



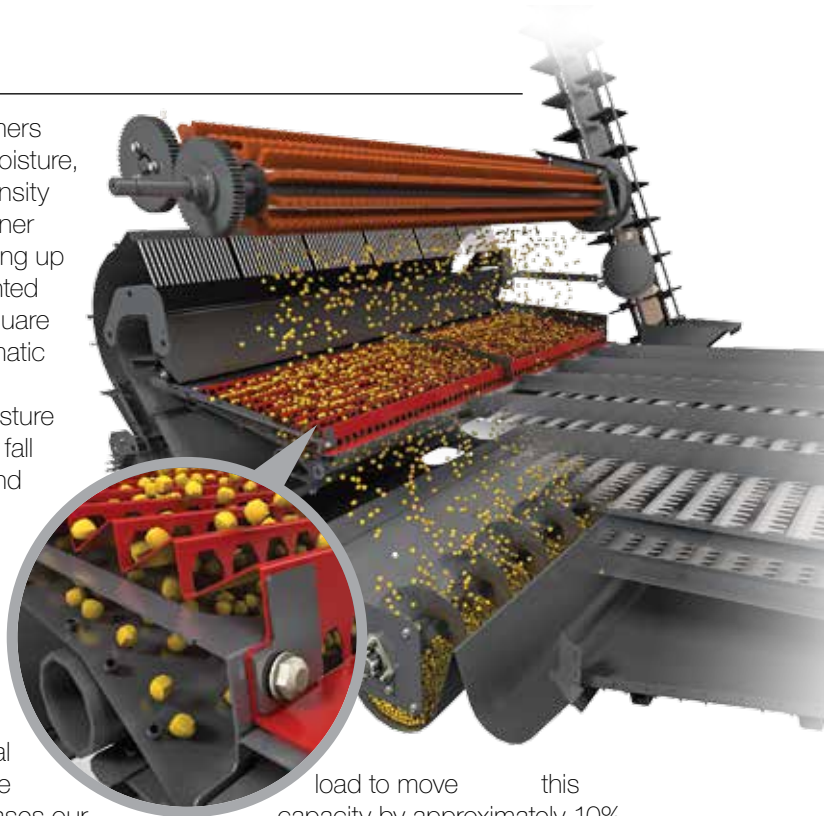
GLEANER

2015 Transverse vs. Axial Competitive Comparison

New perforated cascade pan

As crop dynamics have changed, farmers are harvesting more acres of higher-moisture, higher-yielding corn and other high-density crops. Because of this, the 2015 Gleaner has increased shoe capacity by opening up the cascade pan area. The pan is slanted at a 6° angle and an additional 992 square inches have been converted to pneumatic cleaning area. This provides additional cleaning capacity and allows high-moisture corn and other high-moisture crops to fall through sooner and reach the sieve and clean grain cross auger faster.

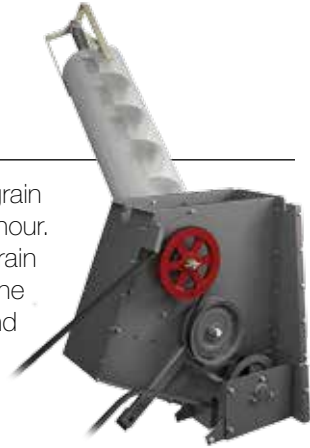
The cascade pan itself has 3/4-inch ridges with holes running throughout. This design allows heavier-density seed to fall through as it comes down from our exclusive accelerator rolls. This process helps avoid potential buildup and substantially reduces shoe clean grain. This design change increases our capacity by approximately 10% in these conditions. In addition, the air duct has been moved forward 1 1/2 inches to redirect the air to the crop that is falling through this perforated area to the front of the sieve or directly to the clean grain cross auger. This means the entire Gleaner cleaning shoe area is pneumatic and provides a 12.8% increase in measurable shoe area to 8,721 square inches over the 7,729 square inches on previous S7 Series machines. This modification also positively affects side hill operation and capacity with these crops.



load to move this capacity by approximately 10%

Increased clean grain elevator speed

A larger drive pulley has increased the speed on the clean grain elevator by 6% over the current rating of 5,000 bushels per hour. This speed increase moves the additional higher-moisture grain away from the shoe faster and is designed to complement the shoe capacity increase from the perforated cascade pan and increased pneumatic shoe area.



