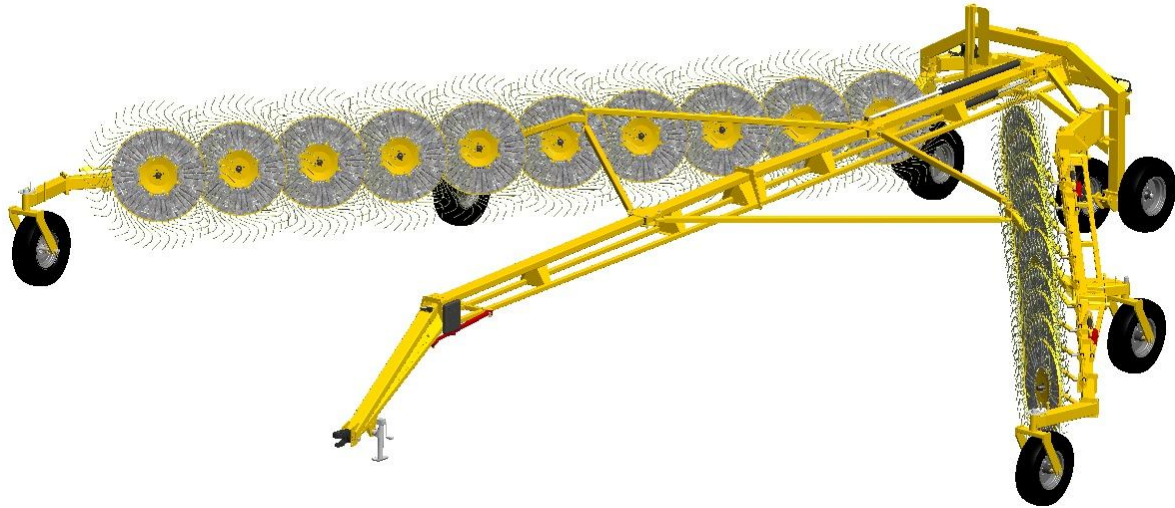




BRIDGEVIEW MFG. INC.



BALE KING VR581 & VR583

Hay Rake

Operator's & Parts Manual

Last Updated: April 27, 2015



Bridgeview Manufacturing Inc.

P.O. Box 4

Gerald, Saskatchewan, Canada

S0A 1B0

Phone: 1-306-745-2711

Fax: 1-306-745-3364

Email: bmi@sasktel.net

www.bridgeviewmanufacturing.com

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.

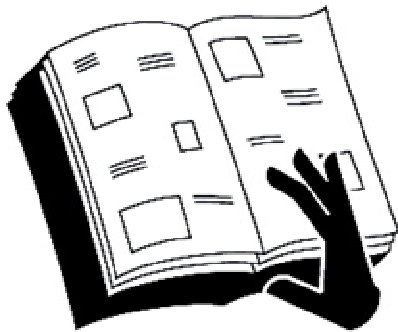
	<div data-bbox="808 1507 1302 1612">⚠ WARNING</div> <div data-bbox="812 1633 1302 1879"><p>Failure to read and understand operator's manual & all safety signs could result in serious injury. Manual must remain with machine.</p></div>
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TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	Safety Precautions	1
1.2	Highway Transport.....	2
1.2.1	Dimensions	2
1.2.2	Safety Chain & Jack.....	3
1.2.3	Lights and Marking	3
1.2.4	Rake Wheel Safety Locks	3
1.2.5	Transport Safety Locks	4
1.2.6	Wheels & Caster Brakes.....	4
2	FEATURES AND OPERATION.....	5
2.1	Hydraulics	5
2.2	Field Operation	5
2.3	Adjustments	5
2.3.1	Lift Cylinder Stoppers.....	6
2.3.2	Individual Spring Adjusters.....	6
2.3.3	Windrow Width Adjustment.....	6
2.3.4	Implement Tongue	7
2.4	Optional 2-Wheel Extension Kit	7
2.5	Trouble-Shooting Guide	8
2.6	Specifications	8
3	MAINTENANCE & LUBRICATION	9
3.1	Greasing	9
3.2	Wheels and Tires	10
3.3	Tine Replacement.....	10
4	PARTS BOOK	11
4.1	Gooseneck Assembly	12
4.1.1	Transport Lock.....	14
4.2	Hitch Beam & Scissor Assembly	15
4.2.1	Scissor Components Front.....	15
4.2.2	Scissor Components Rear VR581	17
4.2.3	Scissor Components Rear VR583.....	19
4.2.4	Width Indicator	21
4.3	Rear Frame Assembly	22
4.3.1	Rear Axle.....	23
4.3.2	Slow Moving Vehicle (SMV) Sign Kit.....	24
4.4	Boom Arm Assembly	25
4.4.1	Boom Arm Assembly VR581	25
4.4.2	Boom Arm Assembly VR583.....	27
4.4.3	Lift Rod Details	30
4.4.4	Caster Wheel and Hub.....	31
4.5	Rake Wheel and Arm	32
4.5.1	Rake Wheel Assembly	33
4.5.2	Spring Assembly	34
4.6	Decals	35
4.7	Hydraulic Components	36
4.8	Electrical Components.....	40



1 INTRODUCTION

Thank you for purchasing your new **Bale King 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 VR581 hay rake is a 12-wheel, V-style rake specially suited for windrowed hay. An optional 14-wheel extension kit is available, if more coverage is desired.

The VR583 hay rake is an 18-wheel, V-style rake specially suited for mowed hay. An optional 20-wheel extension kit is available. The ground following rake boom ensures that raking quality is maintained even over the roughest terrain.

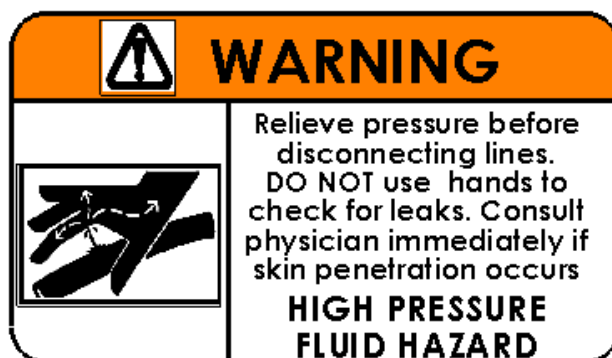
On both models, the rear windrow width is hydraulically adjustable for ease of use. The width compensation system ensures maximum raking width, no matter what the windrow width is set at.

This is a complete safety, operation, and parts manual for the Bale King hay rake. 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 section covers all of the parts you may need to order in case of accident or breakdown.

1.1 Safety Precautions

The following safety precautions MUST be followed to ensure the safe operation of the Bale King 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 or 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.

1.2 Highway Transport

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

1.2.1 Dimensions

	VR581-12	VR581-14	VR583-18	VR583-20
Transport Width	10'-6"	12'-4"	12'-4"	
Transport Height	7'-7"		7'-7"	
Transport Length	32'-8"	36"	41'-8"	
Transport Weight (Gross)	4200 lb	4600 lb	6650 lb	6950 lb
Transport Weight (Tongue)	550 lb		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.



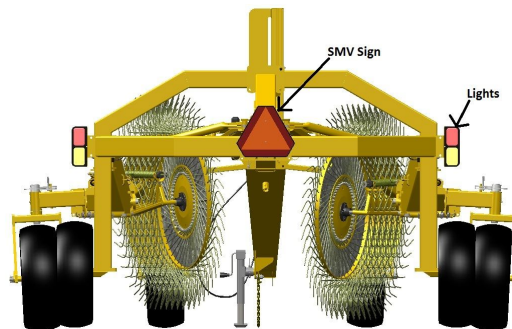
1.2.2 Safety Chain & Jack

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. The chain is rated for 11,000 lb.

1.2.3 Lights and Marking

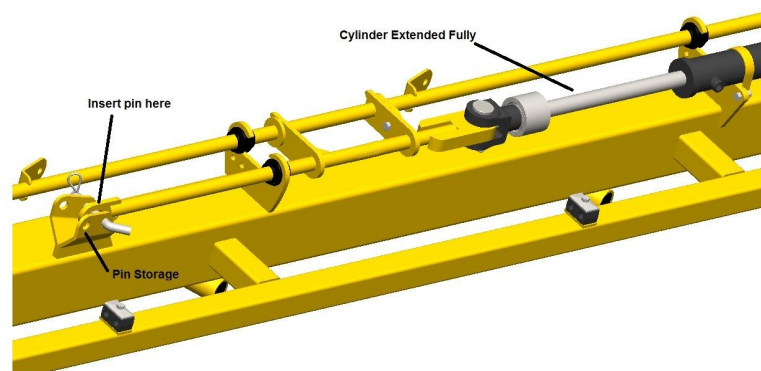
The Bale King hay rake comes standard with a light kit for better visibility. The lights can be plugged into the standard 7-pin round trailer plug on a tractor. However, to tow with a light truck, an adaptor is required. The lights function as flashing amber lights, with solid red tail lights. Ensure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

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



1.2.4 Rake Wheel Safety Locks

The lift rods (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 safety locks, raise the rake wheels to their highest position, then insert the pin as shown. Make sure that this is done for all lift rods (2 on VR581, 4 on VR583). Store pin in other hole when not required.

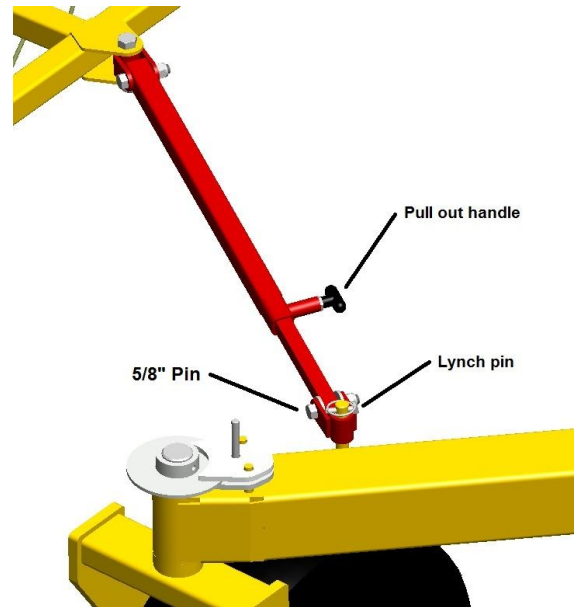




1.2.5 Transport Safety Locks

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.

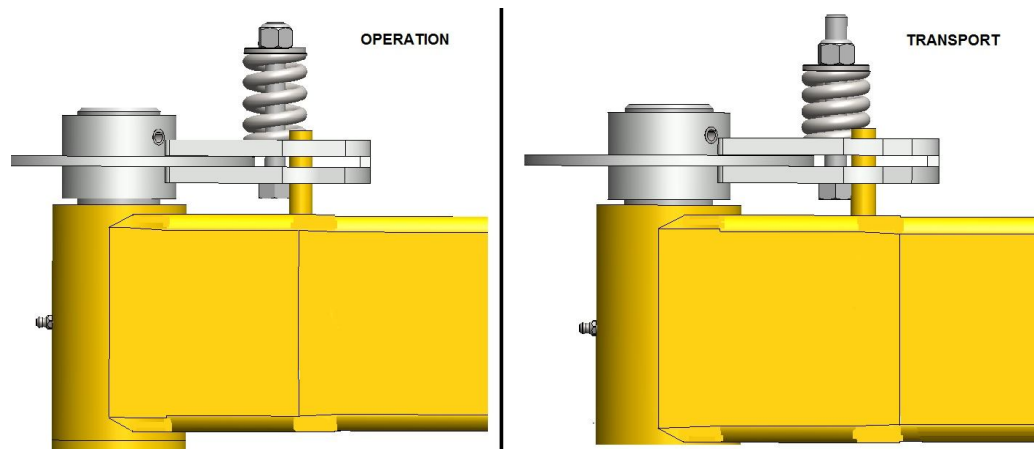
Swing the transport locks out from under the gooseneck hitch, and connect to the pivot on the front caster. Pull out the self-locking pin (black handle) to lengthen or shorten as required. Secure with the 5/8" pin and lynch pin. Finally, adjust the boom width so that the self-locking pin snaps into place.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



1.2.6 Wheels & Caster Brakes

Check tire pressure and wheel nut torque of all wheels regularly. 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.



2 FEATURES AND OPERATION

2.1 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

2.2 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 15 lb.

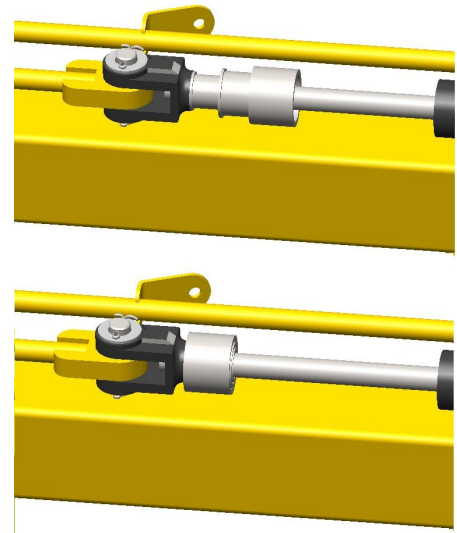
2.3 Adjustments

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.



