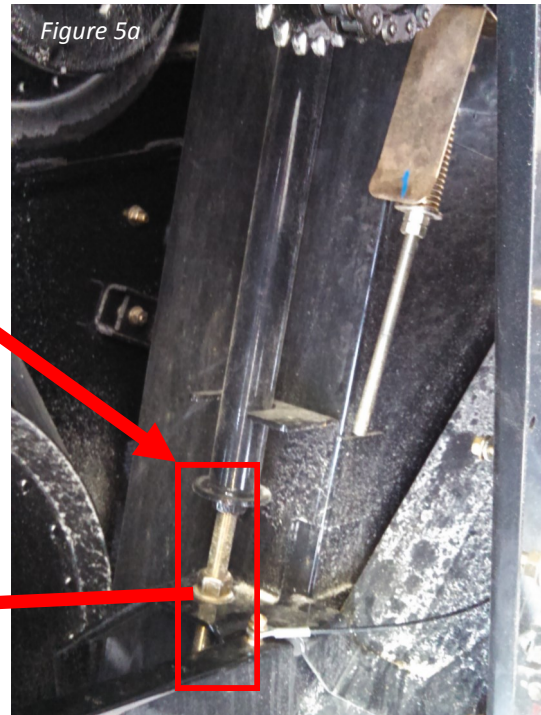


Illustration A

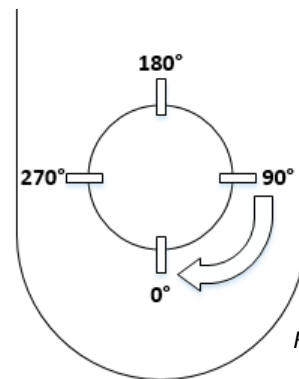
Clean Grain Elevator Chain Installation (Cont.)

Step 5: Tighten the clean grain elevator chain using the 24 mm adjustment nuts on the back of the elevator.

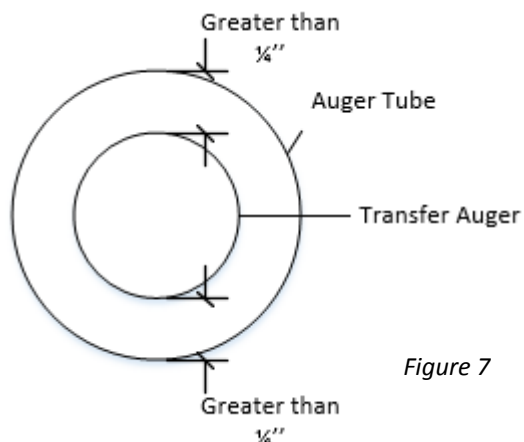
Note: The chain is properly tightened when it cannot be pulled away from the bottom sprocket but can still be slid back and forth across the sprocket. Leave the drive chain off until the flow sensor is installed.



Step 6: Next mark the location you are at on the sprocket. Rotate to 90°, 180°, and 270° making sure at each point you are still able to slide the chain side to side and not pull it away from the sprocket at any point. (Figure 6)



Step 7: Check clearance between the auger and the bottom of the tube. If clearance between transfer auger and auger tube is less than 1/4", remove a half link and adjust the bearing up. Check to make sure you have at least 1/4" of clearance to the top of the tube as well. (Figure 7)

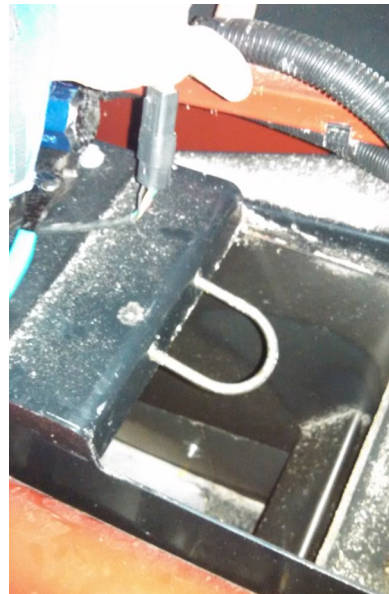


Flow Sensor Installation

Step 1: Remove the stock cover. Unlatch the cam lock, then use a pry bar and hammer to break the cover loose.



Step 2: Remove the U-bolt from the top and discard.



