



# BRIDGEVIEW

## BALE KING V-MAX 1214 Operator and Parts Manual



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## 1.0 Introduction

Thank you for purchasing your new **Bridgeview Bale King V-MAX**. 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-MAX 1214. 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 14 Wheel Rake and optional 16 Wheel Extension Kit. Please read through this manual before beginning assembly.



*\*Please note that some parts and assemblies may not be as shown\**

## 2.0 SAFETY AND OPERATIONS

### **2.1 SAFETY PRECAUTIONS**

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

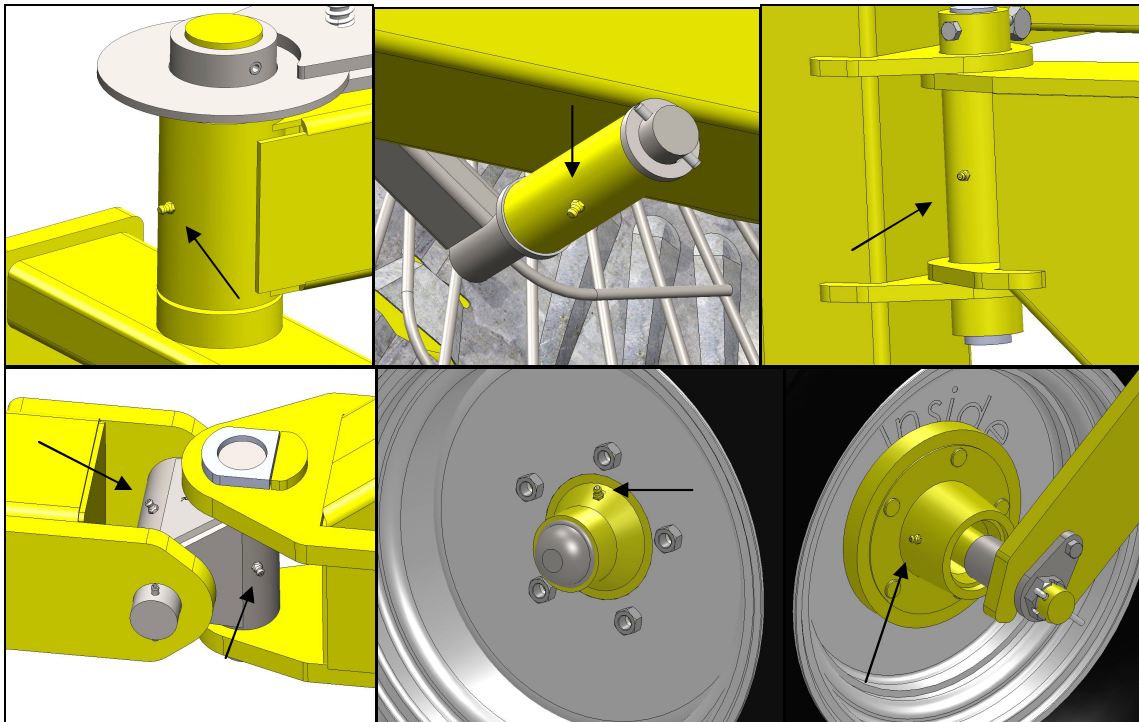
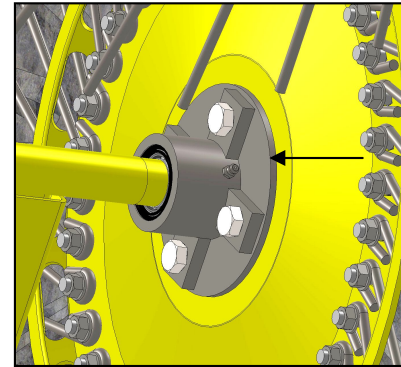
1. This trailed machine was designed and intended for on-farm use only. **Tow at speeds not to exceed 20 MPH.** Slow down for hills, curves, rough areas, and in advance of braking to prevent loss of control and possible injury or death.
2. **Always** turn off the tractor when leaving the operating platform.
3. **Always** read and follow the Highway Transport section before towing the V-MAX 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-MAX 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-MAX 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.





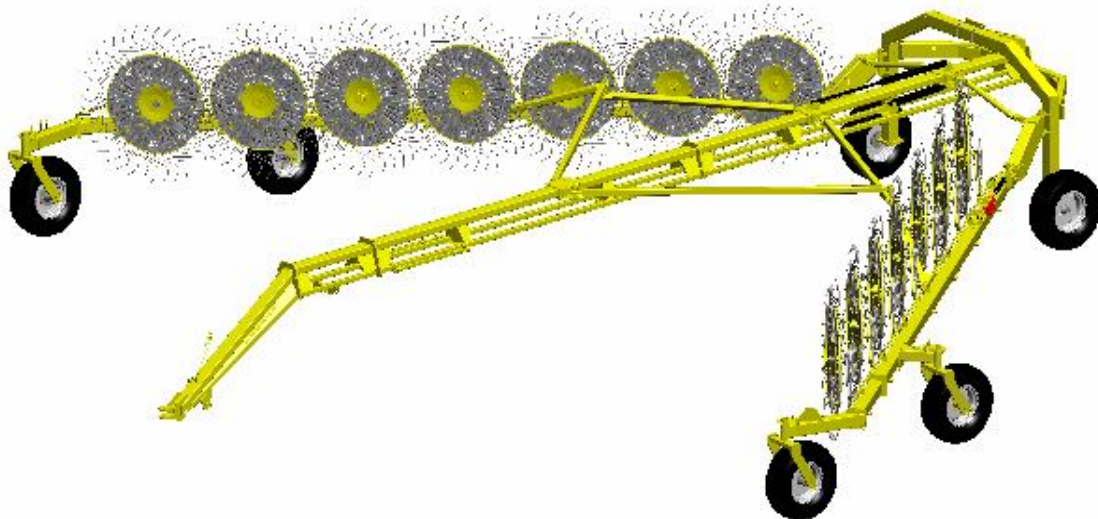
## ***2.3 WHEEL AND TIRE INFORMATION***

The proper tire pressure for the Bale King V-MAX 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 KIT***

The 12 wheel rake can be fitted with an optional 14 wheel extension kit. This kit extends the length of the rake arms, adding a rake wheel to each side, making the rake cover a wider area and can be purchased as a separate kit to the 12 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.
- **Yellow Hose** adjusts the **wheel lift cylinders used** to raise and lower the rake wheels.

## ***2.6 HIGHWAY TRANSPORT***

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

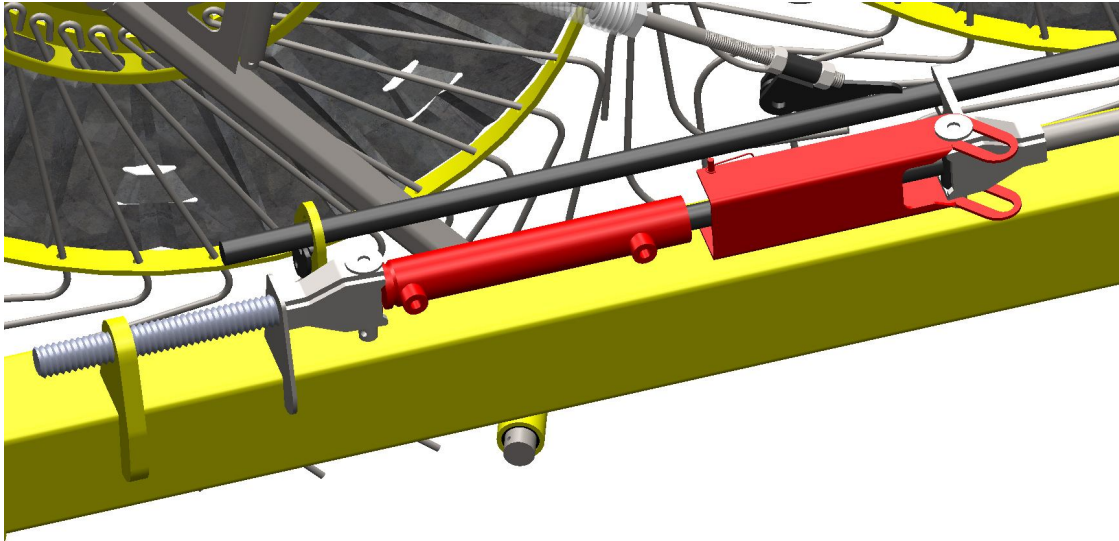
### **2.6.1 Safety Chains**

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

### **2.6.2 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.





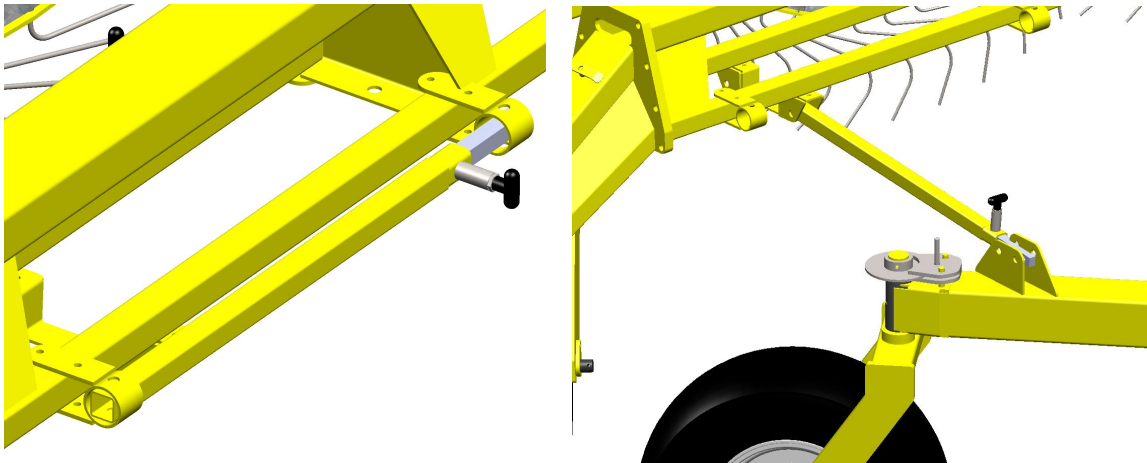
### **2.6.3 Retract Windrow Arms**

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.

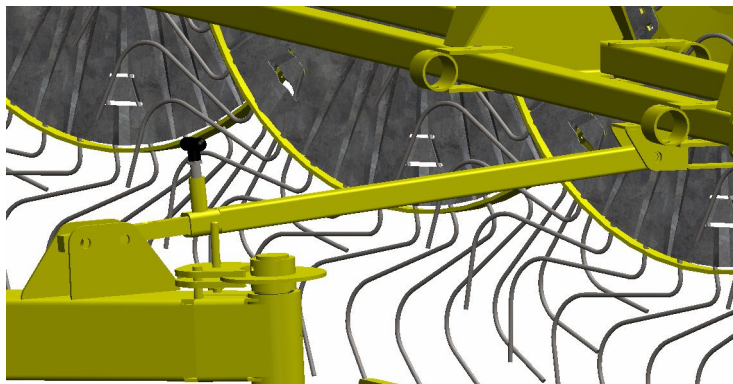
### **2.6.4 Transport Links**

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.

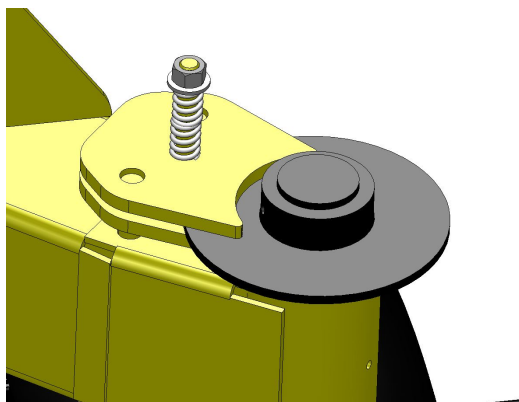
The transport links must then be installed. First, remove the links from the carrying brackets by removing the pin at each end, as shown below.



Next insert the large end into the bracket at the bottom of the main frame. Pull out the self-locking pin and allow the inside tube to freely slide, then insert the small end into the bracket on the arm. Retract the wing cylinder until the self-locking pin locks in transport position. Ensure that both arms are secured and all hairpins are in place.



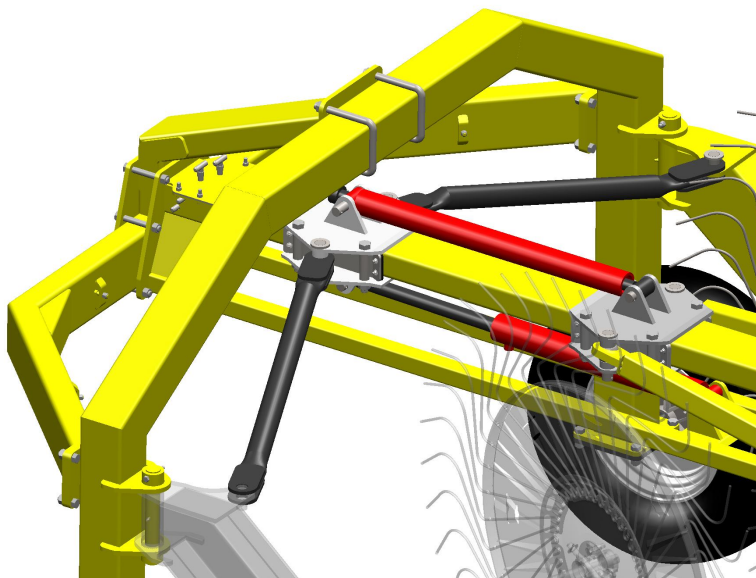
Align the road wheels and tighten the brake springs for all casters. The caster wheels will whip if the brakes are not sufficiently tight!



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.

