

S-Series Combine and Front End Equipment Optimization

“Ready To Harvest” for Canola



John Deere Harvester Works

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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 and platform, for any Canola crop and condition before going to the field.

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

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

Crop setting checklists and Grain Quality Tips are a quick reference for configurations and operating speeds to help optimize grain quality.

Recommended S - Series Combine Attachments

BXE10076 Side Hill Performance Package

Recommended for sidehill conditions to reduce grain loss.
Includes full-length tall chaffer dividers, grain return pan partitions and grain agitator paddles.

BXE10729 Active Terrain Adjustment Conversion Bundle

Available on MY16 machines and newer (PIN 785000 -) ordered without the factory installed Active Terrain Adjustment option.
Changes the fan, sieve & chaffer in uphill and downhill conditions.

AXE48125 High Performance Chaffer DF4 shoe MY16 and later

AXE54556 High Performance Chaffer DF3 shoe MY15 and earlier

Prevents longer sticks from passing through chaffer.

Reduced Tailings 23%

Improved Grain Tank Sample

BXE10692 Adjustable Front Chaffer MY16 and newer S-Series

AXE13768 Adjustable Front Chaffer MY15 and older S-Series

Adjustable front chaffer louvers recommended for crops with dense green stalks



Header Attachments

BXE10119 Header Height Sensing in Rigid Mode

For use on all 600 Series Flex Platforms. Ground contacting height sensors for automatic height sensing when cutterbar is locked in rigid mode.

BXE10730 600D Center Section Seal Kit MY09-11

BXE10851 600D & 700D Center Section Seal Kit MY12+

BXE10959 700FD Center Section Seal Kit

The center-section seal kits minimizes grain loss due to straight cutting canola. For best performance when harvesting cereal grains, it is recommended to remove the left- and right-side seal components. *600D Platforms (PIN 730000 and up) will require the raised side belt position kit, if not already installed. Refer to DTAC Solution #89215 for complete information.*

BXE10995 700D Center Section 14" Feed Drum

Smaller drum for higher capacity, increased productivity for small grains producers with tall stem crops.

AXE21270 600D & 700D End Divider Point Rod

KXE10397 600FD End Divider Point Rod

KXE10535 600FD End Divider Point Rod

Divider rod will help divide tall bushy crops

18" Top Crop Conveying Auger

-BXE10808 (625D/725D)

-BXE10807 (630D/730D)

-BXE10806 (635D/735D)

-BXE10805 (640D/740D)

Assists feeding for maximum efficiency of bushy crops that stall on draper belts such as field peas, canola, mustard, or sunflower.



Draper Inspection and Adjustments

The following adjustments are critical to insure that the Draper performs to its optimum:

- Sickle Sections
- Knife Guards
- Dual Knife Timing
- Reel Finger Timing

For Optimal performance and durability of cutting components:

Coarse Tooth Sections recommended for Canola harvest

- Inspect for broken or improperly adjusted hold downs, repair or replace as required.
- Inspect for dull, worn, or broken knife sections, guard, and cutting edges, repair or replace as required.

- Inspect for excessive binding between top of knife.
- Knife Inspect for excessive binding between top of knife sections and top of guard slots. Binding can be caused by bent guards, bent cutterbar or improper position of guards, repair or replace as required.
- Inspect knife head and knife drive alignment with first guard slot to insure binding is not present in areas. Repair or replace as required.
- Verify that complete cutting system turns freely by rotating the drive by hand (drive shaft removed). Keep hands and fingers away from cutting components while rotating!

Dual Knife Drive Timing

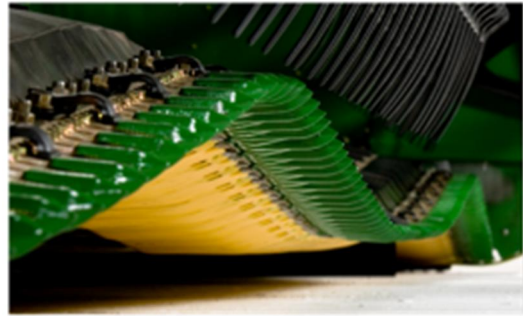
To reduce header vibration and maximize cutter bar effectiveness make sure dual knife drive is timed so the knives cross over themselves in the center of the head.



Reel Finger Clearance

Proper setting of minimum reel height will protect against unexpected reel movements that can place reel fingers in contact with cutterbar.

Set reel fingers above the cutter bar 65mm(625D-635D) and 40mm(640D). See Draper OM for proper reel height and reel leveling.



Automatic Header Height Sensing

Needs to be calibrated before harvest begins to ensure a good clean cut.



