

YieldSense™

Installation Guide

Case IH 2x77 and 2x88 Combines



Safety Information



Always wash your hands after working on or around agricultural equipment prior to eating, drinking, smoking, chewing, etc...



Always use the proper Personal Protective Equipment (PPE) for any task.

- *Eye protection (Safety Glasses) should be worn at all times

- *Face shield, face mask, & ears plugs should be worn when cutting clean grain elevator



Prior to working under or at ground level of any equipment secure the machinery from movement; accidental user operation or simple rolling of equipment. This should involve Lock-Out tags at the battery, removal of the Ignition key, "Do Not Operate" signs placed at key locations, as well as wheel chocks as necessary.



When working on a vehicle or implement's hydraulic system, suspended components may suddenly drop. If you are working on or around the implement at this time serious injury could result. If possible lower the implement or attachment to the ground before beginning any work. Alternatively; use mechanical lock-up devices to secure any components in their lifted positions.



Agricultural equipment may have been exposed to many types of chemicals. Any chemicals or residues should be removed from the planter prior to beginning work. Obey all existing (new & original) warning signs and caution labels on all equipment.



When working on or around equipment that has been or is running many components may get extremely hot. To avoid injury &/or serious burns allow all equipment components to properly cool before working on or around them.



Avoid wearing loose or ragged clothing or jewelry around equipment, with special attention to avoid moving parts.



Route and secure all wires and connections to avoid crimping or damaging. This may result in unexpected shortages and shocks.



Use extreme caution when working on pressurized systems (Air, Water, Oil). Relieve all pressure from a system before disconnecting lines, fittings, etc... Use a cloth or other obstruction to divert possible spray when disconnecting hose connections, fittings, fill caps, breathers, etc. Always use gloves, NEVER use bare hands. To locate or check for leaks use cardboard, never your hand.



Electrical components and devices may contain high voltages and should be kept dry and closed. There are no serviceable components in this unit. Do not open this display unit, the AirForce Module, Row Flow Module, or the Smart Connector. Opening of the covers should be done by, or with guidance from trained personnel.

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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 located at <http://cloud.precisionplanting.com/pubs>.

System Overview

YieldSense Base Kit for Case IH 2x77 and 2x88 Combines (750005)		
Qty.	Part #	Description
1	750107	Flow Sensor Assembly
2	750190	YieldSense Module (YSM) Mounting Assembly
1	750523	Cab Harness
1	750411	Flow Sensor Harness
1	750819	Secondary YSM Base Harness
1	750820	Speed Sensor Harness
1	750821	Head Height Sensor Harness
1	750850	YSM CAN Harness
1	750818	Hardware Kit
1	725708	RAM Kit (Standard Arm)
1	725822	RAM Triple Suction Cup
1	725821	RAM Kit (Long Arm)
1	750805	2x88 Bin Attachment Bracket
1	750809	2x88 Bearing Locator Gauge Assembly
1	750903	2388 Hole Locator Gauge
Chain & Paddle Kit		
1	750750	Chain Assembly with Paddles

Tools for Install

Drill
 Needle Nose Pliers
 1/2" Socket or Nut Driver
 13mm Deep Socket
 Ratchet
 #2 Phillips Screw Driver
 9/16" Wrench
 3 1/4" Wrench

1 3/4" Hole Saw
 Cutting Oil
 Side Cutters
 Tape Measure
 Vice Grips
 Hammer
 File

Quick Start Guide

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

*** For Further Information on Each Step, See 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 build maps.
- 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 them to USB. Then, delete planting data from the 20/20 Display to ensure adequate space is available for YieldSense data.
- 3. Download the latest FieldView app from the App Store or update your app to the latest version.** 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. 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. Connect your iPad to the 20/20 Display through the FieldView Module and launch the FieldView app.**
- 5. 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 Tech Support page at <http://www.precisionplanting.com>. Copy the file to a USB Stick 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.
- 6. 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.
- 7. 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.
- 8. Ensure the 20/20 contains the correct Client, Farm, and Field List.** Upon loading YieldSense Software, the C/F/F from SeedSense will copy to YieldSense. If other fields exist in FieldView, they will transfer automatically to the 20/20 display.
- 9. 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.
- 10. Complete Crop Setup.** After opening the first field, follow the on screen instructions to enter actual elevator scale weight of 1 truckload.
- 11. 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 AL aftermarket yield monitor, enter in both AL display and YieldSense.