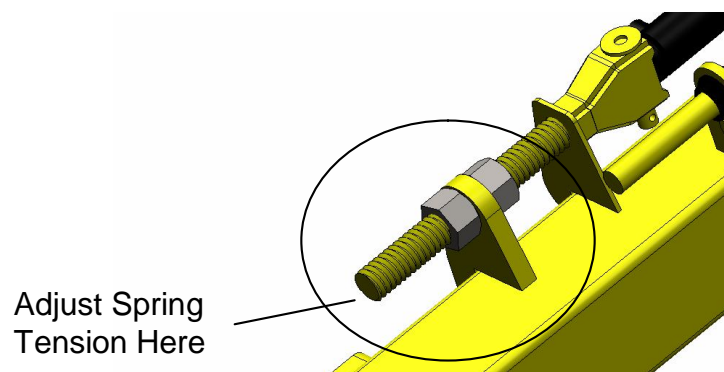


## **2.8 FIELD OPERATION**

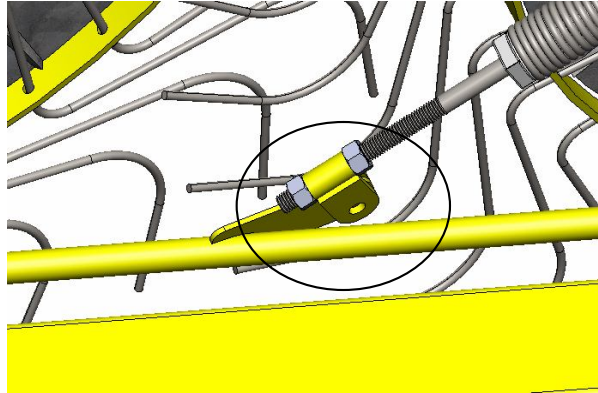
The **recommended raking speed is 8 mph (13 km/h)**, depending on field conditions. Rougher land and heavier windrows require slower operation. This will prevent damage to the rake wheels, and ensure that hay is picked up properly. For faster operation, it is recommended that rake wheel spring tension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



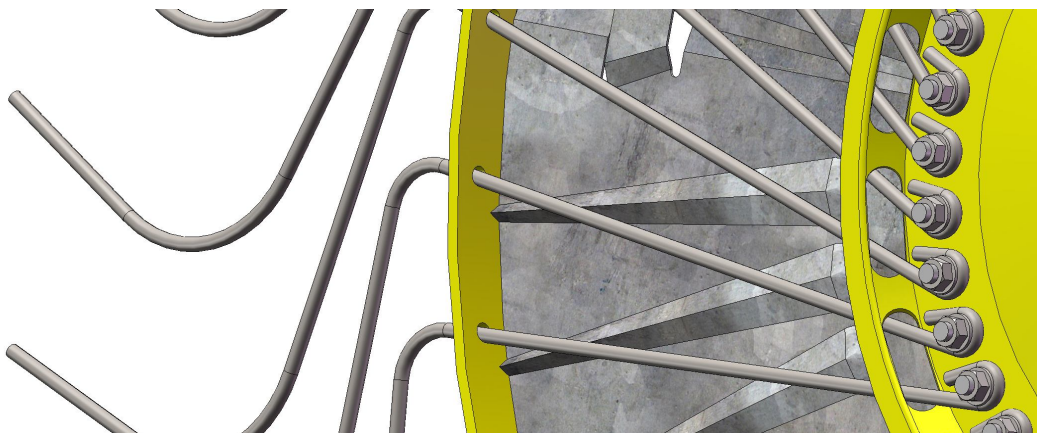
If the spring tension in only one spring needs to be adjusted then the adjustment can be done on the individual spring. There are two nuts near the end of the spring that allow the spring to be loosened or tightened.

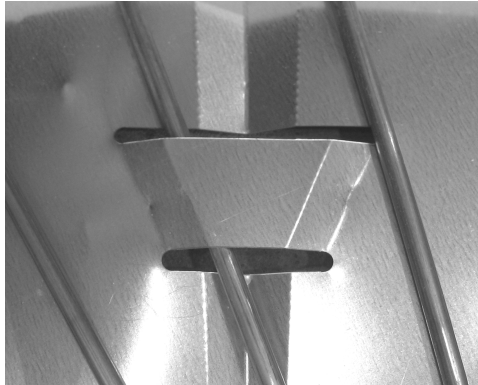


## 2.10 TINE REPLACEMENT

**Note: 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.





## 2.10 SPECIFICATIONS

### Dimensions and Weights

Specifications	12 Wheel	12 Wheel
Raking Width (Front/Rear)	38' / 4'-8"	42' / 4'-8"
Transport Width	9' 6"	12"-7'
Transport Length	33' 6"	36' 10"
Weight	4813 lbs	5605 lbs

### Tires

Tire Size	9.5L15SL 8Ply
Tire Pressure	35psi

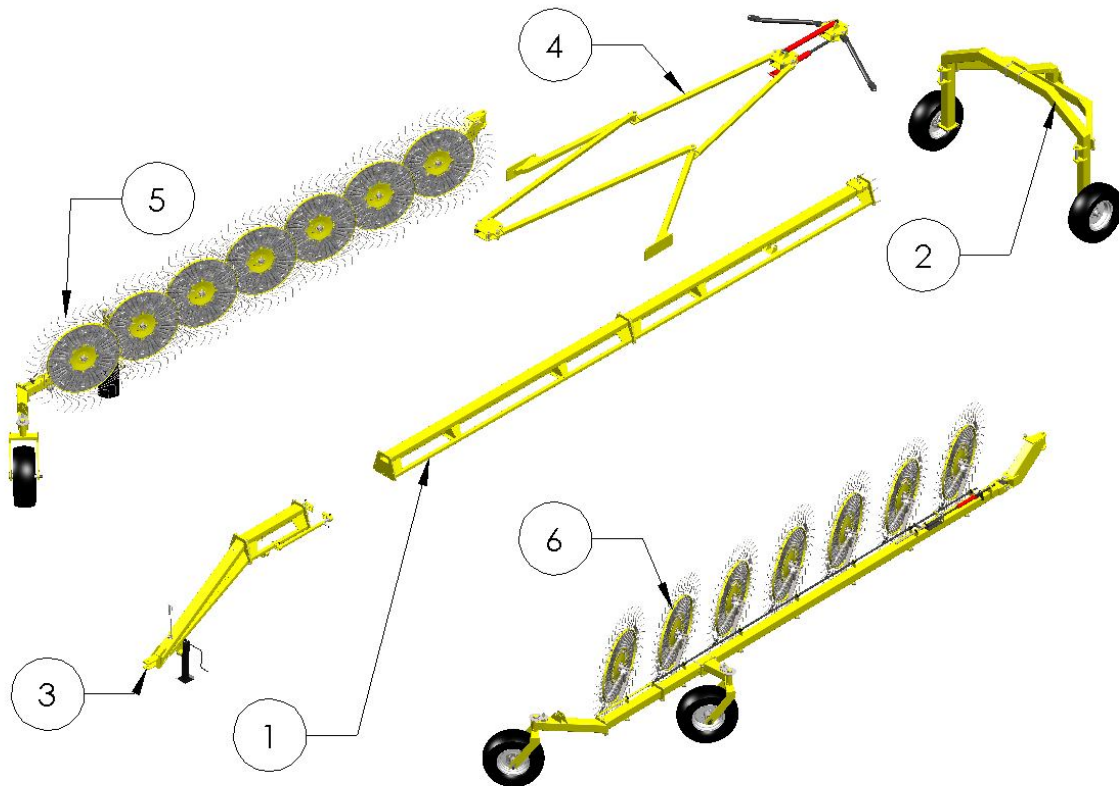
### Wheel Bolt & Nut Torque

½" (Dry)	90 ft-lbs
9/16" (Dry)	120 ft-lbs



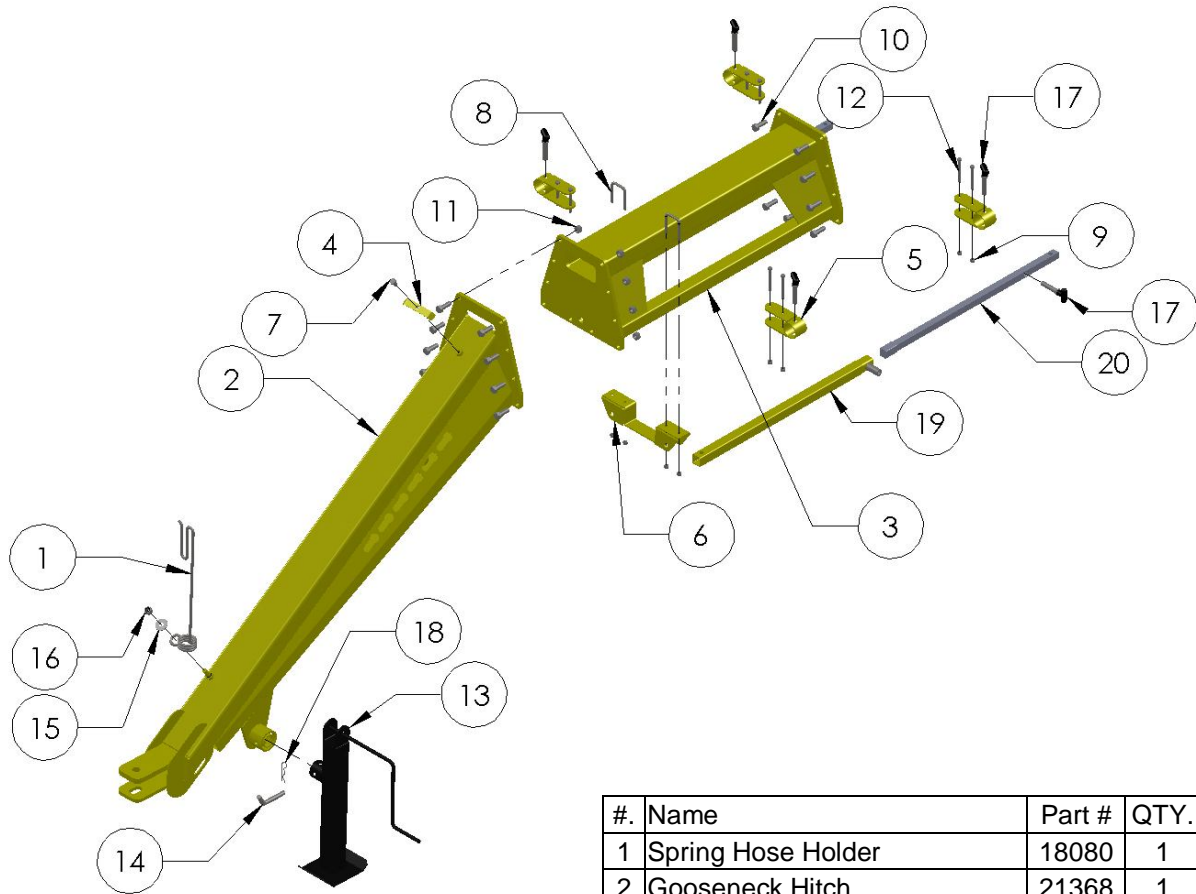
## 3.0 Parts Diagrams and Part Numbers

### 3.1 General Assembly



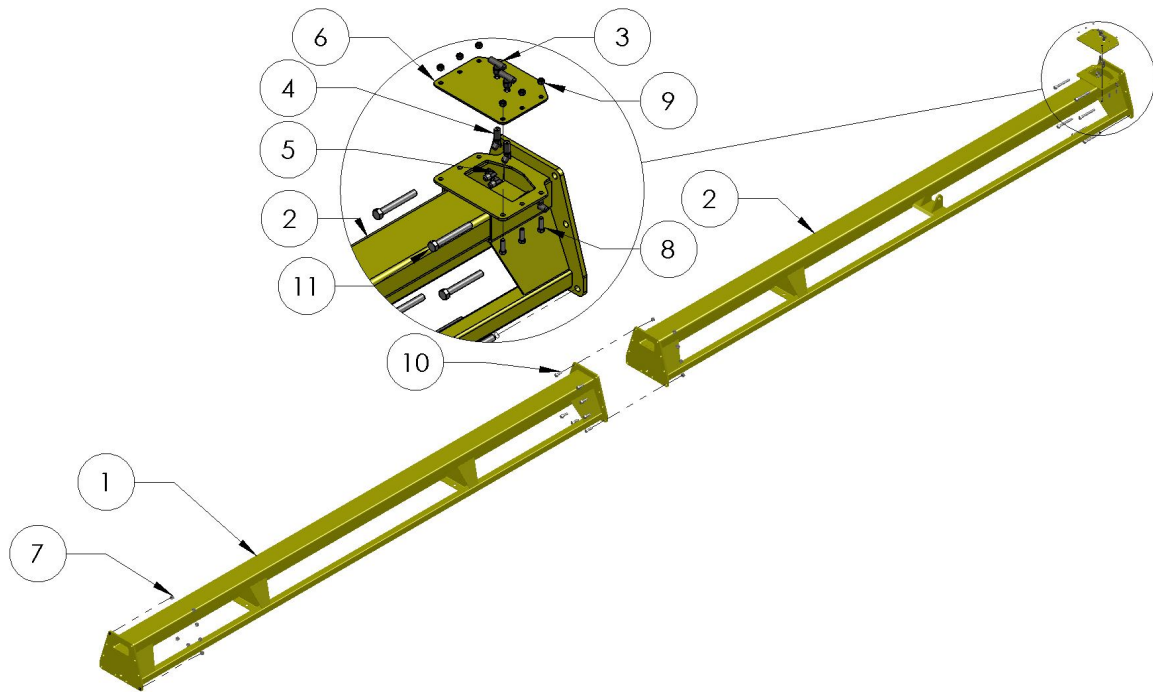
#	Name	Part #	QTY.
1	Main Frame	See Section 3.3	1
2	Rear End	See Section 3.6	1
3	Gooseneck Assembly	See Section 3.2	1
4	Scissor Assembly	See Section 3.4	1
5	Right Arm Assembly	See Section 3.9	1
6	Left Arm Assembly	See Section 3.9	1

