

# PRIMARY TILLAGE TOOLS

4213 | 4233 | 4412 | 4511 | 4530 | 4610 | 4630 | 2433

**SUNFLOWER**

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**SUNFLOWER. THE ULTIMATE ANSWER.**

# THIS IS SUNFLOWER.

Quality and service never go out of style, regardless of the era or the industry. So it's easy to see why Sunflower has grown to become one of the most recognized names around the world for top-quality agricultural products.

It all started more than 70 years ago when Charles Fleming and Orland Hazen formed a partnership in 1941 and bought the Sunflower Express Truck Line. Four years later, in 1945, they bought the patent rights to the "Diamond Packer", and ventured into the farm equipment market through production in a small garage in Beloit, Kansas.

Using a series of heavy-weight cast wheels, the Diamond Packer formed a series of diamond shaped holes in the ground, when pulled behind a plow or disc, to prevent wind and water erosion. Sunflower eventually sold the product line to a company in southwest Kansas, to concentrate on other ventures ... like the need for flexible tillage tools to follow field contours and terraces. In 1961, Sunflower introduced the three-section, flexible stubble mulch blade plow — the first of its kind on the market and Sunflower's first flexible tillage product.

Six years later, Sunflower introduced a flexible chisel plow, followed in 1968 by a flexible offset disc. In 1971, the entire tillage line was redesigned to add more sales appeal in a market that had grown to

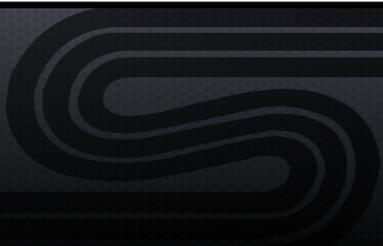
include most of the Midwest's "High Plains" area. In fact, Sunflower went through several years where sales and earnings were doubling every year.

In the mid-70s, Sunflower's engineering team developed the idea of combining a regular two-section offset disc with another left-handed version, making a double offset disc with four sections.

In addition to patenting the four-section disc in 1975, Sunflower also began expanding its sales into the Corn Belt with a new coulter chisel. At the same time, the company moved to its current location on the outskirts of Beloit — the third move since the company's formation.

From that time, Sunflower has expanded the facilities two additional times; been purchased and consolidated by several previous owners, and acquired a number of other companies, including Flex-King, Richardson Manufacturing Co., the Best Grain Drill line from Best Manufacturing, and Richardton Dump Wagons.

In November 2002, Sunflower was acquired by AGCO Corporation. Today, as part of AGCO Corporation, Sunflower tools carry on the quality and service tradition with proven design, coupled with new technology and unprecedented customer service that hasn't wavered in seven decades.



# 4213 COULTER CHISEL

Welcome To One-Pass Soil Management

With coulters spaced every 7 1/2" and shanks on 15" centers, not much gets past the Sunflower Model 4213 Coulters Chisel. Hydraulically adjusted coulters gangs effectively size and cut residue to eliminate plugging and the need for shredding or discing before ripping. The rigid shearbolt or auto-reset shanks, meanwhile, completely fracture hardpans to a depth of 12" to 14", breaking up soil compaction that a wider-spaced shank arrangement would miss. Whether it's used in the fall or the spring, the 4213 is the perfect answer for removing soil compaction, while opening up the surface for improved water intake and reduced erosion.

Sunflower - The Ultimate Answer



### 4213 SHANK OPTIONS

#### RIGID SHEARBOLT

A maximum point load of 1,500 lbs. with a range of points to control residue.



#### AUTO-RESET

A maximum point load of 1,500 lbs. with a vertical trip height of 13".



