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**BULLETIN NO:** PB-127d

**DATE:** 1 March 2016

**TO:** All CLAAS Forage Dealers

**SUBJECT:** ORBIS Settings and Operations Guide (Updated July 2014)

NOTE: This bulletin is for informational purposes only and does not constitute warranty. Refer to ORBIS Operation and Maintenance Manual for further instruction.

## ORBIS Settings and Operations Guide



# ORBIS Settings and Operations Guide





# Feedroll Plastic Wear Plates / Header Gearbox Speed

## Top Feedroll Plastic Filler Plates (PN: 998 691.0)

When an ORBIS head is installed, remove the White top feedroll filler plates. The removal will aid in smoother feeding and better chop quality. Shorter bolts will need to be installed (PN: 214 202.0 Quantity 50)



## Header Gearbox Speed

2010 Production machines (SN: 65802549 & higher, 65901458 & higher and 99201047 & higher) come equipped with a 2 speed gearbox as standard equipment. Select 2009 ORBIS heads were also equipped with this gearbox.

When operating an ORBIS head with a 494/6/7 Series Forage Harvester and the chop length is 17mm or greater, the input gearbox (PN: 498 007.0) Gearbox ONLY) on the head may need to be inverted (reversed) to speed up the head about 13%. The top side of the input end of gearbox should have a Romanian numeral "II".

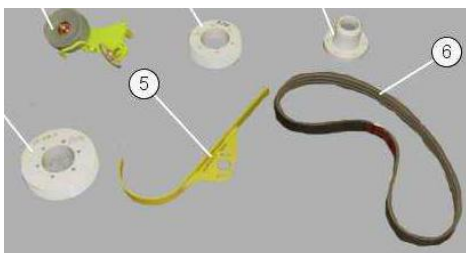
## Header Speed-up Kit Pulleys (PN: 1 318 654.0) 494 Series JAGUAR

A speed up pulley kit can be purchased if the header operates too slow even with the speed up gearbox installed. The pulleys will increase the speed by 15% on top of the gearbox 13%. These pulleys may help when the chop length is 21mm or more, or when harvesting thin stemmed crops. Only do this as a last resort as the header **WILL** experience more wear. If installing on 960 or smaller (SN 49402019 and prior), an additional 3 groove pulley (PN: 495823.1) will need to be purchased. Refer to Service information 10888



## Header Slow-down Pulley Kit (PN: 1 318 655.0) 494 Series JAGUAR

If harvesting with an ORBIS with a 494 Series JAGUAR below 10mm length of cut, a slow-down pulley kit will be needed. JAGUAR 960 and smaller (SN 49402019) will need a groove pulley (PN: 495 821.3) and belt (PN: 495 008.0). Refer to Service information 10888



# Scraper Adjustment

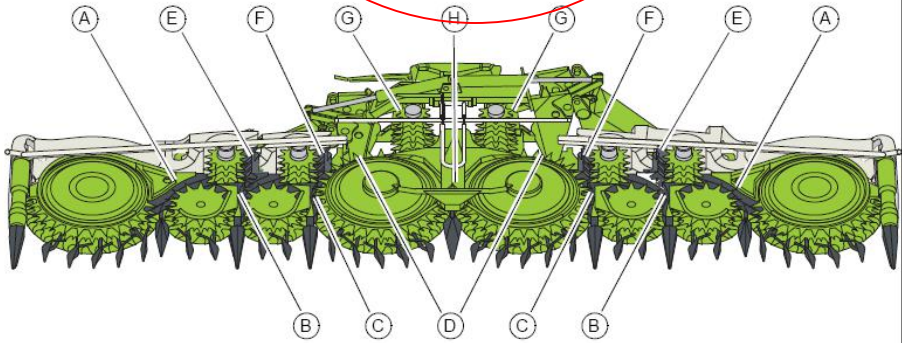
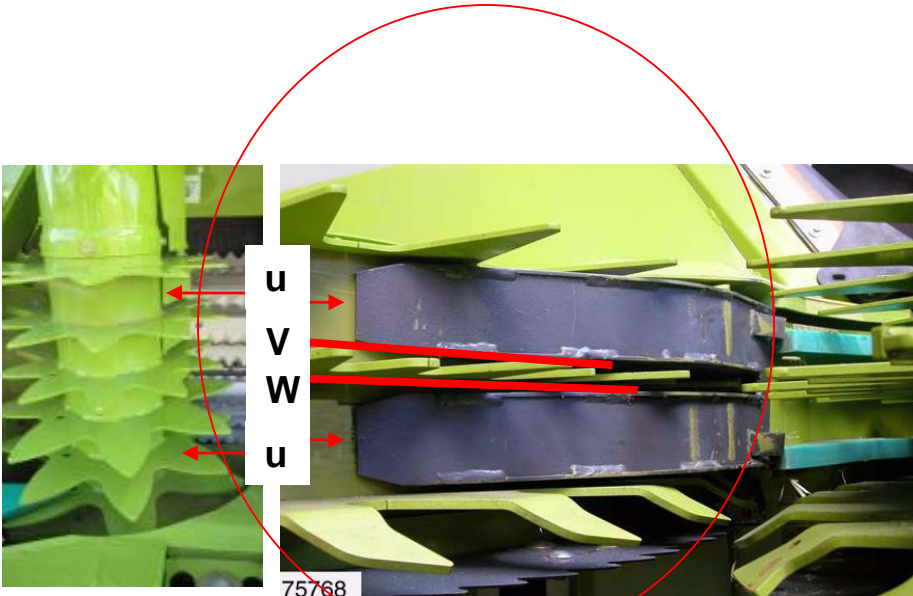


## Refer to Operators Manual – Adjusting the scrapers

Adjust all scrapers so that the distance (up/down) between the feeder disks and the impellers is the same for all of them. Distance (v) = distance (w)

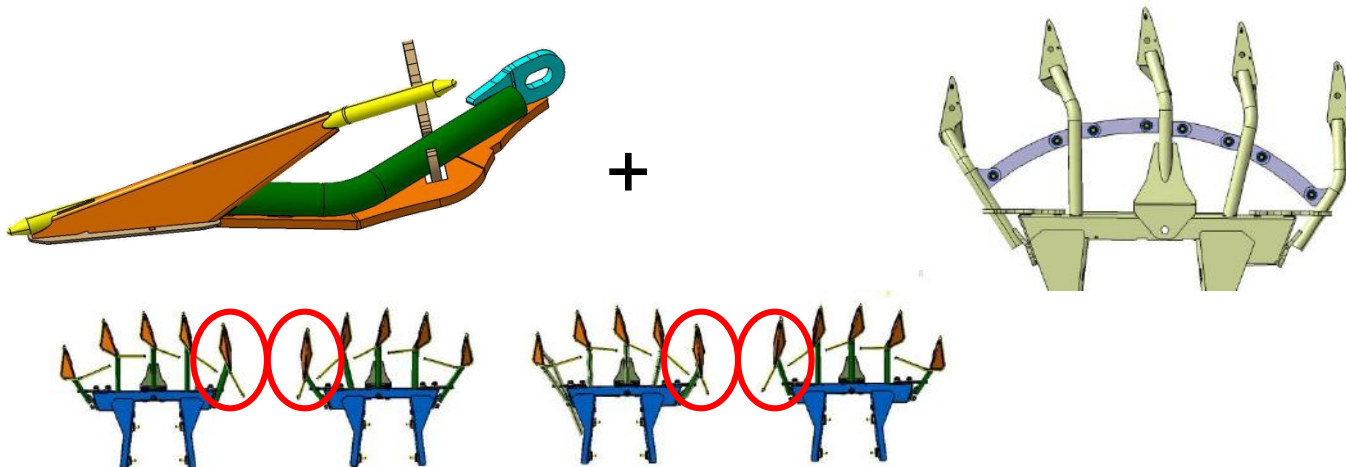
Adjust scrapers so that distances (u) between the scrapers and the feed cylinder / impellers are maintained. Distance (u) = 2.5 - 4 mm (0.10 - 0.16 in) – it is best to use a 2.5mm Allen wrench to check settings. After adjusting, rotate disc to make sure distances stays the same all the way around.