Reel Position & Speed:
Run the reel up and back to reduce pod shatter. In shatter resistant varieties, run the reel just into the crop to assist feeding. Reel speed should be matched to ground speed, or approximately 10% faster than ground speed to correctly flow material.



Belt Speed:
Run the belts slow/equal to ground speed for smooth consistent feeding.



Draper Backshaft Speed
Feederhouse Variable Drive
and 5 Speed

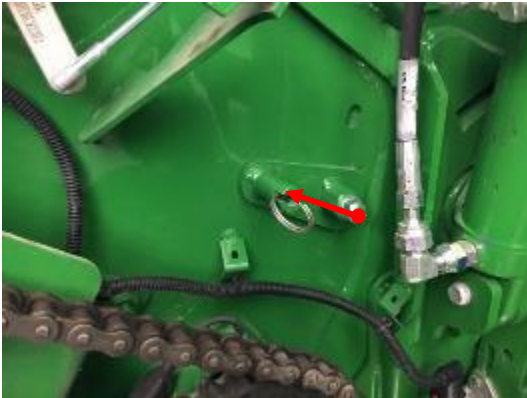
- Operate the draper at the recommended speed 510RPM.
- The backshaft speed will default to slowest speed as soon as multi-coupler is connected and header is recognized. This is for both variable and 5-speed.

- DO NOT ATTEMPT TO OVERSPEED THE BACKSHAFT AS DAMAGE MAY OCCUR TO HEADER DRIVES.

Combine Setup and Inspection

Feederhouse Drum Height and Chain Speed

- Front Drum position - Handle Down for Canola
- Conveyor chain speed - slow 26T



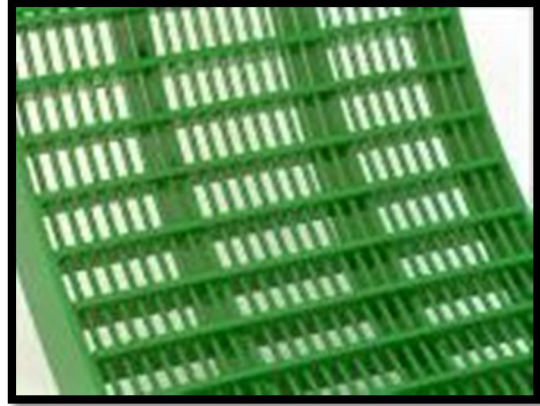
Feed Accelerator Speed High speed

- Small Diameter Sheave



Concaves

Small Wire concaves are recommended in all three positions. Verify that the concaves are level (front to rear) and calibrated to "Zero" clearance with the threshing elements. For more info on installation, leveling, and calibrating concaves, see the OM or the GoHarvest videos.



Separator Grates

Be sure separator grate spacers are on top of rail for small grains. This will raise the grates and keep crop material flowing through the separator.



Separator Grate Covers

Grate covers are installed with 3 rows on the right and 2 on the left from the factory as base in the small grain machines. Once in crop, perform a Power Shutdown to verify the shoe has a balanced material load. Add or remove grates as necessary.

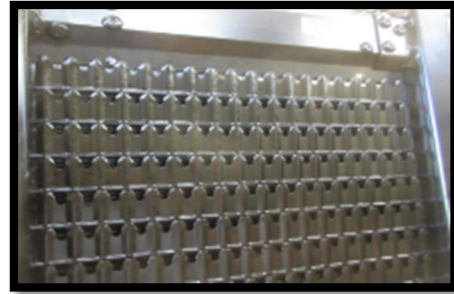


Front Chaffer Extention

If the machine is equipped with a front chaffer extention, It should be Removed. It is only needed for coarse, heavy, high yielding crops such as corn.



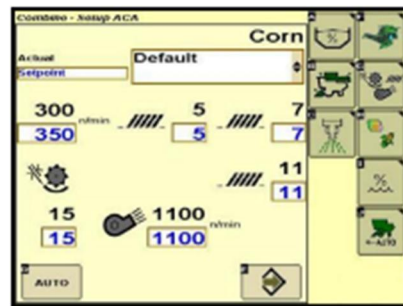
General Purpose Chaffer (AXE60614) and general purpose sieve (AXE60449) should be used.



High Performance Chaffer (AXE54556 MY15 & older) (AXE48125 MY16 & later) Prevents longer sticks from passing through the chaffer reducing the tailings by 23% and improving the grain tank sample.



Chaffer and Sieve Opening Must be calibrated so the opening exactly matches the cab display setting. If openings do not match, follow the Factory Cal procedures.



Adjustable Front Chaffer Set to 10mm to prevent plugging with dense green stalks. Open wider if plugging is not occurring.