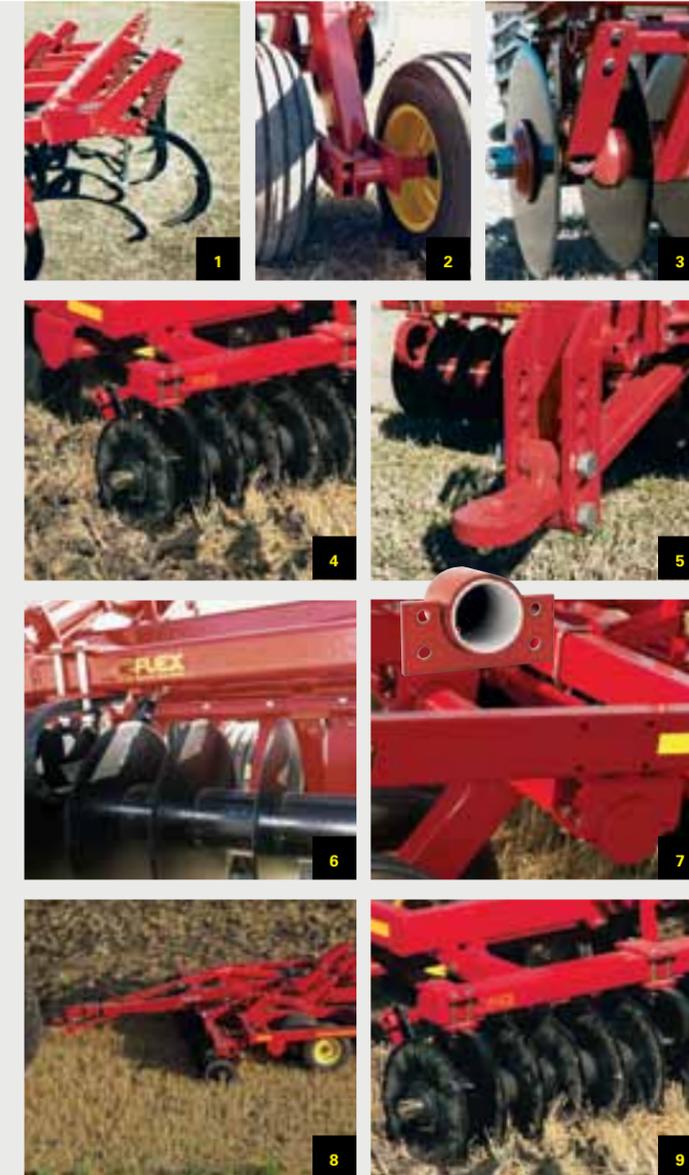
- 1. OPTIONAL OFFSET SHANK MODULES** - These modules can be added to the rear bar of the machine, providing even more clearance for demanding residue.
- 2. STANDARD WALKING TANDEMS** - Standard walking tandems minimize frame bounce and uneven penetration.
- 3. HEAVY-DUTY TRASH BARS** - Heavy-duty 3" wide channel iron trash bars are mounted between each coulters blade to help keep the gangs clear of residue and dirt buildup.
- 4. C-FLEX™ COULTER GANG HANGERS** - Shock-absorbing mounts protect against field obstructions. Spring end collars help ensure the gang stays properly torqued. Coulters gangs eliminate plugging or need for shredding or discing before ripping.
- 5. SINGLE OR DOUBLE CLEVIS ADJUSTABLE HITCH** - Either a single or double clevis adjustable hitch is available to allow front-to-rear leveling of the machine.

- 6. HEAVY-DUTY SEPARATING SPOOLS** - Each spool weighs 50 lbs., enough weight to slice through heavy residue. Gangs feature two rephasing lift hydraulic cylinders (protected by shock-absorbing mounts) to control the front gang depths with on-the-go adjustments.
- 7. HEAVY-DUTY FRAME** - An all welded 4" x 6" x 3/8" frame with special formed gussets in all high stress areas. UHMW technology around the rock shafts means no greasing needed and less parts wear.
- 8. WELL BRACED OVER THE TOP HITCH** - All coulters chisels are fitted with overhead truss hitches providing down pressure to ensure no frame bounce.
- 9. 20" COULTER BLADES** - Spaced on 7 1/2" centers with long-life, trunnion-type bearings. Pre-fracture the soil and size residue ahead of 15" spaced chisel shanks at 12"-14" maximum depth. Equipped with 1 3/4" gang shafts.

### 4213 COULTER CHISEL SPECS

MODEL NUMBER	CUTTING WIDTH (m)	NUMBER OF SHANKS	SHANK SPACING (mm)	TRANSPORT WIDTH (m)	NUMBER OF COULTERS	EST. WEIGHT RIGID SHANKS (kg)	EST. WEIGHT AUTO RESET (kg)
4213-7	8'-9" (2.7)	7	15" (381)	9'-8" (3)	14	6,068 lbs. (2752)	6,760 lbs. (3066)
4213-9	11'-3" (3.4)	9	15" (381)	10'-11" (3.3)	18	6,632 lbs. (3008)	7,522 lbs. (3412)
4213-11	13'-9" (4.2)	11	15" (381)	14'-3" (4.3)	22	7,602 lbs. (3448)	8,690 lbs. (3942)
4213-13	16'-3" (5)	13	15" (381)	16'-2" (4.9)	26	8,162 lbs. (3702)	9,448 lbs. (4285)
4213-15	18'-9" (5.7)	15	15" (381)	18'-9" (5.7)	30	9,202 lbs. (4174)	10,692 lbs. (4850)

Note: Above specifications may vary slightly based on tires, hydraulic system, or other possible variances. We are continually striving to improve our machines; therefore, these specifications are subject to change without notice.