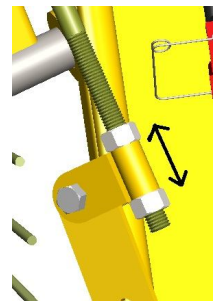
2.3.1 Lift Cylinder Stoppers

The lift cylinders are located near the back of each individual boom arm. When the cylinder is retracted, the rake wheels touch the ground. The 3-stage nut located on the cylinder shaft can be turned to adjust the cylinder stroke. If the rake wheel pressure is too high, increase the length of the nut. Adjust one boom at a time (using the transport lock on others), find the desired wheel weight with hydraulics, then turn the nut until it bottoms out on the cylinder. Lastly, spin the jam rings up against the nut to keep it from turning.



2.3.2 Individual Spring Adjusters

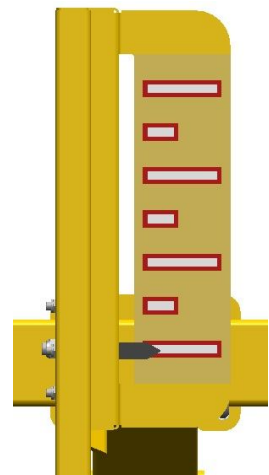
If the spring tension for only one wheel needs to be adjusted, then the adjustment can be done on the individual spring. There are two nuts near the end of the spring (see left) that allow the spring to be loosened or tightened.



2.3.3 Windrow Width Adjustment

The rear opening of the Bale King hay rake 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.



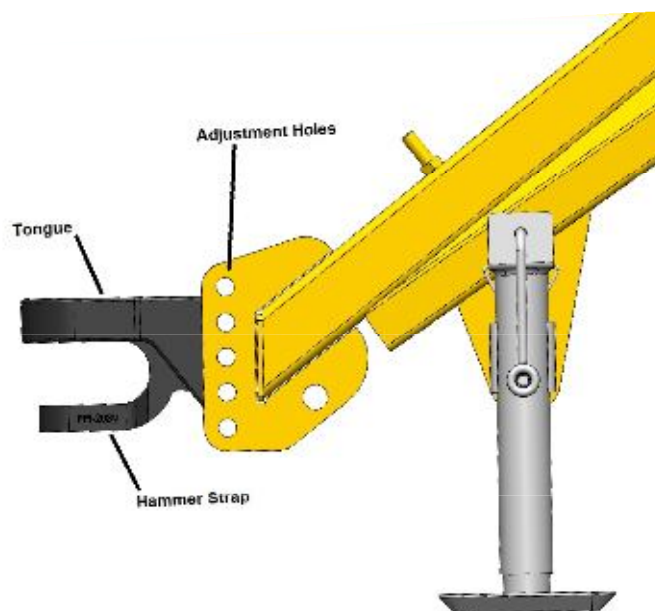


2.3.4 Implement Tongue

The adjustable hitch on the Bale King hay rake features a single cast tongue with optional 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.



IMPORTANT: For maximum turning radius, ensure that the tractor's drawbar is in its most extended position. If the pin still does not stick out past the tires, a drawbar extension may be required.

2.4 Optional 2-Wheel Extension Kit

The Bale King hay rake can be outfitted with an extension kit to add 1 rake wheel to each side, allowing the rake to cover a wider area. This kit can be purchased from Bridgeview Manufacturing or a registered dealer, and can be installed in a short amount of time.

Model		Kit #
VR581	12- to 14-wheel	220341
VR583	18- to 20-wheel	253381

This kit will allow for approximately 4' of additional coverage.



2.5 Trouble-Shooting Guide

Problem	Possible Cause	Remedy
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

2.6 Specifications

Operation	12 Wheel	14 Wheel	18 Wheel	20 Wheel
Raking Width	28 ft	32 ft	36 ft	40 ft
Windrow Width	4 ft - 6.5 ft		3 ft - 5 ft	
Rake Wheel	62" Diameter, 48 Tines			
Transport				
Width	10'-6"	12'-4"		12'-4"
Height	7'-7"			7'-7"
Length	32'-8"	36'		41'-8"
Weight (Total)	4200 lb	4600 lb	6650 lb	6950 lb
Weight (Tongue)	550 lb			650 lb
Tires				
Size	9.5L-15SL, 8 ply			
Pressure	35 psi			
Wheel Nut Torque	125 ft-lb			



3 MAINTENANCE & LUBRICATION

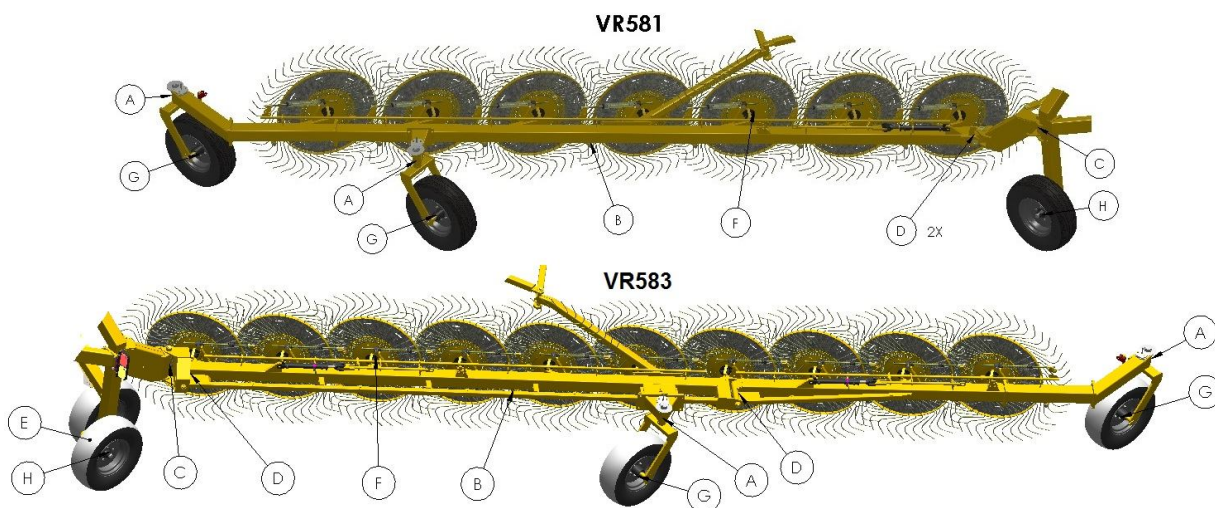
General maintenance of your Bale King hay rake should be done on a regular basis. This includes checking all bolts to ensure they are tight, ensuring all joints are properly greased, and that all moving parts are functioning correctly.

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.

3.1 Greasing

The VR581/583 hay rake is fitted with a number of grease zerks. It is important that these locations are continuously lubricated.

	Location	QTY 12 Wheel	QTY 14 Wheel	QTY 18 Wheel	QTY 20 Wheel	Timeline
A	Caster Pivot	2	4	4	4	10 hr
B	Rake Arm Pivot	12	14	18	20	
C	Knuckle Pivot	4	4	4	4	
D	Boom Arm Pivot	2	2	4	4	
E	Walking Axle Pivot	-	-	2	2	
F	Rake Wheel Hub	12	14	18	20	
G	Caster Wheel Hub	2	4	4	4	200 hours or seasonal
H	Rear Wheel Hub	2	2	4	4	



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) for best access to fittings (C) and (D).



3.2 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.

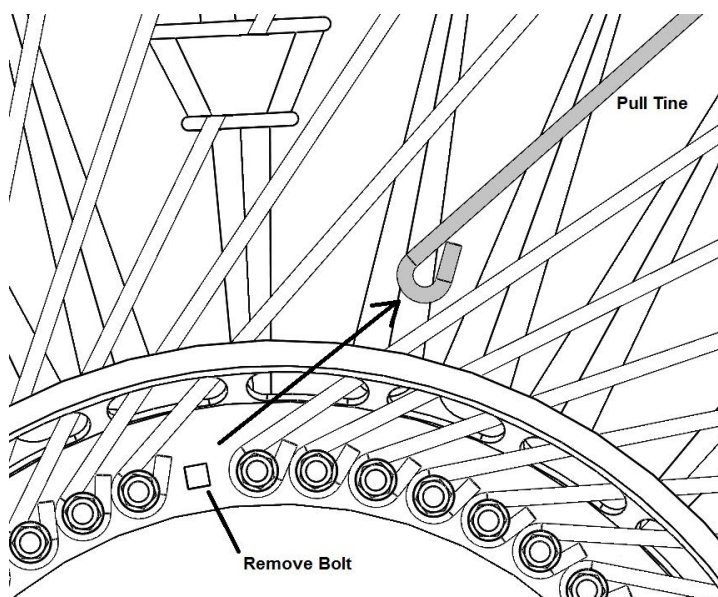
Tire Size	9.5L-15SL, 8-ply
Tire Pressure	35 psi
Wheel Bolt Torque	120 ft-lb

Warranty does not cover damaged rims and hubs due to loose wheel bolts. Tire warranty is covered by the tire manufacturer. See your local tire dealer for service and replacement.

3.3 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.
- Pull the tine out of the center disk.
- Pull the tine out of the wind guard tab (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.



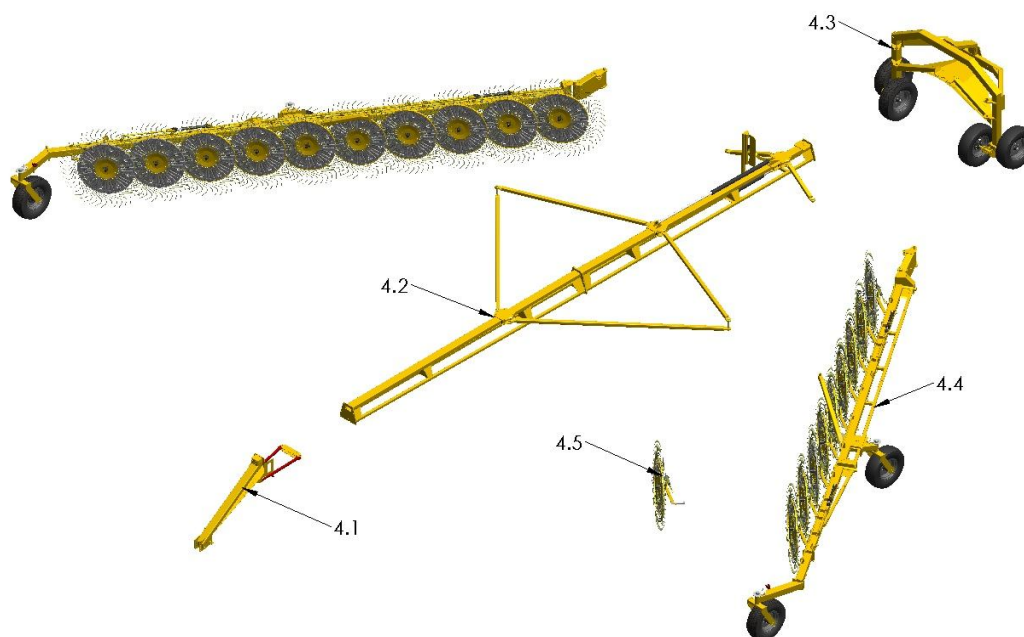


4 PARTS BOOK

The following diagrams show the part numbers for ordering any damaged parts on a VR581 or VR583. Make sure to use the correct diagram for the desired model. Unless stated otherwise, diagram is the same for both models, though some components may look slightly different..