The **above** pictures show the excess wear when the scrapers are set too tight. In addition to excess wear, if the scrapers are too tight, they can cause the clutches to wear prematurely and create excess slippage.  
ORBIS 600 = 6 Scraper  
ORBIS 750 = 10 Scrapers  
ORBIS 900 = 14 Scrapers



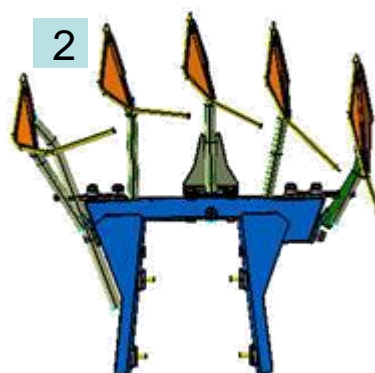
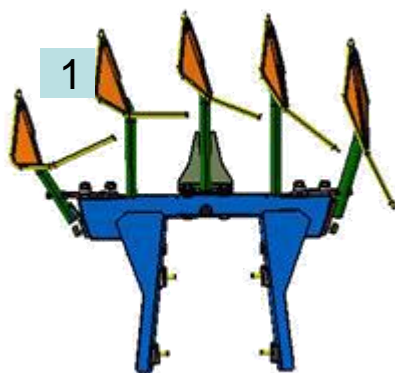
# Heavy Duty Grey Point kit

Attachment kit for grey points available thru spare parts. This kit includes four reinforced single grey points and four additional bolts to the frame.



Depending on the model of points there are two different versions available.

- (technical year < 2012 / > 2012) visible on the grey point frame on the outside!

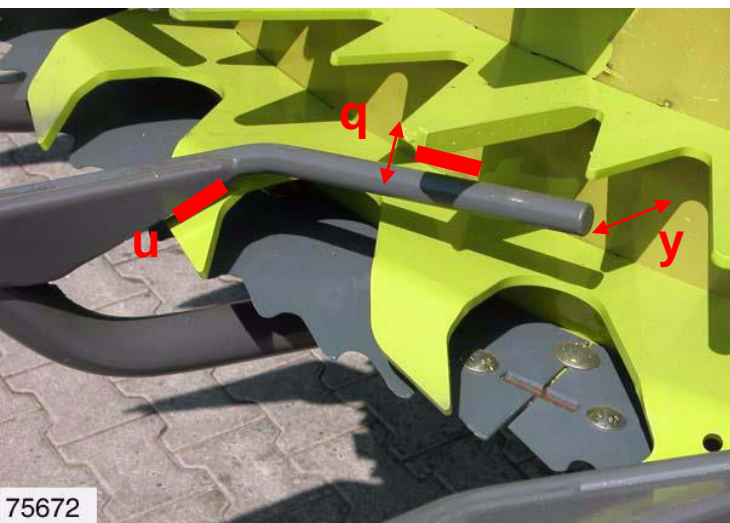


**1 HD kit grey points: 2302 080.0**

**2 HD kit grey points: 2302 081.0**



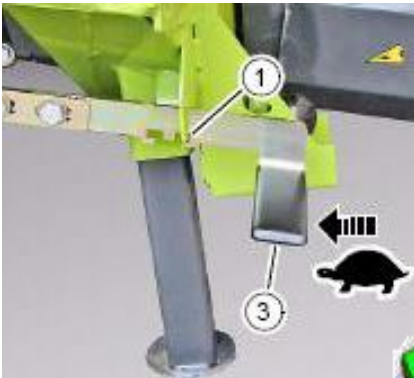
# Points Adjustment / Vertical Cone adjustment / Crop Flow pieces



## Adjusting Points

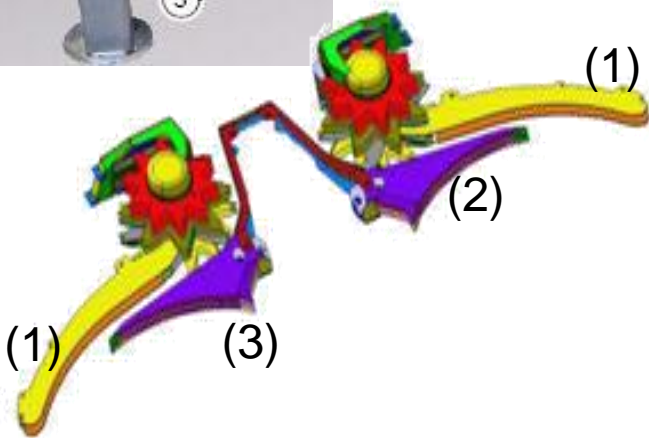
Refer to Operators Manual – Installing / adjusting the guide fingers

- Adjust the guide finger so that distance (u) from the bottom gather hook to point.
- Distance (u): 5 - 10 mm (0.20 - 0.39 in)
- Distance (q) from the middle feeder disk to rod on point
- Distance (q): 15 - 20 mm (0.59 - 0.79 in)
- Distance (y) from the drum wall and end of rod maintained.
- Distance (y): approx. 80 mm (3.15 in)



## Refer to Operators Manual – Set-up for work use

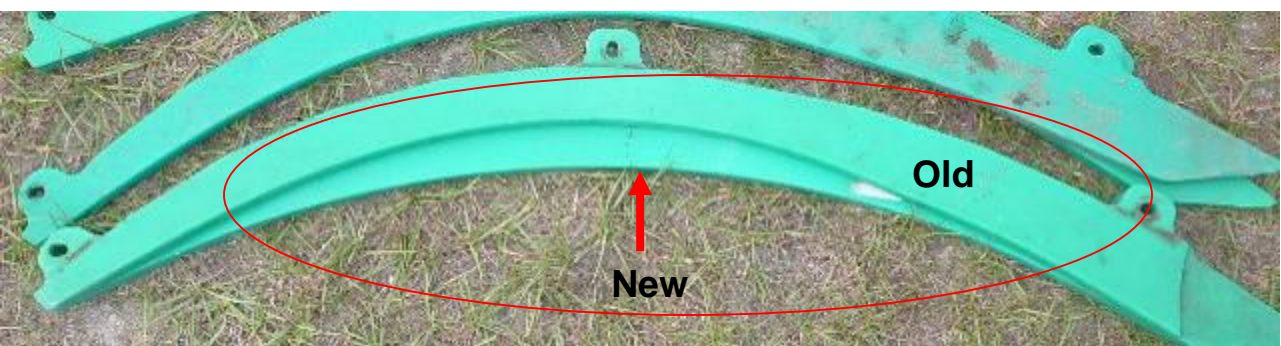
The two center vertical cones have a high low gearbox to match feeding speed to feedrolls. High speed for longer length of cut. Slow speed for shorter lengths of cut. Sometimes the opposite will make for better feeding



