SUNMASTER 1095 HARVESTOR
BENEFITS & FEATURES
And Helpful Background Information

Most successful row crop header in the world to harvest sunflowers that are lodged, broken over, or excessively dry. Its unique design will significantly minimize shattering and head losses so common with traditional harvesting equipment. Excellent for use in milo because it can pick up the crop off the ground and still cut it off high enough to leave a taller standing stubble so desired by many milo growers. Excellent for picking up any downed corn crop minimizing ear loss.

Example of savings by using the Sunmaster Harvestor
As an example, a farmer raises 500 acres of sunflowers with oilseed prices at 10 cents a pound or confectionery at 18 cents a pound. Assume his oil sunflower crop is broken over or lodged either from disease or wind. A crop like this may not have as much yield potential to start with, so it may yield only 1,200-1,400 pounds. Traditional combine headers (either all row crop or sunflower header with pans) are known to leave considerable crop in the filed. Research according to SEED-IMEX has shown the Sunmaster to harvest 6-30% more crop from the same field versus any other attachments available on the market. If the Sunmaster can save an extra 30%, this could amount to as much as 360 pounds per acre (1,200 x 30%). At 10 cents this equals an extra $36 an acre saved. Over 500 acres this amounts to an additional $18,000 in gross revenue that would have been lost using traditional combine headers.

There is an advantage to using the Sunmaster in a crop that is healthy and standing up very nice but is especially dry. As an example, the crop may be standing perfectly up and may have a yield potential of 2,000 pounds but moisture may be down to around 7-8%. Now there is a chance for excessive shattering. Under these conditions if the Sunmaster can save an extra 6% of the crop it would amount to 120 pounds per acre or nearly $15 an acre. Over 500 acres this still amounts to $7,500 in gross revenue that would have been lost using traditional combine headers.

How is the Sunmaster different from any other all row crop or traditional sunflower header in the world?

Here is the problem with using other all row crop headers under extremely adverse, lodged, or excessively dry conditions: The star cutting knife is positioned towards the front end of the gathering chains so that when the sunflower head is cut off, any shattered seeds slide off of the row dividers and onto the ground or the head falls directly onto the ground. Rather than feed in nicely, the heads often fall to the side and get caught on the next row dividers creating even more shattering, bunching up and poor feed in. The head may also drop directly onto the top of the gathering chains. As it rides on top of the gathering chains towards the header platform there is usually more shattering and the seeds fall through the chains to the ground. Even though the all row crop headers can slide along the ground, the row dividers have no gathering pans to catch the seeds.

The Sunmaster solution

The Sunmaster has the star cutting knife positioned at the back end of the gathering chains. As the stalk is pulled towards the header platform by the gathering chains, it is pulled to one side with the sunflower head hanging over a vibrating gathering pan. Any seeds that shatter are dropped onto the pan and move to the platform header from the vibrating action of the pan. When the sunflower head is cut off it drops nearly directly onto the header platform or onto the vibrating pan. This unique design significantly reduces crop losses especially under extremely adverse conditions.

With an all row crop header, even though the star cutters is positioned nearly at the front of the row dividers, the stalk is still pulled a short distance between the wave-like gathering chains before it reaches the star cutters. This initial wave-like action shakes the stock enough to begin shattering seeds, especially under excessively dry conditions.

Stocks cut off so far forward often fall right on the ground or fall sideways on to the next dividers and by hanging there, the heads begin to bunch up very quickly. Before reaching the platform, there are simply too many other places for the stocks to catch including the pivot point of the row dividers, back corner of the header or the heads hang over the outside row dividers. Besides not feeding properly, there is even more shattering taking place. The Sunmaster through its unique design significantly reduces these kinds of losses.

