DRAGO II

CLINIC GUIDE

MODEL IDENTIFICATION

LEGACY – 2001 to 2004

The Legacy model, the platform that both Series I & II are based on. It is easily identified by the red frame as well as steel snouts and bonnets. This was the first model introduced to North America. The drive system on the Legacy head is exclusively oil bath driven.

SERIES I – 2005 to 2012

The Series I corn head is built on the Legacy platform, with a few changes. These changes include a dark gray frame color, the introduction of poly snouts and bonnets (steel snouts were optional), and a folding head option being offered (2012 models). The drive system on Series I heads were predominately oil bath driven with some larger models utilizing the heavy-duty gearbox drive. They are identified by the decal on the end of the head that shows “DRAGO BY OLIMAC”

SERIES II – 2013 to Current

The Series II corn head is built on the Legacy & Series I platform. The major changes from Series I to Series II included updated poly snouts and bonnets (steel snouts were an option), the drive systems are oil bath drive chains for heads smaller than 12 rows & heavy-duty gearbox drive for all heads 12 rows and larger. They are identified by the decal on the end of the head that shows “DRAGO BY OLIMAC SERIES II”

Table of Contents

MAINTENANCE

The maintenance items in this section outlines the recommended intervals and lubricants required to keep the corn head functioning properly.

For more information on maintenance items and repairs please refer to your Operators Manual or the Drago Service Video website at https://www.dragotec.com/service-video

It is important to use only the lubricants specified or degradation of corn head performance may appear over time. Unlike most other EP0 greases, Mobilux EP0 grease does not use clay or polymers as the base material. When clay-based greases are used over time the grease evaporates and leaves behind the base material. This base material deposit can build up over time preventing normal operation. This is the common cause of deck plates and gathering chain tensioners to stick. The pictures below show what the base material deposits look like.

REQUIRED FLUIDS

LUBRICANT	LOCATION	CAPACITY
SAE 30W Oil	Gathering Chain	—
Mobilux EP 0 Grease	Stalk Rollers	—
	Gathering Chain Tensioner	—
	Gathering Chain Drive Sprocket	—
	Folding Joints	—
	Tow Shaft Bearings	—
	Deck Plate Tension Piston	—
	PTO Drive Shafts	—
	Row Unit Slip Clutch	—
	Row Unit Gearbox (Non-Chopping)	135 oz. (4.0L)
	Row Unit Gearbox (Chopping)	152 oz. (4.5L)
	Input Shaft Bearing	—
Mobil SHC 634 Synthetic Oil	Transfer Gearbox	15 oz. (450mL)
	Oil Bath	57 oz. (1.7L)
	Heavy-Duty Drive Gearbox	118 oz. (3.5L)

Mobilux EP 1 grease is recommended for heads running in sustained ambient temperatures of 100°F (38°C) or higher.

LUBRICANT PART NUMBERS

LUBRICANT	SIZE	PART NUMBER
Mobilux EP 0 Grease	14 oz. (414 mL) Tube – Case of 10	GT-1000T
	5 Gallon Bucket (19L)	DR-MOB-EPO
Mobilux EP 1 Grease	5 Gallon Bucket	DR-MOB-EP1
Mobil SHC 634 Synthetic Oil	1 Quart (0.9L) – Single	DR-MOB634-QT
	Case of 12 Quarts	DR-MOB634-CASE
5 Gallon Bucket Pump	—	5GAL-PUMP-#321

PRE-SEASON

CHECK	- Heavy-Duty Gearbox Oil Level - Oil Bath Case Oil Level - Row Unit Gearbox Grease Level - Transfer Gearbox Oil Level - Deck Plate Gap
ADJUST	- Gathering Chain Tension - Purge Deck Plate Piston - Cross-Auger Drive Chain Tension
LUBRICATE	- Gathering Chain Tensioner - Stalk Rollers

NORMAL OPERATION

EVERY 20 HOURS	
LUBRICATE	- Stalk Rollers
CHECK	- Inspect Stalk Chopper (if equipped)
EVERY 50 HOURS	
CHECK	- Heavy-Duty Gearbox Oil Level - Oil Bath Case Oil Level - Row Unit Gearbox Grease Level - Transfer Gearbox Oil Level - Gathering Chain Tension
LUBRICATE	- Cross-Auger Drive Chain - Gathering Chain Drive Sprocket - Row Unit Slip Clutch - Input Shaft Bearings - PTO Shaft U-Joints - PTO Shaft Shield Bearings
EVERY 100 HOURS	
ADJUST	- Oil Bath Drive Chain Tension - Cross-Auger Drive Chain Tension
LUBRICATE	- Gathering Chain Tensioner
EVERY 250 HOURS OR ANNUALLY	
CHECK	- Inspect Gathering Chain Guides
ADJUST	- Gathering Chain Tension
LUBRICATE	- Deck Plate Pistons - Inner Folding Pin - Outer Folding Pin - Wing Pin - Locking Piston - Inner Tow Shaft Bearing - Outer Tow Shaft Bearing

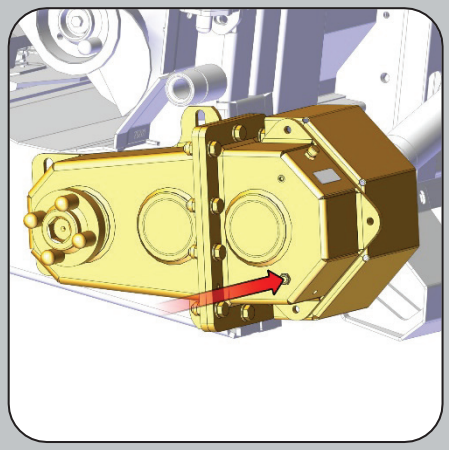
IF PERFORMING ANNUAL MAINTENANCE COMPLETE THE 20, 50, AND 100 HOUR SERVICES IN ADDITION TO THE 250 HOUR SERVICE

DOWN CORN

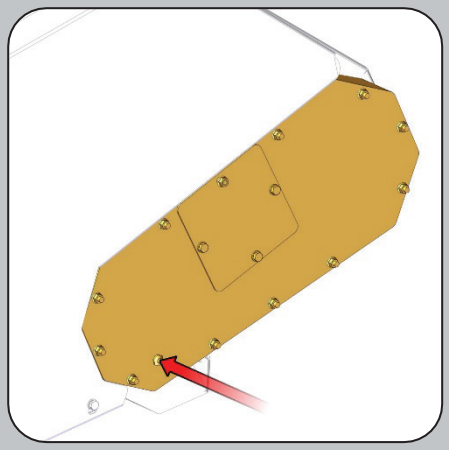
DAILY	
LUBRICATE	- Stalk Rollers
EVERY 20 HOURS	
CHECK	- Gathering Chain Tension
LUBRICATE	- Gathering Chain Tensioner
EVERY 50 HOURS	
ADJUST	- Heavy-Duty Gearbox Oil Level - Oil Bath Case Oil Level - Row Unit Gearbox Grease Level - Transfer Gearbox Oil Level
ADJUST	- Oil Bath Drive Chain Tension
LUBRICATE	- Cross-Auger Drive Chain - Gathering Chain Drive Sprocket - Row Unit Slip Clutch - Input Shaft Bearings - PTO Shaft U-Joints - PTO Shaft Shield Bearings
EVERY 100 HOURS	
ADJUST	- Cross-Auger Drive Chain Tension
EVERY 250 HOURS OR YEARLY	
CHECK	- Inspect Gathering Chain Guides
ADJUST	- Gathering Chain Tension
LUBRICATE	- Deck Plate Pistons - Inner Folding Pin - Outer Folding Pin - Wing Pin - Locking Piston - Inner Tow Shaft Bearing - Outer Tow Shaft Bearing