New Ag Leader Ready Option

Based on customer feedback, Gleaner is now offering an Ag Leader® ready option that includes all wiring harnesses, Ag Leader yield sensor in the elevator head and the elevator mount kit, moisture sensor, speed module, terminal connection into the cab and everything needed to incorporate either of the two Ag Leader displays (12.1" Integra® or 8.5" Versa™) into your Gleaner S8 Series combine.



With this option, all you have to purchase is either of the Ag Leader displays and mounting bracket from an authorized Ag Leader dealer and connect to your combine. The Gleaner C2100 terminal can remain in the cab and handle all other combine functionality except the yield sensor and yield-mapping functionality, which allows you view a live yield map and hybrid/variety yield mapping in real time for instant feedback on yield performance across the field on the Ag Leader display.



Gleaner vs. Case IH

Make/Model	GL S68	CIH 6130/40	GL S78	CIH 7230	GL S88	CIH 8230	
Class	6	6	7	7	8	8	
Horsepower (hp)	322	320/348	375	380	430	450	1
Maximum boost horsepower (hp)	398	380/411	451	440	471	510	
Engine displacement (L)	8.4	8.7	9.8	8.7	9.8	12.9	
Rated speed (rpm)	2,100	2,100	2,100	2,100	2,100	2,100	
Cooling System							
Maintenance	Reverse Cooling fan	Not available	Reverse cooling fan	Not available	Reverse cooling fan	Not available	
Cleaning required	No	Yes	No	Yes	No	Yes	2
Variable fan pitch feature available	Yes	No	Yes	No	Yes	No	3
Average power savings @ 80°F (hp)	36	None	36	None	36	None	
Processor							
Type	Natural Flow Feeding	Axial w/ fighting	Natural Flow Feeding	Axial w/ beater	Natural Flow Feeding	Axial w/ beater	4
Rotor length (in)	90	102.8	90	103.3	90	110	
Degrees of threshing/separation	360	156	360	180	360	180	5
Threshing and separation area (in ²)	6,047	Not Published	6,047	Not published	6,047	Not published	
Cleaning area (in ²)	8,721	7,947	8,721	10,075	8,721	10,075	
Cleaning method	Two-stage	Single-stage	Two-stage	Single-stage	Two-stage	Single-stage	
Accelerator roll technology	Yes	No	Yes	No	Yes	No	
% of cleaning performed on shoe	66% @ rolls; 34% @ shoe	100% @ shoe	66% @ rolls; 34% @ shoe	100% @ shoe	66% @ rolls; 34% @ shoe	100% @ shoe	6
Slope sensitivity	No, up to 23+% slopes	Yes	No, up to 23+% slopes	12%	No, up to 23+% slopes	12%	7
Approx. power required for straw chopper (hp)	40	80-90	40	80-90	40	80-90	

Advantages



1 The higher horsepower rating is lost with higher weight and parasitic loss of the machine.

2 Combine requires periodic cleaning of radiator vs. no cleaning on reverse cooling.

3 Gleaner is the only combine with a variable pitch fan that can save 66% of power at 80°F outside ambient temperature. This translates to a savings of 36 hp at this temperature.

4 Gleaner's flat, even crop mat means the crop doesn't have to change direction to accommodate the rotor. All axial designs have a high wear area as the crop changes direction into the rotor intake. The beater in the CIH 7230 and 8230 can break up cob and damage grain.

5 The Gleaner 360° threshing and separation is substantially greater than CIH's 156° or 180° threshing and separator grate wrap at the same 30" rotor diameter.

6 With Gleaner, 66% of the cleaning is done at the accelerator rolls of our exclusive two-stage cleaning system. Our shoe is a secondary means of cleaning, not a primary one, as in the CIH where the shoe cleans 100% of grain. Our accelerator rolls direct all of the crop through the high-air blast to the front of the cascade pan in the same location every time. Over 40+% of the 7230 and 8230 grain pan is solid at the front and is counted as sieve area, which never gets any air and so does no functional cleaning. With the Gleaner, 100% of the shoe receives air from the upper air blast off of the accelerator rolls and the pneumatic area of the shoe.