Clean Grain Elevator Chain Installation

Step 1: Locate the tensioning spring for the clean grain elevator chain between the elevator and the separator.



Figure 1

Step 2: Using two 9/16" wrenches, remove the tension on the elevator drive chain by loosening both nuts. Once the tension is relieved, remove the chain from the tension pulley.

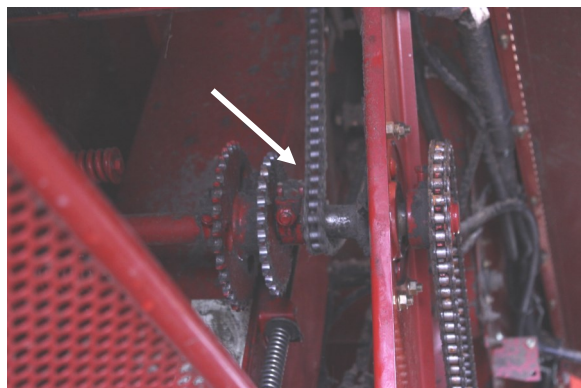


Figure 2

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 3: Rotate the OEM chain to find the master link and remove it (figure 3).

Step 4: 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 5: Pull out the old chain and feed in the new one (figure 5).



Figure 3



Figure 5



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 7: 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 ensure that no paddles are making contact with anything in the elevator.

Flow Sensor Installation

Step 1: Inside the grain tank, remove six bolts from elevator side plate using a 1/2" socket and remove the elevator side plate.

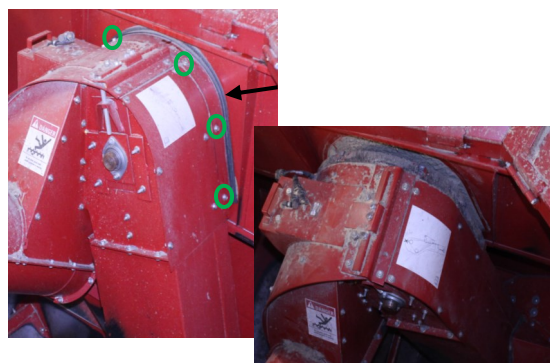


Figure 1

Note: Use a second person on the outside of the combine at the access panel to help remove this hardware.

Step 2: Remove the elevator locking plate using 1/2" wrench (4 bolts) and the middle three nuts with a 9/16" wrench. Then temporarily remove the AgLeader sensor if present for better access to the inside of the elevator.



Figure 2

Step 3: Remove the elevator wear plate by removing six nuts using a 1/2" wrench and socket.



Figure 3

Flow Sensor Installation

Step 4: Remove the AgLeader deflector plate by removing the carriage bolts using a 3/4" socket. Remove the top retaining plate by removing the two bolts with a 3/4" wrench.



Figure 4a



Figure 4b



Figure 4c

Step 5: Locate the provided elevator side plate. Insert two bolts into the top two holes on this plate and start the nuts by hand. Then slide the plate onto the elevator until the bottom hole is aligned.

Step 6: Install bottom right bolt for flow sensor by threading into the provided side plate.

Step 7: Hold the nut side and tighten the 3 bolts.

Note: It may be necessary to have a 2nd person on the outside of the combine to reach the nuts.



Figure 5

Flow Sensor Installation

Step 9: Reinstall Case elevator side plate and tighten six bolts with a 1/2" socket.



Figure 9

Step 11: Use the provided template to drill out the top three flow sensor holes in the top of the elevator. Fold the template over and bend in the three tabs so they are facing away from the other half of the template and fit tight in the three holes on top of the flow sensor.