# 4233 COULTER CHISEL

*Big-Acreage Capacity And Performance*

The Sunflower Model 4233 Coulters Chisel is the obvious answer for large-acreage farmers who need to take fall tillage to a higher level of productivity. Designed to handle higher horsepower tractors, the 4233 features the same heavy-duty construction as the 4213, but in three-section, 17 through 23 shank configurations. Yet, its flexible frame easily conforms to changing field contours.

Spring-cushioned coulters gangs feature 7 1/2" blade spacing to effectively manage residue levels, while ground-penetrating shanks open the field for maximum moisture absorption. Don't take a chance of not getting over fields after harvest or delaying planting of next year's crop. Put the 4233 to work for acreage-eating performance.

Sunflower - The Ultimate Answer



### 4233 SHANK OPTIONS

#### RIGID SHEARBOLT

A maximum point load of 1,500 lbs. with a range of points to control residue.



#### AUTO-RESET

A maximum point load of 1,500 lbs. with a vertical trip height of 13".



**1. OPTIONAL OFFSET SHANK MODULES** - These modules can be added to the rear bar of the machine, providing even more clearance for demanding residue.

**2. STANDARD WALKING TANDEM** - Standard walking tandems minimize frame bounce and uneven penetration.

**3. HEAVY-DUTY TRASH BARS** - Heavy-duty 3" wide channel iron trash bars are mounted between each coulters blade keeping the gangs clear of residue and dirt buildup.

**4. C-FLEX™ COULTER GANG HANGERS** - Shock-absorbing mounts protect against field obstructions. Spring end collars help ensure the gang stays properly torqued. Coulters gangs minimize plugging or need for shredding or discing before ripping.

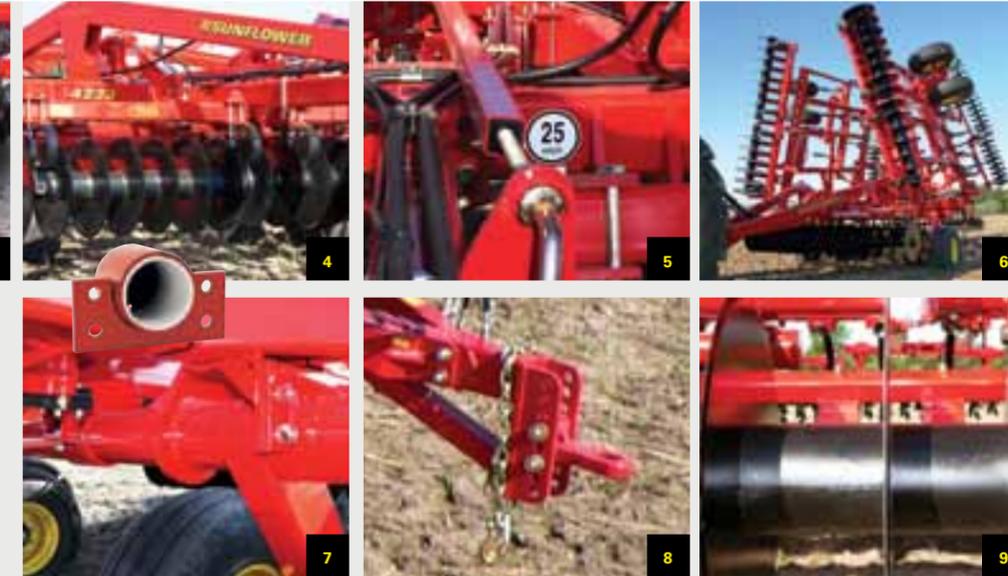
**5. SIMPLE, EASY ADJUSTMENT** - Single-point depth control for a simple, easy adjustment. Sets the depth for the entire machine from one convenient location.

**6. FLEXIBLE FRAMES** - Designed with flexible frames for all types of terrain and folds to a narrow 14'6" transport width.

**7. HEAVY-DUTY FRAME** - An all-welded 4" x 6" x 3/8" frame with special formed gussets in all high stress areas. UHMW technology around the rock shafts means no greasing needed and less parts wear.

**8. SINGLE OR DOUBLE CLEVIS ADJUSTABLE HITCH** - Either a single or double clevis adjustable hitch is available to allow front-to-rear leveling of the machine.

**9. HEAVY-DUTY SEPARATING SPOOLS** - Each spool weighs 50 lbs., enough weight to slice through heavy residue. Gangs feature two rephasing lift hydraulic cylinders (protected by shock-absorbing mounts) to control the front gang depths with on-the-go adjustments.