Step 3: Insert the 2 carriage bolts into the backing plate, and place the bolts through the holes in the elevator cover, making sure that they don't fall back inside.



Flow Sensor Installation

Step 4: Slide the new sensor assembly onto the elevator housing, lining the bolts up between the tabs on the new cover.

Step 5: Place the other backing plate into the tabs, inserting the bolts in the backing plate holes. Add the provided washer and nut onto each bolt.



Figure 5

Step 6: Tighten bolts evenly to draw the cover onto elevator housing. Tighten down until the profile of the plate contacts the radius of the housing. Stop as soon as contact is achieved.



Figure 6a



Figure 6b

Flow Sensor Installation

Step 7: Use the Paddle Clearance Gauge to check the distance between the flow sensor and a paddle on the clean grain elevator chain.

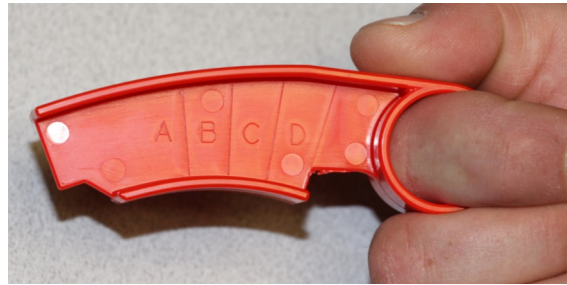


Figure 7

Step 8: Lower bubble auger to gain access to the flow sensor

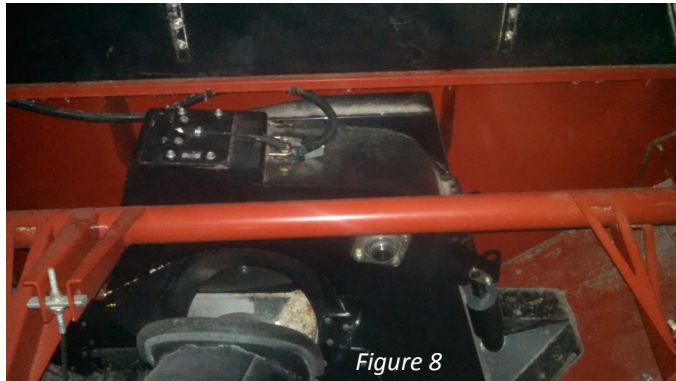


Figure 8

Step 9: Gently insert the Paddle Clearance Gauge at the center of the paddle until it becomes tight against the sensing pad on the flow sensor. Use a finger to identify how far the gauge inserts into the gap. Remove the gauge and note the position.

Sensing
Pad

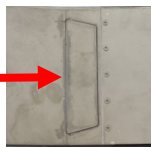


Figure 9b

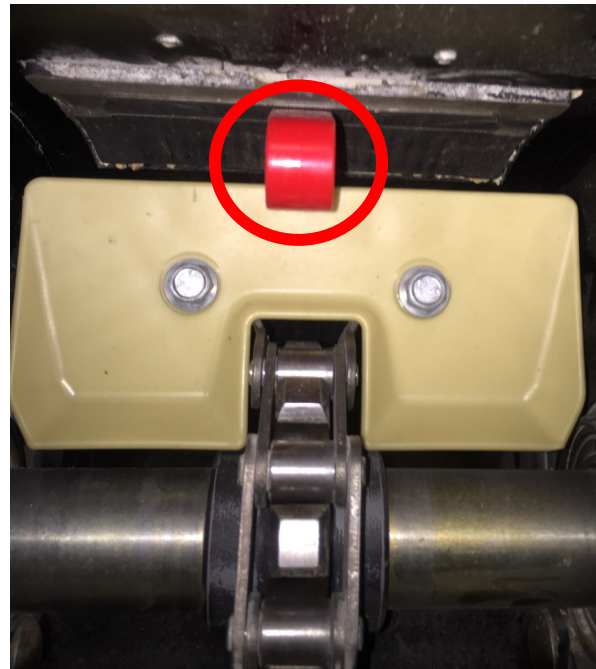


Figure 9a

Step 10: If the Paddle Clearance Gauge becomes tight within regions A through D, the sensor is in the correct location. If the gauge becomes tight outside of this range, verify that you have the correct chain and paddle kit installed and check the sprocket for excessive wear and replace if needed.