IF PERFORMING YEARLY MAINTENANCE COMPLETE THE 20, 50, AND 100 HOUR SERVICES IN ADDITION TO THE 250 HOUR SERVICE

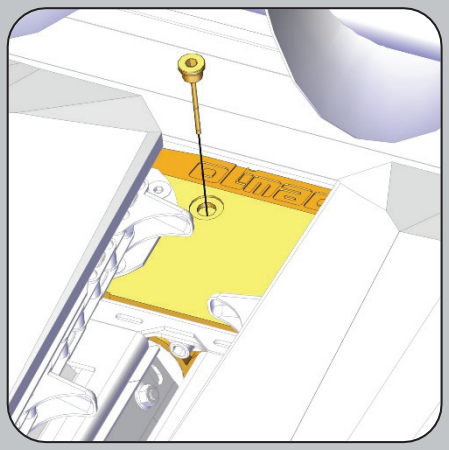
PRE-SEASON



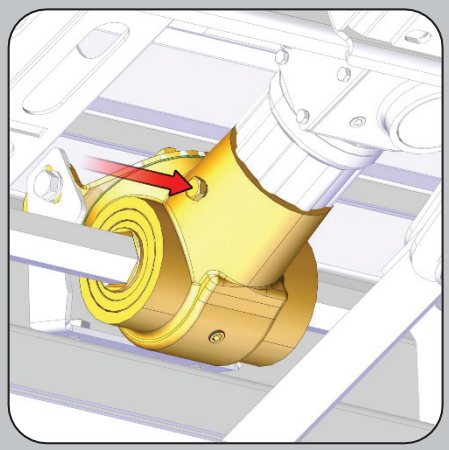
① Check Heavy-Duty Gearbox Oil



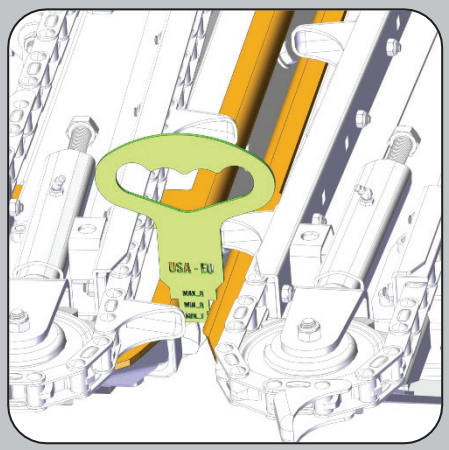
② Check Oil Bath Oil Level



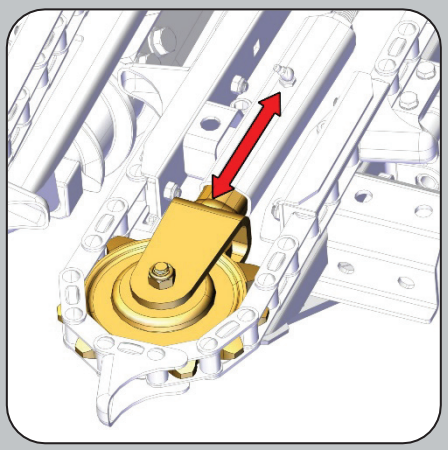
③ Check Row Unit Gearbox Grease



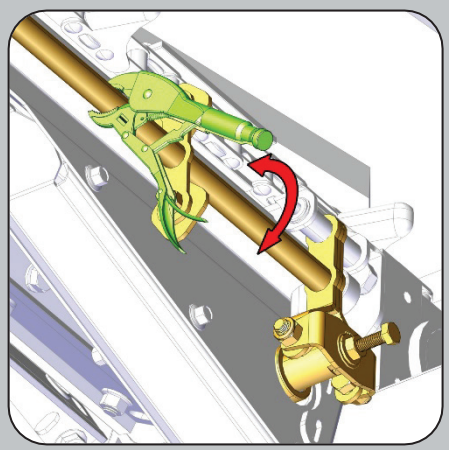
④ Check Transfer Gearbox Oil



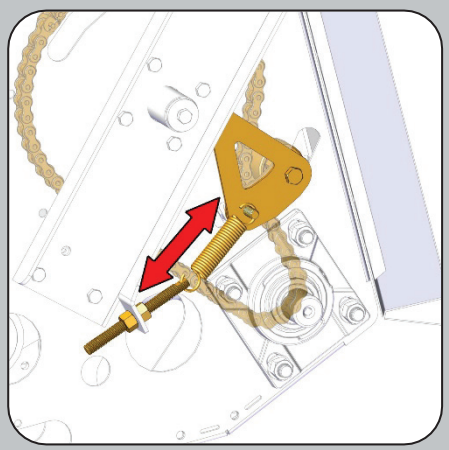
⑤ Check Deck Plate Gap



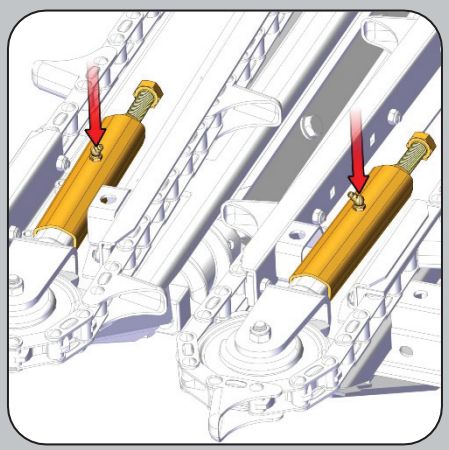
⑥ Adjust Gathering Chain Tension



⑦ Purge Deck Plate Piston

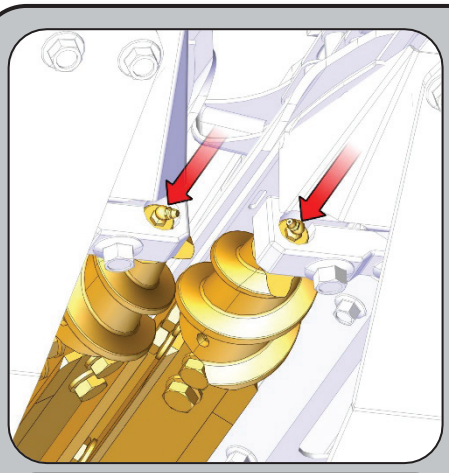


⑧ Adjust Cross-Auger Chain



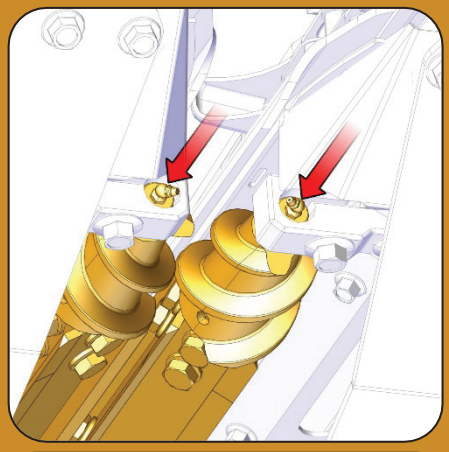
⑨ Grease Gathering Chain

PRE-SEASON (Cont.)