### 4233 COULTER CHISEL SPECS

MODEL NUMBER	CUTTING WIDTH (m)	NUMBER OF SHANKS	SHANK SPACING (mm)	TRANSPORT WIDTH (m)	TRANSPORT HEIGHT (m)	NUMBER OF COULTERS	EST. WEIGHT RIGID SHANKS (kg)	EST. WEIGHT AUTO RESET (kg)
4233-17	21'-3" (6.5)	17	15" (381)	14'-6" (4.4)	10'-3" (3.1)	34	12,804 lbs. (5808)	14,487 lbs. (6571)
4233-19	23'-9" (7.2)	19	15" (381)	14'-6" (4.4)	11'-7" (3.5)	38	13,410 lbs. (6082)	15,291 lbs. (6936)
4233-21	26'-3" (8)	21	15" (381)	14'-6" (4.4)	13'-1" (4)	42	14,364 lbs. (6515)	16,443 lbs. (7458)
4233-23	28'-9" (8.8)	23	15" (381)	14'-6" (4.4)	14' (4.3)	46	14,770 lbs. (6699)	17,047 lbs. (7732)

#### OPERATION:

- Leave more residue by switching from twisted shovels to straight points.
- Run the shanks 1-2" below the compacted layer.

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# 4412 DISC RIPPER

*Dual Performance Meets One-Pass Efficiency*

Save time and fuel by tackling all your fall tillage needs in a single pass with the Sunflower 4412 Disc Ripper. Designed to size and bury trash while shattering hardpan at the same time, the 4412 also finishes the job with unmatched leveling ability. Key to its performance are the patented C-Flex™ mounted disc blades, which are mounted at a compound angle for more aggressive action and improved clean-out ability in wet conditions. This patented compound-angled disc arrangement also allows the unit to respond quickly and efficiently to obstacles found in the field.

Sunflower - The Ultimate Answer



- 1. STANDARD WALKING TANDEM** - Standard walking tandems minimize frame bounce and uneven penetration.
- 2. OPTIONAL SHATTER WING** - Increases horizontal fracturing ability by lifting soil up and forward during operation.
- 3. SELF-LEVELING HITCH** - Front-to-rear leveling - once set the 4412 will remain level both in and out of the ground.
- 4. ADJUSTABLE GANGS** - Height may be adjusted from 5" to 11" above ripper point for adjusting to different depths of surface compaction and residue amounts.
- 5. FOLDING REAR GANGS** - The folding rear gangs of 4412-7 fold for transport.
- 6. MULTI MAX-DEPTH SHANKS** - Adjustable 14"/18" maximum depth settings.

- 7. PATENTED C-FLEX™ SHIELDING** - Stops soil transfer from one disc to the next. Reduces plugging of wet materials and trash.
- 8. PARALLEL LINKAGE** - Exclusive parallel links connect both the front and rear disc gangs to the main frame. Links allow the disc gangs to run level no matter the height adjustment, as one might see in a planter style opener.
- 9. MAINTENANCE-FREE UHMW POLYMER SLEEVES** - Maintenance-free UHMW polymer sleeves on the lift system require no greasing, eliminate wear points and improve overall performance of the machine.
- 10. INDIVIDUAL C-FLEX™ MOUNTED CUSHIONED BLADES** - Originally developed for rock protection, the individual 12" spaced patented\* C-Flex™ mounted discs blades not only react quickly and efficiently to obstacles found in fields, but also provide excellent clean-out in adverse field conditions. These attributes are in part due to the patented\* unprecedented compound angle Sunflower designed into the front row of individual discs.

## 4412 SHANK OPTIONS

### AUTO-RESET PARABOLIC SHANKS

A maximum point load of 3,500 lbs. with operating depths of up to 14"-18". Parabolic shanks provide a wider shattering pattern and require less draft than a straight shank.



## 4412 DISC RIPPER SPECS

MODEL NUMBER	CUTTING WIDTH (m)	NUMBER OF SHANKS	SHANK SPACING (mm)	TRANSPORT WIDTH (m)	NUMBER OF DISCS (F/R)	EST. WEIGHT (kg)
4412-5	12.5' (3.8)	5	30" (762)	15'-5" (4.7)	14/18	13,615 lbs. (6176)
4412-7	17.5' (5.3)	7	30" (762)	17'-4" (5.3)	18/24	16,200 lbs. (7348)

Note: Above specifications may vary slightly based on tires, hydraulic system, or other possible variances.