The Sunmaster compared to traditional sunflower headers with pans and sickle bar.
In lodged or excessively dry conditions, the traditional sunflower pan headers don't work so well either because the pans can't get low enough on the ground. They have a support bar underneath the pan coming back and bolting to the bottom of the platform and consequently, the machine will go right over the top of the heads. Any seeds that do fall on the pan will buildup on the pans and the operator must stop and tilt the platform backwards to try and work any seeds onto the platform. This is time consuming and simply doesn't work very well.

Depending on conditions, the Sunmaster may go with or against the lodged field or even cross ways if the field is not too rough. With traditional sunflower headers, trying to pick up lodged sunflowers just doesn't work that well regardless of direction of travel. Operator may attempt to go with the lodging to try and get the heads to slide up on the pans but often the heads may not cut off neatly, are sheared off, or may bunch up. Traditional sunflower headers also can't be driven cross wise across the field very well.

The row dividers of the Sunmaster will slide along right on the ground with each row divider moving up and down independently. Besides getting lower to the ground it can save more of the crop because the star cutters are positioned at the back of the gathering chain as described above. Direction of travel with the Sunmaster will vary with field conditions.

Traditional sunflower headers use a sickle. However the sickle bar is basically only utilizing about two sickle sections per row where the sunflowers are cut off. Those two sickles have to do a lot cutting. The Sunmaster with the star cutting knife, uses four larger and thicker sickle knives per sunflower row. In effect, each star cutting knife is having to cut only half the amount of material as would an individual sickle section on a sickle bar.

The Sunmaster will work very well in solid seeded sunflowers.
The 20" row header works very well for this.

Weedy conditions
Using the Sunmaster, assuming the knives are sharp and in proper working order, will cut through weeds. Traditional sunflower headers do not work as well in weeds that are green and wet because they use a sickle bar. All row crop headers also do not work very well under weedy conditions.

Sunmaster excellent for milo
Equipped with longer row dividers in front of the machine, the Sunmaster can go lower to the ground to pick up any downed crop while keeping the back of the header higher off of the ground. With the star cutters located farther back on the header then traditional all row crop headers, the Sunmaster is able to pick up any lodged crop and lift it to a taller height before it is cut off. The remaining stubble cut at a much taller height is desired by many growers to avoid erosion. All-row crop harvesters, while they also can cut low, are

unable to leave much standing stubble. The Sunmaster's vibrating pans will also catch and save any shattered seeds caused by excessive dryness.

Sunmaster excellent for picking up any downed corn minimizing ear loss.

Sunmaster built in the U.S.
Westward Products of Jamestown, North Dakota has successfully been selling the Sunmaster to farmers in the U.S. the past ten years. Formally built in Hungary, it is now being built in the U.S. by Sheyenne Tooling & Mfg at Cooperstown, ND. Sheyenne Tooling & Mfg has been in business since 1979. The company manufactures the Sheyenne-Westgo industrial grade portable grain auger which is the longest wearing grain auger in the industry. They also build and market their own shortline of skidsteer attachments, and several attachments for world wide Bobcat including the Bobcat line of snow blades and manure forks. To view Sheyenne Tooling & Mfg. see: www.sheyennemfg.com.

The owner of Sheyenne Tooling & Mfg is also a farmer with first hand experience with the Sunmaster. He bought his first 8 row Sunmaster eleven years ago and he is beginning his 8th season with two of the 12 row Sunmaster units. By significantly reducing the header losses and excessive shattering, he has more than paid for his machines several times over.

Low maintenance.
The Sunmaster has less moving parts and requires less maintenance. Considerable cost is required to refurbish older all row crop headers.

Helpful technical information about the Sunmaster

Available in 8 x 30", 12 x 30" sizes.

12 x 20", 16 x 20" and 18 x 20" also available during early order program only.

Powder coated for more durable and long lasting finish.
The Sunmaster's unique color blends well with any combine manufacturer and makes an excellent appearance. Powder coat paint keeps the Sunmaster looking new. Custom color painting is available on early order program only.