7 The CIH 7230 and 8230 have a self-leveling shoe that is mechanical, can wear out and only levels to 12% slopes. Gleaner accelerator rolls can reduce slope sensitivity up to 23+%.

Gleaner vs. Case IH

Make/Model	GL S68	CIH 6130/40	GL S78	CIH 7230	GL S88	CIH 8230	
Grain Handling							
Grain bin capacity	390 bu. standard	300 bu., no option	390 bu. standard	315 bu., no option	390 bu. standard	350 bu., no option	8
Power-fold bin extensions	Standard	Optional	Standard	Optional	Standard	Optional	
Average unloading rates	4.0 bu./sec.	3.0 bu./sec.	4.0 bu./sec.	3.6 bu./sec.	4.0 bu./sec.	3.6 bu./sec.	9
Time to unload grain bin (sec)	98	100	98	87.5	98	87.5	10
Unloader design	2-auger swivel	3-auger turret	2-auger swivel	3-auger turret	2-auger swivel	3-auger turret	11
Construction & Weights							
Mainframe construction	Unitized, welded	Bolt-on	Unitized, welded	Bolt-on	Unitized, welded	Bolt-on	12
Straight-through shafts	Yes	No, 90° gearboxes	Yes	CVT drive gearboxes	Yes	CVT drive gearboxes	13
Operating weight – 2WD (lbs.)†	33,923	40,276	34,223	43,288	34,233	43,988	
Power required to move operating weight difference (hp)	N/A	12	N/A	17	N/A	19	
Weight of machine w/header and full grain bin (lbs.)‡	63,093	64,924	64,233	69,249	64,973	72,463	14

† Operating weight is weight of machine with tires; full tank of fuel. ‡ As equipped with 30' draper header (Class 6), 35' draper header (Class 7) and 40' draper header (Class 8).

Advantages



8 The S68 has a 30% larger grain tank than the CIH 6130/40; the S78 has one 23% larger than the CIH 7230; and the S88 has one 11% larger than the CIH 8230. Gleaner has the largest grain tank of any class 6/7 combine.

9 S68 unloads 33% faster than CIH 6130/40; S78/S88 unloads 11% faster than CIH7230/CIH8230.

10 Gleaner can unload the largest grain bin in the world in just over a minute and a half.

11 Less wear, less horsepower required and less grain damage with Gleaner's shallow 29° angle from clean grain cross auger to unloading auger.

12 The Gleaner frame is stronger and lighter due to its exclusive welded unitized frame.

13 Gleaner is more efficient, and drives are easier to service.

14 Unlike Gleaner, CaseIH combines have a weight issue. The 8230 consumes 19 hp extra just moving its bare weight difference through a flat field. Wet ground and hills compound this issue. Though smaller, the CIH 7230 platform still consumes 17 horsepower more of its available horsepower versus the S78, and the 6130 consumes 12 more horsepower.

Gleaner vs. John Deere

Make/Model	GL S68	JD S660	GL S78	JD S670	GL S88	JD S680	
Class	6	6	7	7	8	8	
Horsepower (hp)	322	320	375	373	430	473	1
Maximum boost horsepower (hp)	398	365	451	425	471	540	
Engine displacement (L)	8.4	9.0	9.8	9.0	9.8	13.5	
Rated speed (rpm)	2,100	2,200	2,100	2,200	2,100	2,100	
Cooling System							
Maintenance	Reverse Cooling fan	Air scoop	Reverse cooling fan	Air scoop	Reverse cooling fan	Air scoop	2
Cleaning required	No	Yes	No	Yes	No	Yes	
Variable fan pitch feature available	Yes	No	Yes	No	Yes	No	3
Average power savings @ 80°F (hp)	36	None	36	None	36	None	
Processor							
Type	Natural Flow Feeding	Axial w/ beater	Natural Flow Feeding	Axial w/ beater	Natural Flow Feeding	Axial w/ beater	4
Rotor length (in)	90	123	90	123	90	123	
Degrees of threshing/separation	360	180	360	180	360	180	5
Threshing and separation area (in²)	6,047	4,095	6,047	4,095	6,047	4,095	
Cleaning area (in²)	8,721	7,589	8,721	7,589	8,721	8,711	6
Cleaning method	Two-stage	Single-stage	Two-stage	Single-stage	Two-stage	Single-stage	
Accelerator roll technology	Yes	No	Yes	No	Yes	No	
% of cleaning on performed on shoe	66% @ rolls; 34% @ shoe	100% @ shoe	66% @ rolls; 34% @ shoe	100% @ shoe	66% @ rolls; 34% @ shoe	100% @ shoe	7
Slope sensitivity	No, up to 23+% slopes	Yes	No, up to 23+% slopes	Yes	No, up to 23+% slopes	Yes	
Approx. power required for straw chopper (hp)	40	80-90	40	80-90	40	80-90	