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# 4511/4530 DISC CHISEL

*The Answer To Today's Cropping Challenges*

Higher plant populations, genetically modified hybrids and larger combines have certainly done their share to increase yields and speed harvest. But they all come with trade-offs, like a growing residue problem and greater compaction. Fortunately, the Sunflower 4500 Series disc chisel is aggressive enough to handle even the toughest residue and compaction.

Hydraulically adjustable front and rear disc gangs can be independently adjusted, enabling you to fine-tune the machine from field to field to obtain the desired effects. While the front disc gang sizes and mixes the residue in the top few inches of soil for faster decomposition, discs on the rear gangs level and finish the swath for spring tillage or planting. In the meantime, chisel shanks, spaced on 15" centers for optimum residue flow, provide maximum soil fracturing to depths of 12" to 14" for future root growth.

Sunflower - The Ultimate Answer



### 4511 / 4530 SHANK OPTIONS

#### RIGID SHEARBOLT

For light and rock-free soils, with a range of points to control residue.



#### AUTO-RESET

A maximum point load of 1,500 lbs. with a vertical trip height of 13".



- 1. HYDRAULIC FRONT AND REAR GANGS** - Vary the amount of residue that can be buried and fine-tune the machine from field to field. Depth gauge on front and rear gangs can be seen from the tractor seat for added convenience to the operator.
- 2. C-FLEX™ MOUNTED DISC BLADES** - Patented\* individual C-Flex mounted disc blades provide additional rock protection, and allow you to work in wetter conditions, when compared to a solid front gang.
- 3. SELF-LEVELING HITCH** - Self-leveling hitch and front-to-rear leveling - once set the 4511/4530 will remain level both in and out of the ground.
- 4. DEPTH GAUGES** - Disc depth gauges both front and rear are visible from tractor seat.

- 5. PATENTED\* C-FLEX™ SHIELDING** - Stops soil transfer from one disc to the next. Reduces plugging of wet materials and trash.
- 6. EXCLUSIVE PARALLEL LINKS** - Parallel links connect both the front and rear disc gangs to the main frame. Links allow the disc gangs to run level no matter the height adjustment.
- 7. SINGLE POINT DEPTH CONTROL** - Front mounted single point depth control sets the depth for the entire machine.
- 8. UHMW POLYMER SLEEVES** - Spend more time in the field and less time with daily maintenance. Maintenance-free UHMW polymer sleeves on the lift system require no greasing, and improve overall performance of the machine.

### 4511 / 4530 DISC CHISEL SPECS

MODEL NUMBER	CUTTING WIDTH (m)	TRANSPORT WIDTH (m)	TRANSPORT HEIGHT (m)	NUMBER OF SHANKS	SHANK SPACING (mm)	NUMBER OF BLADES (F/R)	BLADE SPACING (F/R)	TIRES & SIZE	EST. WEIGHT (kg)
4511-9	11'-3" (3.4)	13'-9" (4.2)	6'-8" (2)	9	15" (381)	12/16	12/10.5	(4) 12.5Lx15 (318x381)	13,160 lbs. (5969)
4511-11	13'-9" (4.2)	17'-2" (5.2)	6'-8" (2)	11	15" (381)	14/20	12/10.5	(4) 12.5Lx15 (318x381)	14,385 lbs. (6525)
4511-13	16'-3" (5)	16'-9" (5.1)	8'-9" (2.7)	13	15" (381)	18/22	12/10.5	(4) 12.5Lx15 (318x381)	16,680 lbs. (7566)
4511-15	18'-9" (5.7)	18'-8" (5.7)	10'-3" (3.1)	15	15" (381)	20/28	12/10.5	(4) 12.5Lx15 (318x381)	17,900 lbs. (8119)
4530-19	23'-9" (7.2)	18'-1" (5.5)	11'-7" (3.5)	19	15" (381)	24/32	12/10.5	(4) 12.5Lx15 (318x381)	24,360 lbs. (11049)

Note: Specifications may vary slightly based on tires, hydraulic system, or other possible variances.

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# 2433 CHISEL PLOW

*Shatter The Toughest Yield Barrier*

Tough conditions and compacted fields call for a tough machine. That's why the Sunflower Model 2433 is the heaviest chisel plow we build. The rugged 4 X 6-inch tubular steel tongue, for example, extends from front to rear beneath the framework and is bolted to each bar to distribute stress across the entire frame.

Take your choice of rigid, rigid shear bolt or spring cushion shanks spaced on 12" centers, for shattering compaction while attaining good soil mix and residue flow across the full cutting width. There's no better way to improve water and nutrient infiltration over the winter than to break up hardpan and rough up the soil surface in the fall during your post harvest tillage operation. And with sizes to match even the largest high-horsepower tractors, you can cover a large number of acres before the snow flies.