## Heavy Duty Wear guides and scraper (2016 and new production is standard)

	600 USA steel	750 / 900 USA steel
Guide bar bottom (right + left) (1)	1319 485.0	1319 479.0
Guide bar top left side	1319 487.0	1319 480.0
Guide bar top right side	1319 486.0	1319 481.0
scraper left side (2)	0497 758.6	
scraper right side (3)	0497 746.6	

# Green Plastic Pieces



## Green Plastic Pieces - Wear

It is critical if the green plastic pieces are worn more than 3/4 inch from new, they need to be replaced if harvesting Sorghum, short corn, thin stemmed corn or grassy corn. The green plastic pieces are critical to help hold the crop in the gather. Never run without the top green pieces throughout the header. Never run with both top and bottom green pieces removed in standing crop.

## ORBIS 600

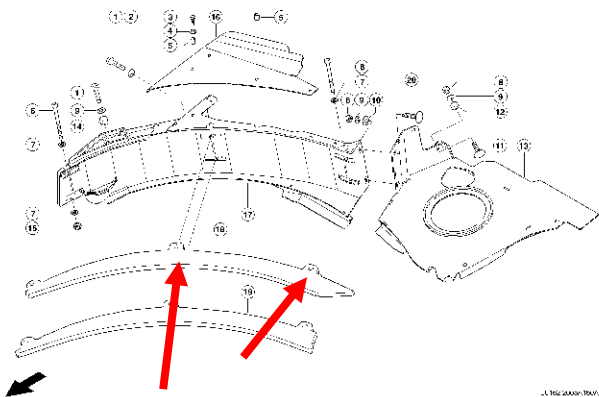
The area to measure on an ORBIS 600 is where the bolt holds the scraper. The measurement should be approximately 2 7/8 inches when new on the inner bolted section (Near Christmas trees) and middle when new. The center bolt measurement is the most critical and if worn to 2 1/8 inches, the piece needs to be replaced. In very fine stemmed crop, less than 3/4 inch wear may require replacement.

Left Bottom PN: 496 522.0

Left Top PN: 496 524.0

Right Bottom PN: 496 522.0

Right Top PN: 496 689.0





# Green Plastic Pieces

## ORBIS 750

The same holds true for ORBIS 750 and 900. If green plastic pieces are worn more than  $\frac{3}{4}$  inch from new, they will need to be replaced when harvesting sorghum, thin stemmed corn, or grassy corn.

Center Left Bottom PN: 496 764.2

Center Left Top PN: 497 110.1

Center Right Bottom PN: 496 764.2

Center Right Top PN: 497 288.1

All Small Drums PN: 496902.2

Outside Wings PN: 496 822.2

Small Drum

Center 2 Large Drums  
Middle hook: 2  $\frac{7}{8}$  inch

Bolt near the  
center intake:  
2  $\frac{3}{4}$  inch

1  $\frac{1}{2}$  inch top towards  
Christmas tree

2  $\frac{1}{4}$  inch towards  
large drum

1  $\frac{3}{8}$   
inch  
from tab  
to  
outside

2  $\frac{1}{8}$  inch

2  $\frac{1}{8}$  inch



# Knife Wear / Outside Vertical Cone Scrapers



## Knife Wear

If the header starts to plug (clutch slippage) or bad stubble quality after many acres occurs, the first thing to look for is dull knives. Knives can be dull by just having the ends worn flat. The flat worn tips will perform bad in grassy or small diameter crop conditions.

**Example A** would not work properly in sorghum, short thin stemmed corn or very heavy grass field.

**Example B** would not work properly in mild grassy corn Sorghum, short thin stemmed corn.

**Example C** would not work properly in any crop



## **New** HEAVY DUTY Knife for Large Drums (Available through spare parts only!)

- Complete Set PN: 1 319 842.1 (4 large drums)
- Individual Knife Left: PN: 1 319 822.1
- Individual Knife Right: PN: 1 319 821.1



## Outside Vertical cone Scrapers (ORBIS 750/900)

- Replace vertical cone scrapers if holes are present or if protruding metal is worn flat. The protruding metal helps transition the crop to the green plastic pieces. If it is worn, the crop will hesitate and crop flow will not be smooth

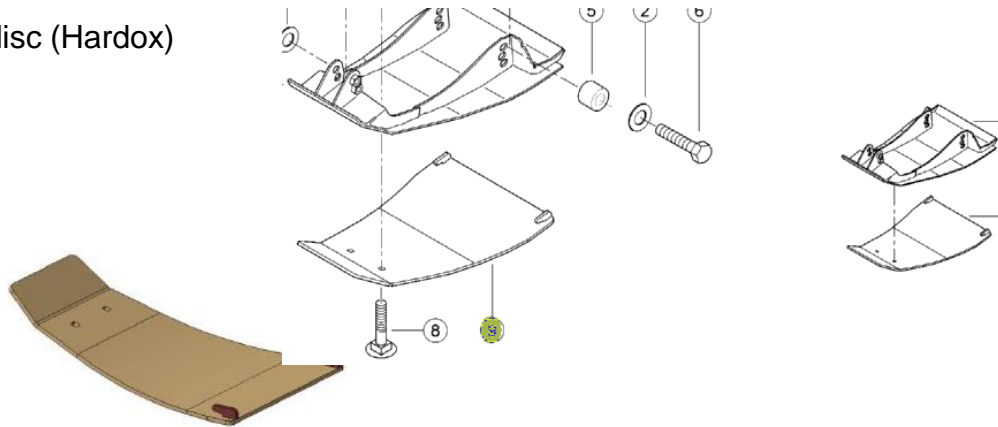
# Heavy Duty wear items available with factory orders

## New MAD JAG PREMIUM LINE skid shoe (available as factory option on 2016 and newer ORBIS)

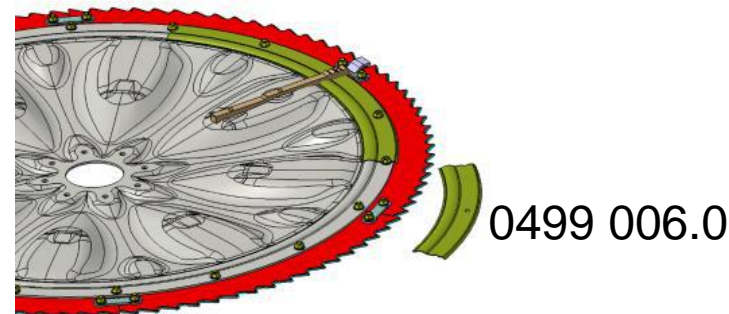
Available underneath the gathering disk gearbox (to bolt on).