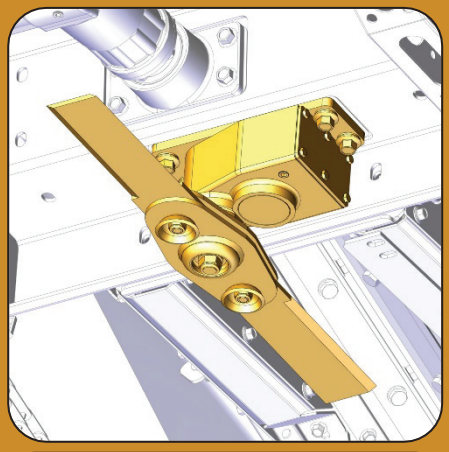


⑩ Grease Stalk Rollers

20-HOUR

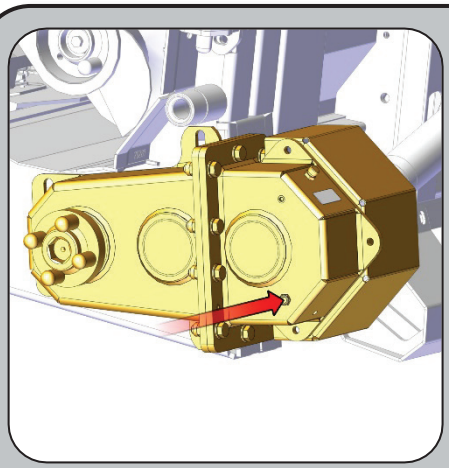


① Grease Stalk Rollers

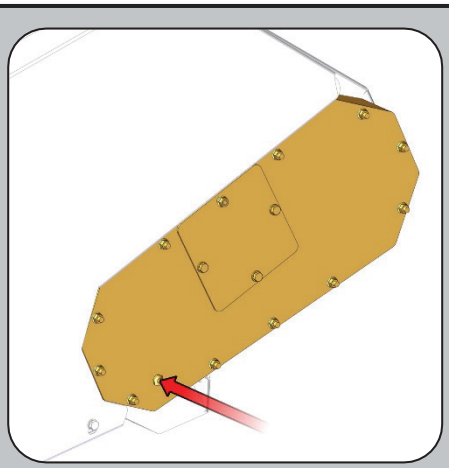


② Inspect Stalk Chopper

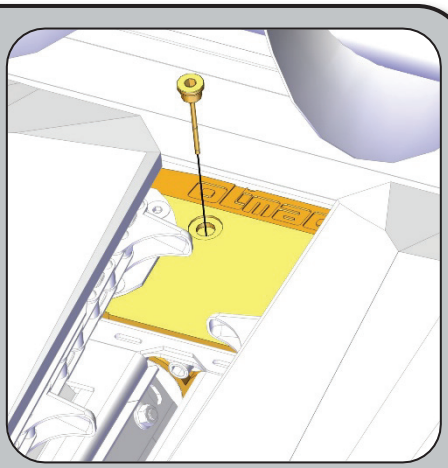
50-HOUR



① Check Heavy-Duty Gearbox Oil

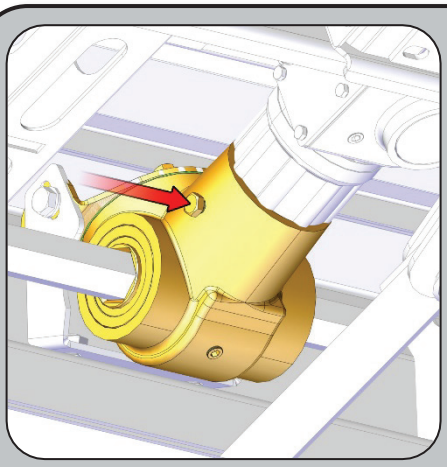


② Check Oil Bath Oil

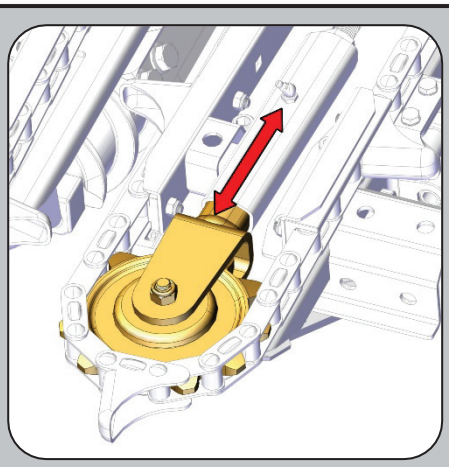


③ Check Row Unit Gearbox Grease

50-HOUR (Cont.)