Advantages



1 Gleaner provides a higher percentage of horsepower to the separator than the Class 6 and Class 7 John Deere combines relative to weight and less efficient drives. The higher horsepower rating with the John Deere S680 is lost with higher weight and parasitic loss of the machine.

2 John Deere's air scoop requires periodic cleaning of radiator vs. no cleaning with Gleaner's reverse cooling.

3 Gleaner is the only combine with a variable pitch fan that can save 66% of power at 80°F outside ambient temperature. This translates to a savings of 36 hp at this temperature.

4 Gleaner's flat, even crop mat means the crop doesn't have to change direction. All axial designs have a high wear area as the crop changes direction into the rotor intake. The beater in the John Deere can break up cob and damage grain.

5 Gleaner's 360° threshing and separation provides almost 48% more area than John Deere.

6 John Deere had to lengthen its shoe to compensate for the lack of a self-leveling device.

7 Gleaner's cleaning area is not only slightly larger on the S68 and S78, but we don't rely on our shoe to do all the cleaning. In fact, we do 66% of our cleaning at the accelerator rolls.

Gleaner vs. John Deere

Make/Model	GL S68	JD S660	GL S78	JD S670	GL S88	JD S680	
Grain Handling							
Grain bin capacity	390 bu. standard	300 bu.	390 bu. standard	300 bu.	390 bu. standard	400 bu.	8
Power-fold bin extensions	Standard	Optional	Standard	Optional	Standard	Standard	
Average unloading rates	4.0 bu./sec.	3.3 bu./sec.	4.0 bu./sec.	3.3 bu./sec.	4.0 bu./sec.	3.3 bu./sec.	9
Time to unload grain bin (sec)	98	91	98	91	98	91	10
Unloader design	2-auger swivel	3-auger turret	2-auger swivel	3-auger turret	2-auger swivel	3-auger turret	11
Construction & Weights							
Mainframe construction	Unitized, welded	Bolt-on	Unitized, welded	Bolt-on	Unitized, welded	Bolt-on	12
Straight-through shafts	Yes	No, 90° gear boxes	Yes	No, 90° gear boxes	Yes	No, 90° gear boxes	13
Operating weight – 2WD (lbs.)†	33,923	44,077	34,223	45,930	34,223	50,649	
Power required to move operating weight difference (hp)	N/A	20	N/A	23	N/A	32	
Weight of machine w/header and full grain bin (lbs.)‡	63,093	67,384	64,233	71,613	64,973	83,016	14

† Operating weight is weight of machine with tires; full tank of fuel. ‡ As equipped with 30' draper header (Class 6), 35' draper header (Class 7) and 40' draper header (Class 8).

Advantages



8

The grain bin on Gleaner S68/S78 is 30% larger than the one on the John Deere S660/S670. Gleaner has the largest grain bin on any Class 6/7 combine.

9

Gleaner has a 21% faster unloading rate than John Deere.

10

Gleaner can unload the largest grain bin in the world in just over a minute and a half.

11

Less wear, less horsepower required and less grain damage with Gleaner's shallow 29° angle from clean grain cross auger to unloader auger.

12

The Gleaner frame is stronger and lighter due to its exclusive welded unitized frame.

13

Gleaner is more efficient, and drives are easier to service.

14

Unlike Gleaner, John Deere has a huge compaction issue and consumes a large amount of horsepower just moving through a flat field. Wet ground and hills compound this issue.

