

S-Series Combine and Front End Equipment Optimization

“Ready To Harvest” for All Corn Crops
Wet/Dry Corn - Food Corn - Popcorn



John Deere Harvester Works

Contents

Preface.....	3
Ag Sales Manual Option Code Recommendations.....	4
Field Installed Bundle Recommendations.....	6
Cornhead Inspection and Adjustments.....	7
Deck Plate Spacing.....	8
Cross Auger Height.....	9
Backshaft Speeds.....	10
Combine Setup and Inspection.....	11
Feederhouse Drum Height and Chain Speed.....	12
Feed Accelerator Speed.....	13
Concaves.....	14
Separator Grates.....	15
Cleaning Shoe Chaffer and Sieve.....	16
Active Tailings (S680, S690).....	17
Cob Deflector Door.....	18
Wet >25% Moisture Corn Checklist.....	15
Dry <25% Moisture Corn Checklist.....	16
Popcorn – Food Corn Adjustment Checklist.....	17
Grain Quality Tips.....	18

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 cornhead, for any Corn crop and condition before going to the field.

Ag Sales Manual Option codes are included to be able to correctly configure a corn combine and field installed bundles are explained for attachments, to enhance performance and Grain Quality in specific corn 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.

S-Series Combine Ag Sales Manual Option Codes

Recommendations for Field Corn, Popcorn, Food Corn

0506 Coarse Grain Package

Includes: 4880 TriStream Rotor Regular Wear,
4822 S-Series Cleaning Shoe Deep Tooth Adjustable
Chaffer and Bottom Sieve with TouchSet.

4340 Round Bar Concaves

5752 Manual Adjust Vane Tailboard

Includes: Fine Cut Chopper - 2-Speed Chopper drive with
Neutral, Integrated Chaff Spreader.

Recommended for Platforms 30 Ft. and less.

5756 PowerCast Powered Tailboard

Includes: Fine Cut Chopper - 2-Speed Chopper drive with
Neutral, Integrated Chaff Spreader.

In-Cab Operator Controlled Wind Compensation

Recommended for platforms 30 Ft. to 50 Ft.

3060 Lateral Tilt Feederhouse Variable Speed Reverser

202kW CommandTouch Multi-Speed Drive Feederhouse
Reverser System


Heavy Duty Lateral Tilt Cylinder

- 3.5 In. (90 mm) Lift Cylinders

For use with StalkMaster Corn Heads 18-rows and less.

Non-Stalkmaster Corn Heads 18-rows and less.

Requires ProDrive.

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- 9315 Feed Accelerator Slow Speed Drive 320-770 RPM.
Recommended for use in edible beans, **food corn, and popcorn ONLY**.
Certain conditions may see a straw quality improvement with slower accelerator speeds, but material handling may be sacrificed when in tougher conditions.
Not recommended for use in Rice.
Available on both the TriStream and Variable Stream rotor.
- 9317 Feed Accelerator Smooth Wear Strips (Set of 30)
Recommended for improved grain quality in crops such as **food corn, popcorn and seed crops ONLY**. The smooth wear strips on the feed accelerator are only compatible with the TriStream rotor FAST system.
- 9482 SideHill Performance Package
Recommended for sidehill conditions to reduce grain loss. Includes full-length tall chaffer dividers, grain return pan partitions and grain agitator paddles.
- 9510 Perforated Elevator Boot, and Clean Grain Cross Auger Door

S - Series Combine Field Installed Bundles Recommended for Field Corn, Popcorn, Food Corn

New and Used Combines

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.

BH81691 Feed Accelerator Slow Speed Drive 320-770 RPM.

Recommended for use in **food corn or popcorn ONLY** when optimum grain quality is desired in these crops.

Not recommended for use in Rice.

Not recommended with the Variable Stream rotor.

(9660, 9760, 9860, 9670, 9770, 9870, S550, S650, S660, S670, S680, S690).

BH81489 Feed Accelerator Smooth Wear Strips (Set of 30)

Recommended for optimum grain quality in specialty crops such as **popcorn, food corn ONLY**.

Not for use in Rice.