Sprockets
The recommended main drive sprocket and gear box sprocket varies with each make of machine and is installed on the header at factory setup depending on the make of the combine. An assortment of different size sprockets are included with the machine to make additional adjustments if necessary. A list is available of recommended sprocket sizes to use for each make of machine. With variable speed headers, it will be rare if the sprocket size ever needs to be changed.

Importance of proper speed of gathering chains
It is very important that the speed of the gathering chains on the Sunmaster match the ground speed of the machine. If not properly matched, the gathering chain may go too fast and will try and pull the crop out of the ground rather than cutting off which puts more stress on the whole drive system and the star cutting knife clutch may begin to slip. It is easy to find proper speed of gathering chain with variable speed headers. While variable speed headers are pretty common standard equipment on most new machines older machines may not have this feature. For those combines without variable speed there are different sized sprockets that can be changed to find correct speed of gathering chains

Important to keep proper tightness of gathering chains.
Measure the spring on the gathering chain tightener with a tape measure to determine proper tightness. Measurement should be about 3 ½ inches. The Sunmaster has the gathering chains pulling in from one side only. This is an advantage because of less moving parts.

Drum height
Drum height comes factory set with clearance at ½" to ¾" for use in sunflowers. For use in mylo the clearance may have to be adjusted lower. The drum is smaller diameter than traditional drums and has a toothed edge instead of fingers at the feeder housing. The toothed edge feeds the crop in better than fingers.

Field speeds
Obviously depends on crop and field conditions but are comparable to other combine headers.

Star cutting knives and gearbox
There is one gearbox for each star cutters. Each star cutters has four (4) non-corrugated, heat treated knives that are riveted. The owner of Sheyenne Tooling & Mfg. has used his two 12-row Sunmaster headers annually on about a 1,000 acres of sunflowers the last seven years and has not yet changed a star cutters knife. In the off season, operator can move star cutters to other side of machine because then the knives are turning in opposite direction and you can make use of the backside of the knife.

Gearbox is completely sealed with #90 and is built with three replaceable seals. There are no shear pins because it relies on a slip clutch. Each row has its own star cutters, gearbox and slip clutch.

The disk-type slip clutch on each gearbox comes from the factory and is pre-set.

Adapters available to fit Sunmaster on just about any machine.
The Sunmaster will fit on just about any combine. An adapter designed for each combine manufacturer is used to connect the Sunmaster header to the combine. Adapter is put on at factory before shipment. If dealer has stocked a machine and wants to change adapters, it is simply exchanged for a different one from the factory. Adapter plates for all machines are the same price.

Drive systems
The 8 and 12 row headers are LH drive. The main PTO drive shaft comes from the left side of the feeder housing that drives the auger drum protected by a slip clutch. An extension is used on the PTO shaft for 12 row models. LH and RH star cutters are driven from each side of the machine.

PTO drive shafts
The correct PTO drive shaft for connecting Sunmaster to the combine drive line is included at shipment from factory.
JD—1000
Cat—1000
Case IH—hex
New Holland—540
Gleaner--1000

How do vibrating pans vibrate?
A cam on the shaft pushes a rocker arm up and down underneath the pan. The rocker arm with a replaceable rubber, strikes a thick strap of iron on the underside of the pan which continually moves the pan up and down. This steady rocking action moves the seeds back to the platform. The replaceable rubber and iron strap protects the pan from wear.

Replaceable shoes on the underside of the point of each row divider.
While generally the points are not run on the ground, the shoes are quickly replaced if needed. Row dividers can also be adjusted to get lower to the ground.

Brackets on each end of the header
There are brackets on each end of the header to prevent heads from hanging in the back corner of the header.

How do you take off the pans?
Pans are held in place by two spring loaded latch pins.

Wear plates in front of each gearbox underneath the header provide protection from stocks or other crop residue.

Ridge plate adjustment helps direct stalk into the header.
As the stalk is fed into row dividers, an adjustable ridge plate leans the stalk over the vibrating pan before it is cut off. This helps keep the sunflower head feeding into the feeder housing first rather than falling backward with the stalk going in first.

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