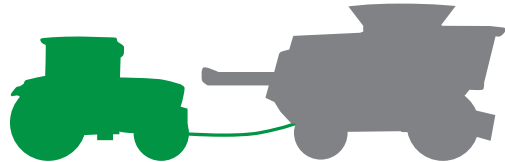
Efficiency

Extra weight requires more horsepower to achieve the same result as a lighter machine. The John Deere S680¹ weighs almost 17,500 lbs. more than a Gleaner S88. This extra weight requires 34 hp extra just to move the laden weight difference of the two machines through the field. That's the equivalent of pulling a John Deere 6210R, MFWD tractor behind your Gleaner.

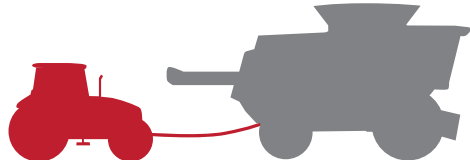
For the CaseIH 8230 you'll have to hook up a CaseIH Farmall 140A, two-wheel-drive tractor with cab behind your Gleaner to travel every hill, through every mud puddle and down every road.



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Efficiency comparison

Class 6 Combines

Brand/Models [‡]	Operating Weight (lbs.)	Header Weight (30' draper) (lbs.)	Weight w/ Header (lbs.)	Difference vs. Gleaner (lbs.)	Power Required [†] (hp)	Grain Tank Capacity (bu.)	Grain Weight [§] (lbs.)	Total Weight (lbs.)
Gleaner S68	33,923	5,770	39,693	NA	NA	390	23,400	63,093
JD S660	44,077	5,307	49,384	+9,691	19	300	18,000	67,384
CIH 6130	40,276	6,648	46,924	+9,234	14	300	18,000	64,924

Class 7 Combines

Brand/Models [‡]	Operating Weight (lbs.)	Header Weight (35' draper) (lbs.)	Weight w/ Header (lbs.)	Difference vs. Gleaner (lbs.)	Power Required [†] (hp)	Grain Tank Capacity (bu.)	Grain Weight [§] (lbs.)	Total Weight (lbs.)
Gleaner S78	34,223	6,610	40,833	NA	NA	390	23,400	64,233
JD S670	45,930	7,683	53,613	+12,780	25	300	18,000	71,613
CIH 7230	43,288	7,061	50,349	+9,516	19	315	18,900	69,249

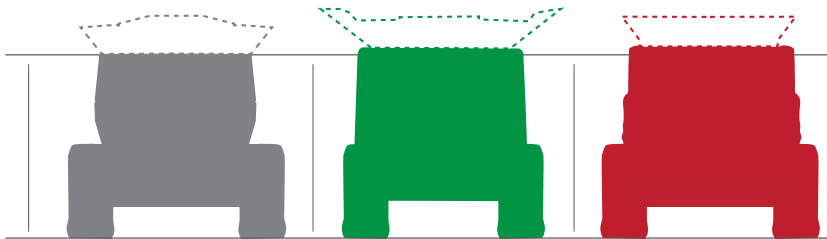
Class 8 Combines

Brand/Models [‡]	Operating Weight (lbs.)	Header Weight (40' draper) (lbs.)	Weight w/ Header (lbs.)	Difference vs. Gleaner (lbs.)	Power Required [†] (hp)	Grain Tank Capacity (bu.)	Grain Weight [§] (lbs.)	Total Weight (lbs.)
Gleaner S88	34,223	7,350	41,573	NA	NA	390	23,400	64,973
JD S680	50,649	8,367	59,016	+17,443	34	400	24,000	83,016
CIH 8230	43,988	7,475	51,463	+9,890	19	350	21,000	72,463

NOTE: Dimensions taken from actual machines on Holtgreven digital scales within 1% accuracy, similar equipped tires and full tank of fuel. ‡ Models compared are equipped with 2-wheel-drive. § Estimated @ 60 lbs. per bushel @ 17% moisture (soybeans). † Horsepower requirement achieved by multiplying an engineering calculation of rolling resistance (CRR) (an estimated 0.00196) by the weight difference in the Difference vs. Gleaner column.

