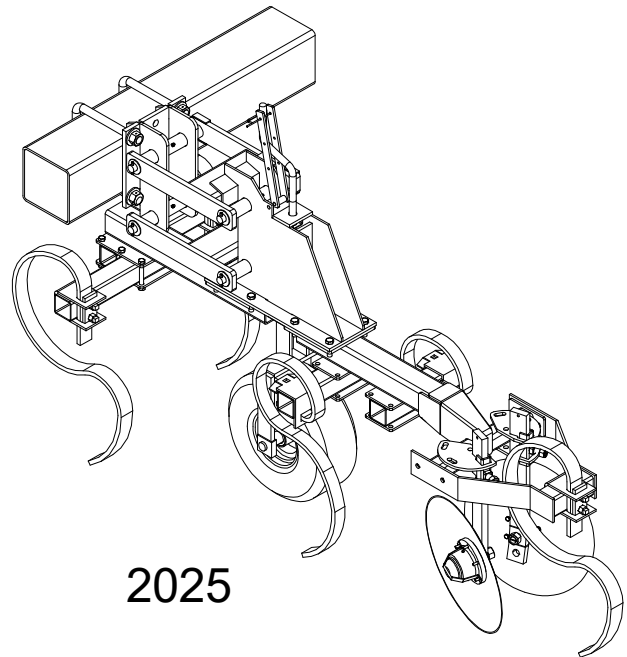
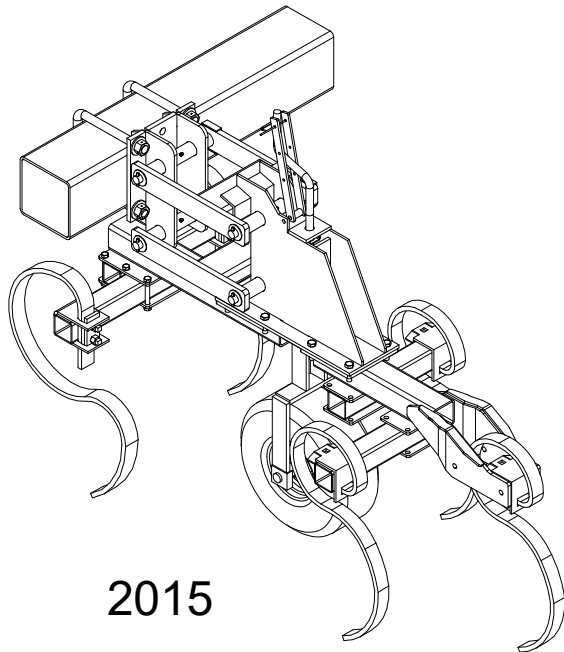


# Harriston

INDUSTRIES



## CULTIVATOR

### OPERATORS MANUAL & PARTS BOOK



# **HARRISTON INDUSTRIES, INC. CULTIVATOR**

## **WARRANTY**

HARRISTON INDUSTRIES, INC. (Harriston) warrants the Harriston Cultivator to be free from defects in material and workmanship, under normal use and service. Obligation under this warranty shall extend for a period of 1 year (12 months) following the date of delivery to the original purchaser and shall be limited to, at the option of Harriston, replacement or repair of any parts found, upon inspection by Harriston, to be defective.

## **WARRANTY CLAIMS**

The purchaser claiming under this warranty shall submit a warranty claim to Harriston or an authorized dealer, for inspection by an authorized company representative. Should any part prove defective within one year from date of purchase, the part will be replaced without charge, provided the defective part is returned to us, transportation charges prepaid.

## **LIMITATIONS OF LIABILITY**

This warranty is expressly in lieu of all other warranties expressed or implied and all other obligations or liabilities on our part of any kind or character, including liabilities for alleged representations or negligence. We neither assume nor authorize any other person to assume on our behalf, any liability in connection with the subsequent sale of the Cultivator.

This warranty does not cover parts and accessories, which are under separate guarantees from the manufacturers and service facilities in Canada or the United States.

This warranty shall not apply to any Cultivator which has been altered outside the factory in any way so as, in the judgment of Harriston, to affect its operation or reliability, or which has been subject to misuse, neglect, or accident.

No warranty is extended to regular service items such as lubricants, paint, and the like.

## **OPERATOR'S MANUAL**

The Purchaser acknowledges having received training in the safe operation of the Cultivator and further acknowledges that Harriston does not assume any liability resulting from the operation of the Cultivator in any manner than described in the Operator's Manual supplied at the time of purchase.

## **WARRANTY VOID IF NOT REGISTERED**

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# 1 INTRODUCTION

Congratulations on your choice of a Harriston Cultivator to complement your farming operation. This equipment has been designed and manufactured to meet the needs of a discerning potato industry.

Safe, efficient, and trouble-free operation of your Harriston Cultivator requires that you and anyone else who will be operating or maintaining the Cultivator read and understand all of the safety, operation, maintenance, and troubleshooting information contained in this Operator's Manual.

Keep this manual handy for frequent reference and to pass on to new operators and owners. Call your Harriston dealer or distributor if you need assistance, information, or additional copies of the manual.

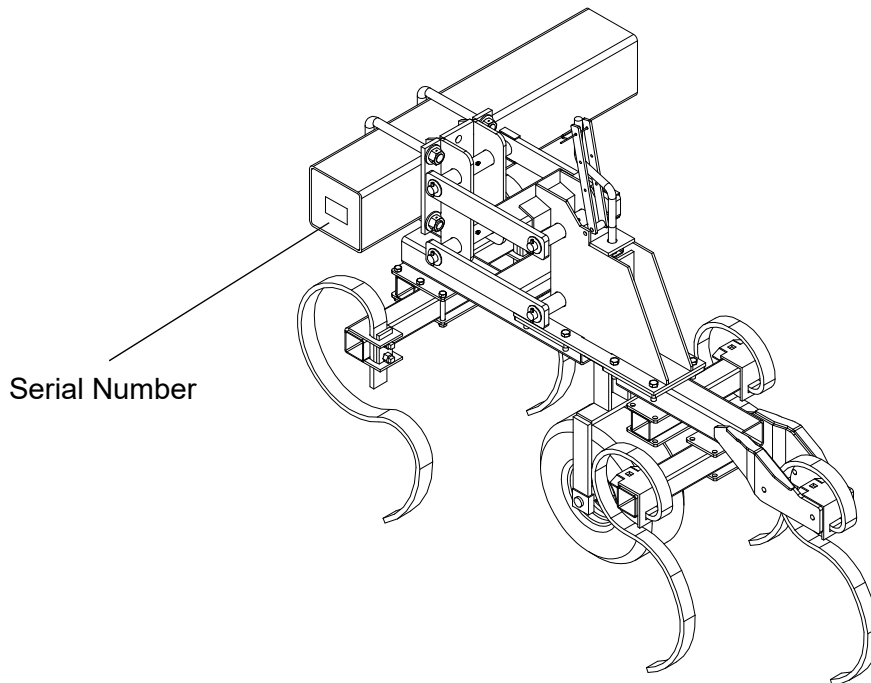
This manual covers the Cultivator. There are many different models and optional equipment available.

**Operator Orientation** - The directions left, right, front and rear, as mentioned throughout the manual, are as seen from the driver's seat and facing in the direction of travel.

## SERIAL NUMBER LOCATION

Always give your dealer the serial number of your Harriston Potato Cultivator when ordering parts or requesting service or other information.

The serial number plates are located where indicated. Please mark the number in the space provided for easy reference.



## 2 SAFETY

### SAFETY ALERT SYMBOL

This Safety Alert symbol means **ATTENTION!**  
**BECOME ALERT! YOUR SAFETY IS INVOLVED!**

The Safety Alert Symbol identifies important safety messages on the Harriston Cultivator and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.



Why is safety important to you?

#### 3 Big Reasons

##### SIGNAL WORDS:

Note the use of the signal words **DANGER**, **WARNING**, AND **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guidelines:

**Accidents Disable and Kill**  
**Accidents Cost**  
**Accidents Can Be Avoided**

**DANGER** - An immediate and specific hazard that **WILL** result in severe personal injury or death if the proper precautions are not taken.

**WARNING** – A specific hazard or unsafe practice that **COULD** result in severe personal injury or death if proper precautions are not taken.

**CAUTION** – Unsafe practices which could result in personal injury if proper practices are not taken, or as a reminder of good safety practices.

## SAFETY

**YOU** are responsible for the SAFE operation and maintenance of your Harriston Cultivator **YOU** must ensure that you and anyone else who is going to operate, maintain, or work around the Cultivator be familiar with the operating and maintenance procedures and related SAFETY information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be adhered to while operating the Cultivator.

Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury by ignoring good safety practices.

Cultivator owners must give operating instructions to operators or employees before allowing them to operate the Cultivator, and at least annually thereafter per OSHA (Occupational Safety and Health Administration) regulation 1928.57.

The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL safety and operating instructions in the manual and to follow them. All accidents can be avoided.

A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.

Do not modify the equipment in any way.

Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.

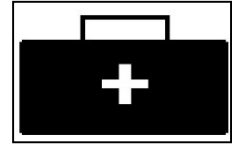
Think SAFETY! Work SAFELY!

## 2.1 GENERAL SAFETY

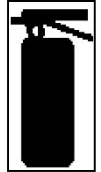
1. Read and understand the Operator's Manual and all safety signs before operating, maintaining, or adjusting the Cultivator.



2. Provide a first-aid kit for use in case of an accident. Store in a highly visible place.



3. Provide a fire extinguisher for use in case of an accident. Store in a highly visible place.



4. Wear appropriate protective gear. This list includes, but is not limited to:

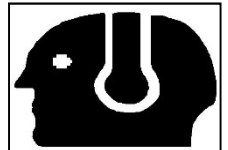
- A hard hat
- Protective shoes with slip-Resistant soles
- Protective glasses or goggles
- Heavy gloves
- Wet weather gear
- Hearing protection
- Respirator or filter mask



5. Install and secure all guards before starting.

6. Do not allow riders.

7. Wear suitable ear protection for prolonged exposure to excessive noise.



8. Stop machine, disconnect power lines, and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.

9. Review safety related items annually with all personnel who will be operating or maintaining the Cultivator.

## **2.2 OPERATING SAFETY**

1. Read and understand the Operator's Manual and all safety signs before operating, servicing, adjusting, repairing, or unplugging.
2. Do not allow riders.
3. Install and secure all guards and shields before starting or operating.
4. Keep hands, feet, hair, and clothing away from moving parts.
5. Stop tractor and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
6. Do not operate when any guards are damaged or removed.
7. Clear the area of bystanders, especially small children, before starting.
8. Keep all hydraulic lines, fittings, and couplers tight and free of leaks before using.
9. Clean Reflectors, Slow Moving Vehicle, and lights before transporting.
10. Add extra lights and use pilot vehicle when transporting during times of limited visibility.
11. Use hazard flashers on vehicle when transporting.
12. Follow chemical manufacturers' handling and safety instructions exactly when using chemicals with machine.
13. Review safety instructions with all operators annually.

## **2.3 MAINTENANCE SAFETY**

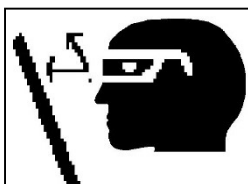
1. Follow all the operating, maintenance, and safety information in the manual.
2. Support the machine with blocks or safety stands when changing tires or working beneath it.
3. Stop tractor and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
4. Make sure all guards are in place and properly secured when maintenance work is completed.
5. Never wear ill-fitting, baggy, or frayed clothing when working around or on any of the drive system components.
6. Before applying pressure to a hydraulic system, make sure all lines, fittings, and couplers are tight and in good condition.
7. Wear appropriate protective gear when contacting chemical handling components on machine.
8. Keep hands, feet, hair, and clothing away from moving or rotating parts.
9. Clear the area of bystanders, especially small children, when carrying out any maintenance and repairs or making adjustments.



## 2.4 HYDRAULIC SAFETY

1. Make sure that all components in the hydraulic system are kept in good condition and are clean.
2. Replace any worn, cut, abraded, flattened, or crimped hoses and metal lines.
3. Do not attempt any makeshift repairs to the hydraulic lines, fittings, or hoses by using tape clamps, or cements. The hydraulic system operates under extremely high pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.

4. Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.



5. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.
6. Before applying pressure to the system, make sure all components are tight and that lines, hoses, and couplings are not damaged.

## 2.5 TRANSPORT SAFETY

1. Make sure you are in compliance with all local regulations regarding transporting equipment on public roads and highways.
2. Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean, and can be seen clearly by all overtaking and oncoming traffic.
3. Do not allow anyone to ride on the Cultivator or vehicle during transport.
4. Do not exceed 32 km/h (20 mph). Reduce speed on rough roads and surfaces.

## **2.6 STORAGE SAFETY**

1. Store away from areas of human activity. Do not permit children to play on or around the stored machine.
2. Make sure the unit is sitting, or blocked up firm and solid and will not tip or sink into a soft area.
3. Cover with weather - proof tarpaulin and tie down securely.

## **2.7 TIRE SAFETY**

1. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion, which may result in serious injury or death.
2. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
3. Have a qualified tire dealer or repair service perform required tire maintenance.

## **2.8 ASSEMBLY SAFETY**

1. Assemble in an area with sufficient space to handle the largest component and access to all sides of machine.
2. Use only lifts, cranes, jacks, and tools, with sufficient capacity for the load.
3. Use two people to handle the large bulky components.
4. Do not allow spectators in the working area.

## **2.9 SAFETY DECALS**

1. Keep safety decals and signs clean and legible at all times.
2. Replace safety decals and signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current sign.
4. Safety decals or signs are available from your Dealer Parts Department.

### **HOW TO INSTALL SAFETY DECALS**

1. Be sure that the installation area is clean and dry
2. Decide on the exact position before you remove the backing paper.
3. Remove the smallest portion of the split backing paper.
4. Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.
5. Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
6. Small air pockets can be pierced with a pin and smoothed out using the piece of decal backing paper.

## 2.10 SIGN OFF FORM

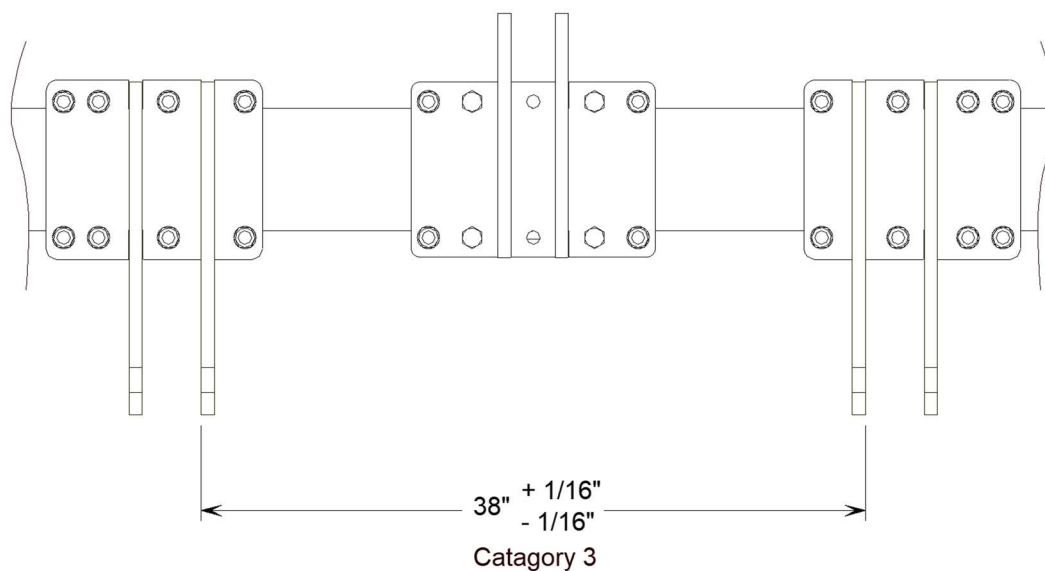
Harriston Industries follows the general Safety Standards specified by the American Society of Agriculture Engineers (ASAE) and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and/or maintaining the Cultivator must read and clearly understand All Safety, Operating, and Maintenance information presented in this manual.