Sunflower - The Ultimate Answer



**1. ADJUSTABLE HITCH** - Ratchet-jack adjustable hitch allows precise leveling of the chisel frame from front to rear. No bolts to remove or linkages to unhook, simply ratchet the handle of the jack to decrease the draft load and smooth out the soil finish.

**2. WALKING TANDEMS** - Walking tandems are available on all sections, allowing the machine to follow the ground contour, maintaining a more consistent shank depth. The tandem beam pivots on a set of greasable tapered roller bearings for smooth, long-lasting service. Grease-fitting-equipped six-bolt hubs and heavy-duty 2" slip-in spindles feature triple-lip seals.

**3. SINGLE-POINT DEPTH CONTROL** - Front-mounted depth control allows the operator to set the depth of the entire chisel from a single, convenient location. No need to move from frame to frame setting each section as you go; just turn the handle and dial in your depth.

**4. HYDRAULIC LIFT SYSTEM** - Rephasing hydraulic lift system features two 4" x 8" cylinders with hydraulic stroke control and matching 3 3/4" x 8" slave cylinders. Shank depth control is precise and the traditional rockshaft linkage wear-points are minimized.

## 2433 CHISEL PLOW SPECS

MODEL NUMBER	WORKING WIDTHS (m)	NUMBER OF EXTENSIONS	NUMBER OF SHANKS-CENTER FRAME	NUMBER OF SHANKS-WING FRAME	TRANSPORT HEIGHT (m)	TRANSPORT WIDTH (m)	EST. WEIGHT (kg)
2433-25	25' (7.6)	0	13	6	9'-10" (3)	18'-7" (5.7)	9,135 lbs. (4143)
2433-27	27' (8.2)	1	13	7	10'-6" (3.2)	18'-7" (5.7)	9,369 lbs. (4250)
2433-31	31' (9.4)	0	13	9	12'-8" (3.9)	18'-7" (5.7)	9,917 lbs. (4498)
2433-33	33' (10.1)	1	13	10	13'-4" (4.1)	18'-7" (5.7)	10,151 lbs. (4604)
2433-35	35' (10.7)	2	13	11	14'-4" (4.4)	18'-7" (5.7)	10,465 lbs. (4747)
2433-37	37' (11.3)	0	13	12	15'-7" (4.7)	18'-7" (5.7)	11,039 lbs. (5007)
2433-39	39' (11.9)	1	13	13	16'-3" (5)	18'-7" (5.7)	11,273 lbs. (5113)
2433-41	41' (12.5)	2	13	14	17'-3" (5.3)	18'-7" (5.7)	11,587 lbs. (5256)

Note: Above specifications may vary slightly based on tires, hydraulic system, or other possible variances.

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## 2433 SHANK OPTIONS



### RIGID SHEARBOLT SHANKS

Added protection against shank breakage without the additional cost of springs. A beefy 1 1/2" x 2" and 30" of underframe clearance. Shank mounts provide shear-bolt protection and retain the shank in the event of a shear-bolt breakage.



### SPRING CUSHION SHANKS

Husky 1 1/4" x 2" with 30" clearance. Shank-to-frame stress is controlled by a rugged ductile shank mount. Reversible 5/8" x 2" points are standard equipment.



1

## 1. PATENTED C-FLEX™ MOUNTS

Whether they're used to support a full disc gang on a 4213/4233 Coulter Chisel or individually mounted gangs on a Sunflower disc chisel, our patented C-Flex™ bearing standards absorb disc shock created by rocks, field obstructions and normal discing. Additional C-Flex benefits include the ability to clear residue better than conventional rigid standards; extended bearing, spool and disc blade life, and easy maintenance.



2

## 2. HEAVY-DUTY FRAME

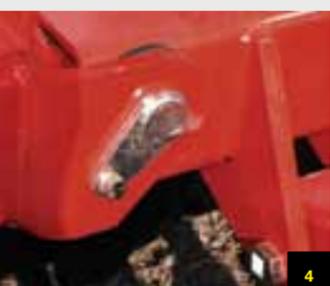
All Sunflower primary tillage tools feature an all-welded, box-beam frame with specially formed gussets in all high-stress areas for maximum reliability and a long service life. All models also feature a maintenance-free lift system, which utilizes space-age UHMW plastic sleeves on lift pivots, to eliminate the need for greasing, while decreasing parts wear and maintenance.



3

## 3. STANDARD WALKING TANDEMS

Walking tandem axles, which offset each set of support wheels, minimize frame bounce and uneven penetration, while providing the necessary support and flotation in the field and on the road.



