

S-Series Combine Optimization

“Ready To Harvest” for Barley



John Deere Werke Zweibrücken

Contents

<i>Preface</i>	2
<i>Combine Setup and Inspection</i>	3
Feederhouse Drum Height and Chain Speed	3
Feed Accelerator Speed	3
Concaves	4
Concave Covers	4
Separator Grates	5
Rethresher and Adjustable Top Covers (if equipped)	5
Separator Settings	6
Cleaning Shoe Hardware	6
Shoe Settings	7
Grain Handling	8
Residue Hardware	8
Residue Settings	9
<i>Tips & Tricks</i>	10
<i>Tools & Links</i>	13

Preface

The content of this material is intended to help you know how to choose the best configuration and set up an S-Series combine for any Barley crop and condition before going to the field.

Small Grain combine and field installed bundles are explained, to enhance performance and Grain Quality in specific Barley conditions.

Setup and Adjustment recommendations are intended as a starting point. Additional adjustments and fine tuning will be necessary depending on crop moisture and harvest conditions.

A tips and tricks section is included to allow you to further fine tune your machine settings. Please also remember to use the on board Interactive Combine Adjustment system to gain further tips on your specific constraints if equipped on your machine.

Combine Setup and Inspection

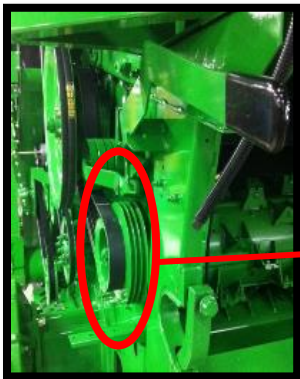
Feederhouse Drum Height and Chain Speed

- Front Drum position - **Handle Down for Barley**
- Conveyor chain speed – 32 teeth for normal and tough Barley, 26 teeth for dry conditions.



Feed Accelerator Speed

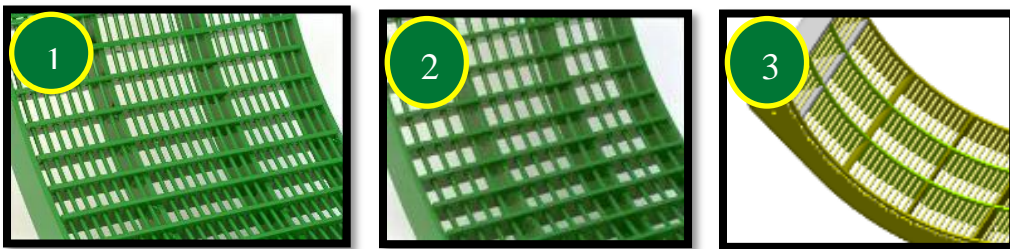
High speed for normal and tough condition. In dry and brittle conditions the speed can be set to low in order to reduce straw damage and reduce shoe load.



Concaves

Small Wire #1 and Large Wire #2 concave are the recommended types for small grain and provide the best performance. The standard machine configuration is 1 small wire in the front one small wire in the middle and one large wire concave in the rear. In tough separation conditions the middle concave can be changed to a large wire concave to increase separation. The mini round bar concaves #3 should only be use in corner conditions where concave plugging is occurring and cannot be prevented through setting changes.

Refer to your Operators Manual for how to Level Concaves (front to rear) and calibrated to “Zero” on clearance to the threshing elements.



Concave Covers

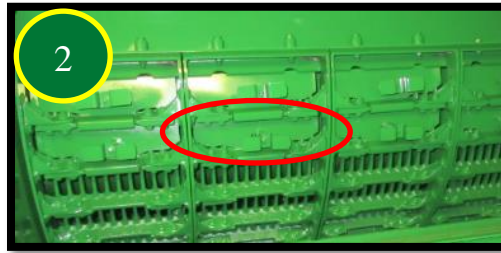
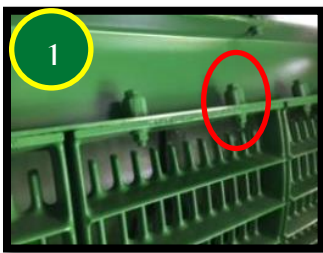
Most likely concave covers will not be needed due to the great threshing performance of the small wire concave and rotor.