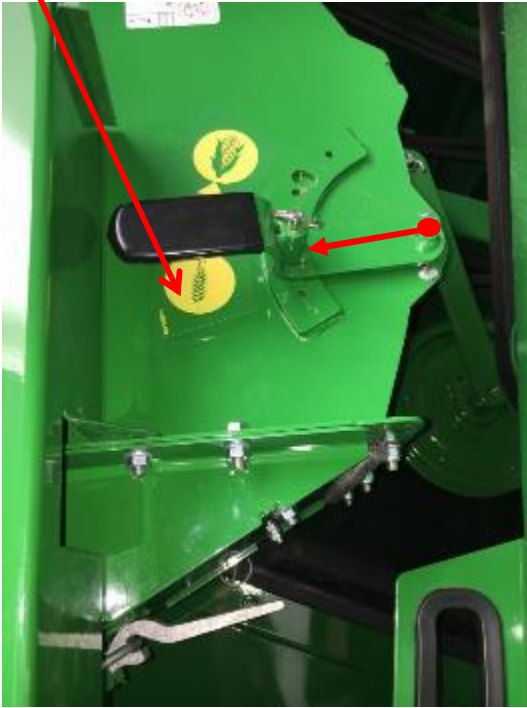


Dual Zone Set to 5mm in level land conditions and 10mm in hills.



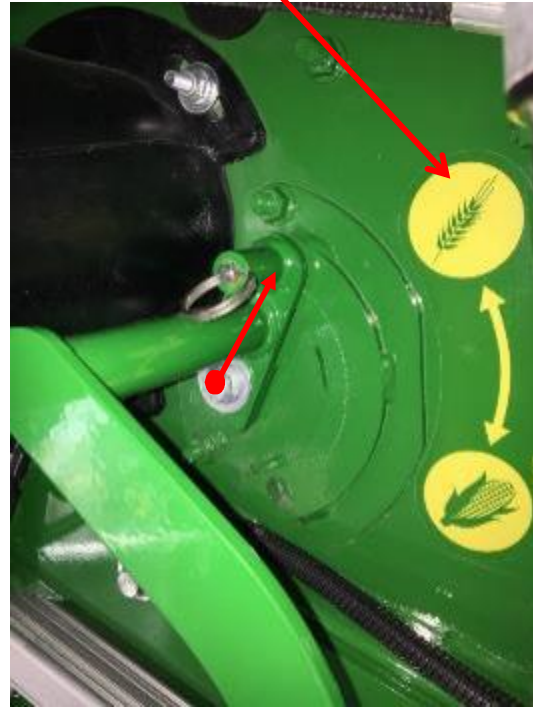
Active Tailings System (S680, S690)

Set the lever DOWN to the closed position to tighten the concave for small grains.



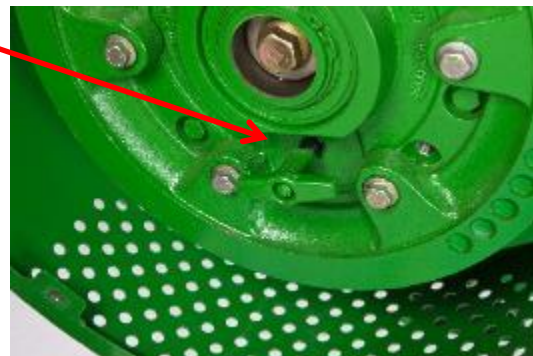
Cob Deflector

Move the cob Deflector handle to the Small Grains position.



Chopper

Chopper speed on high (pull knob out). Also engage knife bank depending on preferred residue size.



Canola Adjustment Checklist

1. Feederhouse Chain Speed – 26T
2. Feederhouse Drum Down
3. Feed Accelerator on High Speed
4. Serrated Feed Accelerator Wear Strips are recommended
5. Backshaft Speed 510rpm / 1st Gear 5 Speed
6. Cleaning Fan speed 750rpm, 600-900 working range
7. Rotor Speed 450rpm, 350-550 working range
8. Concave Clearance 20, 15-40 working range
9. General Purpose Chaffer 13mm, 10-14mm working range
10. High Performance Chaffer if equipt 12-16mm + increase fan 100rpm
11. Dual Zone Chaffer manual adjust 5mm Leval Land/10mm Hills
12. General Purpose Sieve 3mm, 2-5 working range
13. Seperator grate spacers need to be installed on the top side of the rail.
14. Front chaffer extention needs to be removed and 4 finger grates H132161 need to be installed across the front chaffer.

Every year, every crop, every farm can be differrent. Do not expect last year's machine settings to perform at maximum efficiancy.