Clean Grain Elevator Chain Installation (Cont.)

Step 1: Confirm that the chain is properly routed and then adjust the tensioning spring until the washer reaches the spring gauge as shown.

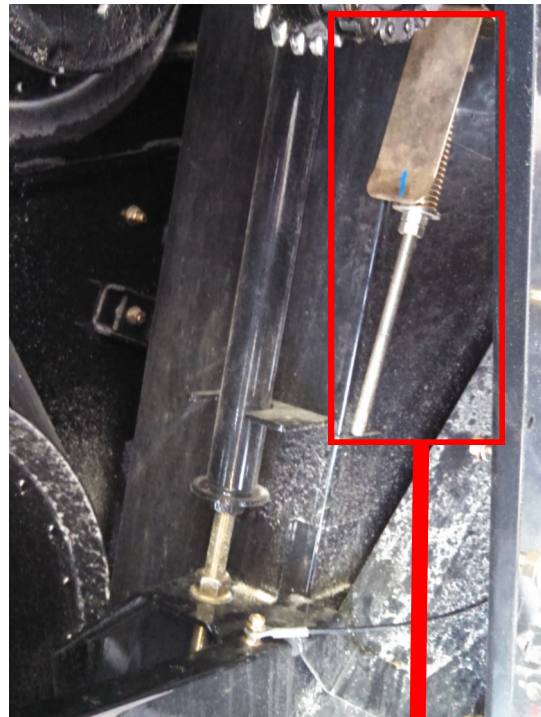


Figure 1

Step 2: After 10 hours of operation, check the chain tension. Adjust the tension if needed.



Figure 2

YieldSense Module (YSM) Installation

Step 1: Open the right side panel of the combine. Identify the mounting location for the YSM as shown and use the YSM mounting plate to mark two spots to drill holes to secure the mounting plate to the combine. The YSM will need to be level or $\pm 5^\circ$ once bolted in place.