→ 5 mm Hardox-Plate

Wear Plate skid shoe large disc (Hardox)  
PN: 000 498 3820



Wear Plate skid shoe small disc (Hardox)  
PN: 000 498 3800



## ORBIS MAD JAG PREMIUM LINE Wear Parts (top left) (2016 and Newer heads available as option from factory)

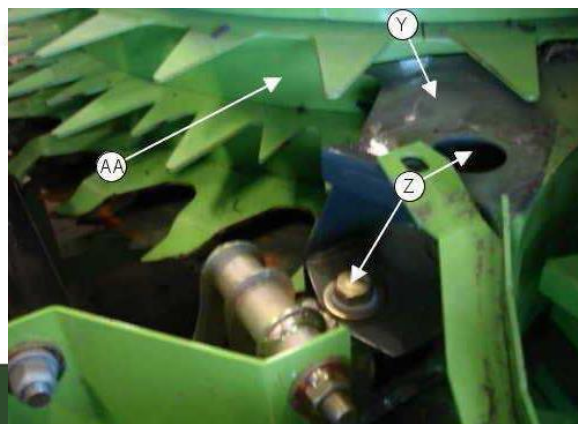
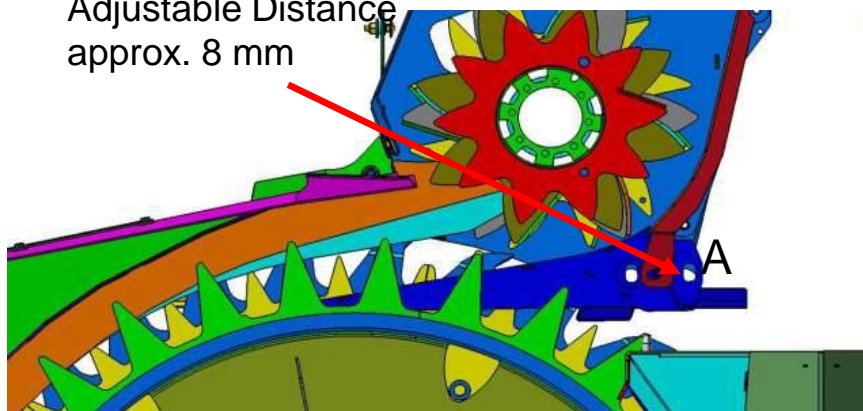
Heavy Duty reinforcement ring underneath the knife disc prevents wear and twisting of knife disc in adverse conditions (PN 499 006.0) Four large drum kit PN: 498 897.1. Refer to Service Information: 11499 (2016 and newer, as a factory option)



# Crop Channel Enhancements for short or thin stemmed crop

- Modified feeding channel (Grey colored scrapers) (distance between feeding drum <-> scraper adjustable with slotted hole)
- Allows the rear of the scraper (A) to be adjusted closer to the Christmas Tree for thin stemmed crops
- Allows the rear of the scraper to be adjusted further away from the Christmas Tree for thick stemmed crops
- Standard May 2011 Production (from SN 65802774, 65901626, 99201094)
- Service Information 11489 explains how to modify

Adjustable Distance  
approx. 8 mm

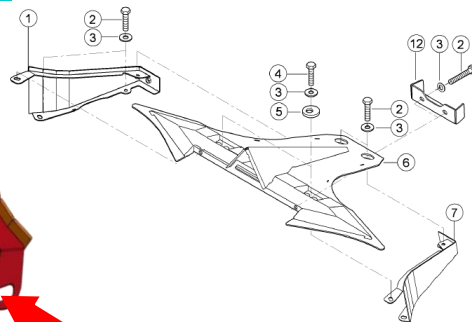
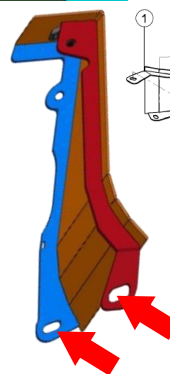
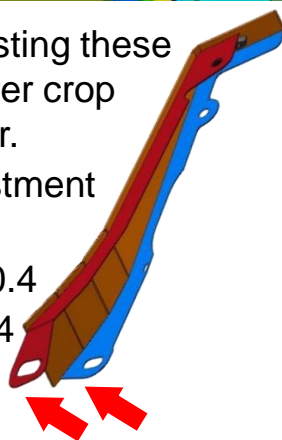


If corn is short or light, adjusting these guide plates can help transfer crop from head to feedrolls better.

If head does not have adjustment holes:

guide sheet right: 1310 030.4

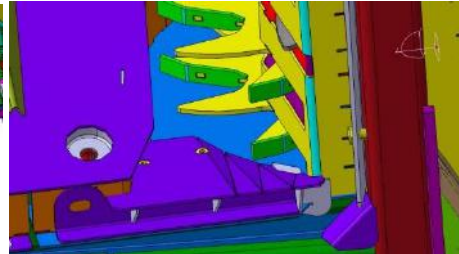
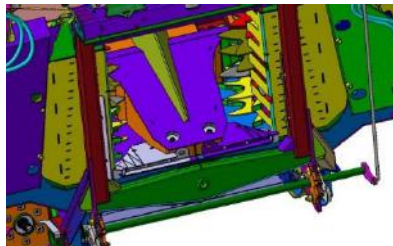
guide sheet left: 1310 049.4



## Very short corn ramps:

If corn is short or light, these ramps can help transfer crop from head to feedrolls.