BH81519 Perforated Clean Grain Elevator Boot, Door

BXE10094 Perforated Clean Grain Auger Door- S660, S670, S680

BXE10387 Extended Wear Round Bar Concaves (Set of 3)

Recommended for corn and soybeans.

Cornhead Inspection and Adjustments

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

- Deck Plate Spacing
- Auger Height Position
- Feeder House Variable Speed

(Corn Head Backshaft Speed)



Deck Plate Spacing

The spacing can be changed for different harvesting conditions.

Deck plates should be set narrow to keep grain losses at a minimum yet wide enough to keep trash intake at a minimum. The general rule is: maximum spacing should be no more than 3mm (1/8 inch) wider than the diameter of the typical cob and no less than 3mm (1/8 inch) wider than the diameter of the corn stalk.

Dry Conditions – Adjust the deck plates wider to minimize trash intake but not too wide to increase grain loss. A small amount of trash intake to cushion ears as they impact the deck plates to prevent butt shelling is preferred.

High Moisture Corn >25% and Popcorn–

Set corn head deck plates close to take in some trash to cushion the ears as they hit the deck plates. High moisture corn leaves are usually still green and will not shred or break apart as easily as dry stalks. Be careful with too much green stalks and leaves because they can plug concaves and severely limit separation which increases rotor loss.



Cornhead Cross Auger Height

The auger position is factory set in the down position. Do not raise the auger too high so that the ears will pass freely under the flighting.

Flighting will scuff the kernels if too high.



Very Dry Conditions – To minimize dry trash intake, move auger down.

High Moisture Corn and Popcorn – To minimize grain damage, lower auger down.



Cornhead Backshaft Speed Feederhouse Variable Drive - 5 Speed

- Operate the corn head at or slightly above the recommended speed 510 – 580RPM for the given ground speed. Greener stalk leaves do not strip off the stalk and give any cushion when the ears impact the deck plates. 1ST gear (510-530) or no more than 2nd gear (560-580) on a 5 Speed drive.
- DO NOT OVERSPEED THE BACKSHAFT.
- Too fast of conveyor chain speed causes kernel damage.



Dry Stalk Conditions – Operate the corn head at the higher variable speed drive 510- 640RPM (without excessive butt shelling). No faster than 3rd gear (620-640) on a 5 Speed drive. The fast corn head drive speeds allow the stalk rolls to pull more trash down and cushion the ears to minimize butt shelling.

Combine Setup and Inspection

Feederhouse Drum Height and Chain Speed

- Front Drum position - Handle Up for corn
- Conveyor chain speed - slow 26T or 22T small sprocket AH232851 from Service Parts.



Feed Accelerator Speed Slow side speed - 430 rpm Inner Large Diameter

For Food Corn and Popcorn use BH81691 Slow Speed FAST Kit at 320 RPM and BH81486 Smooth Wear Strips



Concaves

Round bar is the recommended concave in all three positions for grain damage since its overall performance is very good in all moisture conditions. Refer to your Operator's Manual for how to Level Concaves (front to rear) and calibrated to "Zero" on clearance to the threshing elements.



Separator Grates

Be sure separator grate spacers are between separator grate and top rail for corn. This will lower the grates and minimize cob damage from rotor tines and small pieces of cob in the graintank.



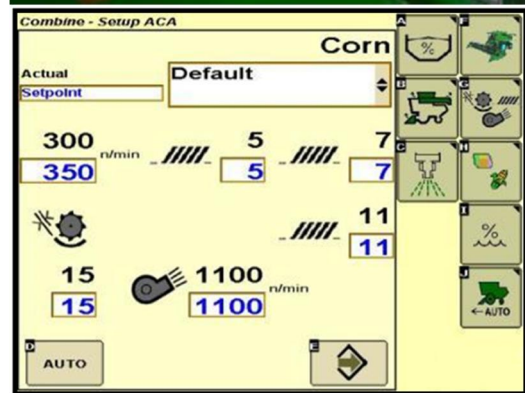
Cleaning Shoe

Deep-tooth chaffer (AXE28478) and deep-tooth sieve (AXE20450) should be used, for field corn only.

General Purpose Chaffers are recommended for Food Corn and Popcorn

Be sure chaffer and sieve are calibrated so the opening exactly matches the cab display setting.