In case you do need them, they are supposed to be installed in the following sequence due to the way how the returns/tailings are handled. For SX60 and SX70, positions 1,4,5,2,3. For SX80 till SX90, position 1,2,3,4,5



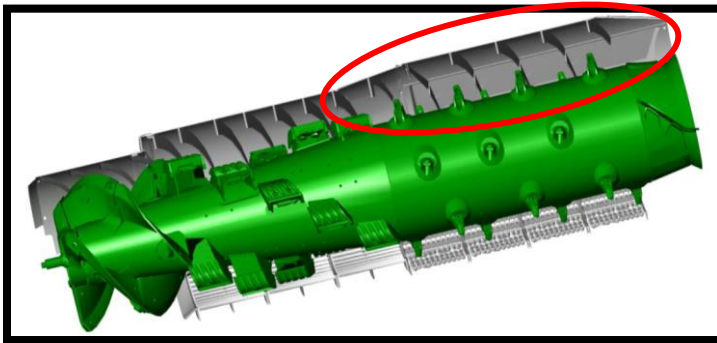
Separator Grates

Be sure separator grate spacers #1 are on top of rail for Barley. This will raise the grates and keep crop material flowing consistent through the separator. Separator grate covers #2 should only be used when the cleaning shoe distribution is uneven. They are used to reduce the amount of material exiting the rotor on the outside. Before installing them, you should try to achieve an even cleaning shoe distribution by adjusting the auger bed dividers.



Rethresher and Adjustable Top Covers (if equipped)

The rethresher concave should be in the closed/small grain position. If the grain is vulnerable for grain damage, the concave can also be run in the open/corn position.



The rotor top covers should be in the standard position and only placed in the advanced position if you want to improve the straw quality since this will reduce separation capacity slightly.

Separator Settings

The rotor gear should be on high speed.

Rotor speed - 830rpm - dry and brittle conditions

Rotor speed - 930rpm – normal and tough conditions.

Concave clearance – 25mm - dry and easy threshing conditions

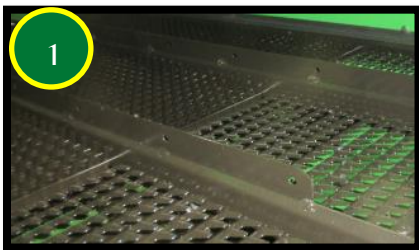
Concave clearance - 13mm – normal and tough conditions

These settings are recommendations for a starting point and might need to be further optimized.

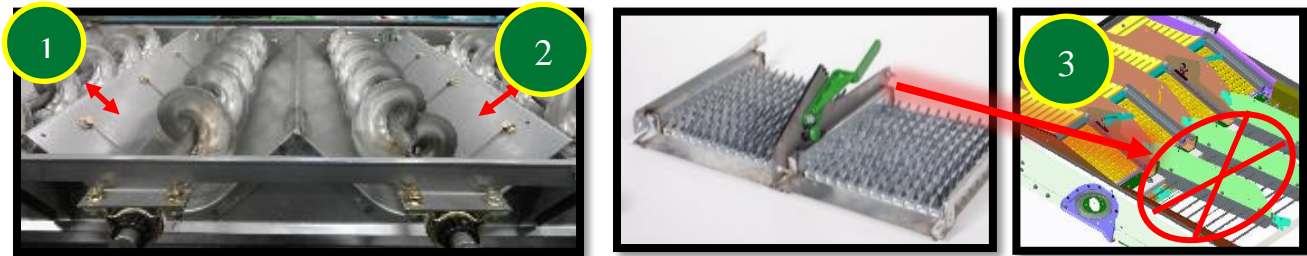


Cleaning Shoe Hardware

The general purpose chaffer #1 and general purpose sieve #3 are most commonly used. There is an option to install a HP chaffer #2 which can achieve a cleaner tank sample and reduced tailings load in cleaning shoe limiting conditions.



The auger bed dividers #1 should be adjusted, so that an even cleaning shoe distribution is reached. By pulling the sheets up, you can reduce the amount of material on the outside. It is also possible to install an adjustable front chaffer #2 which can avoid the accumulation of stems in the front chaffer in Rapeseed and sunflowers. The adjustable front chaffer does not provide advantages in Barley. The front chaffer extension #3 which does not get delivered with ZX machines should not be installed for Barley.



Shoe Settings

Chaffer opening – 16mm – normal throughput (SX70 in 6t/ha)

Chaffer opening – 18mm – high throughput (SX90 in 8t/ha)

Chaffer opening should be 2mm higher if HP chaffer is installed

Chaffer extension – 5mm – in level conditions

Chaffer extension – 10mm – in side hill conditions

Sieve opening – 6mm - normal throughput (SX70 in 6t/ha)

Sieve opening – 9mm – high throughput (SX90 in 8t/ha)

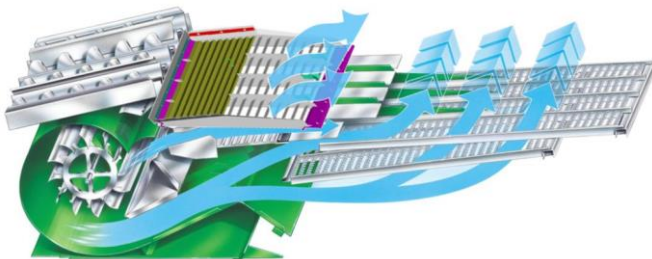
Sieve opening should be 1mm higher if HP chaffer is installed