Kit pedestal sheet: 2300 369.0

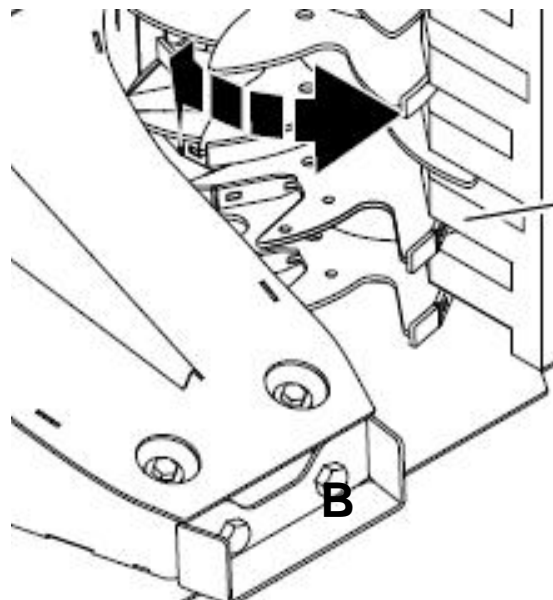
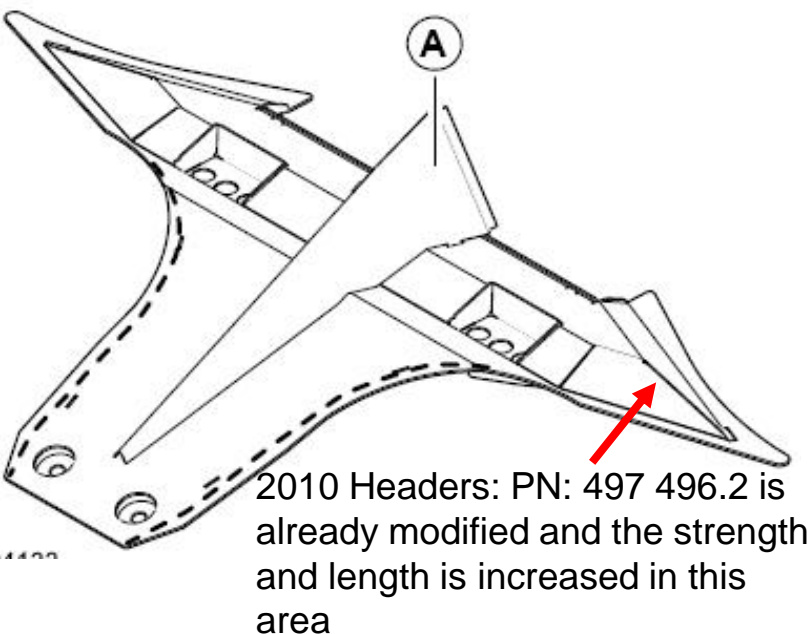


# Chop Quality / Smoother Feeding

## Chop Quality Enhancement for 2009 and Prior machines

Refer to Service information bulletin 11135. Instruction booklet PN: 1 319 451.0 gives instruction on how to modify cover **A** (PN: 497 496.0 ,.1 or.2 old version) for smoother crop feeding and better chop quality (New version PN 497 496.4). Modifying area **C** with the dotted line below so top plate is even with crop flow area up and down. Older plates over lap this area

Installing plate **B** (PN: 1 319 571.0) will improve chop quality. It keeps the butt of the stalk from turning sideways when contacting the feedroll.



## Chop quality improvement for 494 Series

- Rasp bar behind the anvil PN: 1312 261.0
- Fewer long stalk pieces, leaves and husks
- No differences in power requirement
- Excellent choice when harvesting Earlage





# Knife Disc Scraper / Brown Leaf build-up on grey points

## Knife Disc Scrapers

2 New Scrapers are introduced for 2010. Both scrapers will help in removing crop off the grey point and on the back side of the frame. Once the scrapers are worn round on one edge, rotate the scrapers from left to right disc to get a new blunt edge for cleaning to extend the life.

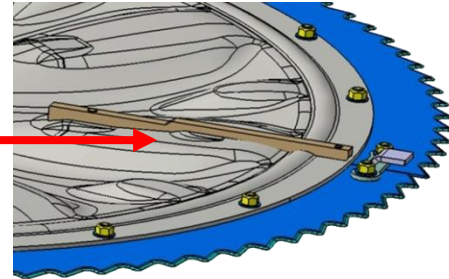
Bolt on scraper under Knife: PN: 383 148.0

Serial Numbers below 65801333, 65901067 or 99201007

Bolt on scraper under Disc: PN: 383 147.0

Serial Numbers above 65801334, 65901378 or 99201007

Bolt on scraper under Disc: PN: 499 220.2



These scrapers are critical if crop is collecting on the grey points

**Refer to CLAAS Service Bulletin 11121**

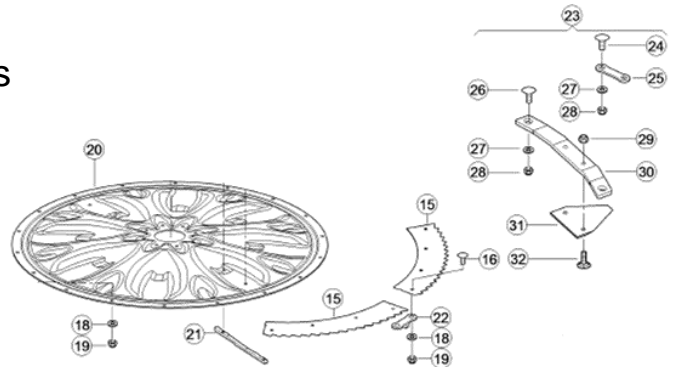


## Knife Disc Scraper

If the factory fitted scrapers is not enough to clear the brown leaves off the grey points the following can be added

ORBIS 600 *kit knife scraper:* 0383 704.0

ORBIS 750 / 900 *kit knife scraper:* 383 705.0



## Crop Building-up on inner grey point

- In certain crop conditions, brown wet corn leaves may build up on Grey Points
- Check to make sure at least 2 L-shaped scrapers (PN:383148.0) are installed under knife.
- If scrapers from above are installed and crop is still building, then it may be necessary to remove the inner crop flow grey point. When crop is building on this grey point, the crop will push the knife up into the gather and damage the tips of the knife or the build-up crop will not allow the standing crop to be harvested. Reinstall grey points when conditions change.



# Gathering Disc Clutches

## Checking restrictor

Refer to Operators Manual - Prior to Initial Operation

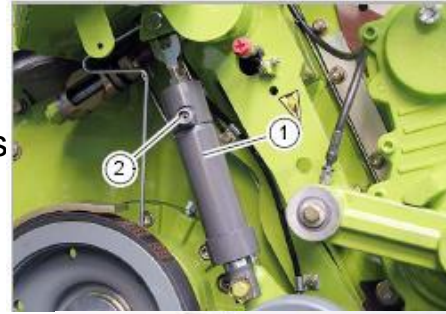
– Check the diameter (X) of the restrictor bore in the restrictor screw-in adapter (2) and replace if necessary. It is important to have the proper restrictor for header engagement, if not the clutches on the head will slip when starting the head.

**Note!** The CLAAS part code is stamped into the restrictor screw-in adapter (2).

**JAGUAR 494:**

Part #: Restrictor hole (X) PN: 055 236 0 Ø 0.9 mm (0.04in)

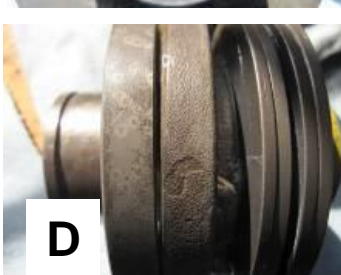
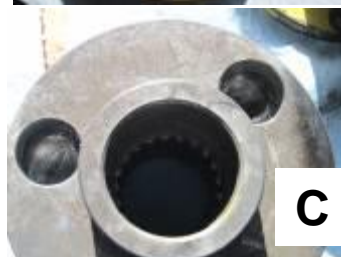
**JAGUAR 492:** PN: 991 286.1



## Gathering Clutches

If clutches are prematurely slipping, the following should be inspected:

- Inspect scrapers next to the gathering discs so they are adjusted properly
- Inspect to make sure no crop or soil is accumulating underneath the knife disc
- Inspect to confirm that the knife disc can rotate easily
- Inspect the balls (PN: 243 036.0 (A)) in the clutch and make sure they are round (egg shaped is bad)
- Inspect both plates (PN: 139 345.0 (B) and 139 344.0 (C)) so the three holes do not have wear. Part B will have 4 corners machined out. Do not consider this wear.
- Test the torque of the clutch by using a torque wrench.
  - Torque: 800-880Nm or 590-650 ft lbs.