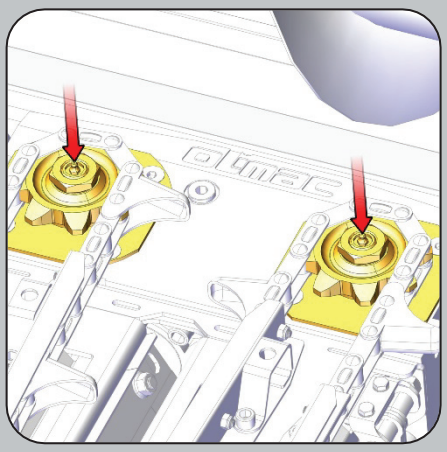


④ Check Transfer Gearbox Oil

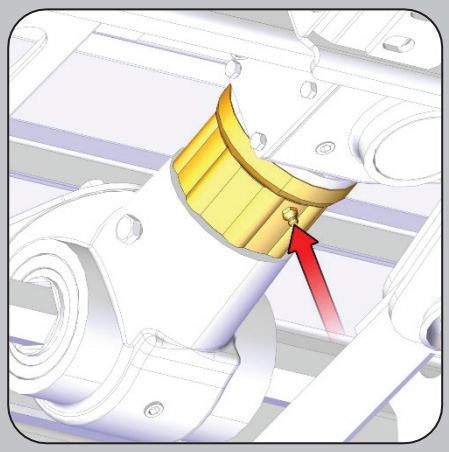


⑤ Check Gathering Chain Tension

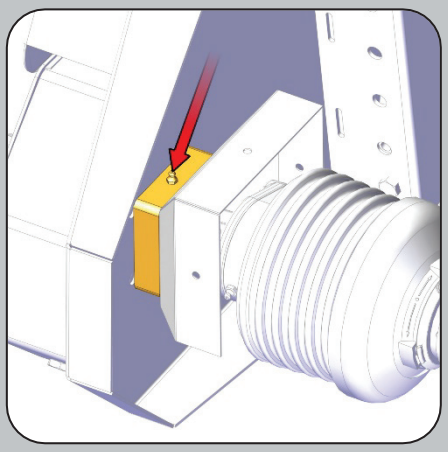
⑥ Lube Cross-Auger Chain



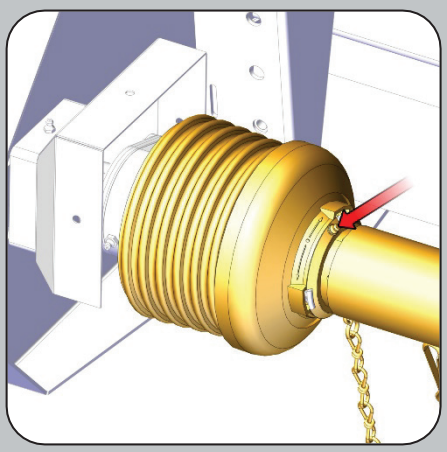
⑦ Grease Gathering Chain Drive



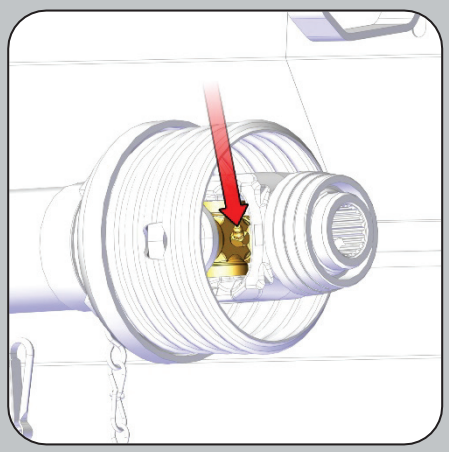
⑧ Grease Row Unit Slip Clutch



⑨ Grease Input Bearing

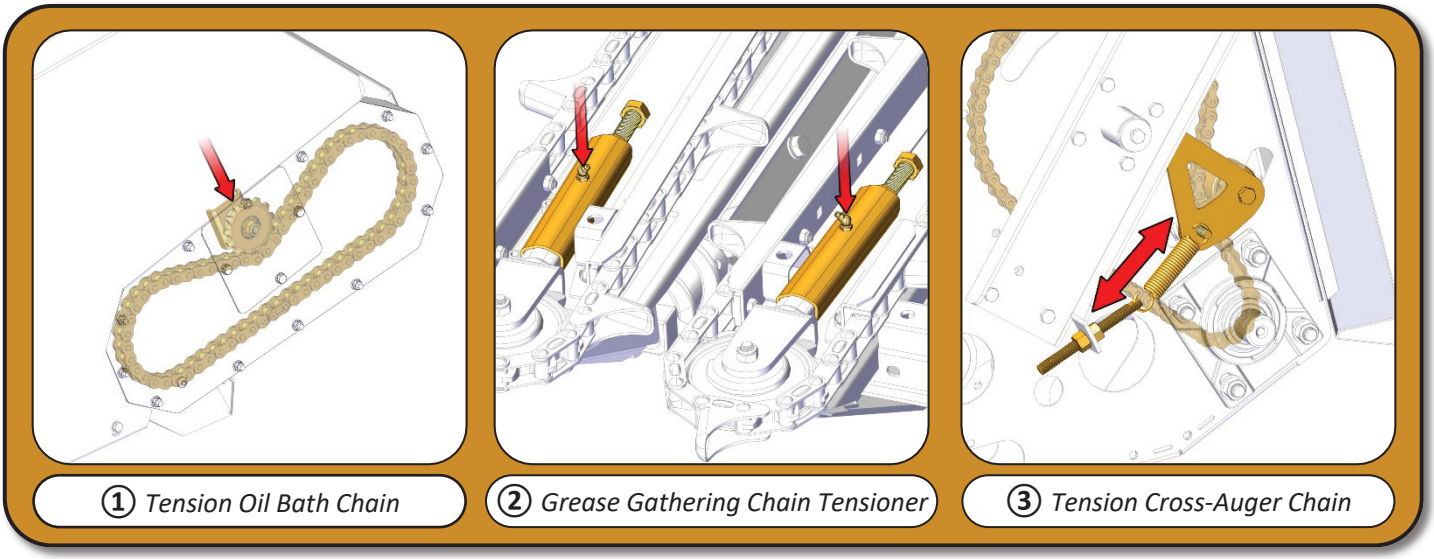


⑩ Grease PTO Shield Bearing



⑪ Grease PTO U-Joint

100-HOUR



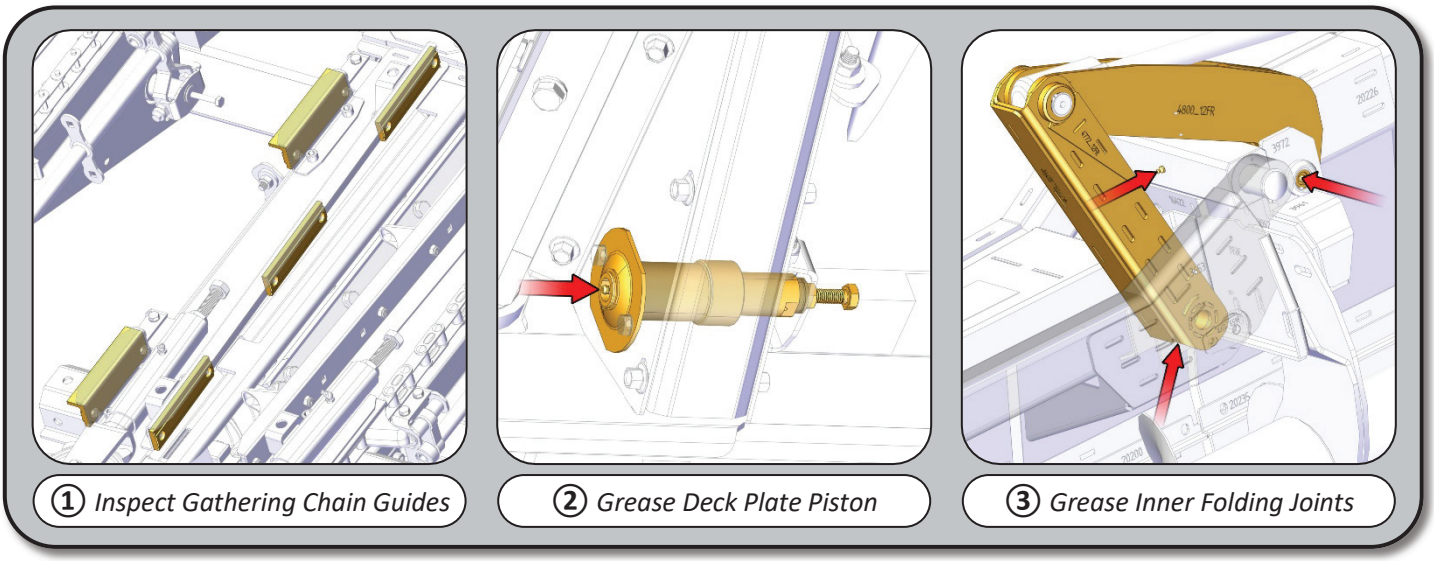
① Tension Oil Bath Chain

② Grease Gathering Chain Tensioner

③ Tension Cross-Auger Chain

250 HOUR OR YEARLY

If performing year end service complete the 20, 50, and 100-hour services in addition to the 250 hour service below.

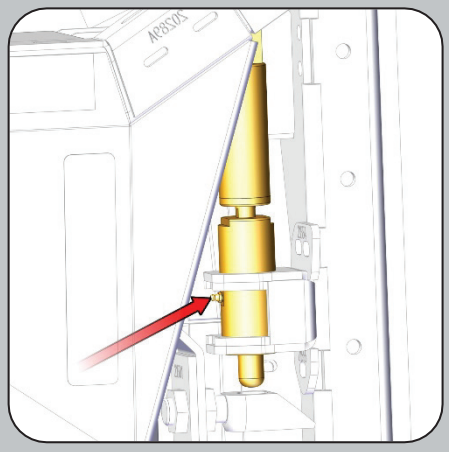


① Inspect Gathering Chain Guides

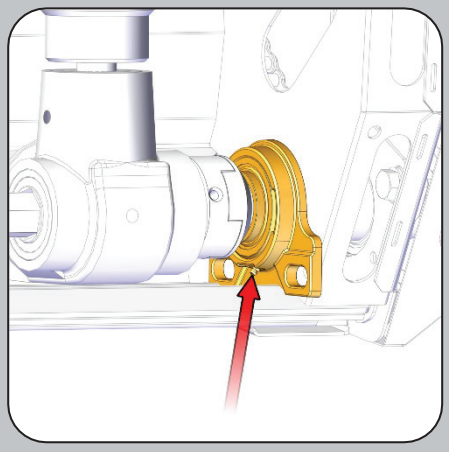
② Grease Deck Plate Piston

③ Grease Inner Folding Joints

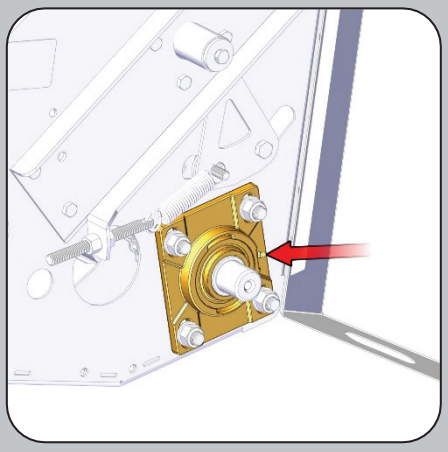
250 HOUR OR YEARLY (Cont.)



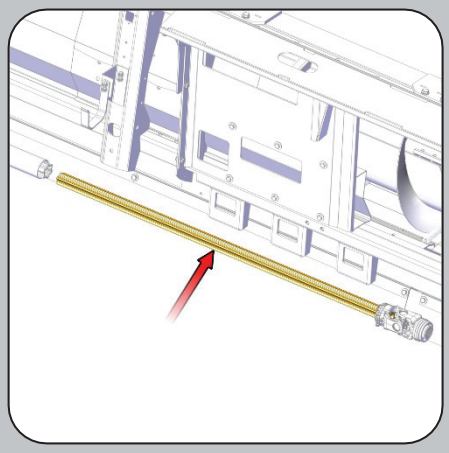
④ Grease Locking Piston



⑤ Grease Inner Tow Shaft Bering



⑥ Grease Outer Tow Shaft Bearing



⑦ Grease PTO Shaft Profile

INITIAL SETTINGS

The settings listed in this section are the suggested settings to be used when starting each harvest season. Adjustments can then be made to best suit the conditions being operated in. The head angle and head speed are the most critical to maintaining performance of the corn head. Before going to the field each year all settings shown should be checked to verify that the head is set properly.

CORN HEAD ANGLE

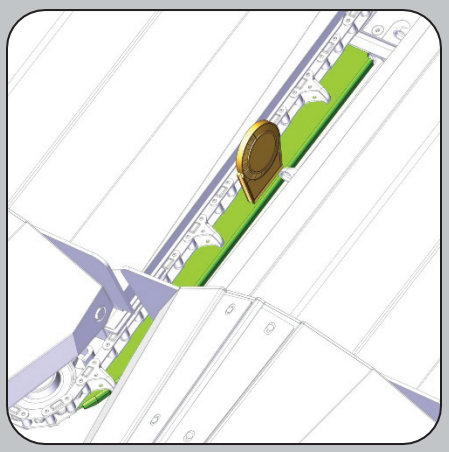
The corn head angle is measured from the deck plates and should be between 17° and 23°

- For normal operation the recommended setting is 20°
- For down corn the recommended setting is 23°

To check the head angle, park the combine with the corn head attached, on a flat, level surface, and place the corn head in operating position. Place an angle finder on the deck plates to check the angle.

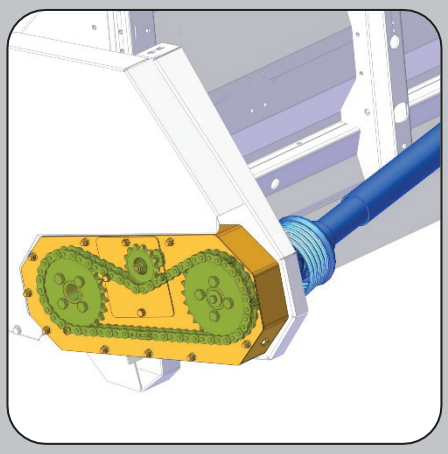
Whenever the corn head angle is adjusted the snout angle should be adjusted as well.

See *Section 6.1* in the Operators Manual for further information.

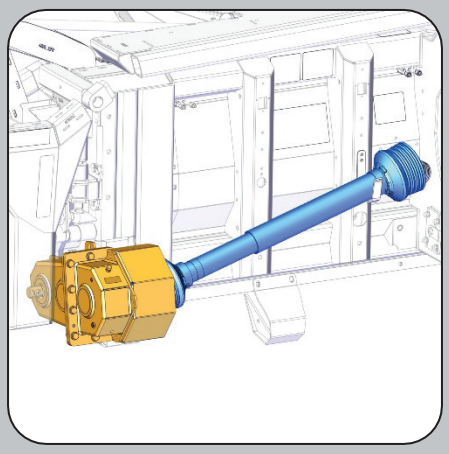


HEAD SPEED

Excessive butt shelling and poor feeding can occur from the head being operated either **TOO FAST** or **TOO SLOW**. The speed that the corn head operates is critical to maintain proper performance with the Drago corn head. Any time the head is adapted to fit a different combine the gearing should be checked to verify it is correct. Contact your dealer to determine the correct gearing for your combine. Depending on the size and age of the corn head, one of two different drive systems shown below may be used. The oil bath drive system uses two sprockets and roller chain to drive the head. The heavy-duty gear drive uses a gearbox with interchangeable gears.



