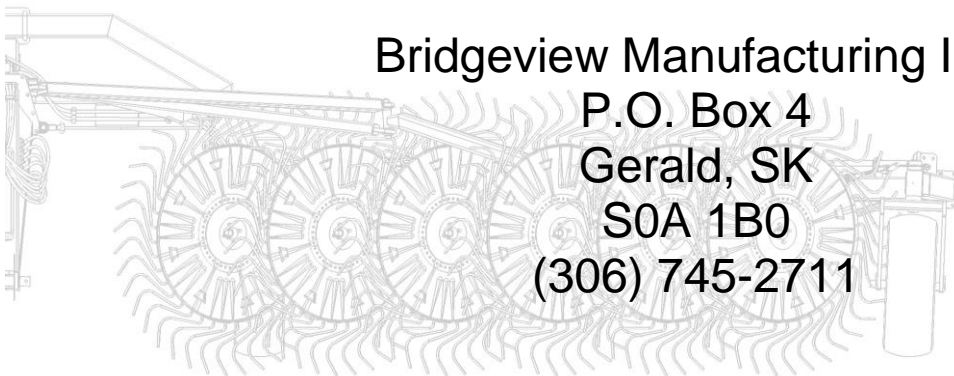




BRIDGEVIEW

BALE KING V-Rake VR1620 Operators and Parts Manual



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1.0 Introduction

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

This is a complete safety, operation and parts manual for the V-Rake 1620. The manual covers in detail how to safely and effectively use the rake and these steps should be followed to ensure safety and longevity of your machine. The part manual covers all the parts you may need to order in case of accidents or breakdown. Included in this manual is the procedures on how to assemble the Bridgeview 16 Wheel Rake and optional 18 & 20 Wheel Extension Kits. Please read through this manual before beginning assembly.



2.0 SAFETY AND OPERATIONS MANUAL

2.1 SAFETY PRECAUTIONS

The following safety precautions MUST be followed to ensure the safe operation of the V-Rake:

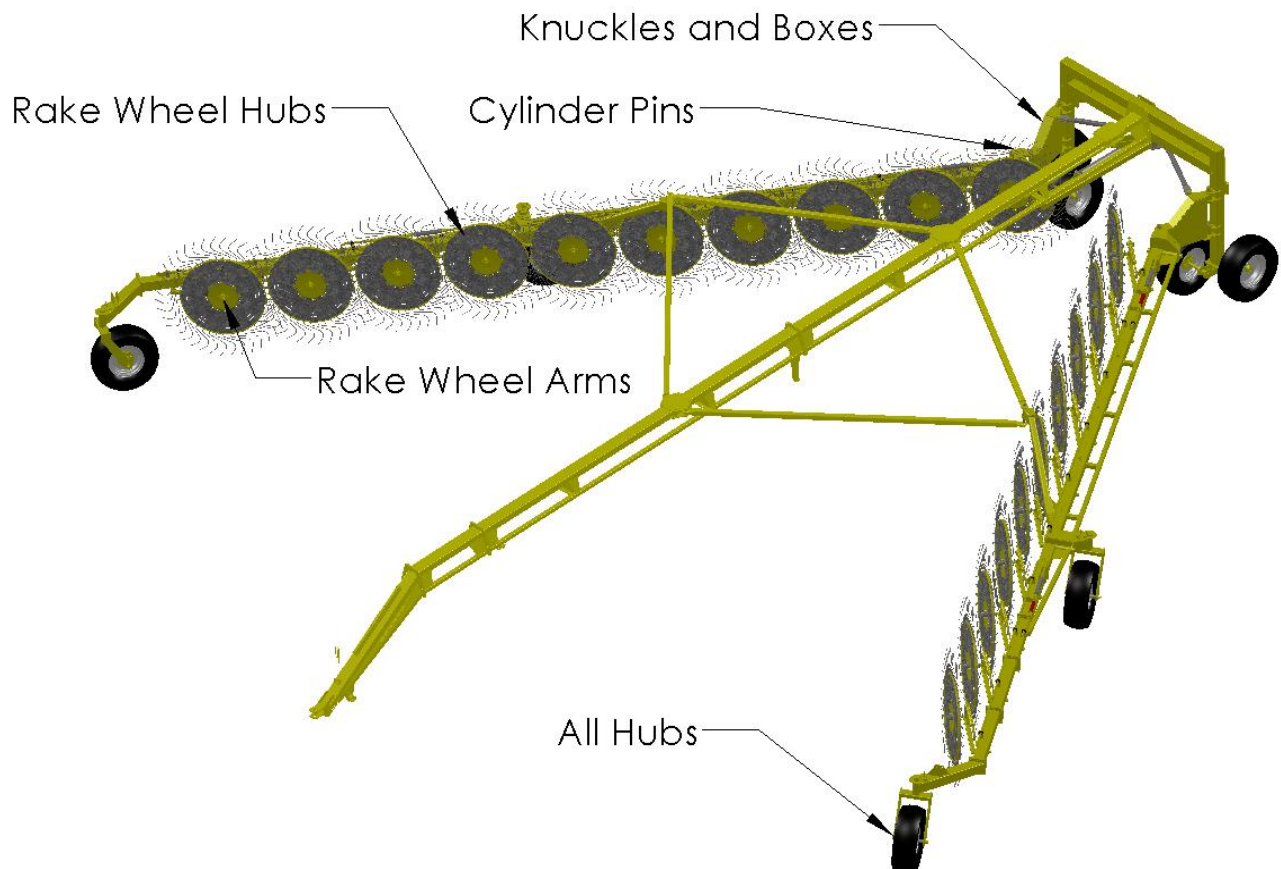
1. This trailed machine was designed and intended for on-farm use only.
Tow at speeds not to exceed 20 MPH. Slow down for hills, curves, rough areas, and in advance of braking to prevent loss of control and possible injury or death.
2. **Always** turn off the tractor when leaving the operating platform.
3. **Always** use the transport links when towing the V-Rake on the highway.
4. Unless operating tractor, **stand clear** of the rake when in operation.
5. **Do not** stand inside the rake while it is being opened or closed.

2.2 MACHINE MAINTENANCE AND LUBRICATION

General maintenance of your V-Rake should be done on a regular basis. This includes checking all bolts to ensure they are tight, making sure all grease zerks are accepting grease and ensuring that all moving parts are functioning correctly.

Your Bale King V-Rake is equipped with a number of grease zerks. It is important that these locations are lubricated according to the following maintenance schedule:

- Wheel hubs for the tires and rake wheels should be greased every **200 hours** of use.
- Knuckles, caster pivots, wheel arms, and any remaining grease zerks should be greased every **10 hours** use.



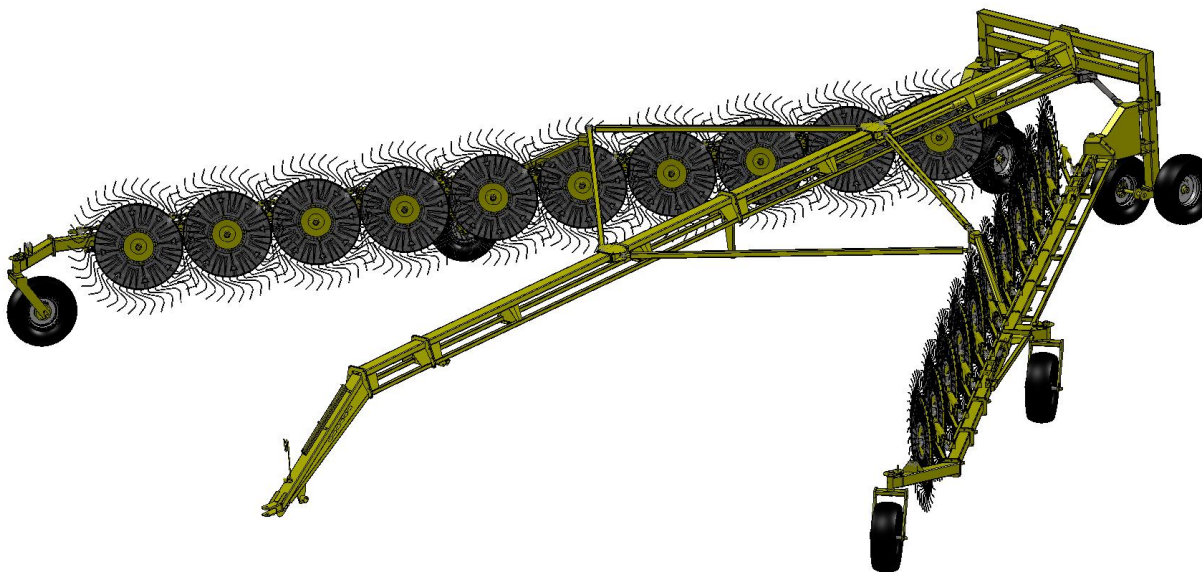
2.3 WHEEL AND TIRE INFORMATION

The proper tire pressure for the Bale King V-Rake is **35 psi**. Proper tire inflation will help alleviate a puncture problem when pulling and operating the machine in rough terrain. The optimum tire size is 9.5L15SL, 8 Ply.

- **NOTE:** Check and tighten wheel bolts on a regular basis to ensure that bolts are tightened to **90 ft-lbs**.
- Warranty **does not** cover damaged rims and hubs due to loose wheel bolts.
- Tire warranty is covered by the tire manufacturer.

2.4 WHEEL EXTENSION KITS

The 16 wheel rake can be fitted with an optional 18 or 20 wheel extension kit. This kits extend the length of the rake arms, adding one or two rake wheels to each side, making the rake cover a wider area and can be purchased as a separate kit to the 16 wheel rake.



2.5 HYDRAULIC HOOK UP

There are six hydraulic hoses to be connected to the tractor. All six hoses run out of the gooseneck of the rake, near the hitch.

Green Hose controls the **main wing cylinder**, used to open and close the rake arms.

Blue Hose controls the **windrow adjustment cylinder**, to change the width of the rear opening, and the size of the windrow. The hose marked with

Yellow Hose adjusts the **wheel lift cylinders used** to raise and lower the rake wheels.

2.6 HIGHWAY TRANSPORT

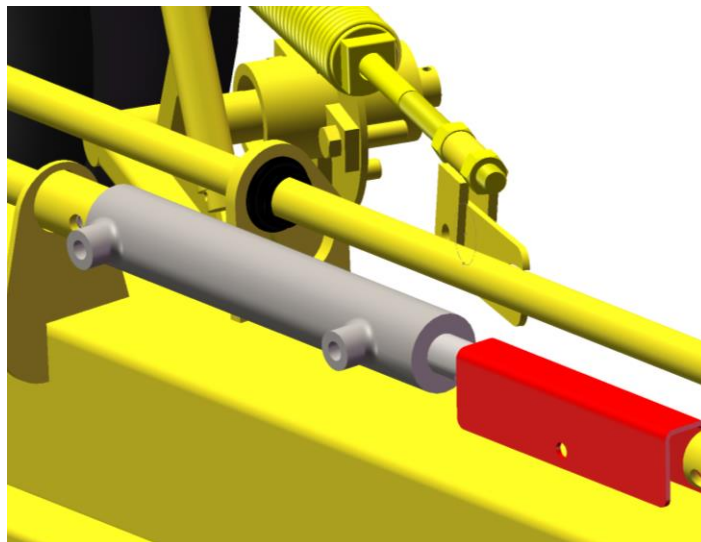
When transporting your V-Rake on the highway there are a number of safety precautions that must be taken to ensure safe travel.

1. Safety Chains

Make sure that you have attached a safety chain to the hitch through the safety chain hole.

2. Cylinder Safety Locks

First is to insert the cylinder safety locks. The lift arm cylinders (located on the left and right rake arms) should be fitted with cylinder safety locks. To insert the safety locks, raise the rake wheels to their highest position, then insert the safety lock with locking pin.

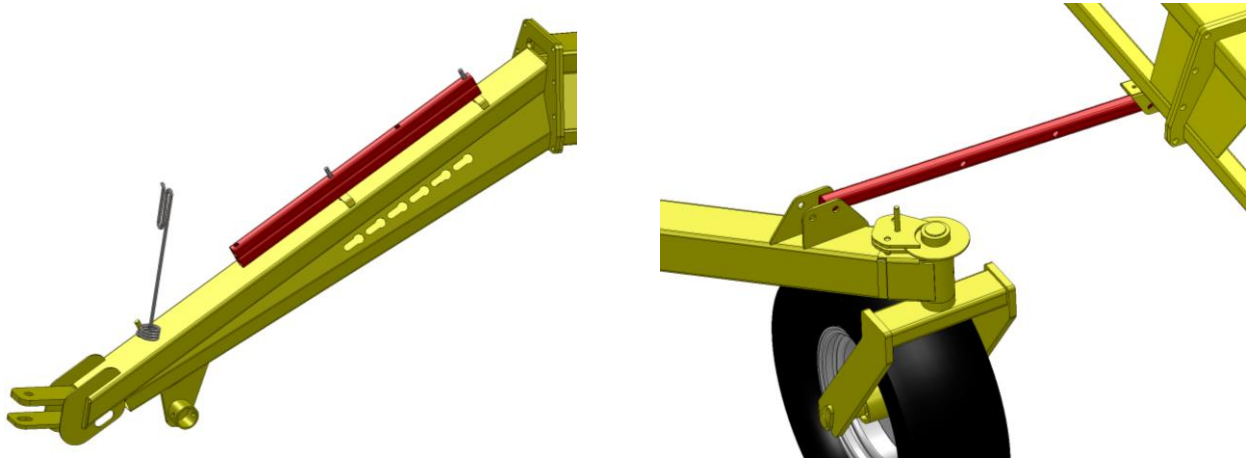


3. Retract Windrow Arms

Ensure that the rear opening is in the narrow position by fully stroking the windrow adjustment cylinder. Then bring in the arms by retracting the wing cylinder until the front castors are brought in near the hitch.

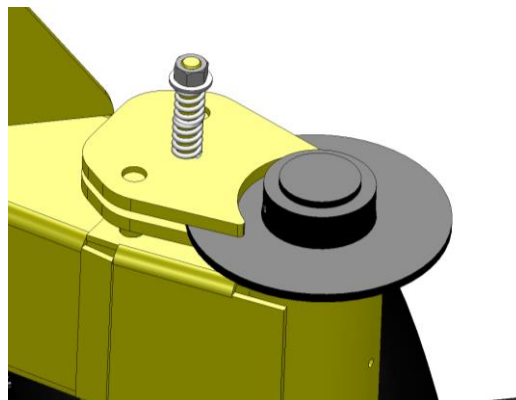
4. Transport Links

The transport links must then be installed. First, remove the links from the carrying brackets by removing the pin at each end, as shown below.