## New and stronger material of the springs in the clutch starting:

- 65804547, 65902875, 99201437, i5101043, i5001001, i5201001, i5301001
- Part Number: 0932 946.3

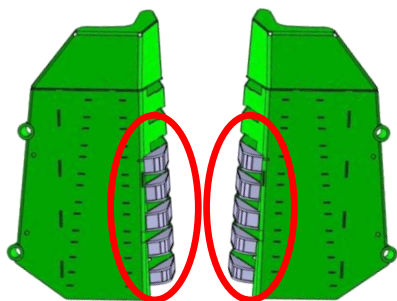


# Christmas Tree Enhancements for short, thin stemmed crop or wet brown leaves

## Solution to Christmas Tree Scrapers plugging in wet/dew conditions or Short/Thin stemmed crops

The below scrapers have welded on humps to help keep the wet brown leaves from building up inside the scrapers. Service Information 11489 explains how to install Kit PN 383 712.0 (**Picture A**)

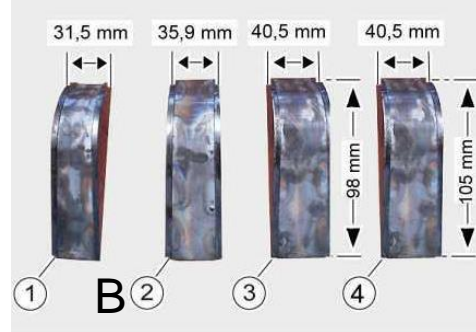
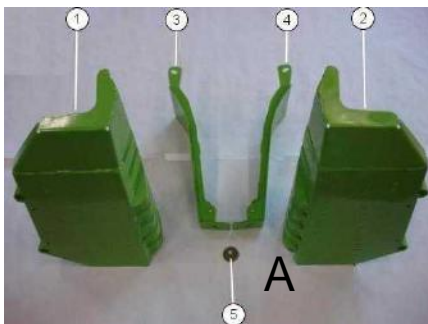
One can also order kit PN: 383 081.0 (**B**) and weld the humps on manually. Refer to Service information: 11393



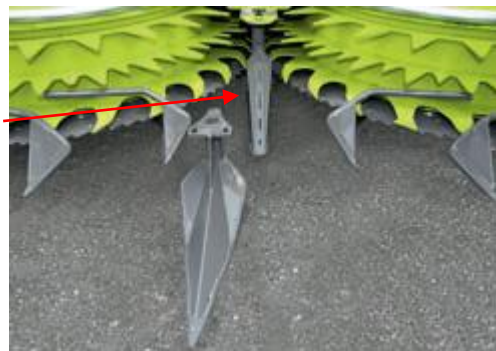
stripper case right  
stripper case left

PN: 383 114.0

PN: 383 121.0



**C. Smaller Center Point is available** – good for drill sorghum or small grain crops. Kit: PN 383698.0



## Weld-on or bolt-on Christmas tree scrapers

Refer to Service information bulletin 11135 or 11393 and Instruction booklet PN: 1 319 451.0

Additional scrapers can be added to the Christmas trees if crop is collecting and plugging the Christmas trees. Additional scraper for Christmas tree: PN: 1 310 962.0

If the star pieces on the Christmas trees are worn to the point the edges are getting sharp, the entire Christmas tree needs to be replaced.

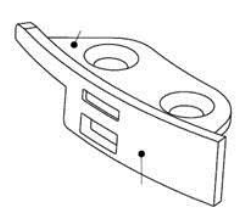
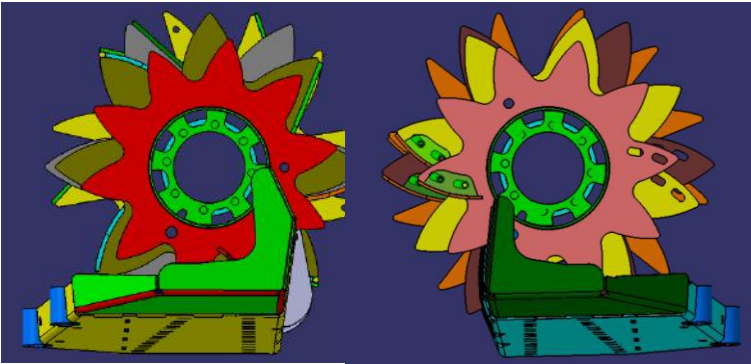
# Christmas Tree Enhancements for wet brown leaves

New and Improved Christmas trees for Brown leaf build up. Helps to eliminate leaf build up in the Christmas tree area. Depending on model and year, some heads have some of the updates

- 2601 268.1 Retrofit kit (bolt on finger scrapers+ scrapers)
  - 2601 269.1 Retrofit kit (bolt on finger scrapers+ scrapers+ HD drums)
- The following SN# have the new HD Christmas tree drums: 65804654; I5101162; 65903030; 99201477 And all machines i50, i52 and i53
- 2601 271.2 Retrofit kit (bolt on finger scrapers)

## Solution on head

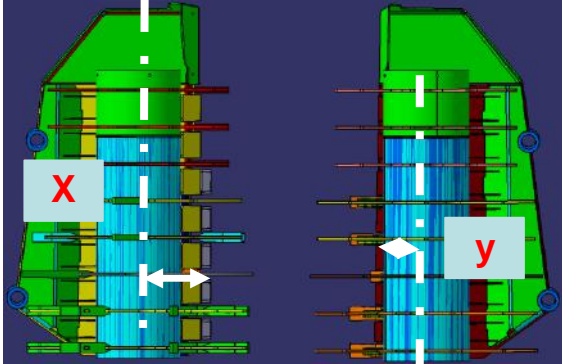
## Kit solution



New adjustable scraper

## Solution on head

## Kit solution



Due to the smaller welded parts and the new shape of the scraper (x>y) is the feeding width between the Christmas trees app 3.54 inch increased.

## Cleaning kit in corn cracker area:

The flexible hose will suck the dirt directly out of the maintenance room. The tube is fixed by magnets and can be custom positioned.