OIL BATH



HEAVY-DUTY GEAR DRIVE

The corn head should be operated in the 630-700rpm range. Recommended speed is 650-675rpm. Use the formula below to determine the correct combine feeder house speed for the desired head speed.

Please note that some combines do not display the actual feeder output speed in the cab. If this is encountered the best practice is to use a hand tachometer on the output shaft of the feeder house.

$$Head\ Speed = \frac{Actual\ Feeder\ Speed\ x\ DriveR\ Gear\ or\ Sprocket}{DriveN\ Gear\ or\ Sprocket}$$

Example:

A Gleaner S88 combine with a variable speed feeder house drive with an 8-row head. The monitor in the cab is showing 510 rpm feeder speed.

- This model of combine requires a 1.5 multiplier be added to the in-cab feeder speed reading due to reading the feeder speed being monitored at a different point in the system.
  - $Actual\ Feeder\ Speed = 510rpm\ x\ 1.5$
  - Actual feeder speed for this example is 765 rpm.
- Determine which driveR and driveN sprockets or gears are currently installed on the corn head.
  - The driven gear on the heavy-duty gear drive is always 32-tooth. Only the driveR gear is changed.
  - For this example, the driveR is a 22-tooth sprocket and the driveN is a 26-tooth sprocket.
  -

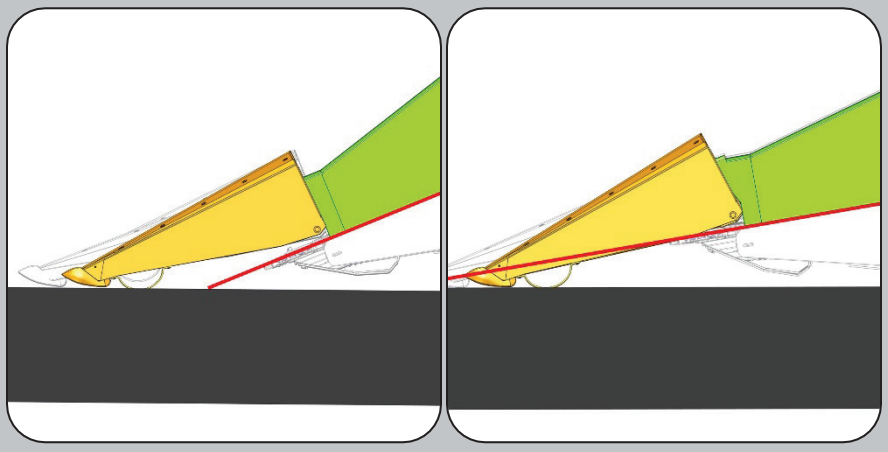
$$Head\ Speed = \frac{765\ rpm\ x\ 22\ teeth}{26\ teeth}$$

This works out to 647rpm head speed.

SNOUT ADJUSTMENTS

When positioning the snouts, do not place them below the breakover line. This line extends from the bottom surface of the bonnet forward toward the wear point. If the snouts are below this point and an obstacle is encountered, they will be more likely to fold under the corn head instead of floating over top of the obstacle.

See *Section 6.2* in the Operators Manual for specific adjustment procedures.

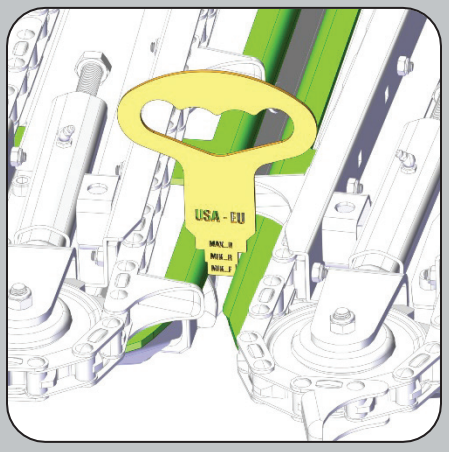


Correct ***Incorrect***

DECK PLATE GAP

Check the deck plate gap using tool ST-8, which is available from your local Drago dealer. Place the tool where the curved portion of the deck plate stops.

- Insert the tool until the tab marked “MIN_F” is between the deck plates. The deck plates should not move, or, move very slightly when the tool is inserted.
- Insert the tool to the tab marked “MAX_F” is between the deck plates. The deck plates should spread to the maximum setting and should not be able to be opened further.

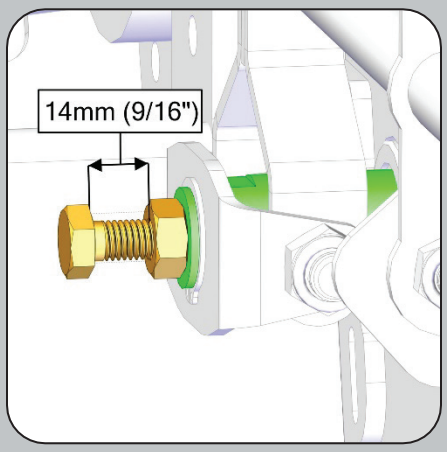


If adjustment is required see *Section 6.6* in the Operators Manual.

DECK PLATE TENSION

For 30”- 40” row heads measure the exposed threads on the deck plate piston bolt. The distance from the jamb nut and the bottom of the adjustment bolt head should be 14mm (9/16”). There is no adjustment mechanism for 20”- 22” row pistons.

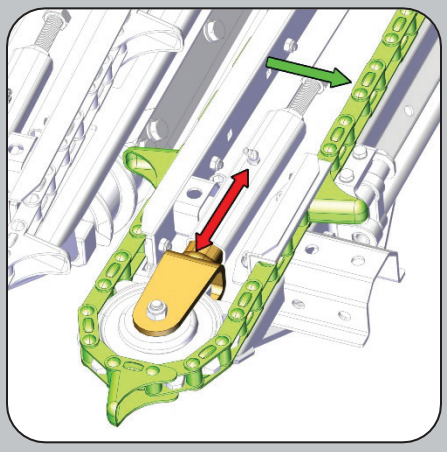
If adjustment is required see *Section 6.6* in the Operators Manual.



GATHERING CHAIN TENSION

Check the gathering chain tension by pulling on the side of the gathering chain until the tensioning fork hits the internal stop. Mark the tensioning fork shaft and release the chain. The tensioning fork should have $^{1}/_{4}$" to $^{5}/_{16}$“of travel.

If adjustment is required see *Section 6.7* in the Operators Manual.



