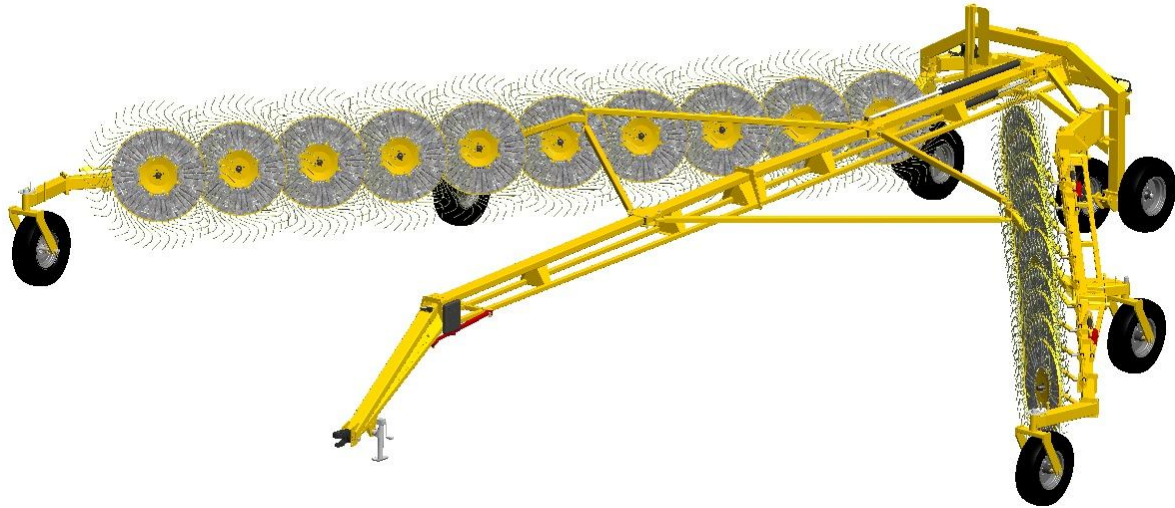




**BRIDGEVIEW MFG. INC.**



## **BALE KING VR483**

### *Hay Rake*

### *Operator's & Parts Manual*

Last Updated: April 27, 2015



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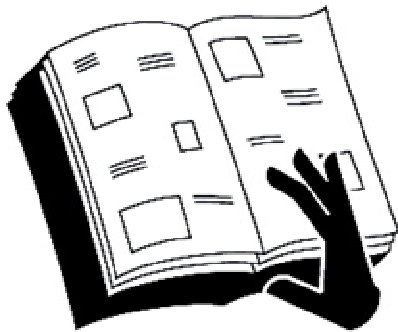
*Bridgeview Manufacturing Inc.*



**Your Authorized Dealer**

**Your Serial Number**

The Serial Number is located on the front of the hitch beam behind the manual holder.

	<div data-bbox="808 1507 1302 1600"><b>⚠ WARNING</b></div> <div data-bbox="812 1633 1302 1879"><p><b>Failure to read and understand operator's manual &amp; all safety signs could result in serious injury. Manual must remain with machine.</b></p></div>
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## INTRODUCTION

Thank you for purchasing your new **Bale King VR483 Hay Rake** from Bridgeview Manufacturing. With the proper operation and service as outlined in this manual, this rake will provide years of trouble free operation.

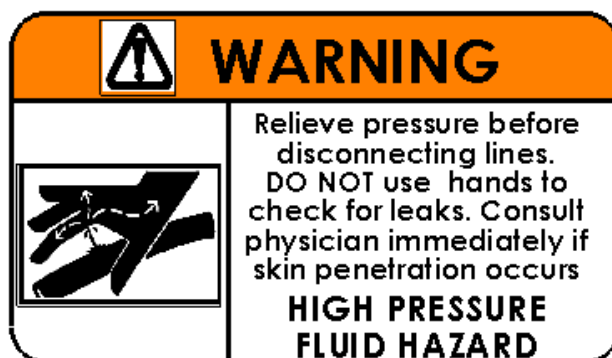
The VR483 Hay Rake is an 18-wheel, V-style rake specially suited for mowed hay. An optional 20-wheel extension kit is available, if more coverage is desired. The rear windrow width is hydraulically adjustable for ease of use. The width compensation system ensures maximum raking width, no matter what the windrow width is set at. The ground following rake boom ensures that raking quality is maintained even over rough terrain.

This is a complete safety, operation, and parts manual for the VR483. This manual covers in detail how to safely and effectively use the rake and these steps should be followed to ensure safety and the longevity of the machine. The parts manual covers all of the parts you may need to order in case of accident or breakdown.

### ***Safety Precautions***

**The following safety precautions MUST be followed to ensure the safe operation of the VR483 hay rake.**

- This trailed machine was designed and intended for on-farm use only. **Tow at speeds not exceeding 20 miles/hour** (32 km/h). Slow down for hills, curves, rough area, and in advance of braking to prevent loss of control and possible injury or death.
- Read and follow the **Highway Transport** section before towing on public roads.
- **Always** turn off tractor and ensure parking brake is applied before leaving the operating platform.
- **Stand clear** of the rake while in operation.
- **Do not** stand near inside the rake during opening or closing. Ensure that there is enough room to open the rake in an area before doing so.
- **Beware** of pinch points at all articulating joints.



**WARNING:** Pressurized hydraulic fluid can cause serious injury

- When working with hydraulic equipment, eye and hand protection should be worn.
- Do not test for leaks with bare hands.
- Relieve hydraulic pressure before removing a hose or fitting.
- Never work under components raised by hydraulic equipment unless supported externally.

## ***Highway Transport***

When transporting the VR483 hay rake on public roads, there are a number of safety precautions that must be taken to ensure safety to everyone on the road.

### **Dimensions**

Transport Width	12'-4"
Transport Height	7'-7"
Transport Length	41'-8"
Transport Weight - 18 Wheel (Gross)	6650 lb
Transport Weight - 20 Wheel (Gross)	6950 lb
Transport Weight (Tongue)	650 lb

Ensure that road restrictions do not prohibit these dimensions, and that the towing vehicle and hitch are properly rated for the weight (both gross and tongue).

**DO NOT EXCEED 20 mph (32 km/h) DURING TRANSPORT.**



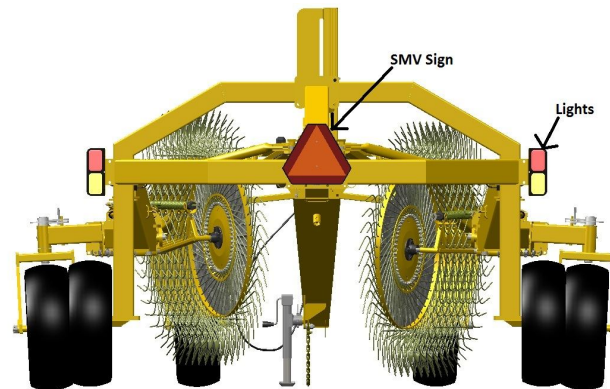
## Safety Chain

Make sure that the safety chain is properly attached to the towing vehicle. There should be enough slack that the trailer can turn freely, but not so much that the chain drags on the ground. The jack should be stored on the underside of the gooseneck hitch to avoid damage.

## Lights and Marking

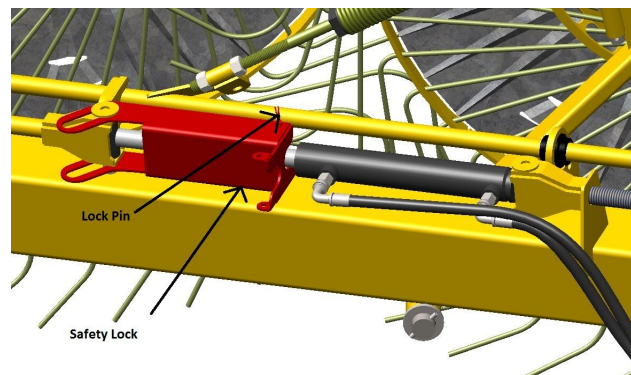
The VR483 hay rake comes standard with a light kit for better visibility. The lights can be plugged into the standard 7-pin round trailer plug on a tractor. However, to tow with a light truck, an adaptor is required. The lights function as flashing amber lights, with solid red tail lights. Ensure that they are functioning properly before towing.

Ensure that the SMV (Slow Moving Vehicle) sign is in place and visible.



## Cylinder Safety Locks

The lift arm cylinders (located on the left and right boom arms) should be locked in place to keep the rake wheels from touching the ground during transport. To insert the four (4) safety locks, raise the rake wheels to their highest position, swing the locks into place, and insert the lock pin.

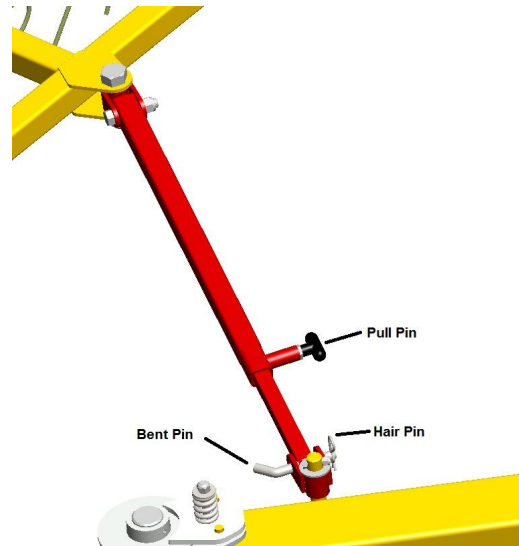




## Transport Safety Locks

Close the rake into its folded position. First ensure that the rear opening is in the transport position (the indicator needle at the bottom line). Next close the boom arms until the front caster wheels are brought in near the hitch.

Swing the transport locks out from under the gooseneck hitch, and connect to the pivot on the front caster. Pull out the self-locking pin (black handle) to lengthen or shorten as required. Secure with the 5/8" bent pin and hairpin. Finally, adjust the boom width so that the self-locking pin snaps into place. Both sides must be locked.

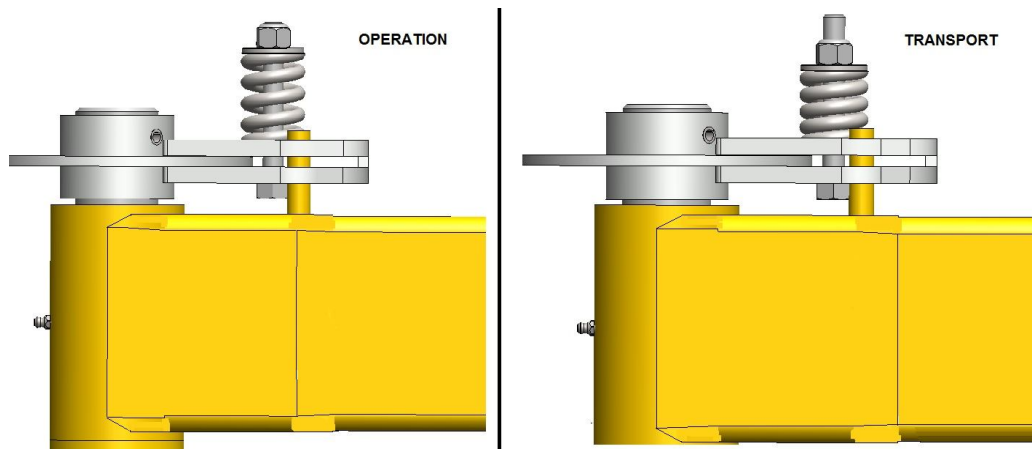


## Wheels & Caster Brakes

Check tire pressure and wheel nut torque of all wheels.

Drive straight forward several feet until all caster wheels are aligned with the direction of travel (angled rearwards). Tighten the brake springs so there is about 1/16" between the coils. This will prevent the casters from whipping.

If the casters continue to whip, first SLOW DOWN. Do not exceed 20 mph (32 km/h). If this does not help, tighten the brakes further until the problem no longer occurs.



**IMPORTANT: Ensure that the spring is loosened back off before operation or the rake will be very difficult to turn or back up.**



## FEATURES AND OPERATION

### ***Hydraulics***

There are three sets of hydraulic hoses to connect to the tractor. Each hose has a coloured marker to identify its function. They should be connected at best convenience for the tractor's controls. Note that the hoses are paired by colour and the following table shows the operation when pushing oil into the hose with the longer marker.

Hose Marker	Function
Long Red	Open rake
Long Blue	Increase windrow width
Long Yellow	Lift rake wheels

### ***Field Operation***

The MAXIMUM recommended raking speed is 8 mph (13 km/h), depending on field conditions. Rougher land and heavier hay require slower operation. This will prevent damage to the rake tines and premature wear.

For faster operating conditions, rake wheel spring pressure should be increased to prevent excess bouncing of the tines. Under normal conditions, the rake wheel pressure should be approximately 25 lb.