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





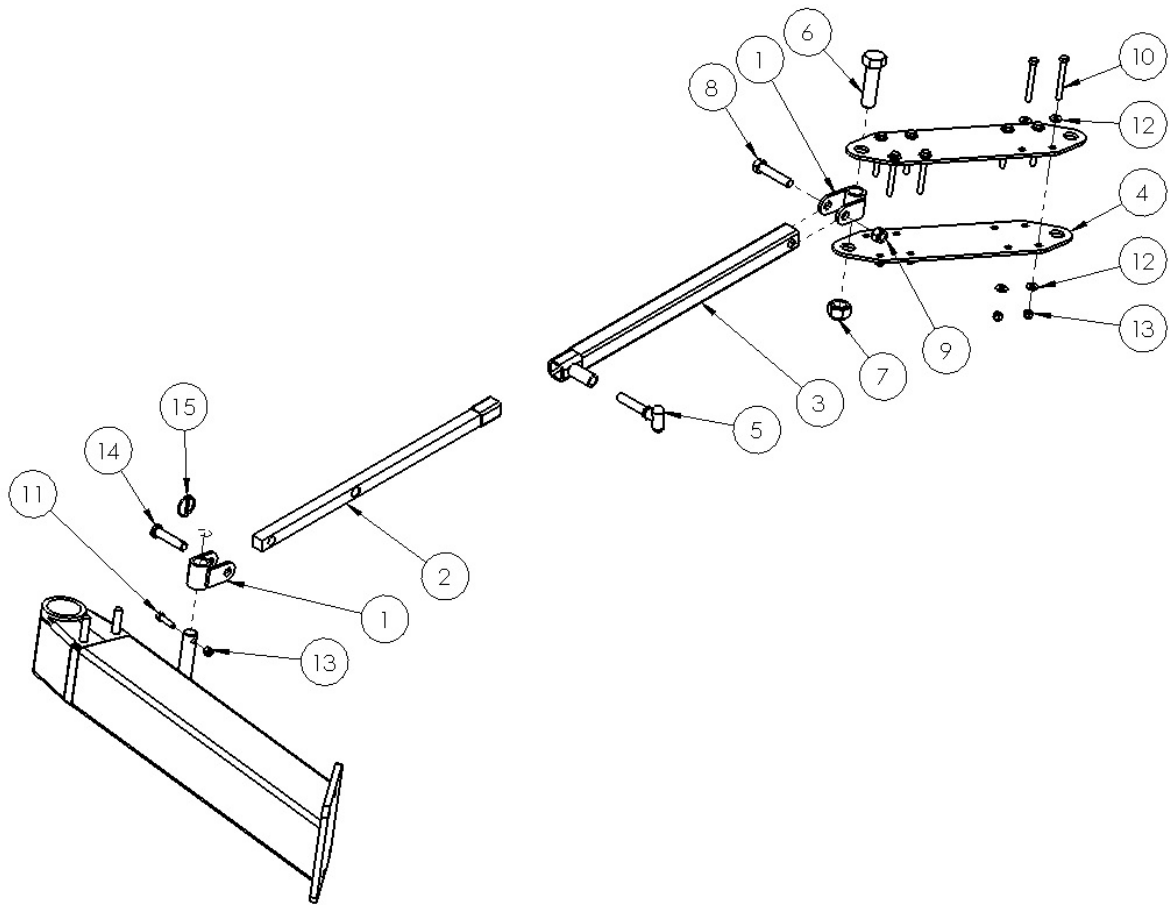
4.1 Gooseneck Assembly							
	Description	ID #	QTY		Description	ID #	QTY
1	Gooseneck	25563	1	15	Nut, 1" Stover Lock	21746	1
2	Front Hitch Beam 581	22232	(1)	16	Jack, 5000 lb Sidewind	18034	1
	Front Hitch Beam 583	25561	(1)	17	Spring Hose Holder	18080	1
3	Hitch Beam Extension *	22192	1	18	Flat Washer, 5/8"	21390	1
4	Bolt, 5/8 x 1-3/4"	12379	10	19	Nut, 5/8" Nylon Lock	10364	1
5	Nut, 5/8" Serrated Flange	11614	10	20	Operator Manual Bracket	23294	1
6	Hitch Tongue	22440	1	21	Operator Manual Box	22409	1
7	Bolt, 3/4 x 5-3/4"	10802	2	22	Bolt, 1/4 x 3/4"	11809	4
8	Nut, 3/4" Stover Lock	11823	2	23	Flat Washer, 1/4"	11666	4
9	Hitch Clevis Option #	25540	1	24	Nut, 1/4" Nylon Lock	11664	4
10	Hitch Clevis	22441	1	25	Hydraulic Bulkhead Plate 1	26371	1
11	Bolt, 3/4 x 5"	10803	1	26	Hydraulic Bulkhead Plate 2	26372	1
12	Nut, 3/4" Stover Lock	11823	1	27	Bolt, 3/8 x 1"	13806	4
13	Safety Chain	21715	1	28	Grommet	21428	1
14	Bolt, 1 x 2"	18992	1	29	Transport Lock Assembly	-	1

*** NOTE: 14 wheel only**

NOTE: Includes (10), (11), (12)



4.1.1 Transport Lock



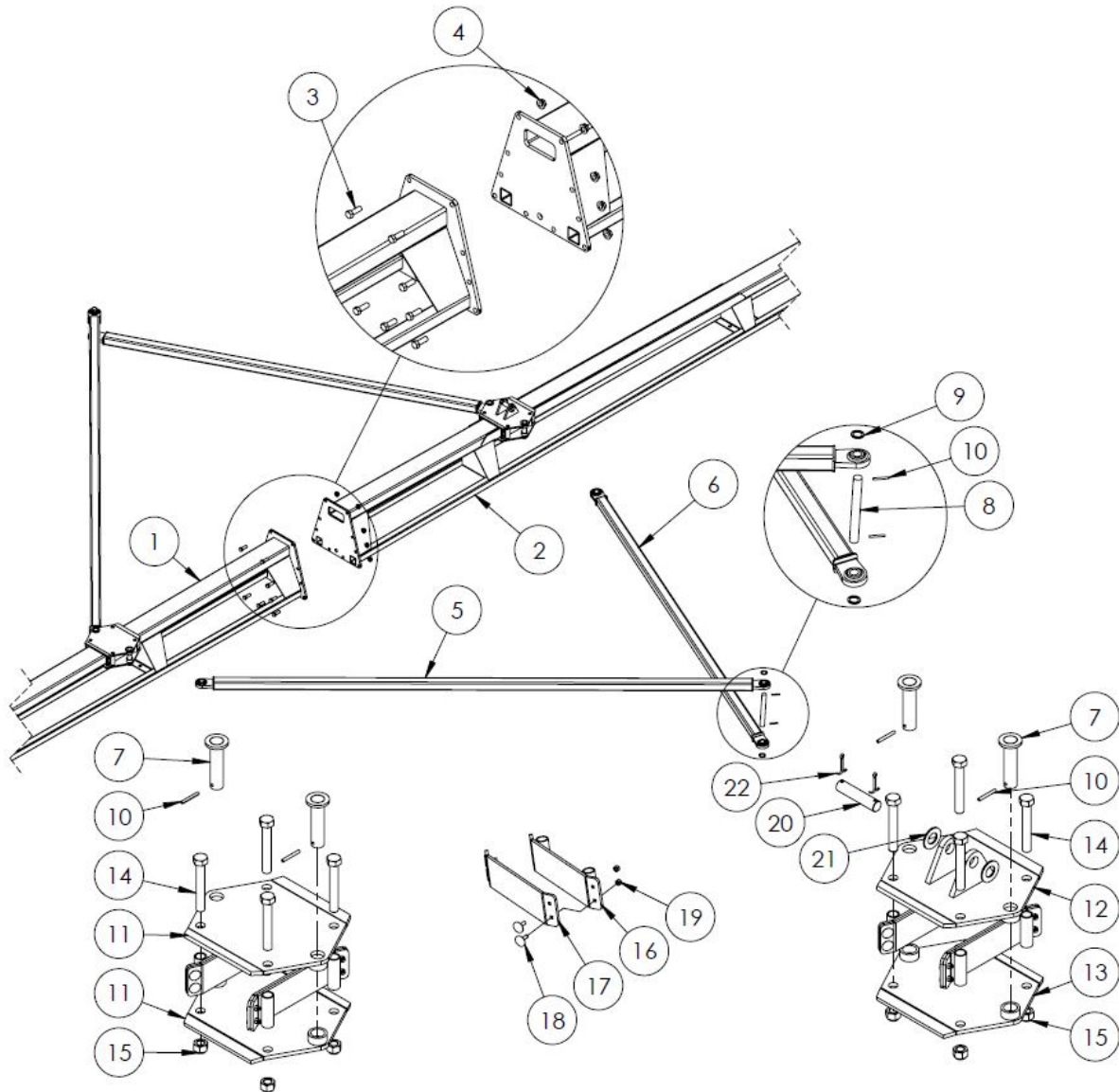
Right arm not shown

4.1.1 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	Clevis Pin, 5/8 x 2-3/4"	21829	1
7	Nut, 1" Stover Lock	21746	1	15	Lynch Pin, 3/16 x 1-1/4"	13233	1
8	Bolt, 5/8 x 3"	20907	1				



4.2 Hitch Beam & Scissor Assembly

4.2.1 Scissor Components Front





4.2.1 Scissor Components Front

VR581

	Description	ID #	QTY			Description	ID #	QTY
1	Front Hitch Beam	22232	1		12	Slider Plate Middle Top	22459	1
2	Rear Hitch Beam	26359	1		13	Slider Plate Middle Bottom	22242	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	22235	2		16	Slider Side Plate	22246	4
6	Rear Scissor Linkage	22236	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 8-1/2"	26449	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, 3/16 x 1-1/2"	10072	2

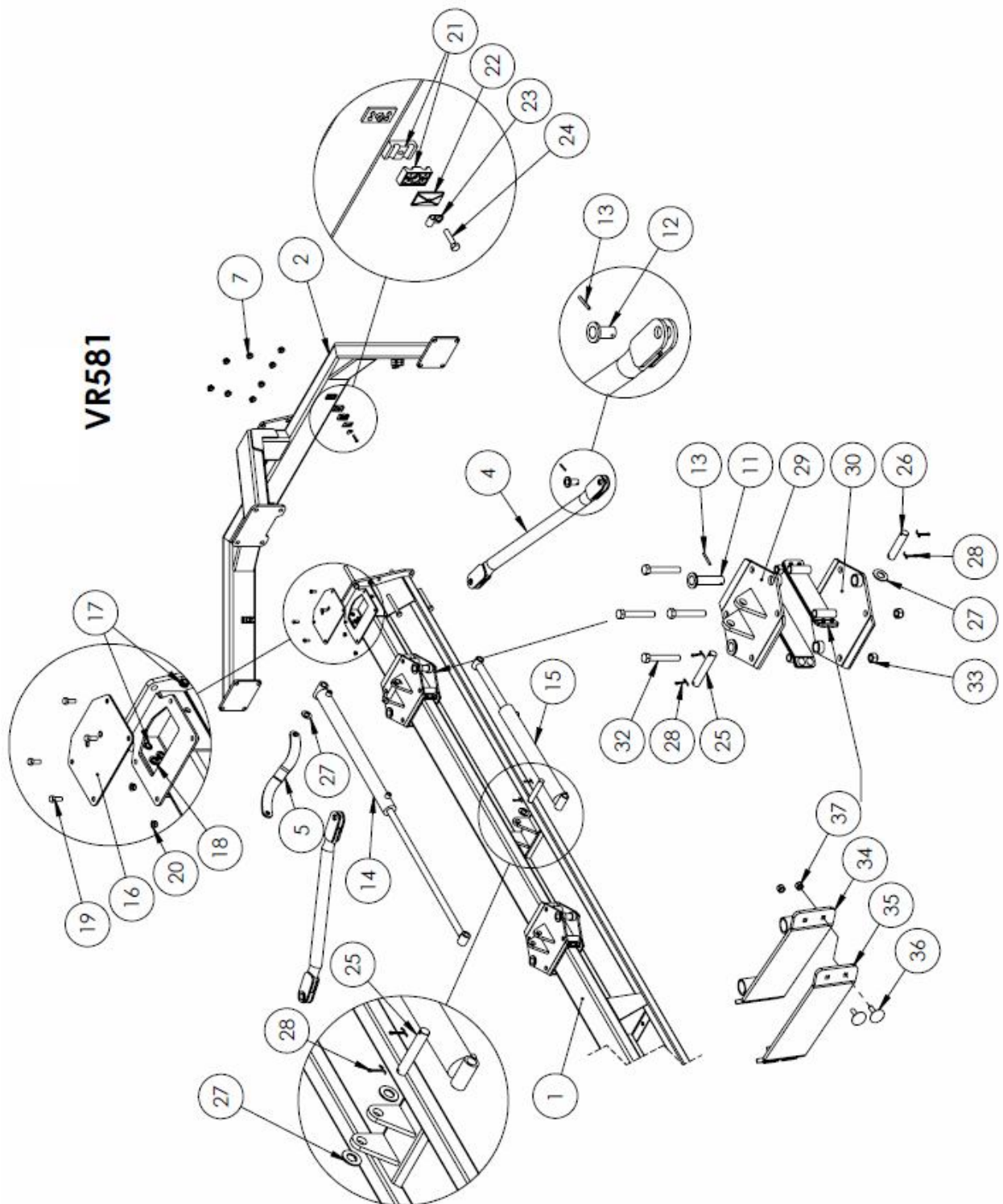
4.2.1 Scissor Components Front

VR583

	Description	ID #	QTY			Description	ID #	QTY
1	Front Hitch Beam	25561	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