Transport height

Even with one of the largest grain bin capacities on any combine in the industry, the Gleaner S68, S78 and S88 unique standard power foldable 390-bushel bin extensions fold down in under 20 seconds with the flip of a switch to an overall height of 12.41 feet. This compactness can make a big difference when transporting or storing the combine.



	Gleaner S78	JD S670	CaseIH 7230
	390 bu.	300 bu.	315 bu.
Bin extensions in transport position	12.41 ft.	12.69 ft.	12.91 ft.
Bin extensions in operating position	14.16 ft.	15.5 ft.	14.16 ft.

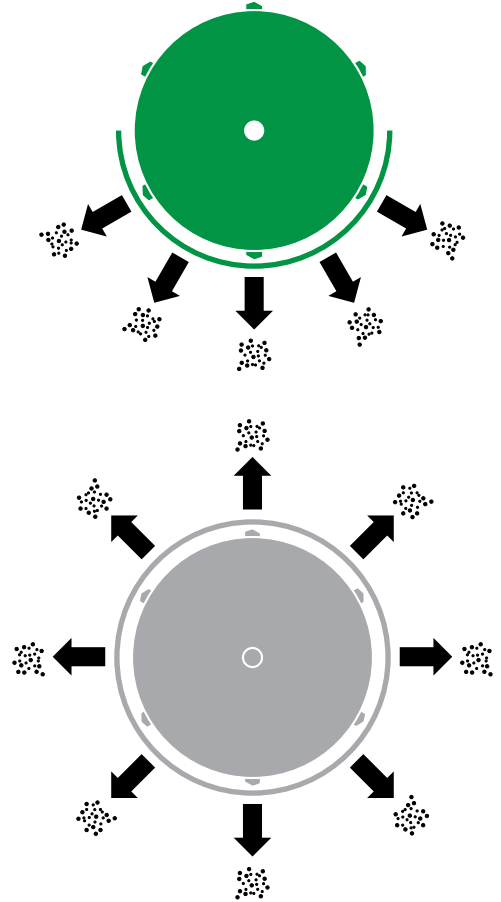
Center of gravity

The rotor in a Gleaner sits in the center of the combine. This allows the grain tank to sit low and wrap around the processor. The result is more grain bin capacity that provides a low center of gravity in the machine. Our competitors must accommodate their axial rotor in order to fit their grain bin in the combine. This places the weight higher, creating a higher center of gravity and smaller grain bin capacity.



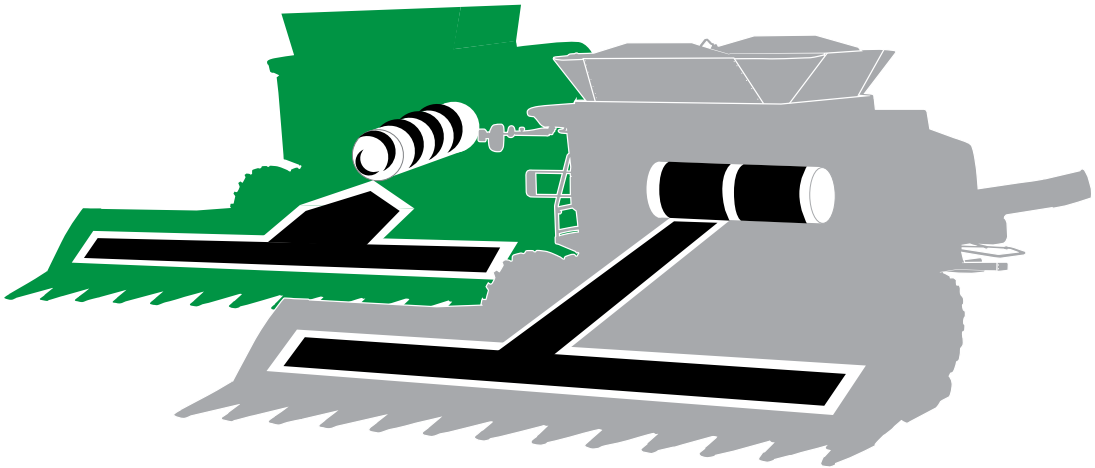
Threshing area

Once crop enters our rotor and threshing begins, it separates and falls from the rotor through a 360° cage. The wrap of this cage is important because it is crucial that crop be threshed only long enough to release it from heads, pods or cobs. Crop that remains in the threshing area can be damaged. Our 360° wrap means grain exits the rotor cage once it is threshed. Our competitors' designs are closed on top, keeping free grain inside where it continues to contact the rotor's threshing elements.