### ***Adjustments***

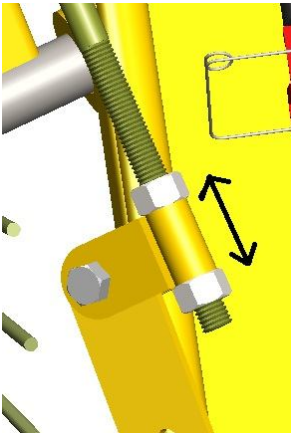
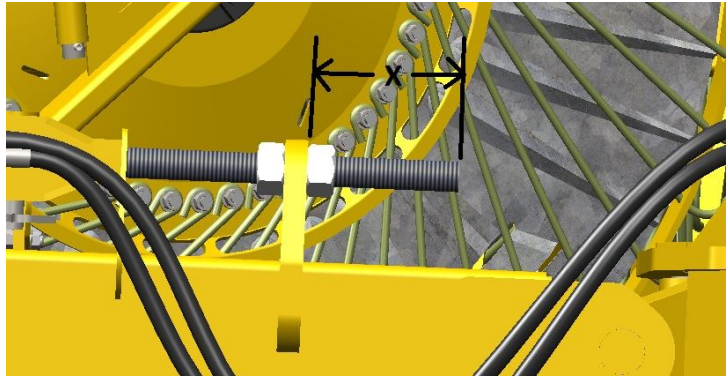
Optimum rake performance is achieved when the rake wheels are lightly scratching the ground. This is controlled by the springs on each individual wheel. If the spring tension is set too heavy, premature rake tine damage could occur. Also, dirt and rocks could be picked up and mixed in with the hay. If spring tension is too light, the hay will not be properly picked up. If the tension in the spring arms needs to be adjusted, there are two ways to accomplish this.





### Threaded Rod Adjusters

The threaded rod adjusters are located behind each of the four rake wheel lift cylinders on the top of the main rake boom arms. By adjusting the nuts on these, multiple rake wheels can be adjusted at one time. To increase tension, increase rod length "X", as shown above. To decrease tension, decrease rod length.

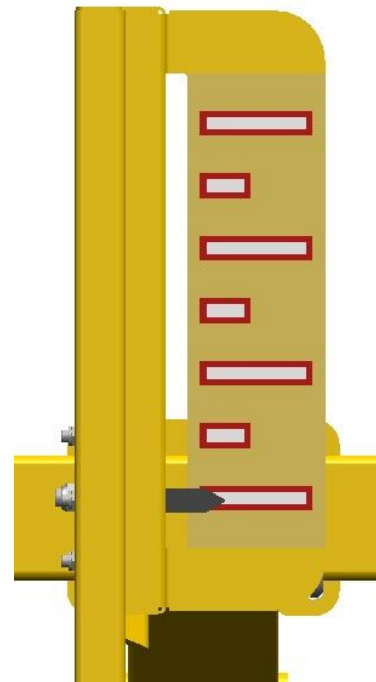


### Individual Spring Adjusters

If the spring tension for only one wheel needs to be adjusted, then the adjustment can be done on the individual spring. There are two nuts near the end of the spring (see left) that allow the spring to be loosened or tightened.

### Windrow Width Adjustment

The rear opening of the VR483 is adjustable using the windrow width adjustment cylinder. It must be in the narrow position to be able to transport on the highway. Widening the rear opening will space the wheels farther apart, creating a wider windrow. Pulling the rear opening closer together will create a tighter swath. This allows the operator to adjust the width of the windrow to suit field conditions and to accommodate different sized balers.



An indicator is provided to show you how wide the rear end is set. This will allow you to consistently set the machine to your desired windrow width. The needle moves up to indicate a wider windrow, while the bottom position indicates transport width.

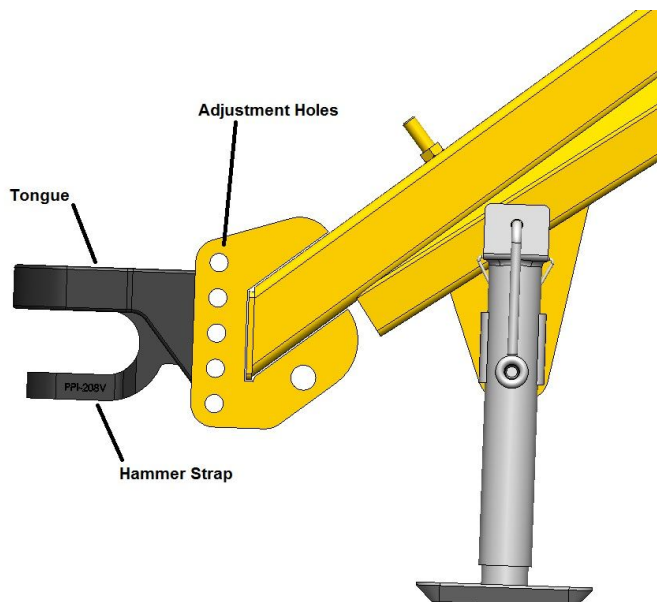


## Implement Tongue

The adjustable hitch on the VR483 hay rake features a single cast tongue with hammer strap insert. This allows for use with tractors equipped with a hammer strap, or a single drawbar. It also allows the machine to move independently over rough terrain without bending the draw pin.

Make sure that the hitch height is adjusted to match your tractor's particular drawbar height. The hitch beam should sit level when connected to the tractor.

DO NOT install the hammer strap insert if the tractor also has a hammer strap. This could cause the hitch pin to bend or break.



## Optional 20-Wheel Extension Kit

The 18-wheel Hay Rake can be outfitted with an extension kit to add 1 rake wheel to each side. This allows the rake to cover a wider area. This kit can be purchased from Bridgeview Manufacturing or a registered dealer (**KIT #25338**), and can be installed in a short amount of time.



## ***Trouble-Shooting Guide***

<b>Problem</b>	<b>Possible Cause</b>	<b>Remedy</b>
Rake plugging at rear end	Windrow width too narrow	Increase windrow width (indicator needle moves upward)
	Too much material	Close rake booms slightly to catch less material
Missing hay	Tine pressure too light	Increase spring pressure
Rake wheels not turning	Tine pressure too light	Increase spring pressure
	Wheel angle too steep	Close rake booms slightly
A single wheel not turning	Tine pressure too light	Adjust individual spring pressure
	Hub or arm not greased	Grease full machine
Rake tines breaking excessively	Tine pressure too heavy	Decrease spring pressure
	Too fast or rough ground	Slow down
	Tires low	Check tire pressure
Caster wheels wobbling during transportation	Caster brakes not tightened	Tighten caster brakes (loosen for operation)
	Driving too fast	Slow down
Lights not functioning properly	Loose plug connectors	Check plug connectors (one at each light, one under center of rear frame)
	Wrong tractor connector	Make sure tractor and trailer use the same connector

## ***Specifications***

### **Operation**

Raking Width  
Windrow Width  
Rake Wheel

### **18 Wheel**

36 ft

### **20 Wheel**

40 ft

3 ft - 5 ft

62" Diameter, 48 Tines

### **Transport**

Width  
Height  
Length  
Weight (Total)  
Weight (Tongue)

12 ft 4 in

7 ft 7 in

41 ft 8 in

6650 lb

6950 lb

650 lb

### **Tires**

Size  
Pressure  
Wheel Nut Torque

9.5L-15SL, 8 ply

35 psi

125 ft-lb



## MAINTENANCE & LUBRICATION

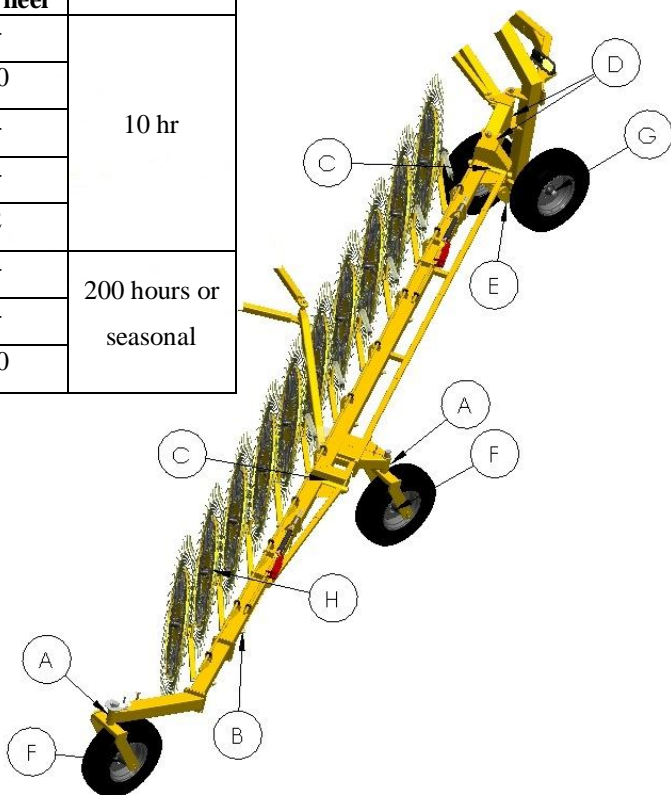
General maintenance of your VR483 hay rake should be done on a regular basis. This includes checking all bolts to ensure they are tight, ensuring all joints are properly greased, and that all moving parts are functioning correctly.

Before the raking season, a full inspection of the rake should be done, ensuring that the wheel hubs are tight and fully greased, any broken tines replaced, and no hydraulic leaks are present.

### ***Greasing***

The VR483 hay rake is fitted with a number of grease zerks. It is important that these locations are continuously lubricated.

	Location	QTY 18 Wheel	QTY 20 Wheel	Timeline
A	Caster Pivot	4	4	10 hr
B	Rake Arm Pivot	18	20	
C	Boom Arm Pivot	4	4	
D	Width Adjustment Pivot	4	4	
E	Walking Axle Pivot	2	2	
F	Caster Wheel Hub	4	4	200 hours or seasonal
G	Rear Wheel Hub	4	4	
H	Rake Wheel Hub	18	20	



**NOTE:** For ease of greasing, all zerks are accessed from the outside of the rake. The rake should be either fully closed or fully open (including rear width).



## ***Wheels and Tires***

Maintaining proper tire pressure will help to alleviate puncture problems on rough terrain. Check tires for wear and tear on a regular basis.

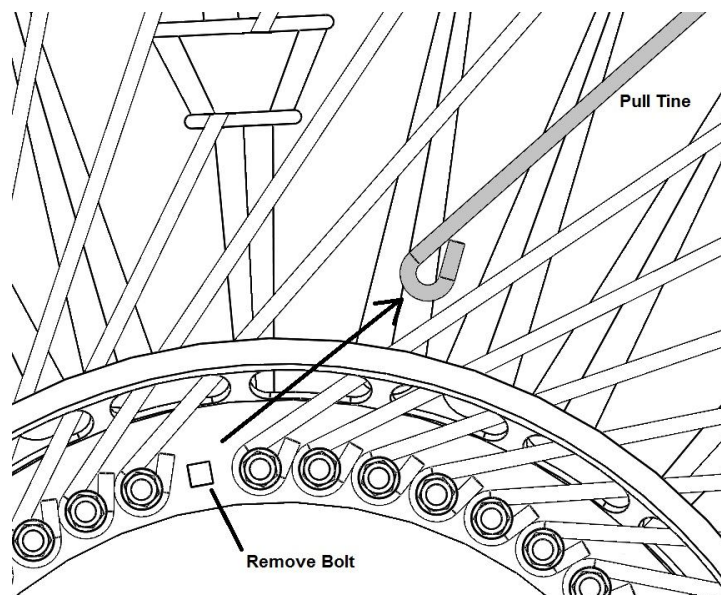
Tire Size	9.5L-15SL, 8-ply
Tire Pressure	35 psi
Wheel Bolt Torque	90 ft-lb

Warranty does not cover damaged rims and hubs due to loose wheel bolts. Tire warranty is covered by the tire manufacturer.

## ***Tine Replacement***

Occasionally during operation, a rake wheel tine will break. The following procedure can be used to replace a tine without removing the rake wheel from the machine.

- Remove the corresponding bolt for the broken tine.
- Slide the tine out of the center disk.
- Slide the tine out of the wind guard (if necessary).
- Slide the tine out of the hole in the outer ring by pushing it inwards and rotating.
- Insert the replacement tine in the opposite way from removal.
- Reinsert bolt and tighten.