4.2.2 Scissor Components Rear VR581

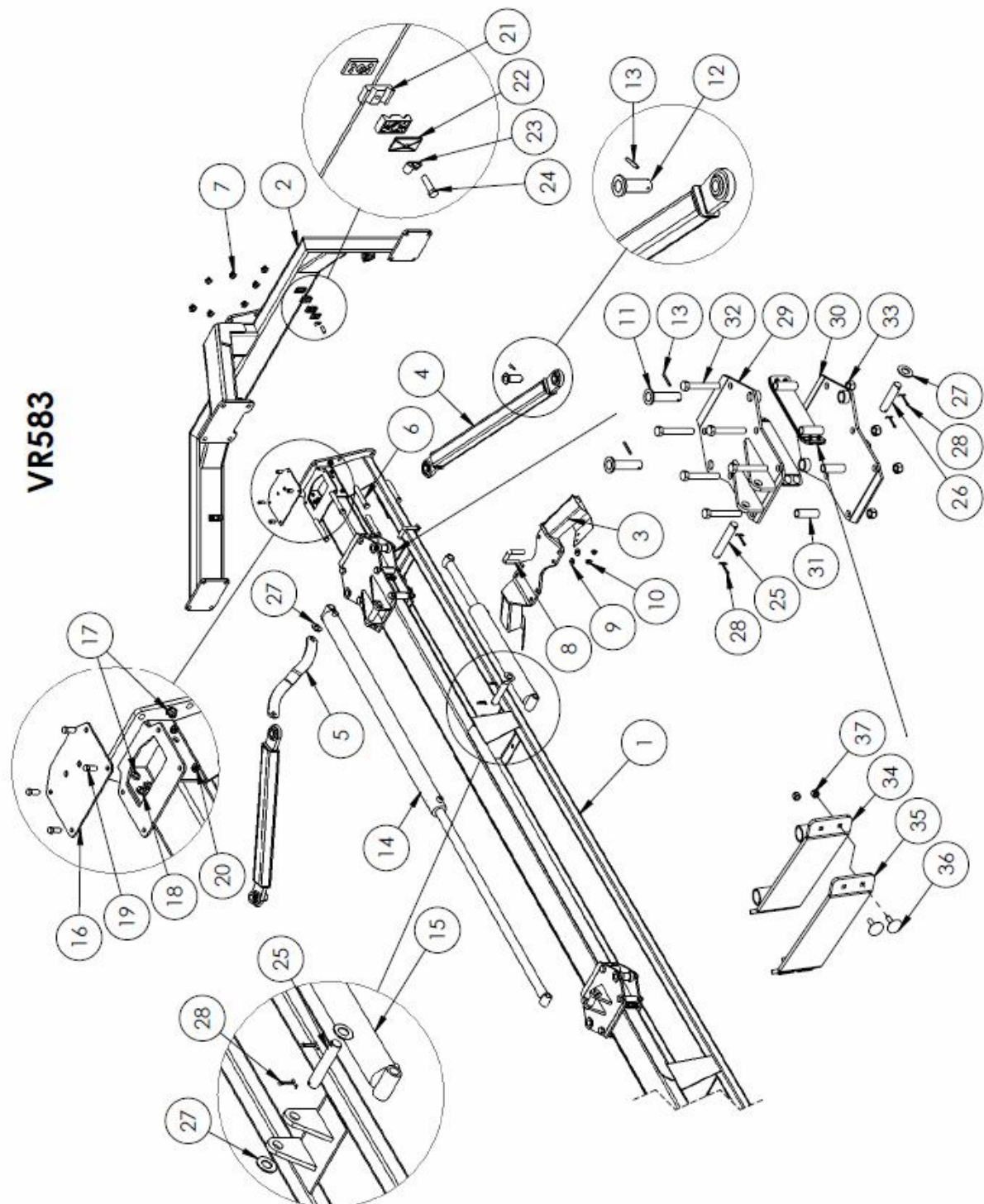




4.2.2 Scissor Components Rear								
VR581								
	Description	ID #	QTY			Description	ID #	QTY
1	Rear Hitch Beam	26359	1		19	Bolt, 3/8 x 1"	13806	4
2	Rear Frame Connector	25562	1		20	Nut, 3/8" Serrated Flange	10271	4
3	-	-	-		21	Hose Clamp	22181	8
4	Width Adj. Linkage	22239	2		22	Hose Clamp Top	22182	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	-	-	-		26	Pin, 1 x 3-3/4" Usable	20788	1
9	-	-	-		27	Flat Washer, 1"	14472	5
10	-	-	-		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	22243	1
12	Pin, 1-1/8 x 1-5/8" Usable	26442	2		30	Slider Plate Rear Bottom	22459	1
13	Roll Pin, 1/4 x 2"	15872	4		31	-	-	-
14	Hyd. Cylinder, 2.5 x 30" Seal Kit	16301	1		32	Bolt, 3/4 x 5"	17826	4
		16396			33	Nut, 3/4" Stover Lock	11823	4
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					



4.2.3 Scissor Components Rear VR583





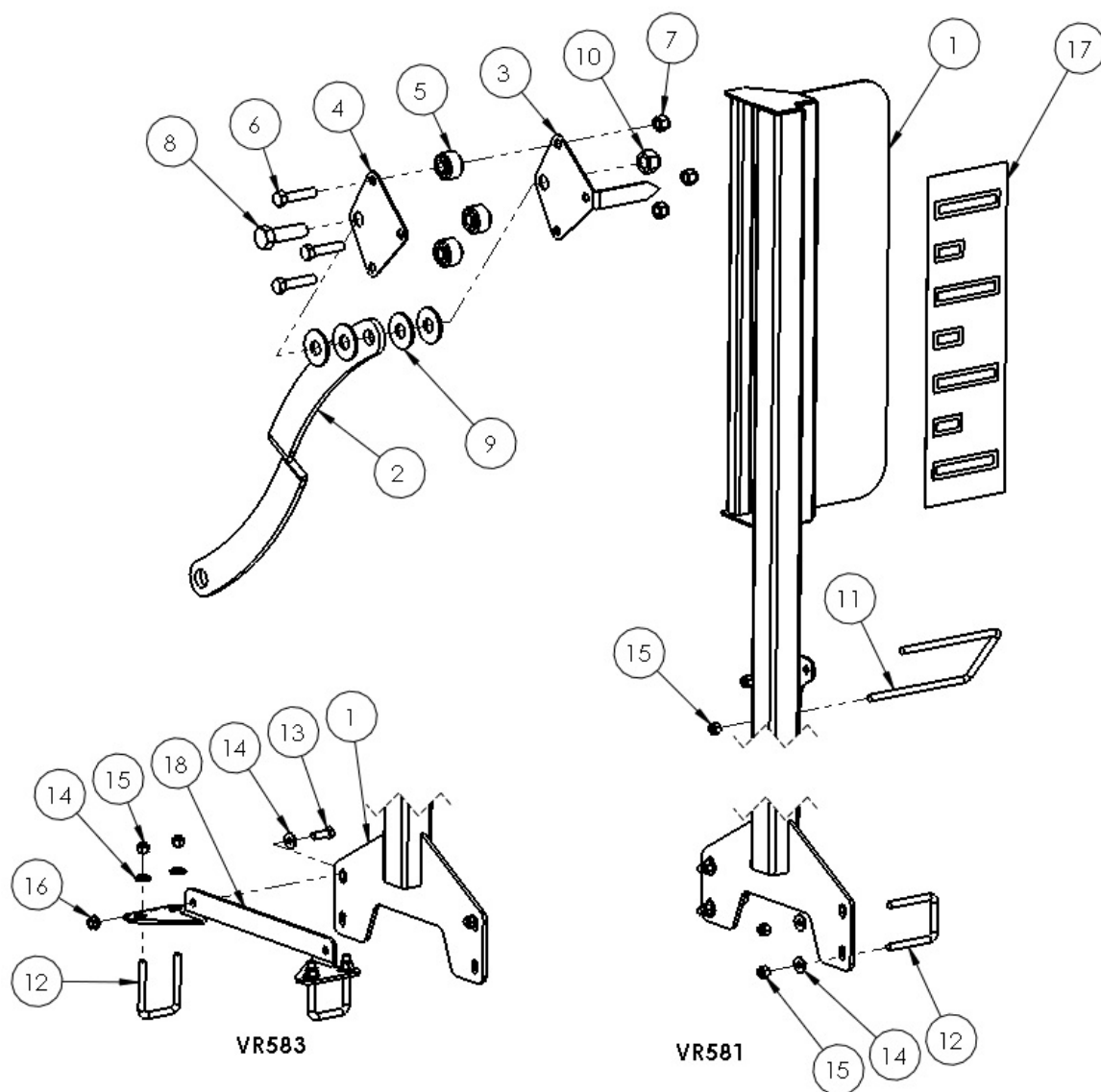
4.2.3 Scissor Components Rear

VR583

	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				



4.2.4 Width Indicator

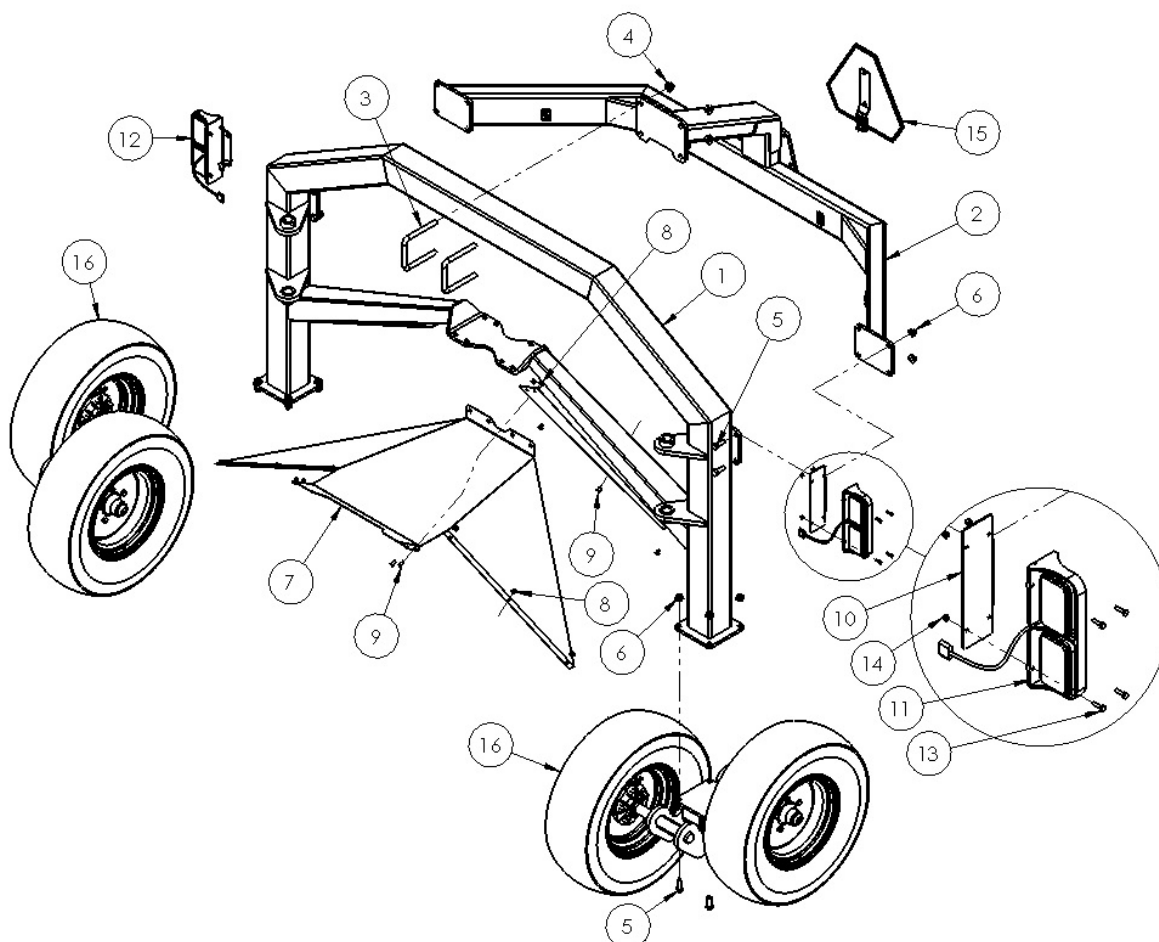


4.2.2 Width Indicator							
	Description	ID #	QTY		Description	ID #	QTY
1	Width Indicator Bracket	23222	1	10	Nut, 3/4" Stover Lock	11823	1
2	Width Indicator Linkage	24673	1	11	U-Bolt, 3/8 x 4 x 7"	23013	1
3	Width Indicator Needle	23049	1	12	U-Bolt, 3/8 x 2 x 3"	21459	2
4	W.I. Roller Plate	23064	1	13	Bolt, 3/8 x 1"	13806	(2)
5	W.I. Roller	11637	3	14	Flat Washer, 3/8"	11667	4 (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)

NOTE: Quantities in brackets are for 583. Otherwise same for both models.