Next insert the one end into the bracket at the bottom of the main frame and the other end into the bracket on the arm with the locking pins. Ensure that both arms are secured and all hairpins are in place.

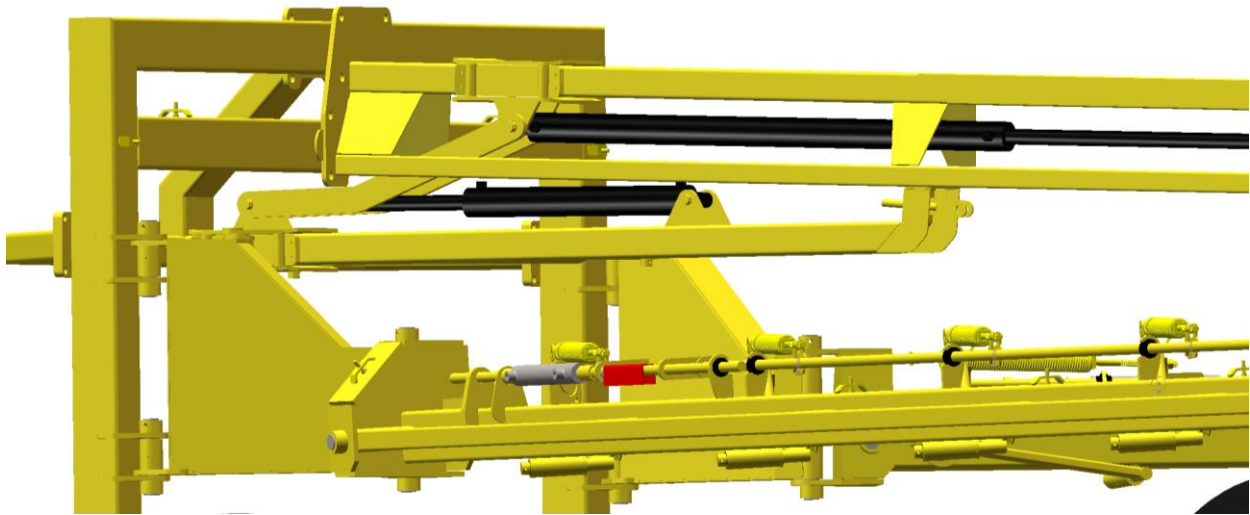
Align the road wheels and tighten the brake springs for all casters. The caster wheels will whip if the brakes are not sufficiently tight!



Ensure that all of the tires are at the correct pressure and that all wheel bolts are secured.

2.7 WINDROW WIDTH ADJUSTMENT

The rear opening of the V-Rake is adjustable using the windrow adjustment cylinder. It must be in the narrow position to be able to transport on the highway. Widening the rear opening will space the rake wheels further apart, creating a wider windrow. Pulling the rear opening closer together will also pull the rake wheels closer together, and make a tighter swath. This allows the operator to adjust the width of the windrow to suit field conditions, and accommodate different baler sizes.

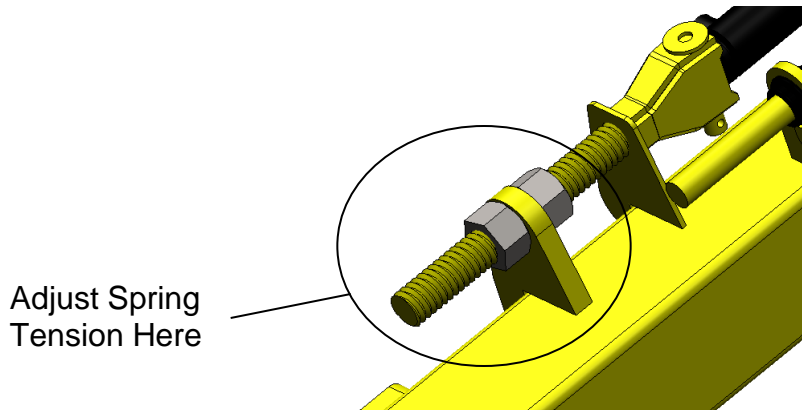


2.8 FIELD OPERATION

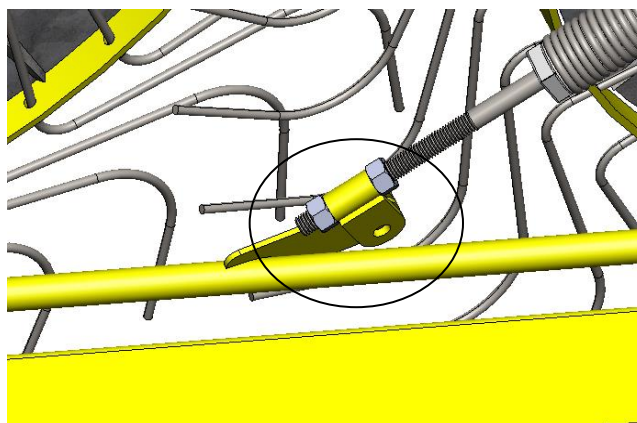
The **recommended raking speed is 8 mph (13 km/h)**, depending on field conditions. Rougher land and heavier windrows require slower operation. This will prevent damage to the rake wheels, and ensure that hay is picked up properly. For faster operation, it is recommended that rake wheel spring tension is increased to prevent bouncing of the tines.

2.9 ADJUSTING RAKE WHEEL ARM SPRING TENSION

Optimum rake performance is achieved when the rake wheels are lightly scratching the ground. If the spring tension is set too heavy, premature rake tine damage will occur. If 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 a number of ways to accomplish this. The first is by moving the threaded rod adjusters. The threaded rod adjusters are located at the rear end of each rake arm and are directly attached to the lift rod cylinder. By adjusting the bolts attached to the rod adjusters the tension in all the springs of that rake arm are adjusted evenly. To increase tension, increase rod length, as shown below. To decrease tension, decrease rod length.



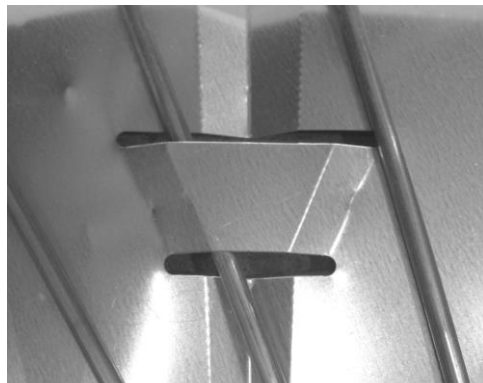
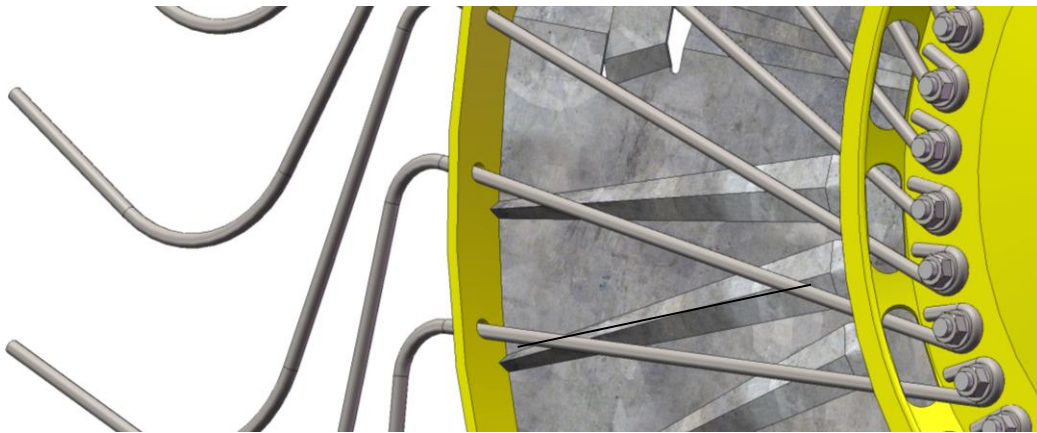
If the spring tension in only one spring needs to be adjusted then the adjustment can be done on the individual spring. There are two nuts near the end of the spring that allow the spring to be loosened or tightened.



2.10 TINE REPLACEMENT

If a tine on one of the rake wheels needs to be replaced, the following procedure can be used:

1. The bolt on the back of the rake wheel that corresponds to that tine should be
2. loosened and removed completely.
3. Slide the tine out of the hole in the center disk.
4. Slide the tine out of the wind guard tab if necessary.
5. Slide the tine out of the hole in the outer ring.
6. Insert the replacement tine in the same direction as the other tines on the rake wheel.
7. Then insert the bolt back in to the wind guard and tighten the nut.



2.11 SPECIFICATIONS

Dimensions and Weights

Specifications	16 Wheel	18 Wheel	20 Wheel
Raking Width (Front/Rear)	38' / 4'-8"	42' / 4'-8"	46' / 4'-8"
Transport Width	9'-6'	9'-6'	9'-6'
Transport Length	42'	42'	42'
Weight	6476 lbs	6900 lbs	7324 lbs