Do not operate or allow anyone else to operate this equipment until such information has been reviewed. Annually review this information before the season start-up.

Make these periodic reviews of Safety and Operation a standard practice for all of your equipment. We feel that an untrained operator is unqualified to operate this machine.

A sign-off sheet is provided for your record keeping to show that all personnel who will be working with the equipment have read and understand the information in the Operator's Manual and have been instructed in the operation of the equipment.

[illegible]



Standing in front of Cultivator

## 3 SETUP

### 3.1 TOOLBAR SETUP

Set the tool bar on stands approximately 30" high for ease in assembly. Assembly should be carried out in a flat and open area.

### 3.2 MARKING TOOLBAR

Find the center of the tool bar and mark it. Mark off row spacing on both sides of center mark. For example, if you are setting up a cultivator for 30" rows, mark off every 30" on both sides of center mark.

### 3.3 REFLECTORS

Place red reflector toward the outside edge of the tool bar facing the rear and the yellow reflector toward outside edge facing forward.

### 3.4 THREE-POINT HITCH

Center the upper 3 pt. Hitch over the center mark on toolbar and fasten in place with u-bolts, lock washers and nuts. Locate pin in upper hole for category II. Attach the lower hitches, secure with lynch pin. Space the lower hitches 38" apart as shown in the figure for Cat. III.

### 3.5 GANG ASSEMBLY

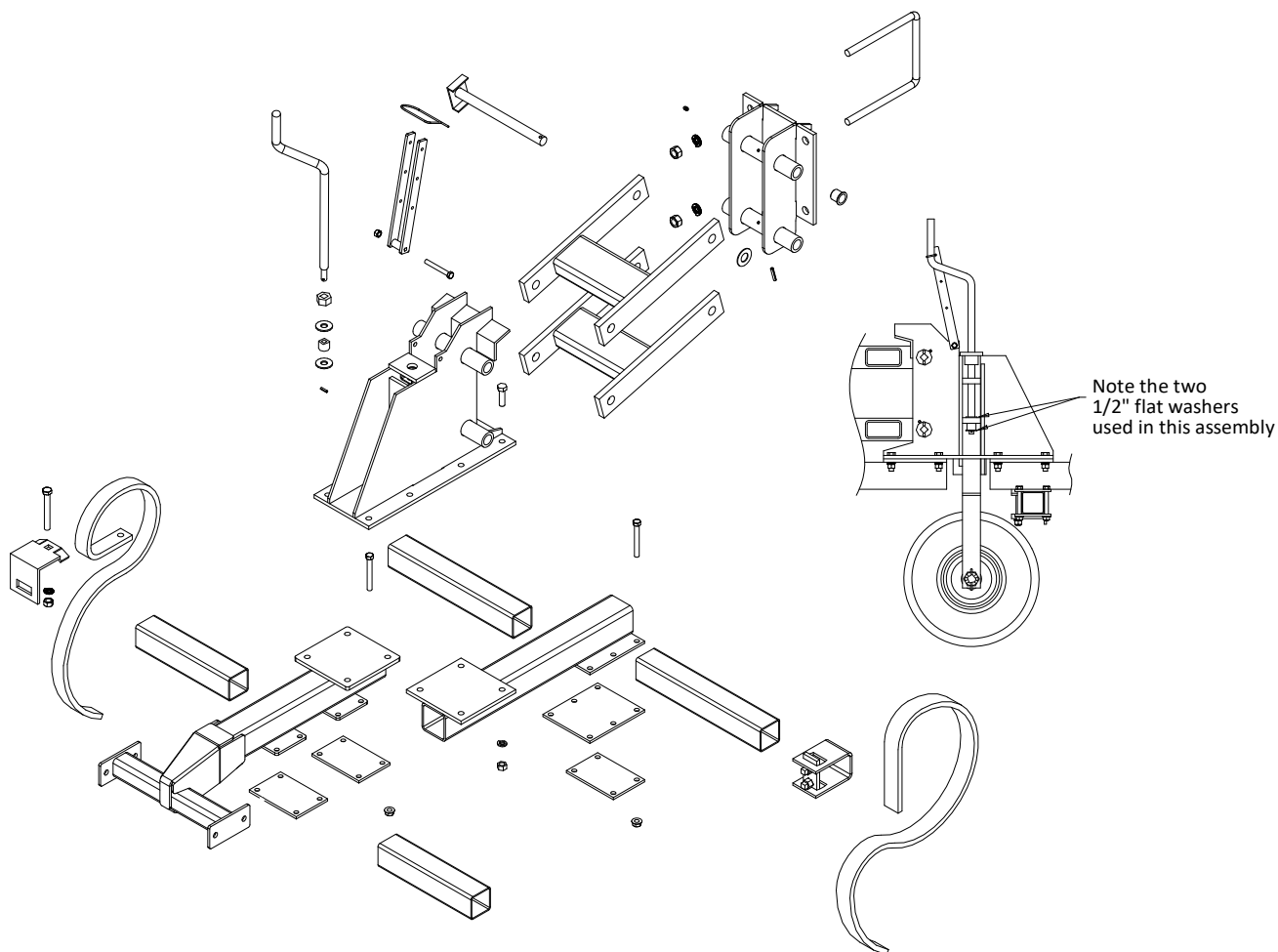
Clamp the tine mounting tubes to the gang frame with plates, 7/16" X 3 1/2" carriage bolts, lock washers and nuts. Place the 16" tubes in the front and 12" tubes in the rear of gang as shown. The two end gangs will have two tubes as shown. End gangs will use plates with 4 holes instead of the six hole plates.

Mount the gang gauge wheel to the gang frame. Screw the Adjusting crank all the way down through the gang frame. Place one 1/2" flat washer on top of the gauge wheel bushing, turn the crank until it protrudes through the bushing enough to put another 1/2" Flat washer & the 3/16" x 3/4" roll pin. Adjust to correct height and lock with Safety Pin. (See diagram below).

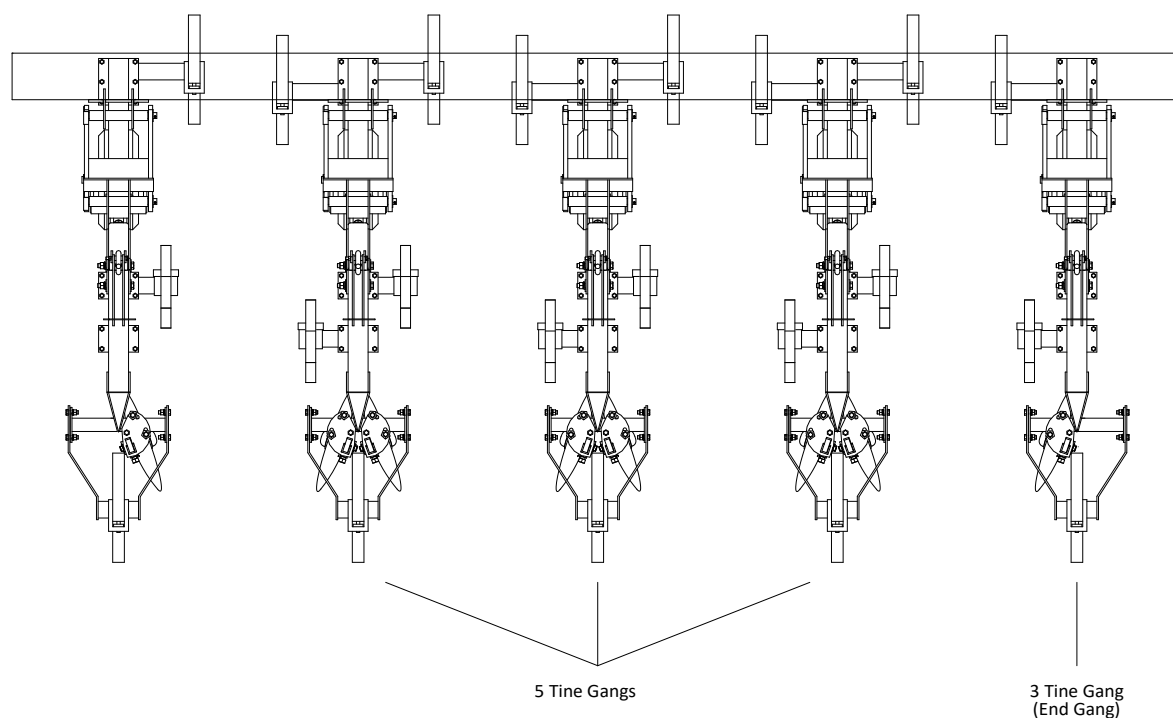
Attach the lower linkage to the gang frame and front mount with linkage pins and 1/4" X 1/2" roll pins. Insert the upper linkage between the gang uprights and front mount, securing with bolts and locknuts.

Attach each gang assembly to the toolbar, using u-bolts, lock washers and nuts to mount. Center gang assemblies over the marks on the tool bar.

Mount the Vertical S-Tines to the front tubes and on chisel cleaner (if equipped). Use C-shaped clamps, 1/2" X 4" hex head bolts, lock washers and nuts. Mount the regular S-Tines to the middle tubes with L-shaped clamps, 1/2" X 4" carriage bolts, lock washers and nuts. The two end gangs are to have 3 tines and all of the other gangs get 5 tines. Fasten shovels to tines using bolts supplied with shovels.



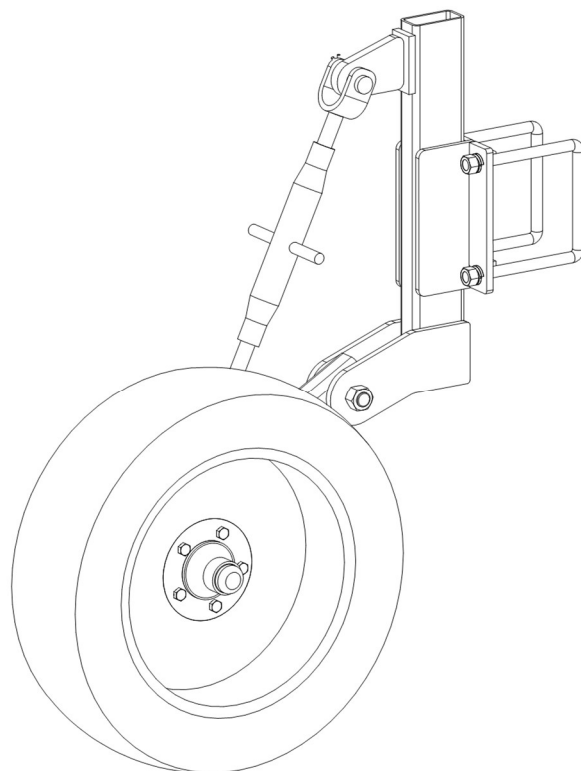
### 3.6 ROW SPACING

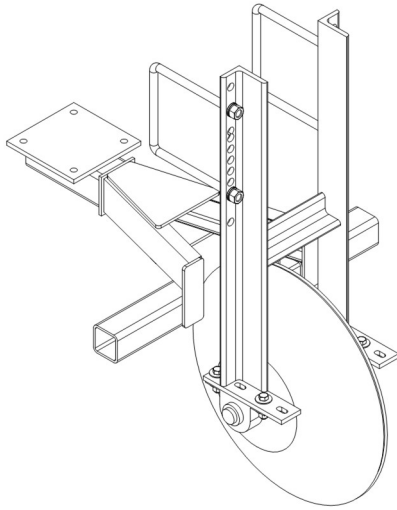


## 4 OPTIONAL EQUIPMENT

### 4.1 TOOLBAR GAUGE WHEELS

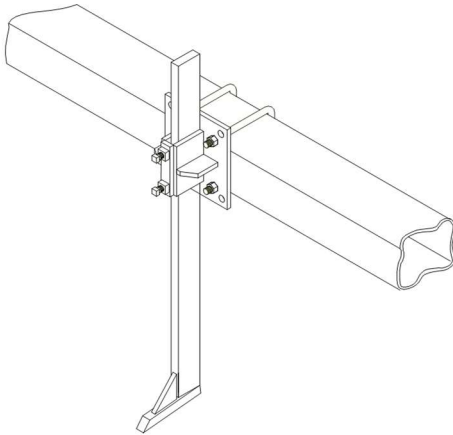
Gauge wheels are mounted to the toolbar between the first and second gangs from the outside of the toolbar. Attach the gauge wheel assembly to the front of the toolbar with u-bolts, lock washers and nuts. Adjust the turnbuckle until the correct height is reached.





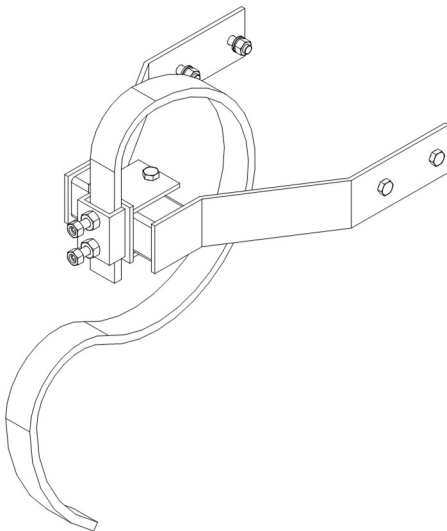
## 4.2 STEEL GUIDE WHEELS

The steel guide wheels mount to toolbar with u-bolts. Center in row with assembly mounted on front of toolbar



## 4.3 CHISEL MARKER

The chisel marker mounts on your seeder or planter. Use u-bolts to mount. Mount between the two outer rows of your planter or seeder. Chisel marker slides up and down, adjust to desired height and lock in place with set screw.

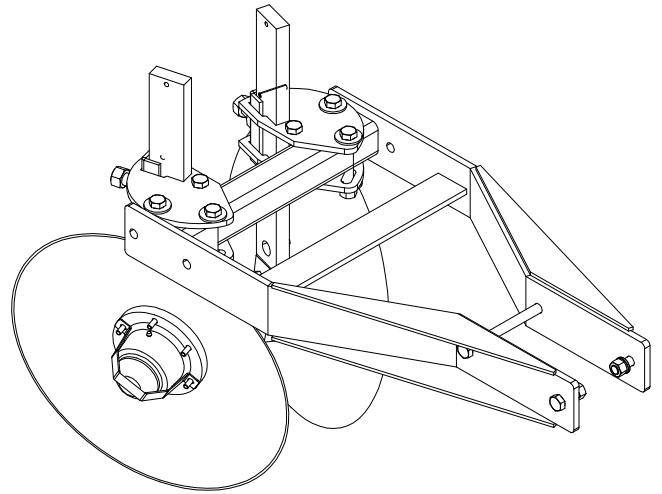


## 4.4 CHISEL MARKER CLEANER

A chisel marker cleaner is available for your cultivator. Bolt the cleaner bracket to the rear of the gang and mount the tine to the cleaner bracket.