4.3 Rear Frame Assembly



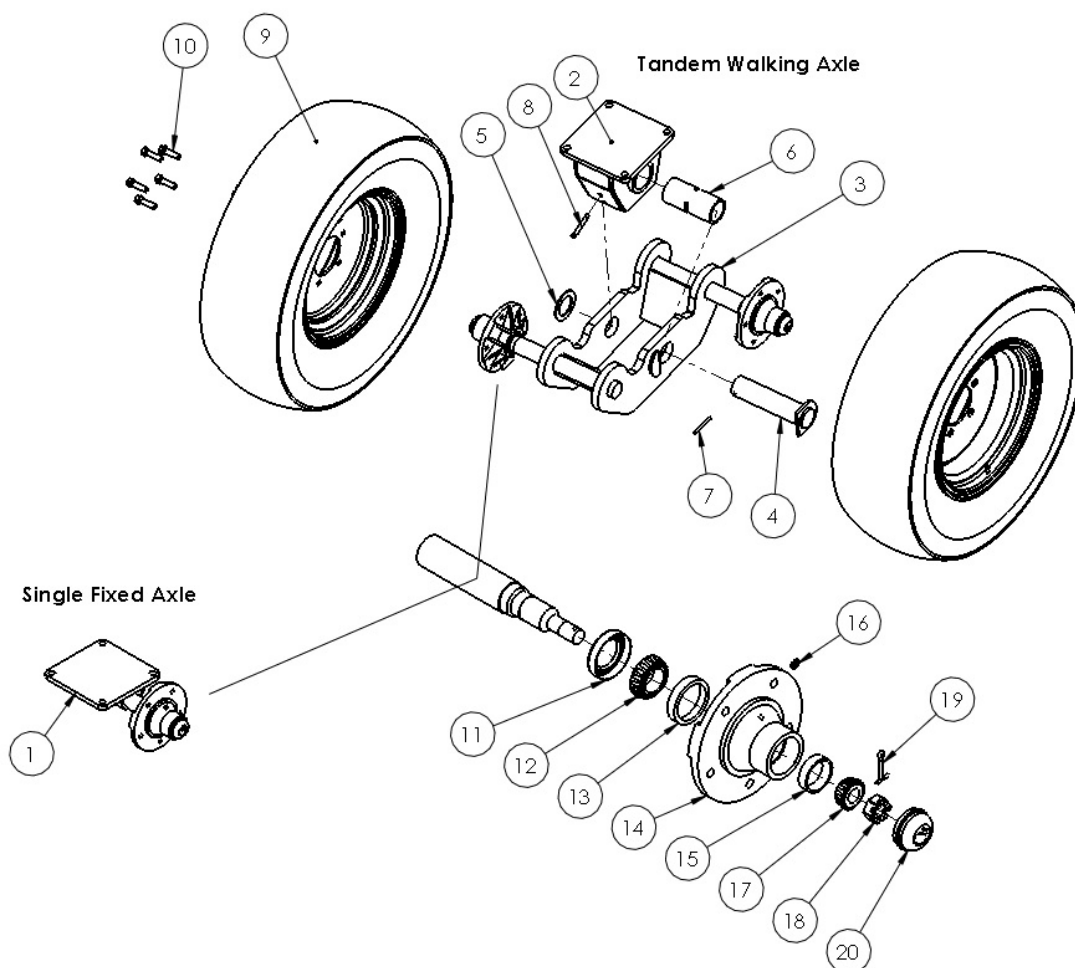
NOTE: VR583 shown. VR581 may not look exactly as shown.

4.3 Rear Frame Assembly							
	Description	ID #	QTY		Description	ID #	QTY
1	Rear Frame 581	22247	1	9	Nut, 3/8" Serrated Flange *	10271	10
	Rear Frame 583	25559		10	Light Bracket	23101	2
2	Rear Frame Connector	25562	1	11	Left Light	22968	1
3	U-bolt, 3/4 x 5 x 6"	16091	2	12	Right Light	22969	1
4	Nut, 3/4" Serrated Flange	16076	4	13	Bolt, 1/4 x 1"	11810	8
5	Bolt, 5/8 x 1-3/4"	12379	16	14	Nut, 1/4" Nylon Lock	11664	8
6	Nut, 5/8" Serrated Flange	11614	16	15	SMV Sign	-	1
7	Rear Deflector *	26370	1	16	Rear Axle	-	1
8	Fin Bolt, 3/8 x 3/4" *	10807	10				

***NOTE: 583 only**



4.3.1 Rear Axle



4.3.1 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				

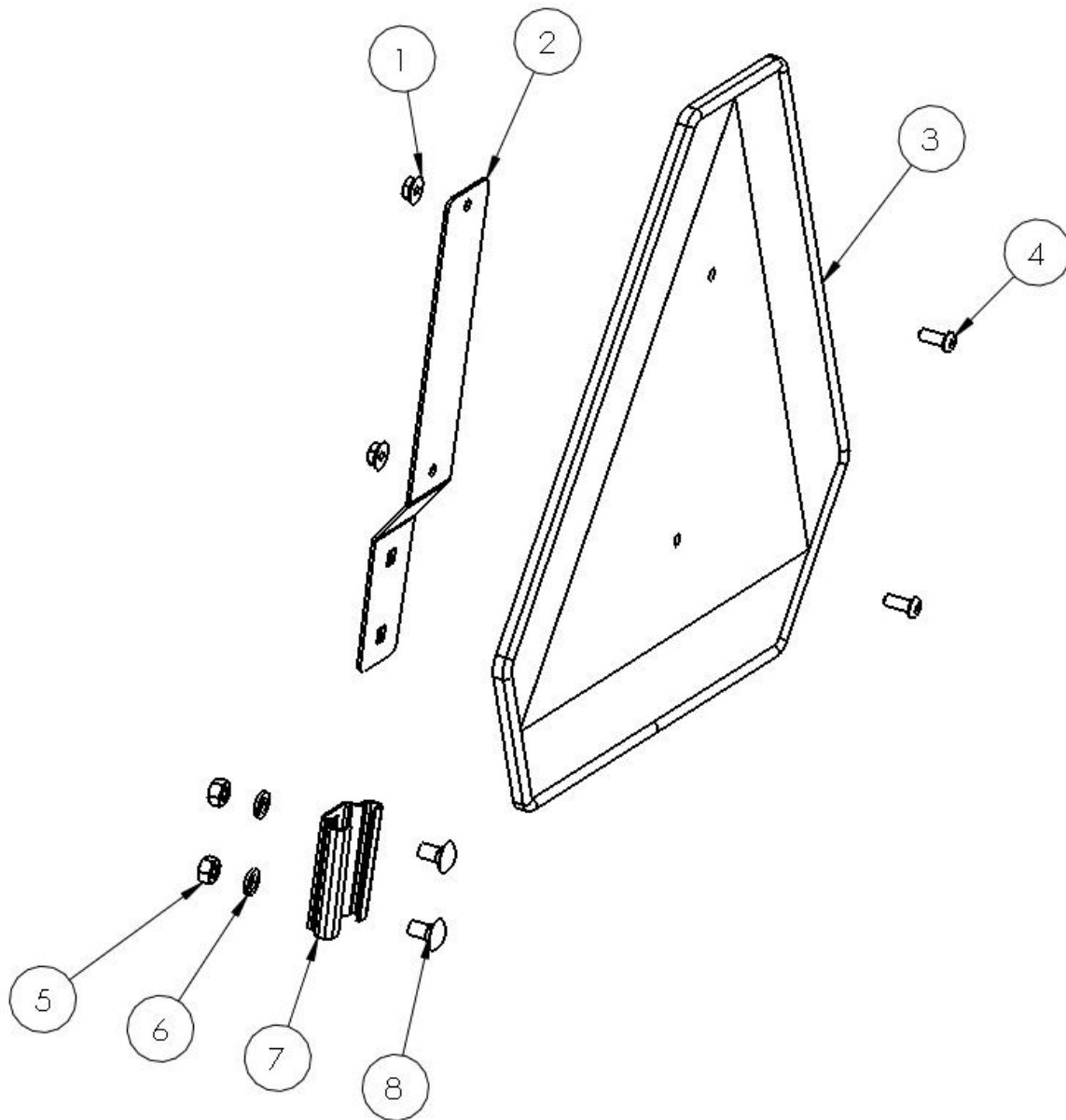
* NOTE: Hub (14) comes with grease zerk (16) and bearing cups (13,15) installed

NOTE: See local tire dealership for replacement or repairs

Quantities are per assembly as shown. Left side shown.



4.3.2 Slow Moving Vehicle (SMV) Sign Kit



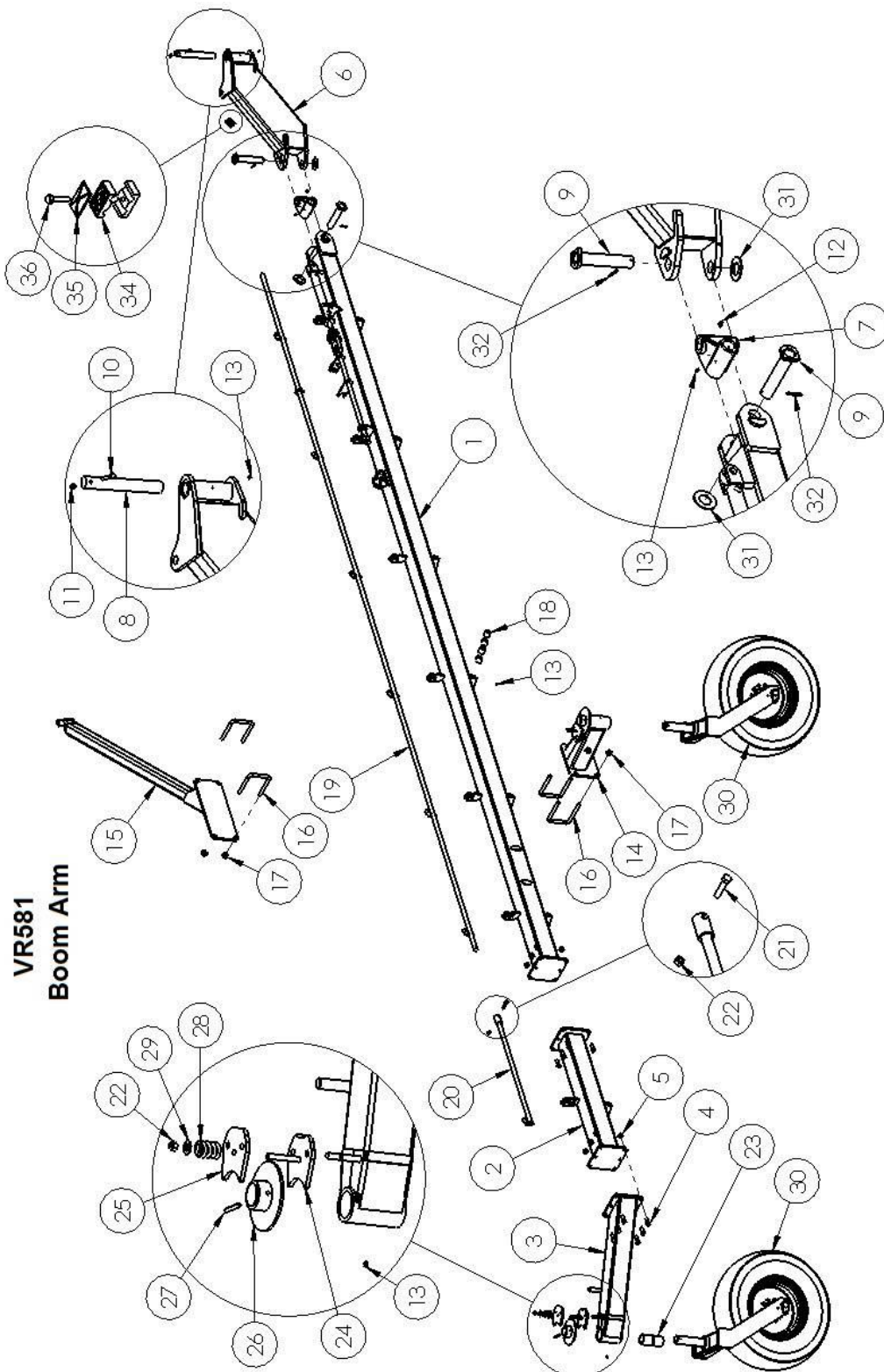
4.3.1 SMV Sign Assembly							
	Description	ID #	QTY		Description	ID #	QTY
	Complete Kit	22411	1	5	Nut, 5/16"	*	2
1	Nut, 1/4" Serrated Flange	*	2	6	Lock Washer, 5/16"	*	2
2	Sign Mounting Bracket	*	1	7	Tapered Mounting Bracket	*	1
3	Plastic Sign	*	1	8	Carriage Bolt, 5/16 x 5/8"	*	2
4	Screw, 1/4 x 5/8"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