Tires

Tire Size 9.5L15SL 8Ply

Tire Pressure 35psi

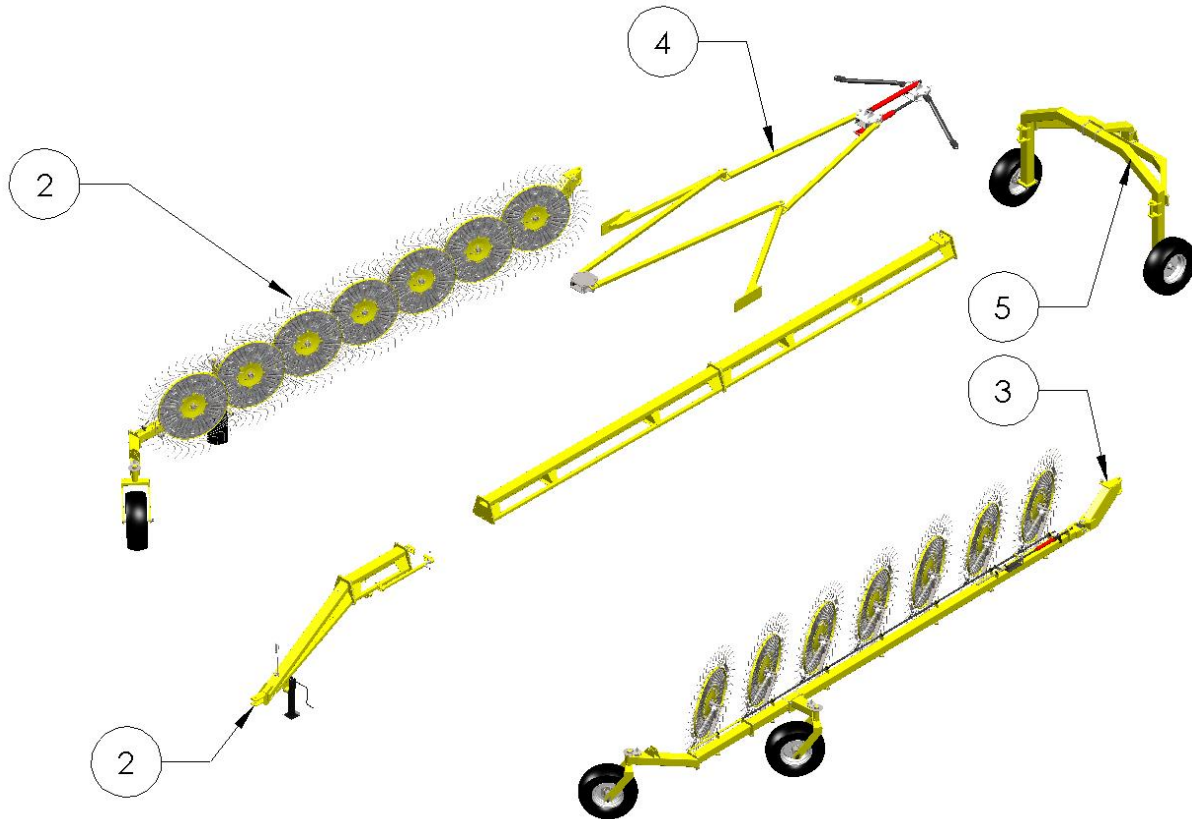
Wheel Bolt & Nut Torque

1/2" (Dry) 90 ft-lbs

9/16" (Dry) 120 ft-lbs

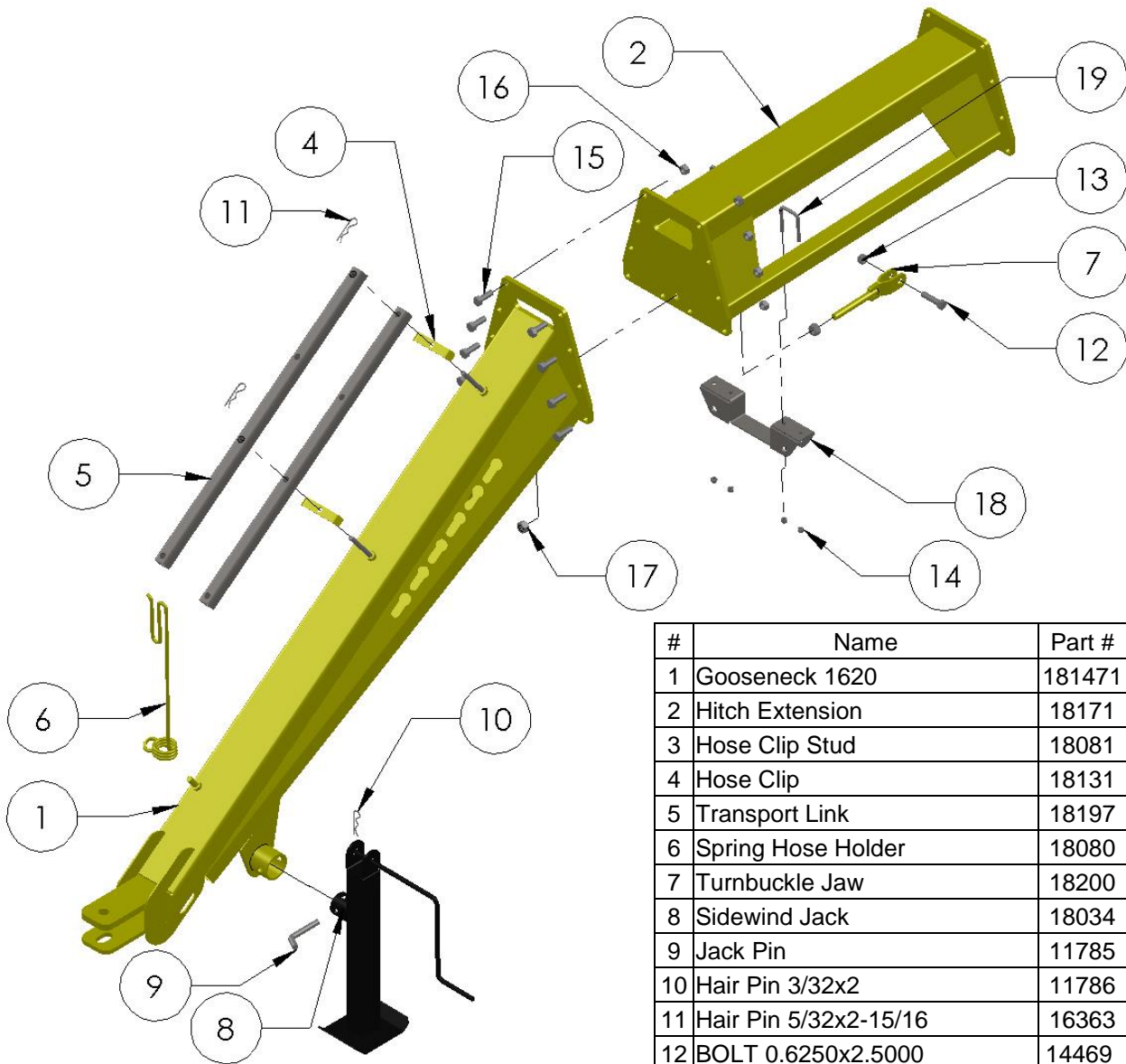
3.0 Parts Diagrams and Part Numbers

3.1 General Assembly



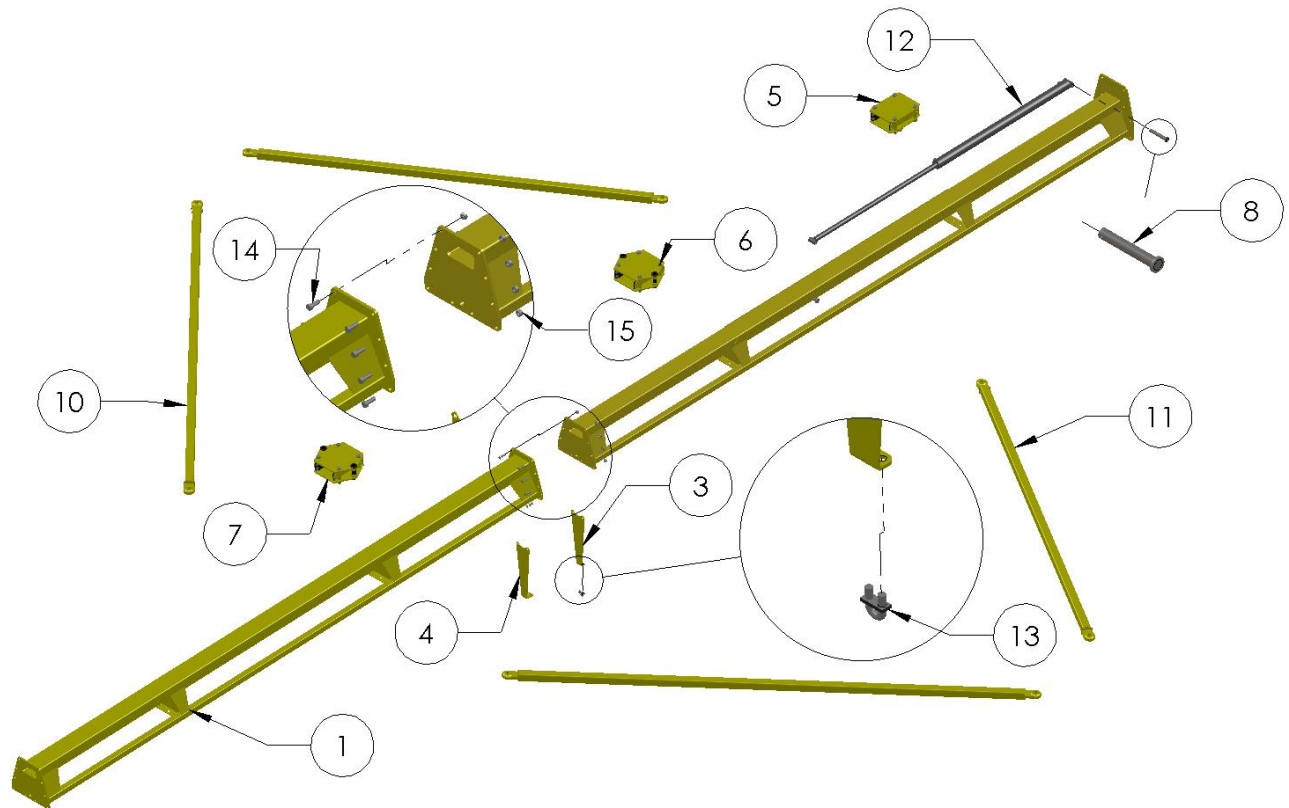
#	Name	Part #	Qty
1	Gooseneck Assembly	See Section 3.2	1
2	Main Frame Assembly	See Section 3.3	1
3	Rear End Assembly	See Section 3.4	1
4	Right Arm Assembly	See Section 3.5	1
5	Left Arm Assembly	See Section 3.5	1

3.3 Gooseneck Assembly



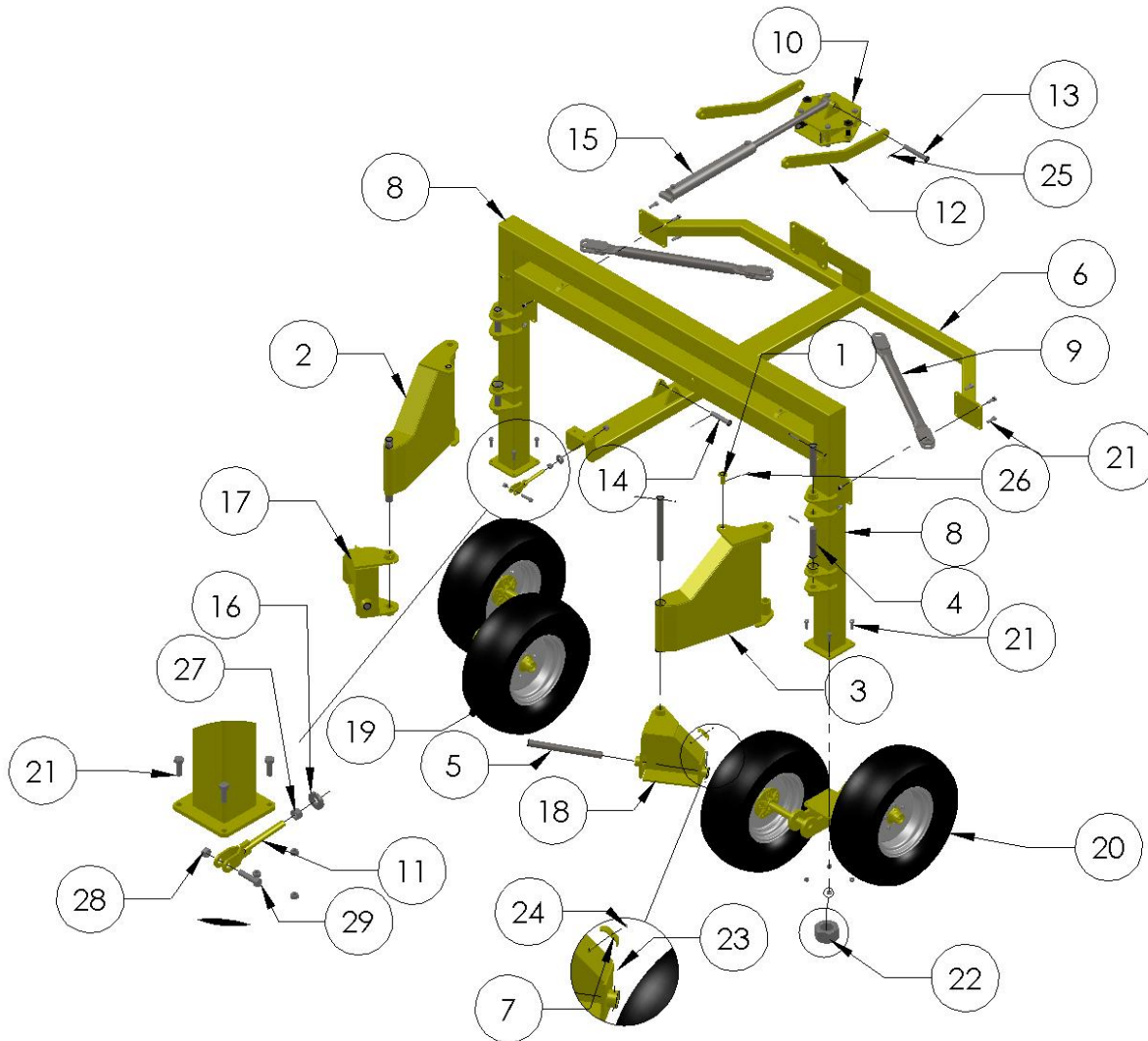
#	Name	Part #	Qty
1	Gooseneck 1620	181471	1
2	Hitch Extension	18171	1
3	Hose Clip Stud	18081	2
4	Hose Clip	18131	2
5	Transport Link	18197	2
6	Spring Hose Holder	18080	1
7	Turnbuckle Jaw	18200	1
8	Sidewind Jack	18034	1
9	Jack Pin	11785	1
10	Hair Pin 3/32x2	11786	1
11	Hair Pin 5/32x2-15/16	16363	2
12	BOLT 0.6250x2.5000	14469	1
13	NLN 0.6250	11614	1
14	NLN 0.3750	10271	4
15	BOLT 0.6250x1.7500	12379	10
16	SFN 0.6250	11614	10
17	NUT 0.7500	10283	2
18	Transport Lock Bracket	18186	1
19	Transport Lock U-bolt	16531	2

3.3 Main Frame Assembly



#	Name	Part #	QTY
1	Main Hitch Beam (Front)	18148	1
2	Main Hitch Beam (Rear)	18180	1
3	Cable Gusset 2	18199	1
4	Cable Gusset 1	18198	1
5	Upper Rear Slide Plate Assembly	See Section 3.5	1
6	Lower Rear Slide Assembly	See Section 3.5	1
7	Front Slide Plate Assembly	See Section 3.5	1
8	Compensation Cylinder Pin	18127	1
9	Ram Cylinder Pin	18192	1
10	Scissor Arm Front 1620	18162	2
11	Scissor Arm Rear 1620	18163	2
12	48 Inch Cylinder	See Section 3.18	1
13	Crosby Clip	12368	1
14	BOLT 0.6250x1.7500	12379	8
15	SFN 0.6250	11614	10
16	BOLT 0.6250x2.2500	20910	2
17	Cotter Pin 0.250x2	10580	2

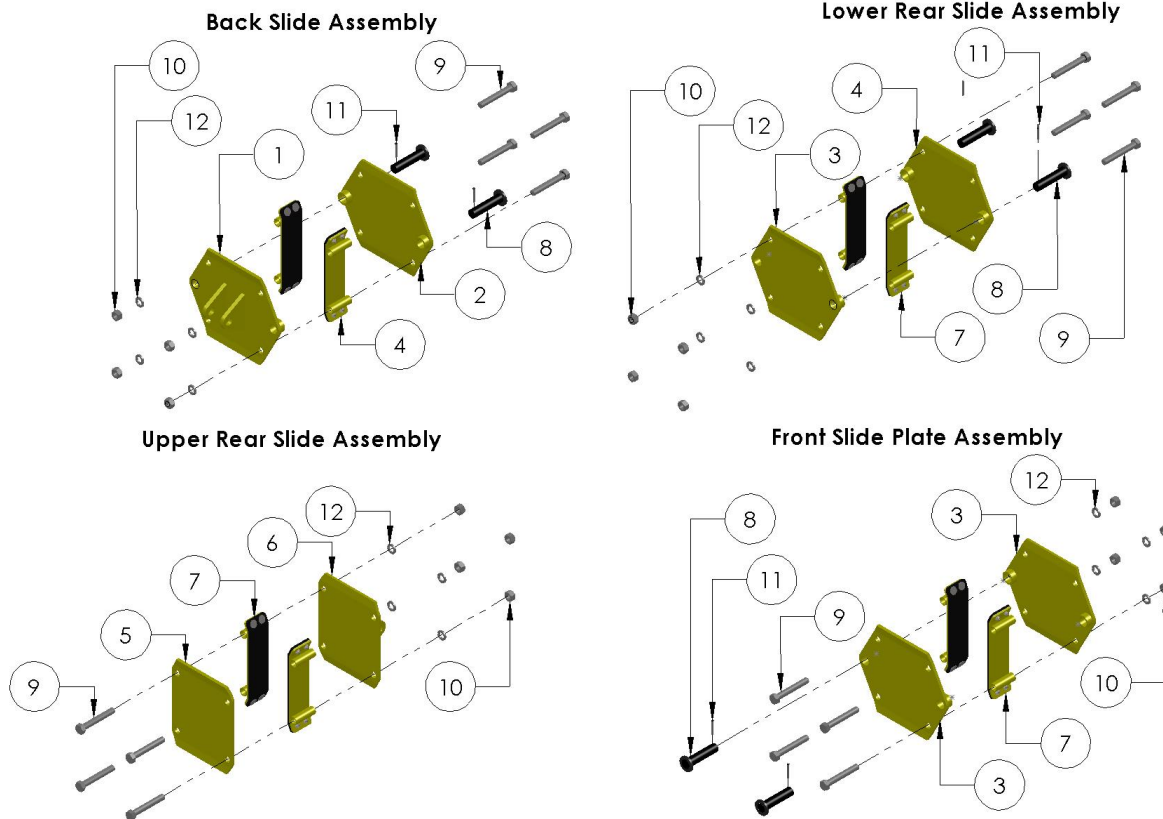
3.4 Rear End Assembly



#	Name	Part #	Qty
1	Pin Rear Pivot Link	18168	2
2	Boom Pivot Box RT	18153	1
3	Boom Pivot Box LT	18152	1
4	Knuckle Pin 3	18170	4
5	Knuckle Pin 2	17174	4
6	Rear Slide	18150	1
7	Hose Clip	18131	6
8	Rear Frame	18149	1
9	Rear Pivot	18151	2
10	Lower Rear Slide Asm.	See Section 3.5	1
11	Turnbuckle Jaw	18200	1
12	Compensation Bar	18175	2
13	Compensation Cyl. Pin	18192	1
14	Base Cylinder Pin	18127	1

