S-Series Combine Optimization

“Ready To Harvest” for Rape Seed

John Deere Werke Zweibrücken

Contents

Preface

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

Combine settings and field installed bundles are explained, to enhance performance and Grain Sample in specific Rape Seed 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.

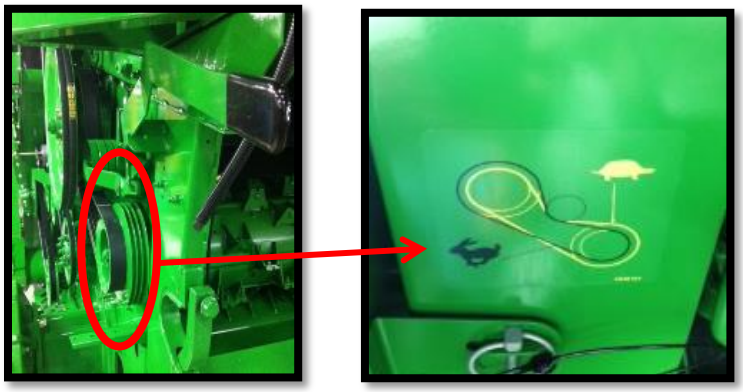
Combine Setup and Inspection

Feederhouse Drum Height and Chain Speed

- Front Drum position - **Handle Up for Rape Seed**
- Conveyor chain speed – 32 teeth for normal and tough barley, 26 teeth for dry conditions.

Feed Accelerator Speed

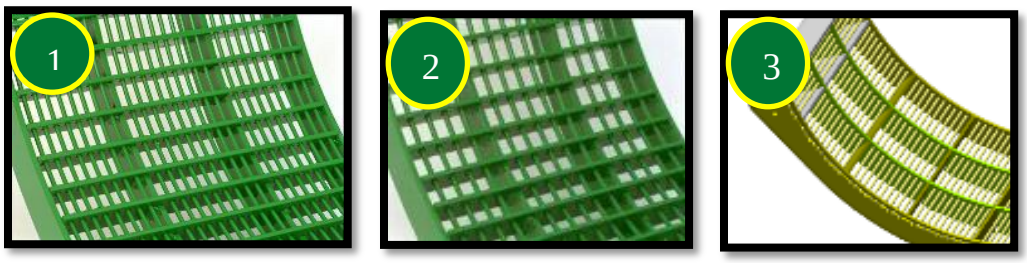
High speed for normal and tough condition. In dry and brittle conditions the speed can be set to low in order to reduce straw damage and reduce shoe load.



Concaves

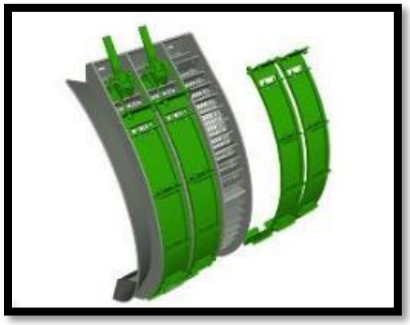
Small Wire #1 and Large Wire #2 concave are the recommended types for small grain and provide the best performance. The standard machine configuration is 1 small wire in the front, one small wire in the middle and one large wire concave in the rear. The mini round bar concaves #3 should not be used in Rape Seed

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



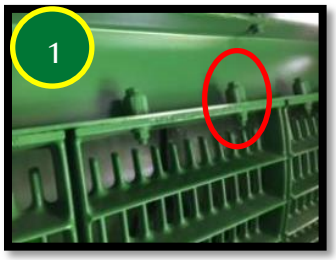
Concave Covers

Concave covers are not needed in Rape Seed



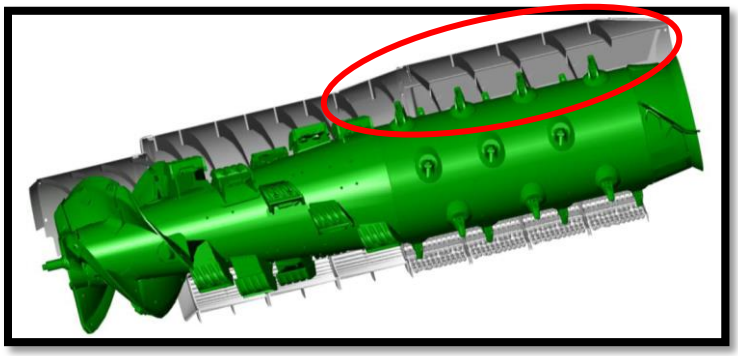
Separator Grates

Be sure separator grate spacers #1 are on top of rail for Rape Seed. 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.
In Rape Seed the separator blanks #2 can also be used to reduce the overall amount of material exiting the separator and reduce the shoe load.