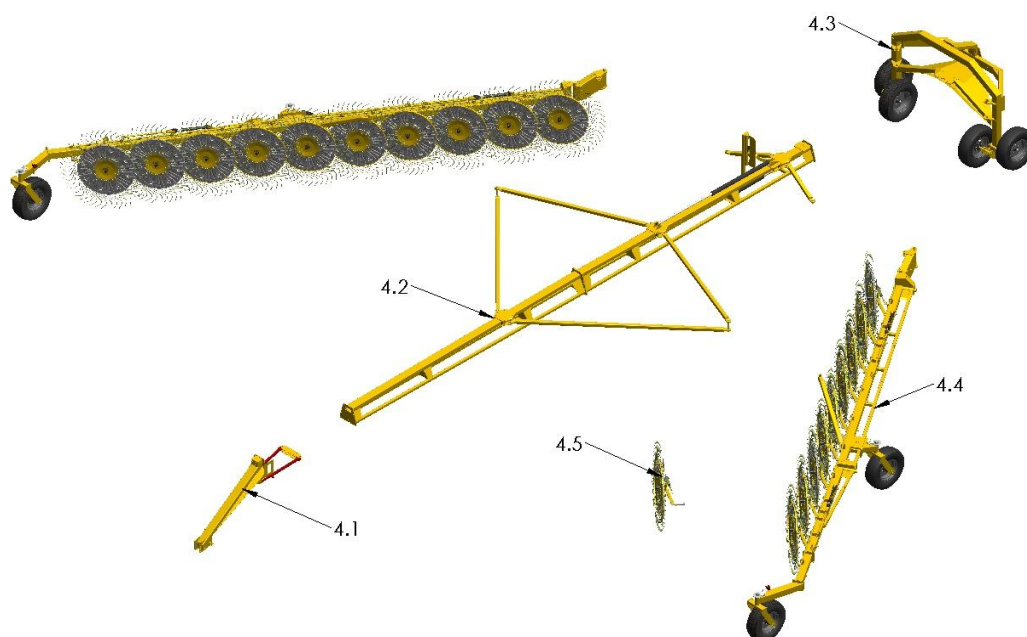


## PARTS BOOK

The following diagrams show the part numbers for ordering any damaged parts on a VR483.

Quantities are listed for as shown, and some components are optional. The total quantities will vary depending on model and size. The diagrams should be referenced to find the part number, and order quantities should be based on what is required, not necessarily by the quantity on the table.

Left and right as used in the parts book is as viewed from the rear of the rake looking in the direction of travel.

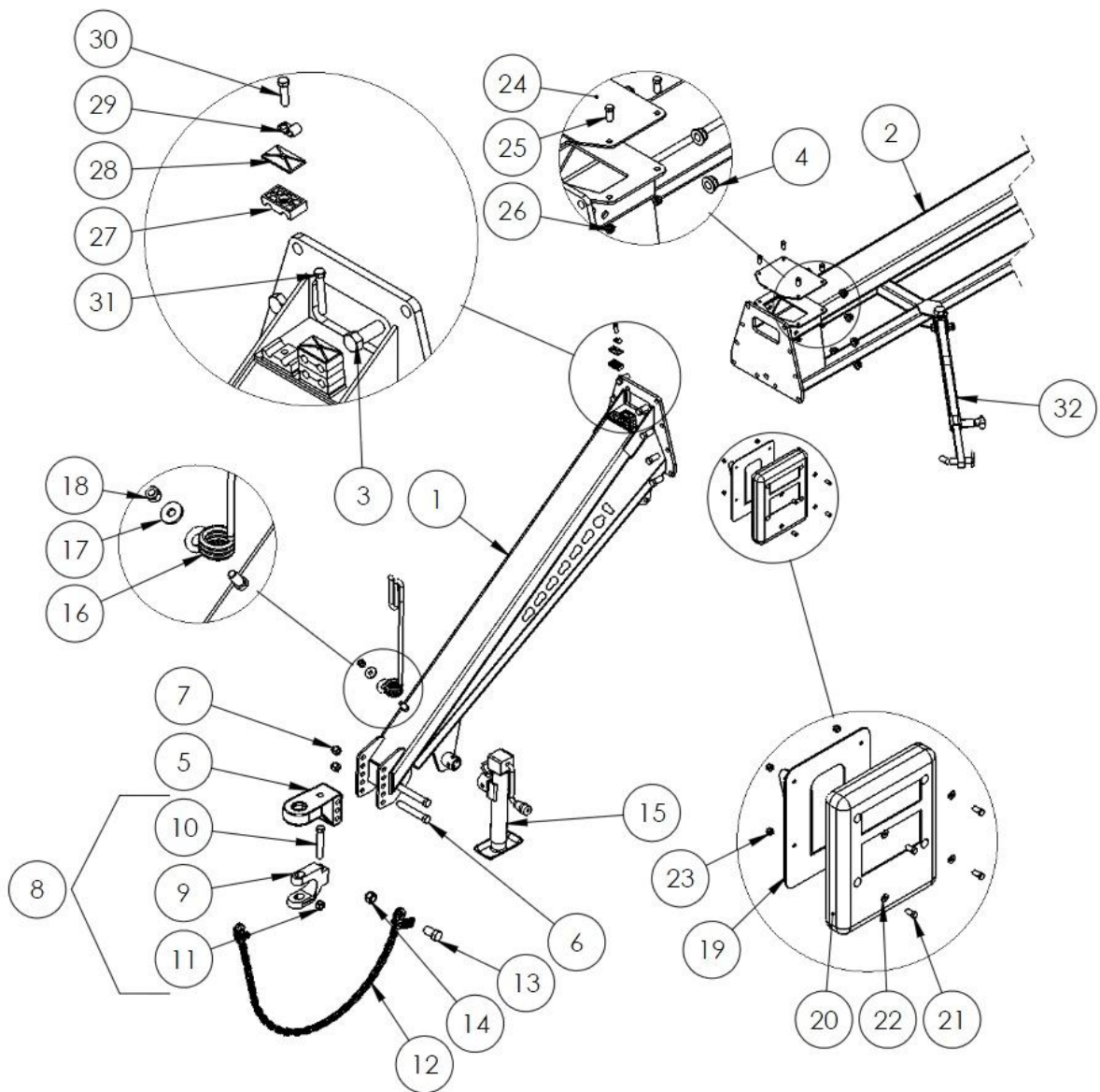


Parts Book Sections	
Section	Description
4.1	Gooseneck
4.2	Hitch Beams and Scissor
4.3	Rear Frame
4.4	Boom Arms
4.5	Rake Wheel Assembly
4.6	Decals
4.7	Hydraulics
4.8	Electrical





## Gooseneck Assembly





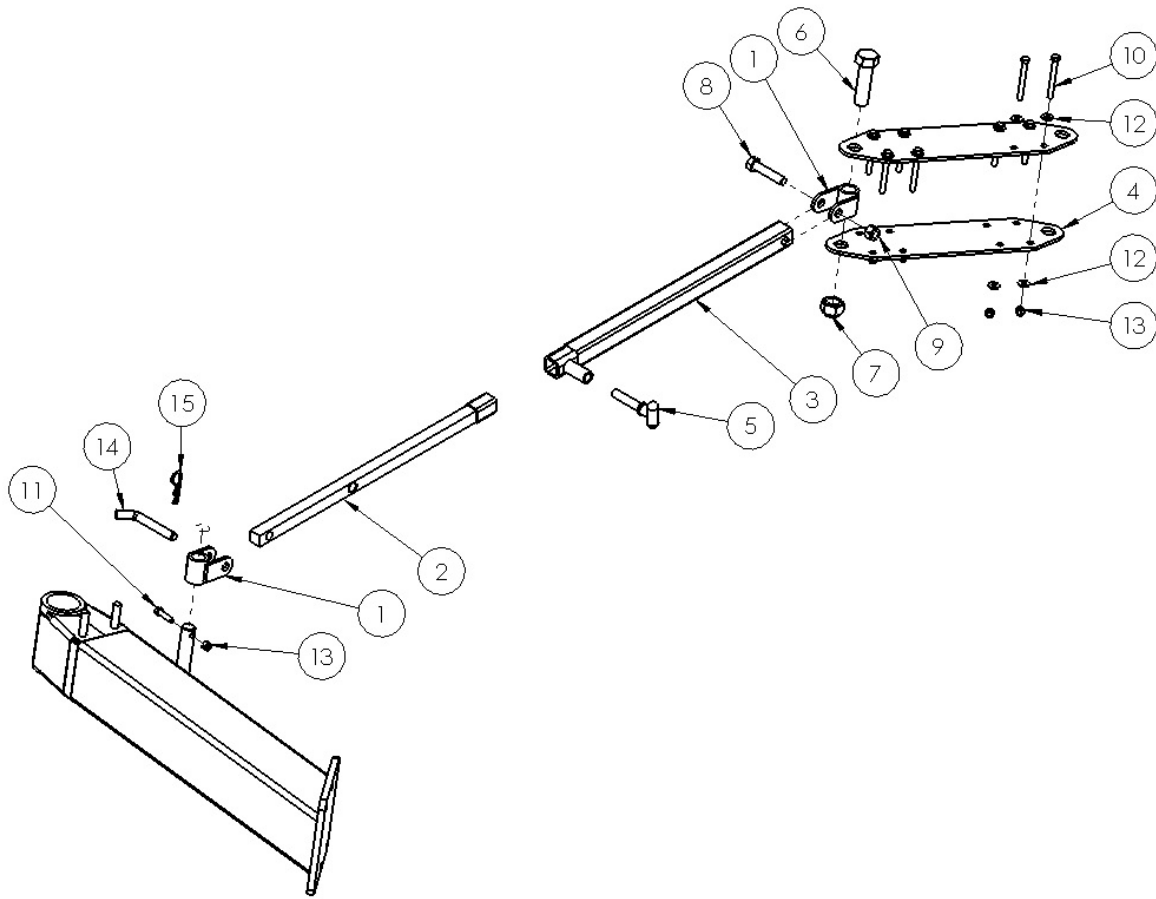
Gooseneck Assembly							
	Description	ID #	QTY		Description	ID #	QTY
1	Gooseneck	26621	1	17	Flat Washer, 5/8"	21390	1
2	Front Hitch Beam 483	26620	1	18	Nut, 5/8" Nylon Lock	10364	1
3	Bolt, 5/8 x 1-3/4"	12379	10	19	Operator Manual Bracket	23294	1
4	Nut, 5/8" Serrated Flange	11614	10	20	Operator Manual Box	22409	1
5	Hitch Tongue	22440	1	21	Bolt, 1/4 x 3/4"	11809	4
6	Bolt, 3/4 x 5-3/4"	10802	2	22	Flat Washer, 1/4"	11666	4
7	Nut, 3/4" Stover Lock	11823	2	23	Nut, 1/4" Nylon Lock	11664	4
8	Hitch Clevis Option #	25540	1	24	Bulkhead Cover Plate	25655	1
9	Hitch Clevis	22441	1	25	Bolt, 3/8 x 1"	13806	4
10	Bolt, 3/4 x 5"	10803	1	26	Nut, 3/8" Serrated Flange	10271	4
11	Nut, 3/4" Stover Lock	11823	1	27	Hose Clamp	22181	6
12	Safety Chain	21715	1	28	Hose Clamp Top	22182	2
13	Bolt, 1 x 2"	18992	1	29	Wiring Clamp	13629	1
14	Nut, 1" Stover Lock	21746	1	30	Bolt, 5/16 x 1-3/8"	22183	1
15	Jack, 5000 lb Sidewind	18034	1	31	Bolt, 5/16 x 2-1/2"	19115	1
16	Spring Hose Holder	18080	1	32	Transport Lock Assembly	-	1