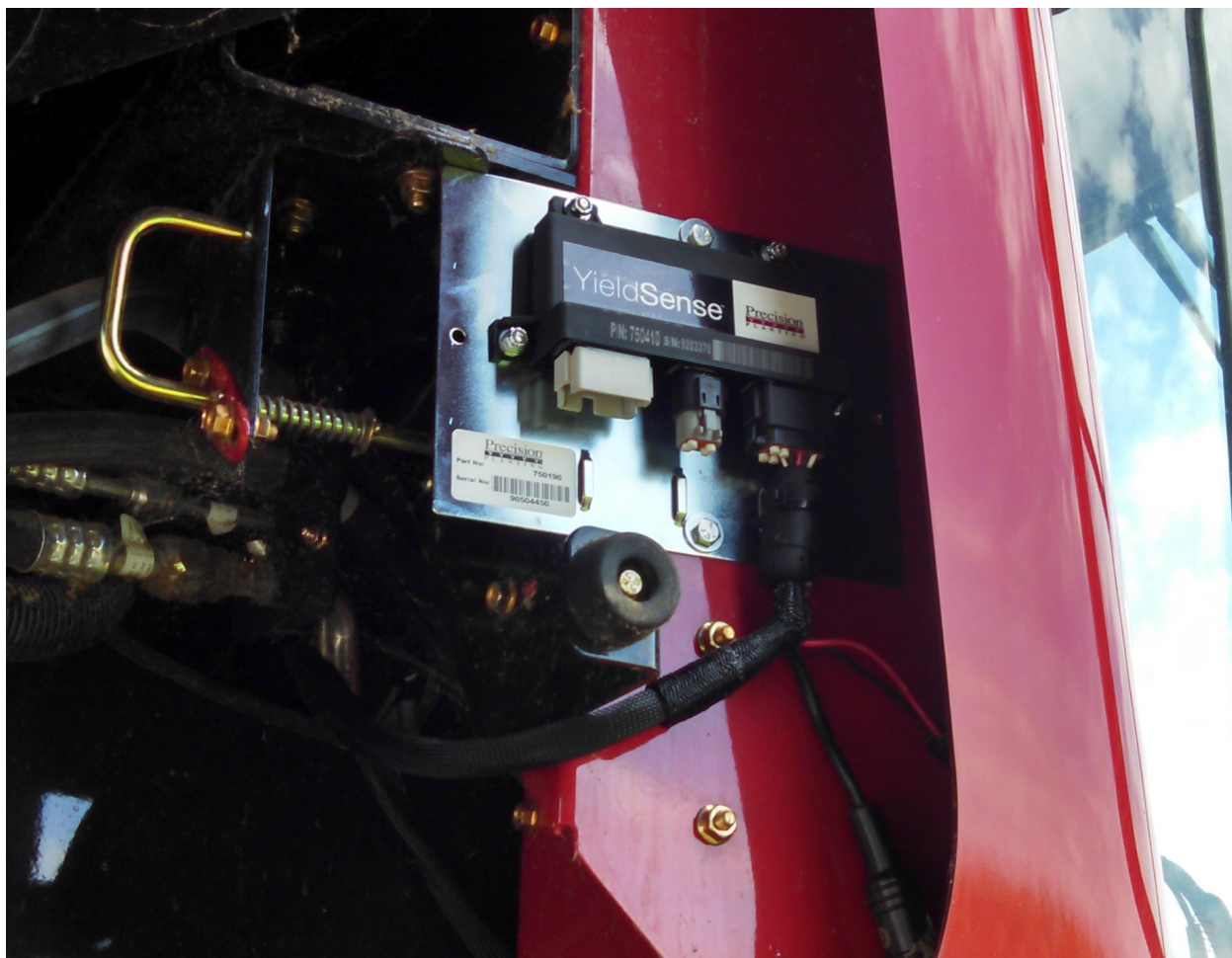


Figure 1

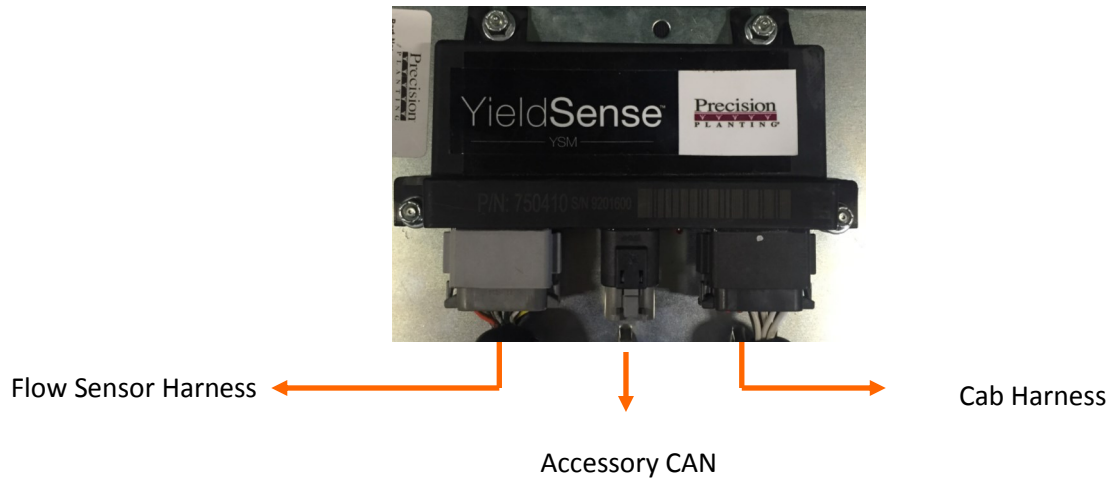
Step 2: Drill the two holes as marked in step 1 using the provided #4 bit.

Step 3: Tap the holes using the provided 1/4"-20 tap.

Step 4: Mount the Yield Sense Module using the provided 1/4"-20 bolts.

Flow Sensor Harness Installation

Illustration A



Step 1: Plug the 6-pin Deutsch connector of the Flow Sensor Harness into the Flow Sensor Assembly

Step 2: Route the flow sensor harness down to the YSM. Secure the harness with zip ties about every 12 inches. Tighten the zip ties so that they are just snug. A 1.25" hole can be drilled in the side of the grain tank, and the harness can be routed through the wall using the provided grommet.

Warning : Do not route the flow sensor harness next to any large power or CB radio cables. Doing so may result in a noisy sensor signal.



Illustration B

Cab Harness Installation

Step 1: For **X130, X140**, remove #2 Phillips screws from gear shift lever, and remove plastic housing, leaving the boot on the lever. For **X088**, continue to next step.