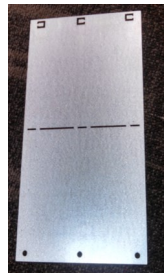


Figure 11

Flow Sensor Installation

Step 12: Position the flow sensor into correct location making sure that the mounting plate is flat against the side of the elevator and is contacting the top. As you work the sensor into location tighten the bottom left bolt to get the sensor in the correct location before you center punch your three holes.

Step 13: Next center punch the three holes to be drilled in the top of the elevator. Be sure the sensor is sitting up tight against the top of the elevator.

Step 14: Once holes have been center punched remove the sensor and template. Then drill out the three holes with the letter Q drill bit provided.

Step 15: Before installing the flow sensor install the 2" thick provided foam block. Remove adhesive protection and stick foam onto the top of the elevator as shown.

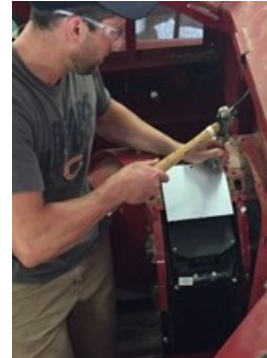


Figure 13

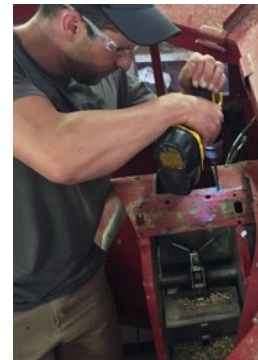


Figure 14



Figure 15

Flow Sensor Installation

Step 16: Install the flow sensor and tighten 5 bolts to 17 ft-lbs. Then drill out the top left hole on the bottom portion of the flow sensor and install last bolt to 17 ft-lbs.



Figure 16a

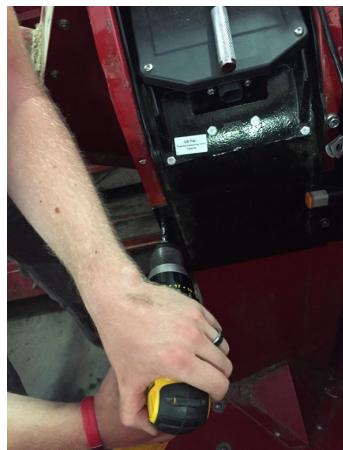


Figure 16b

Step 17: Reinstall the top shaft hardware using 1/2" wrench (4 bolts) and the middle three nuts with a 9/16" wrench.



Figure 17a



Figure 17b

Flow Sensor Installation

Step 18: Loosen 8 bolts on the inside and outside access panel holding top chain adjustment. Using the gauge (figure 17c) move the top bearing until shaft is centered in the gauge. Once completed tighten the bearing bolts to lock into place. Then reinstall the plate and channel to lock bearing adjustment.

Note: Place the provided sticker at the top of the elevator reminding not to adjust the shaft at the top for tension.

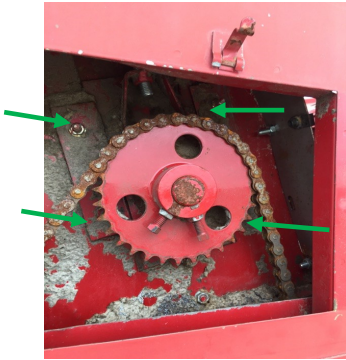


Figure 18a



Figure 18b



Figure 18c

Step 19: Reinstall the AgLeader moisture sensor if present.