### 3.2 Gooseneck Assembly



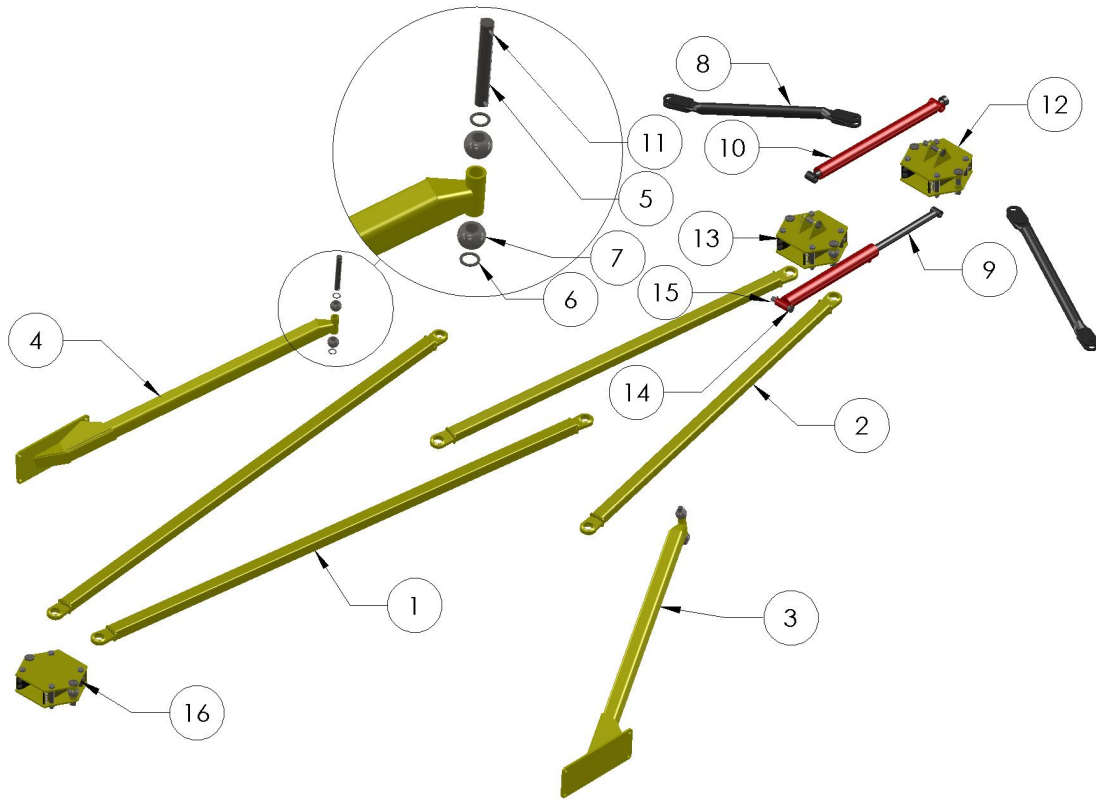
#.	Name	Part #	QTY.
1	Spring Hose Holder	18080	1
2	Gooseneck Hitch	21368	1
3	Hitch Extension	18197	1
4	Hydraulic Hose Holder	18176	1
5	Transport Lock Mount	22018	4
6	Transport Lock Bracket	18186	1
7	BOLT 0.5000x0.75	15851	1
8	Transport lock U-bolt	16531	2
9	LOCKNUT 0.3750	13802	12
10	BOLT 0.6250x1.75	12379	20
11	SFN 0.6250	11614	10
12	BOLT 0.3750x3.5	21391	8
13	Sidewind Jack	18034	1
14	Jack Pin	11785	1
15	Heavy Washer 0.625	21390	1
16	LOCKNUT 0.6250	10364	1
17	Transport Locking Pin	21246	4
18	Hair Pin 3/32x2	11786	1
19	Transport Lock Inside Tube	213251	4
20	Transport Lock Outside Tube	21370	4

### 3.3 Main Frame Assembly



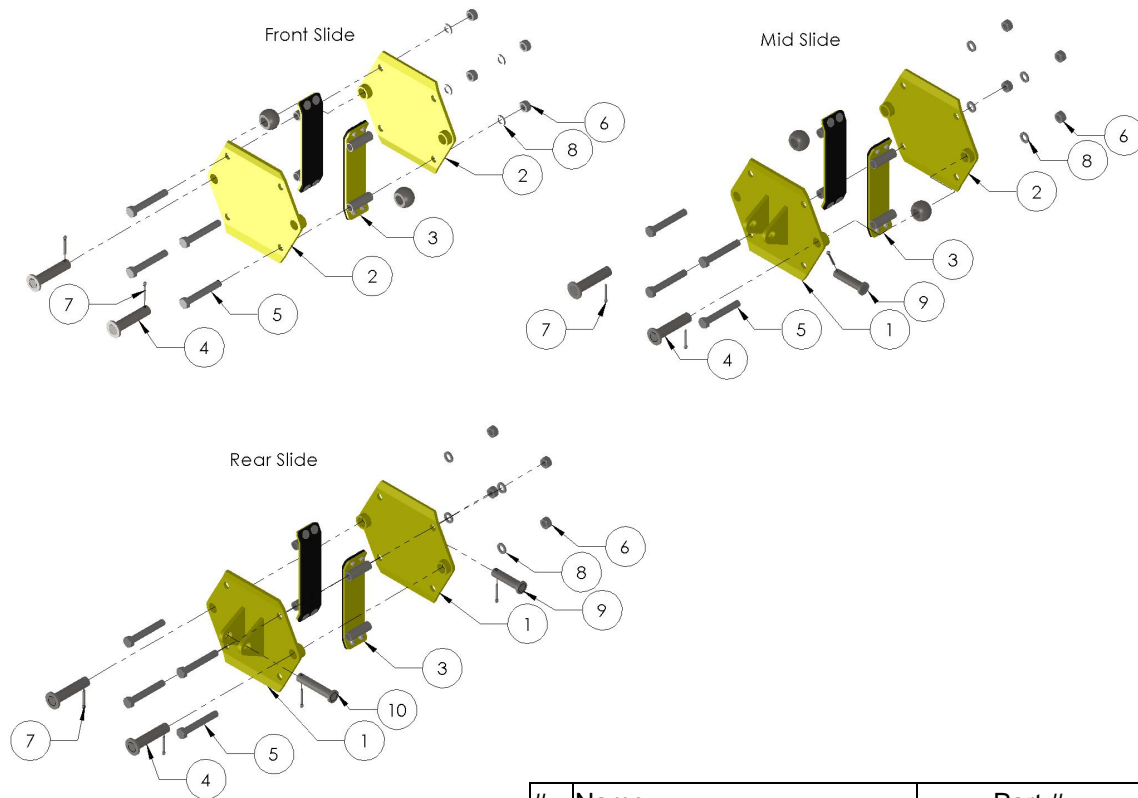
#	Name	Part #	QTY.
1	Leading Center Frame	21366	1
2	Trailing Center Frame	21367	1
3	Hydraulic 'T'	10188	2
4	90 Fitting	12162	2
5	Hydraulic 90 Fitting	10187	4
6	Bulkhead Base	21363	1
7	SFN 0.6250	11614	28
8	BOLT 0.3750x1.25	10253	6
9	SFN 0.3750	10271	6
10	BOLT 0.6250x1.75	12379	10

### 3.4 Scissor Assembly



#	Name	Part #	QTY.
1	F Rake Arm Linkage	21372	2
2	R Rake Arm Linkage	21371	2
3	Left Riser Arm	21355	1
4	Right Riser Arm	21356	1
5	Rake Arm Linkage Pin	21296	2
6	Roll Pin	15872	4
7	Washer	21384	4
8	Width Adj. Linkage	21361	2
9	20in Stroke Cyl	See Section 3.18	1
10	30in Stroke Cyl	See Section 3.19	1
11	Roll Pin 0.2500x2	15872	4
12	Rear Slider ASM	See Section 3.5	1
13	Mid Slider ASM	See Section 3.5	1
14	1" x 5" Welded Pin	18127	1
15	Cotter Pin 0.2500x2	10580	1
16	Front Slider ASM	See Section 3.5	1

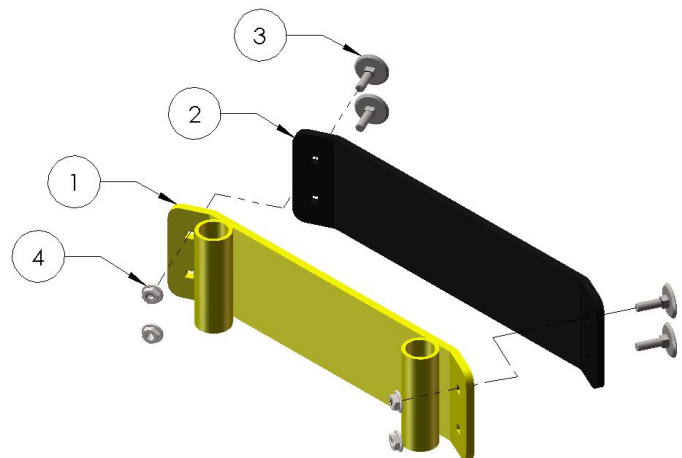
### 3.5 Slides



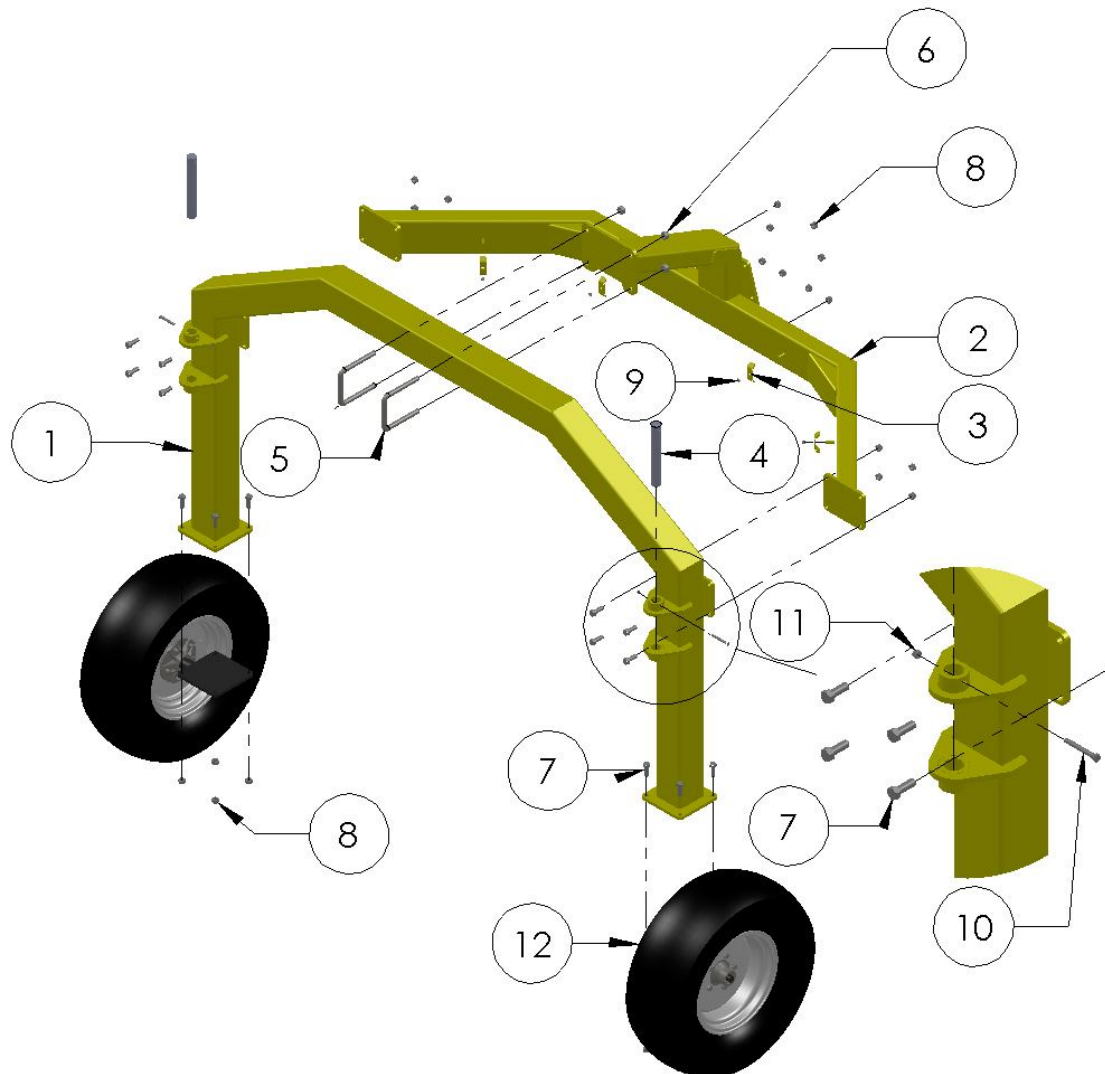
#	Name	Part #	QTY.
1	Slide Plate, BF48	18185	3
2	Slide Plate	18189	3
3	Slide Side	See Section 3.5.1	6
4	Scissor Arm Pin	18188	6
5	BOLT 0.7500x5	17826	16
6	NUT 0.7500	10283	16
7	Roll Pin 0.2500x2	15872	6
8	Lock Washer 0.7500	13795	16
9	Ram Cylinder Pin	16185	2
10	Base Cylinder Pin	16184	1

#### 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



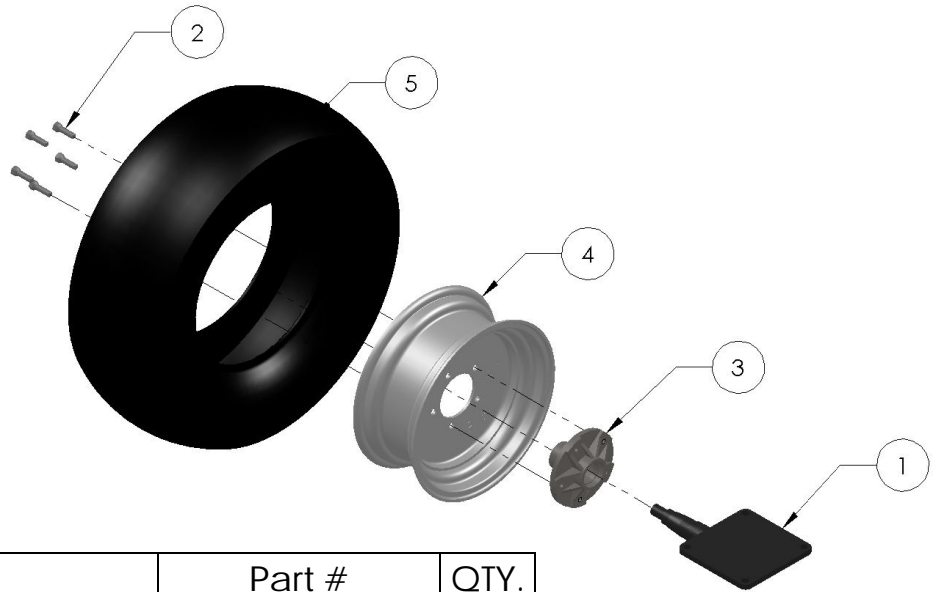
### 3.6 Rear End Assembly



#	Name	Part #	QTY.
1	Rear Frame	21348	1
2	Rear/Center Frame Connection	21349	1
3	Hydraulic Hose Clamp	18131	4
4	Rake Arm Pivot Pin	21302	2
5	0.7500x5x5 U-bolt	16091	2
6	SFN 0.7500	10283	4
7	BOLT 0.6250x1.75	12379	16
8	SFN 0.6250	11614	24
9	NLN 0.3750	10271	4
10	BOLT 0.3750x3	13770	2
11	LOCKNUT 0.3750	10806	2
12	1214 Wheel and Hub ASM	See Section 3.7	2