15	20 Inch Cylinder Rake	See Section 3.18	1
16	Cable Washer	18196	1
17	Knuckle RT	18172	1
18	Knuckle LT	18154	1
19	RT Tandem Wheel Asm.	See Section 3.6	1
20	LT Tandem Wheel Asm.	See Section 3.6	1
21	BOLT 0.6250x1.7500	12379	16
22	SFN 0.6250	11614	16
23	BOLT 0.3750x3	13770	8
24	NLN 0.3750	10271	14
25	Cotter Pin 0.2500x2	10580	2
26	Roll Pin 0.2500x2	15872	2
27	NUT 0.7500	10283	2
28	NLN 0.6250	10271	1
29	BOLT 0.6250x2.5000	14469	1

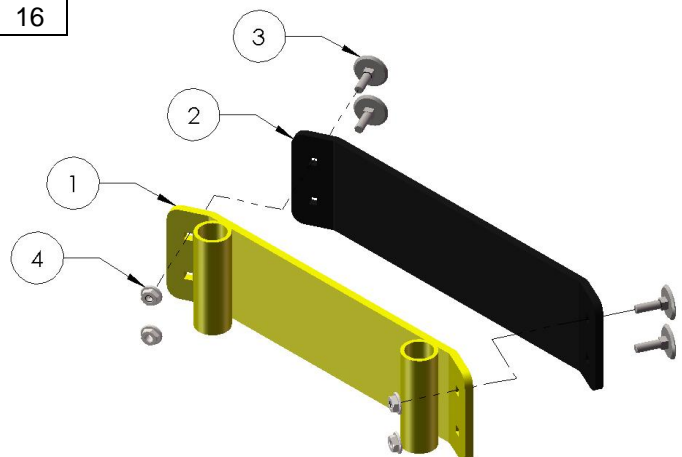
3.5 Slides



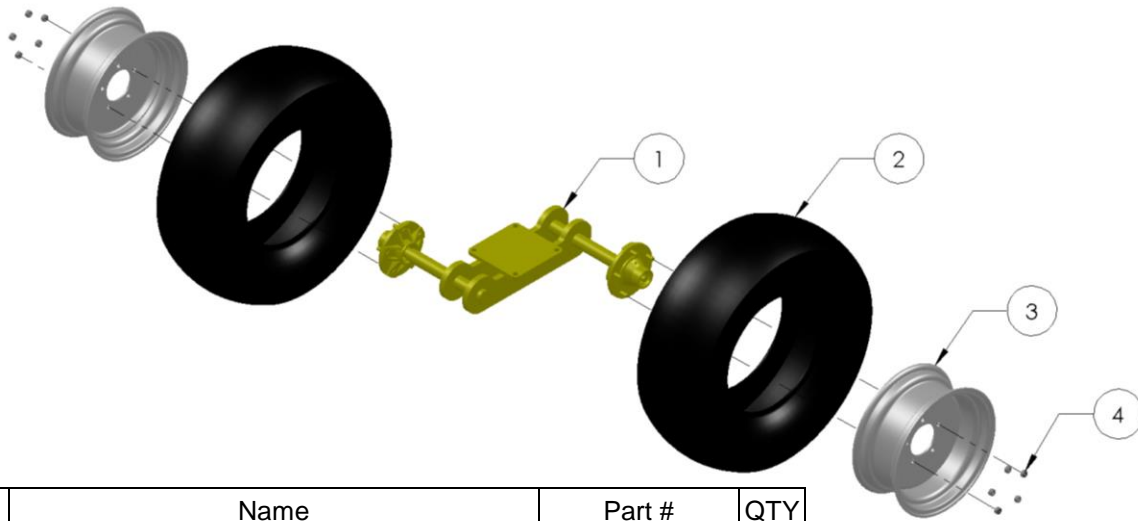
#	Name	Part #	QTY.
1	Slide Plate, BF48	18185	1
2	Slide Plate, TF48	18184	1
3	Slide Plate	18189	3
4	Slide Plate, Top Rear	18183	1
5	Slide 1	18174	1
6	Slide Plate, BR48	18182	1
7	Slide Side	See Section 3.5.1	6
8	Scissor Arm Pin	18188	6
9	BOLT 0.7500x5	17826	16
10	NUT 0.7500	10283	16
11	Roll Pin 0.2500x2	15872	6
12	Lock Washer 0.7500	13795	16

3.5.1 Slide Side

#	Name	Part #	Qty
1	Slide Side Plate	18181	1
2	Plastic Slide	18011	1
3	0.2500 Elevator Bolt	17970	4
4	NLN 0.2500	11664	4

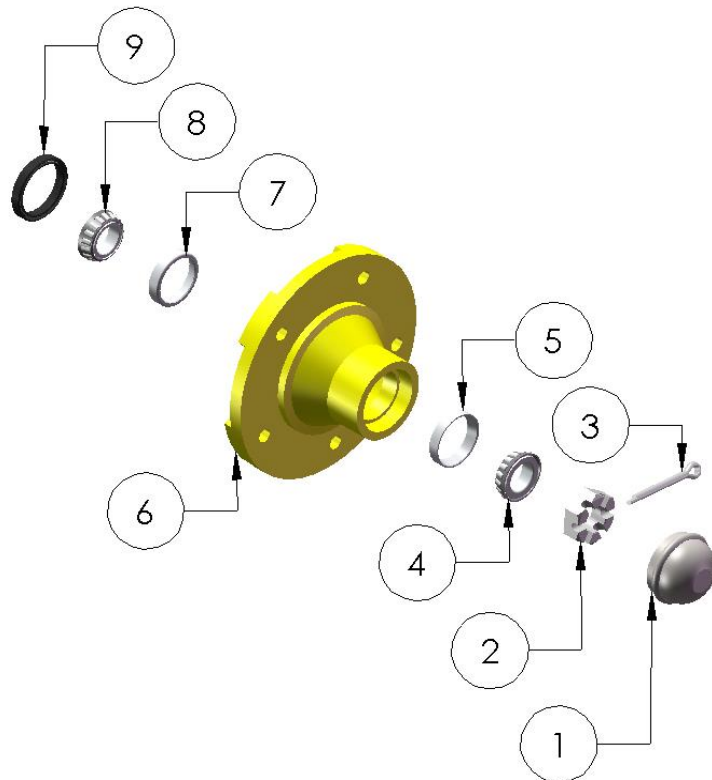


3.6 Left/Right Tandem Wheel Assembly



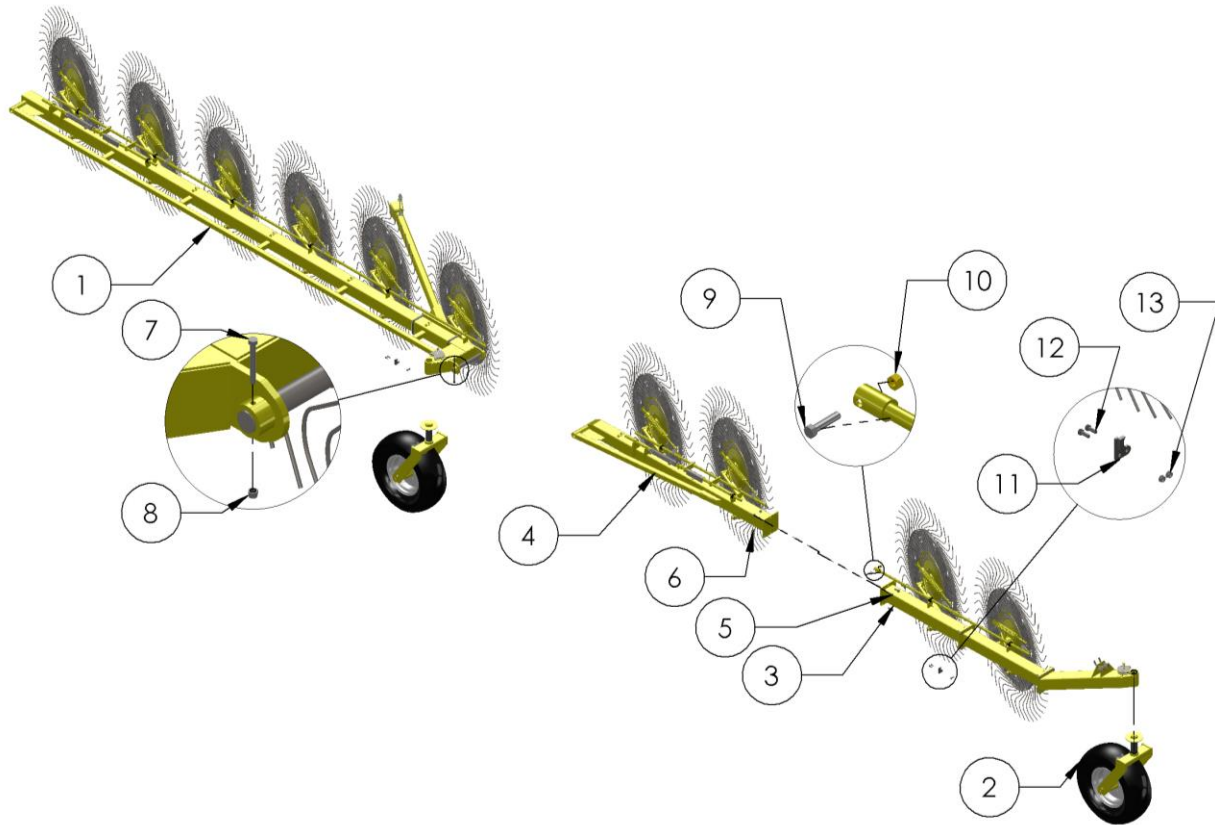
#	Name	Part #	QTY
1	Tandem Axle (LT) (See Section 3.7 for Hub)	18161	1
1(b)	Tandem Axle (RT) (See Section 3.7 for Hub)	18173	(1)
2	Tire - 9.5Lx15	18835	2
3	15" Rim	18425	2
4	Stud Bolts 1/2x1-3/4	16307	10

3.7 Tandem Axle Replacement Parts



#	Name	Part #	QTY
1	Dust Cap	16308	1
2	Castle Nut	16358	1
3	Cotter Pin	11669	1
4	Outer Bearing	16305	1
5	Outer Cup	16304	1
6	Hub	16724	1
7	Inner Cup	10083	1
8	Inner Bearing	10082	1
9	Oil Seal	16306	1

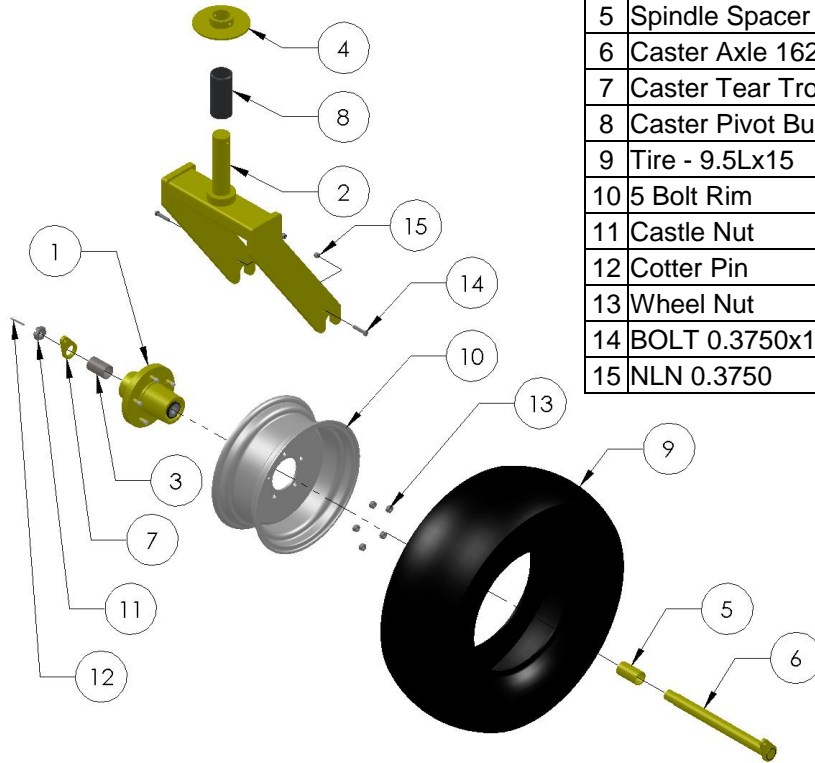
3.8 Right/Left Arm Assembly



#	Name	Part #	QTY.
1	Right Long Arm Assembly	See Section 3.10	1
2	Right Middle Wheel Assembly	See Section 3.8	2
3	Right Outer Extension	See Section 3.12	1
4	Right Short Frame	See Section 3.11	1
5	BOLT 0.6250x1.7500	12379	6
6	SFN 0.6250	11614	6
7	BOLT 0.3750x3	13770	1
8	NLN 0.3750	10271	1
9	BOLT 0.5000x2.2500	11820	1
10	NUT 0.5000	16085	1
11	Lift Rod Lock	22082	2
12	BOLT 0.375 x 1.00	13806	4
13	SFN 0.375	10271	4