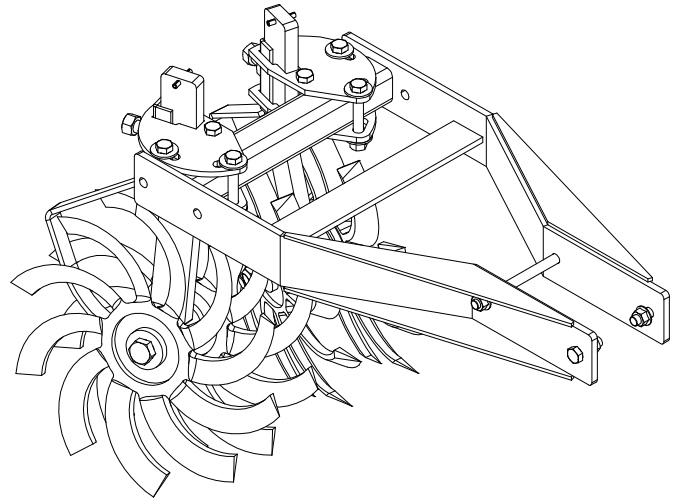
#### 4.5 HILLER DISCS

The hiller discs are attached to rear of cultivator gang with hiller mount. Shank and disc assembly mount to hiller mount with hiller clamp. Adjust to fit row width.



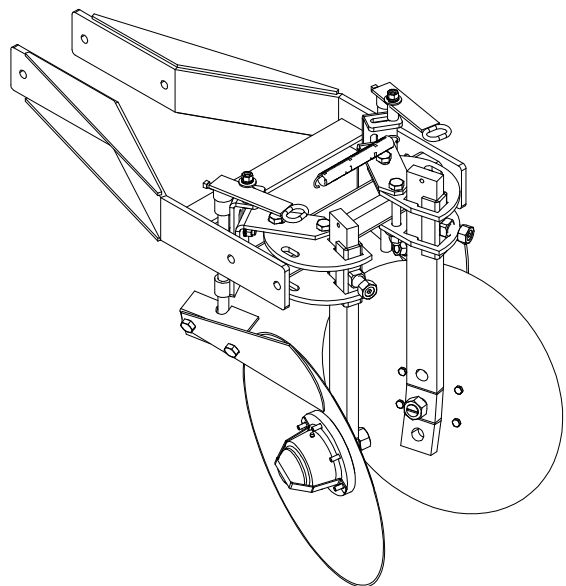
#### 4.6 SPIDER SHANKS

The spider shanks are attached to rear of cultivator gang with hiller mount. Shank and spider assembly mount to hiller mount with hiller clamp. Adjust to fit row width.



#### 4.6 HILLER DISC SCRAPER

The hiller disc scraper is mounted to the hiller clamp. A spring between the arms keeps the blade tight against the disc. Adjust arms for appropriate pressure when adjusting row spacing.





## 5 OPERATION & SERVICE

### 5.1 ADJUSTMENT & OPERATION

Check gangs for movement. They should move up and down freely but the bolts on the parallel bars should be tight enough to eliminate excessive side sway.

Adjust the tines on the gangs to give the coverage desired.

When entering the field, straddle the rows in the same direction that planter was used.

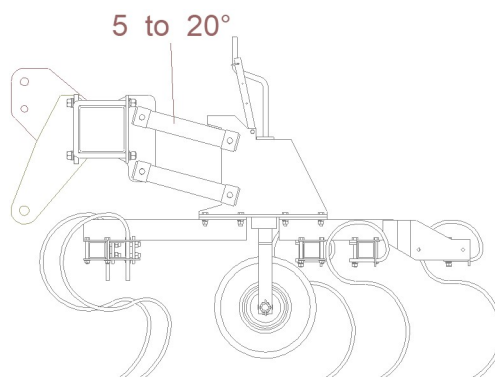
Level the cultivator with the top 3-point link on tractor.

Check gang-working depth. If working depth is not suitable, adjust gauge wheels on gangs to the desired depth. Be sure all gangs are adjusted to the same depth.

Raise the tool bar with tractor 3 point to where parallel linkage of gangs has 5 to 20 degrees of incline when cultivating. Set tractor 3-point control to ensure future proper working position.

Maintain a speed of at least 4 MPH when cultivating. Slower speeds will limit the vibrating action of the tines and reduce their effectiveness.

Set the hiller discs shallower than the S-Tines so the discs are working with loose dirt. The discs can be adjusted by loosening the clamp bolts and turning the discs for desired hill.



Working Angle of Parallel Linkage

### 5.2 MAINTENANCE

Check all nuts and bolts for tightness.

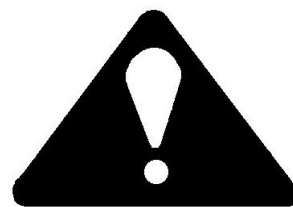
Clean off dirt that has accumulated on moving parts to prevent abrasion that will cause faster wear.

Grease all fittings.

### 5.3 STORAGE

When through with the cultivator for the year, clean away all trash and dirt, which could hold moisture and cause rusting.

Look for worn or broken parts on the cultivator. Order these from your Harriston Dealer during the off-season so that they can be replaced and the cultivator will be ready when needed next year.



**MAKE SURE NO ONE IS NEAR THE CULTIVATOR WHEN RAISING OR LOWERING THE CULTIVATOR OR WINGS.**

## 6 TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
CULTIVATOR DRIFTING TO ONE SIDE	3 POINT HITCH NOT CENTERED	CENTER HITCH
	DIFFERENT SIZE SHOVELS ON DIFFERENT DEPTHS	USE EQUAL QUANTITIES OF SAME SIZE SHOVELS ON EACH GANG
	UNEVEN GROUND	USE GUIDE COULTERS
	3 POINT ON TRACTOR NOT SQUARE	ADJUST LOWER 3 POINT LINKS ON TRACTOR UNTIL CULTIVATOR IS SQUARE TO TRACTOR
	TIRE AIR PRESSURE GANGS RUNNING AT UNEVEN DEPTHS	TIRE AIR PRESSURE 32 POUNDS
UNEVEN PENETRATION OF GANGS	GAUGE WHEELS SET UNEVENLY	SET ALL GAUGE WHEELS AT SAME DEPTH
	DIFFERENT SIZE SHOVELS ON DIFFERENT GANGS	USE EQUAL QUANTITIES OF SAME SIZE SHOVELS ON EACH GANG
UNEVEN FRONT TO REAR TINE PENETRATION	TOOL BAR NOT LEVEL	ADJUST TOP LINK OF 3 POINT HITCH ON TRACTOR
EXCESSIVE SIDE SWAY ON GANGS	WORN PARALLEL BAR BUSHINGS	REPLACE BUSHINGS
GANGS DO NOT MOVE UP AND DOWN FREELY	PARALLEL BAR BOLTS TOO TIGHT	LOOSEN SLIGHTLY
POOR WEED COVERAGE	SHOVEL TOO NARROW	USE WIDER SHOVELS
	SPEED TOO SLOW	INCREASE SPEED (4 TO 7 MPH)
EXCESSIVE SLABBING	HILLER DISCS ARE SET LOWER THAN SHOVELS	RAISE HILLER DISCS SO THE DISCS ARE WORKING WITH LOOSE DIRT
	SHOVELS ARE TOO BIG	PUT ON NARROW SHOVELS
HILL IS TOO HIGH (TOO MUCH DIRT)	CULTIVATOR TOO DEEP	ADJUST GAUGE WHEEL
	DISC NOT ADJUSTED RIGHT	RUN DISC STRAIGHTER
HILL IS TOO SMALL (NOT ENOUGH DIRT)	CULTIVATOR TOO SHALLOW	ADJUST GAUGE WHEEL TO RUN CULTIVATOR DEEPER
	DISC NOT ADJUSTED RIGHT	RUN DISC AT MORE OF AN ANGLE

## **7 PARTS LIST**

### **WHEN ORDERING PARTS**

Always give your dealer the Model and Serial Number of your machine to assist him in ordering and obtaining the correct parts. Use exploded view and tabular listing of the area of interest to exactly identify the required part.

### **USING THE MANUAL**

Parts data consists of exploded view illustrations and associated parts list tables, which are read as follows:

#### **REFERENCE NUMBER**

The reference number is the identifier number from the illustration. For example number 3 on an illustration points to a component which is item 3 on the accompanying table.

#### **PART NUMBER**

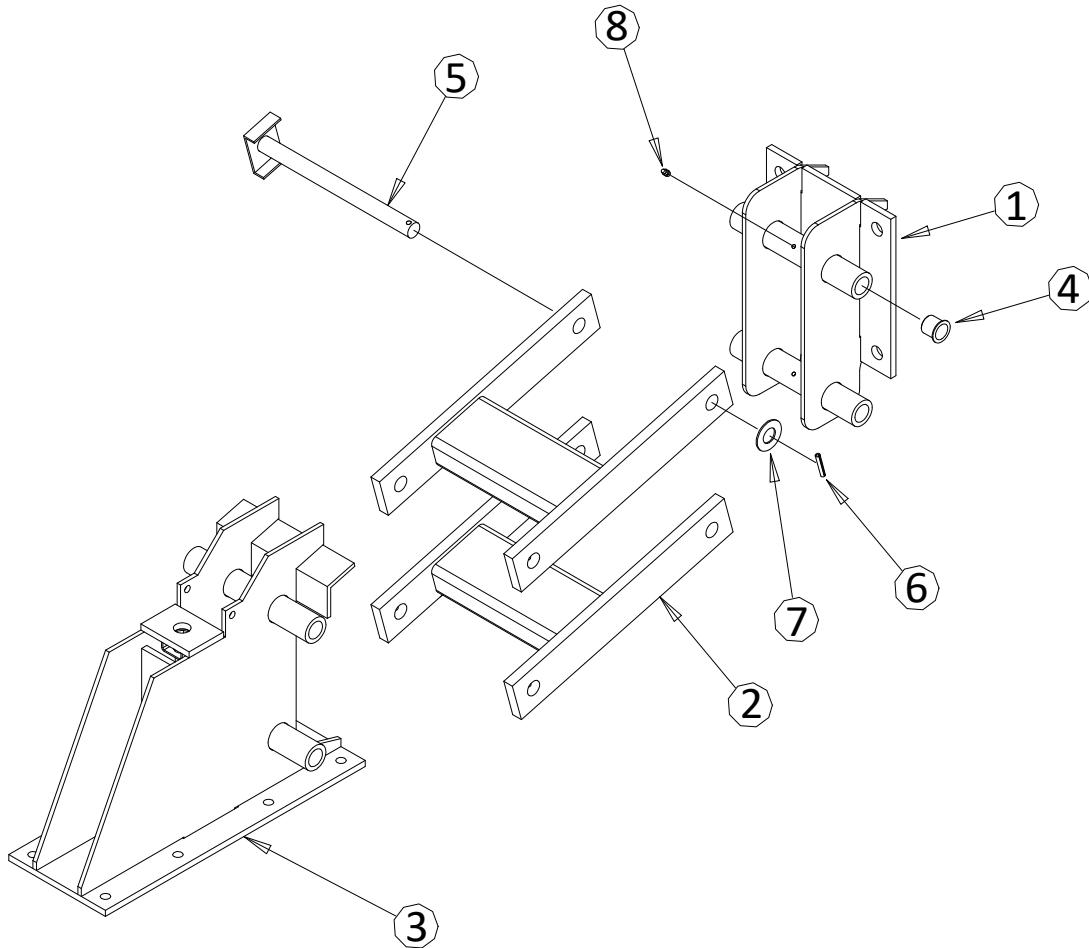
The Part number is the number by which the component may be Identified and ordered from Harriston Industries and its network of Dealers.

#### **DESCRIPTION**

This column contains the name and description of the part.

**NOTES:**

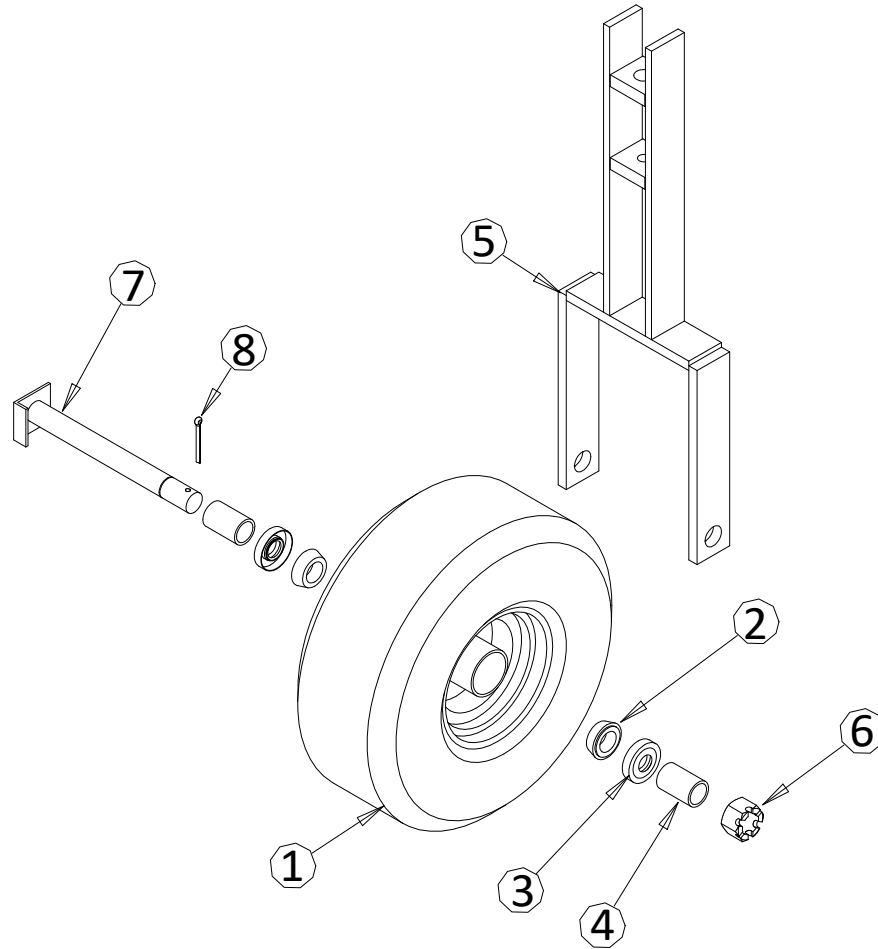
## Gang Assembly #290300



Ref.	Part No.	Description
1	270210	Front Mount Weldment
2	270220	Linkage Weldment
3	290330	2015/25 Rear Linkage
4	090167	1" x 7/8" Plastic Insert

Ref.	Part No.	Description
5	200230	Lower Linkage Pin
6	020965	1/4" x 1-1/2" Spring Lock Pin Plated
7	021334	Washer 14 gauge x 7/8"
8	095036	1/4"-28 Straight Zerk