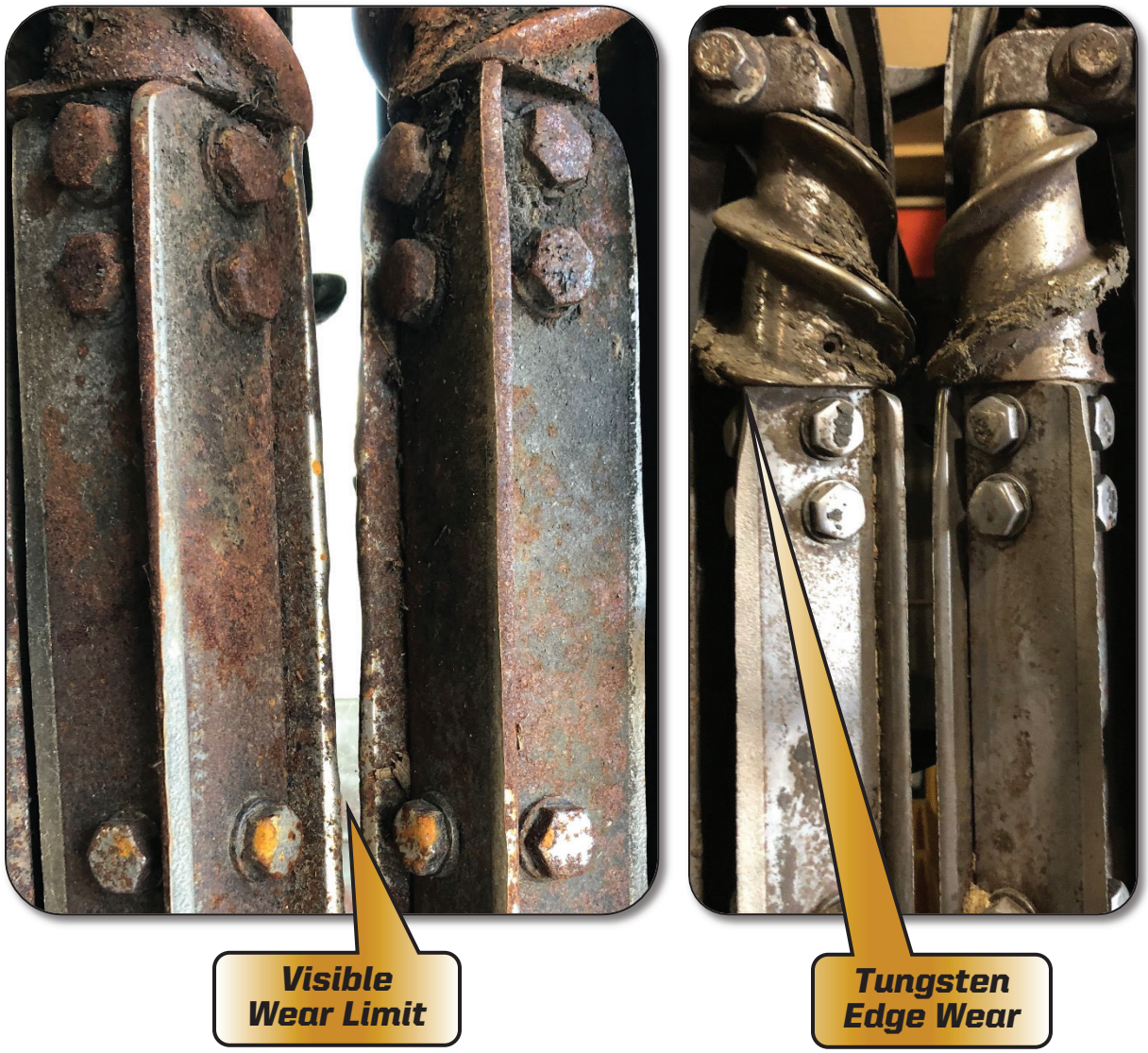
PART REPLACEMENT

The information below is intended to help evaluate when certain wear parts are nearing the end of their intended lifespan. Dragotec recommends only original OLIMAC wear parts be used. Use of third-party parts may void warranties and are not as long-lasting.

Stalk Roller Knives

The stalk roller knives are due to be replaced when visible wear is seen on the front edge of the knife blade, approximately 5-6 inches back. The front edge of the roller knives should be inspected to see if wear has progressed past the tungsten coated edge.

It is not recommended to flip the stalk roller knives. This may cause material to wrap around the rear of the stalk roller causing damage to the stalk roller seal.

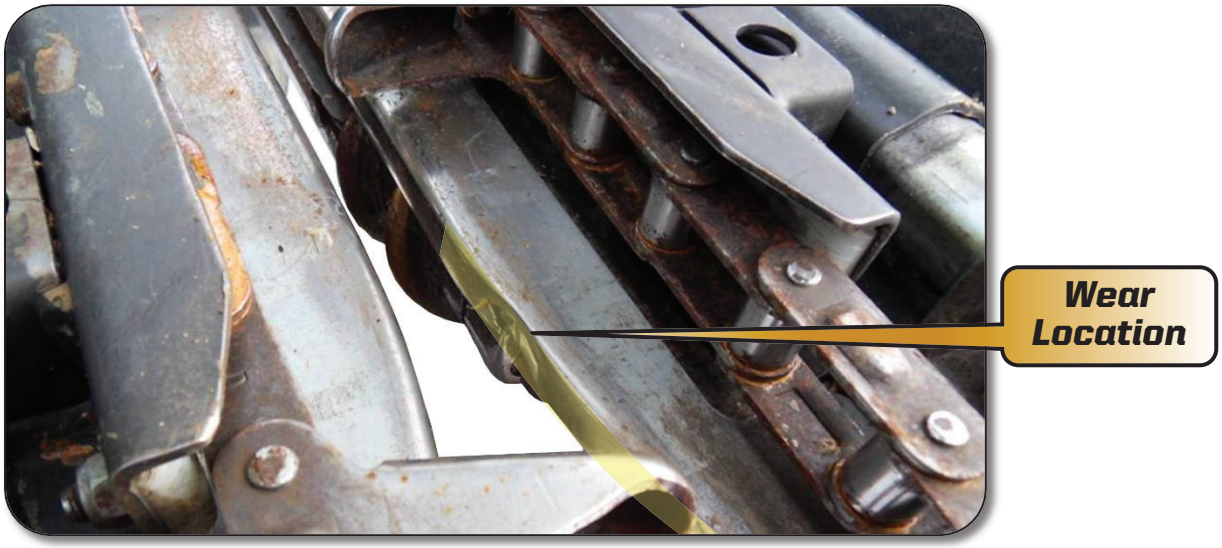


Gathering Chains

The gathering chains should be replaced when they reach 3% stretch. Continuing to run past this point can cause the chains to break and potentially enter the combine. Measure from the amount of exposed tensioner tube (highlighted area). This dimension should be 2 $^{5}/_{8}$" or less.

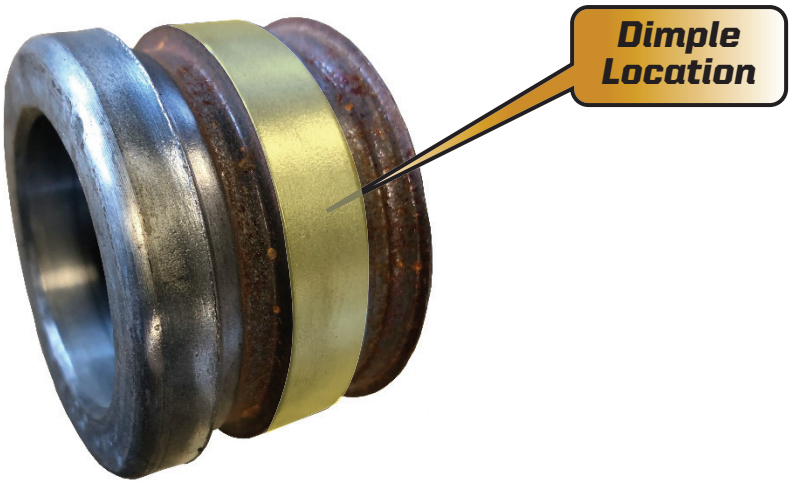
Deck Plates

The deck plates can become worn over time causing material to hairpin on sharp edges impeding feeding. The wear is typically concentrated on the vertical edge that contacts the crop on the front curve (highlighted area). When this vertical edge becomes thin the deck plates should be replaced.



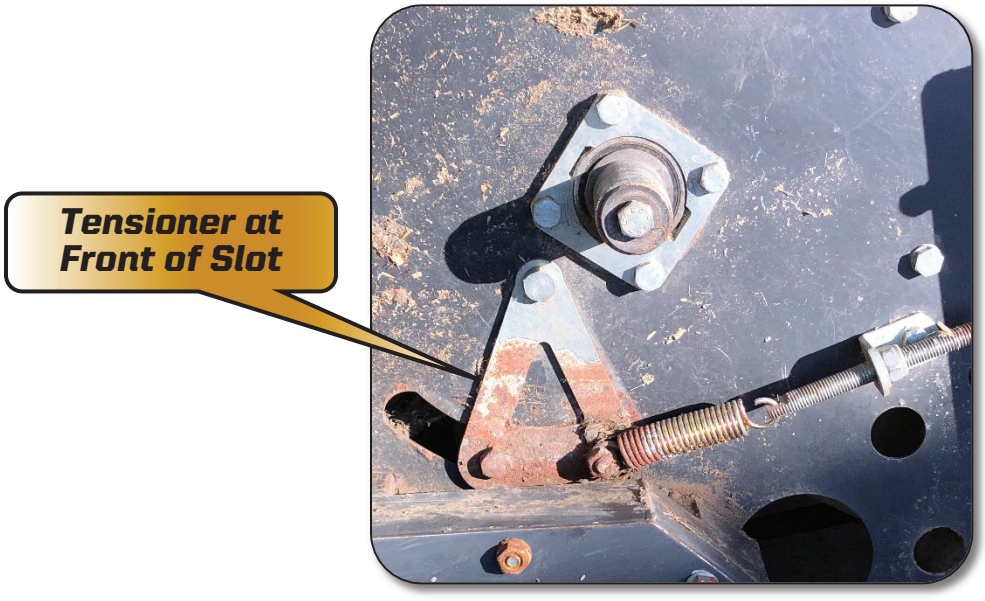
Cross-Auger Drive Chain & Tensioner Roller

The cross-auger tensioner roller will become worn due to the chain riding on the smooth surface. The tensioner roller should be replaced when the rollers on the drive chain begin to touch the roller surface. This will result small dimples appearing on the center of the roller (highlighted area).