# NOTE: Includes (9), (10), (11)





## Transport Lock



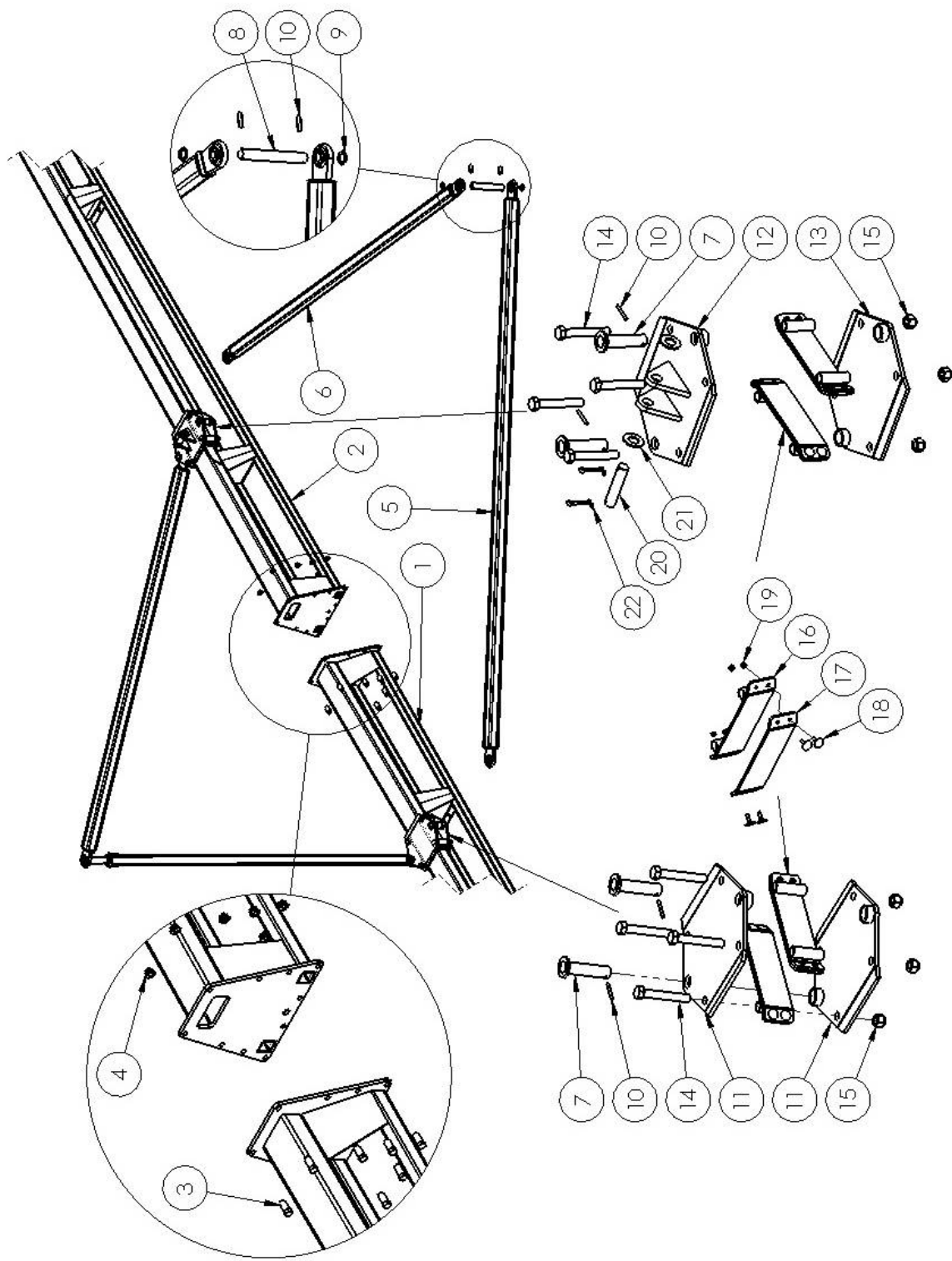
Right arm not shown

Transport Lock Assembly							
	Description	ID #	QTY		Description	ID #	QTY
1	Transport Lock Knuckle	25645	2	9	Nut, 5/8" Nylon Lock	10364	1
2	Transport Lock Bar	25648	1	10	Bolt, 3/8 x 3-1/4"	23325	8
3	Transport Lock Tube	25649	1	11	Bolt, 3/8 x 1-1/2"	11660	1
4	Transport Lock Bracket	26369	2	12	Flat Washer, 3/8"	11667	16
5	Tee-Handle Pin	21246	1	13	Nut, 3/8" Nylon Lock	10806	9
6	Bolt, 1 x 3-1/2"	25663	1	14	Hitch Pin, 5/8 x 3-1/2" *	16339	1
7	Nut, 1" Stover Lock	21746	1	15	Hair Pin	16363	1
8	Bolt, 5/8 x 3"	20907	1				

\*NOTE: Hitch pin comes with hairpin (17)



## Hitch Beam & Scissor Assembly

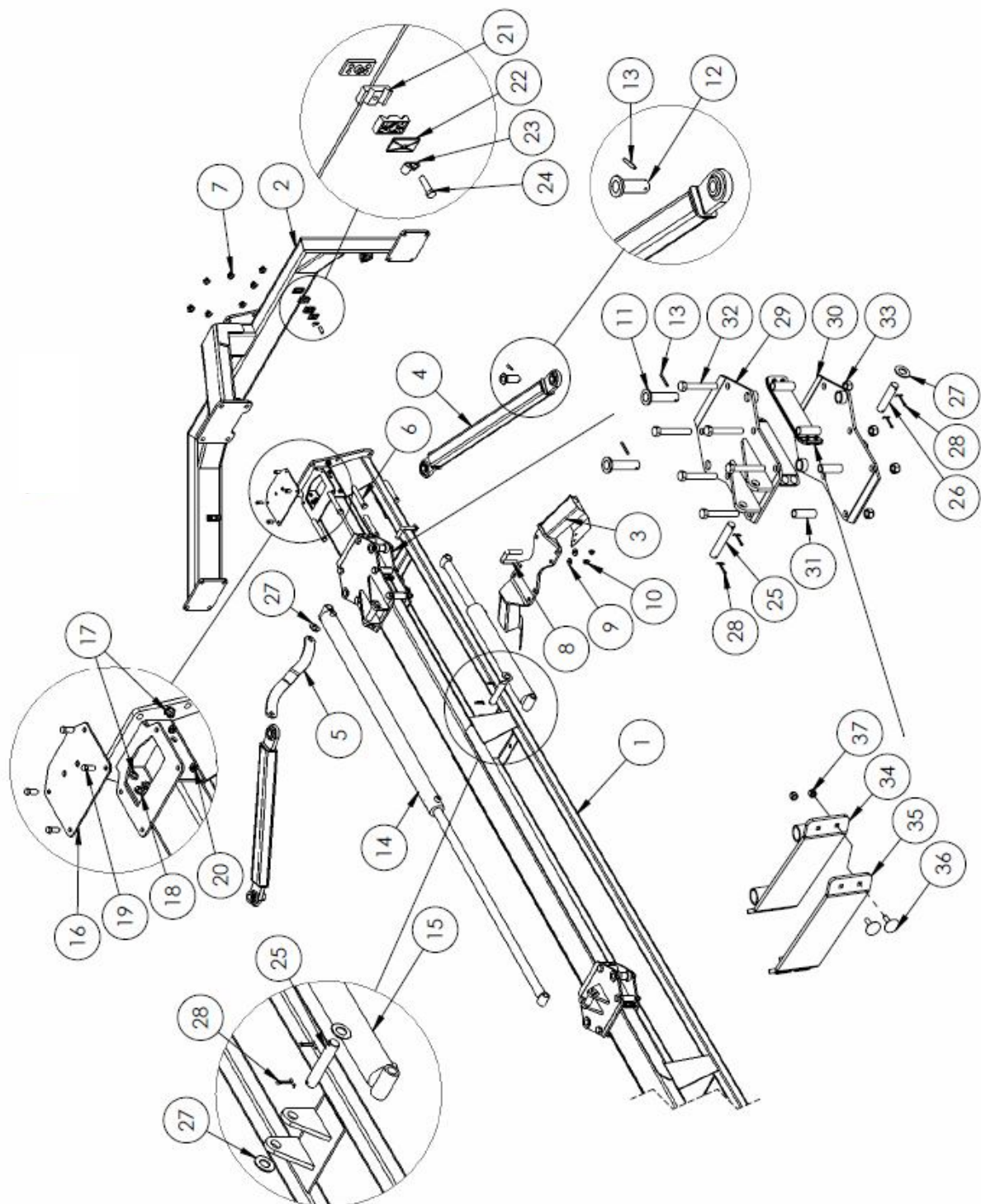




Scissor Components Front							
	Description	ID #	QTY		Description	ID #	QTY
1	Front Hitch Beam	26620	1	12	Slider Plate Middle Top	22243	1
2	Rear Hitch Beam	25560	1	13	Slider Plate Middle Bottom	23124	1
3	Bolt, 5/8 x 1-3/4"	21392	10	14	Bolt, 3/4 x 5"	17826	8
4	Nut, 5/8" Serrated Flange	11614	10	15	Nut, 3/4" Stover Lock	11823	8
5	Front Scissor Linkage	25644	2	16	Slider Side Plate	22246	4
6	Rear Scissor Linkage	25647	2	17	Plastic Slider	18011	1
7	Pin, 1-1/8 x 4" Usable	22244	4	18	Elevator Bolt, 1/4 x 1"	17970	4
8	Pin, 1-1/8 x 10"	26444	2	19	Nut, 1/4" Nylon Lock	11664	4
9	Flat Washer, 1-1/8"	26450	4	20	Pin, 1 x 3-3/4" Usable	20788	1
10	Roll Pin, 1/4 x 2"	15872	8	21	Flat Washer, 1"	14472	2
11	Slider Plate Front	22242	2	22	Cotter Pin, 1/4 x 2"	10072	2



## Scissor Components Rear

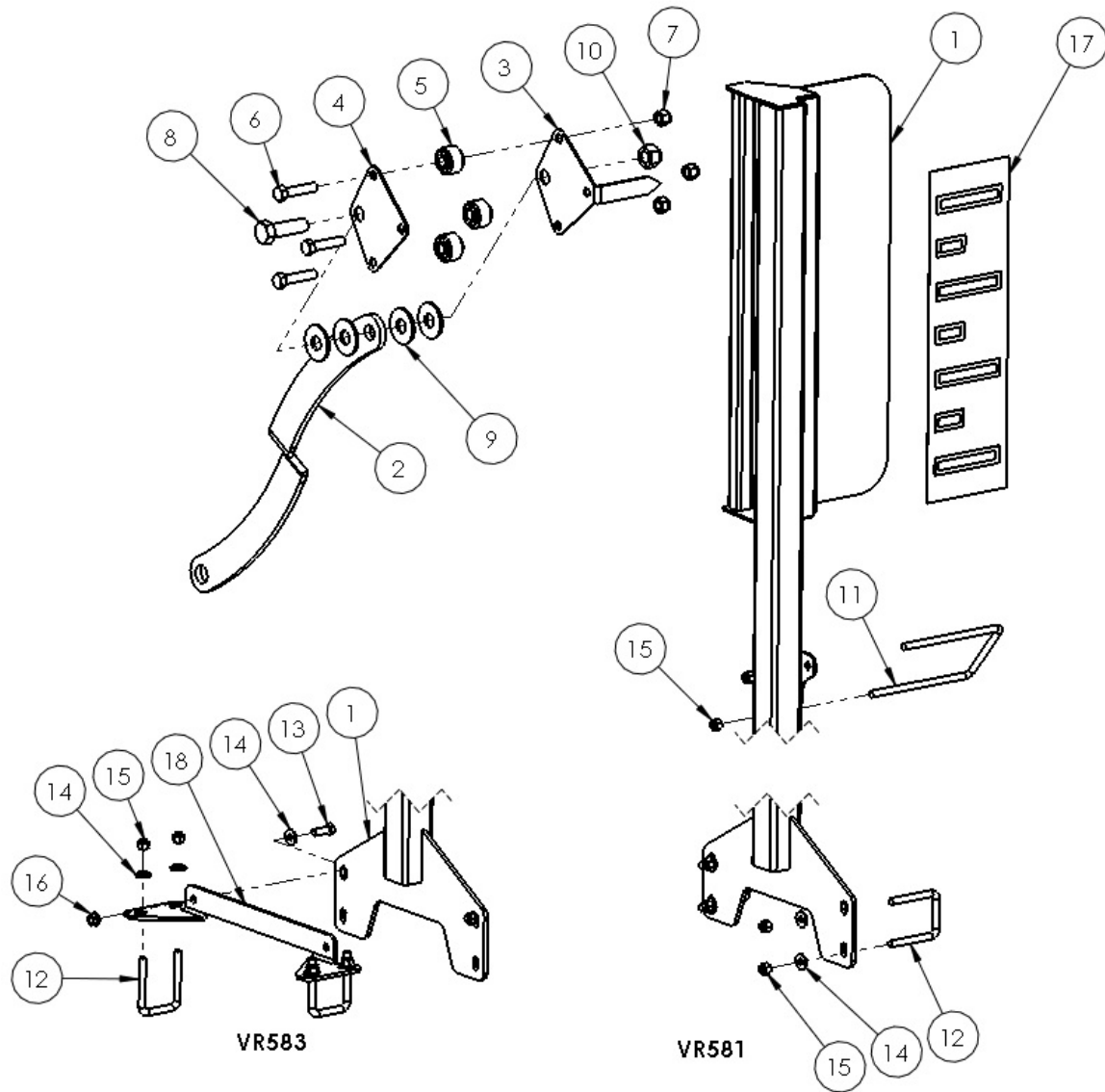




Scissor Components Rear							
	Description	ID #	QTY		Description	ID #	QTY
1	Rear Hitch Beam	25560	1	19	Bolt, 3/8 x 1"	13806	4
2	Rear Frame Connector	25562	1	20	Nut, 3/8" Serrated Flange	10271	4
3	Rear Frame	25559	1	21	Hose Clamp	22181	8
4	Width Adj. Linkage	25643	2	22	Hose Clamp Top	22182	4
5	Width Ind. Linkage	24673	1	23	Wire Clip	13629	4
6	Bolt, 5/8 x 5"	21392	8	24	Bolt, 5/16 x 1-3/8"	22183	4
7	Nut, 5/8" Serrated Flange	11614	8	25	Pin, 1 x 5" Usable	26430	2
8	U-Bolt, 1/2 x 2 x 3"	23590	4	26	Pin, 1 x 3-3/4" Usable	20788	1
9	Flat Washer, 1/2"	11668	8	27	Flat Washer, 1"	14472	5
10	Nut, 1/2" Nylon Lock	10241	8	28	Cotter Pin, 3/16 x 1-1/2"	10072	6
11	Pin, 1-1/8 x 4" Usable	22244	2	29	Slider Plate Rear Top	25628	1
12	Pin, 1-1/8 x 2-3/4" Usable	25652	2	30	Slider Plate Rear Bottom	25629	1
13	Roll Pin, 1/4 x 2"	15872	4	31	Slider Spacer	25764	2
14	Hyd. Cylinder, 2.5 x 48" Seal Kit	17331	1	32	Bolt, 3/4 x 5"	17826	6
		16396		33	Nut, 3/4" Stover Lock	11823	6
15	Hyd. Cylinder, 2.5 x 20" Seal Kit	17328	1	34	Slider Side Plate	22246	4
		16396		35	Plastic Slider	18011	1
16	Bulkhead Cover Plate	22234	1	36	Elevator Bolt, 1/4 x 1"	17970	4
17	Grommet	21428	2	37	Nut, 1/4" Nylon Lock	11664	4
18	Lock Washer, 9/16"	23369	4				