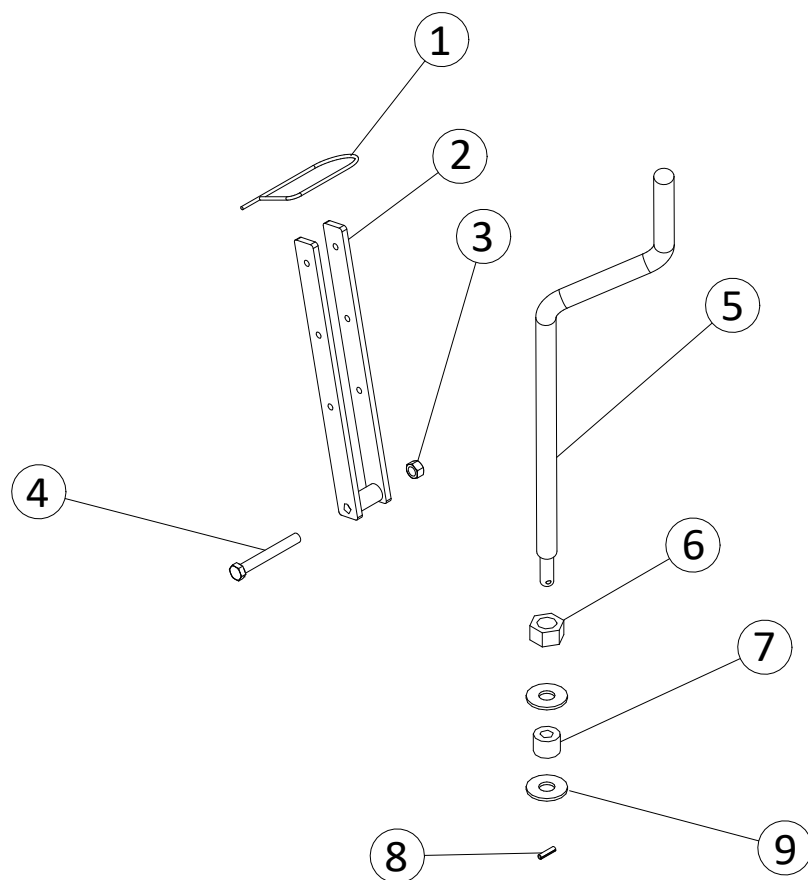
## Row Unit Gauge Wheel Assembly #290350



Ref.	Part No.	Description
1	090164	Tire, 15 x 6.00 x 6NHS 4 Ply
2	082166	Tapered Bearing LM 11949
3	096203	SE-11 Seal
4	290131	Gauge Wheel Spacer
5	290355	Gauge Wheel Yoke (Vertical)

Ref.	Part No.	Description
6	020174	1" NC Slotted Hex Nut
7	290145	Axle Pin 2015/25
8	020832	3/16" x 2" Cotter Pin
-	096203	Oil Seal
-	021327	Bushing 1" Narrow 10 ga.

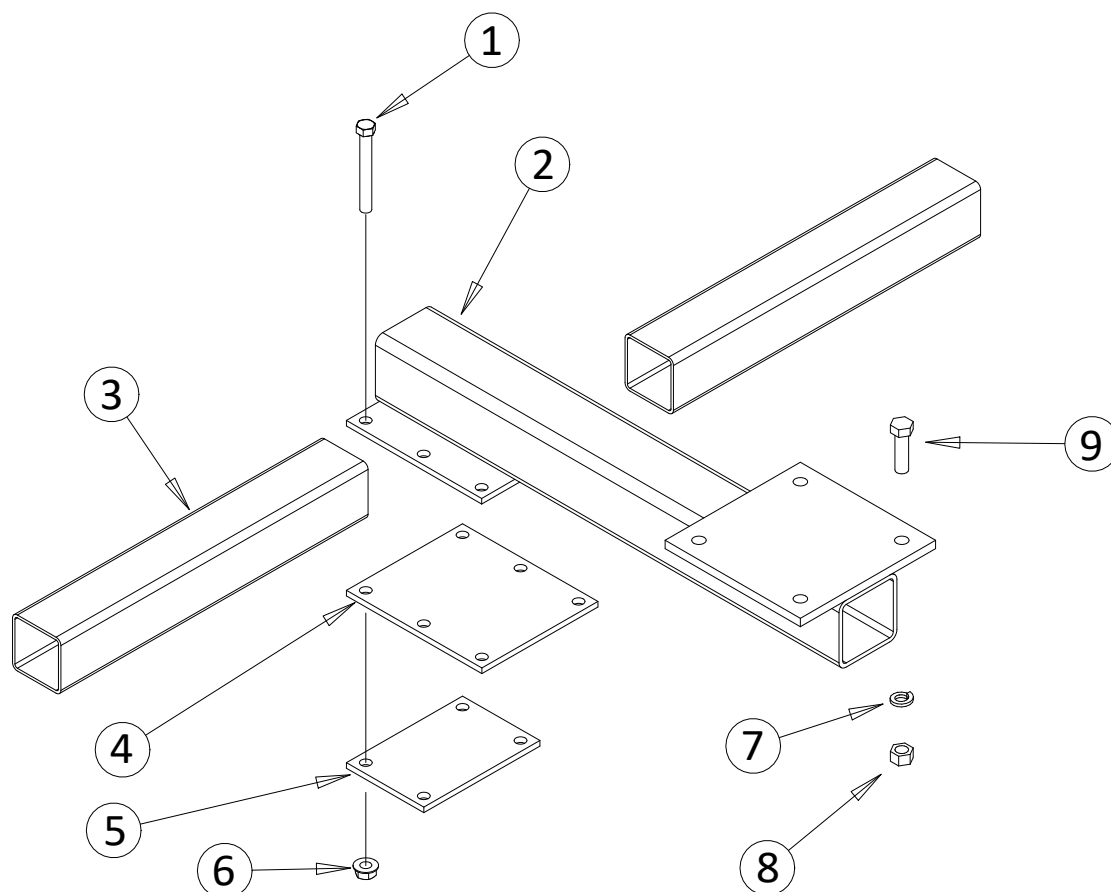
## Gauge Wheel Adjusting Crank



Ref.	Part No.	Description
1	021100	Safety Pin
2	290140	Crank Lock Weldment
3	020423	Nut, 3/8" Centerlock
4	020033	Bolt, 3/8" x 3"
5	095058	Gauge Wheel Crank Plated

Ref.	Part No.	Description
6	095057	3/4" Acme Nut
7	290316	Crank Spacer
8	020960	Roll Pin, 3/16" x 3/4"
9	021310	1/2" 14 ga. Washer

## Front Tube

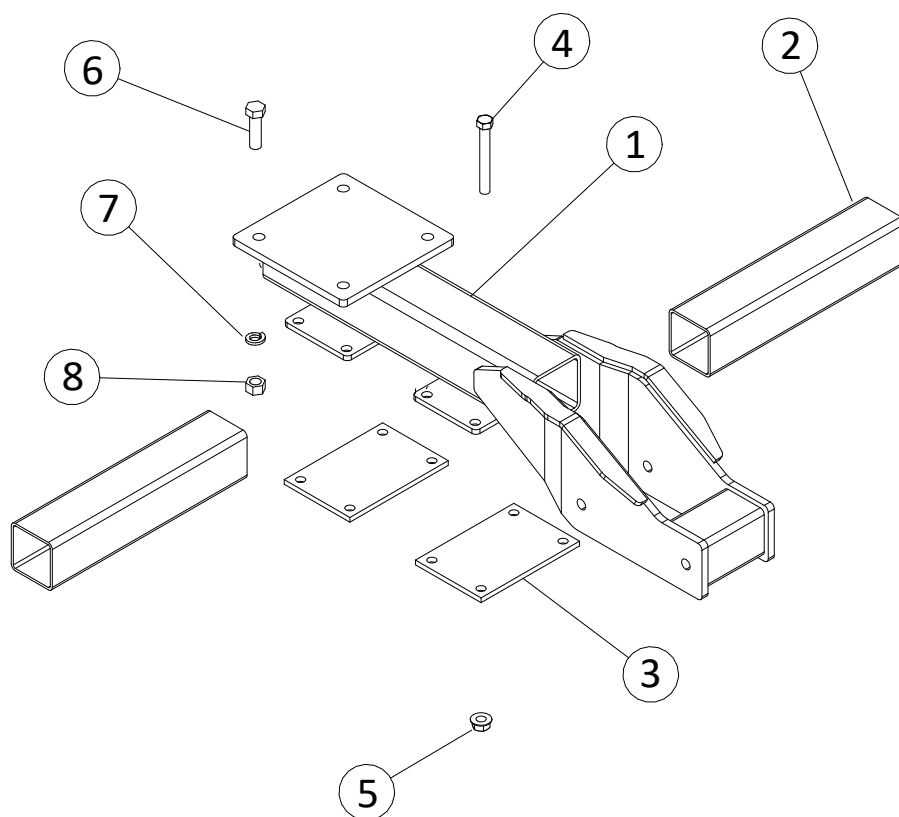


Ref.	Part No.	Description
1	020045	Bolt, 7/16 x 3-½"
2	290360	Front Tree Tube Weldment (Straight)
3	200700	Front Tree Cross Tube
4	290223	Tree Tube Back Plate (2 Tubes)
5	290216	Tree Tube Back Plate (1 Tube)

Ref.	Part No.	Description
6	020481	Nut, 7/16" Flange
7	020504	Washer, ½" Lock
8	020404	Nut, ½"
9	020152	Bolt, ½" x 1 ¾"



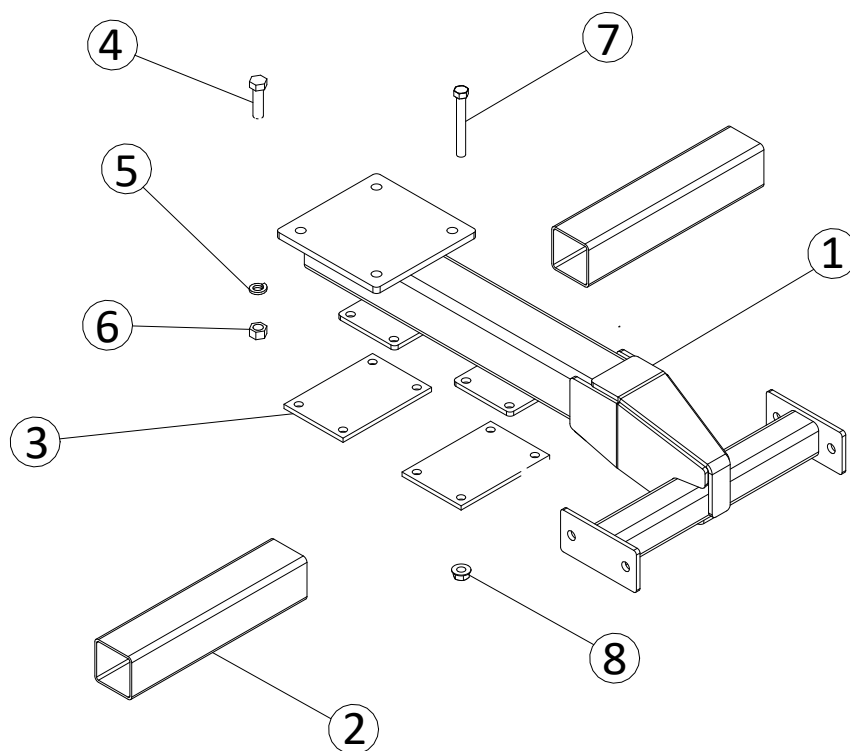
## 2015 Rear Tube



Ref.	Part No.	Description
1	290345	2015 Rear Tree Tube Weldment
2	200800	Back Cross Tree Tube
3	290216	Tree Tube Back Plate (1 Tube)
4	020045	7/16" x 3-1/2" Bolt

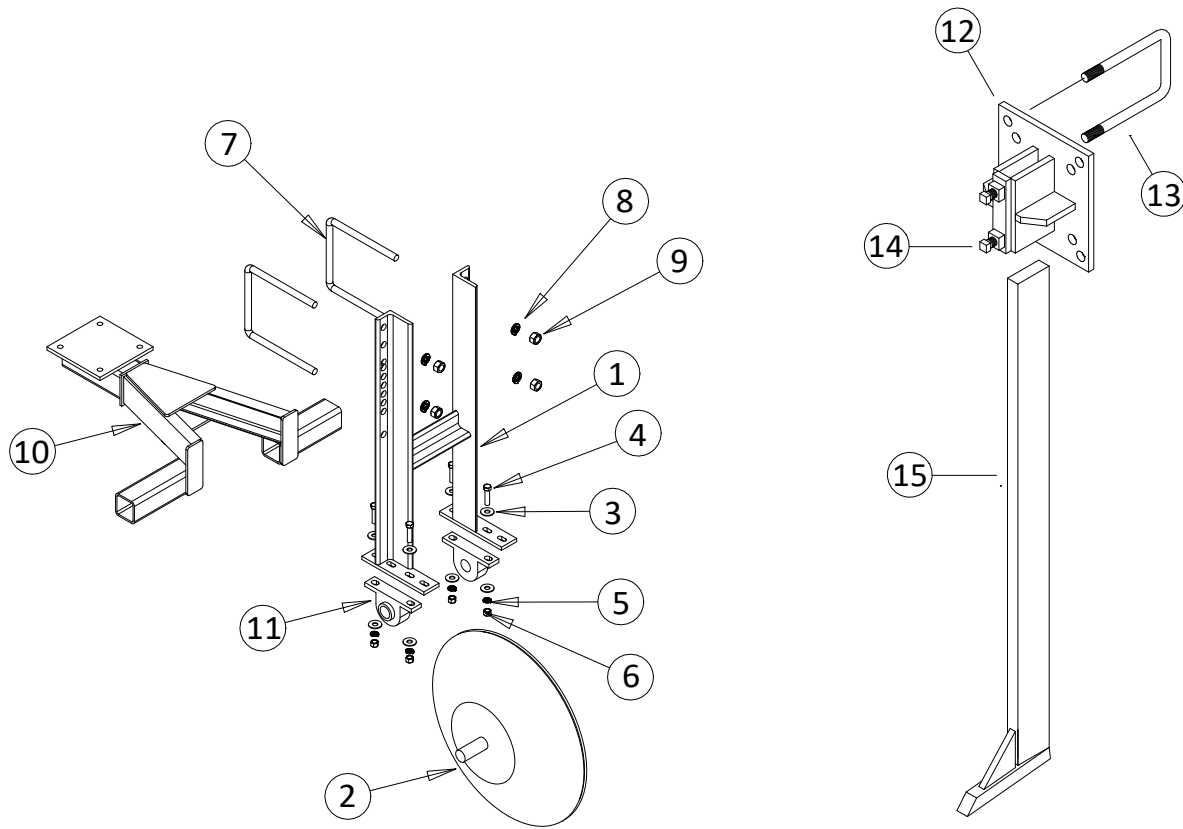
Ref.	Part No.	Description
5	020481	7/16" Serrated Flange Nut
6	020152	1/2" x 1-3/4" Bolt
7	020504	1/2" Lock Washer
8	020404	1/2" NC Nut