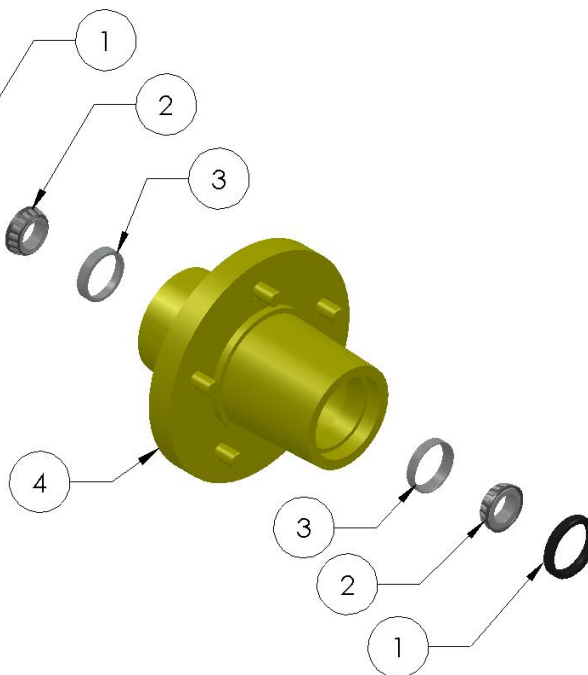
3.9 Arm Wheel Assembly

#	Name	Part #	QTY.
1	Caster Hub Assembly	See Section 3.10	1
2	Caster Fork	170931	1
3	Spindle Spacer 1	18178	1
4	Brake Disk (2 Inch)	17330	1
5	Spindle Spacer 2	18179	1
6	Caster Axle 1620	18187	1
7	Caster Tear Trop	18105	1
8	Caster Pivot Bushing 5.5in	21150	1
9	Tire - 9.5Lx15	18835	1
10	5 Bolt Rim	18425	1
11	Castle Nut	16299	1
12	Cotter Pin	10580	1
13	Wheel Nut	16356	5
14	BOLT 0.3750x1.7500	16040	2
15	NLN 0.3750	10271	2

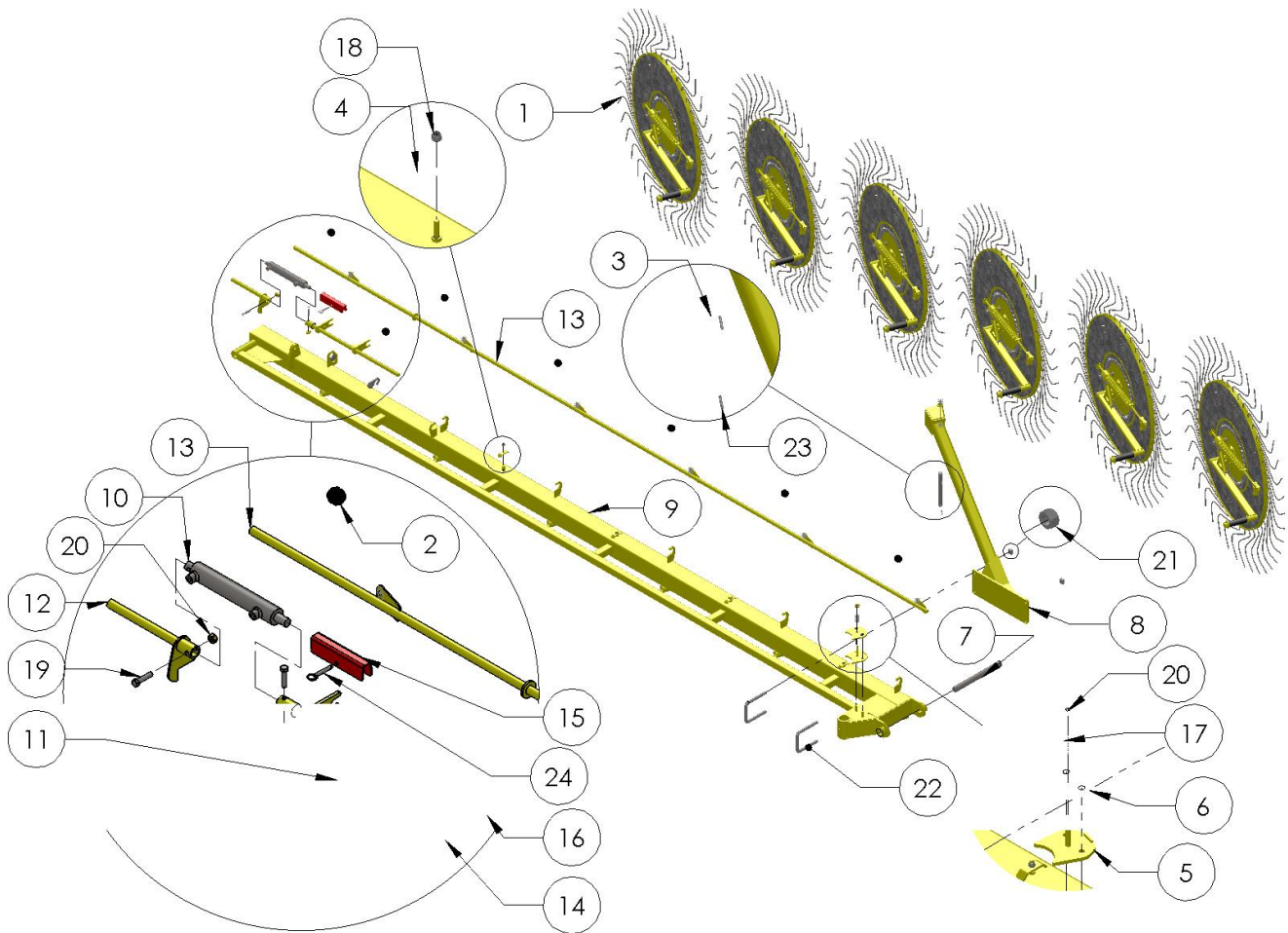


3.10 Caster Hub Assembly

#	Name	Part #	Qty
1	Oil Seal	16297	2
2	Bearing	16296	2
3	Cup	16081	2
4	Caster Hub	16294	1
5	Wheel Stud	16391	1



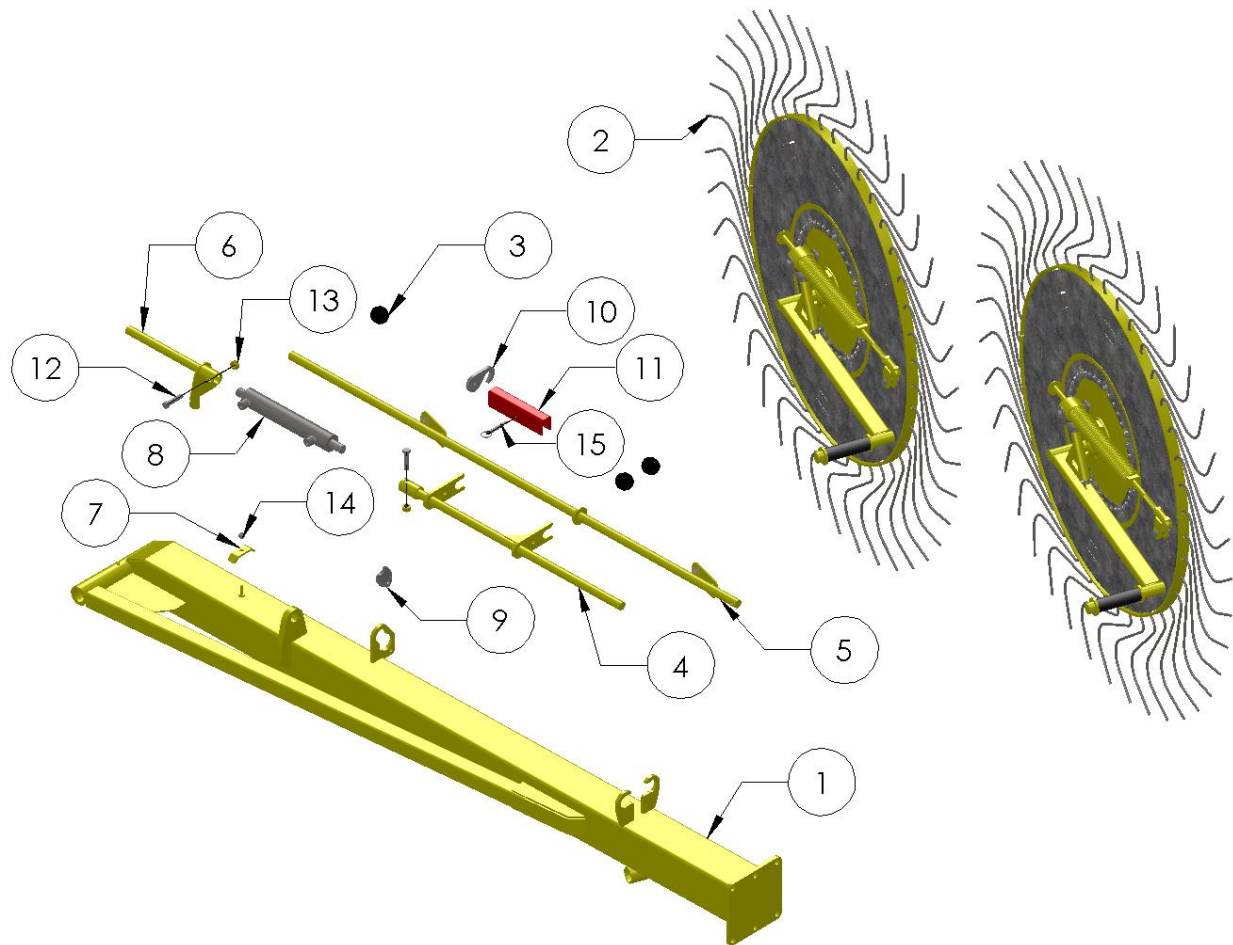
3.11 Right/Left Long Arm



#	Name	Part #	Qty
1	Rake Wheel Assembly	See Section 3.13	6
2	Bushing Lift Rod Slide	16099	7
3	Scissor Center Pin	21296	1
4	Hose Clip	18131	4
5	Bottom Brake Pad	16138	1
6	Brake Pad	16137	1
7	Knuckle Pin 2	17088	1
8	Riser Arm RT	18191	1
8(b)	Riser Arm LT	18190	(1)
9	Long Arm RT	181561	1
9(b)	Long Arm LT	181551	(1)
10	8" Stroke Cylinder	See Section 3.16	1
11	Lift Rod Lock	18193	1

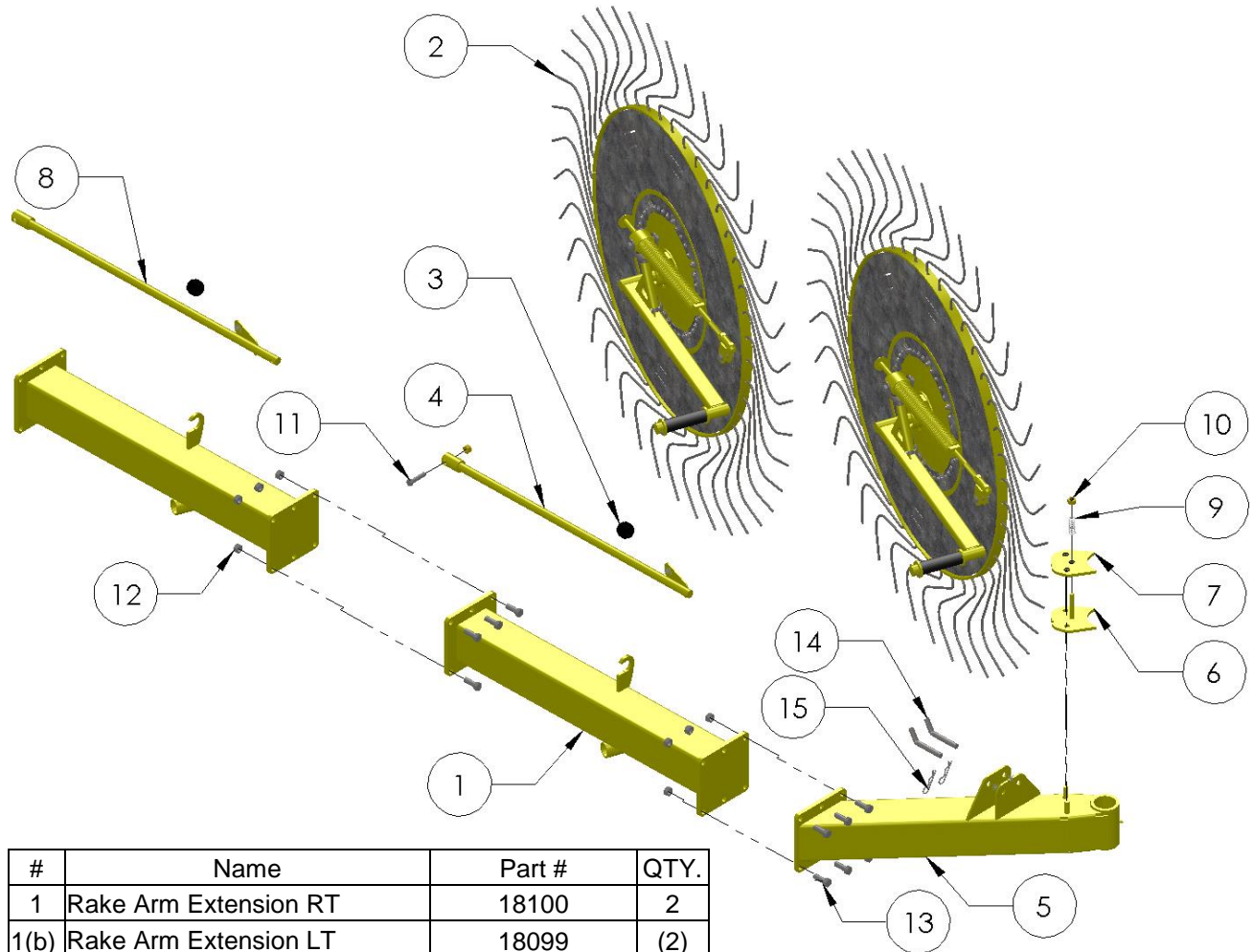
12	Threaded Rod RT	18110	1
12(b)	Threaded Rod LT	18109	(1)
13	Lift Rod - Long	18164	1
14	Lift Rod Fork Lock	18177	1
15	Cylinder Safety Lock	18125	1
16	Lift Rod - Outer	18166	1
17	Spring	16093	2
18	NLN 0.3750	11614	4
19	BOLT 0.5000x2.2500	11820	2
20	NUT 0.5000	14393	3
21	SFN 0.7500	10283	4
22	Riser Arm U-bolt	16091	2
23	Roll Pin 0.2500x2	15872	2
24	0.3750 x 2" Quick Pin	12050	1