## Width Indicator

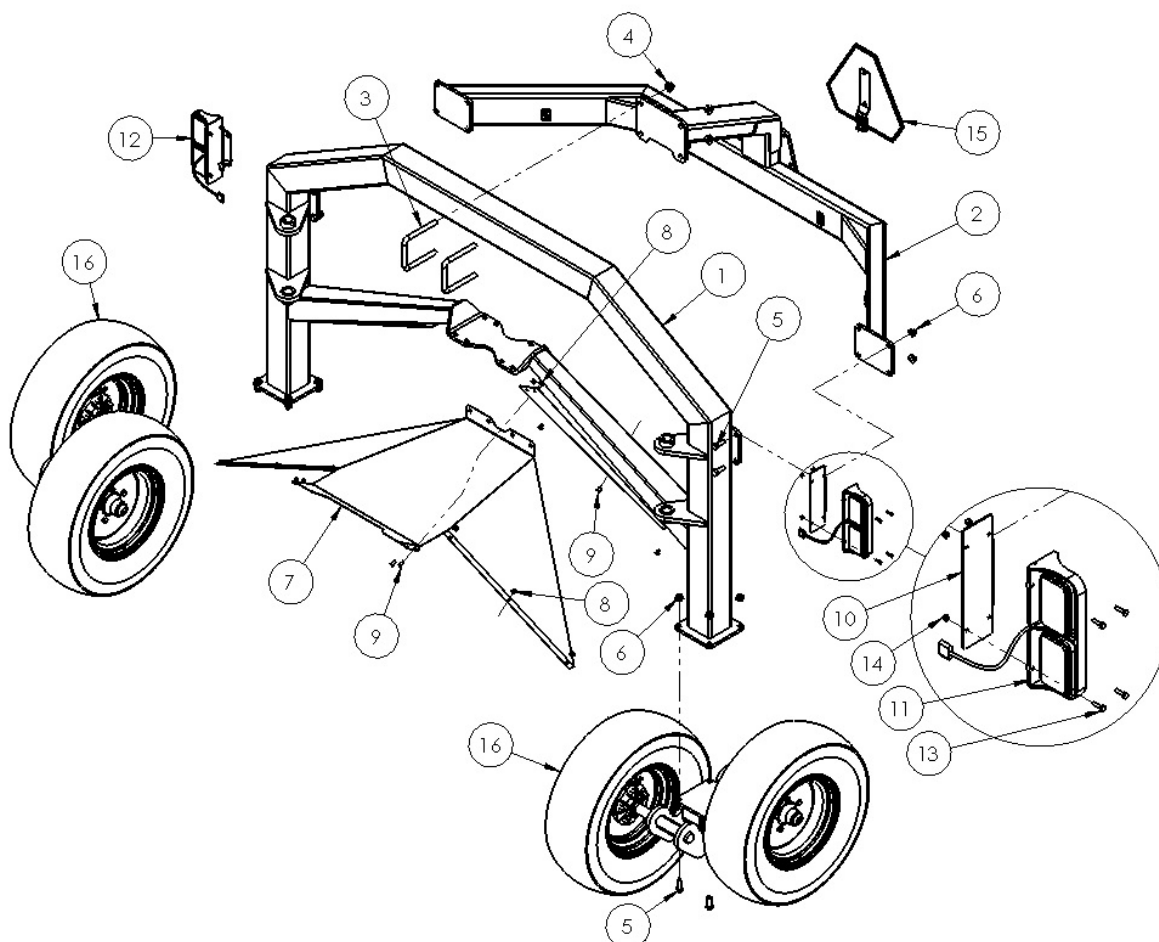


Width Indicator							
	Description	ID #	QTY		Description	ID #	QTY
1	Width Indicator Bracket	23222	1	10	Nut, 3/4" Stover Lock	11823	1
2	Width Indicator Linkage	24673	1	11	U-Bolt, 3/8 x 4 x 7"	23013	1
3	Width Indicator Needle	23049	1	12	U-Bolt, 3/8 x 2 x 3"	21459	2
4	W.I. Roller Plate	23064	1	13	Bolt, 3/8 x 1"	13806	2
5	W.I. Roller	11637	3	14	Flat Washer, 3/8"	11667	6
6	Bolt, 1/2 x 2-1/4"	11820	3	15	Nut, 3/8" Nylon Lock	10806	6
7	Nut, 1/2" Nylon Lock	10241	3	16	Nut, 3/8" Serrated Flange	10271	2
8	Bolt, 3/4 x 2-1/2"	14470	1	17	Width Indicator Decal	23011	1
9	Flat Washer, 3/4"	13717	4	18	W.I. Bracket Adaptor	25654	1





## Rear Frame Assembly

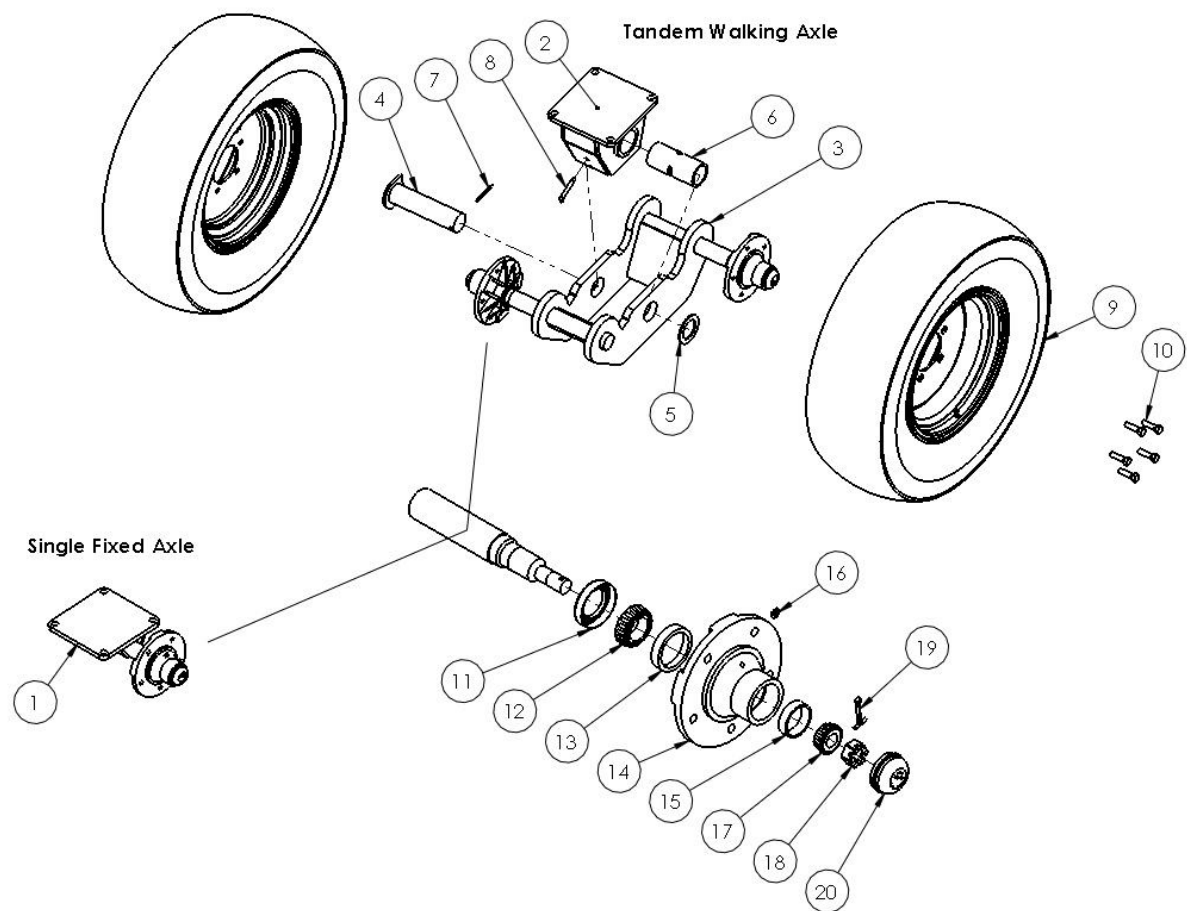


Rear Frame Assembly							
	Description	ID #	QTY		Description	ID #	QTY
1	Rear Frame 583	25559	1	9	Nut, 3/8" Serrated Flange *	10271	10
2	Rear Frame Connector	25562	1	10	Light Bracket	23101	2
3	U-bolt, 3/4 x 5 x 6"	16091	2	11	Left Light	22968	1
4	Nut, 3/4" Serrated Flange	16076	4	12	Right Light	22969	1
5	Bolt, 5/8 x 1-3/4"	12379	16	13	Bolt, 1/4 x 1"	11810	8
6	Nut, 5/8" Serrated Flange	11614	16	14	Nut, 1/4" Nylon Lock	11664	8
7	Rear Deflector Kit	25901	1	15	SMV Sign	-	1
8	Fin Bolt, 3/8 x 3/4" *	10807	10	16	Rear Axle	-	1

\* NOTE: Part of deflector kit



## Rear Axle



Rear Axle Assembly							
	Description	ID #	QTY		Description	ID #	QTY
1	Single Axle Mount	22250	1	11	Seal	16306	1
2	Walking Axle Mount	23137	1	12	Inner Bearing Cone	10082	1
3	Walking Axle Left	23138	1	13	Inner Bearing Cup	10083	1
	Walking Axle Right	23139	(1)	14	Rear Wheel Hub *	16724	1
4	Walking Axle Pivot Pin	23112	1	15	Outer Bearing Cup	16304	1
5	Walking Axle Washer	26447	1	16	Grease Zerk	16364	1
6	Walking Axle Bushing	21150	1	17	Outer Bearing Cone	16305	1
7	Roll Pin, 1/4 x 2-1/2"	10293	1	18	Castle Nut	16358	1
8	Grease Zerk	23356	1	19	Cotter Pin	11669	1
9	Tire & Rim, 9.5L-15 #	-	1	20	Dust Cap	16308	1
10	Wheel Bolt	16307	5				

\* NOTE: Hub (14) comes with grease zerk (16) and bearing cups (13,15) installed

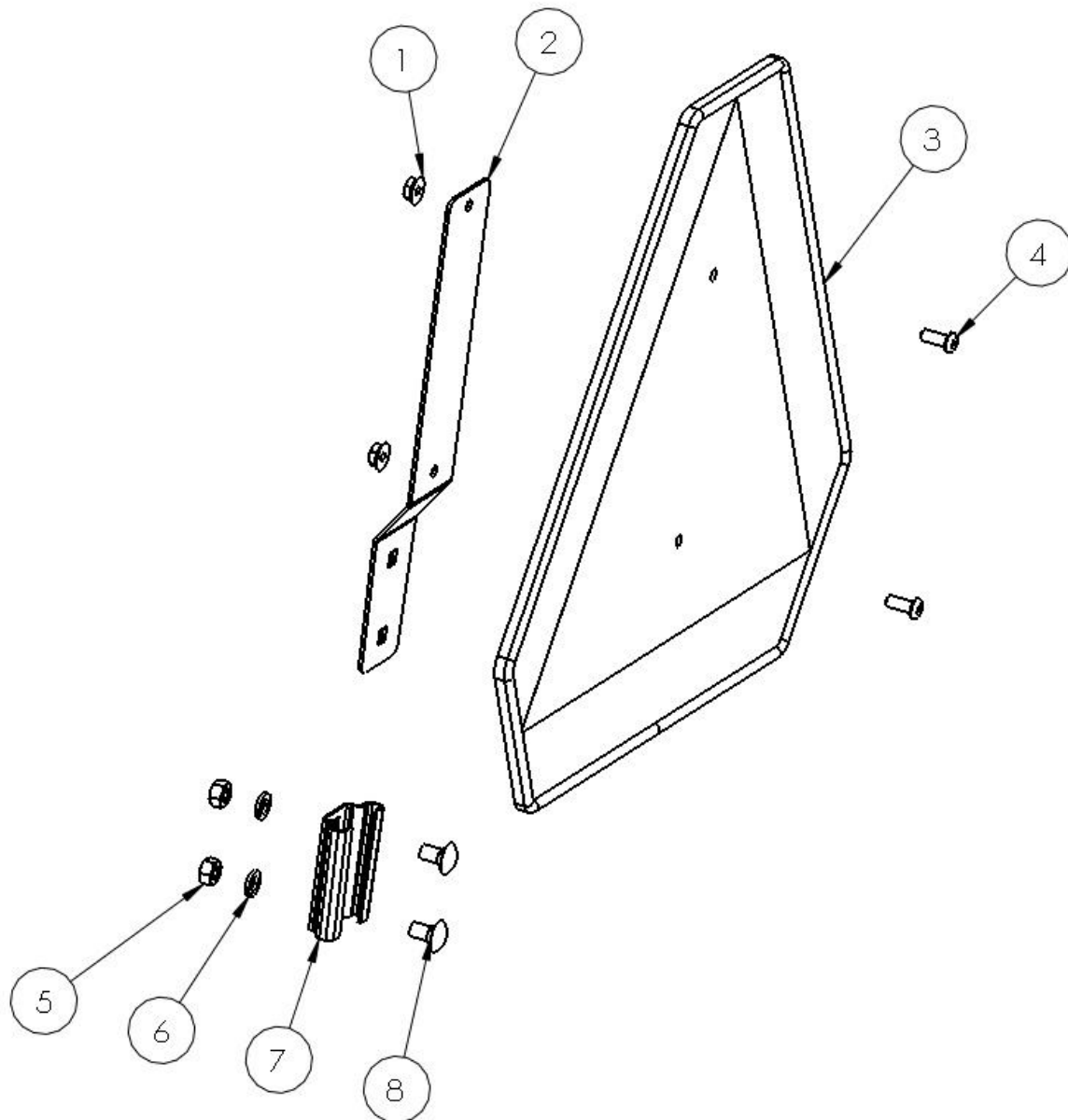
# NOTE: See local tire dealership for replacement or repairs

Quantities are per assembly as shown. Left side shown.