## 2025 Rear Tube



Ref.	Part No.	Description
1	290340	2025 Rear Tree Tube Weldment
2	200800	Back Cross Tree Tube
3	290216	Tree Tube Back Plate (1 Tube)
4	020152	1/2" x 1-3/4" Bolt

Ref.	Part No.	Description
5	020504	1/2" Lock Washer
6	020404	1/2" NC Nut
7	020045	7/16" x 3-1/2" Bolt
8	020481	7/16" Serrated Flange Nut



## 2015/25 Guide Cone Package #290001

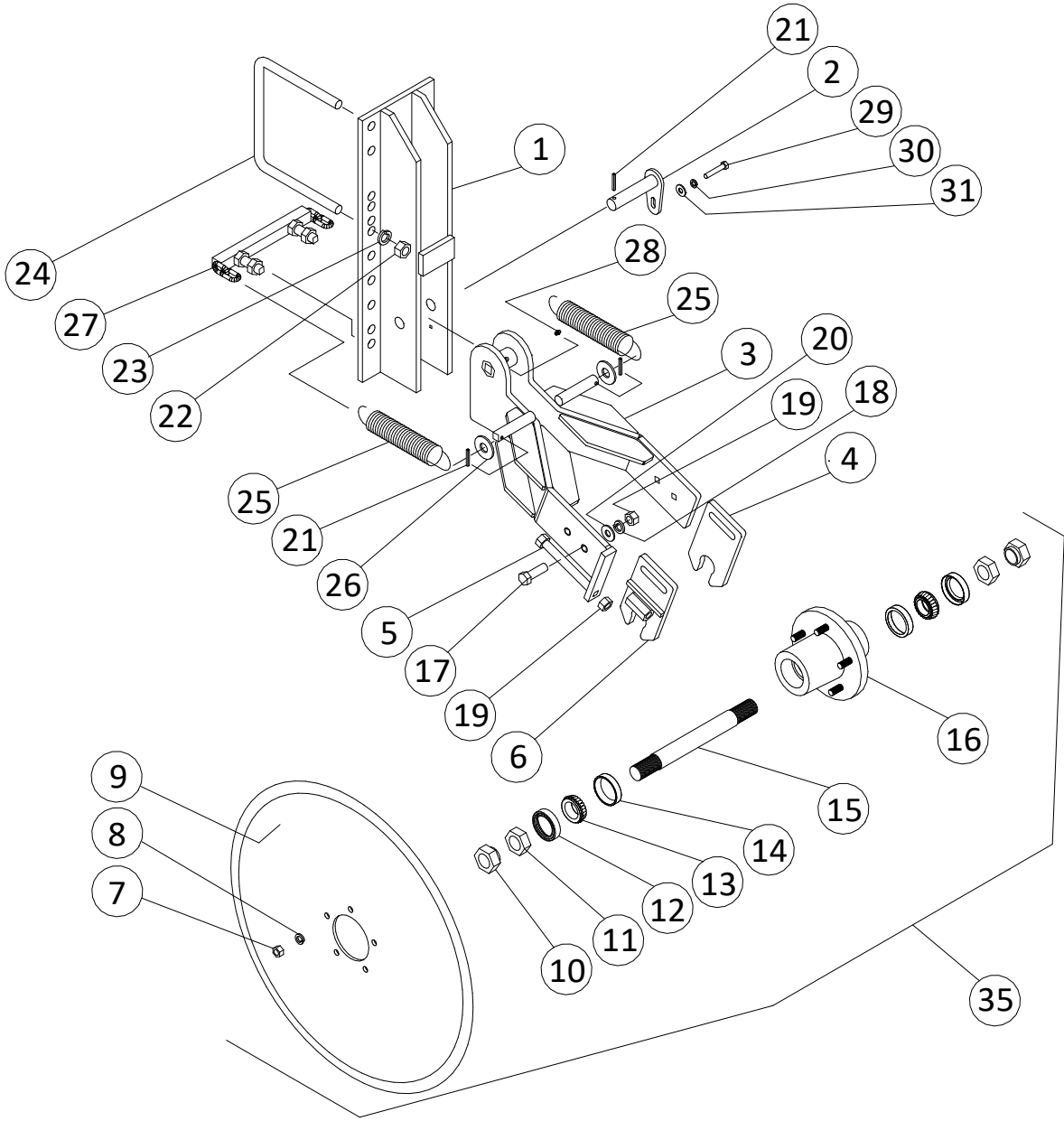
Ref.	Part No.	Description
1	224100	Steel Guide Wheel Mount
2	224510	Steel Guide Wheel w/ 1-1/4\" Bearings
3	020514	7/16\" Flat Washer
4	020117	7/16\" x 1-3/4\" Hex Head Bolt
5	020503	7/16\" Regular Lock Washer

Ref.	Part No.	Description
6	020403	7/16\" Hex Nut
7	021036	U-Bolt, 5/8\" X 7\" X 8 1/2\"
8	020506	5/8\" Regular Lock Washer
9	020406	5/8\" Hex Nut
10	290365	Front Tube Weldment (Guide Cone)
11	094040	1-1/4\" Pillow Block Assembly

## Chisel Marker Assembly #223200

Ref.	Part No.	Description
12	222200	Chisel Marker Clamp
13	021012	U-Bolt, 5/8\" X 5\" X 8 1/2\" (5 X 7 Toolbar)
-	021036	U-Bolt, 5/8\" X 7\" X 8 1/2\" (7 X 7 Toolbar)
14	021360	Set Screw, 5/8\" X 1 3/4\" Sq. Hd.
15	222100	Chisel Marker Shank

**Stabilizer Disc Spring Loaded  
#229490**

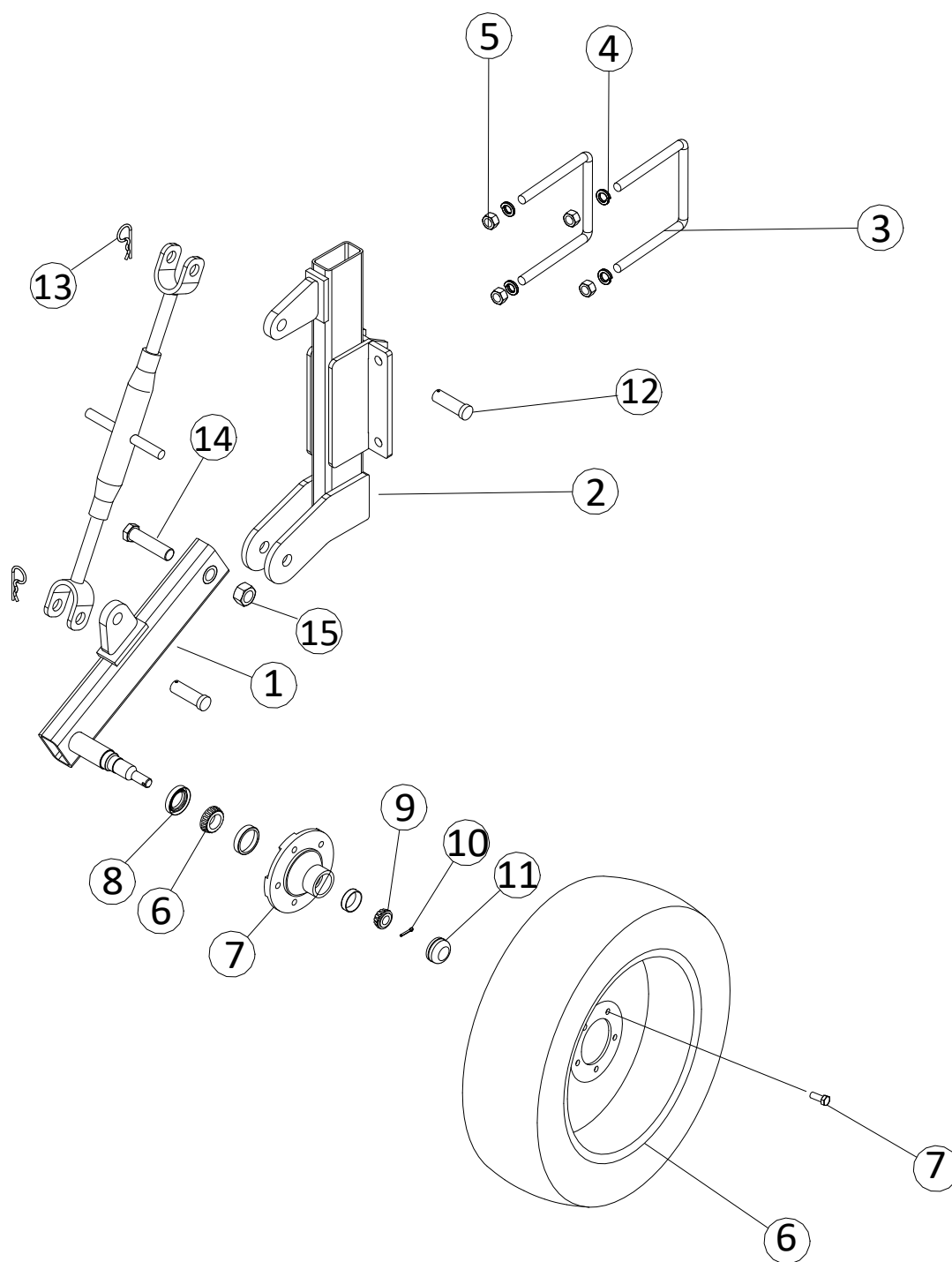


## Stabilizer Disc Spring Loaded #229490

Ref.	Part No.	Description
1	229555	Cushion Disc Mount
2	229505	Stabilizer Pivot Pin
3	229550	Cushion Disc Frame Weldment
4	229535	Disc Hub Mount
5	229508	Adjuster Rod
6	229530	Disc Hub Mount W/Nut
7	020405	Nut, ½" NF
8	020504	Washer, ½" Lock
9	090030	27" Flat Coulter Blade
10	127660	Nut, 1 ¼" Shoulder
11	020461	Nut, 1 ¼" NF Jam
12	095086	SE 13 Oil Seal Cr
13	095094	Cone Bearing
14	095093	Bearing Cup
15	090004	Spindle Dbl. Yoke 1 3/8" X 11"
16	090003	Double Yoke Hub W/Cup

Ref.	Part No.	Description
17	090065	Bolt, 5/8" X 2"
18	020506	Washer, 5/8" Lock
19	020406	Nut, 5/8"
20	020536	Washer, 5/8" Flat
21	020965	Roll Pin, ¼" X 1 ½"
22	020407	Nut, ¾"
23	020507	Washer, ¾" Lock
24	021018	U-Bolt, ¾" X 7" X 6 ½"
25	021508	Spring, Disc Opener
26	021335	Washer, 10 Gauge 7/8"
27	229540	Spring Mount
28	095035	Grease Zerk, 1/8" NPT
29	020029	Bolt, 3/8" X 1" NC
30	080004	Washer, 3/8" Lock
31	020513	Washer, 3/8" Flat

## Support Wheel Pair w/Tires #270330

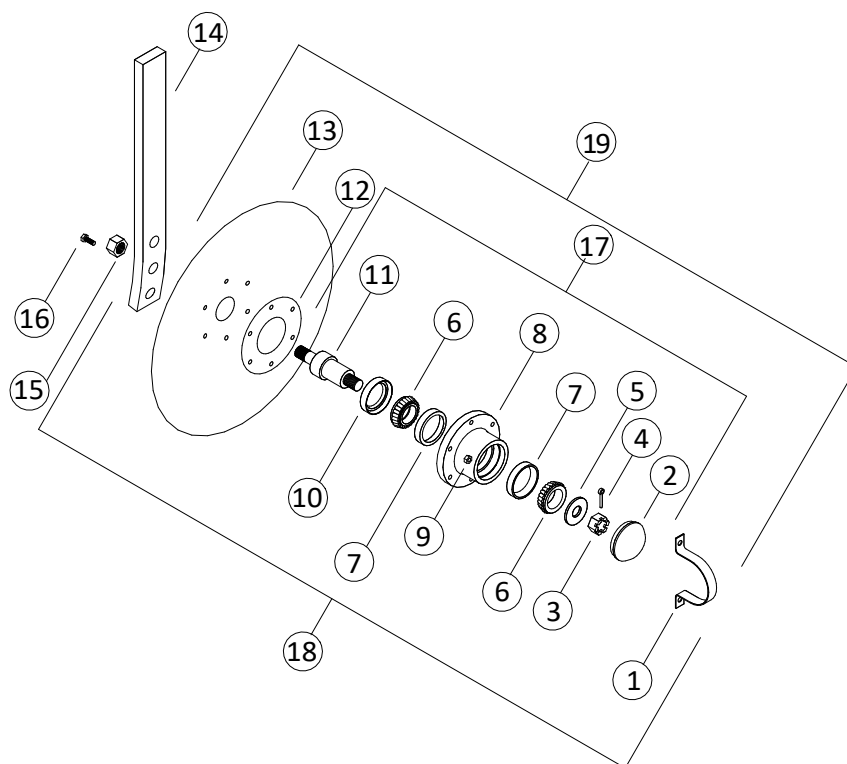


## Support Wheel Pair w/Tires #270330

Ref.	Part No.	Description
1	270348	Gauge Wheel Arm Left
-	270355	Gauge Wheel Arm Right
2	270320	Gauge Wheel Arm Weldment
3	021037	U-Bolt, $\frac{3}{4}$ x 7 x 8 1/2
4	020507	$\frac{3}{4}$ " Lock Washer
5	020407	$\frac{3}{4}$ " Nut, Hex
6	095020	Tapered Bearing LM67048 Cone
7	090012	HA511 Hub w/ Cup

Ref.	Part No.	Description
8	095025	Seal, SE-11
9	095019	Bearing LM11949 Cone
10	020827	Cotter Pin 5/32 x 1"
11	090013	Dust Cap, DC-12
12	020898	Clevis Pin 1 x 3
13	020915	#6 Bridge Pin 3/16"
14	020104	Bolt, Hex 1" x 4"
15	223710	Tire-Rim Assembly, 5 Hole