Natural Flow

We call our feeding system Natural Flow™ because the crop material flows straight into the combine, straight into and around the rotor and straight out the back. Our competitors shift the crop's path and change its direction, requiring more horsepower to do the same threshing and separating.



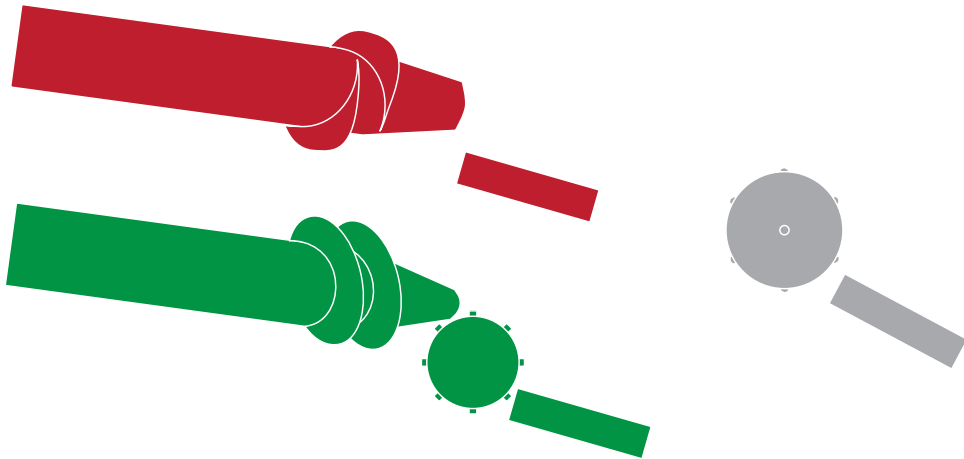
Feeder house

While a Gleaner has a narrower feeder house than other combines, the opening that feeds the rotor is actually wider. This is because Gleaner does not narrow or compress the crop mat as doing so would cause wear, bunching and crop damage.



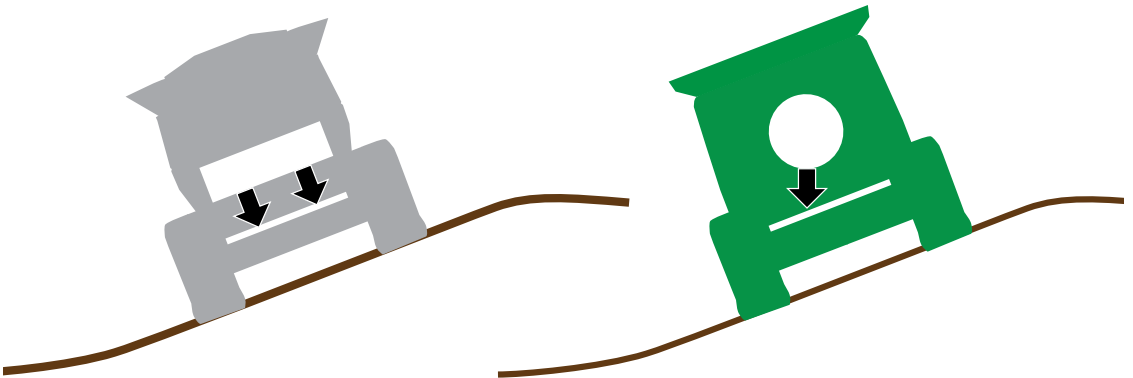
Feeding

Our competitors' designs, which include either a beater or "elephant ears," have to stuff, bunch and shear the crop mat in order to feed their rotor. Our rotor is fed naturally and directly to ensure even and consistent threshing.