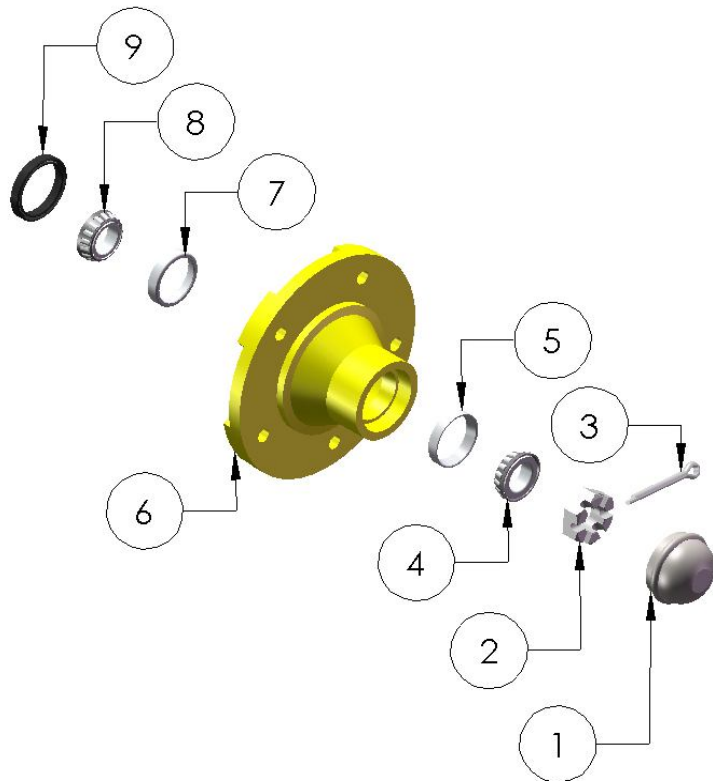


### 3.7 Left/Right Tandem Wheel Assembly



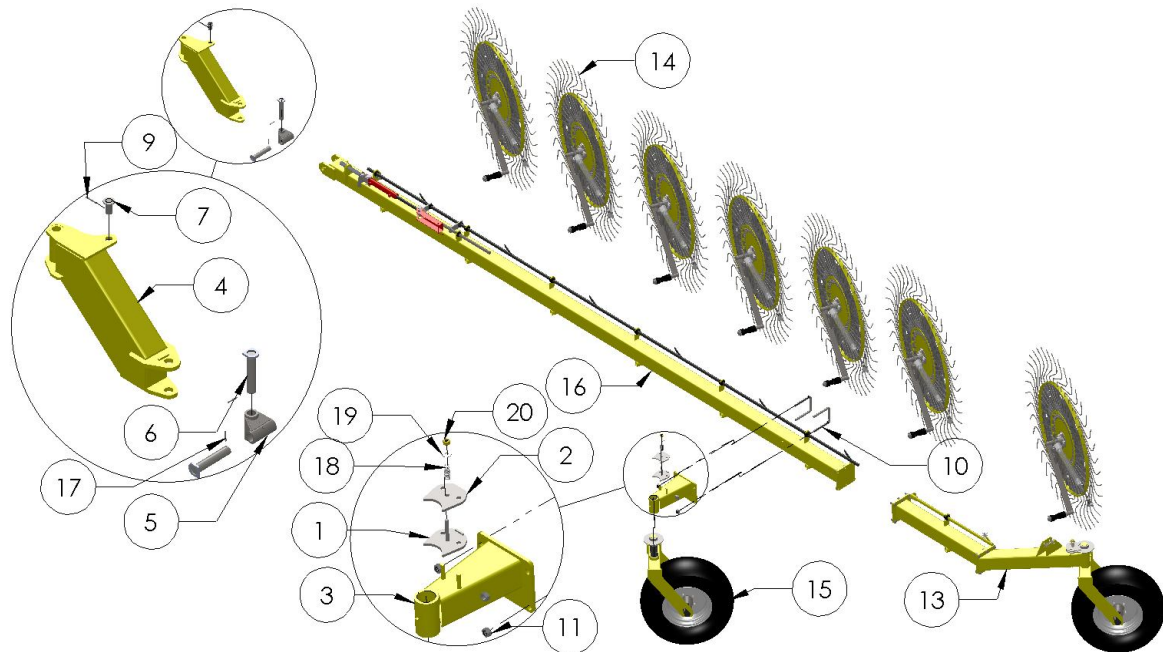
#	Name	Part #	QTY.
1	Spindle W/ Flange	18091	1
2	Wheel Stud Bolt 1/2x1-3/4	16307	5
3	Hub Assembly	See Section 3.8	1
4	5 Bolt Rim	18425	1
5	Tire 9.5L-15	18835	1

### 3.8 Hub Replacement Parts



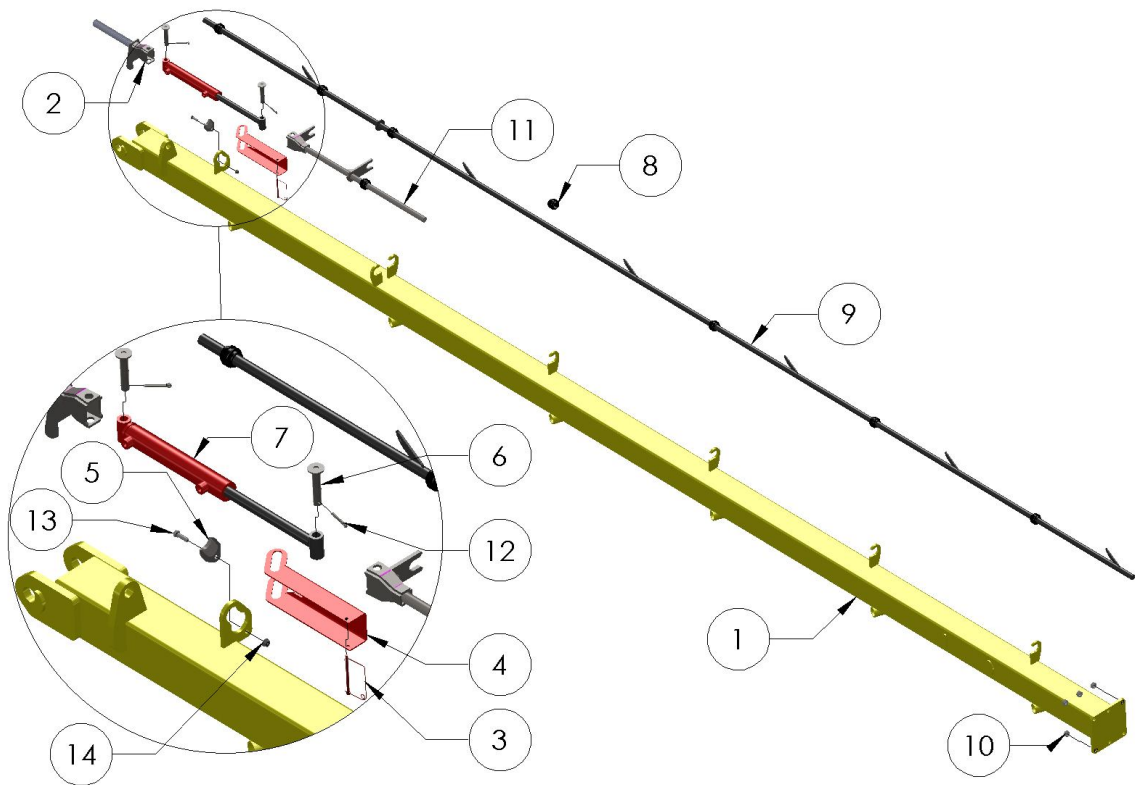
#	Name	Part #	QTY
1	Dust Cap	16308	1
2	Castle Nut	16358	1
3	Cotter Pin	11669	1
4	Outer Bearing	16305	1
5	Outer Cup	16304	1
6	Hub	16724	1
7	Inner Cup	10083	1
8	Inner Bearing	10082	1
9	Oil Seal	16306	1

### 3.9 Right/Left Arm Assembly



#	Name	Part #	QTY.
1	Castor Brake	16137	1
2	Castor Damper	16138	1
3	Bolt-on Castor Mount	21379	1
4	Width Adj. Box Pivot LH	21350	1
4(b)	Width Adj. Box Pivot RH	21351	(1)
5	Right Knuckle	18093	1
6	1.5" x 7-5/16" Welded Pin	18094	2
7	2-1/8" Welded Pin	18168	1
8	Hydraulic Hose Clamp		1
9	Cotter Pin 0.2500x2	10580	1
10	Caster Wheel U-bolt	16091	2
11	SFN 0.7500	10283	4
12	NLN 0.3750	10271	1
13	Outter Extension	See Section 3.9	1
14	Right Rake Wheel	See Section 3.9	7
15	Right Caster ASM	See Section 3.9	1
16	Right Arm Long	See Section 3.9	1
17	Roll Pin 0.2500x2	15872	2
18	Spring	16093	2
19	Washer 0.5000	11668	1
20	Nut 0.5000	14393	1