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.

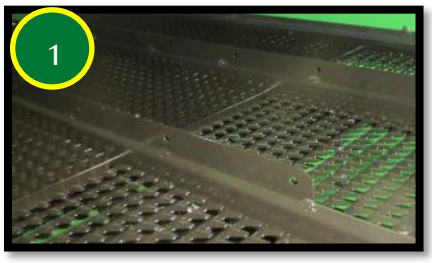
The rotor top covers should be in the standard position and in very dry conditions it could help reducing the shoe load setting the vanes to advanced.

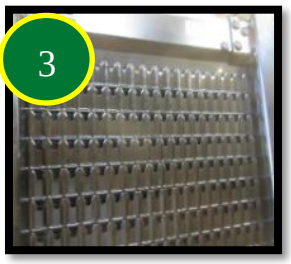
Separator Settings

The rotor gear should be on high speed.
Rotor speed – 500rpm – dry and brittle conditions
Rotor speed – 600rpm – normal and tough conditions.
Concave clearance – 35mm - dry and easy threshing conditions
Concave clearance – 25mm – normal and tough conditions
These settings are recommendations for a starting point and most likely need to be further optimized.

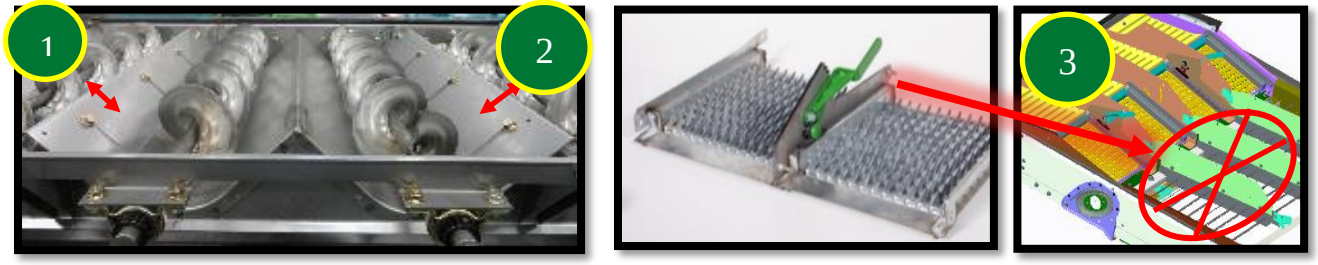
Cleaning Shoe hardware

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.



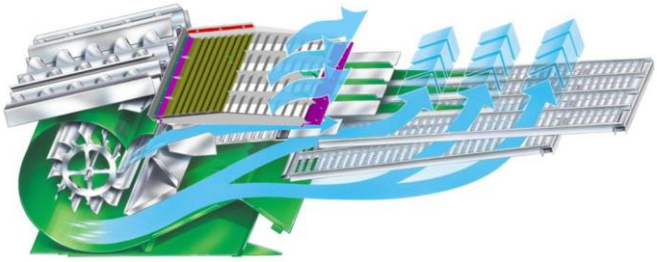


The auger bed dividers #1 should be adjusted, so that an even cleaning shoe distribution is reached. By pulling the sheets up, you can reduce the amount of material on the outside. It is also possible to install an adjustable front chaffer #2 which can avoid the accumulation of stems in the front chaffer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



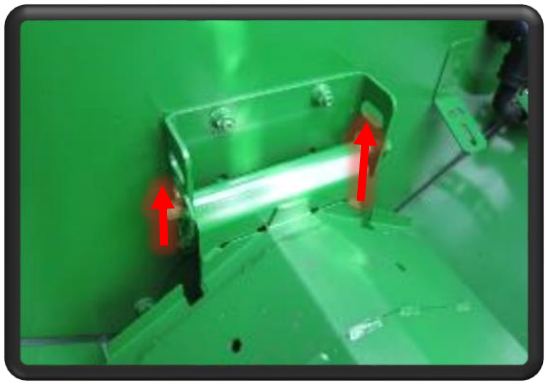
Shoe settings

Chaffer opening – 11mm – normal throughput (SX70 in 3,5t/ha)
Chaffer opening – 13mm – high throughput (SX90 in 4t/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 – 3mm - normal throughput (SX70 in 3,5t/ha)
Sieve opening –4mm – high throughput (SX90 in 4t/ha)
Sieve opening should be 1mm higher if HP chaffer is installed
Fan speed – 700rpm - normal throughput (SX70 in 3,5t/ha)
Fan speed – 800rpm – high throughput (SX90 in 4t/ha)
Fan speed should be 100rpm higher for HP chaffer type
If equipped, the adjustable front chaffer should be set to 6mm