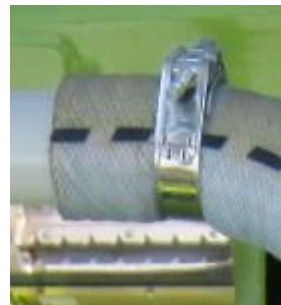
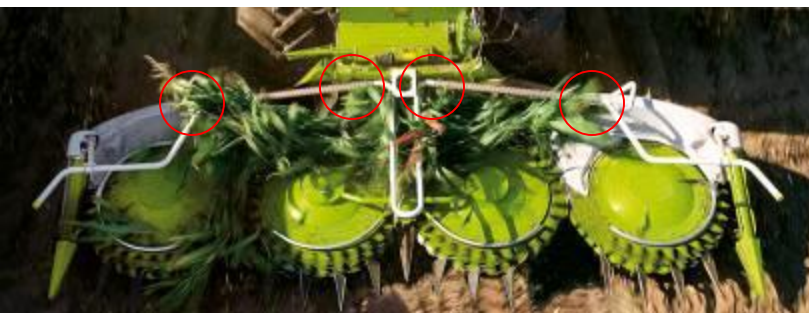
retrofit number 2401 660.0



# Hose Clamps / Crop Guide Extension

## Hose Clamps on guide bars

It has been observed that many times the hose clamp on the crop guide is turned so the bolt is catching on the crop flow. Rotate hose clamps on ORBIS 600, 750 and 900 so the crop flow is not disturbed.



## Outside Crop Guide Extension

In certain crop conditions, crop may have a tendency to build up on the end of the head. To reduce this issue, one can add 36 inches of 2 inch diameter PVC tubing over the ends of the white “Bull Horns” and bolt to the “Bull Horn.” The extension of the end of these horns will help hold the stalk up longer and catch the tassel end of the stalk sooner so the butt of the stalk gets closer to the feedrolls. In standard configuration, the taller stalks tend to fall around the original “Bull Horn” and cause the stalks to build up on the head. Depending on row spacing and driver tendencies, the pieces may need to be shorter than 36 inches so they do not interfere with the next row.










# Header Control











Each time a header is connect to a JAGUAR it is necessary to go to the header menu and do the ALL the steps in the menu: (All is found in the Operators Manual)

### 4.4.8 Header menu

If this is not set, header will not float properly

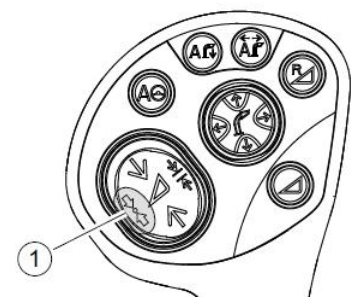
	
Submenu	Operation
	Set the header parameters.
	Set the header type.
	Set the width of the attached header.
	Set the maximum number of subwidths of the header. This value can be corrected during use in the HOTKEY direct menu to the active number of subwidths. The active number describes the number of subwidths that actively pick up the crop. If there is a departure from the working height that was set, this value resets itself automatically to the maximum number of subwidths.

Each time or header will not function correctly

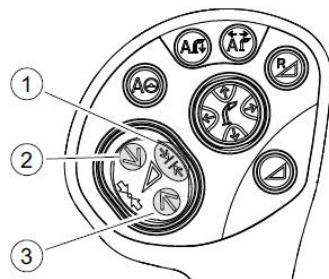
Submenu	Operation
	Set AUTO CONTOUR sensitivity.  <a href="#">Page 315</a>
	Adjust the cutting height preset or ground pressure. These values can also be set using the multifunction handle.
	Adjust the setpoint of the cutting height preset or ground pressure. The value is set that was previously activated in the harvest display.
	Learn the header height end stops. Follow the instructions that appear in CEBIS.
	Open the Working Position menu, and display settings.
	Set the working position. The working position refers to the cutting height at which the header engages the crop. Surface area counting  is not enabled until the working position has been reached and the header has been switched on. If the header is lifted out of this position, the active subwidths  set back to the maximum number.
	Learn the working position. Follow the instructions that appear in CEBIS.

DYNAMIC power, yield measuring and acre counter will not work if this is not set properly

# Header Control

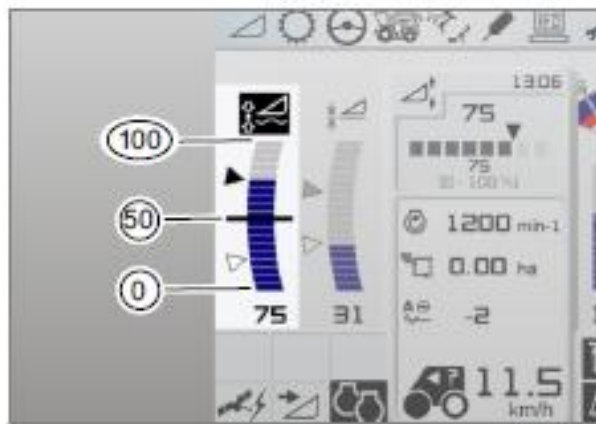


Left side of button is used for Hay head, DD head and auto contour for corn head



Right side used for corn head (No auto contour) and high setting for turning on headland  
If you use this side for an ORBIS who has Auto contour, the header will not raise up and down with the wands

142830-001



142835-001

## Storing cutting height control value

The value range is between 0-100. The value does not relate to any units and is used only for orientation.

Value 0 - 49 range for ground pressure:

The cutting height is set short over the ground. The header has a part of its weight on the ground and is adapted to the ground contours according to the ground pressure.

Value 50 - 100 range for cutting height:

The header does not have any ground contact. The cutting height is controlled via the sensor bands.

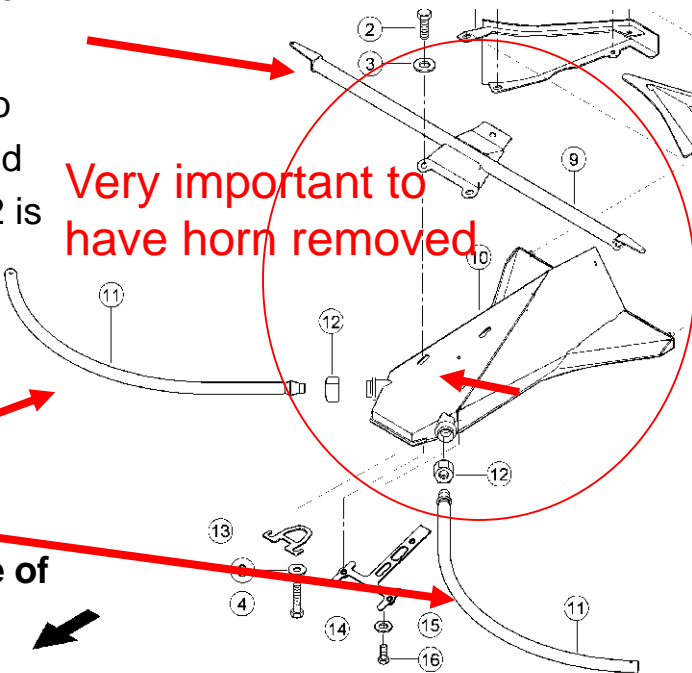
413

If there are no sensing bands on the header, the set value in the top range of the scale (cutting height) cannot be activated. The set value can only be set in the lower range of the scale (ground pressure).