## Slow Moving Vehicle (SMV) Sign Kit

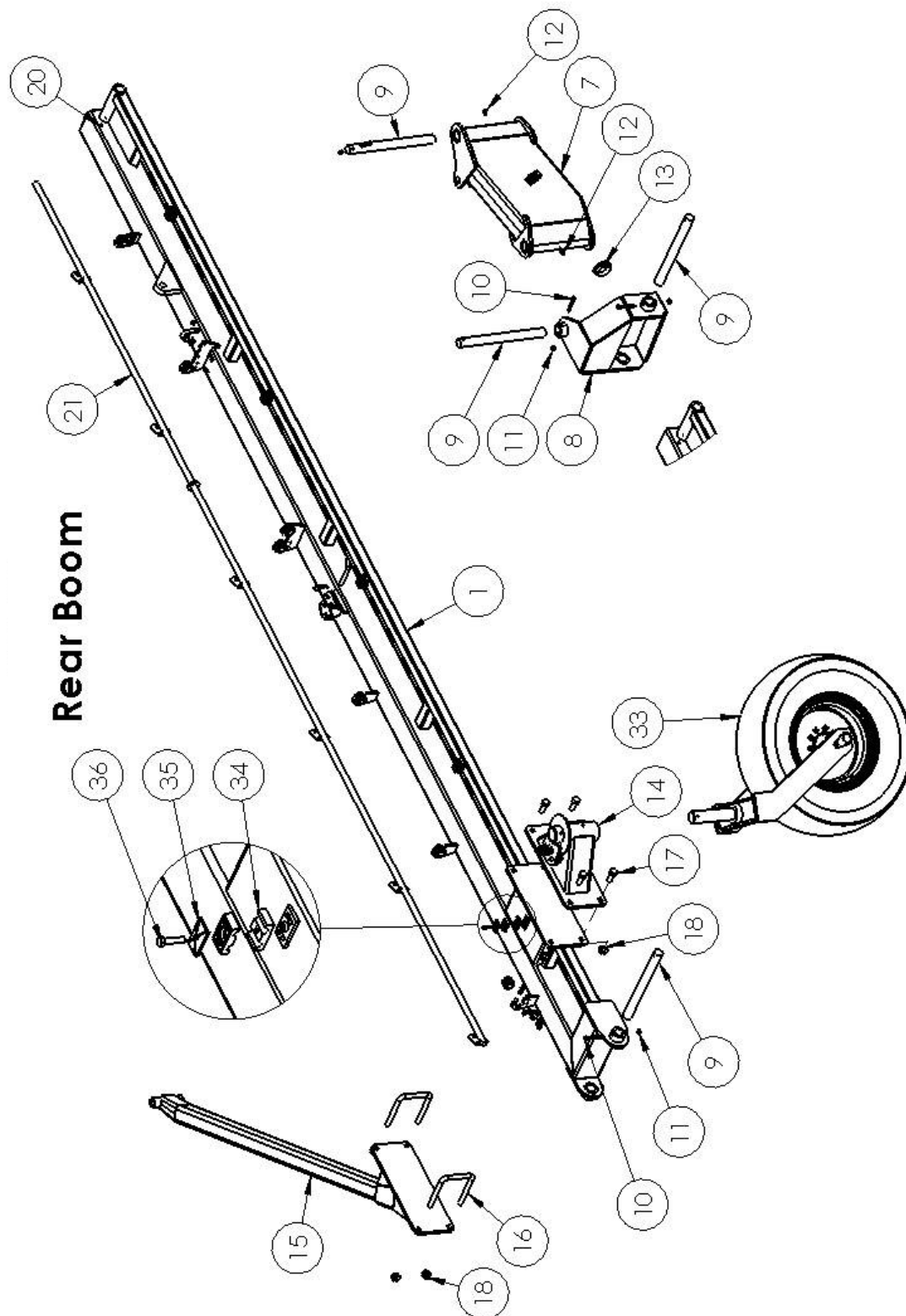


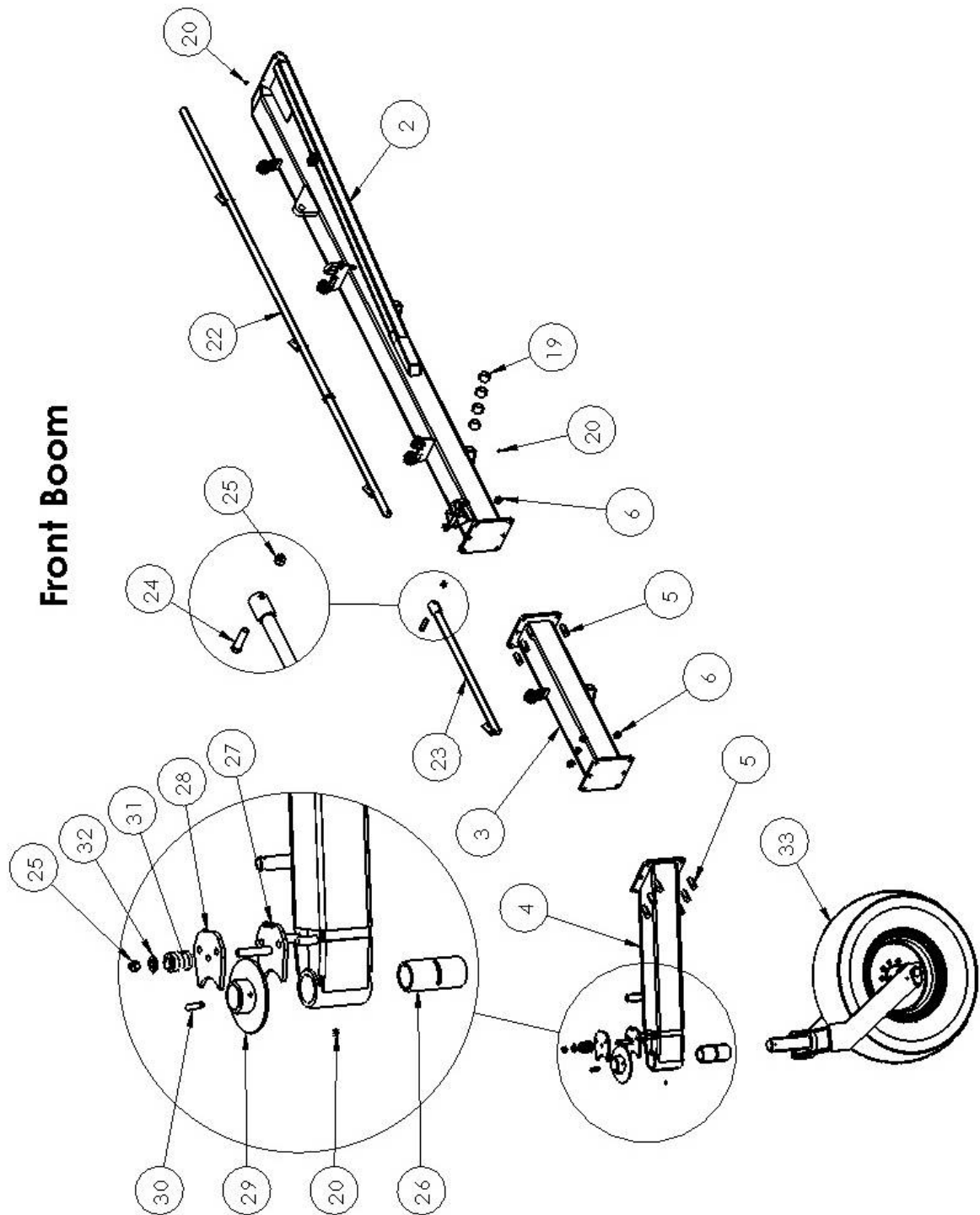
SMV Sign Assembly							
	Description	ID #	QTY		Description	ID #	QTY
	Complete Kit	22411	1	5	Nut, 5/16"	*	2
1	Nut, 1/4" Serrated Flange	*	2	6	Lock Washer, 5/16"	*	2
2	Sign Mounting Bracket	*	1	7	Tapered Mounting Bracket	*	1
3	Plastic Sign	*	1	8	Carriage Bolt, 5/16 x 5/8"	*	2
4	Screw, 1/4 x 5/8"	*	2				

\* NOTE: Individual parts not sold separately. Not all parts in kit are used.



## Boom Arm Assembly





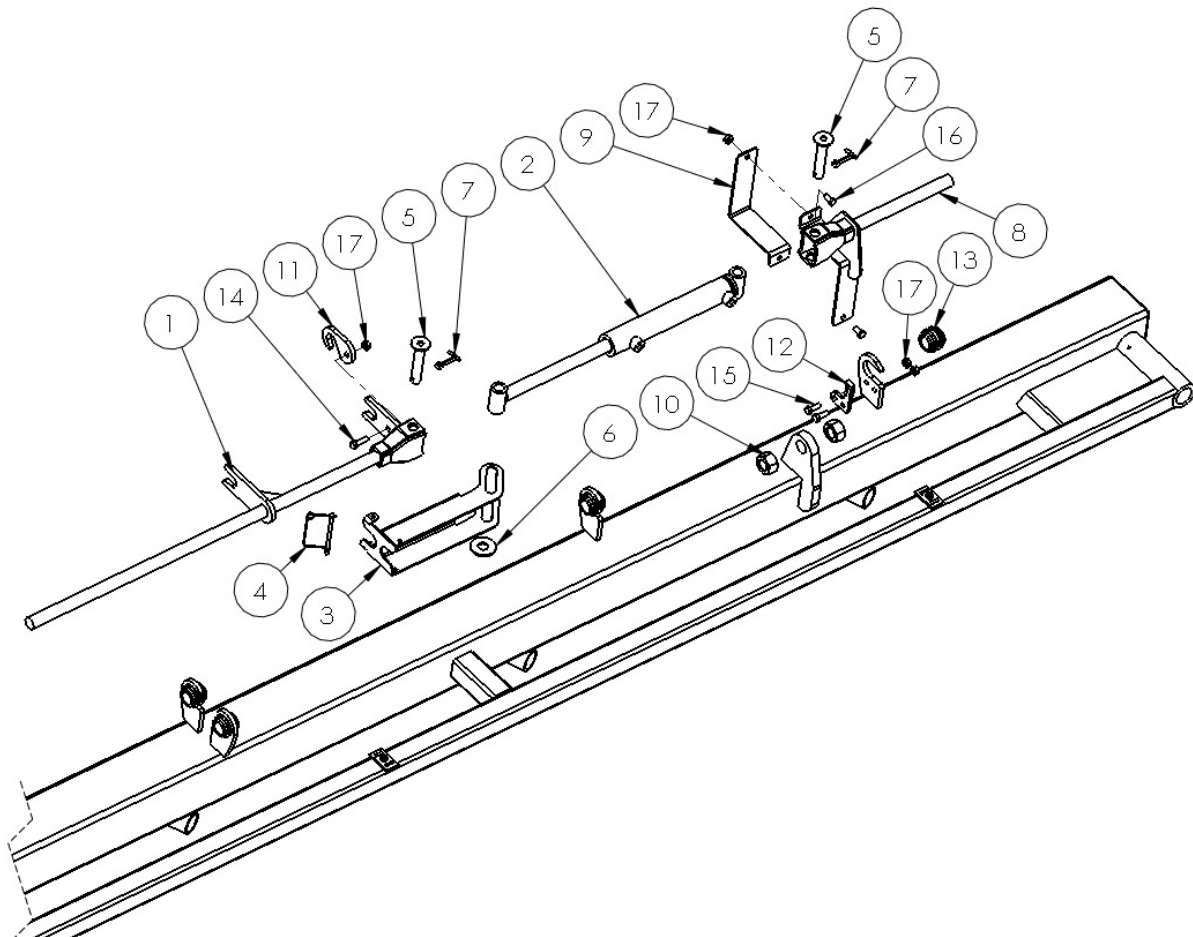
**NOTE:** Left arm shown. Some components only used on 20 wheel.