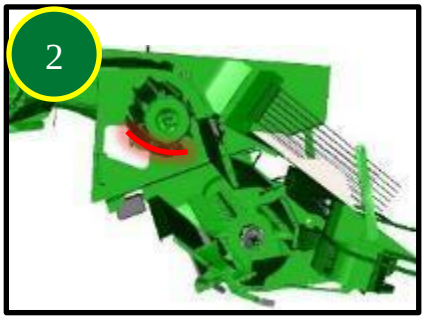
Grain Handling

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

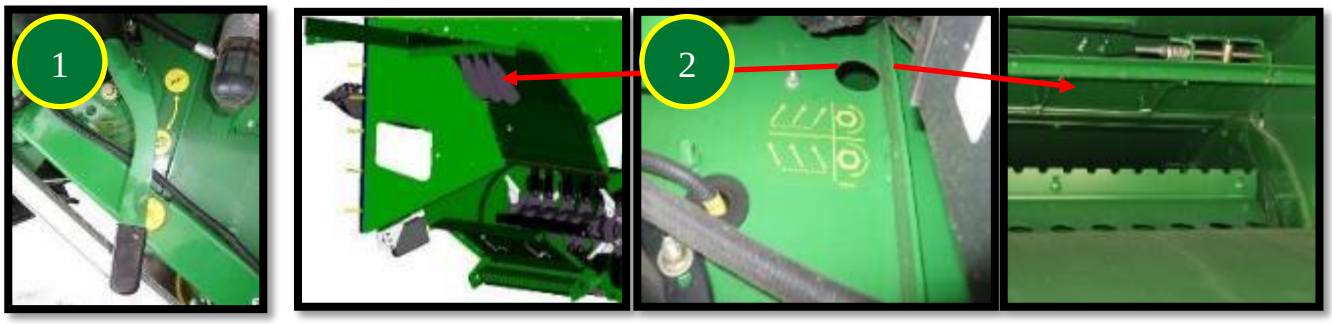
The scoop paddles #1 should be installed on every second segment of the spreader disk of the APC tailboard. The cover under the Overshot beater #2 should not be installed since it can lead to wrapping in small grain. There is a speed bump #3 available for the premium configuration to improve the windrow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



Residue settings

The chopper speed #1 should be set to high. The counter knifes #2 should only be engaged as much as needed to avoid unnecessary power consumption. For the fine cut chopper (44knifes) 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

- In dry Rape Seed as in all other crops you need to find out if the majority of losses are coming from the cleaning shoe or the separator. To find that out you should do a Power Shut Down. See the power Shutdown procedure in the crop and settings section in your OM. Based on the material you see on the chaffer, you will make your conclusions. First of all the distribution needs to be even. The amount of material on the chaffer tells you how much the cleaning shoe is challenged → how many losses come from the cleaning shoe.

- In order to reduce the cleaning shoe load, you first should increase the concave opening max. 45mm. Reducing the rotor speed will also help putting less material on the shoe, min 400rpm. If you still think you have mainly shoe losses and minimal separator losses, you can install more separator blanks to reduce the amount of chaff going to the shoe.
- You should also make sure the losses on the ground really come from the cleaning shoe and separator. To do so you should us a loss pan. Ask your John Deere dealer for solutions.
- If you harvest Rape Seed with green pods, the loss level will most likely be relatively high since they can't get 100% threshed. The chopper does the threshing and throws the free grain on the ground. Count the number of green pods you find per area on the plants and calculate how much grain that equals to.

- If your machine was configured with 2 large wire concaves to increase separation in wheat or barley, it might be necessary to go back to 2 small wire concaves and one large wire concave in very dry Rape Seed conditions.
- The volume of straw / plant material 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. In Rape Seed the operator has a huge impact on this and should not set the cutting height too low.
- Green and wet straw makes grain separation in the separator more difficult. In green conditions higher rotor speed will be needed to reduce separator losses.
- 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.
- The moisture content in the plant increases from top to bottom so stubble height has a big impact on grain throughput.
- In cab values are only as accurate as the system is calibrated. Please frequently double check that those match the hardware settings.




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=3KR77OTdNKU&list=PL1KGsSJ4CWk7jzH744F1bByhwXWAlxmFj

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