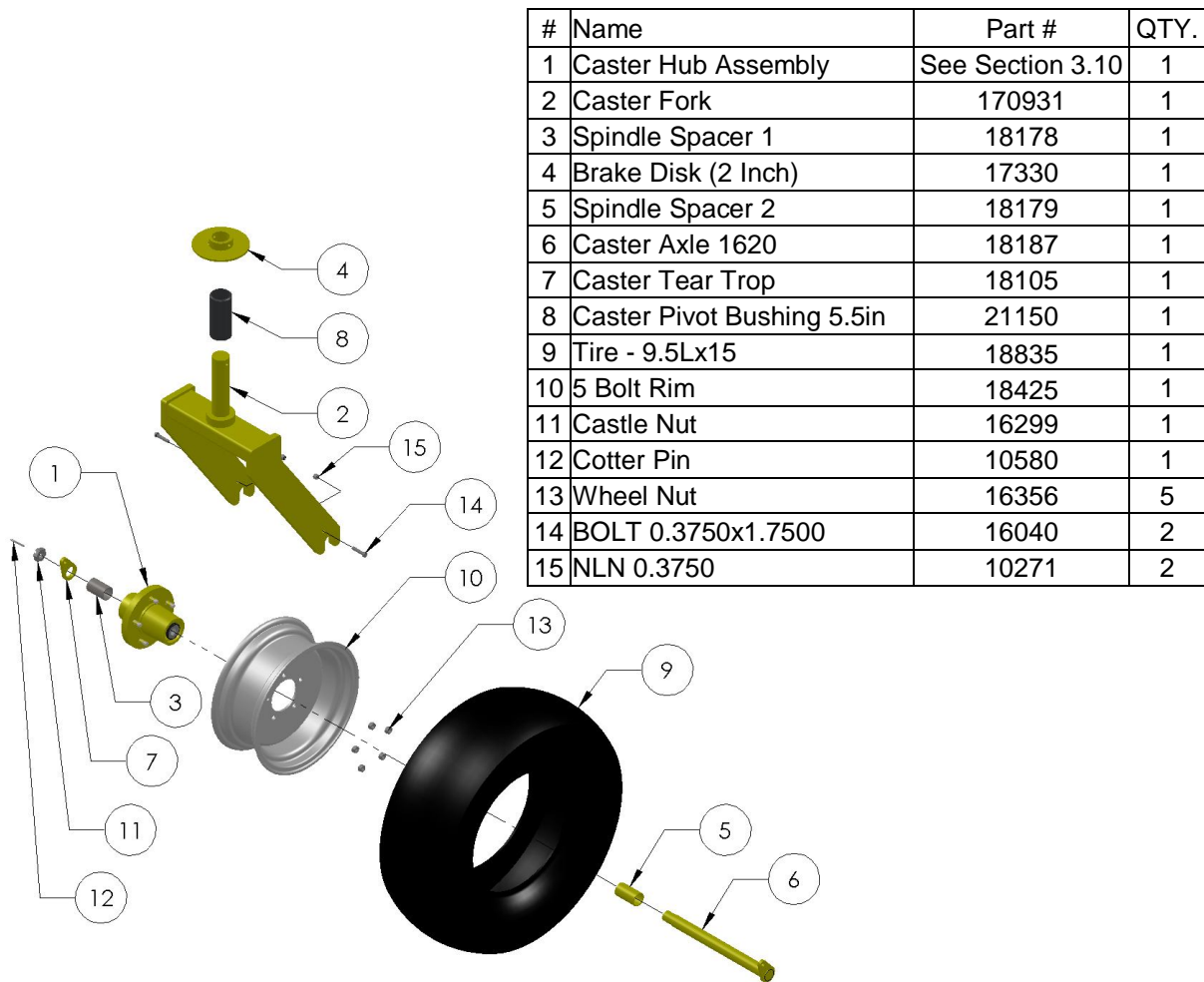
### 3.10 Right/Left Long Arm



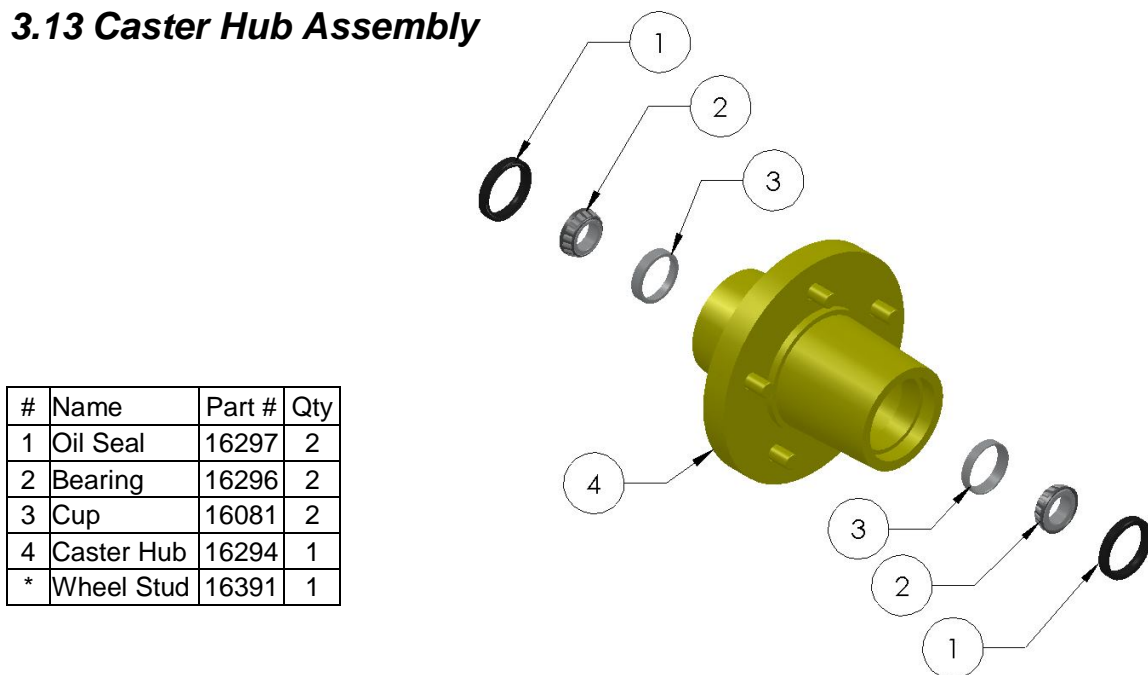
#	Name	Part #	QTY.
1	Rake Arm - Right	21353	1
1(b)	Rake Arm - Left	21352	(1)
2	Lift Arm Adj. Right	21360	1
2(b)	Lift Arm Adj. Left	21359	(1)
3	Square Retainer With Hook	21389	1
4	Cylinder Lock	21373	1
5	Filler Plate	18193	1
6	0.75 x 3.75" Pin	22019	2
7	Cylinder	21213	1
8	Bushing	16099	8
9	Primary Rake Arm Rod	213541	1
10	SFN 0.6250	11614	6
11	Secondary Lift Rod	21357	1
12	Cotter Pin 0.2500x2	10580	2
13	Bolts 0.3750x1.25	10253	1
14	SFN 0.3750	10271	1

#	Name	Part #	QTY
1	Front Caster Support RT	18160	1
1(b)	Front Caster Support LT	18159	(1)
2	Castor Brake	16137	1
3	Castor Damper	16183	1
4	Spring	16093	1
5	Nut 0.5000	14393	2
6	HBOLT 0.6250x1.75	12379	12
7	Rake Arm Extension RH	18100	1
7(b)	Rake Arm Extension LH	18099	(1)
8	SFN 0.6250	11614	6
9	Lift Rod Extension	18108	1
10	Bushing	16099	1
11	BOLT 0.5000x2.25	11820	1
12	Right Caster ASM	See Section 3.12	1
13	Flat Washer 0.500	11668	1

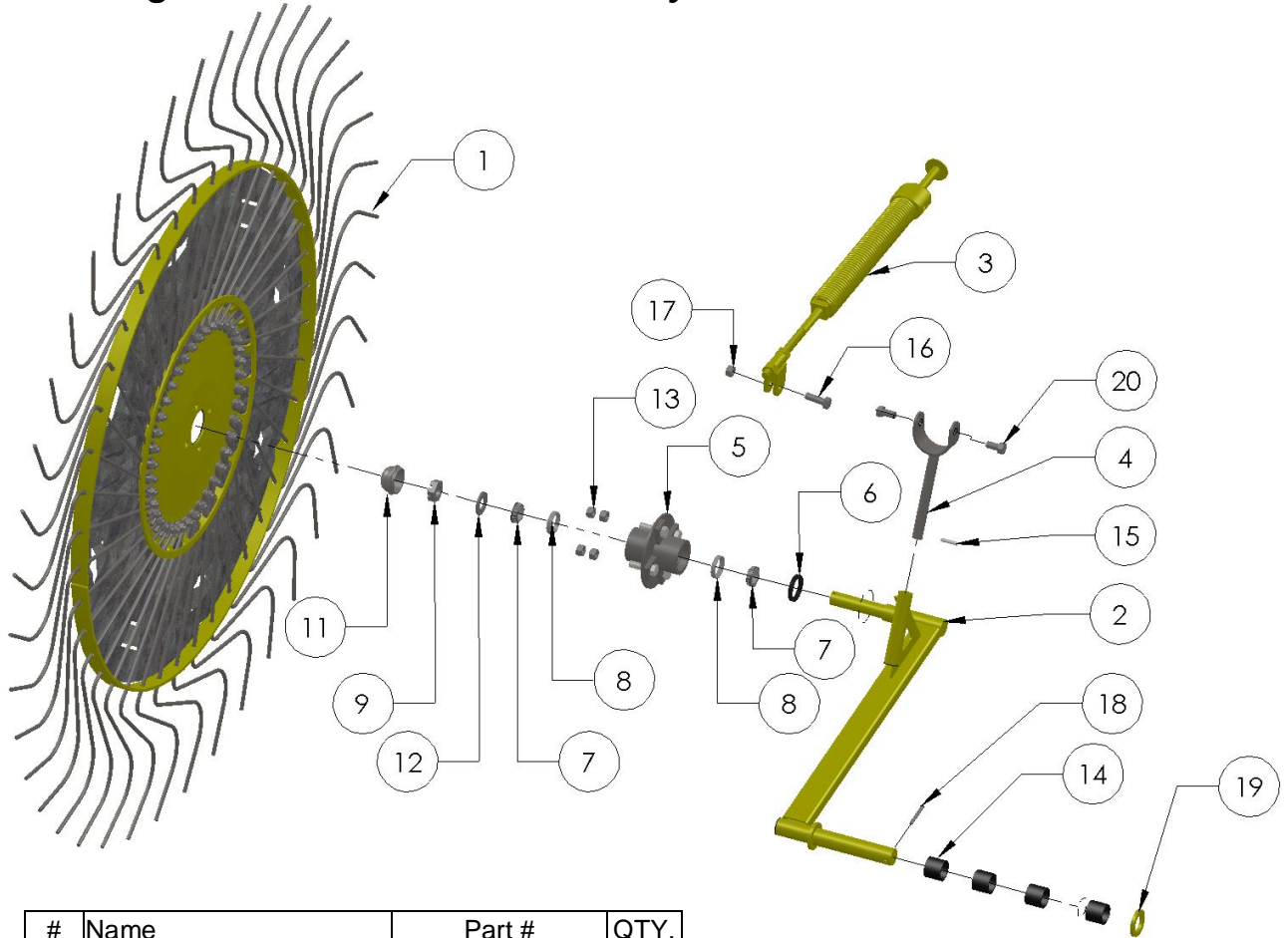
### 3.12 Arm Wheel Assembly



### 3.13 Caster Hub Assembly



### 3.14 Right/Left Rake Wheel Assembly

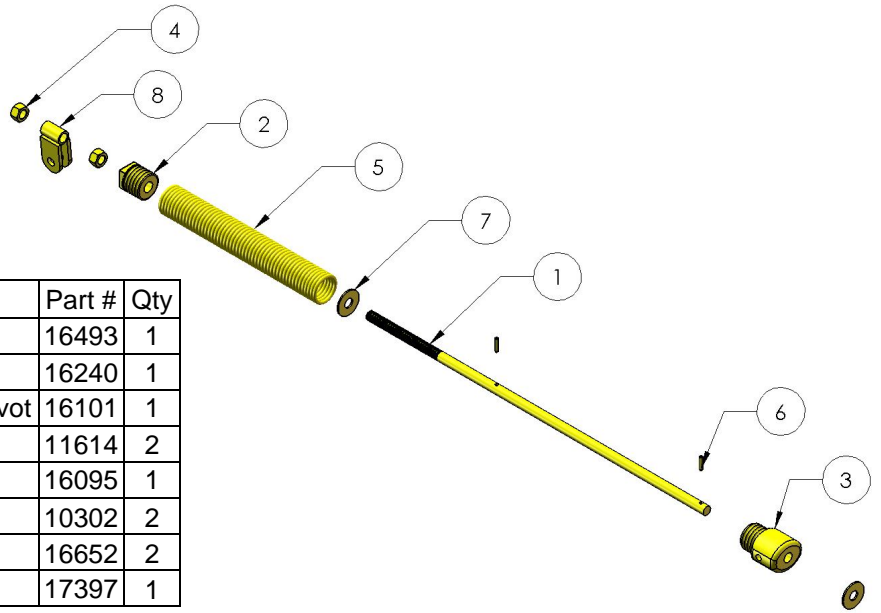


#	Name	Part #	QTY.
1	Rake Wheel	See Section 3.16	1
2	Rake Wheel Arm (LF)	18112	1
2(b)	Rake Wheel Arm (RT)	18114	(1)
3	Spring Assembly	See Section 3.15	1
4	Yoke	18116	1
5	Rake Wheel Hub	16413	1
6	Oil Seal	16083	1
7	Cone Bearing	16082	2
8	Cone Bearing Cup	16081	2
9	Castle Nut	16087	1
10	Cotter Pins	16089	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	16650	1
20	BOLT 0.5000x1	10824	2



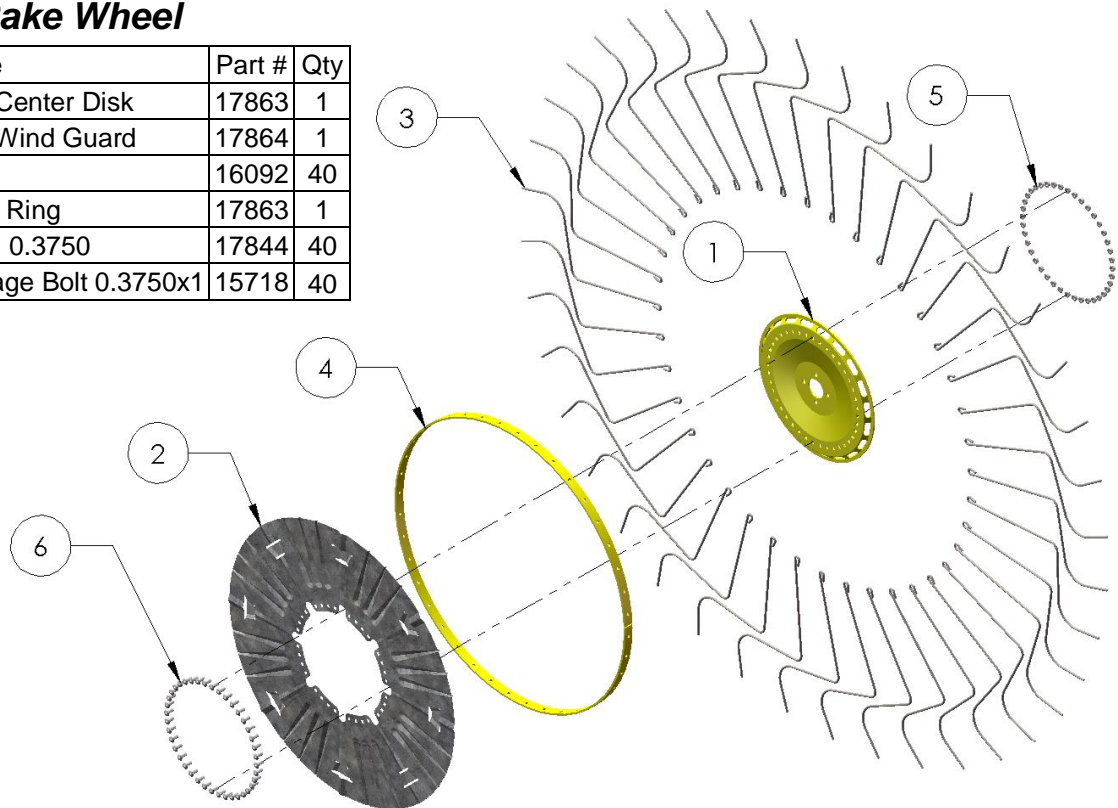
### 3.15 Spring Assembly

#	Name	Part #	Qty
1	Spring Slide Rod	16493	1
2	Pull Spring Retainer Guide	16240	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 Clevis	17397	1



### 3.16 Rake Wheel

#	Name	Part #	Qty
1	Reel Center Disk	17863	1
2	Reel Wind Guard	17864	1
3	Tine	16092	40
4	Outer Ring	17863	1
5	STFN 0.3750	17844	40
6	Carriage Bolt 0.3750x1	15718	40

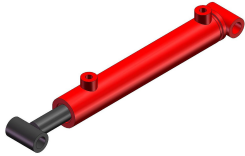


### ***3.17 Cylinder – 8in***

Complete Cylinder - 17442

Cylinder Rod – 17614

Cylinder Seal Kit - 17613

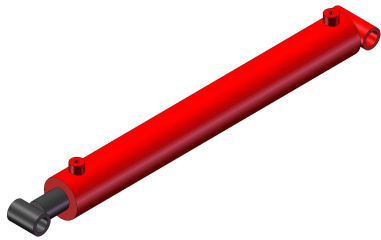


### ***3.18 Cylinder - 20in***

Complete Cylinder - 17328

Cylinder Rod – N/A

Cylinder Seal Kit - 16396

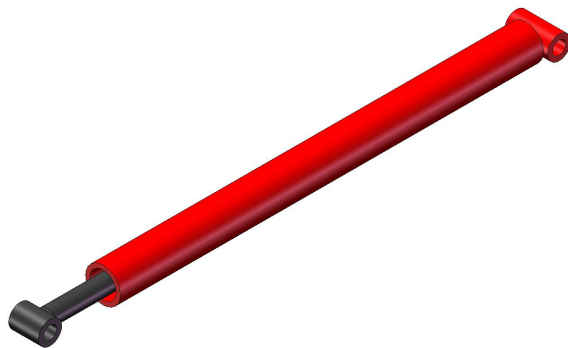


### ***3.19 Cylinder - 30in***

Complete Cylinder - 16301

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 12 Wheel Rake and optional 14 Wheel Extension Kit is available below.