4

## 4. MAINTENANCE-FREE HINGES

Heavy-duty wing hinges incorporate maintenance-free UHMW plastic sleeves that eliminate greasing and increase service life.



## OPTIONAL FINISHING ATTACHMENTS



### THREE-ROW, HEAVY-DUTY COIL TINE HARROW

Uniform germination depends on a smooth, level seedbed that warms evenly. Designed to work in heavy crop residue, the Heavy-Duty Coil Tine Harrow features three rows of 1/2" x 22" coil tines with 12" spacing on each bar to produce a 4" overall tine spacing for even soil and residue distribution. Spring-loaded parallel mounting arms maintain the necessary down-pressure, while keeping the tine angle consistent. Yet, tine pitch angle on each section can be easily adjusted without the use of tools. Each section also features back-up protection and maximum flexibility that helps ensure against skips and gouges. Available for: 4213/4233, 4500/4530 and 4400 Series.



### FIVE-ROW SPIKE DRAG HARROW

For the ultimate in seedbed preparation or chemical incorporation, add the five-row spike drag harrow to any 4213 or 4233 model. Indexed tines on five individual bars create a smooth level surface by breaking up clods and evenly distributing both soil and crop residue. Reversible bar connector links allow for both flexible and rigid harrow postures to attain the desired action. Equally important, the harrow's 11" x 3/4" spikes are spaced on 1 3/4" centers to handle heavy residue without bunching. Available for: 4213/4233 Series. The 3-row version of the spike drag harrow is available for the 2433 Series.



### ROLLING TREADERS

Designed to work in dryer conditions and stone-free applications the Sunflower Rolling Treader is the perfect answer for maximum weed control and greater soil pulverization. Eight rows of 7/16" x 1 1/2" curved and twisted carbon steel teeth per row help bring weeds to the soil surface, while mixing residue and leveling and firming the soil surface. In the meantime, the 18" in diameter treader reels ride on 1 1/2" shafts and triple-sealed bearings to ensure maximum reliability. Available for: 2400, 4213/4233 Series.



### CHOPPER REELS

The Sunflower Chopper Reel attachment provides just the right amount of aggressive action needed to size residue, break up clods, and level and condition the soil for one-pass seedbed preparation. Rugged 16" reels with 15" offset blades provide reliable performance in a wide variety of residue conditions, while 1 3/4" reel shafts with two triple-sealed, trunnion-mounted bearings per reel provide the reliability you demand. Available for: 4213/4233 Series.

# 4610/4630 DISC RIPPER

*The Size And Strength To  
Handle Today's Needs*

The new Sunflower 4600 Series Disc Ripper does more than just fulfill the demand for a machine that is large enough to maximize the power ratings of today's high horsepower tractors. It's also tough enough to handle the tillage demands of corn-on-corn rotation programs.

Available in working widths from 14' to 26', the 4600 Series disc ripper combines primary surface tillage via two ranks of individually mounted disc blades with fracturing of subsoil compaction for maximum crop potential. Fact is, the Model 4630-13, equipped with 13 parabolic spring-reset shanks, is the largest flexible frame disc ripper in the industry.

Add your choice of three different finishing harrow options — a heavy-duty coil tine harrow, two-bar coil tine harrow or five-bar spike tooth harrow — and the 4600 can be tailored to handle virtually any soil type and cropping condition in North America.

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- 1. HEAVY-DUTY FRAME** - The 4600 disc chisel is one of the strongest and heaviest units of its kind, thanks in part to an all-welded mainframe constructed of 4" X 8" X 3/8" steel tube. The frame is also cross-braced and gusseted for trouble-free service and the strength to withstand the high stress of aggressive tillage.
- 2. STANDARD WALKING TANDEMS** - Walking tandem axles, which offset each set of support wheels, equipped with 385/66R 22.50 tires and 8-bolt hubs, provide the necessary support and flotation in the field and on the road.

- 3. INDIVIDUALLY MOUNTED DISC BLADES** - Two ranks of individually mounted 28" x 5/16" disc blades — the largest in the industry — provide an effective cut of 7 1/2" to size and bury heavy residue. The operating range of 0 to 8 inches deep is adjusted remotely from the tractor cab.
- 4. PARABOLIC SPRING-RESET SHANKS** - The parabolic spring-reset shanks have a 3,500-pound maximum trip pressure and set at 24" shank spacing. Each shank is constructed of 1 1/4" high-strength, abrasion-resistant steel with a chromium carbide shin guard to protect the shank from excessive wear.