Fan speed – 950rpm - normal throughput (SX70 in 6t/ha)

Fan speed – 1050rpm – high throughput (SX90 in 8t/ha)

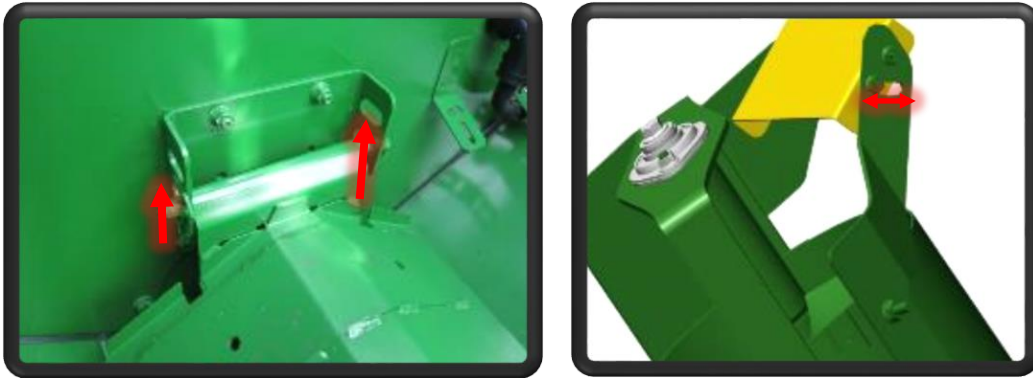
Fan speed should be 100rpm higher for HP chaffer type

If equipped, the adjustable front chaffer should be set to max. opening.



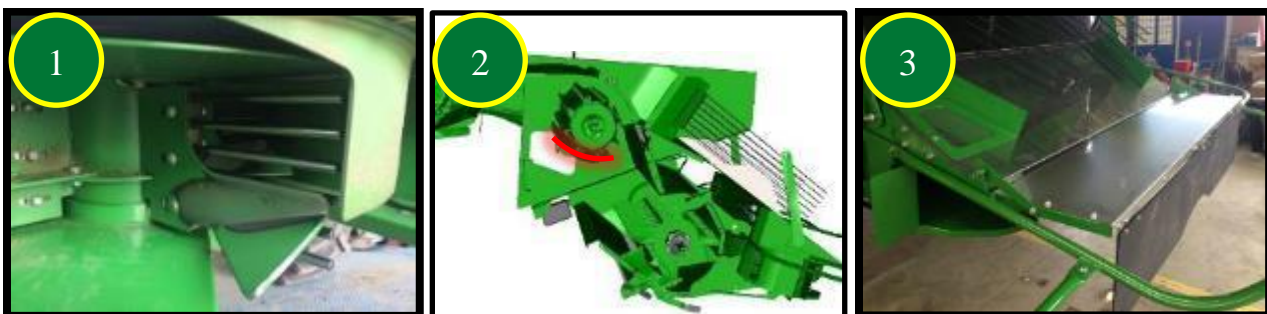
Grain Handling

The cross auger covers should be in the up position. The deflector at the grain tank filling auger can be adjusted to change the loading of the grain tank. The shown position would load the grain tank further to the right side.



Residue Hardware

The scoop paddles #1 should be installed on every second segment of the spreader disk of the APC tailboard. The cover under the Overshot beater #2 should not be installed since it can lead to wrapping in small grain. There is a speed bump #3 available for the premium configuration to improve the windrow shape and helps the straw to dry out faster.

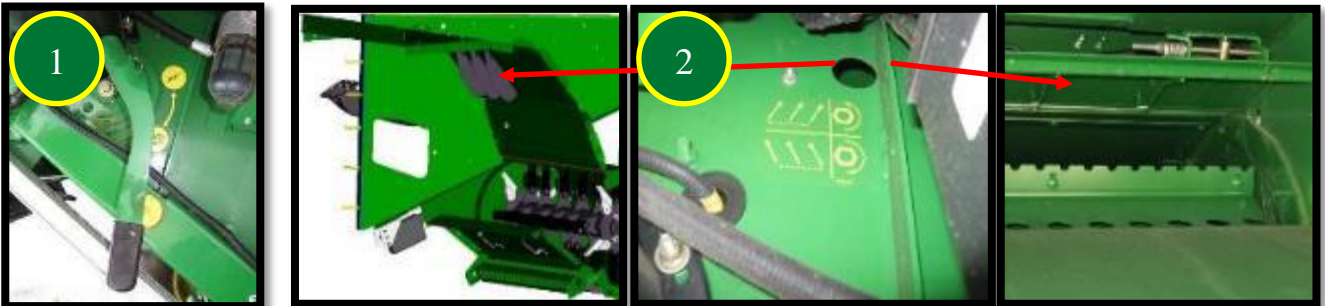


Residue Settings

The chopper speed #1 should be set to high. The counter knives #2 should only be be engaged as much as needed to avoid unnecessary power consumption. For the fine cut chopper (44knives) there is a grouser bar #3 available to be installed in the chopper floor to increase chopping quality.