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

### ***4.1 Rake - 12 Wheel***

#### **4.1.1 Main Body**

##### Parts

- 1 – Front hitch
- 1 – Rear Frame
- 1 – Front Hitch Beam
- 1 – Rear Hitch Beam
- 1 – Hitch Attachment Frame
- 2 – Transport Link
- 4 – Transport Link Mount
- 1 – Transport Lock Brkt
- 1 – Slide Plate (30" Cyl. Base Mount)
- 2 – Slide Plate (Cylinder Mount)
- 3 – Slide Plate (Flat)
- 6 – Slide Side Plate Assembly
- 2 – Rear Opening Pivot
- 2 – Front Scissor Link
- 2 – Rear Scissor Link
- 6 – Arm Slide Pin
- 2 – Cylinder Base Pin
- 2 – Cylinder Ram Pin
- 1 – Left Box Hinge
- 1 – Right Box Hinge
- 2 – Box Hinge Pin
- 1 – Bulkhead Cover
- 2 – Rear Wheel Assembly

#### Hardware

- 6 – 3/8" x 1 1/4" Bolt
- 2 – 3/8" x 3"
- 8 – 3/8" x 3 1/2"
- 2 – 3/8" U-bolt
- 6 – 3/4" x 5" x 6 1/2" U-bolt
- 12 – 3/4" x 5" Bolt
- 8 – 5/8" x 4 3/4" Bolt
- 36 – 5/8" x 1 3/4" Bolt
- 1 – Hitch Pin
- 16 – 1/4" x 2" Cotter Pin
- 8 – 1/4" x 2" Roll Pin
- 14 – 3/8" Lock Nut
- 6 – 3/8" Serrated Flange Nut
- 12 – 3/4" Stover Nut
- 34 – 5/8 Serrated Flange Nut
- 1 – 5/8" Lock nut
- 1 – 5/8" Heavy Washer
- 24 – 5/8" Nut
- 12 – 3/4" Serrated Flange Nut

#### **4.1.2 Hydraulics**

##### Parts

- 1 – Hose Kit
- 1 – Hose Adapter Kit
- 1 – Hose Holder Spring
- 1 – Large Hose Clamp
- 6 – Small Hose Clamp
- 1 – 30" Cylinder
- 1 – 20" Cylinder
- 2 – 8" Cylinder

##### Hardware

- 1 – 1/2" x 3/4" Bolt
- 6 – 3/8" Lock Nut

#### **4.1.3 Rake Arms**

##### Parts

- 1 – Left Knuckle
- 1 – Right Knuckle
- 1 – Left Front caster support
- 1 – Right Front caster support

- 1 – Left Rake Arm
- 1 – Right Rake Arm
- 1 – Left Riser Arm
- 1 – Right Riser Arm
- 4 – Knuckle Pin

#### Hardware

- 12 – 5/8" x 1 3/4" Bolt
- 12 – 5/8" Serrated Flange Nut
- 4 – 10 ga. x 1 7/8" OD x 1 1/4" ID Washer
- 4 – 1/4" x 2" Roll Pin

### **4.1.4 Lift Rods**

#### Parts

- 2 – Lift Rod Lock
- 2 – Long Lift Rod
- 2 – Outer Lift Rod
- 2 – Lift Cylinder Safety Lock
- 1 – Height Adjustment Rod Right
- 1 – Height Adjustment Rod Left
- 2 – Rod Clip

#### Hardware

- 14 – Plastic Bushings
- 2 – 1/4" x 3 1/2" Square Retainer
- 4 – 3/4" Cylinder Pins
- 2 – 3/8" x 1" Bolt
- 2 – 3/8" x 1 1/4" Bolt
- 4 – 3/8" Serrated Flange Nut

### **4.1.5 Front Casters**

#### Parts

- 2 – Caster
- 2 – Caster Axle
- 2 – Brake Disk
- 2 – Bottom Brake Pad (incl. bolt)
- 2 – Top Brake Pad
- 2 – Caster Teardrop
- 2 – Caster Spindle Spacer – Small
- 2 – Caster Spindle Spacer – Large
- 2 – Caster Wheel Hub (incl. Bearing Cups)
- 4 – Bearing Cones
- 4 – Caster Wheel Seal

#### Hardware

- 2 – 3/8" x 2 3/4" Roll Pin
- 2 – 1 1/4" Castle Nut
- 2 – 1/4" x 3" Cotter Pins
- 4 – 3/8" x 1 3/4" Nylon Locking Nuts
- 2 – 1/2" Stover Locking Nut
- 2 – .321 x .888 ID x 2 Spring with washer
- 10 – Fine Thread Tapered Wheel Nuts
- 6 – 1/4" Grease Zerk
- 4 – 3/8" x 1 3/4" Bolt

#### **4.1.6 Rake Wheels**

##### Parts

- 12 – Spring Assembly
- 6 – Rake Wheel – Left
- 6 – Rake Wheel – Right
- 6 – Rake Wheel Arm – Left
- 6 – Rake Wheel Arm – Right

##### Hardware

- 12 – Rake Wheel Arm Washer
- 12 – 1/4" x 2" Roll Pin
- 12 – 1/2" x 1 1/2" Stover Locking Nut
- 48 – Fine Thread Wheel Nuts
- 16 – 1/4" x 1 1/4" Roll Pin



## **4.2 Extension Kit – Upgrade from 12 Wheel to 14 Wheel**

### **4.2.1 Rake Arm Extension Kit**

#### Parts List

- 1 – Rake Wheel – Left
- 1 – Rake Wheel – Right
- 1 – Rake Arm Extension – Left
- 1 – Rake Arm Extension – Right
- 2 – Lift Rod Extension
- 1 – Rake Wheel Arm – Left
- 1 – Rake Wheel Arm – Right
- 2 – Spring Assemblies

#### Hardware 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 – Rake Wheel Arm Washer, 1 1/4" ID
- 2 – 1/4" x 2" Roll Pin – Attaching Rake Wheel Arms
- 2 – 1/2" x 1 1/2" with Stover Locking Nut – Mounting Spring Assembly
- 2 – 1/4" x 1 1/4" Roll Pin – Attaching Spring Assembly
- 8 – 1/2" Tapered Wheel Nuts
- 2 – 1/4" Grease Zerk – Wheel Arm Hinge

### **4.2.2 Hitch Extension Kit**

#### Parts List

- 6 – 40" Hydraulic Hose Extensions
- 1 – Hitch Extension

#### Hardware List

- 10 – 5/8" x 1 3/4" Bolts w/ Serrated Flange Nuts – Hitch Extension

### **4.2.3 Caster Kit**

#### Parts List

- 2 – 9.5L15 Wheels
- 2 – Caster Assemblies – including:
  - 2 – Flanged Caster Mount
  - 2 – Caster Fork
  - 2 – Caster Axle
  - 2 – Caster Tear Drop
  - 2 – Caster Wheel Hub (w/ seals and bearings)
  - 2 – Caster Spindle Spacer Large

- 2 – Caster Spindle Spacer Small
- 2 – Brake Disk
- 2 – Bottom Brake Pad (w/ bolt)
- 2 – Top Brake Pad

#### Hardware List

- 10 – 1/2" Wheel Nuts
- 4 – 3/4" x (6 x 7") Square U-Bolts w/ Serrated Flange Nuts – Caster Mount
- 2 – Caster Assembly Hardware
  - 2 – 1 1/4" Castle Nut with 1/4" x 2" Cotter Pins – Caster Axle
  - 4 – 3/8" x 1 3/4" with Nylon Locking Nuts – Caster Axle Tear Drops
  - 2 – .321 x .888 ID Spring with Washer – Brake Spring
  - 2 – 1/2" Stover Locking Nut – Brake Disk
  - 2 – 1/4" Grease Zerk – Caster Hinge
  - 2 – 3/8" x 2 3/4" Roll Pins – Caster Pivot

## 5.0 Extension Kit: 14 Wheel Hitch

### 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 Bale King VMAX 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.
- Ensure that all parts of the rake are **safely supported** before working around or beneath it.
- Always have help when lifting heavy pieces.
- **Relieve hydraulic pressure** and disconnect lines before installing hose extensions.

### 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 Bale King V-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.

### **5.4.1 Torque Settings**

All of the bolts should be tightened to their correct torque settings, as follows:

1/2" .....	Dry 90 ft-lb.
9/16" .....	Dry 120 ft-lb.
3/4" .....	Dry 300 ft-lb.

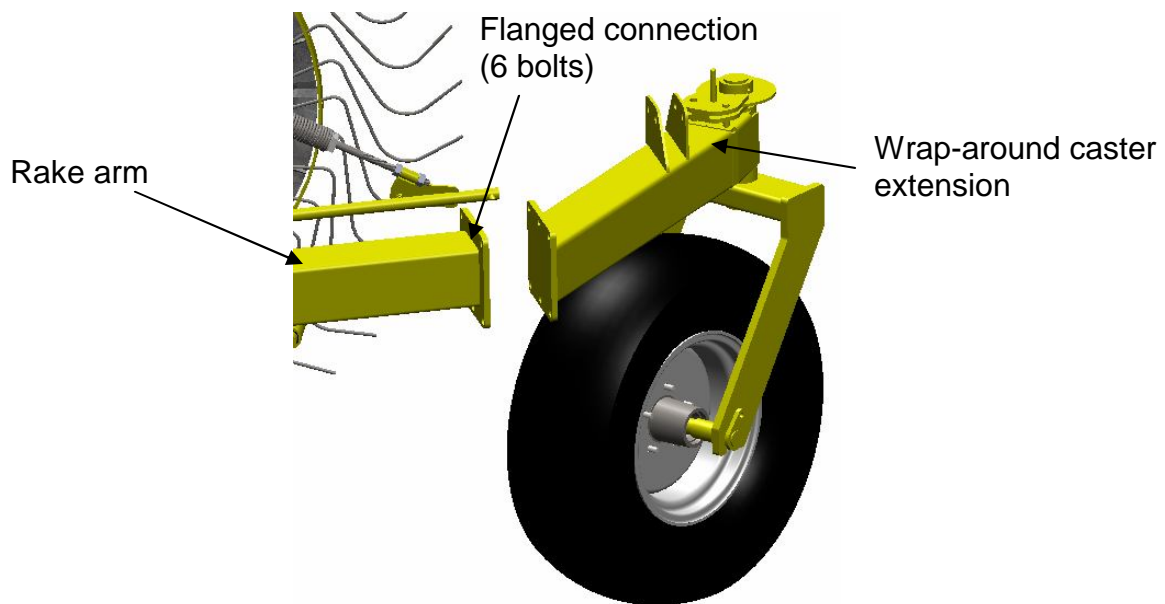
## 5.5 Rake Wheel Extension Assembly Procedure

The following is the standard procedure used to attach the VMAX Extension Kit. For ease of connection, extend the V-rake to the open position (space permitting).

**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

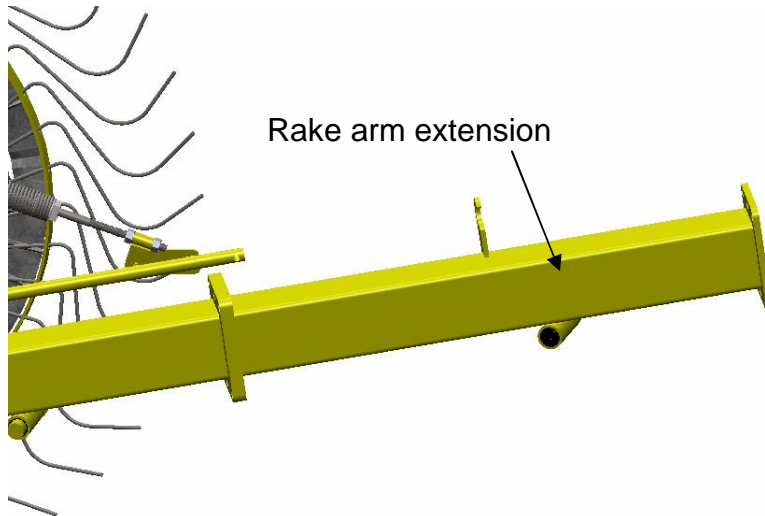
First, the wrap-around caster extension must be removed. To do this, support the rake arm near the front rake wheel to take the weight off of the flanged connection. Remove the 6 bolts ( $5/8"$  x  $1\frac{3}{4}"$ ) and flange nuts and save for later use.



### 5.5.2 Install Rake Arm Extension

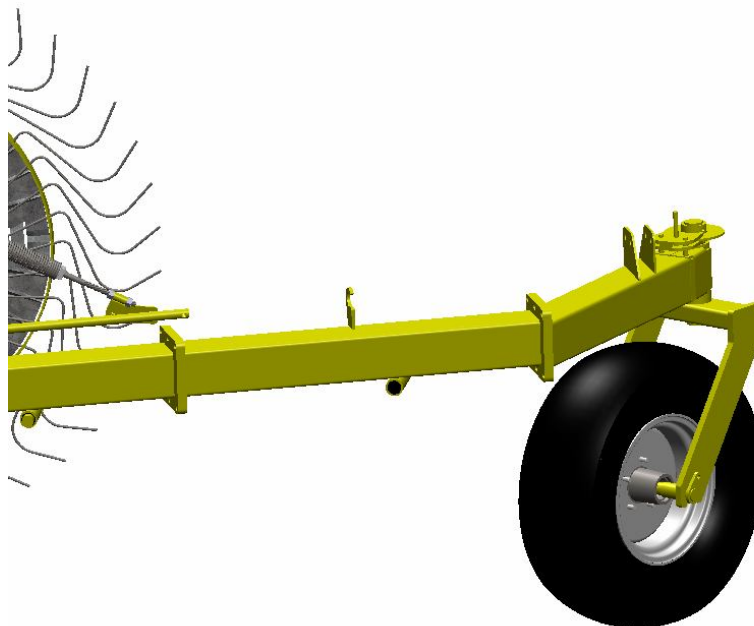
Next, install the rake arm extension. The rake arm extension is bolted to the open end of the rake arm using six  $5/8"$  x  $1\frac{3}{4}"$  bolts and serrated flange nuts. Make

sure that the lift arm brackets are located on the same side and that the rake arm hinges are at the same angle as on the rake wheel arm. **Ensure that the left arm extension is on the left side of the machine, and vice versa.**



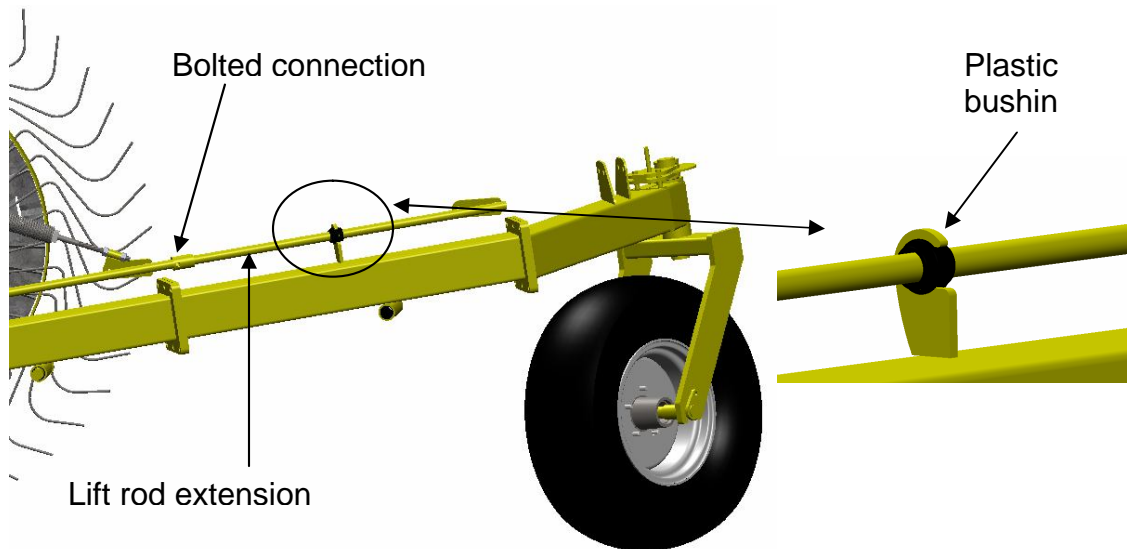
### 5.5.3 Reinstall Wrap-around Caster Extension

The wrap around caster extension can now be remounted on the end of the rake arm extension, in the same orientation as before. Reuse the six 5/8" x 1 3/4" bolts and serrated nuts that were removed previously.