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



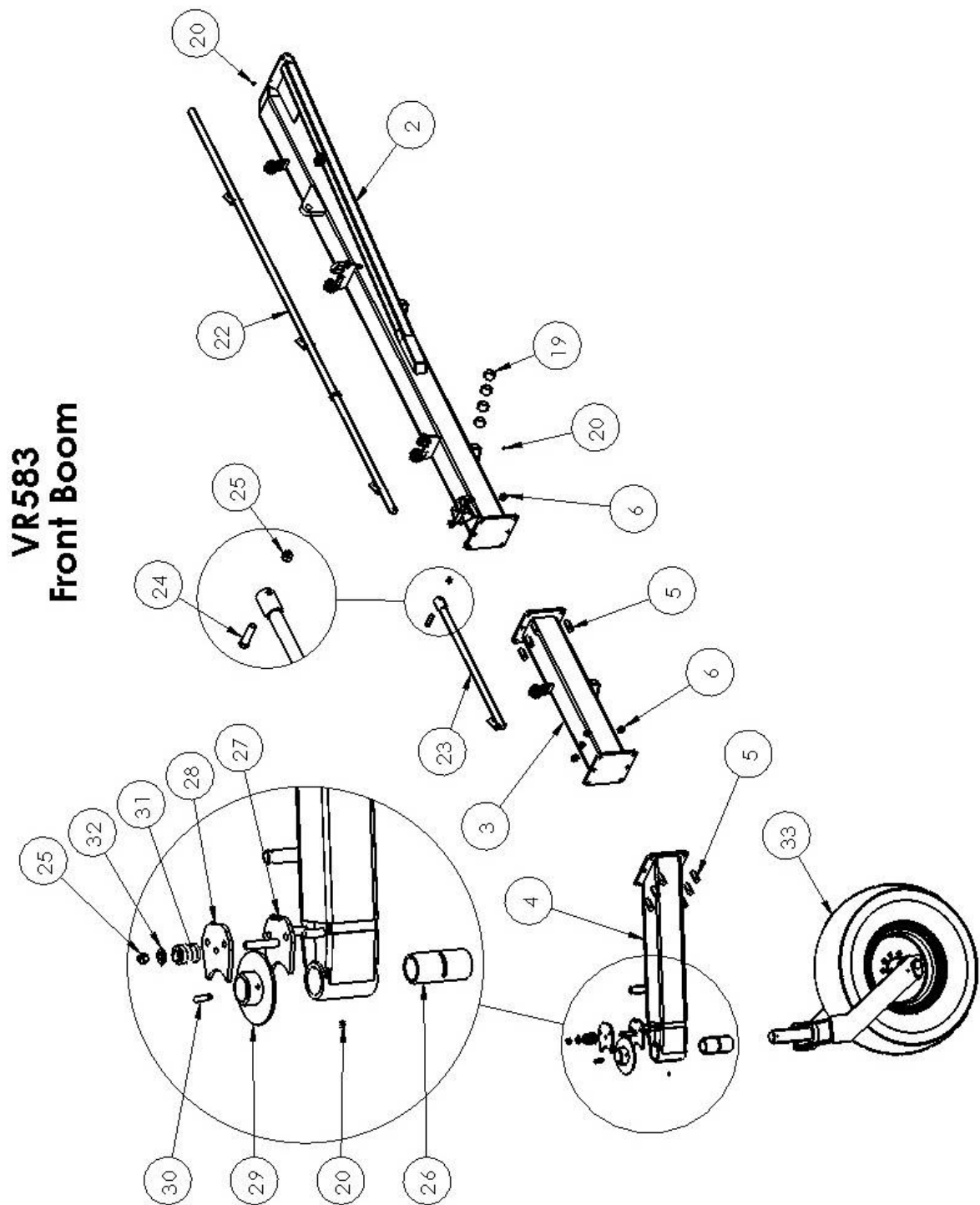
4.4 Boom Arm Assembly

4.4.1 Boom Arm Assembly VR581





4.4.1 Boom Arm Assembly VR581							
	Description	ID #	QTY		Description	ID #	QTY
1	Boom Arm 581 Left	26362	1	16	U-Bolt, 3/4 x 5 x 6"	16091	4
	Boom Arm 583 Right	26363		17	Nut, 3/4" Serrated Flange	16076	8
2	Boom 581 Ext. Left	22268	1	18	Rake Arm Bushing	16096	56
	Boom 581 Ext. Right	22267		19	Lift Rod 581	22263	1
3	Front Caster Support LT	25575	1	20	Lift Rod 581 Extension	22269	1
	Front Caster Support RT	25574		21	Bolt, 1/2 x 2-1/4"	11820	1
4	Bolt, 5/8 x 1-3/4"	12379	12	22	Nut, 1/2" Stover Lock	14393	2
5	Nut, 5/8" Serrated Flange	11614	12	23	Caster Bushing	21150	1
6	Box Pivot 581 Left	26361	1	24	Brake Pad Bottom	16138	1
	Box Pivot 581 Right	26360		25	Brake Pad Top	16137	1
7	Knuckle 581 Left	23096	1	26	Brake Disk	17330	1
	Knuckle 581 Right	22253		27	Roll Pin, 3/8 x 2-3/4"	16039	1
8	Box Pivot Pin	26448	1	28	Brake Spring	16093	1
9	Knuckle Pin	26441	2	29	Brake Spring Washer	16322	1
10	Bolt, 3/8 x 3"	13770	1	30	Caster Wheel Assembly	-	2
11	Nut, 3/8" Nylon Lock	10806	1	31	Flat Washer, 1-1/2"	20434	2
12	Grease Zerk 45 Deg.	20888	1	32	Roll Pin, 1/4 x 2"	15872	2
13	Grease Zerk	16364	10	33	-	-	
14	Side Caster Support 581	24502	1	34	Hose Clamp	22181	2
15	Riser Arm 581 Left	22237	1	35	Hose Clamp Top	22182	1
	Riser Arm 581 Right	22238		36	Bolt, 5/16 x 1-3/8"	22183	1



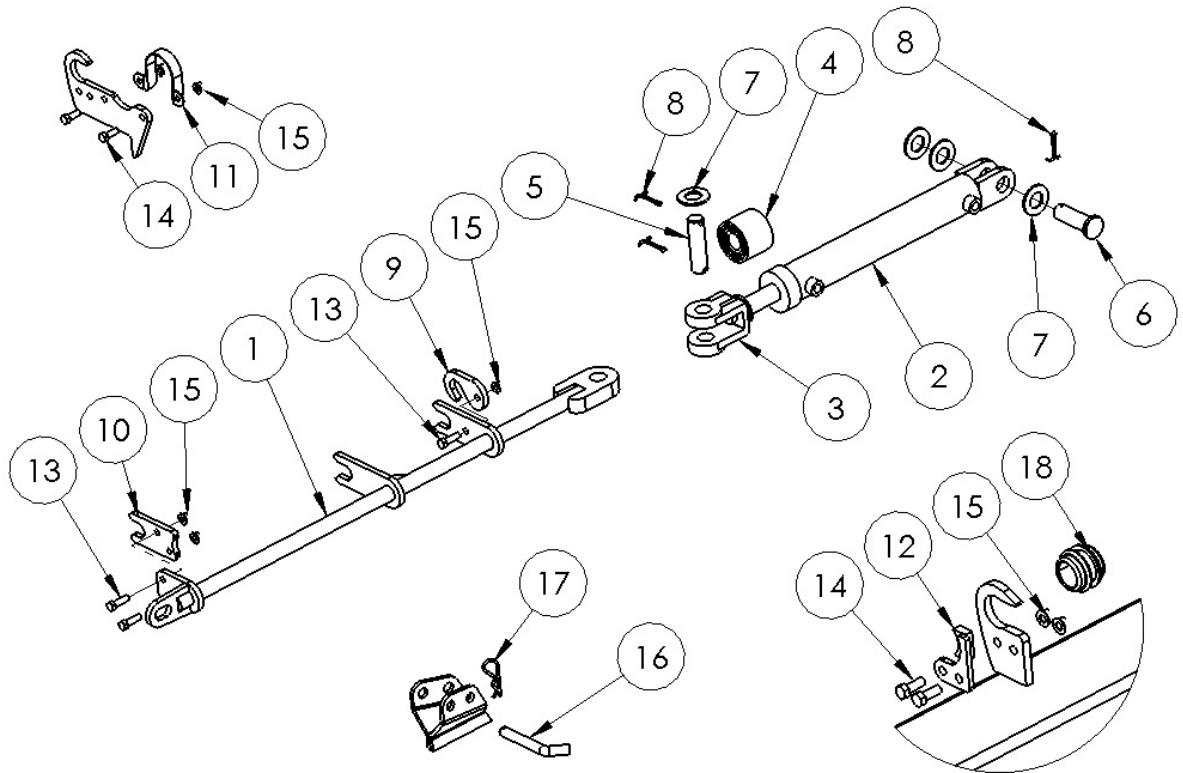
NOTE: Left arm shown. Some components only used on 20 wheel.



4.4.2 Boom Arm Assembly VR583								
	Description	ID #	QTY			Description	ID #	QTY
1	Boom 583 Rear Left	26365	1		16	U-Bolt, 3/4 x 5 x 6"	16091	2
	Boom 583 Rear Right	26364			17	Bolt, 3/4 x 2"	13800	4
2	Boom 583 Front Left	26367	1		18	Nut, 3/4" Serrated Flange	16076	8
	Boom 583 Front Right	26366			19	Rake Arm Bushing	16096	40
3	Boom 583 Ext. Left	25573	1		20	Grease Zerk	16364	12
	Boom 583 Ext. Right	25572			21	Lift Rod 583 Rear	26599	1
4	Front Caster Support LT	25575	1		22	Lift Rod 583 Front	26600	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						



4.4.3 Lift Rod Details



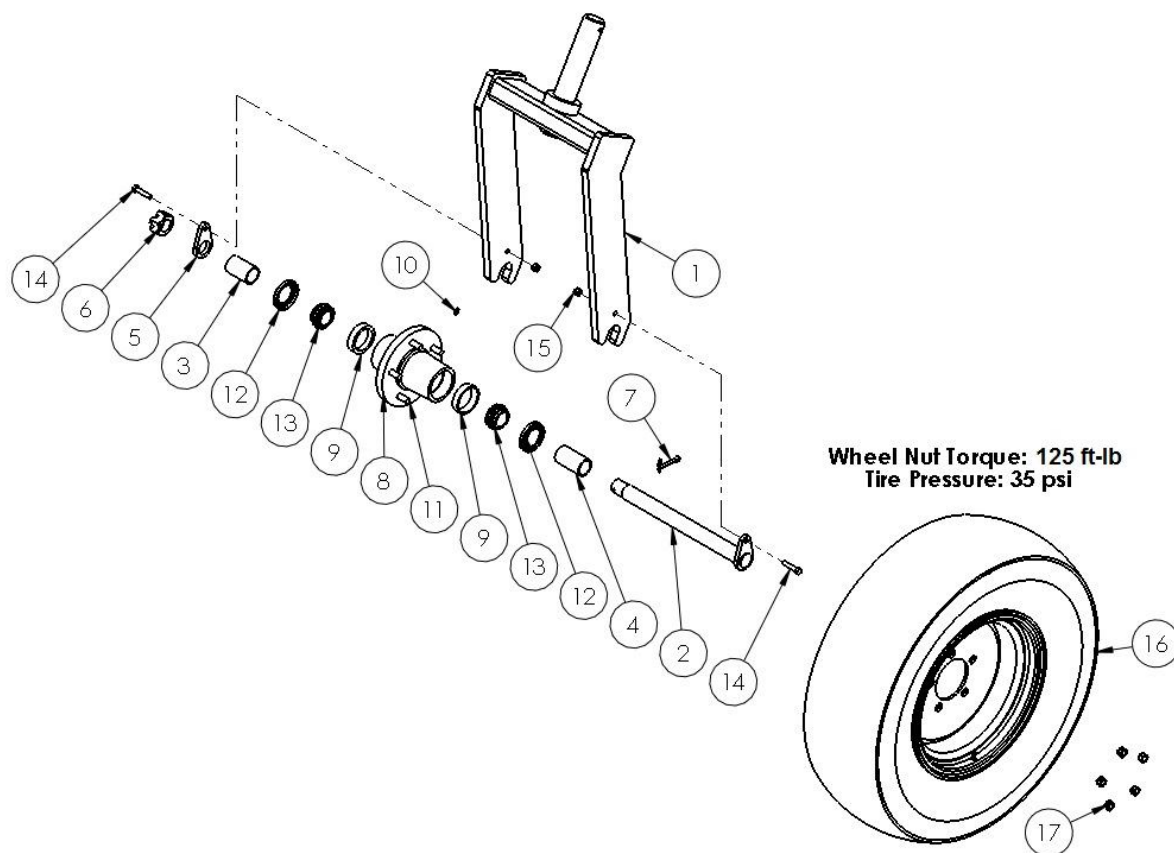
4.4.3 Lift Rod Details							
	Description	ID #	QTY		Description	ID #	QTY
1	Lift Rod Push Bar	26368	1	10	Lift Rod Spacer	26601	1
2	2" Lift Rod Cylinder * Seal Kit	26379	1	11	Cylinder Clamp	26373	1
		26641		12	Lift Rod Bushing Lock	22257	1
3	Cylinder Clevis		1	13	Bolt, 3/8 x 1-1/4"	10253	3
4	Stroke Adjuster Nut	26459	1	14	Bolt, 3/8 x 1"	13806	4
5	Pin, 1 x 2-7/8" Usable	10341	1	15	Nut, 3/8" Serrated Flange	10271	5
6	Pin, 1 x 2-1/2" Usable	22787	2	16	Lock Pin, 5/8 x 3-1/2" #	16339	1
7	Flat Washer, 1"	14472	3	17	Hairpin	16363	1
8	Cotter Pin, 3/16 x 1-1/2"	10072	3	18	Lift Rod Bushing	16099	1
9	Lift Rod Lock	21303	1				

* NOTE: Comes with clevis (3) and nut (4)

NOTE: Comes with hairpin



4.4.4 Caster Wheel and Hub



4.4.4 Caster Wheel and Hub							
	Description	ID #	QTY		Description	ID #	QTY
1	Caster Fork	22270	1	10	Grease Zerk	16364	1
2	Caster Axle	26443	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	26477	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