Figure 1

Step 2: Pull up the floor mat on the right side of the cab to gain access to the metal floor. Drill a hole with a 1 3/4" hole saw (not provided) in the location shown for **X130, X140**.

For **X088**, drill from bottom, near the windshield in area shown.



Figure 2a



Warning: Before drilling, ensure that the area immediately underneath the area you plan to drill through is free from harnesses and tubing. Adjust your hole location if necessary.

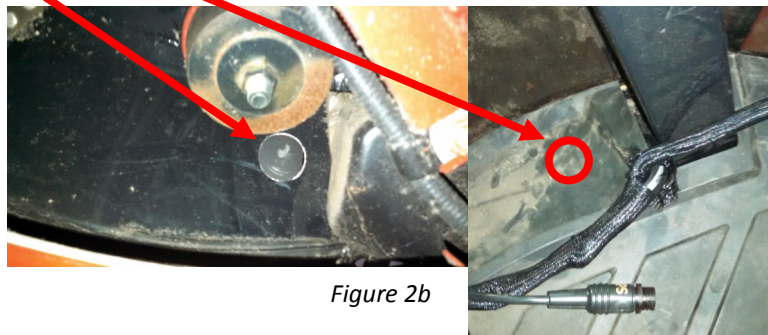


Figure 2b

Step 3: Remove the sharp edges of the hole with a file.

Step 4: Feed the 12-pin Deutsch connector end of the Cab Harness through the hole in the floor as shown at right.



Figure 4

Cab Harness Installation

Step 5: Route the cab harness to the YSM. Secure with zip ties about every 12 inches, pulling the zip ties just snug. Connect the 12-pin deutsch connector on the cab harness to the YSM.

Step 6: Insert the grommet on the cab harness into the hole in the floor.



Figure 6

Step 7: In the cab, route the cab harness inside the harness channel towards the cab post as shown and reinstall the floor mat.



Figure 7

Cab Harness Installation

Step 8: In **X130** and **X140** cabs, plug the power connector of the cab harness into the 3-pin AMP connector just below the key as shown.

In **X088** cabs, connect the cab power harness to the seat harness underneath the seat. Then plug into the power connector of the cab harness. Then, remove fuse panel underneath armrest. Locate switched power stud at the back of the cavity. Connect power terminal, then connect ground terminal to any frame ground.

X130, X140



X088

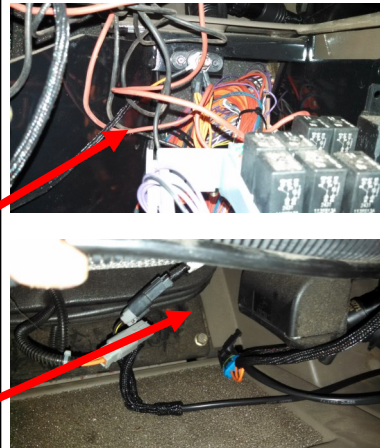


Figure 8

X130, X140



X088



Figure 9

Step 9: In **X130** and **X140** cabs, plug the 9-pin Deutsch connector on the cab harness into the diagnostic port located to the left of the operator's seat.

In **X088** cabs, plug the 9-pin Deutsch connector on the cab harness into the diagnostic port located behind the armrest.

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) A 10 mm bolt is provided if you have an open and threaded hole in the railing along the top edge of the right window.
- 2) Two 1/4"-20 bolts are provided if drilling and tapping is required.
- 3) 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 display harness into the back of the 20/20. For Gen 2 20/20 displays, plug the cab harness into 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.



Illustration A

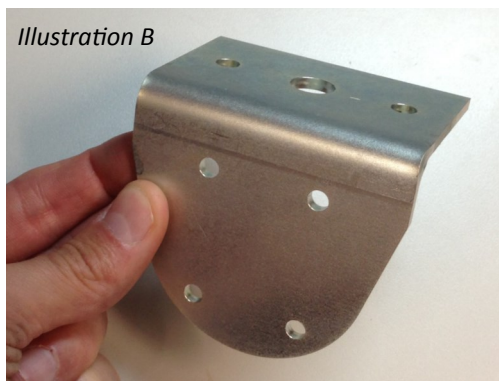


Illustration B

Display Mounting Bracket

GPS Connection

Step 1: The YieldSense Cab Harness has two 4-pin connectors that are labeled “GPS”. One is located inside the cab and one is located outside of the cab. Only use one of these connectors. Connect the GPS Adapter Harness to either the inside or outside connector, depending on where you are connecting to GPS.