Before Flow Sensor Installation



Figure 19a

Flow Sensor Installation Complete



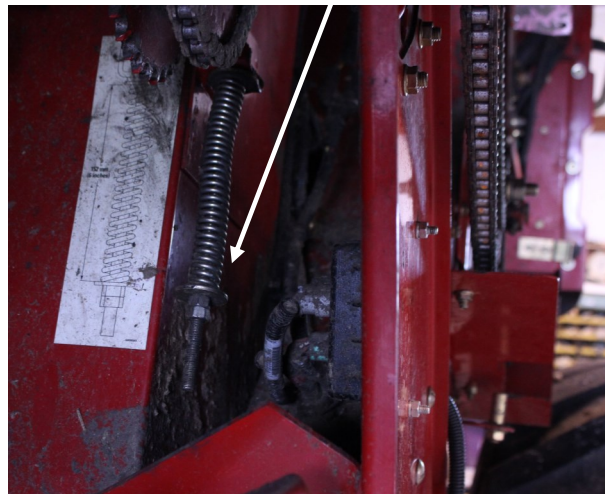
Figure 19b

Completing Clean Grain Elevator Chain Installation

Step 1: Confirm that the drive chain is properly installed and then adjust the tensioning spring until the washer reaches the proper location on the OEM label next to the tensioning spring.

Step 2: A bottom chain adjustment mechanism, highlighted in green at right, is required. If you do not have this, install part number 750255 from Precision Planting.

Step 3: Loosen the four bolts on the bottom chain adjustment and slide the bearing down so that the chain can slide back and forth but not be pulled away from the sprocket.



Figures 1—3

Step 4: Install the decal on top of the elevator that reminds the operator to adjust chains from the bottom.

Step 5: After 10 hours of operation, check the chain tension. Adjust the tension if needed.

YieldSense Module (YSM) Installation

Step 1: Open the access panel on the right side of the cab. If the combine had an Ag Leader system installed it may be necessary to remove the bracket shown in picture to gain clearance for YSM install, otherwise this bracket doesn't need to be removed.



Figure 1a

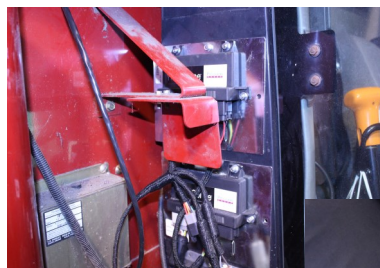


Figure 1b

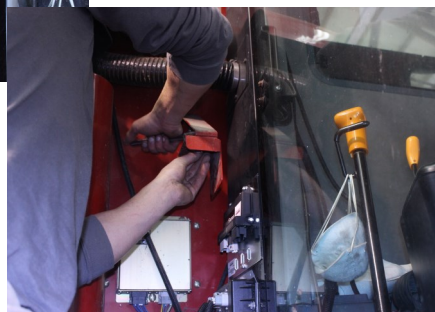


Figure 1c

Step 2: Use a marker to locate holes for drilling. Use a #4 drill bit to drill YSM mounting holes. Install with included self tapping screws (do not use a tap). Make sure both YSM's are level (± 5 degrees).



Figure 2a



Figure 2b

YieldSense Module (YSM) Installation

Step 3: 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 3

Step 4: Next connect the grey 12 pin Secondary YSM base harness into the grey left plug on the top (secondary) YSM. Connect the elevator speed, ground speed, and height sensor harnesses into this harness.

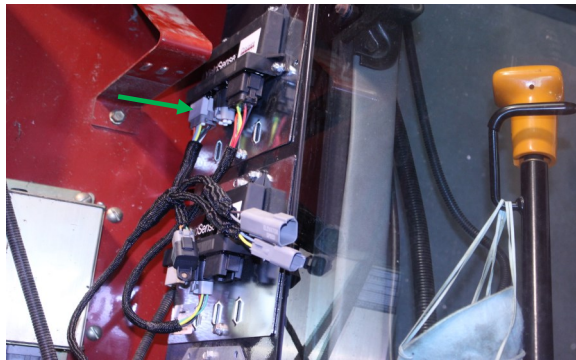


Figure 4

Step 5: Plug the speed sensor Y harness in for ground speed and elevator speed. Then plug in your ground speed and elevator speed.