# Down Crop Solutions

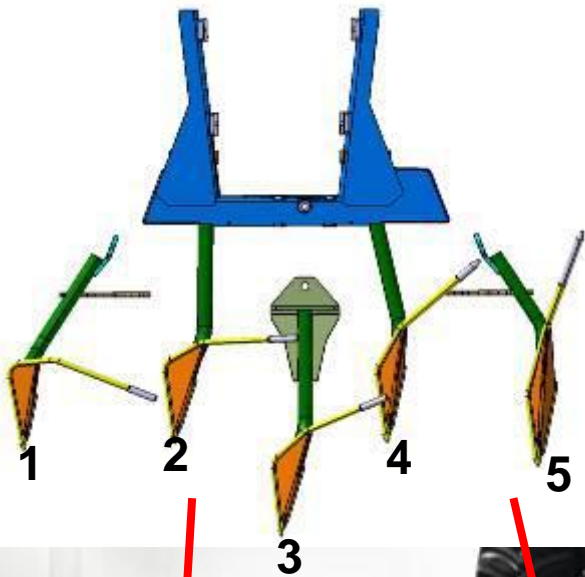
## A. Remove cross tube (9) from nose piece (10) PN: 497 734.3

If the header does not have nose piece to the right, there are 2 options, 1 purchased piece with above part number or option 2 is to convert old piece into new style. See Service information bulletin 11132

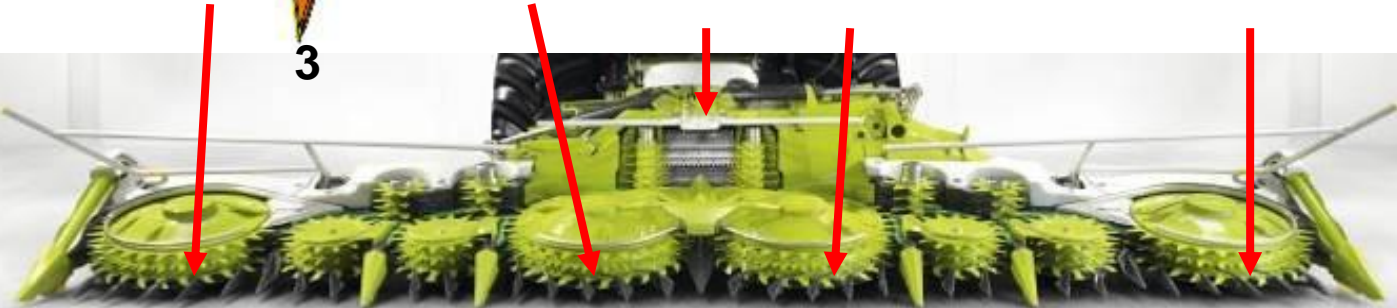


## B. Remove all cob savers (Except Outside drum on uncut crop side of head)

- ORBIS 600 = 4 Cob Savers
- ORBIS 750 = 6 Cob Savers
- ORBIS 900 = 8 Cob Savers



## C. On Large drums, remove points 1,3 and 5. This will allow down crop to get closer to the gather hooks





# Down Crop Solutions

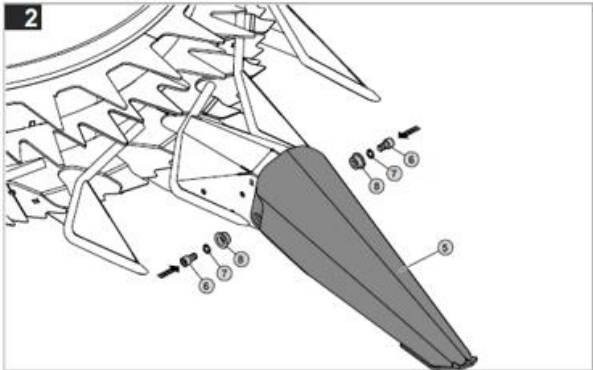
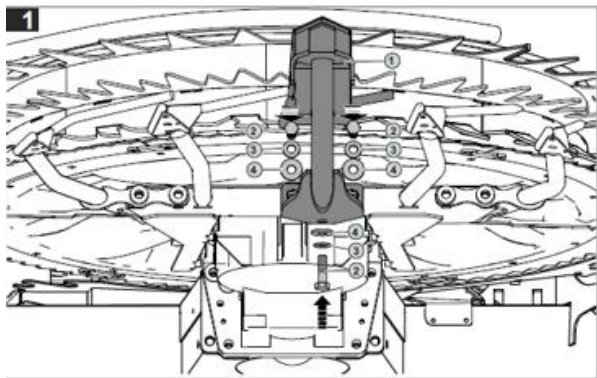


**D. Remove Center White tube on ORBIS 750 and 900 (PN: 496 691.2). Corn tends to wrap on the hoop**

**E. Down Crop Center Point (Center of head) is available – good for down corn or drill sorghum. Kit: PN 2302 082.0**



**F. Down crop point in middle of each disc**  
Great for sever down corn. Point left the corn up off the ground  
Kit: PN 2302 405.0



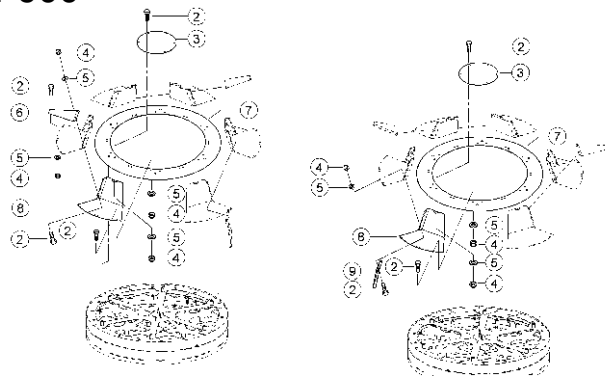
# Down Crop Solutions

## G. Down Crop Drums

PN: 498 290.0 – 2 Drums Short (ORBIS 750/900)

PN: 498 413.0 – 2 Drums Tall (OBRBIS 600)

- To optimize crop flow in down crop conditions
- Can be mounted on ORBIS 600, 635, 750 or 900
- Service Information bulletin: 11179

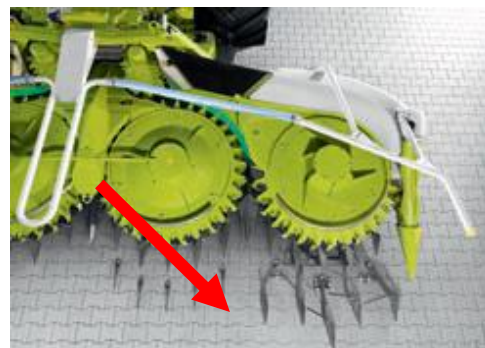


## H. Intake finger extensions

- Intake finger extensions can be installed to improve feeding in leaning crop conditions.
- Not recommended in severe down crop.

ORBIS 600/635 PN: 1 319 685.0

ORBIS 750/900 PN: 1 319 610.0



## i. Remove Outside Corn Auger (PN: 499 702.2)

- If down crop is piling up on the end of the head that is on the uncut crop side of head, remove outside corn auger.
- If crop is hanging up on outside white bull horn, remove it.
- Turn Ear Saver straight up and slightly outside of head