The cross-auger drive chain should be replaced when 3% stretch is reached. The drive chain has reached this point when the half link has been removed from the chain and the tensioner is positioned near the front of the slot when the chain is properly tensioned as shown below.

To ensure proper performance ensure that the tensioner assembly (triangular bracket) can pivot freely without binding on the side sheet of the frame.



PERFORMANCE PARTS

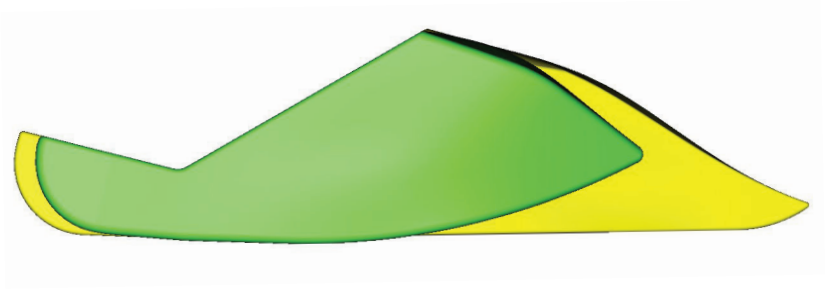
Drago offers several different product performance parts and accessories for different conditions. The two shown below are considered to provide the best performance increase across the widest range of conditions.

SNOUT WEAR POINTS

In 2018, Drago introduced a new standard poly wear point for Series II corn heads with a new front profile.

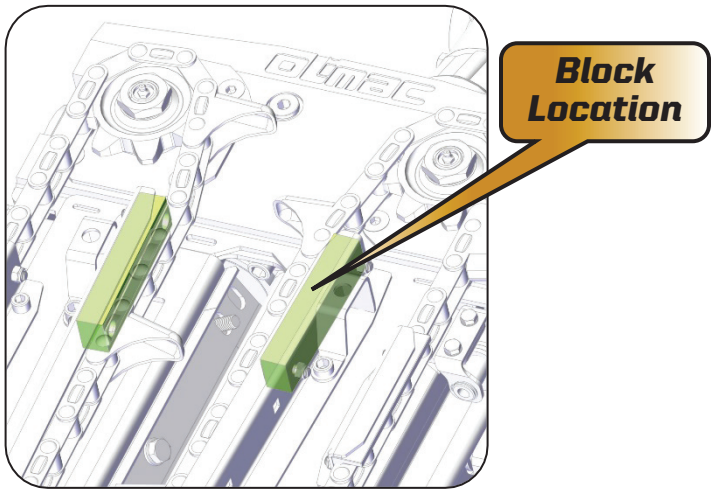
- The standard wear point has a shorter, less aggressive profile, with a higher tip point to help reduce the risk of folding the snouts under.
- The aggressive wear point has a pointed tip that sits low to the ground and is recommended for severe down corn conditions where the wear point tries to ride up over the corn.

The picture below shows the difference in the wear points. The yellow is the aggressive wear point, and the green is the standard wear point.