Boom Arm Assembly							
	Description	ID #	QTY		Description	ID #	QTY
1	Boom 483 Rear Left	25569	1	16	U-Bolt, 3/4 x 5 x 6"	16091	2
	Boom 483 Rear Right	25568		17	Bolt, 3/4 x 2"	13800	4
2	Boom 483 Front Left	25571	1	18	Nut, 3/4" Serrated Flange	16076	8
	Boom 483 Front Right	25570		19	Rake Arm Bushing	16096	40
3	Boom 483 Ext. Left	25573	1	20	Grease Zerk	16364	12
	Boom 483 Ext. Right	25572		21	Lift Rod 483 Rear	25579	1
4	Front Caster Support LT	25575	1	22	Lift Rod 483 Front	25580	1
	Front Caster Support RT	25574		23	Lift Rod 583 Extension	25581	1
5	Bolt, 5/8 x 1-3/4"	12379	12	24	Bolt, 1/2 x 2-1/4"	11820	1
6	Nut, 5/8" Serrated Flange	11614	12	25	Nut, 1/2" Stover Lock	14393	2
7	Box Pivot 583 Left	25565	1	26	Caster Bushing	21150	1
	Box Pivot 583 Right	25564		27	Brake Pad Bottom	16138	1
8	Knuckle 583 Left	25567	1	28	Brake Pad Top	16137	1
	Knuckle 583 Right	25566		29	Brake Disk	17330	1
9	Knuckle Pin	26446	4	30	Roll Pin, 3/8 x 2-3/4"	16039	1
10	Bolt, 3/8 x 3"	13770	4	31	Brake Spring	16093	1
11	Nut, 3/8" Nylon Lock	10806	4	32	Brake Spring Washer	16322	1
12	Grease Zerk 90 Deg.	16389	2	33	Caster Wheel Assembly	-	2
13	Grommet	16397	1	34	Hose Clamp	22181	2
14	Side Caster Support 583	25630	1	35	Hose Clamp Top	22182	1
15	Riser Arm 583 Left	25577	1	36	Bolt, 5/16 x 1-3/8"	22183	1
	Riser Arm 583 Right	25576					



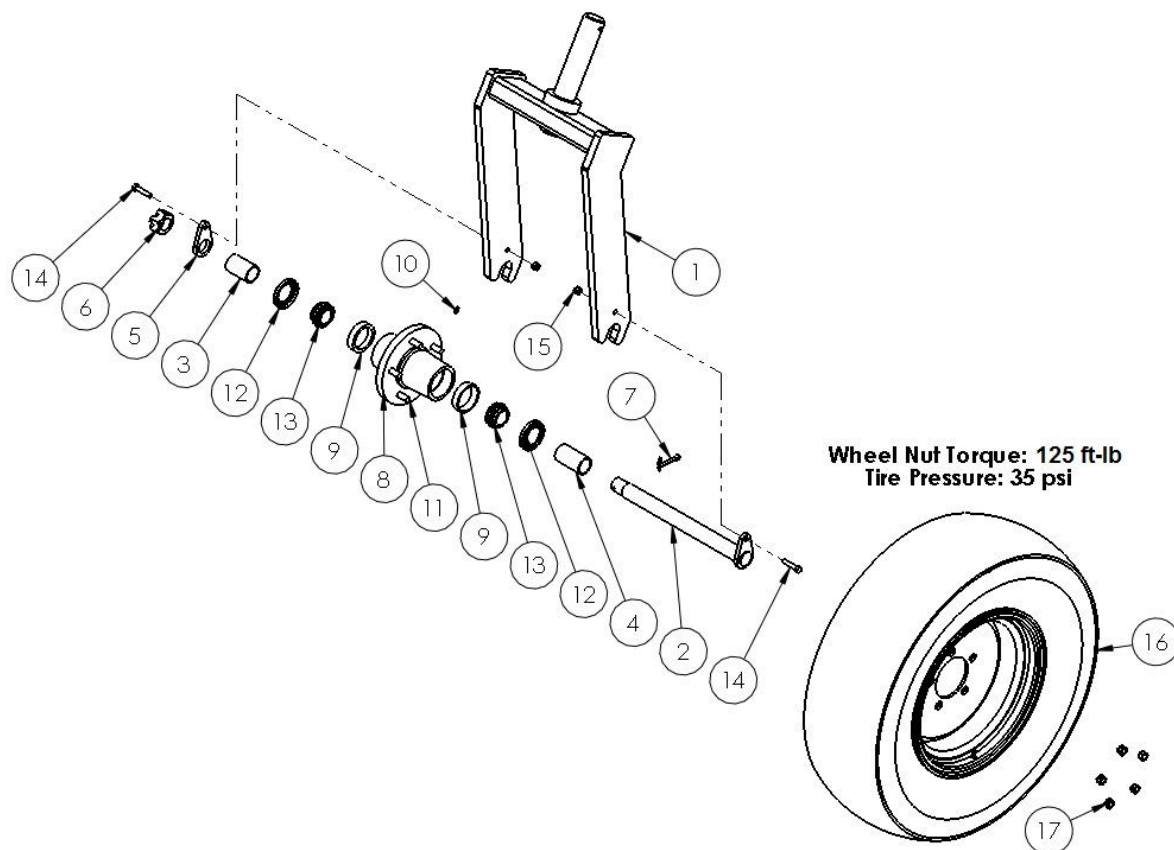
## Lift Rod Details



Lift Rod Details							
	Description	ID #	QTY		Description	ID #	QTY
1	Lift Rod Push Bar	25578	1	9	Lift Rod Adjuster Guide	25653	1
2	Lift Rod Cylinder Seal Kit	21213	1	10	Nut, 1"	12946	2
		17613		11	Lift Rod Lock	21303	1
3	Cylinder Lock	21373	1	12	Lift Rod Bushing Lock	22257	1
4	Lock Pin	21389	1	13	Lift Rod Bushing	16099	1
5	Pin, 3/4 x 2-3/4"	22019	2	14	Bolt, 3/8 x 1-1/4"	10253	1
6	Flat Washer, 3/4"	13717	1	15	Bolt, 3/8 x 1"	13806	2
7	Cotter Pin, 1/4 x 1-1/2"	13593	2	16	Bolt, 3/8 x 3/4"	11816	2
8	Lift Rod Adjuster LEFT	25583	1	17	Nut, 3/8" Serrated Flange	10271	5
	Lift Rod Adjuster RIGHT	25582					



## Caster Wheel and Hub



Caster Wheel and Hub							
	Description	ID #	QTY		Description	ID #	QTY
1	Caster Fork	22270	1	10	Grease Zerk	16364	1
2	Caster Axle	22273	1	11	Stud	16391	5
3	Caster Spacer, 2-9/16"	22271	1	12	Seal	16297	2
4	Caster Spacer, 2-15/16"	22272	1	13	Bearing Cone	16296	2
5	Caster Teardrop	22274	1	14	Bolt, 3/8 x 1-3/4"	16040	2
6	Castle Nut	16299	1	15	Nut, 3/8" Nylon Lock	10806	2
7	Cotter Pin	10580	1	16	Tire & Rim, 9.5L-15 #	-	1
8	Caster Wheel Hub *	18819	1	17	Wheel Nut	16356	5
9	Bearing Cup	16295	2				

\* NOTE: Hub (8) comes with wheel studs (11), grease zerk (10), and bearing cups (9) installed

# NOTE: See local tire dealership for replacement or repairs

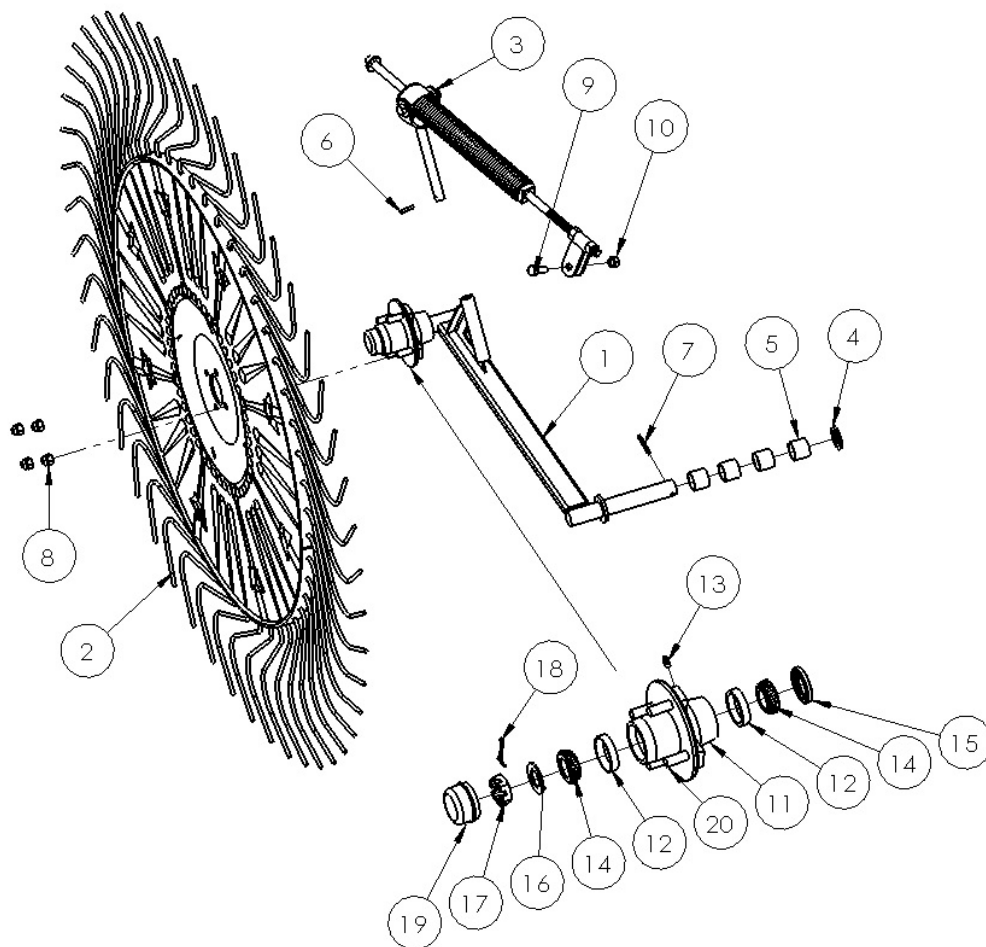
Quantities are per assembly as shown. Left side shown. For right side, install fork opposite direction.

Wheel nuts installed with cone IN, air valve same side as wheel nuts.





## Rake Wheel and Arm



Rake Wheel and Arm							
	Description	ID #	QTY		Description	ID #	QTY
1	Rake Wheel Arm Left	25651	1	11	Rake Wheel Hub *	16413	1
	Rake Wheel Arm Right	25650		12	Bearing Cup	16081	2
2	Rake Wheel Assembly	-	1	13	Grease Zerk	16364	1
3	Spring Assembly	-	1	14	Bearing	16082	2
4	Rake Arm Pivot Washer	16650	1	15	Seal	16083	1
5	Rake Arm Pivot Bushing	16096	4	16	Washer	16088	1
6	Roll Pin, 1/4 x 1-1/4"	16021	1	17	Castle Nut	16087	1
7	Roll Pin, 1/4 x 2"	15872	1	18	Cotter Pin	16089	1
8	Rake Wheel Nut	16085	4	19	Dust Cap	16084	1
9	Bolt, 1/2 x 1-1/2"	14461	1	20	Stud	16391	4
10	Nut, 1/2" Stover Lock	14393	1				