# Hiller Disc Assembly Double Bearing #211840

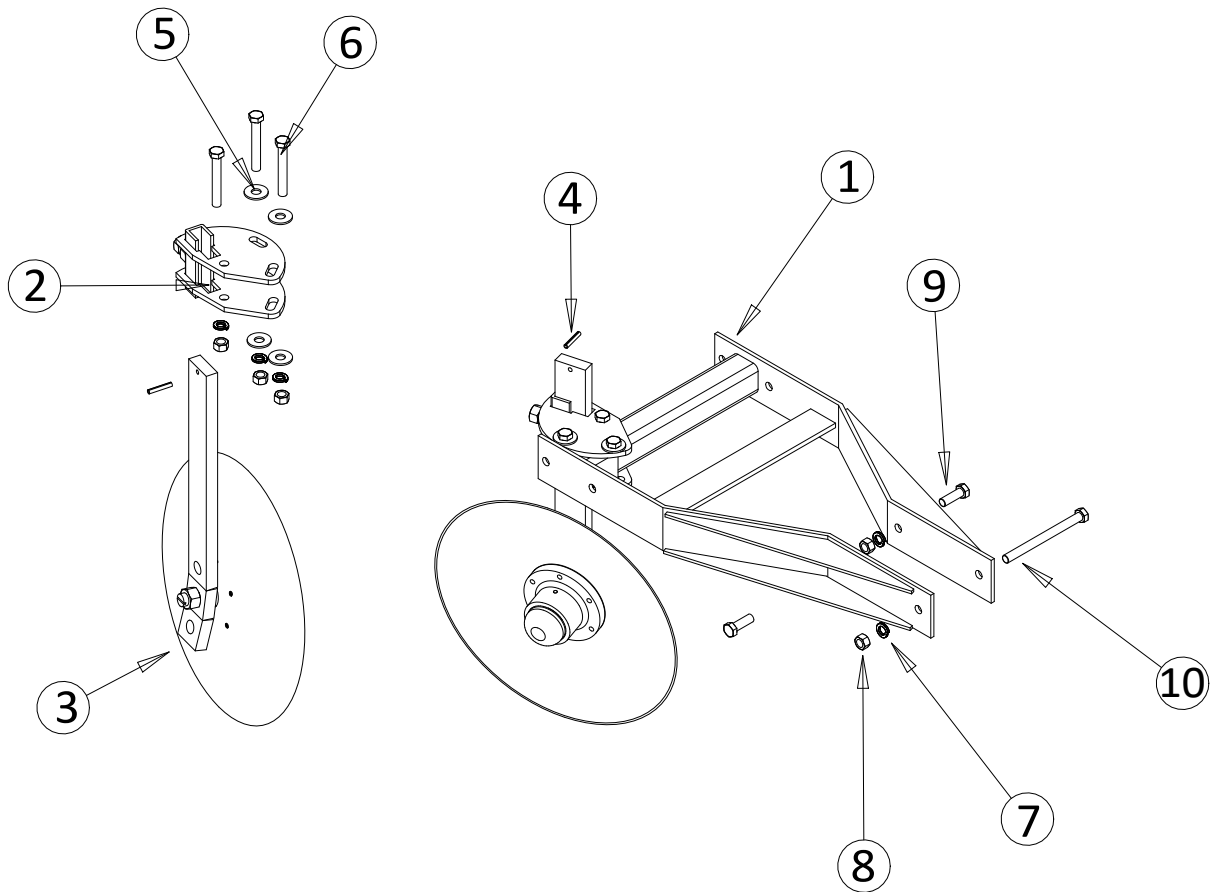


Ref.	Part No.	Description
1	211876	Dust Cap Strap
2	090015	Dust Cap
3	020490	Castle nut
4	020827	Cotter pin
5	020517	Washer
6	095020	Bearing
7	095069	Bearing cup
8	090210	Hub Casting
9	020421	1/4" lock nut
10	095115	Double Lip Seal
11	211875	Spindle

Ref.	Part No.	Description
12	095045	Gasket
13	090024	16" Disc
-	090023	14" Disc
14	211660	Hiller Shank
15	020415	3/4" nut
16	020003	1/4" bolt
17	211870	Hub Assembly
18	211840	Disc Assy.w/shank
19	211845	Disc with Hub
21	020003	1/4" x 1-1/4" bolt



## 2015 Hiller Discs



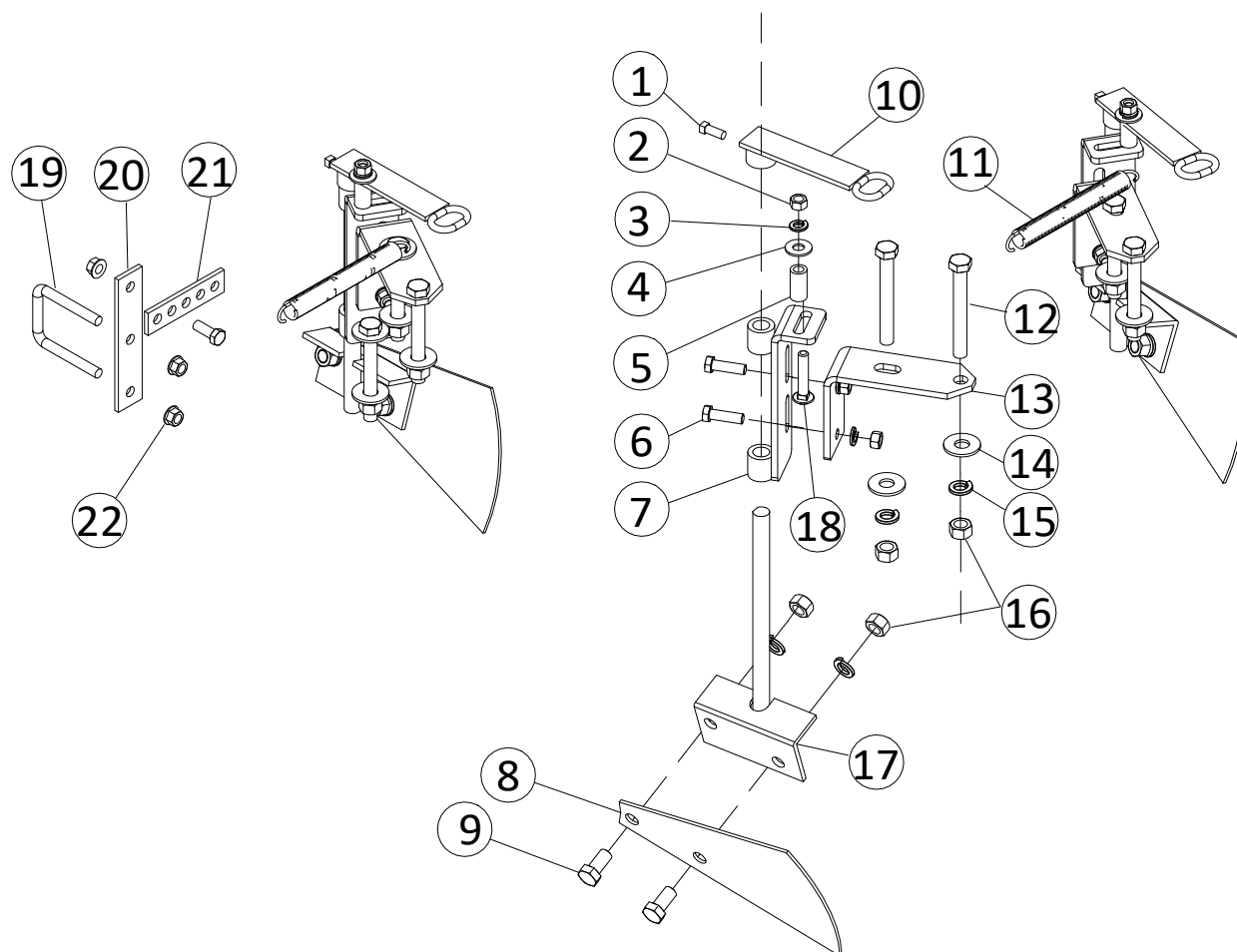
Ref.	Part No.	Description
1	290230	2015 Disc Mount Weldment
2	211930	Disc Clamp
3	211840	Disc Assy. W/ Shank (Double Bearing)
4	020965	1/4 x 1-1/2" Spring Lock Pin
5	020515	1/2" Flat Washer

Ref.	Part No.	Description
6	020057	1/2 x 3-1/2" Hex Head Bolt
7	020504	1/2" Regular Lock Washer
8	020404	1/2" Hex Nut
9	020052	1/2" x 1-1/2" Grade 5 Bolt
10	020062	1/2" x 6" Grade 5 Bolt

# Hiller Disc Scraper

## #212900 – Scraper Pair

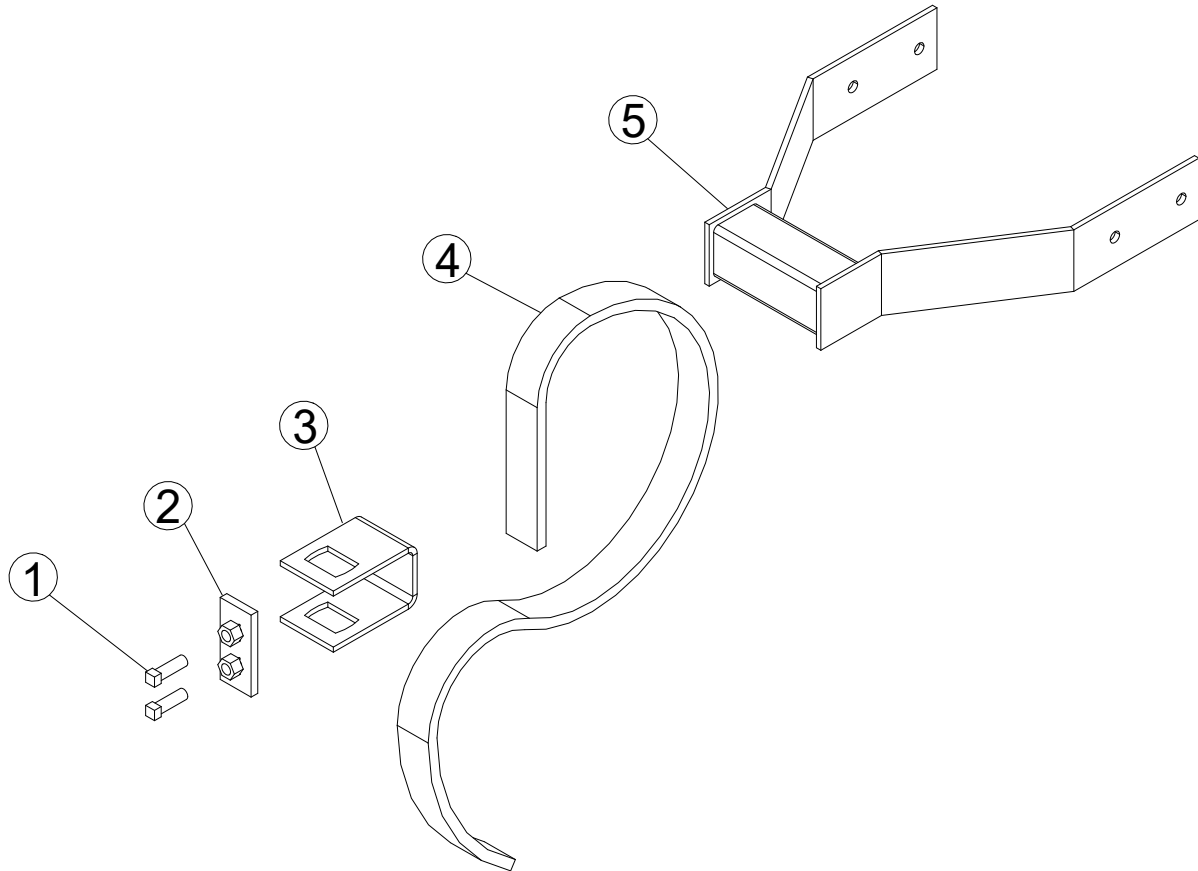
### #212901 - Guess Row Mount



Ref.	Part No.	Description
1	021361	Set Screw, Square 5/16" x 3/4"
2	020402	Nut, 3/8"
3	020502	Washer, 3/8" Lock
4	020513	Washer, 3/8 flat
5	212913	Scraper Adjustment Stop Tube
6	020120	Bolt, 3/8 x 1 1/4"
7	212915	Scraper Height Adj. Weldment Left
8	090161	Scraper Blade
9	020050	Bolt, 1/2 x 1"
10	212920	Spring Tension Weldment
11	096007	Spring, Extension
12	020058	Bolt, 1/2 x 4"

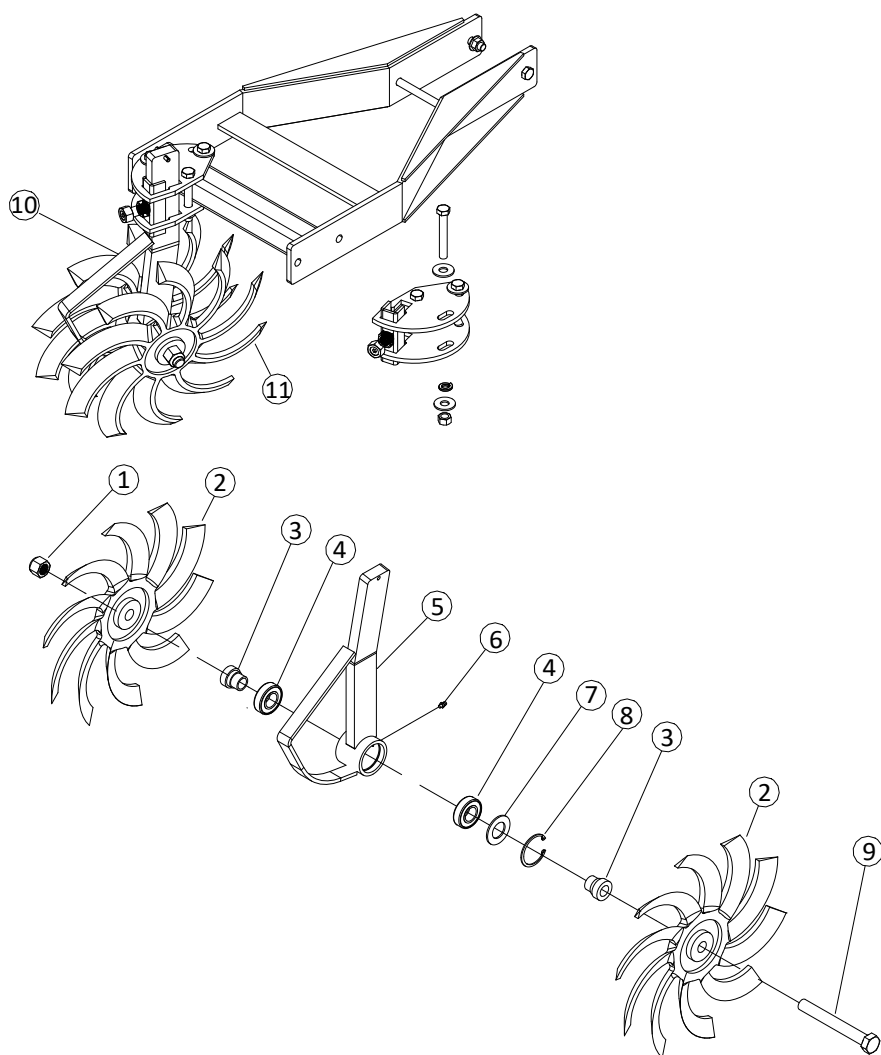
Ref.	Part No.	Description
13	212910	Scraper Mount Flat
14	020515	Washer 1/2" Flat
15	020504	Washer, 1/2 Lock
16	020404	Nut, 1/2" NC
17	212905	Scraper Mount Weldment Left
-	212930	Scraper Mount Weldment Right
18	020630	Bolt, 3/8 x 2"
19	021024	U-Bolt, 3/8 x 2 x 3"
20	212903	Scraper Spring Adj Flat Plate
21	212904	Scraper Spring Adj Flat
22	020471	Nut, 3/8" Flange

## 2015/25 Chisel Cleaner



Ref.	Part No.	Description
1	021365	Set Screw, ½" x 1 ½"
2	201034	Squeeze Plate
3	201036	Vertical Clamp Strap
4	212115	Vertical S-tine
5	290240	Cleaner Weldment