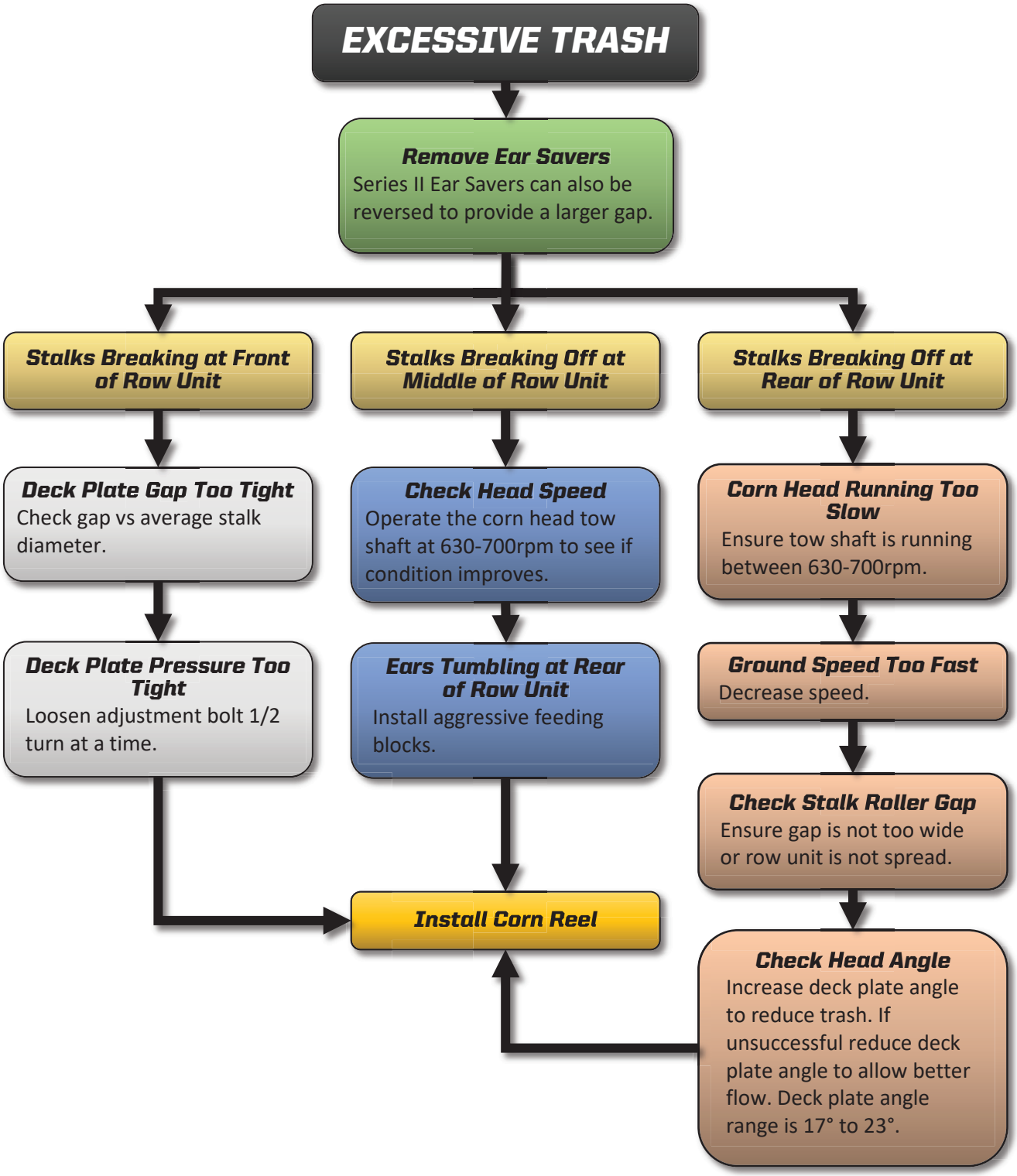
AGGRESSIVE FEEDING BLOCKS

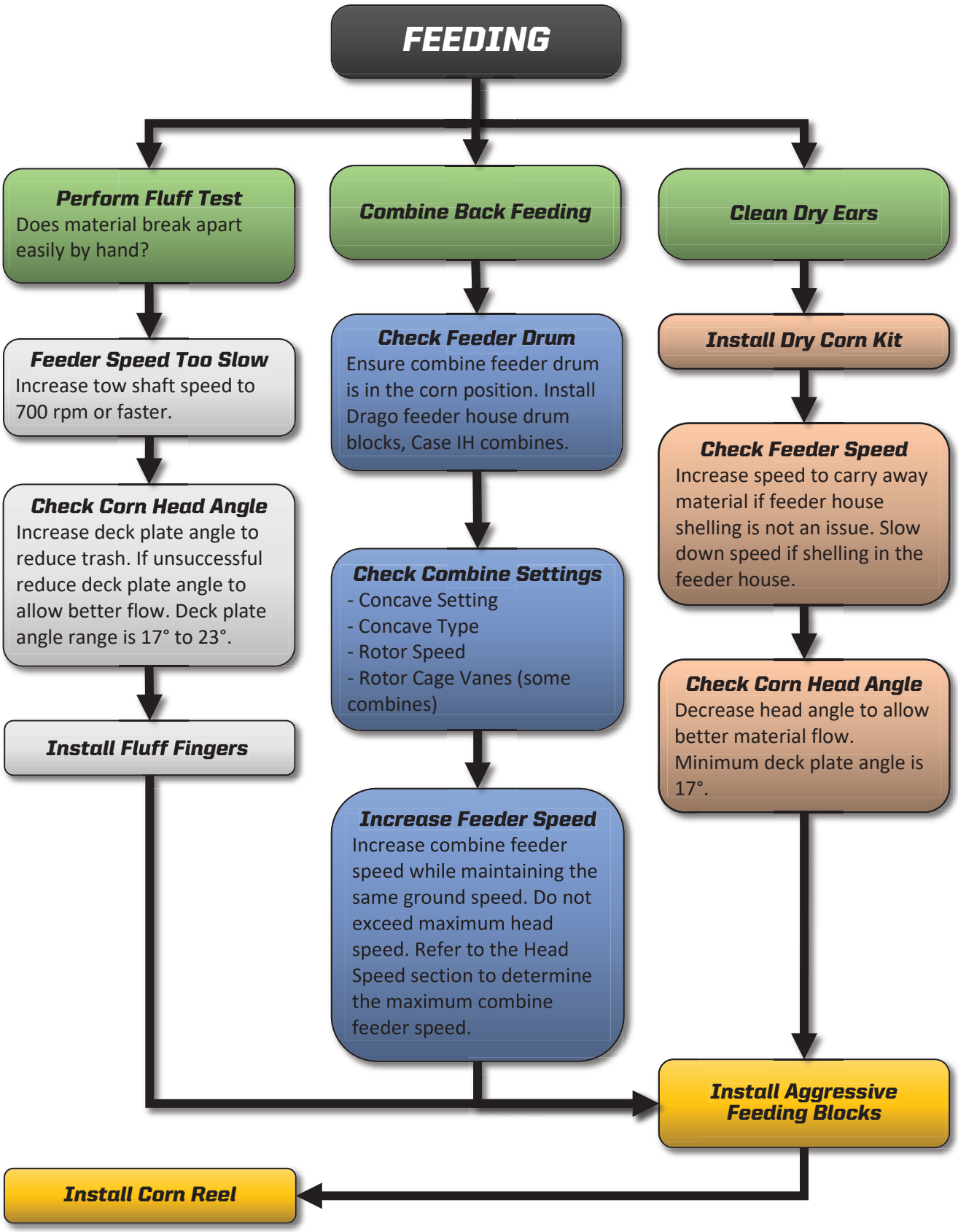
Drago offers an aggressive feeding block that will fit all Legacy, Series I, and Series II corn heads. This block (bottom block) is thicker than the production wear pad (top block). The thicker block pushes the gathering chains closer together at the top of the row unit to allow the gathering chains to maintain more positive control of the ears before entering the cross-auger. The aggressive feeding blocks replace the rear most gathering chain wear pad. Each row requires two feeding blocks to complete.

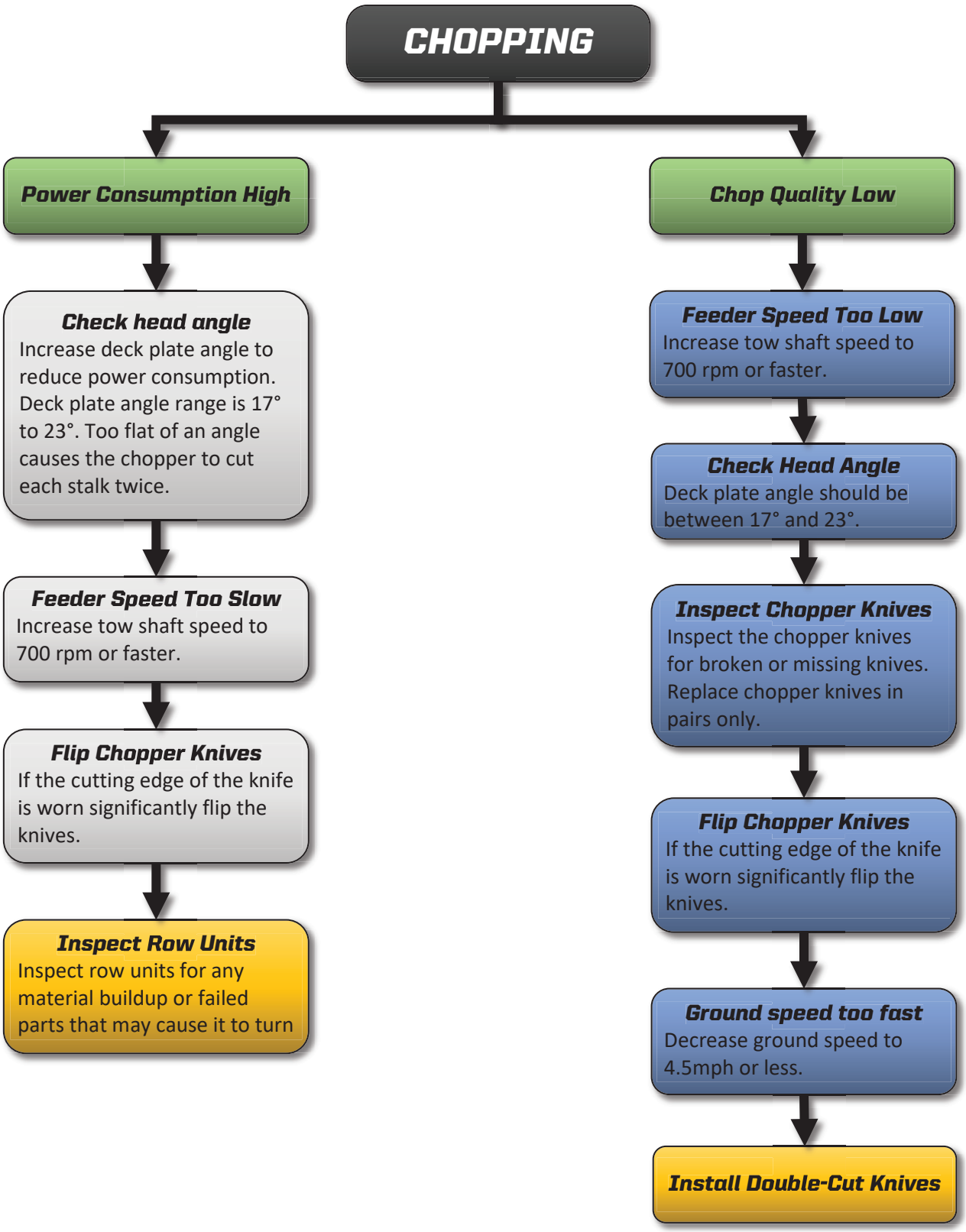


TROUBLESHOOTING

The two most common functional issues are shown in this booklet. For additional troubleshooting items or more in-depth information please refer to your Operators Manual




FEEDING
Perform Fluff Test
Does material break apart easily by hand?
Feeder Speed Too Slow
Increase tow shaft speed to 700 rpm or faster.
Check Corn Head Angle
Increase deck plate angle to reduce trash. If unsuccessful reduce deck plate angle to allow better flow. Deck plate angle range is 17° to 23°.
Install Fluff Fingers
Combine Back Feeding
Check Feeder Drum
Ensure combine feeder drum is in the corn position. Install Drago feeder house drum blocks, Case IH combines.
Check Combine Settings
- Concave Setting
- Concave Type
- Rotor Speed
- Rotor Cage Vanes (some combines)
Increase Feeder Speed
Increase combine feeder speed while maintaining the same ground speed. Do not exceed maximum head speed. Refer to the Head Speed section to determine the maximum combine feeder speed.
Clean Dry Ears
Install Dry Corn Kit
Check Feeder Speed
Increase speed to carry away material if feeder house shelling is not an issue. Slow down speed if shelling in the feeder house.
Check Corn Head Angle
Decrease head angle to allow better material flow. Minimum deck plate angle is 17°.
Install Aggressive Feeding Blocks
Install Corn Reel


CHOPPING
Power Consumption High
Check head angle
Increase deck plate angle to reduce power consumption. Deck plate angle range is 17° to 23°. Too flat of an angle causes the chopper to cut each stalk twice.
Feeder Speed Too Slow
Increase tow shaft speed to 700 rpm or faster.
Flip Chopper Knives
If the cutting edge of the knife is worn significantly flip the knives.
Inspect Row Units
Inspect row units for any material buildup or failed parts that may cause it to turn
Chop Quality Low
Feeder Speed Too Low
Increase tow shaft speed to 700 rpm or faster.
Check Head Angle
Deck plate angle should be between 17° and 23°.
Inspect Chopper Knives
Inspect the chopper knives for broken or missing knives. Replace chopper knives in pairs only.
Flip Chopper Knives
If the cutting edge of the knife is worn significantly flip the knives.
Ground speed too fast
Decrease ground speed to 4.5mph or less.
Install Double-Cut Knives

SERVICE VIDEOS AT YOUR FINGERTIPS

Keep up to date on how you can service your corn head all from your mobile phone at www.Dragotec.com/service-video.