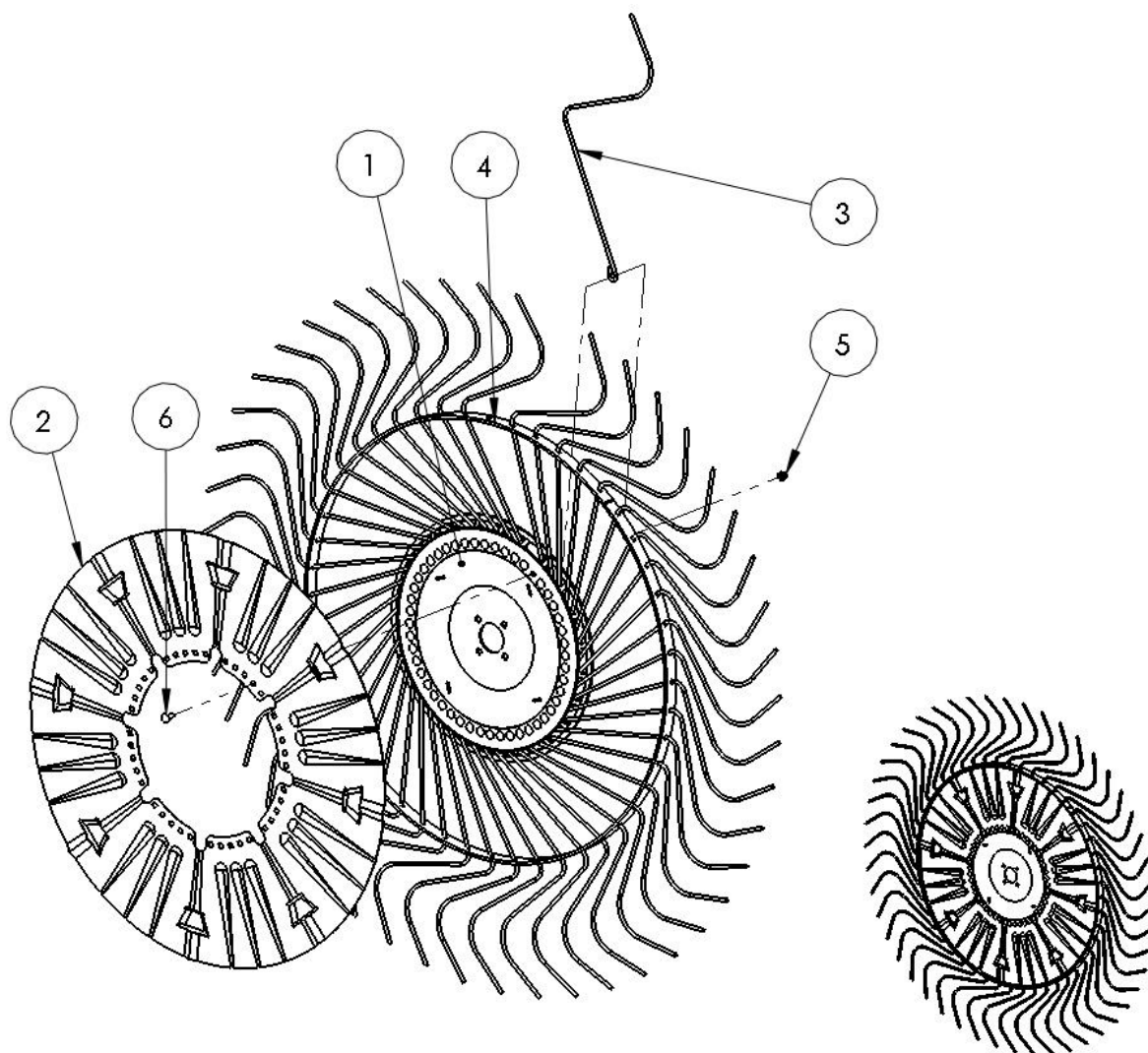
\* NOTE: Hub (11) comes with wheel studs (20), grease zerk (13), and bearing cups (12) installed.

Quantities are per assembly as shown. Left side shown.

Torque wheel nuts to 90 ft-lb



## Rake Wheel Assembly



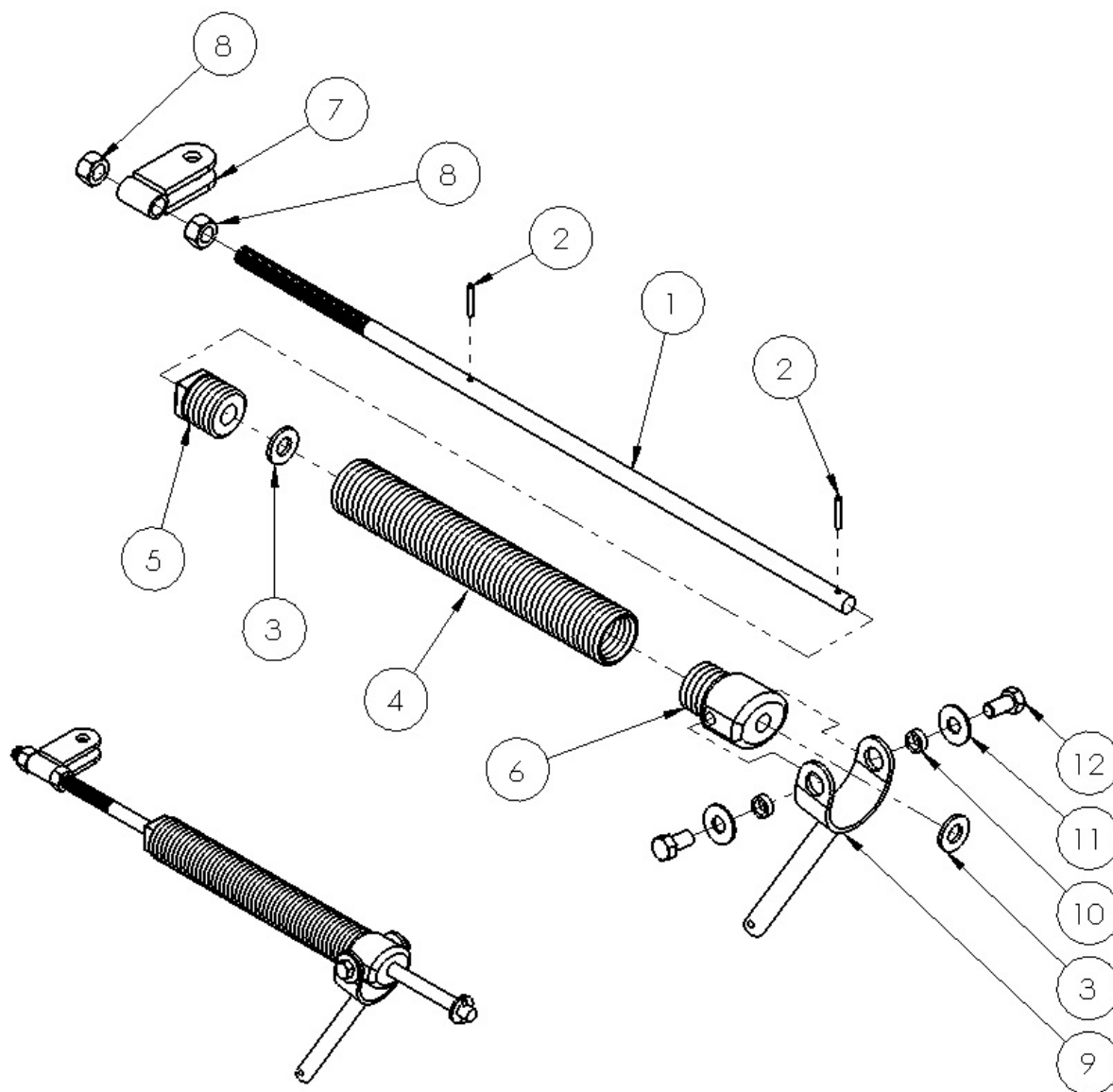
Rake Wheel Assembly							
	Description	ID #	QTY		Description	ID #	QTY
	Complete Left Wheel	22056		3	Rake Tine	16092	48
	Complete Right Wheel	22057		4	Outer Ring	22055	1
1	Center Disk Left	22053	1	5	Nut, 3/8" Stover Flange	17844	48
	Center Disk Right	22731		6	Carriage Bolt, 3/8 x 1"	15718	48
2	Wind Guard	22054	1				

**NOTE:** Left hand shown. Quantities are for each wheel.





## Spring Assembly



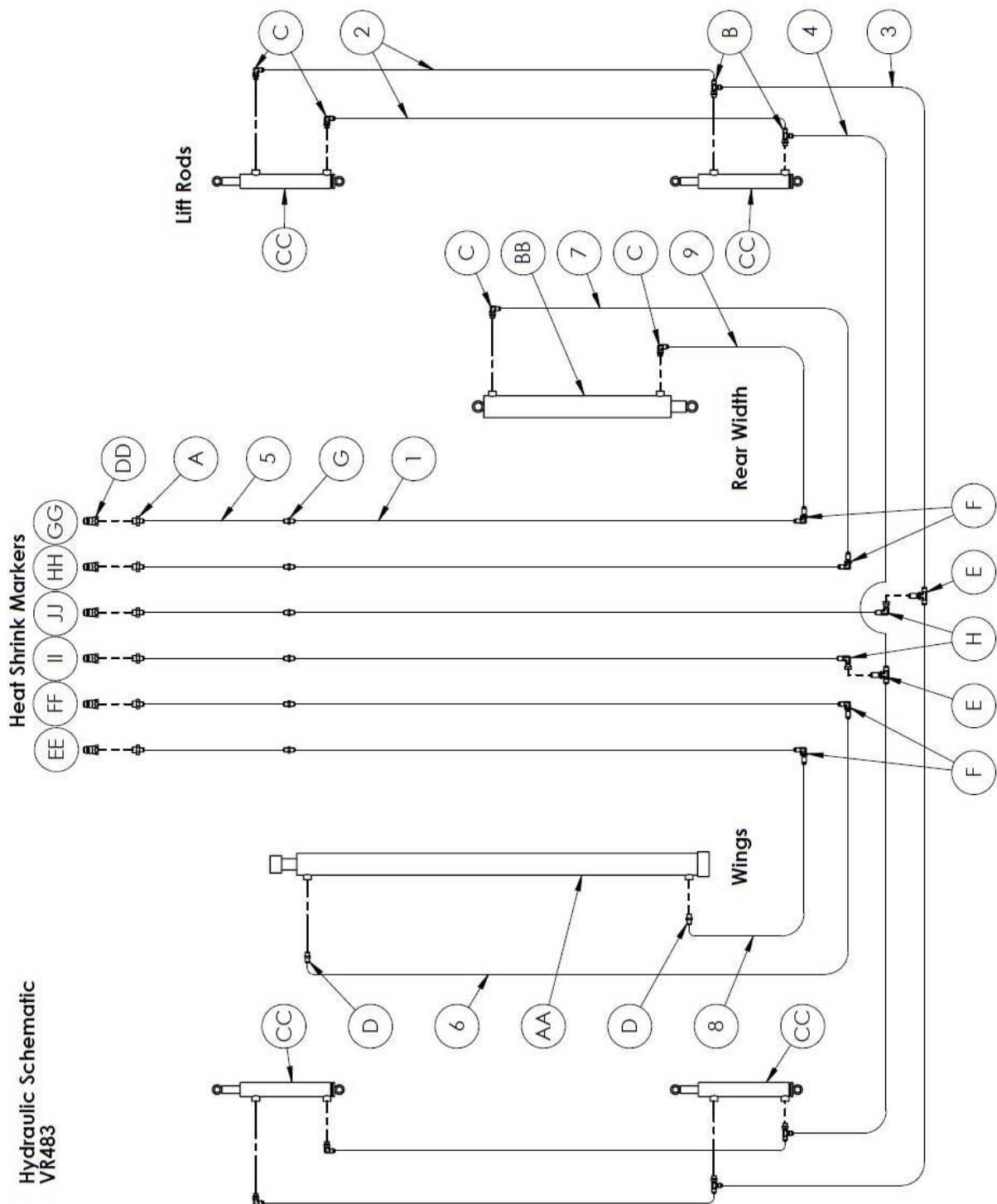
Spring Assembly							
	Description	ID #	QTY		Description	ID #	QTY
	<i>Complete Kit</i>	22050		7	Spring Clevis	22048	1
1	Spring Slide Rod	16493	1	8	Nut, 5/8"	11614	2
2	Roll Pin, 3/16 x 1-1/4"	10302	2	9	Spring Yoke	22049	1
3	Flat Washer, 5/8"	16652	2	10	Spring Yoke Bushing	16290	2
4	Rake Wheel Spring	16095	1	11	Flat Washer, 1/2"	11668	2
5	Spring Retainer Block	16100	1	12	Bolt, 1/2 x 1"	10824	2
6	Spring Retainer Pivot	16101	1				

**NOTE:** Quantities are per assembly.



## Hydraulic Components

### Hydraulic Schematic





#	DESCRIPTION	PART #
AA	Hydraulic Cylinder - Wings, 2-1/2" Bore x 48" Stroke *Seal Kit	17331
BB	Hydraulic Cylinder - Windrow, 2-1/2" Bore x 20" Stroke *Seal Kit	17328
CC	Hydraulic Cylinder - Rake Wheels, 1-1/2" Bore x 8" Stroke *Seal Kit	21213
DD	Pioneer Tip, 8FB	17379
EE	Hose Marker, Long Red	20790
FF	Hose Marker, Short Red	18140
GG	Hose Marker, Long Blue	18497
HH	Hose Marker, Short Blue	18141
II	Hose Marker, Long Yellow	16521
JJ	Hose Marker, Short Yellow	16520
A	Adaptor, 8MB - 6MJ	
B	Adaptor, 6MBR - 6MJT	
C	Adaptor, 6MB - 6MJ90	
D	Adaptor, 6MB - 6MJ	
E	Adaptor, 6MJBHT	
F	Adaptor, 6MJBH90	
G	Adaptor, 6MJ-6MJ	
H	Adaptor, 6FJX-6MJ90	

### **Hydraulic Hoses**

#	DIAM.	LENGTH	ENDS
1	1/4"	425" OAL	6FJX - 6FJX
2	1/4"	208" OAL	6FJX - 6FJX90
3	1/4"	150" OAL	6FJX - 6FJX
4	1/4"	140" OAL	6FJX - 6FJX
5	1/4"	120" OAL	6FJX - 6FJX
6	1/4"	114" OAL	6FJX - 6FJX90
7	1/4"	78" OAL	6FJX - 6FJX
8	1/4"	67" OAL	6FJX - 6FJX90
9	1/4"	56" OAL	6FJX - 6FJX



## Electrical Components

### Light Wiring Schematic