If openings do not match, follow the Factory Cal procedures.



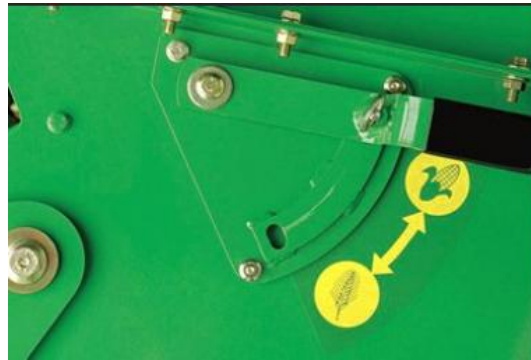
Active Tailings System (S680, S690)

Set the lever UP to the open position to open the concave for corn.



Cob Deflector

Move the cob Deflector handle to the Corn position.



Wet >25% Moisture Corn Adjustment Checklist

1. Corn Head Auger Down
2. Deck plates tight
3. Feederhouse Chain Speed – 22T or 26T sprocket
4. Feederhouse Drum UP
5. Feed Accelerator on Low Speed (Large Diameter) 430 RPM
6. BH81486 Feed Accelerator Smooth Wear Strips are recommended.
7. Backshaft Speed 500-580 RPM / 3rd Gear 5 Speed
8. Cleaning Fan speed - 1000- 1350 RPM
10. Rotor Speed - 400-450
11. Concave Clearance - 20-35
12. Deep Tooth Chaffer - Front 15-20
13. Dual Zone Chaffer Rear manual = Closed
14. Sieve = 10-14

Dry < 25% Moisture Corn Adjustment Checklist

1. Corn Head Auger Down
2. Deck plates half to closed
3. Feederhouse Chain Speed 26T sprocket
4. Feederhouse Drum UP
5. Feed Accelerator on Low Speed (Large Diameter) 430 RPM
6. Regular serrated Feed Accelerator wear strips
7. Backshaft Speed 500-580 RPM / 3rd Gear 5 Speed
8. Cleaning Fan speed 1000- 1350 RPM
9. Rotor Speed = 400-450 RPM
10. Concave Clearance - 20-35
11. Deep Tooth Chaffer Front - 15 - 20
12. Dual Zone Chaffer extension Rear manual - 10
13. Sieve - 10-14

Popcorn - Food Corn Adjustment Checklist

1. Corn Head Auger Down
2. Deck plates tight
3. Feederhouse Chain Speed – 22 or 26T sprocket
4. Feederhouse Drum UP
5. Feed Accelerator Slow Speed Kit 320 RPM BH81691
6. Swept-back Smooth FAST wear strips BH81486
7. Low Backshaft Speed 500-580 RPM / 3rd Gear 5 Speed
8. Cleaning Fan speed 1200-1300 RPM
9. Rotor Speed = 300-425 RPM
10. Concave Clearance - 26-30
11. General Purpose Chaffer - 10-14
12. Dual Zone Chaffer Rear manual - Closed
13. Sieve - 5-8

Grain Quality Tips for High Moisture Corn, Food Corn, Popcorn

1. Check concaves for level front to rear. Concaves out of level may cause a pinch point increasing damage potential.
2. Calibrate and "Zero" the concave position sensor.
3. Check all the auger flighting to be sure there are no sharp edges.
4. Only run perforated screens on Clean Grain elevator doors in dry corn. Door perforations may have a tendency to scuff the kernels in certain conditions and moisture.
5. Do not unload grain tank completely empty.
Leave some grain in the tank to cover the augers to minimize damage.
6. Do not fill the grain tank over top of the loading auger
The corn boiling up above the loading auger can add to grain damage.
7. Do not unload the grain tank at high idle.
8. Minimize free grain in tailings/rethresher as much as possible.
9. Do not run deck plates wide open. May cause ear butt shelling.
10. Do not run cornhead auger in up position. Flighting will scuff kernels on the ears.
11. If new parts that contact the crop have been installed, run the combine in crop other than corn, to shine up any rough edges.
Threshing elements, FAST Wear Strips, augers, etc

NOTES