Inside the cab



Figure 1a

Outside the cab



Figure 1b

Step 2: If the combine has a NAV II Controller, connect the GPS Adapter Harness to cab harness inside the cab and then connect to the diagnostic port on the NAV II Controller. In **2013 or newer** combines, the diagnostic port will be located behind the panel just behind the key. In **early 2013 and older 2013** combines, it will be underneath the seat.



Figure 2a: 2013 and newer

Step 3: If you do not have a NAV II Controller, connect the GPS adapter harness to the cab harness either inside or outside of the cab and then to the GPS receiver. If the combine is not providing power to the receiver, plug the adapter harness into the outside GPS connector and then connect the adapter harness to the 2-pin weather pack on the cab harness.

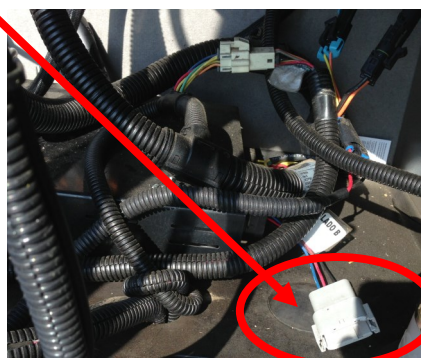


Figure 2b: Early 2013 and older

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

GPS Setup—NAV II Controllers

Step 1: If connected to a NAV II Controller for GPS, navigate to the NAV tab on the Pro 600/700 by pressing the BACK button in the lower left hand corner and pressing the *right* arrow until you see the NAV tab. Select the NAV tab and press EDIT under NMEA Output Setup.

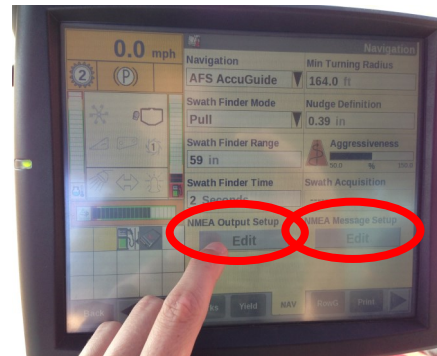


Figure 1

Step 2: Make sure that NMEA Output is set to "On". Set Baud Rate to 38400. Press OK.

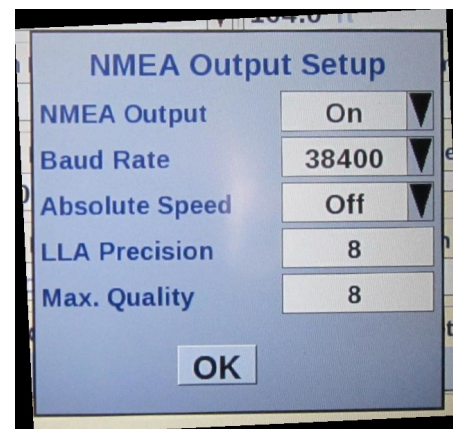


Figure 2

Step 3: Press EDIT under NMEA Message Setup. Set GGA, RMC, and VTG to 200ms (this is the same as 5Hz). Turn the other messages to OFF. Press OK to save. GPS setup is now complete.

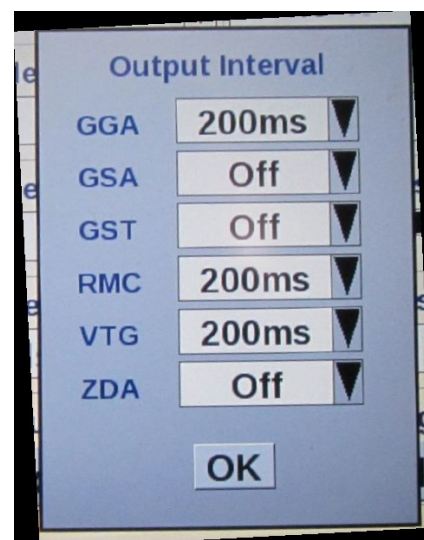


Figure 3

Note: If your combine does not have a NAV II Controller and you connect the 727131 GPS adapter harness to the receiver, configure the Pro 600/700 display like you would for planting.