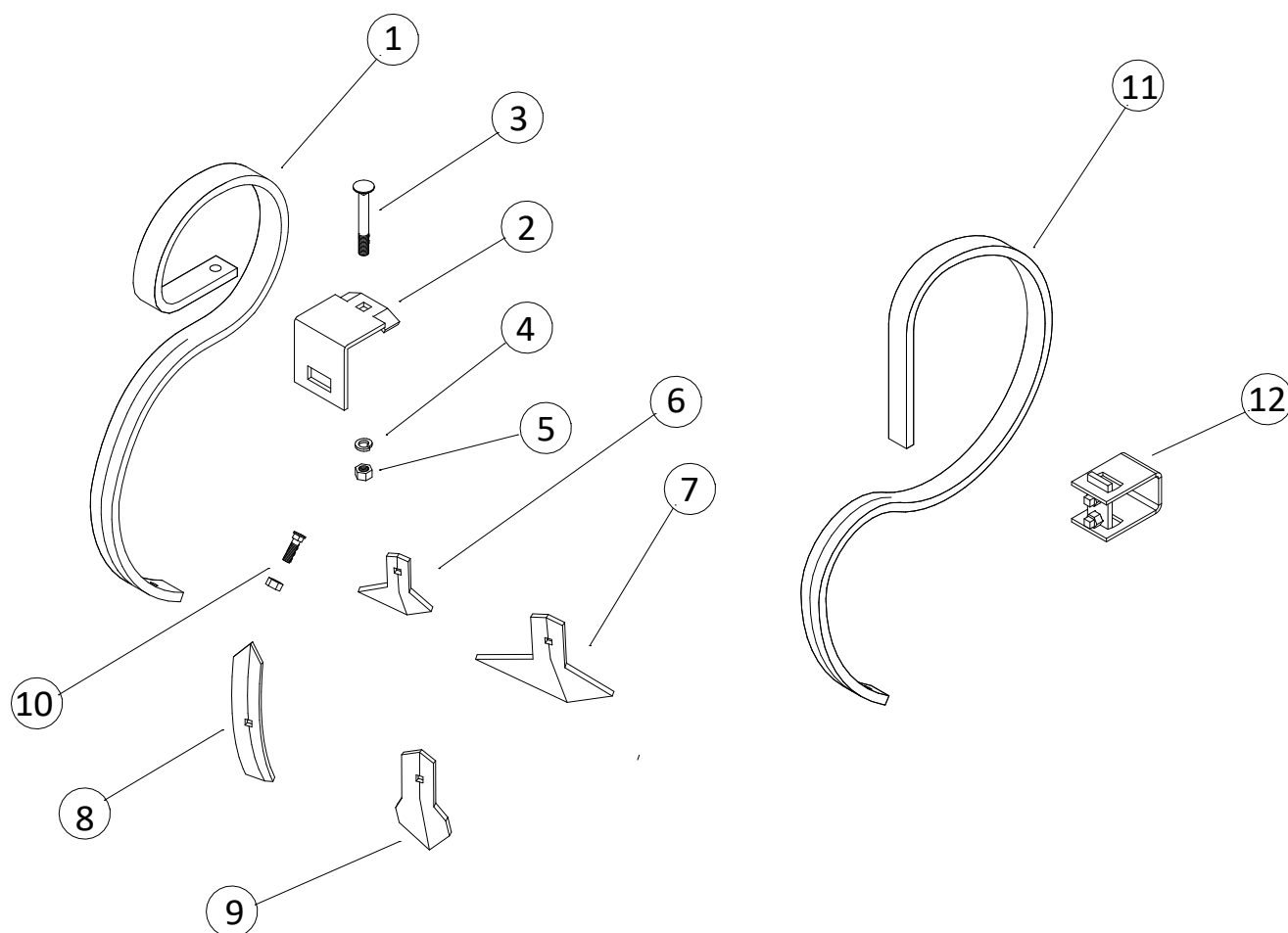
## Spider Accessories



Ref.	Part No.	Description
1	020432	3/4" Nylock Nut
2	211675	Spider, Right
3	095104	Hub Bushing
4	095101	Hub Bearing
5	211685	Spider Shank Weldment Right
6	095036	Zerk, Straight 1/4-28

Ref.	Part No.	Description
7	095102	Seal
8	095103	Snap Ring
9	020094	Bolt, Hex 3/4" x 6"
10	211686	Spider Shank Weldment Left
11	211676	Spider, Left

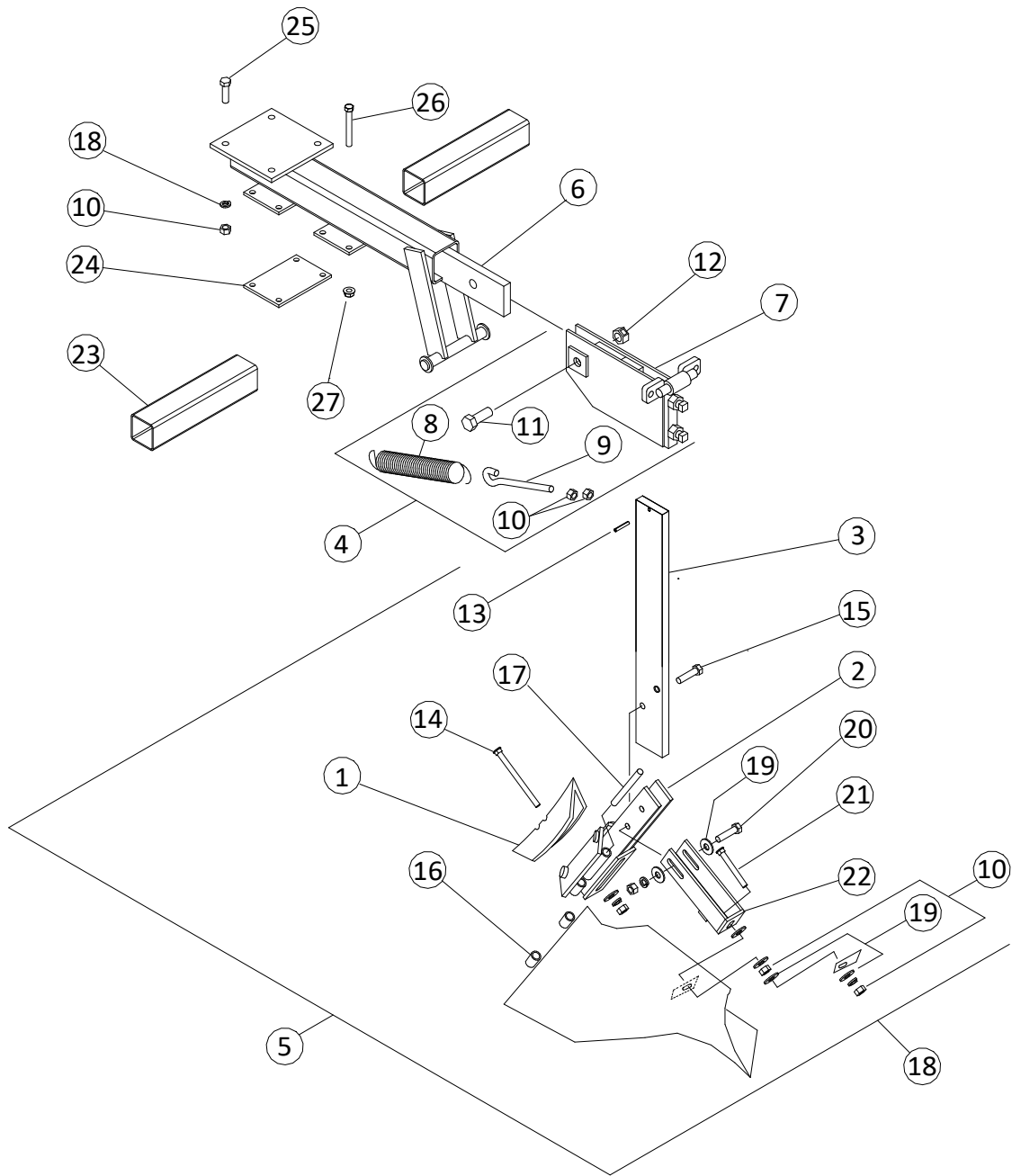
## Shanks & Shovel Options



Ref.	Part No.	Description
1	212105	Heavy S-tine
2	201000	2-1/2" S-Tine clamp
3	020658	Carriage bolt 1/2" X 4"
4	020504	1/2" Lock Washer
5	020404	1/2" NC Nut
6	212600	Shovel, 4" Heart Shaped

Ref.	Part No.	Description
7	212500	Shovel, 7"
8	212200	1-1/2" S-Tine Shovel
9	212300	Shovel, 2-3/4"
10	213800	Shovel Bolt with Nut
11	212115	Vertical S-Tine
12	201040	Vertical Clamp

# Hiller Wing Attachment

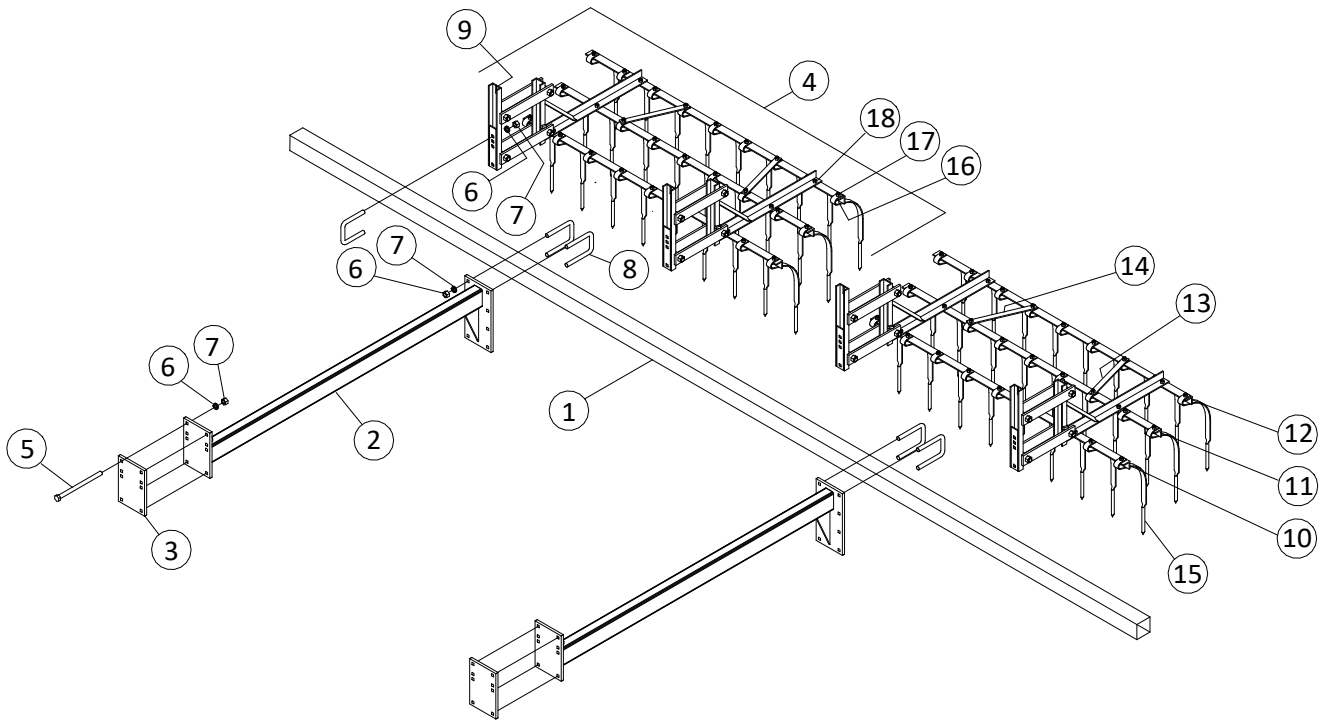


# Hiller Wing Attachment #1547

Ref.	Part No.	Description
1	095139	Hiller Shovel (Ag Mate)
2	204055	Hiller Wing Mount Weldment
3	204032	Hiller Plow Shank 27" Note
4	204000	Hiller Plow Trip Assembly
5	204040	Hiller Plow Shank Assembly
6	290285	Hiller Plow Frame Weldment
7	204020	Plow Shank Pivot Mount Weldment
8	095084	Extension Spring
9	300700	1/2" x 8" Eyebolt
10	020404	Nut, 1/2" NC
11	020083	Bolt, 3/4" x 2-1/2" NC GR #5
12	020428	Nut, 3/4" NC Lock
13	020967	1/4" x 2" Spring Lock Pin Plain
14	020657	Bolt, 1/2" x 5" NC GR 5 Carriage

Ref.	Part No.	Description
15	020053	Bolt, 1/2" x 2" NC GR #5
16	095136	Plow Hiller Blade Left
-	095137	Plow Hiller Blade Right
17	204064	Wing Pin
18	020504	Washer, 1/2" Lock
19	020515	Washer, 1/2" Flat
20	020053	Bolt, 1/2" x 2
21	020655	Bolt, 1/2" x 2-1/2" Carriage
22	204060	Hiller Wing Bracket Weldment
23	200800	Back Cross Tree Tube
24	290216	Tree Tube Back Plate (1 Tubes)
25	020152	1/2" x 1-3/4" Hex Head Bolt
26	020045	7/16" x 3-1/2" Bolt
27	020481	7/16" Serrated Flange Nut

## Culti-Weeder Accessory

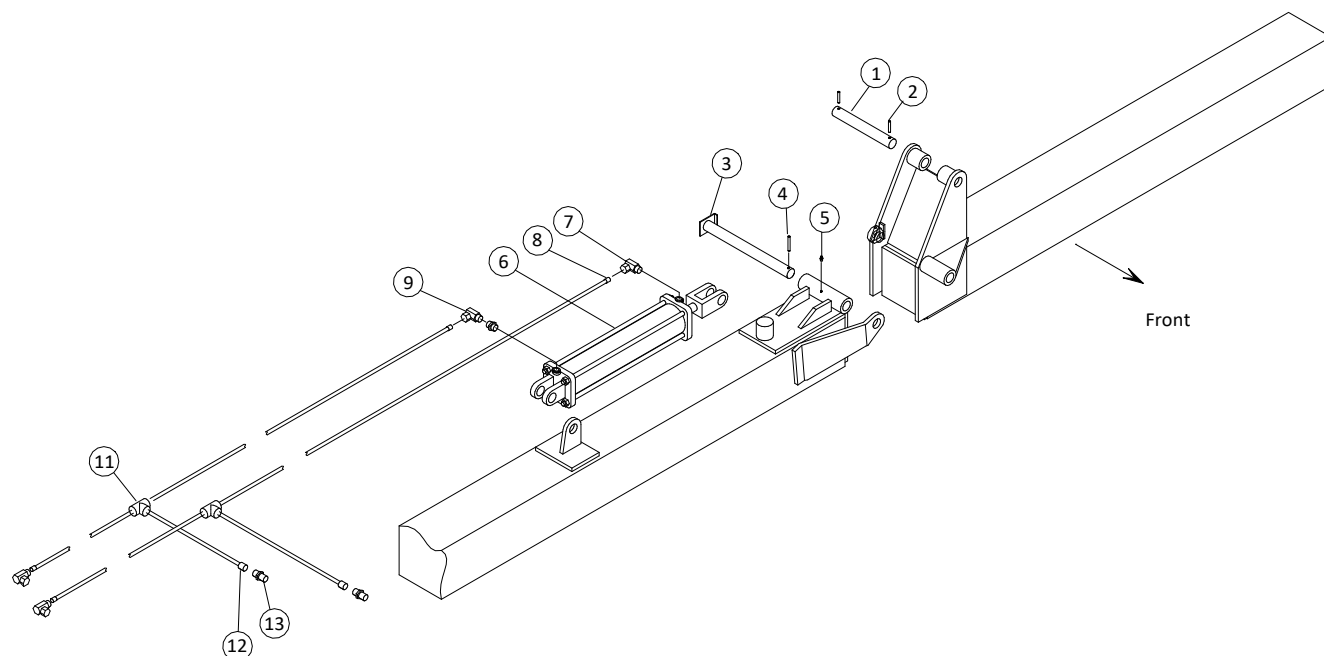


Ref.	Part No.	Description
1	110010	3" X 3" X 1/8" 20' Tool Bar
2	128100	Culti-Weeder Mount Bracket
3	128600	1/2" X 6" Mounting Plate
4	125072	72" Weeder Section
5	020076	Bolt, 5/8" X 9" NC GR 5
6	020406	Nut, 5/8" NC
7	020506	Washer, 5/8" Lock
8	021008	U-Bolt, 5/8" X 3" X 5"
9	125100	Parallel Linkage Assembly