The cob deflector #1 should be in the up/small grain position. The vanes in the rear deflector or the chop to drop door #2 can be adjusted to further improve the residue distribution.



Tips & Tricks

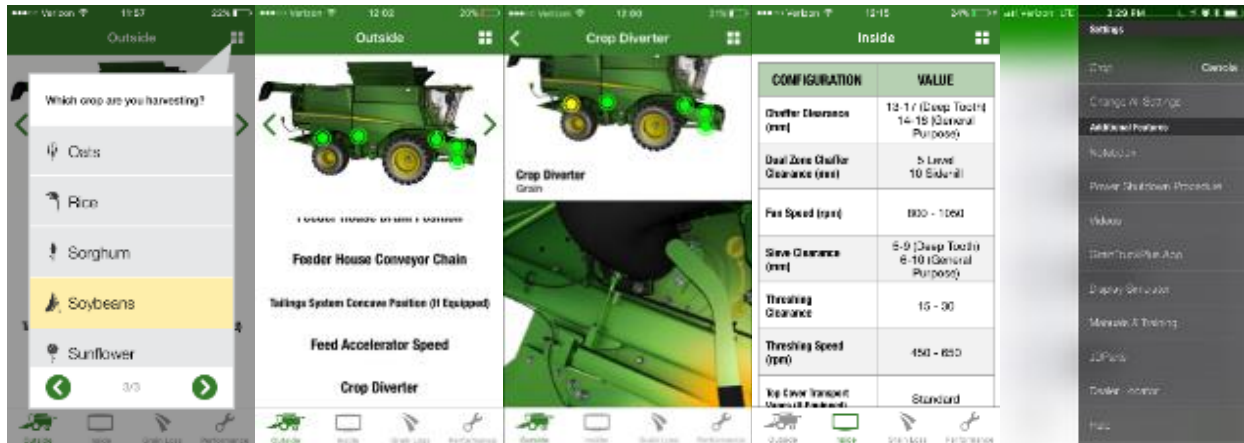
- Hard to thresh varieties require an aggressive setup of the separator like concave clearances as low as 5mm, small wire concaves and concave covers. If barley heads are not completely threshed or awns stay on the grain, the cleaning shoe cannot work efficiently
- The best way to check weather threshing is sufficient is to drop a windrow and check for unthreshed grain.
- In Barley it is easier to blow out grain trapped in the chaff mat on the chaffer since the grain is not as smooth as wheat. Proper threshing helps prevent this.
- Understanding the source of losses is key for taking the right actions. Please ensure you know if you have pre-harvest, header, separator or cleaning shoe losses.
- Crop and field conditions have a huge impact on optimal settings and machine productivity. Make sure you evaluate those in detail before you start harvesting. In Barley especially the threshing ability and straw toughness and moisture have a big impact on machine settings.
- The volume of straw that goes through the combine has a huge impact on combine productivity, so the ratio of Grain/MOG (Material Other Than Grain) has a very big impact on grain throughput performance.
- Green and wet straw makes grain separation in the separator more difficult.
- The moisture content in the plant increases from top to bottom so stubble height has a big impact on grain throughput.
- In low yielding conditions bigger header widths and ground speeds will maintain machine fill and result in grain on grain threshing.

- In cab values are only as accurate as the system is calibrated. Please frequently double check that those match the hardware settings.
- Very dry and brittle straw can cause cleaning shoe overloading. Use separator blanks in brittle conditions to reduce this, run wide concave clearance and slow down rotor speed (min.800rpm) to a level where threshing is still maintained.
- Please make sure, that the distribution of the material on the cleaning shoe is even. This is very critical. Perform a power stop to evaluate this and use the auger bed dividers and separator covers for adjustments.



Tools & Links

Download the GoHarvest App for addition information on, settings, loss calculator, JDParts, videos, procedures and much more.



Visit the Go Harvest link on YouTube for detailed videos on Powershut down procedure, CombineAdvisor, ActiveTerrain Adjustment, and many more.



<https://www.youtube.com/watch?v=3KR77OTdN KU&list=PL1KGsSJ4C Wk7jzH744F1bByhwXWAlxmFj>

NOTES