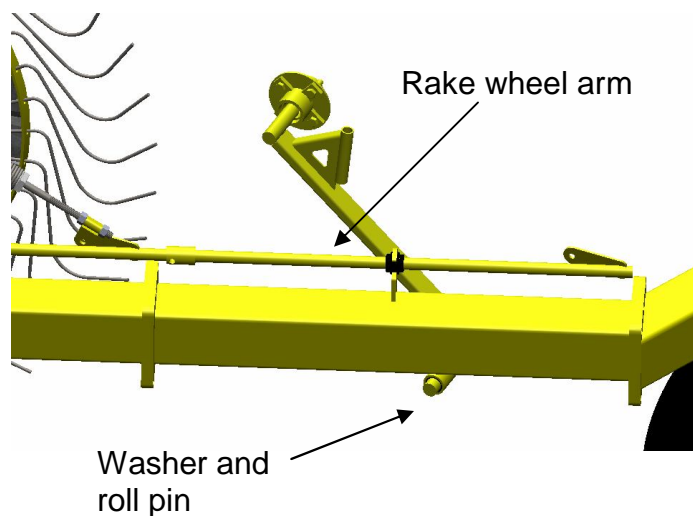
#### 5.5.4 Install Lift Rod Extension

The lift rod extension can now be installed. This extension mounts 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 bracket. The extension is bolted to the end of the lift rod using a 1/2" x 2 1/4" bolt and Stover lock nuts.



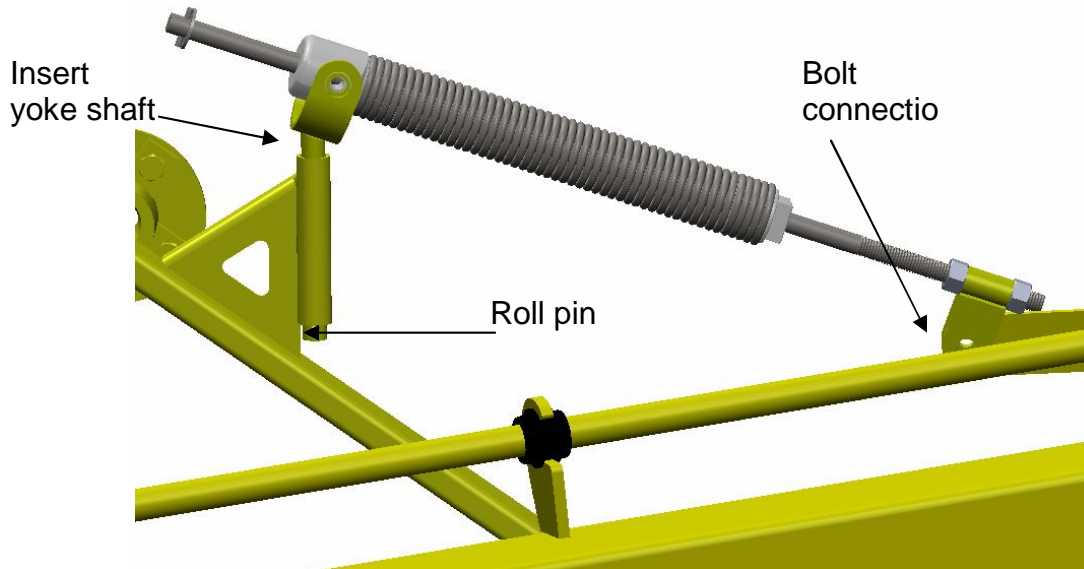
#### 5.5.5 Install Rake Wheel Arm

There is one mounting arm for each side of the rake. The wheel arm is installed through the pivot on the bottom of the rake arm extension with the hub towards the rear of the rake, and the spring mount facing upwards, as shown. The arm is slid through the bushings and secured on the outside of the rake with a 1 1/4" inside diameter washer and 1/4" x 2" roll pin.



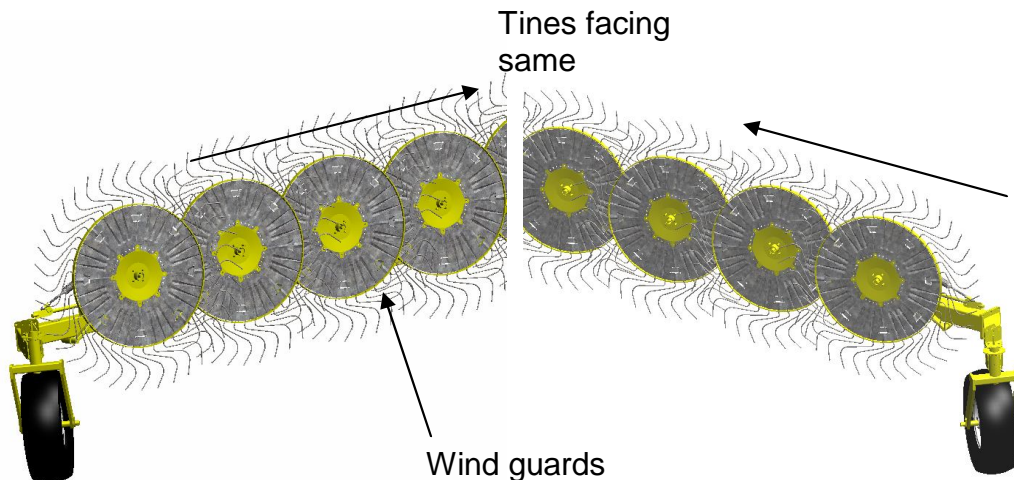
### 5.5.6 Install Spring Assembly

To mount the spring assembly, first insert the yoke shaft into the rake wheel arm pivot, and insert the clevis over the bracket on the lift rod extension, as shown. Attach the clevis to the bracket using a 1/2" x 1 1/2" bolt and Stover lock nut. Insert a 1/4" x 1 1/4" roll pin to secure the yoke shaft.



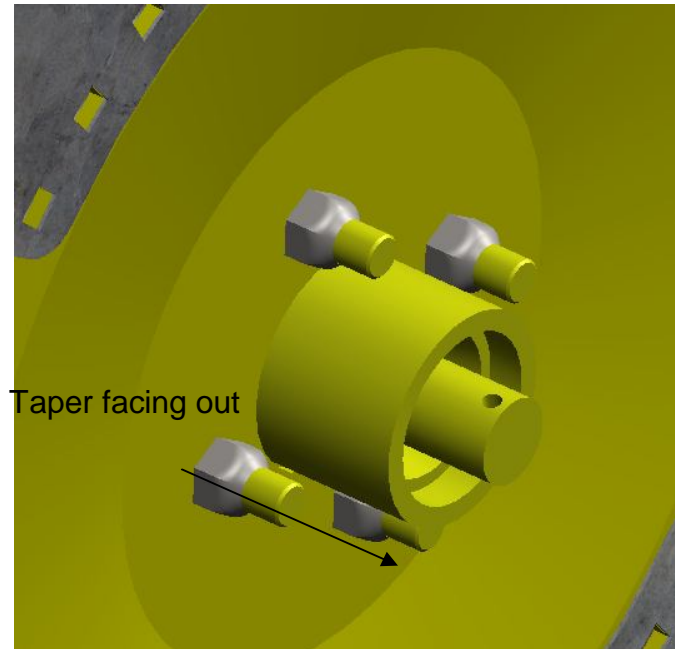
### 5.5.7 Install Rake Wheels

The rake wheels are installed onto the hubs of the rake wheel arms. There is one wheel for each side of the rake. Ensure that the tines point in the same direction as the other wheels on the same side, with the wind guard facing inward.

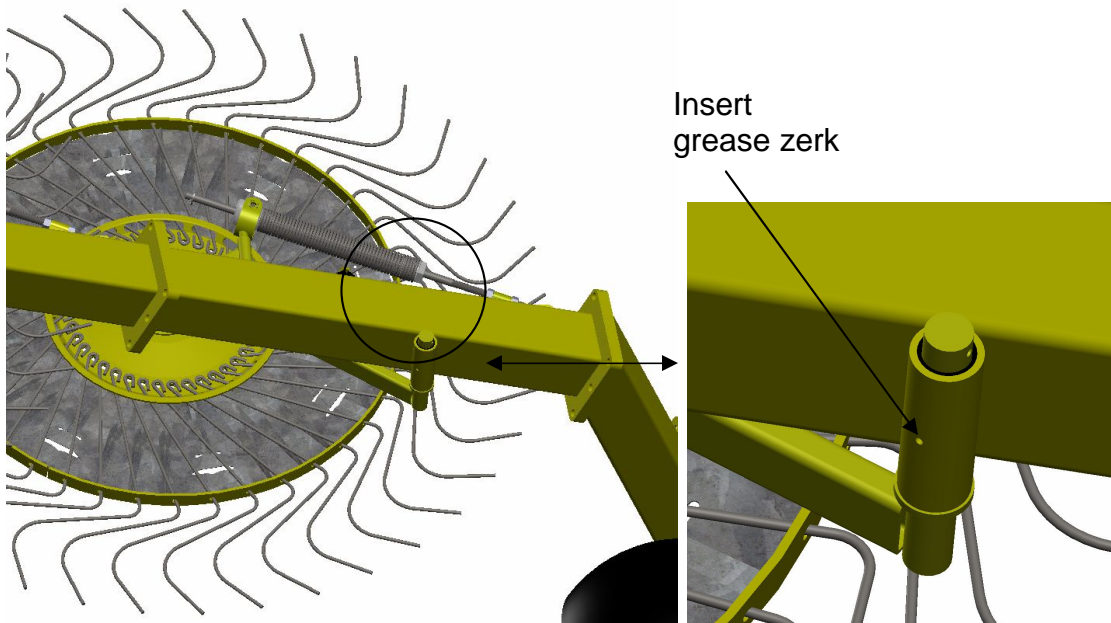




The wheels are mounted using ½" tapered wheel nuts. FOR MOUNTING THE RAKE WHEELS, THE TAPERED EDGE OF THE NUTS FACES OUT. This means that the flat edge of the nut is tightened against the rake wheel. **Torque nuts to 90 ft-lb.**



Finally, the ¼" grease zerk should be installed in the rake wheel arm pivot, as shown.



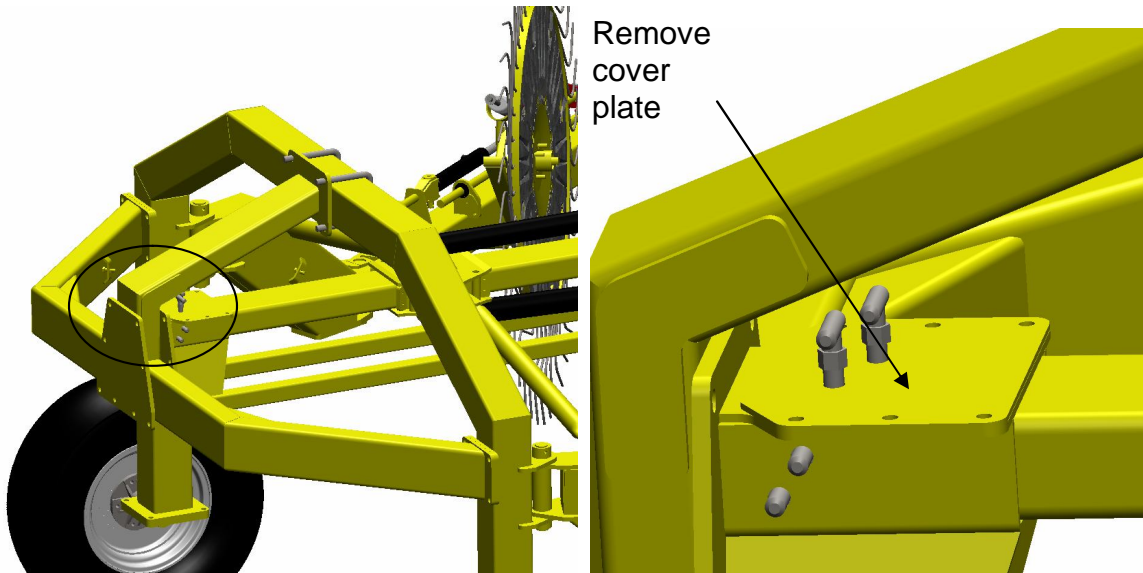
Repeat all previous steps on the opposite side.