3.12 Right/Left Short Frame



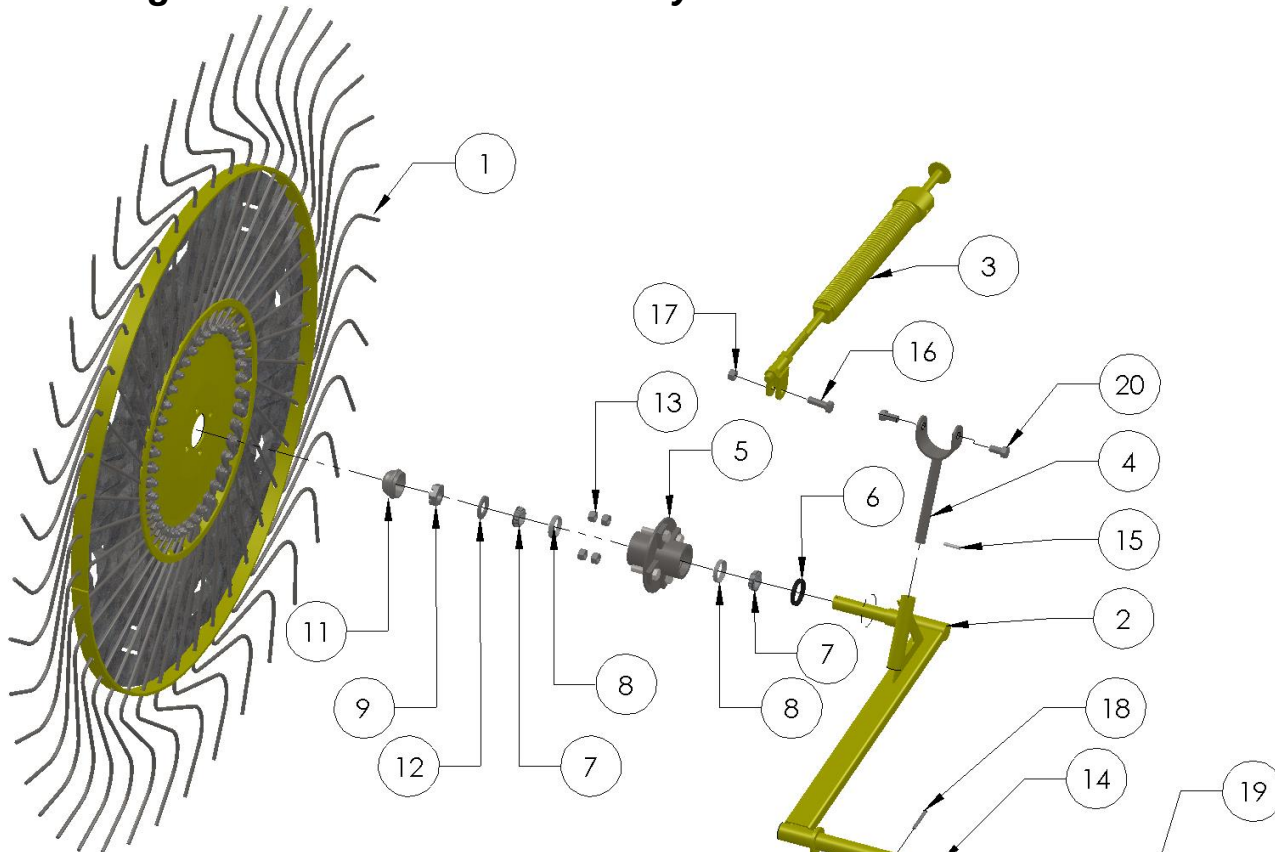
#	Name	Part #	QTY.
1	Short Arm RT	18158	1
1(b)	Short Arm LT	18157	(1)
2	Right Rake Wheel Assembly	See Section 3.13	2
3	Bushing Lift Rod Slide	16099	3
4	Lift Rod - Outter	18166	1
5	Lift Rod - Short	18165	1
6	Threaded Rod RT	18110	1
6(b)	Threaded Rod LT	18109	(1)
7	Hose Clip	18131	1
8	8" Stroke Cylinder	See Section 3.17	1
9	Lift Rod Lock	18193	1
10	Lift Rod Fork Lock	18177	1
11	Cylinder Safety Lock	18125	1
12	BOLT 0.5000x2.2500	11820	2
13	NUT 0.5000	10241	2
14	NLN 0.3750	10806	1
15	0.3750 x 2" Quick Pin	12050	1

3.13 Right/Left Outer Extension



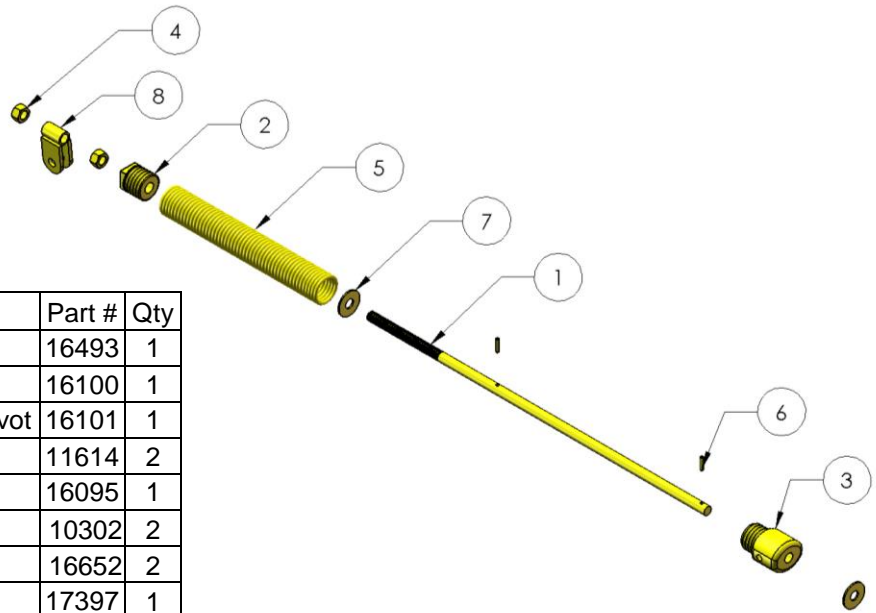
#	Name	Part #	QTY.
1	Rake Arm Extension RT	18100	2
1(b)	Rake Arm Extension LT	18099	(2)
2	Right Rake Wheel Assembly	See Section 3.13	2
3	Bushing Lift Rod Slide	16099	2
4	Extension Lift Rod	18108	1
5	Wrap Around Caster RT	18160	1
5(b)	Wrap Around Caster LT	18201	(1)
6	Bottom Brake Pad (w/ bolt)	16183	1
7	Brake Pad	16137	1
8	Lift Rod - 2nd Extension	18201	1
9	Spring	16093	2
10	NUT 0.5000	14393	2
11	BOLT 0.5000x2.2500	11820	1
12	SFN 0.6250	11614	12
13	BOLT 0.6250x1.7500	12379	12
14	Bent Pin 0.6250 x 3.500	16339	2
15	Hair Pin 0.12625 x 2.9375	16363	2

3.14 Right/Left Rake Wheel Assembly



#	Name	Part #	QTY.
1	Rake Wheel	See Section 3.16	1
2	Rake Wheel Arm (LF)	18112	1
2(b)	Rake Wheel Arm (RT)	18114	(1)
3	Spring Assembly	See Section 3.15	1
4	Yoke	18116	1
5	Rake Wheel Hub	16413	1
6	Oil Seal	16083	1
7	Cone Bearing	16082	2
8	Cone Bearing Cup	16081	2
9	Castle Nut	16087	1
10	Cotter Pins	16089	1
11	Dust Cap	16084	1
12	Washer	16088	1
13	Lug Nut	16085	4
14	Reel Arm Pivot Bushing	16096	4
15	Roll Pin 0.2500x1.2500	16021	1
16	BOLT 0.5000x1.5000	14461	1
17	STLN 0.5000	14393	1
18	Roll Pin 0.2500x2	15872	1
19	Rake Arm Washer	16651	1
20	BOLT 0.5000x1	10824	2

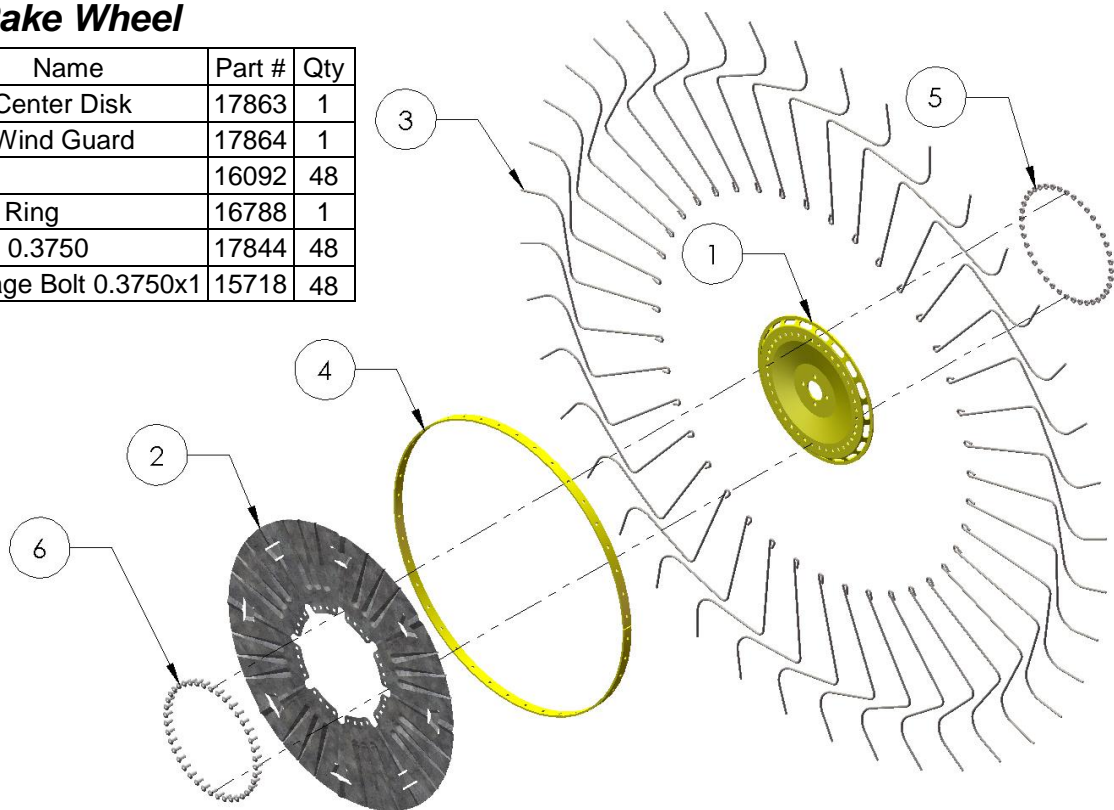
3.15 Spring Assembly



#	Name	Part #	Qty
1	Spring Slide Rod	16493	1
2	Pull Spring Retainer Guide	16100	1
3	Pull Spring Retainer Guide Pivot	16101	1
4	STFN 0.6250	11614	2
5	Large Rake Spring	16095	1
6	Roll Pin 0.1875x1	10302	2
7	Washer 0.6250	16652	2
8	Spring Clevice	17397	1

3.16 Rake Wheel

#	Name	Part #	Qty
1	Reel Center Disk	17863	1
2	Reel Wind Guard	17864	1
3	Tine	16092	48
4	Outer Ring	16788	1
5	STFN 0.3750	17844	48
6	Carriage Bolt 0.3750x1	15718	48



3.17 Cylinder – 8in

Complete Cylinder - 17442

Cylinder Rod – 17614

Cylinder Seal Kit - 17613



3.18 Cylinder - 20in

Complete Cylinder - 17328

Cylinder Rod – N/A

Cylinder Seal Kit - 16396



3.19 Cylinder - 48in

Complete Cylinder - 17331

Cylinder Rod – N/A

Cylinder Seal Kit - 16396



4.0 Parts List

Before assembly, ensure that all of the components are included. The parts list for the Bridgeview 16 Wheel Rake and optional 18 & 20 Wheel Extension Kits are available below.