Straight Cutting Canola

- Cut height should be as high as possible minimizing excess MOG.
- Run the reel up and back minimizing pod shatter.
- Tine angle position for minimal disturbance to the crop, helping the crop onto the belt minimizing pod shatter.
- Slow to medium side draper belt speed for smooth feeding.
- Install Top Conveying Augers to improve feeding/crop flow.
- Run the Top Conveying Augers slightly faster than draper belts.
- Finger drum timing should be fully counterclockwise.
- Tilt setting should be minimal to avoid higher losses off the front.
- Install 14" drum for increased capacity. See page 4 for part #
- Install center section seal kit to reduce header loss. See page 4 for part #

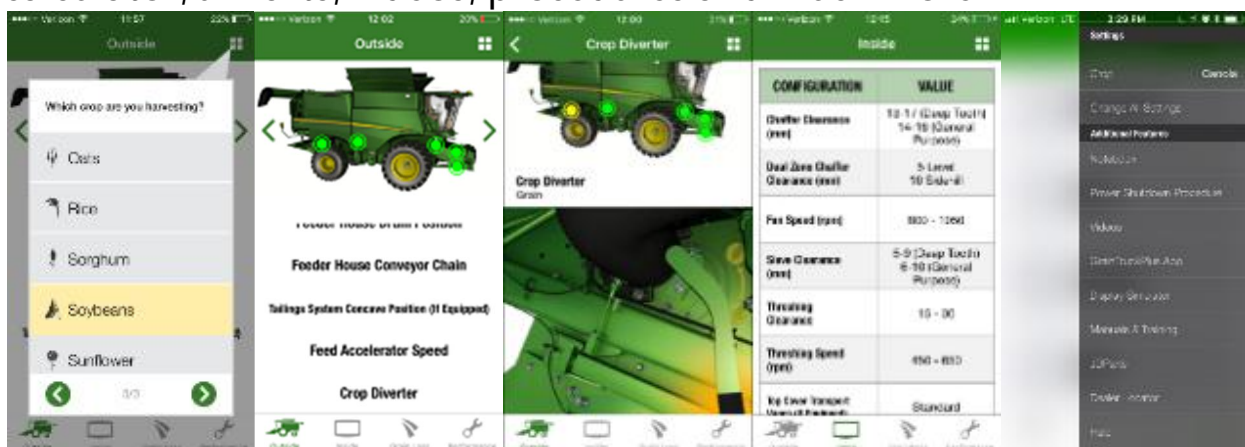


Harvesting Tips for Canola

- Check concaves for level front to rear. Concaves out of level may cause a pinch point increasing damage potential. Then Calibrate and “Zero” the concave position sensor. For more information, see the GoHarvest: Concave Leveling video.
- Check chaffer and sieve openings against the display. If they are off, recalibrate the shoe.
- Cleaning shoe load distribution is key – Auger bed dividers can be adjusted. Separator grate covers may need to be removed or installed for even shoe distribution (2 rows on the right side and 3 rows on the left.) Add the Side Hill Performance Package for additional help with shoe distribution on side hills. For more info on Power Shutdown and shoe load distribution, go to the OM or GoHarvest App.
- Minimize free grain in tailings/rethresher as much as possible.
- Install adjustable front chaffer in lodging green stalk conditions.
- If harvesting swathed canola with a BPU, you can shift the backshaft speed to second gear to help with tough windrows.
- Proper header/platform setup is critical for effective material feeding and overall combine performance. If you have slug-feeding issues, check header performance.
- Ground speed is an important factor in harvest optimization that is easy to overlook. Verify losses as you increase speed in order to maximize efficiency. For more information, see the GoHarvest: HarvestSmart video.

- Try to achieve the largest opening between the concaves and threshing elements that will still thresh out all of the grain, this will help to minimize grain damage and allow for highest level of efficiency by reducing rotor power consumption. For more information, go to the GoHarvest: Power Consumption video.
- Set for good straw & Material Other Than Grain (MOG) quality. If the material is chewed up in small pieces, over-threshing may be occurring along with unnecessarily using up horse-power in over threshing material. This would also make achieving a clean grain tank sample difficult due to the excess amount of light forien material on the shoe. For more information, see the GoHarvest: Power Shutdown video.
- Unless you know the sorce of grain loss, you will be unable to reduce it. There are pre-harvest losses, header loss, rotor loss, and shoe loss. For more info on Losses, see the GoHarvest: Improving Grain Loss video.
- In order to clean up your grain tank sample, you will have to adjust: fan speed, chaffer clearance, sieve clearance, and dual zone chaffer clearance. For more info, see the GoHarvest: Improving Grain Cleanliness video.

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



Notes