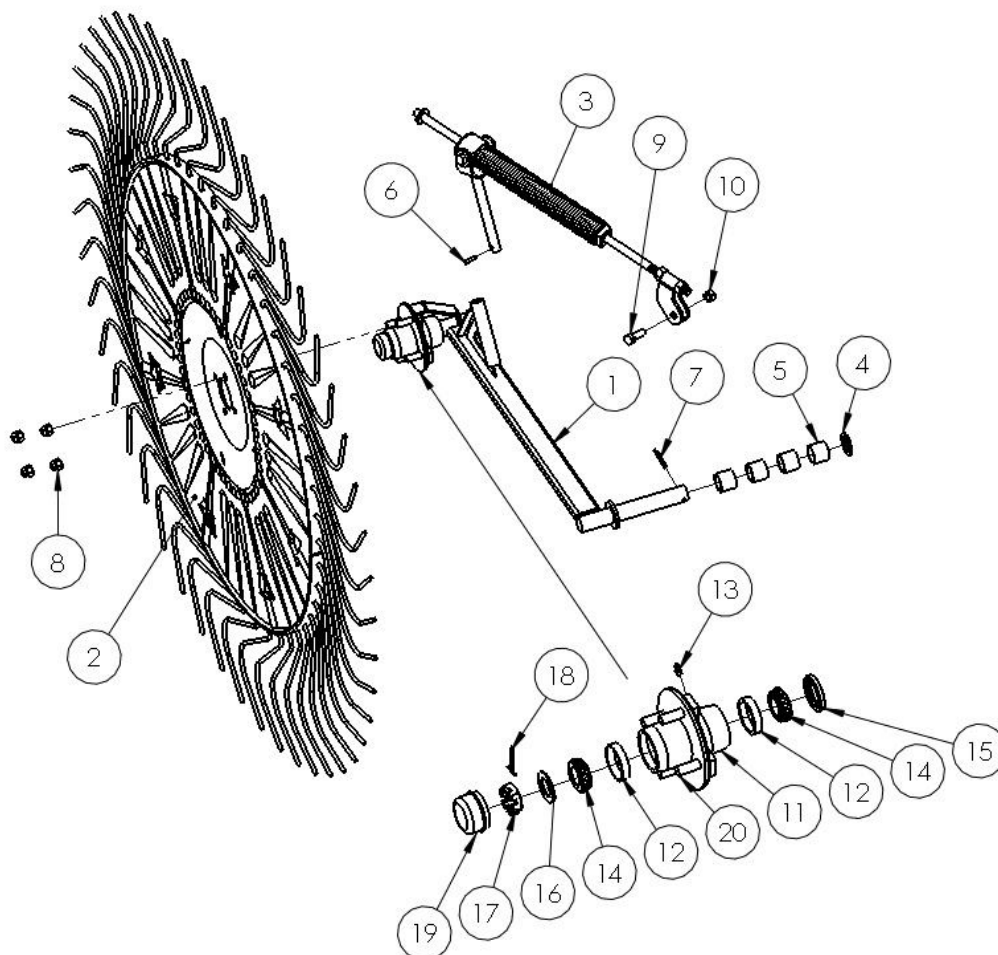
NOTE: See local tire dealership for replacement or repairs

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.



4.5 Rake Wheel and Arm



4.5 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				

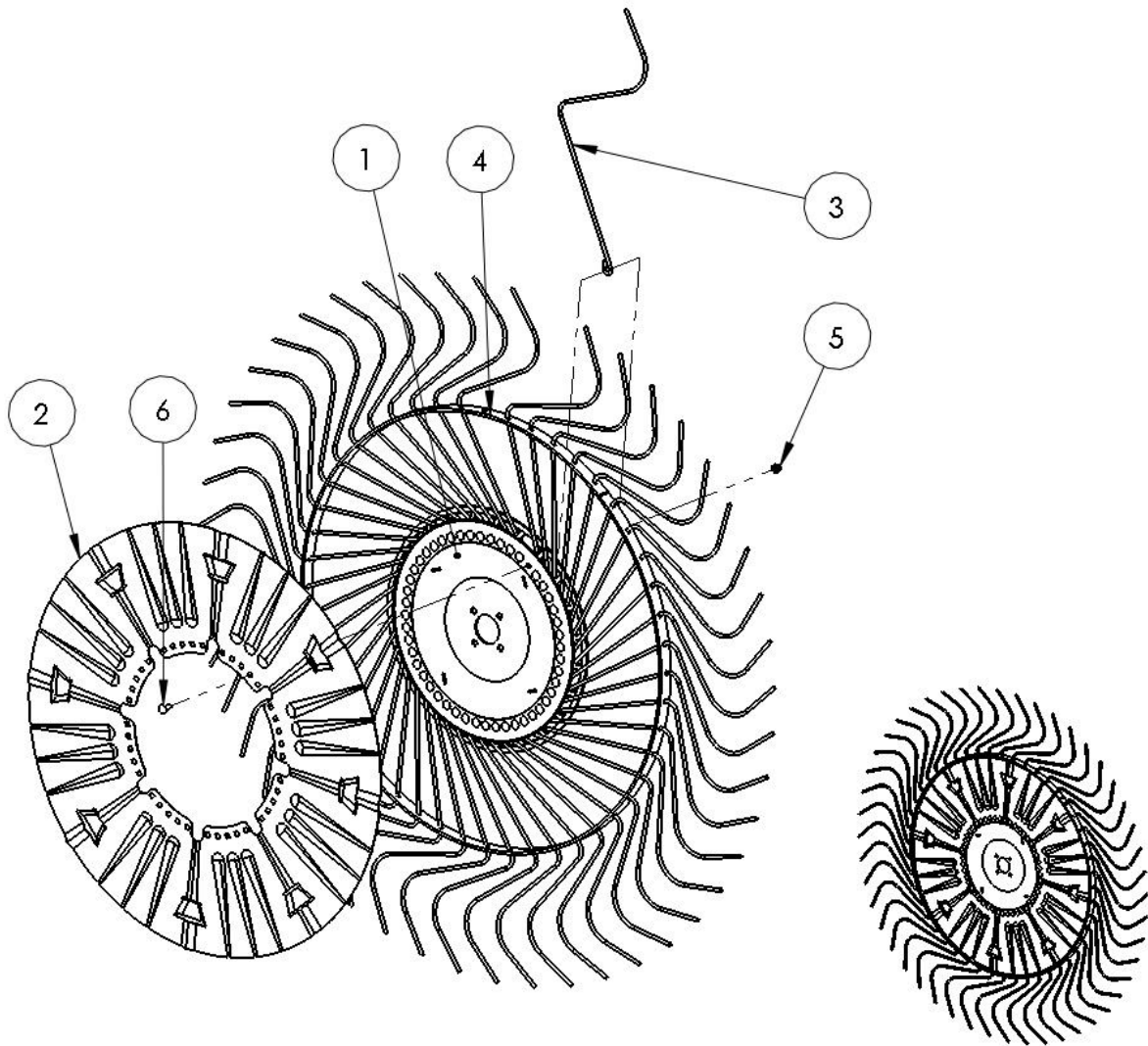
* NOTE: Hub (11) comes with wheel studs (20), grease zerk (13), and bearing cups (12) installed.

Quantities are per assembly as shown. Left side shown.

Torque wheel nuts to 90 ft-lb



4.5.1 Rake Wheel Assembly

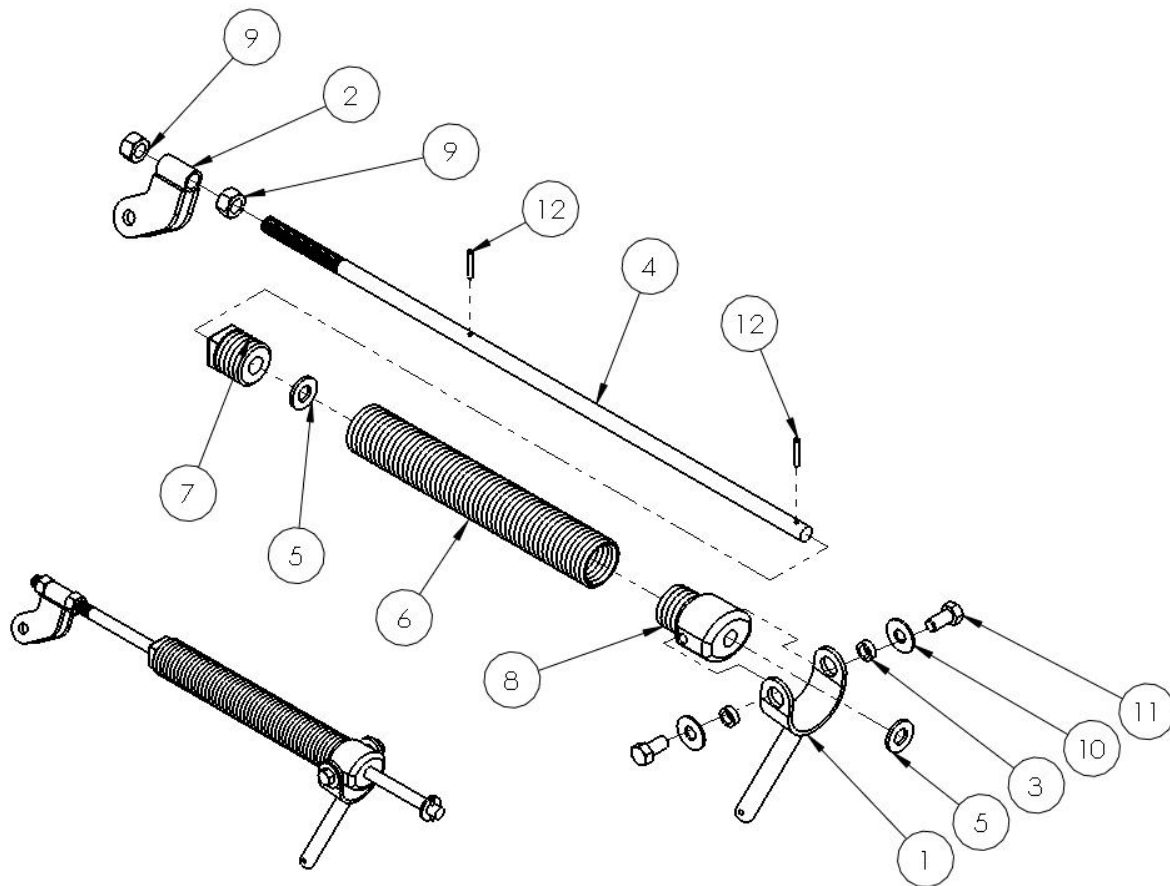


4.5.1 Rake Wheel Assembly							
	Description	ID #	QTY		Description	ID #	QTY
1	Complete Left Wheel		1	3	Rake Tine	16092	48
	Complete Right Wheel			4	Outer Ring	22055	1
	Center Disk Left	22053		5	Nut, 3/8" Stover Flange	17844	48
	Center Disk Right	22731		6	Carriage Bolt, 3/8 x 1"	15718	48
2	Wind Guard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

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



4.5.2 Spring Assembly

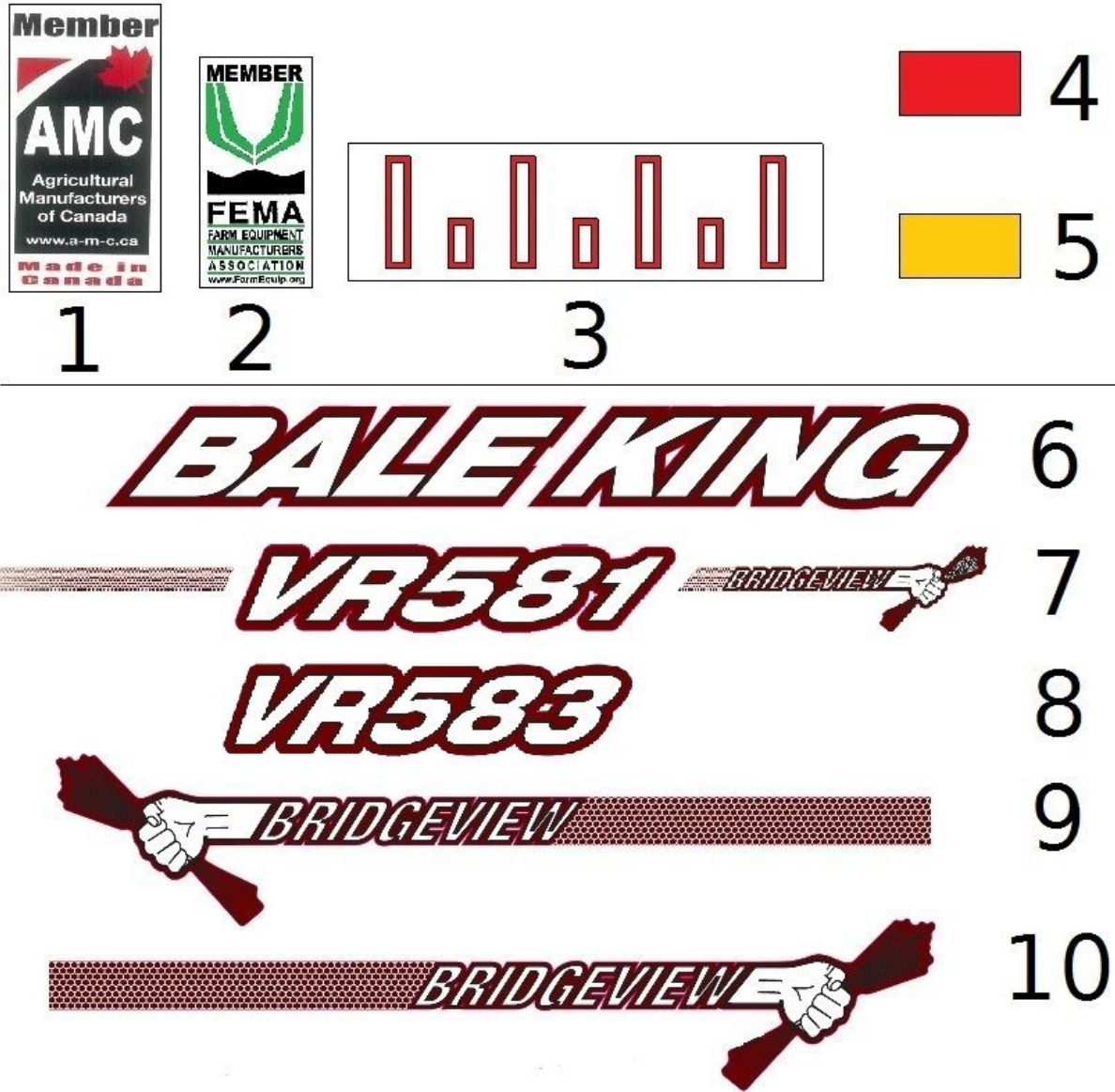


4.5.2 Spring Assembly							
	Description	ID #	QTY		Description	ID #	QTY
	<i>Complete Kit</i>			7	Spring Retainer Block	16100	1
1	Spring Yoke	22049	1	8	Spring Retainer Pivot	16101	1
2	Offset Spring Clevis	25881	1	9	Nut, 5/8"	11614	2
3	Spring Yoke Bushing	16290	2	10	Flat Washer, 1/2"	11668	2
4	Spring Slide Rod	16493	1	11	Bolt, 1/2 x 1"	10824	2
5	Flat Washer, 5/8"	16652	2	12	Roll Pin, 3/16 x 1-1/4"	10302	2
6	Rake Wheel Spring	16095	1				

NOTE: Quantities are per assembly.