4.1 Rake - 16 Wheel

Assembled Parts

- 8 – Rake Wheel Left
- 8 – Rake Wheel Right
- 16 – Spring Assembly
- 4 – Rear Hub Assembly

Main Body

Parts List

- 1 – Gooseneck
- 1 – Main Hitch Beam (Main Frame Front)
- 1 – Main Hitch Beam (Main Frame Rear)
- 1 – Rear Frame
- 1 – Rear Slide
- 1 – Left Box
- 1 – Right Box
- 1 – Left Knuckle
- 1 – Right Knuckle
- 6 – Long Knuckle Pin
- 4 – Short Knuckle Pin
- 1 – Left Tandem Axle
- 1 – Right Tandem Axle
- 1 – Long Rake Arm Boom – Left
- 1 – Long Rake Arm Boom – Right
- 1 – Short Rake Arm Boom – Left
- 1 – Short Rake Arm Boom – Right
- 1 – Wrap-around Caster Mount – Left
- 1 – Wrap-around Caster Mount – Right
- 1 – Transport lock Bracket
- 1 – 2000 lb. Side Wind Jack
- 2 – Transport Link
- 16 – Small Hose Clip
- 2 – Long Hose Clip
- 1 – Hose Kit

- 1 – Hose Adaptor Kit
- 1 – Hose Spring

Bolt List

- 20 – 5/8" x 1 3/4" with serrated Flange Nuts – Gooseneck Flange and Mid Frame Flange
- 8 – 5/8" x 1 3/4" with Serrated Flange Nuts – Rear Tandem Attachment
- 12 – 5/8" x 1 3/4" with Serrated Flange Nuts – Wrap-around Caster Mounts
- 10 – 3/8" x 3" with Nylon Locking Nuts – Pivot Pin Retainers
- 16 – 3/8" Nylon Locking Nuts – Hose Clips
- 4 – 5/8" x 3 1/2" Bent Pins with 5/32" x 2 15/16" Hair Pin – For Transport Links
- 1 – Jack Pin with 3/32" x 2" Hair Pin – Front Hitch Jack
- 6 – Male Hydraulic Tips
- 2 – 5/32" x 2 15/16" Hair Pins – For Transport Link Holders
- 20 – Rear Wheel Bolt
- 1 – 5/8" Serrated Flange Nut with Heavy Washer – Gooseneck Spring
- 2 – 1/2" x 5" Modified Bolt with Jam Nut – Gooseneck Transport Lock and Hose Clip
- 4 – 3/4" x 7" Bolt – Rear Main Flange and Slide
- 2 – 3/4" U Bolt with Serrated Flange Nut – Rear Main Flange
- 8 – 3/4" Serrated Flange Nut – Rear Main Flange
- 8 – 5/8" x 1 3/4" Bolt with Serrated Flange Nut – Slide Flange
- 2 – 5/8" x 1 1/2" Bolt with Serrated Flange Nut – Slide Support
- 2 – 3/8" U Bolt with Nylon Lock Nut – Transport lock Bracket

Scissor Arm

Parts List

- 1 – Riser Arm – Left
- 1 – Riser Arm – Right
- 1 – Hydraulic Cylinder (2.5" x 48")
- 1 – Hydraulic Cylinder (2.5" x 20")
- 1 – Cylinder Pin (Base End)
- 1 – Cylinder Pin (Ram End)
- 2 – Cylinder Pin (Compensation Bar)
- 1 – Slide Plate Top Front 48 Cylinder
- 1 – Slide Plate Bottom Front 48 Cylinder
- 3 – Slide Plate
- 1 – Slide Plate Top Rear Adjustment
- 1 – Slide Plate Top Rear 48 Cylinder
- 1 – Slide Plate Bottom Rear 48 Cylinder
- 8 – Slide Side
- 1 – Rear Pivot
- 2 – Compensation Bar

- 6 – Scissor Arm Frame Slide – Pin
- 2 – Pivot Arm – Pin
- 2 – Riser Arm Center Pin
- 4 – Riser Arm Washer
- 2 – Scissor Arm Front
- 2 – Scissor Arm Rear

Bolt List

- 12 – 1/4" x 2" Roll Pin – Scissor Arm Attachment to Frame Slides and Pivot Bar Pins
- 4 – 1/4" x 2" Cotter Pin – Attaching Main Cylinder Pins & Compensation Bar Cylinder Pins
- 4 – 3/4" x (5x6 1/2") Square U-Bolts – To Attach Riser Arms
- 8 – 3/4" Serrated Flange Nuts – To Attach Riser Arms
- 16 – 3/4" x 5 Bolt with Lock Washer and Nut – Slides
- 4 – 10 Ga ID 1 1/4" OD 1 7/8" – Riser Arm Pin
- 2 – Cinching Hose Strap
- 4 – T-Clip Hose Holders

Lift Rod

Parts List

- 4 – Lift Rod Fork Lock
- 4 – Lift Rod Front Lock
- 4 – Lift Rod Bushing Lock
- 4 – Threaded Rod Adjusters
- 4 – Hydraulic Cylinder (1" x 8")
- 4 – Cylinder Safety Lock with PTO clips
- 2 – Main Lift Rod Long
- 2 – Main Lift Rod Short
- 4 – Side Lift Rod

Bolt List

- 8 – 1/2" x 2 1/4" with Stover Locking Nuts – Lift Rod Coupler
- 20 – 1.125 ID Plastic Bushings – For Lift Rod Assembly
- 12 – 3/8" x 1" Bolt with Serrated Flange Nut – Lift Rod Locks
- 4 – 3/8" x 1 1/4" Bolt with Serrated Flange Nut – Lift Rod Fork Lock
- 8 – 1" Nut – Lift Rod Adjustment

Front Caster

Parts List

- 4 – Caster
- 4 – Caster Axle
- 4 – Brake Disk

- 4 – Bottom Brake Pad (w/ bolt)
- 4 – Top Brake Pad
- 4 – Caster Tear Drop
- 4 – Caster Spindle Spacer Large
- 4 – Caster Spindle Spacer Small
- 4 – Caster Wheel Hub w/cups
- 8 – Caster Hub Cones
- 8 – Caster Wheel Seal

Bolt List

- 4 – 3/8" x 2 3/4" Roll Pin - Caster Pivot Mount
- 4 – 1 1/4" Castle Nut with 1/4" x 2" Cotter Pins – Caster Axle
- 8 – 3/8" x 1 3/4" with Nylon Locking Nuts – Caster Axle Retainer
- 4 – 1/2" Stover Locking Nut – Brake Disk
- 4 – .321 x .888 ID x 2 Spring with washer – Brake Spring
- 4 – 1/4" x 2" Cotter Pin – Castle Lock
- 20 – Caster Wheel Nuts (90 Degree Tapered Edge) Fine Thread

Rake Wheel Mount

Parts List

- 8 – Rake Wheel Arm – Left
- 8 – Rake Wheel Arm – Right
- 16 – Rake Wheel Arm Washer

Bolt List

- 16 – 1/4" x 2" Roll Pin – Attaching Rake Wheel Arms
- 16 – 1/2" x 1 1/2" with Stover Locking Nut – Mounting Rake Wheel Springs
- 64 – Rake Wheel Nuts (60 Degree Tapered Edge) Fine Thread
- 16 – 1/4" x 1 1/4" Roll Pin – Yoke Lock

Miscellaneous Parts

- 54 – 1/4" Grease Zerk (40 are installed, 16 in Rake Wheels, 16 in Rake Wheel Bushings, 4 in Rear Hubs, 4 in Caster Hubs)

4.2 Extension Kit – Upgrade from 16 Wheel to 18 Wheel

Assembled Parts

- 2 – Spring Assembly
- 1 – Rake Wheel – Left
- 1 – Rake Wheel – Right

Parts List

- 1 – Frame Extension – Left
- 1 – Frame Extension – Right
- 2 – Lift Rod Extension
- 1 – Rake Wheel Arm – Left
- 1 – Rake Wheel Arm – Right
- 2 – Rake Wheel Arm Washer

Bolt List

- 12 – 5/8" x 1 3/4" with Serrated Flange Nuts – Rake Arm Extension
- 2 – 1/2" x 2 1/4" with Stover Locking Nuts – Lift Rod Coupler
- 2 – Bushing Lift Rod Slide
- 2 – 1/4" x 2" Roll Pin – Attaching Rake Wheel Arms
- 2 – 1/2" x 1 1/2" with Stover Locking Nut – Mounting Rake Wheel Springs
- 4 – 1/4" Grease Zerk
- 8 – Rake Wheel Nuts (60 Degree Tapered Edge) Fine Thread
- 2 – 1/4" x 1 1/4" Roll Pin – Yoke Lock

4.3 Extension Kit - 20 Wheel Upgrade from 18 Wheel to 20 Wheel

Assembled Parts

- 2 – Spring Assembly
- 1 – Rake Wheel – Left
- 1 – Rake Wheel – Right

Parts List

- 1 – Hitch Extension
- 1 – Cable Gusset Short
- 1 – Cable Gusset Long
- 1 – Cable Washer
- 2 – Turnbuckle Jaw
- 1 – Frame Extension – Left
- 1 – Frame Extension – Right
- 2 – Lift Rod Extension (Throw Away)
- 2 – Lift Rod Extension with hole
- 1 – Rake Wheel Arm – Left
- 1 – Rake Wheel Arm – Right
- 2 – Rake Wheel Arm Washer

Bolt List

- 10 – 5/8" x 1 3/4" Bolt with Serrated Flange Nut – Gooseneck Flange
- 2 – 5/8" x 2 1/4" Bolt with Serrated Flange Nut – Cable Truss
- 2 – 5/8" x 2 1/2" Bolt with Nylon Lock Nut – Cable Pin
- 1 – 31' Cable – Cable Gusset
- 12 – 5/8" x 1 3/4" with Serrated Flange Nuts – Rake Arm Extension
- 2 – 1/2" x 2 1/4" with Stover Locking Nuts – Lift Rod Coupler
- 2 – Bushing Lift Rod Slide
- 2 – 1/4" x 2" Roll Pin – Attaching Rake Wheel Arms
- 2 – 1/2" x 1 1/2" with Stover Locking Nut – Mounting Rake Wheel Springs
- 4 – 1/4" Grease Zerk
- 8 – Rake Wheel Nuts (60 Degree Tapered Edge) Fine Thread
- 2 – 1/4" x 1 1/4" Roll Pin – Yoke Lock
- 1 – 1/2" Cable Crosby Clip
- 4 – 3/4" Nuts – Turnbuckle Jaw
- 10 – 5/8" Serrated Flange Nuts to replace the 10 Removed on the Gooseneck

5.0 18 & 20 Wheel Hitch Extension Kits

5.1 Introduction

This section describes the assembly process in order to attach the Bridgeview Rake Extension Kit. Please read through this before beginning assembly of the kit. Before assembly, ensure that all of the components are included.

Note: Some of the hardware used in assembly may be used as packaging hardware. Please save the packaging hardware.

5.2 Safety

Proper precautions must be taken to ensure safe assembly of the Bridgeview Extension Kit:

- Wear proper safety equipment when assembling the rake. Steel toe boots and safety glasses are required. Earplugs are recommended when tightening bolts.
- Gloves are recommended when handling materials.
- Be sure to have solid working platforms during assembly to ensure the work pieces are stable.
- Always have help when lifting heavy pieces.
- Never work under any lifted parts unless safely secured with jack stands or equivalent devices

5.3 Tools required

The following tools may be required for the assembly of the Bridgeview Extension Kit:

- Forklift or Hoist
- Impact Wrench
- Basic Hand Tools

5.4 Fastener Information

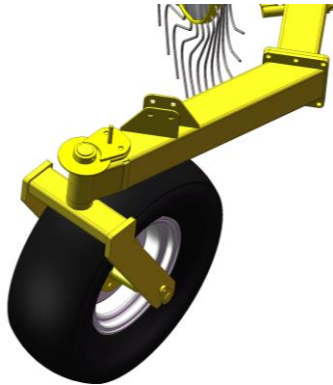
Your Bridgeview Rake is fastened with a variety of bolts. For these bolts to work properly the correct washer and nut must be used in the proper situation. Please consult this guide for correct fastener information. Also ensure that all fasteners are securely tightened. Serrated flange nuts must be installed tightly with an impact wrench. The flanged nut must be tight against the steel in order for the nut to correctly bind.

5.5 Assembly Procedure

- **NOTE:** Left and Right, as referred to in this guide, are taken as if you are standing at the rear of the rake, looking along the length of the rake towards the tractor hitch.

5.5.1 Remove Wrap Around Caster Extension

Use a lifting device to lift outside wheels off the ground, leave room to remove bolts from wrap around caster. Now that the rake arms are resting on two wheels, the wrap around caster extension and front caster can now be removed from the ends of the rake arms.



5.5.2 Rake Arm Extensions

To Upgrade from 16 Wheel Rake with 18 Wheel Kit:

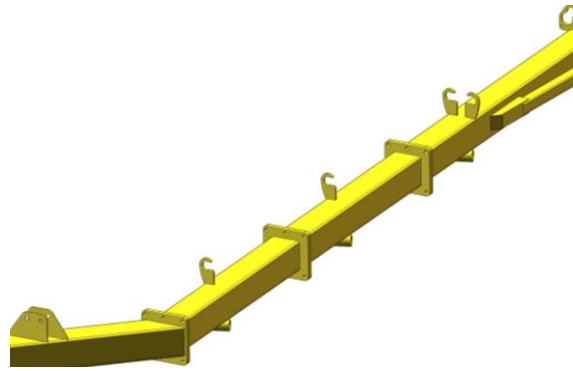
Install the rake arm extender at this time. The rake arm extender is bolted to the open end of the rake arm. The rake arm extender is attached using 5/8" x 1 3/4" bolts using serrated flange nuts. Make sure that the rake wheel arm stoppers are located on the same side and are at the same angle as the arm stoppers of the rake arm.

To Upgrade from 18 Wheel Rake with 20 Wheel Kit:

Install the rake arm extender at this time. The rake arm extender is bolted to the open end of the first rake arm extender. The rake arm extender is attached using 5/8" x 1 3/4" bolts using serrated flange nuts. Make sure that the rake wheel arm stoppers are located on the same side and are at the same angle as the arm stoppers of the rake arm.

To Upgrade from 16 Wheel Rake with 20 Wheel Kit:

Install the rake arm extenders at this time. The rake arm extenders are bolted together to the open end of the rake arm. The rake arm extenders are attached using 5/8" x 1 3/4" bolts using serrated flange nuts. Make sure that the rake wheel arm stoppers are located on the same side and are at the same angle as the arm stoppers of the rake arm.



5.5.3 Reinstall Wrap Around Caster Extension

Now the wrap around caster extension and front caster can be remounted on the end of the rake arm extension. The wrap around caster extension curves to the inside of the frame. The pins on the extension should be facing up. This extension is attached to the end of the rake arm using 5/8" x 1 3/4" bolts using serrated flange nuts. Once complete, you can lower the arms back to the ground.

5.5.4 Install Lift Rod Extender

To Upgrade from 16 Wheel Rake with 18 Wheel Kit::

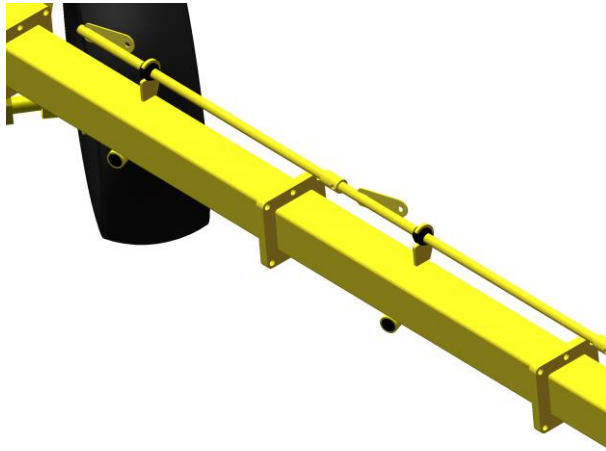
The lift rod extenders can now be installed. These extenders mount directly to the end of the regular lift rods. Slide the plastic bushing over the lift rod extension and slide the lift rod extension into the mount. The extension is bolted to the end of the lift rod using 1/2" x 2 1/4" bolts and nylon locking nuts. Relocate the lift rod lock using existing hardware.