Slope sensitivity

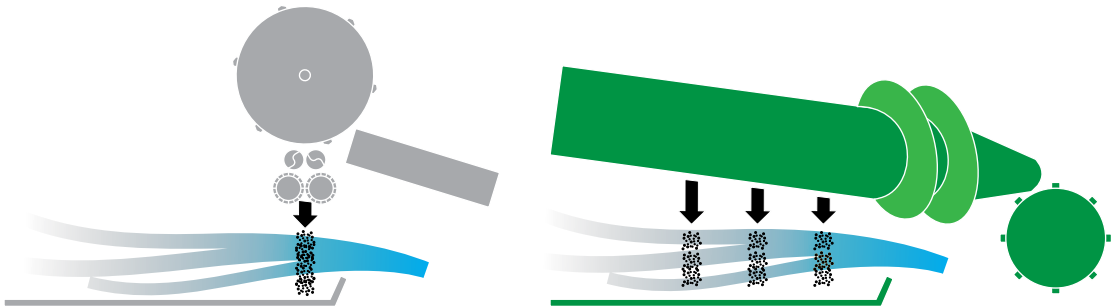
Gleaner propels grain through the air blast and onto the grain pan. Because Gleaner does not rely on gravity to move the grain, the direction of the grain stays consistent, even on slopes up to 23+%. Competitors require the expense, complexity and wear of self-leveling shoes or undercarriages to match Gleaner.



Air velocity

Our transverse system drops material in the same position parallel to the fan, which means every piece of grain is hit with the same velocity of air. With an axial rotor, grain can drop at any point on the rotor, meaning grain that drops early is hit with one air velocity and grain that drops later with another. Gleaner's ability to preclean the grain before the shoe and use the shoe as a highly effective secondary cleaning system is why it can obtain such clean grain with low loss levels.

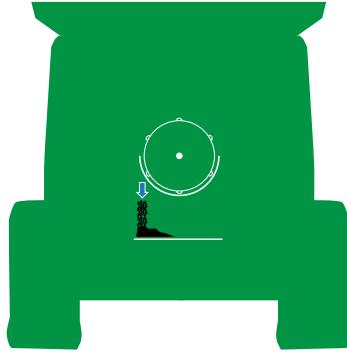
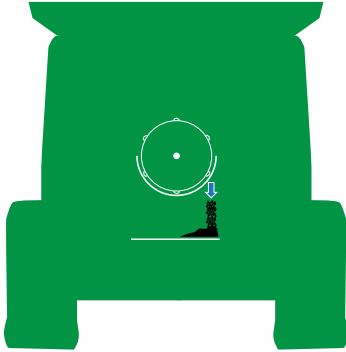
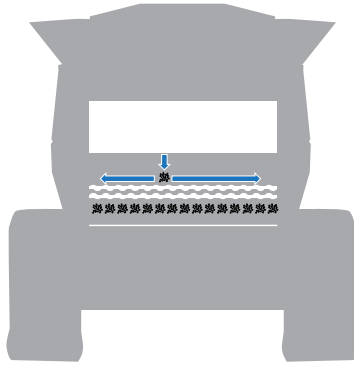
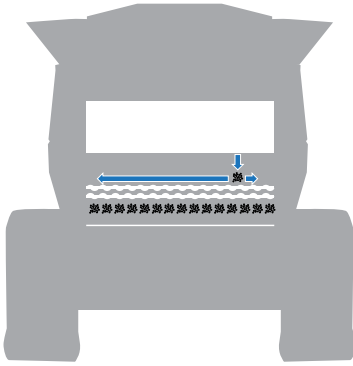
The same issue of where grain drops from the rotor affects the effectiveness of the shoe. Gleaner always drops its grain and material in the same position. Axial combines tend to distribute grain unevenly to the cleaning shoe, which can cause grain loss out the back of the combine.



Shoe overload

Many axial combines, due to their concave design, tend to overload the cleaning shoe on one side of the machine. As the rear portion of the shoe becomes overloaded with grain and MOG (material other than grain), grain can be carried out the back of the combine.

With Gleaner, after grain falls from the processor, a set of distribution augers keeps the crop mat consistent. The crop is then propelled by the accelerator rolls through an air blast at four times the speed of free fall and onto the grain pan. These distribution augers ensure a uniform ribbon of crop feeding into the remainder of the cleaning system, no matter where crop falls from the processor.







GLEANER

AGCO • 4205 River Green Parkway, Duluth, GA 30096 • www.gleanercombines.com

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