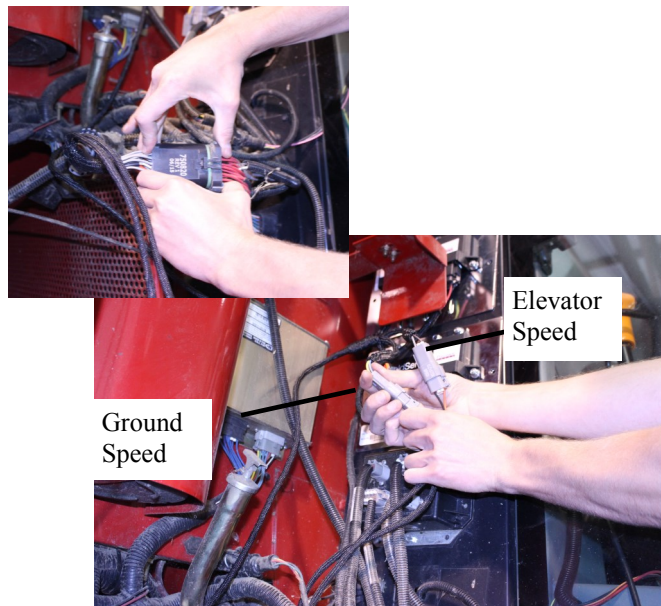


Figure 5

YieldSense Module (YSM) Installation

Step 6: Route Head Height sensor to the left (ladder side) of the feeder house. Zip tie the harness under the cab. Route the sensor to the 3 pin head height sensor coming off the main harness.



Figure 6a



Figure 6b

Step 7: Next route the flow sensor harness out of the grain tank. Using a step bit, drill a 1 1/4" hole into the grain tank to route the harness from the flow sensor to the YieldSense Module (YSM).



Figure 7a

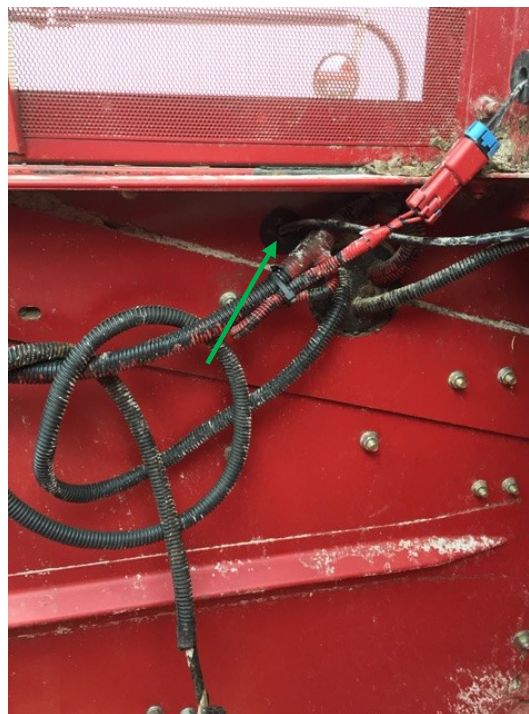


Figure 7b

Cab Harness Installation

Step 1: Pull up the floor mat on the right side of the cab to gain access to the metal floor. Drill a hole from underneath with a 1 3/4" hole saw (not provided).

Warning: Before drilling, ensure that the area through which you plan to drill is clear of harnesses and tubing on both sides. Adjust your hole location if necessary.

Step 2: Remove the sharp edges of the hole with a file.

Step 3: Feed the 12-pin Deutsch connector end of the Cab Harness through the hole in the floor.

Step 4: 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 5: Insert the grommet on the cab harness into the hole in the floor.

Step 6: In the cab, route the cab harness channel towards the cab post as shown and reinstall the floor mat.



Figure 1



Figure 2-3



Figure 5



Figure 6

20/20 and iPad Installation

Step 1: Mount the 20/20 display and the iPad RAM mount in the cab as you desire. 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. For Gen 2 20/20 Displays, plug the cab harness to the back of the 20/20 display. A Gen 1 display has two USB ports on the side of the case. A Gen 2 display has one USB port on the side and three on the back.



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



Figure 2