Ref.	Part No.	Description
10	125600	Section Angle Front 72"
11	125700	Section Angle Center 72"
12	125800	Section Angle Rear 72"
13	126600	Sway Brace 11-1/2"
14	126500	Sway Brace 12"
15	126400	Weeder Teeth
16	020111	Bolt, 3/8" x 7/8" NC
17	020471	Nut, 3/8" Flange NC
18	020482	Nut, 3/8" NC Nylock



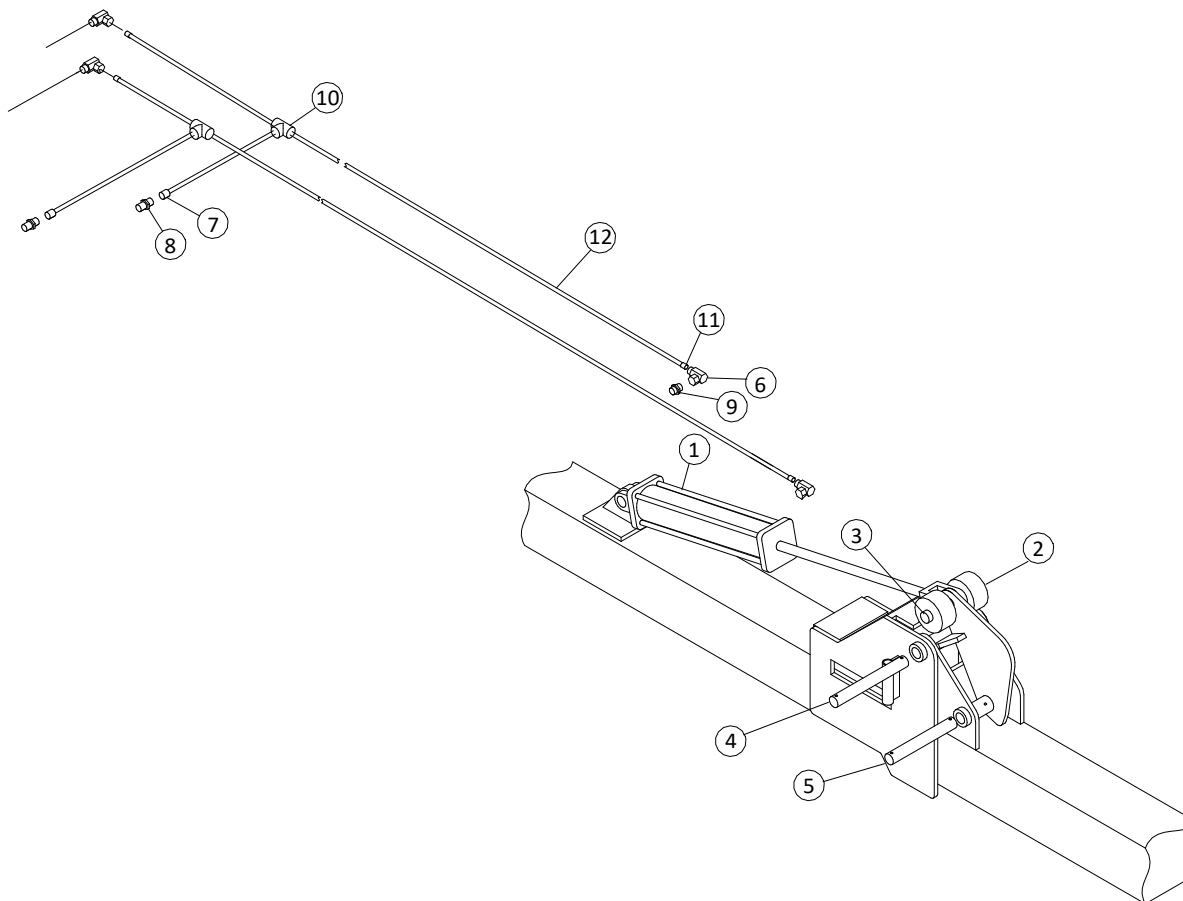
## 90° Fold Package #111750



Ref.	Part No.	Description
1	111717	Cylinder Pin
2	020965	1/4" x 1-1/2" Spring Lock Pin
3	111610	Hinge Pin
4	020967	1/4" x 2" Spring Lock Pin
5	095036	1/4" 28 Straight Zerk
6	096126	4" x 16" Cylinder
7	095155	1/2" Hose 90 Swivel 3/4-16 JIC

Ref.	Part No.	Description
8	083019	3/4-16 JIC Swivel Female 1/2" Hose
9	096290	Restrictor
10	095009	1/2" Hydraulic Hose
11	083025	Tee
12	095277	ORB (3/4-16) Solid 1/2" Hose End
13	096289	Pioneer 3/4 ORB

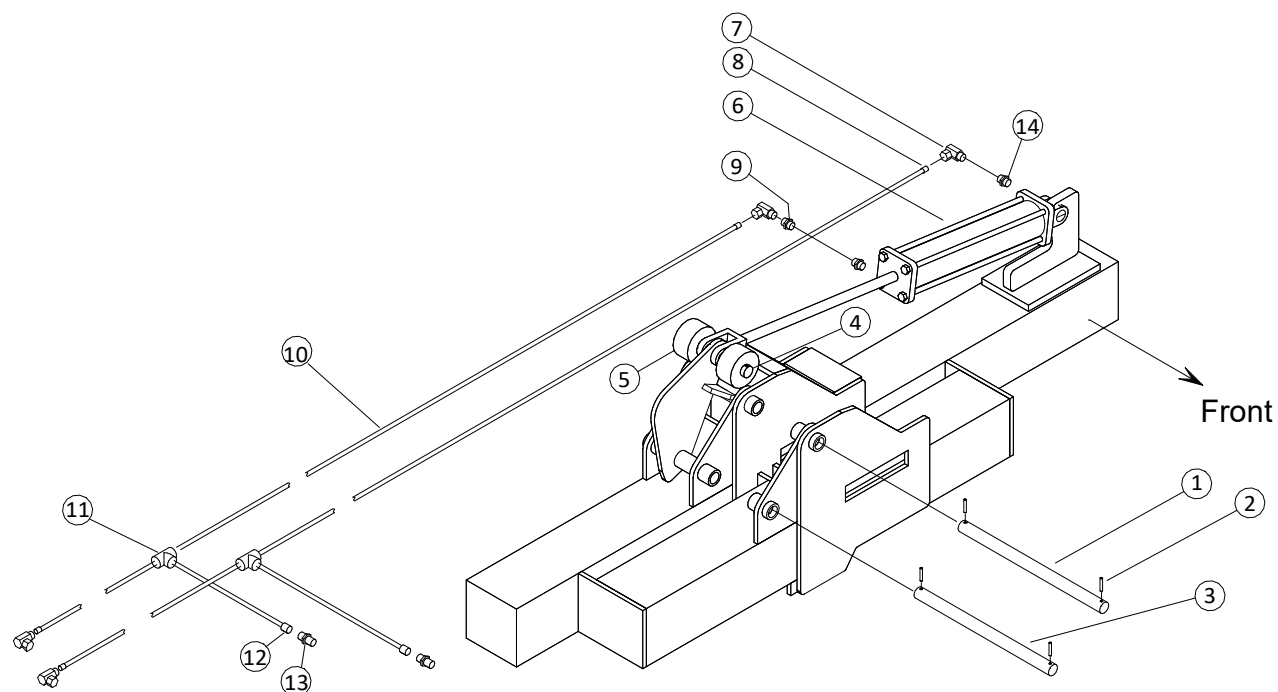
## 180° Fold Package #111755



Ref.	Part No.	Description
1	096126	Hyd. Cylinder, 4 x 16"
2	111781	4" O.D. Roller
3	111782	Roller Pin 9" Long
4	111784	Top Pin (Single Bar)
5	111786	Lower Pin (Single Bar)
6	095155	½" Hose 90 Swivel ¾-16 JIC

Ref.	Part No.	Description
7	095277	ORB (3/4-16) Solid ½" Hose End
8	096289	Tip, Pioneer ¾" ORB
9	096290	Restrictor
10	083025	Tee
11	083019	¾-16 JIC Swivel Female ½" Hose
12	095009	½" Hydraulic Hose

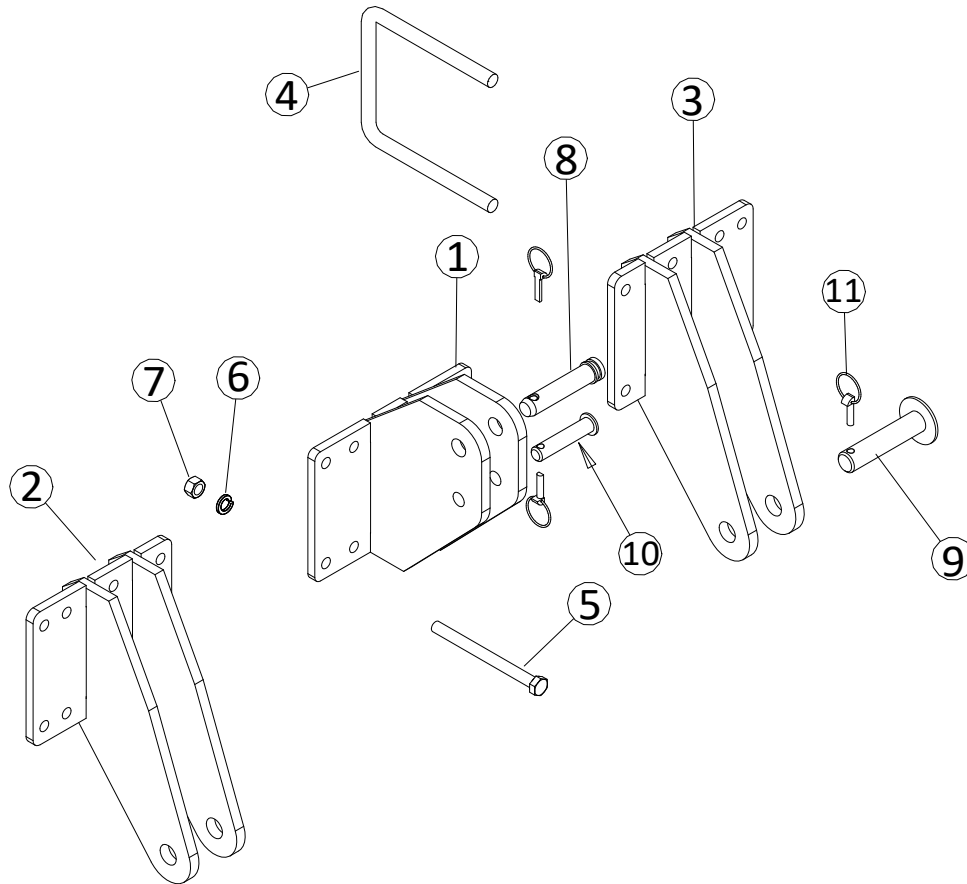
# **180° Fold Pkg. (Double Bar)** **#111760**



Ref.	Part No.	Description
1	111783	Top Pin (Double Bar)
2	20967	Roll Pin ¼" x 2"
3	111785	Lower Pin (Double Bar)
4	111782	Roller Pin
5	111781	4" OD Roller
6	96138	Hyd. Cylinder, 5" x 16"
7	95155	½" Hose 90° Swivel ¾-16 JIC

Ref.	Part No.	Description
8	083019	¾-16 JIC Swivel Female ½" Hose
9	096290	Restrictor
10	095009	½" Hydraulic Hose
11	083025	Tee
12	095277	ORB (3/4-16) Solid ½" Hose End
13	096289	Tip, Pioneer ¾ ORB 8010-15
14	096214	Connector, JIC #8 to O-ring #12

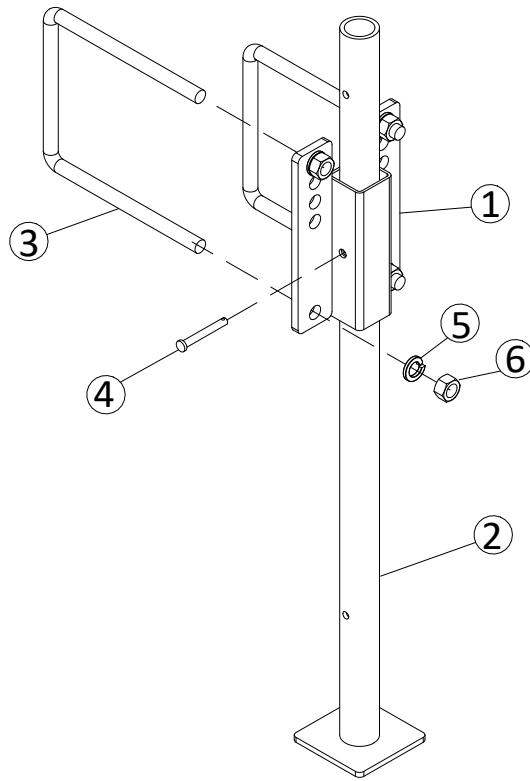
## 3-Point Assembly #270450



Ref.	Part No.	Description
1	270440	Upper 3-Point Weldment
2	270420	Lower Right 3 Point Weldment
3	270430	Lower Left 3-Point Weldment
4	021037	3/4" x 7" x 8-1/2" U-Bolt
5	020093	3/4" x 9" Bolt
6	020507	3/4" Regular Lock Washer

Ref.	Part No.	Description
7	020407	3/4" Hex Nut
8	095263	Top Link Pin Category 3 (P7711)
9	228400	Category 3 Bottom 3 Point Pin
10	220900	Top 3 Point Pin
11	095032	7/16" Lynch Pin

## Parking Stand #223300



Ref.	Part No.	Description
1	222500	Parking Stand Mount
2	222600	Parking Stand Leg
3	021036	U-Bolt 5/8 x 7 x 8 1/2"
4	020868	Pin, Clevis 5/16 x 2 1/2"
5	020506	Washer, 5/8" Lock
6	020406	Nut, 5/8"





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