To Upgrade from 18 Wheel Rake with 20 Wheel Kit:

The lift rod extenders can now be installed. These extenders mount directly to the end of the long extenders. Slide the plastic bushing over the lift rod extensions and slide the lift rod extensions into the mount. The extensions are bolted together using a 1/2" x 2 1/4" bolt and nylon locking nut. Relocate the lift rod lock using existing hardware.

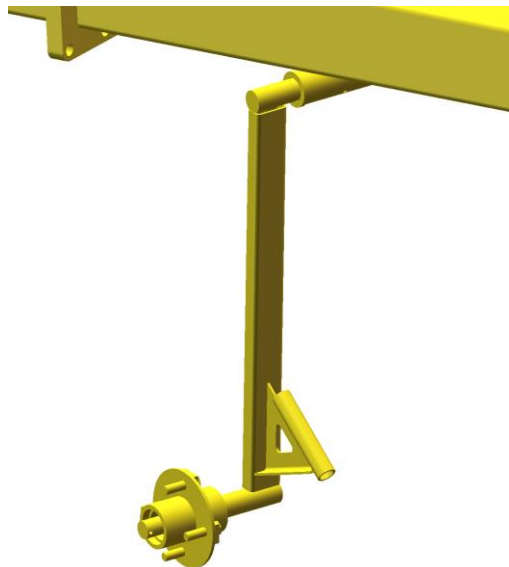
To Upgrade from 16 Wheel Rake with 20 Wheel Kit:

The lift rod extenders can now be installed. The longer extenders mount directly to the end of the regular lift rods. The shorter extenders now mount directly to the end of the long extenders. Slide the plastic bushing over the lift rod extensions and slide the lift rod extensions into the mount. The extensions are bolted together and to the end of the lift rod using 1/2" x 2 1/4" bolts and nylon locking nuts. Relocate the lift rod lock using existing hardware.



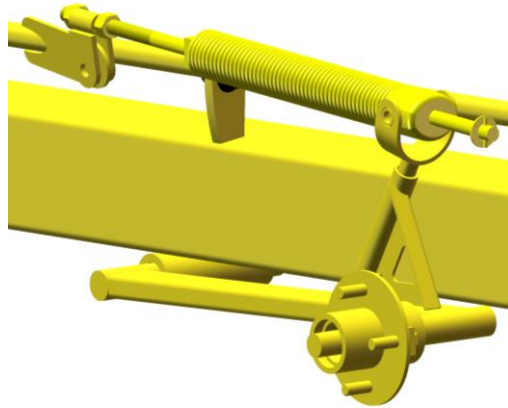
5.5.5 Install Rake Wheel Mounting Arm

There are two different types of mounting arms, one for the left and one for the right sides of the rake. The mounting arms are installed inside the rake arms with the spring mounting facing towards the rear of the rake. The arms are slid through the bushings and secured on the outside of the rake with a 1 ¼" inside diameter painted washer and ¼" x 2" Roll Pin.



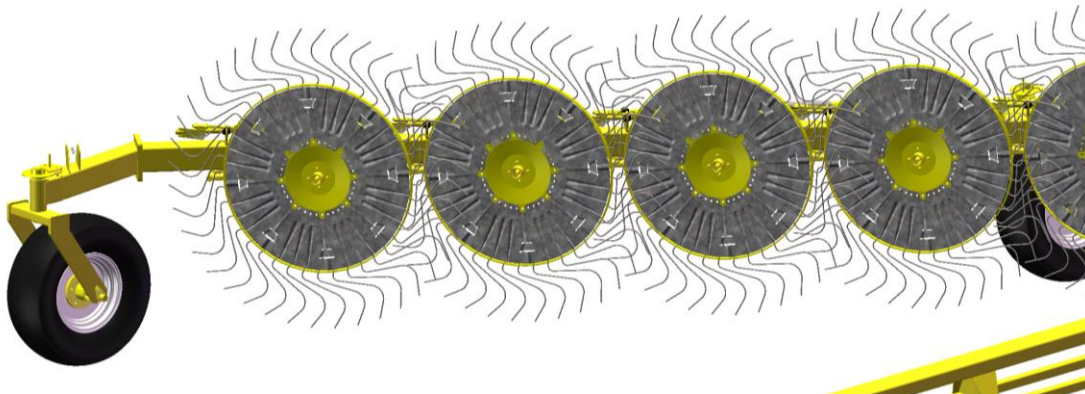
5.5.6 Install Spring Assembly to Mounting Arm

To mount the spring assembly, place the Yoke shaft into the mounting hole of the arm. Now pick up the arm and secure the bolt fitting to the riser arm fitting with a 1/2" x 1 ¾" bolt with locking nut. The spring assembly will only fit if it is mounted before installing the bolt fitting.

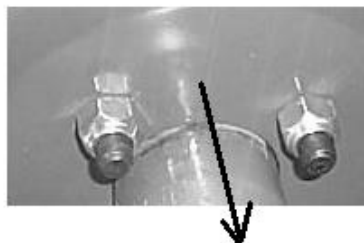


5.5.7 Install Rake Wheels

The Rake Wheels are installed onto the hubs of the Rake Wheel mounting arms. There is one wheel for each side of the rake. Care must be taken to ensure that the wheels are mounted on the proper side of the rake. When standing at the front of the rake (at the hitch) the tines will point in the same direction as the wheels in the picture shown below. Make sure the wheels point in the same direction as the wheels already on the rake.



The wheels are mounted using tapered wheel nuts. For mounting the rake wheels, the **tapered edge of the nuts faces outward**. This means that the flat edge of the nut is tightened against the Rake Wheel.



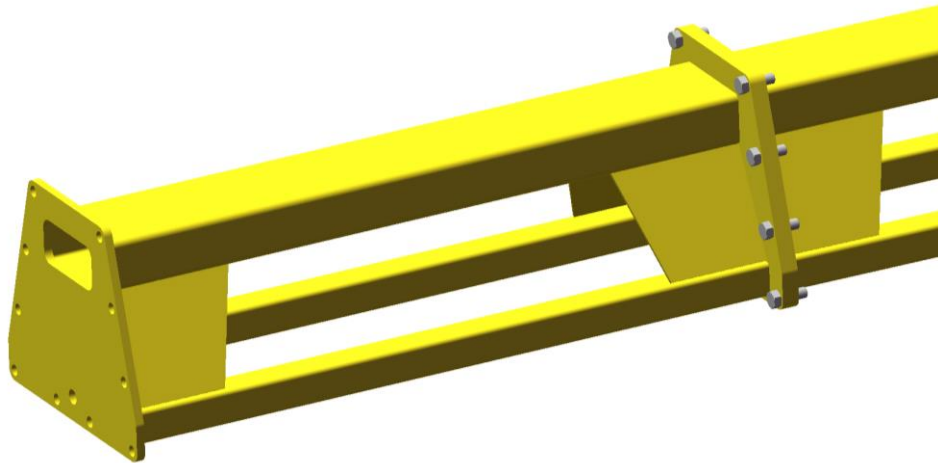
Tapered Edge Facing Out

5.5.8 Remove Gooseneck Assembly (*20 Wheel Upgrades Only*)

Use a lifting device to lift Gooseneck Assembly off the ground, leave room to remove bolts from Main Hitch Beam flange. Special care should be taken when removing the Gooseneck in order to protect the hydraulic hoses. The Gooseneck Assembly can now be removed from the Main Hitch Beam.

5.5.9 Hitch Extension (*20 Wheel Upgrades Only*)

Feed the hydraulic hoses back into the Hitch Extension, and install the Hitch Extension. The Hitch Extension is bolted to the open end of the Main Hitch Beam using 5/8" x 1 3/4" bolts using serrated flange nuts.



5.5.10 Reinstall Gooseneck Assembly (*20 Wheel Upgrades Only*)

Now the Gooseneck Assembly can be remounted on the end of the Hitch Extension. The Gooseneck Assembly is attached using 5/8" x 1 3/4" bolts using serrated flange nuts. Once complete, you can lower Gooseneck Assembly back to the ground.



5.5.11 Relocate the Transport Lock

To Upgrade to 18 Wheel Kit:

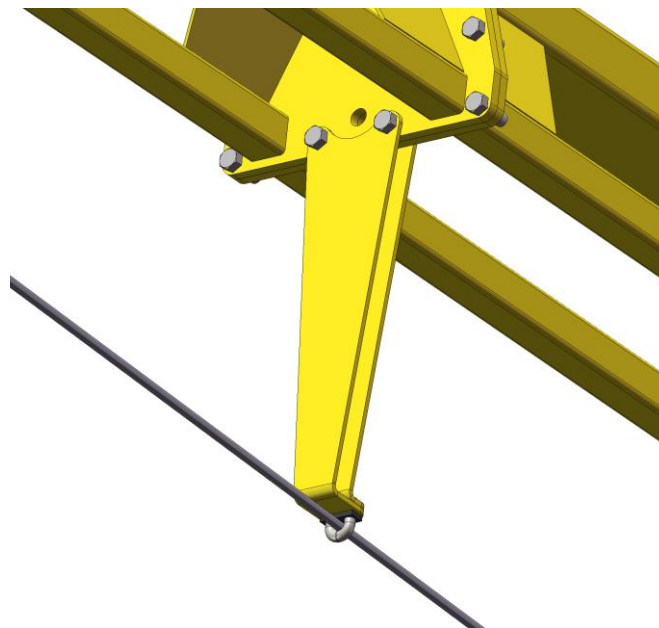
The transport lock now needs to be relocated to the new position of the transport link when its installed on the arms. The first step to relocate the transport locks is to loosen the two U-bolts connecting it to the Main Hitch Beam. Then move the lock to roughly same distance from the gooseneck flange. Now install the transport links in arms assemblies and adjust the transport lock position until a good fit is achieved.

To Upgrades to 20 Wheel Kit:

The transport lock now needs to be relocated to the new position of the transport link when its installed on the arms. The first step to relocate the transport locks is to remove the two U-bolts connecting it to the Main Hitch Beam. Then loosely reinstall the U-bolts with the transport lock on the Hitch Extension. Move the lock to roughly same distance from the gooseneck flange. Now install the transport links in arms assemblies and adjust the transport lock position until a good fit is achieved, then tighten the nuts.

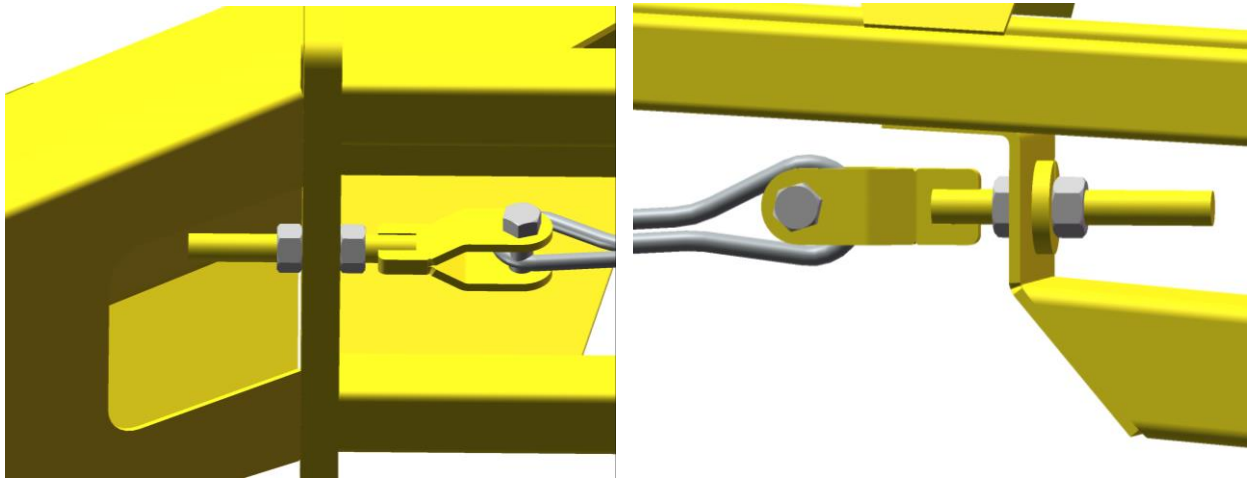
5.5.12 Install Cable Gussets (*20 Wheel Upgrades Only*)

Remove the two Front Main Frame lower middle $5/8"$ x $1\ 3/4"$ bolts with serrated flange nuts. Then the two bottom middle bolts need to be $5/8"$ x $2\ 1/4"$ bolts with serrated flange nuts to install the cable gussets. The gussets face the back of the rake as seen in the picture below.



5.5.13 Install Tension Cable (20 Wheel Upgrades Only)

At this point, the cable and Turnbuckles can now be installed. Both turnbuckle jaw gets one 3/4" nut on the thread before they are inserted through the frame. Install the first through the hole in the gooseneck flange then the other 3/4" nut on the end of the turnbuckle. DO NOT TIGHTEN YET. Then install the other turnbuckle into the hole on the front of the Rear End Assembly, followed by the large painted washer and the 3/4" nut. DO NOT TIGHTEN YET. Take the cable and place a 5/8" x 2 1/2" bolt through the pin hole in the turnbuckle jaw and the eye of the cable. Then place the nylon locking nut on the bolt just inserted. Do the same on the other end of the rake. After the nuts must be taken off the Crosby. Place the u-bolt and the base around the cable with the u-bolt also going through the cable gusset and replace the nuts on the Crosby. Now tighten the 3/4" nuts on the turnbuckle jaws. One the turnbuckle jaws are tight then the Crosby may be tightened.



5.6 Torque Settings

All the wheel bolts can now be tightened to their correct torque settings. These settings are:

9/16"	Dry 120 Lb.
1/2"	Dry 90 Lb.
3/4"	Dry 300 Lb.

The rake is now complete.



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