## 4600 DISC RIPPER SPECS

MODEL NUMBER	DESCRIPTION	CUTTING WIDTH (m)	SHANK SPACING (mm)	BLADE SIZES (mm)	NUMBER OF BLADES	TRANSPORT DIMENSIONS WIDTH X HEIGHT (m)	EST. WEIGHT (kg)
SF4610-07	Disc Ripper Individually Mounted Blades Parabolic Auto-Reset Shanks	14' (4.3)	24" (610)	28" (711)	20	14' 5" x 7' 0" (4.4 X 2.1)	14,906 lbs. (6761)
SF4610-09	Disc Ripper Individually Mounted Blades Parabolic Auto-Reset Shanks	18' (5.5)	24" (610)	28" (711)	28	19' 7" x 7' 0" (6 x 2.1)	17,565 lbs. (7967)
SF4630-11	Disc Ripper Individually Mounted Blades Parabolic Auto-Reset Shanks	22' (6.7)	24" (610)	28" (711)	36	19' 3" x 13' 6" (5.9 x 4.1)	28,376 lbs. (12,871)
SF4630-13	Disc Ripper Individually Mounted Blades Parabolic Auto-Reset Shanks	26' (7.9)	24" (610)	28" (711)	40	19' 3" x 13' 6" (5.9 x 4.1)	29,689 lbs. (13,467)

Note: Above specifications may vary slightly based on tires, hydraulic system, or other possible variances. We are continually striving to improve our machines; therefore, these specifications are subject to change without notice.



“Sunflower equipment helps open the residue-management window.”

The weather around Redwood Falls, Minnesota, can get pretty cold during the winter. That’s part of the reason Ken Felleeson, who farms around 1,000 acres of corn and soybeans in partnership with his brother, Bob, likes to use a Sunflower 4511 disc chisel to get his primary tillage done in the fall before the snow flies. Not only does the 4511 size and bury much of the growing amount of residue, but the chisel helps break up soil compaction, allowing moisture to penetrate the soil profile. Most important, it helps get the decomposition process started a little earlier.

“We’re seeing a lot more trash in the fields than we used to,” Ken admits, noting that a lot of their corn consists of Roundup Ready triple stacked varieties. “I don’t know that the stalks are any thicker or heavier, but there seem to be a lot more leaves and husks with the new varieties. I’ve found, too, that it depends on the brand more than it does the particular hybrid. If we can get over the fields in the fall with the disc chisel, we can get a better handle on residue management and start preparing the field for spring.”

Felleeson realizes that the microbes that break down residue are always most aggressive right below the soil surface where there’s a good mix of soil, air and moisture. Unfortunately, those microbes go dormant when the soil temperature drops to 40 degrees, which means the window closes pretty quickly in Minnesota.

Felleeson says their residue management program starts with the use of a pull-type stalk chopper shortly after harvest. Weather permitting, they follow with the disc chisel at approximately six miles per hour a few days later.

“It leaves a nice mix,” he says. “When you look down from the tractor cab, you can see about 60 to 65 percent black dirt. Once the buried residue deteriorates over the winter and we hit it with the field cultivator and a crumbler attachment in the spring, it leaves an ideal seedbed, which ultimately leads to a better stand and higher yields.

“On the other hand, I think the Sunflower disc chisel leaves the surface a lot more level to begin with,” he adds. “I’ve seen the job other brands do in

the fall, and it seems the fields are a lot more uneven. I know, too, that the Sunflower does a better job when we’re working in heavy soil or wet ground. It may pull harder, but it still does the job.”

Ken says the key is to set the front discs just deep enough to throw a little dirt, since the main function of the individually mounted discs is to cut the stalks.

“If you can get the front discs to throw enough dirt to hold the leaves and trash in place, it seems the twist on the shovels can do an even better job of burying it,” Felleeson says, noting that he particularly likes the easily visible depth gauges and the hydraulic front and rear gangs, which allow him to vary the amount of residue that is buried. “And since there aren’t any spindles on the front gangs, there’s nothing to stop residue from moving through when it’s desired,” he concludes. “I’m certainly happy with its performance.”

**GROWER**  
Ken Felleeson  
**LOCATION**  
Redwood Falls, Minnesota  
**SITUATION**  
Residue management in high-population stacked-genetics corn  
**SOIL CONDITION**  
Better aeration and a good mix of black soil and residue  
**TILLAGE TOOL USED**  
Sunflower 4511 Disc Chisel



# PRIMARY TILLAGE TOOLS

4213 | 4233 | 4412 | 4511 | 4530 | 4610 | 4630 | 2433

**SUNFLOWER. THE ULTIMATE ANSWER.**

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