4.6 Decals

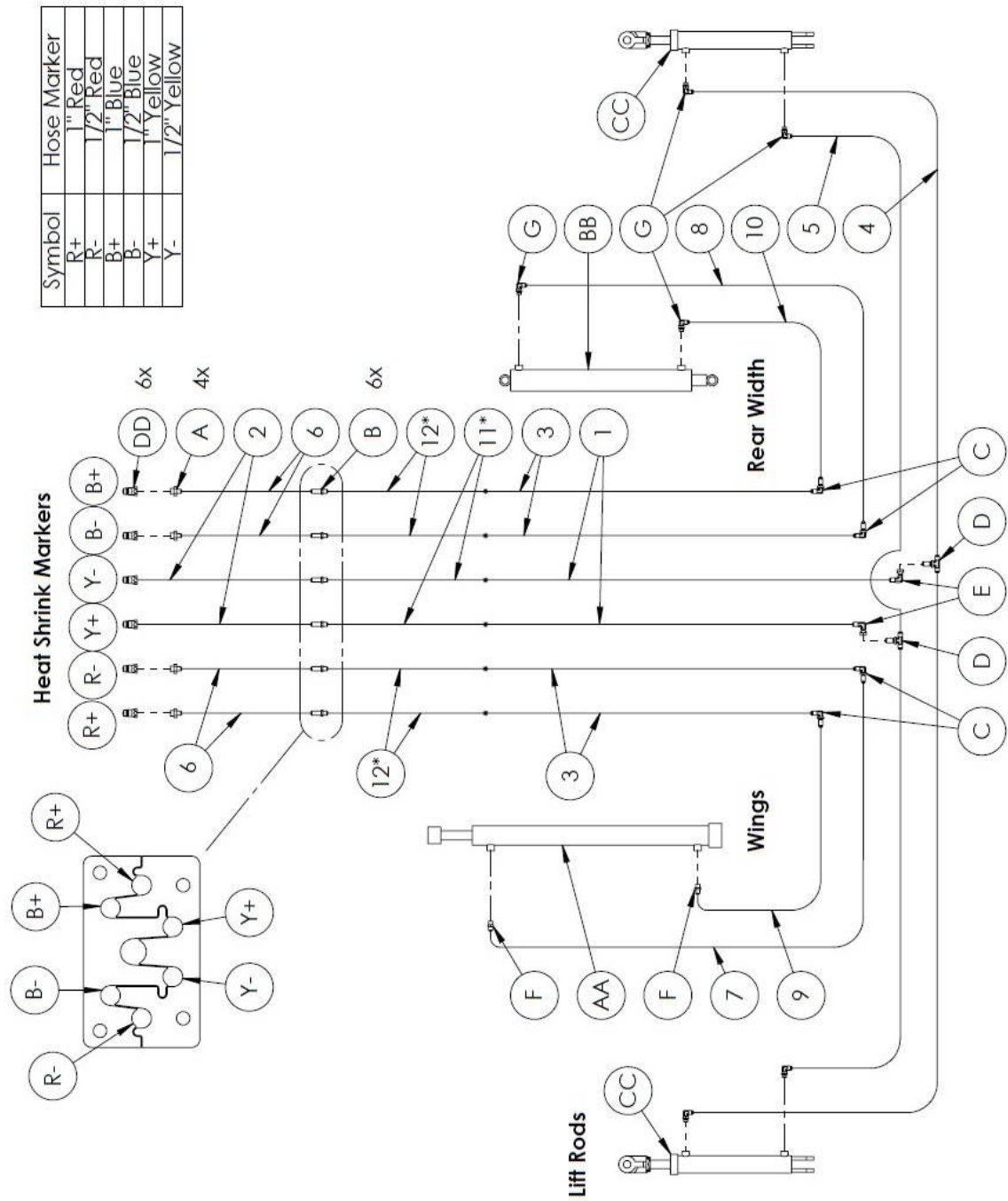


4.6 Decals								
	Description	ID #	QTY			Description	ID #	QTY
1	PIMA/AMC	12239	1	6		"BALE KING"	22162	2
2	FEMA	25347	1	7		"VR581"	26353	2
3	Width Indicator	23011	1	8		"VR583"	26374	
4	Red Reflector	13324	6	9		"Bridgeview" Left	24554	1
5	Amber Reflector	13325	10	10		"Bridgeview" Right	24552	1



4.7 Hydraulic Components

VR581 Hydraulic Schematic



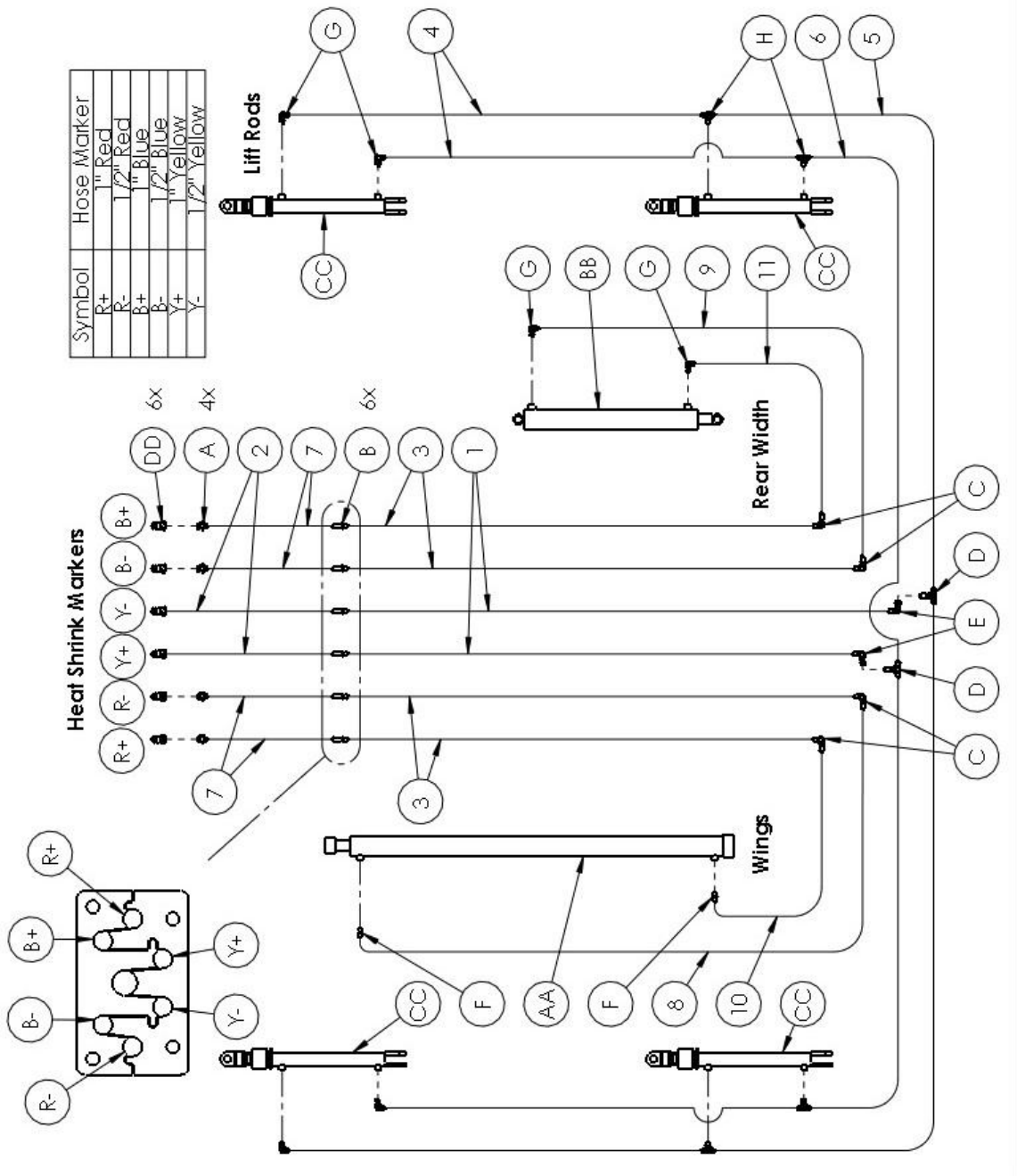


4.7 Hydraulic Components			
VR581			
	Description	ID #	QTY
AA	Hydraulic Cylinder, 2-1/2 x 30"	16301	1
	Seal Kit	16396	
BB	Hydraulic Cylinder, 2-1/2 x 20"	17328	1
	Seal Kit	16396	
CC	Hydraulic Cylinder, 2"	26379	2
	Seal Kit	26641	
	Clevis		
	Stroke Limit Nut	26459	
DD	Pioneer Tip, 8FB	17379	6
	<i>Hydraulic Adaptor Kit</i>		
A	8MB-6MJ	11740	4
B	6MJBH		6
C	6MJBH90	10187	4
D	6MJBHL-6MJT	10188	2
E	6MJ-6FJX90	12162	2
F	6MB-6MJ	10162	2
G	6MB-6MJ90	10201	6
	<i>Hydraulic Hose Kit</i>		
1	3/8 x 336" OAL, 6FJX-6FJX		2
2	3/8 x 120" OAL, 6FJX-8MB		2
3	1/4 x 336" OAL, 6FJX-6FJX		4
4	1/4 x 141" OAL, 6FJX-6FJX		2
5	1/4 x 127" OAL, 6FJX-6FJX		2
6	1/4 x 120" OAL, 6FJX-6FJX		4
7	1/4 x 79" OAL, 6FJX-6FJX90		1
8	1/4 x 76" OAL, 6FJX-6FJX		1
9	1/4 x 54" OAL, 6FJX-6FJX90		1
10	1/4 x 54" OAL, 6FJX-6FJX		1
	<i>Extension Kit *</i>		
11	3/8 x 40" OAL, 6FJX-6MJ		2
12	1/4 x 40" OAL, 6FJX-6MJ		4

* NOTE: 14 wheel only



VR583 Hydraulic Schematic





4.7 Hydraulic Components			
VR583			
	Description	ID #	QTY
AA	Hydraulic Cylinder, 2-1/2 x 48"	17331	1
	Seal Kit	16396	
BB	Hydraulic Cylinder, 2-1/2 x 20"	17328	1
	Seal Kit	16396	
CC	Hydraulic Cylinder, 2"	26379	4
	Seal Kit	26641	
	Clevis		
	Stroke Limiter Nut	26459	
DD	Pioneer Tip, 8FB	17379	6
	<i>Hydraulic Adaptor Kit</i>		
A	8MB-6MJ	11740	4
B	6MJBH		6
C	6MJBH90	10187	4
D	6MJBHL-6MJT	10188	2
E	6MJ-6FJX90	12162	2
F	6MB-6MJ	10162	2
G	6MB-6MJ90	10201	6
H	6MBL-6MJT		4
	<i>Hydraulic Hose Kit</i>		
1	3/8 x 434" OAL, 6FJX-6FJX		2
2	3/8 x 120" OAL, 6FJX-8MB		2
3	1/4 x 434" OAL, 6FJX-6FJX		4
4	1/4 x 208" OAL, 6FJX-6FJX		4
5	1/4 x 150" OAL, 6FJX-6FJX		2
6	1/4 x 134" OAL, 6FJX-6FJX		2
7	1/4 x 120" OAL, 6FJX-6FJX		4
8	1/4 x 114" OAL, 6FJX-6FJX90		1
9	1/4 x 76" OAL, 6FJX-6FJX		1
10	1/4 x 67" OAL, 6FJX-6FJX90		1
11	1/4 x 54" OAL, 6FJX-6FJX		1



4.8 Electrical Components