## 5.6 Hitch Extension Assembly Procedure

This part of the manual covers the steps involved in adding the hitch extension. Ensure that the hydraulic pressure is relieved and disconnected before beginning.

### 5.6.1 Install Hydraulic Hose Extensions

In order to extend the hitch length, the hydraulic hoses must first be extended. This is accomplished using the connections at the rear of the machine. First remove the cover plate (6 bolts) to access the hydraulic connections.

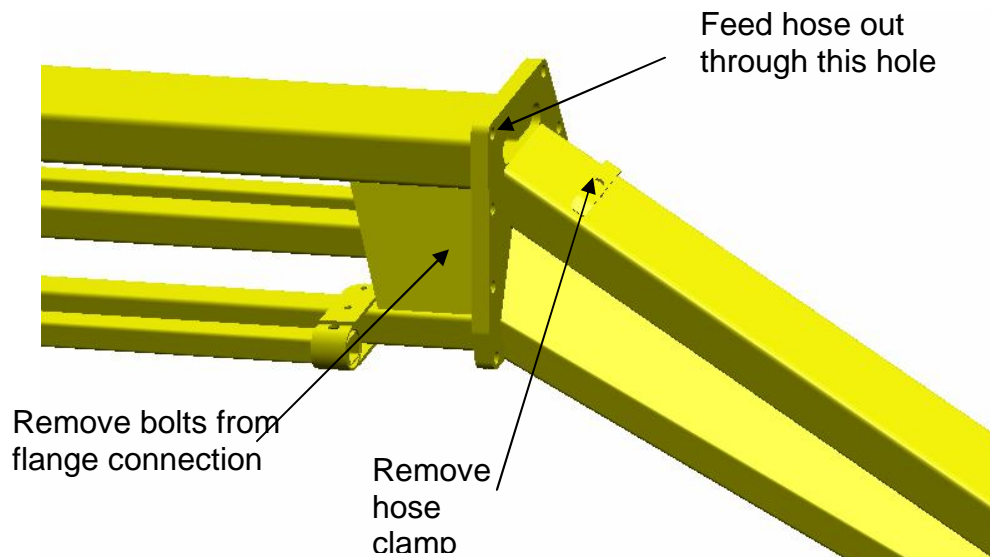


Remove each individual hose and install a 40" hose extension on each hose, making sure that they are reconnected to the same port that they came off of. Bolt cover plate back on once all six hoses have been extended.

### 5.6.2 Remove Front Hitch

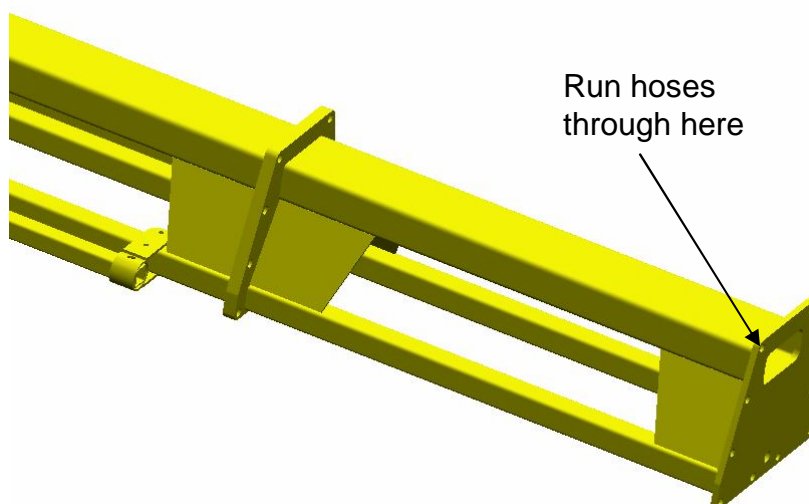
Next, the front hitch must be removed. Before doing this, ensure that both sides of the flange connection are supported to take weight off of the connection, and so that the hydraulic lines are not damaged. Remove all 10 bolts (5/8"x1 3/4")

and save for later use. Also, remove the hose clamp from the front hitch, and feed the hose out through the hole.



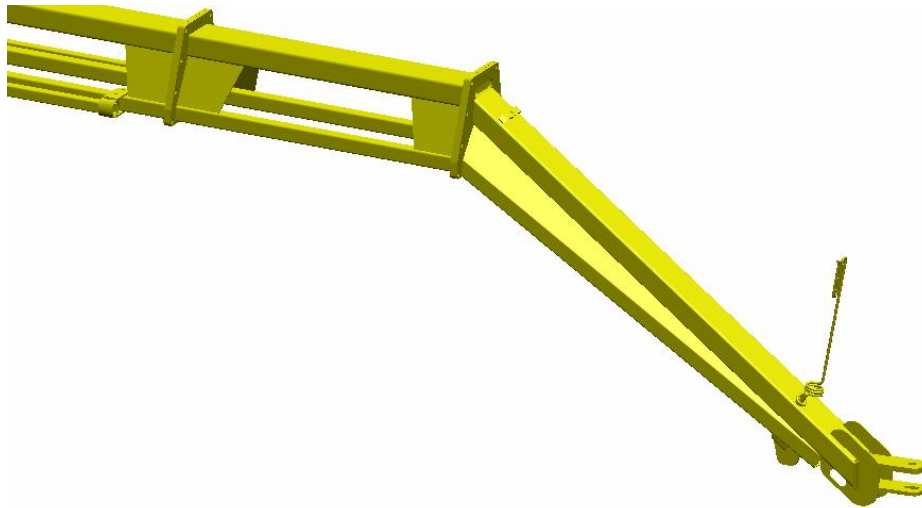
### 5.6.3 Install Hitch Extension

Once the hitch is removed, the hydraulic hose should be run through the top pipe of the hitch extension, then the hitch extension should be bolted to the flange on the hitch of the machine using 10 bolts (5/8"x1 3/4") and serrated flange nuts.



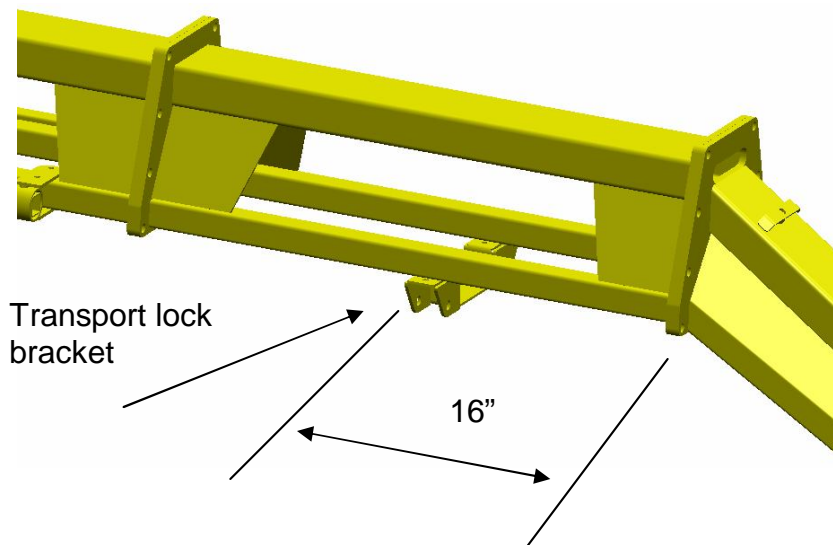
#### 5.6.4 Reinstall Front Hitch

Next, the front hitch can be reinstalled. First, feed the hydraulic hoses back through the opening, and reconnect the flange using the bolts removed earlier. Reattach the hose clamp and run the hoses down along the hitch as before.



#### 5.6.5 Move Transport Lock Bracket

Finally, the transport lock bracket needs to be moved. The correct position is 16" from the front flange to the center of the U-bolt, on the bottom of the hitch extension. First, remove it from its current location on the hitch by removing the U-bolts, then reinstall as shown.



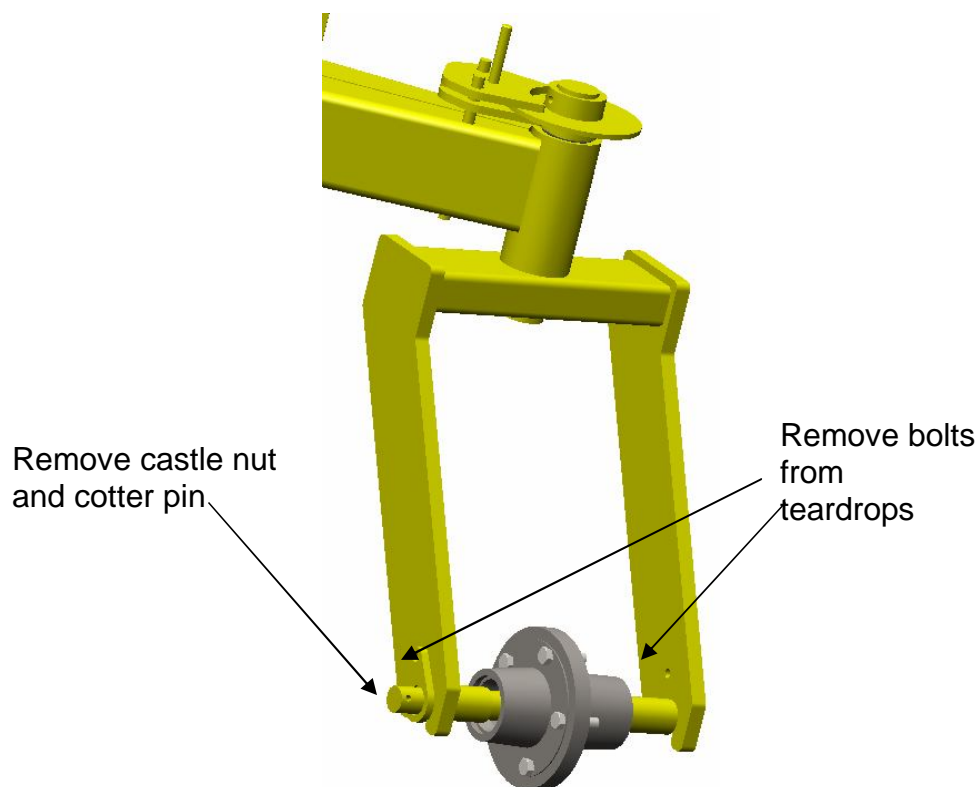
## 5.7 Caster Kit Assembly Procedure

This part of the manual involves the steps required to install the caster kit. It is strongly recommended that this be installed along with the extension kit.

### 5.7.1 Install Wheel and Tire

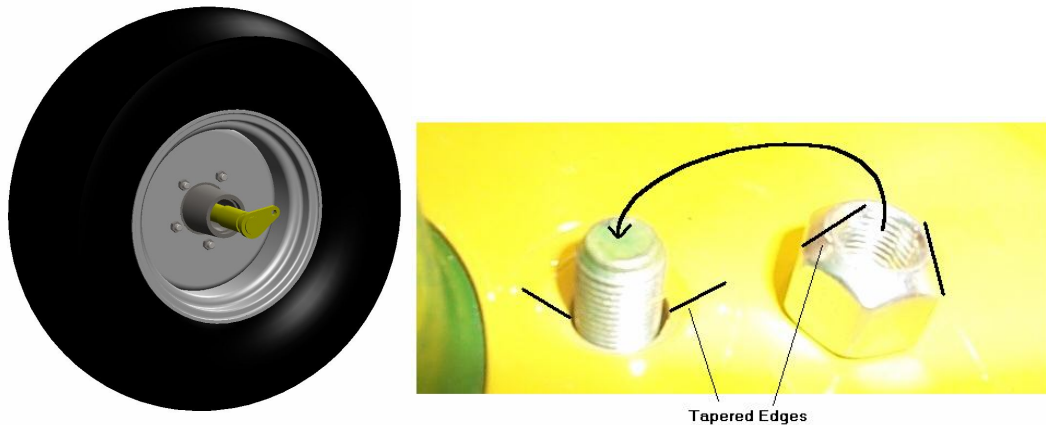
The caster kit is shipped pre-assembled. However, the wheel needs to be installed. To install the wheel, first remove the castle nut (and cotter pin) on the end of the axle.

Next, remove the two 3/8" bolts holding on the teardrops, so that the axle can drop out of the forks.



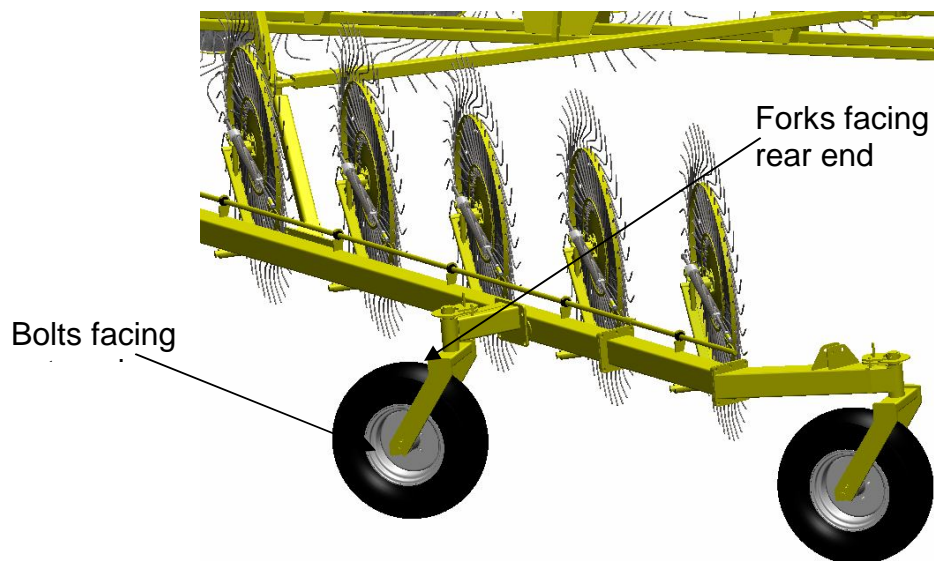
Once the axle is removed, install the wheel onto the hub. Be careful not to lose or mix up either of the spacers on the axle (the longer spacer is on the stud side, which faces the welded-on teardrop). Ensure that the **valve stem is on the same side as the wheel nuts**.

Mount the wheel to the hub using the tapered 1/2" wheel nuts. The wheel should be mounted so the tapered edge of the nuts fit into the tapered holes of the wheel (flat edge facing outwards). **Torque wheel nuts to 90 ft-lb.**



### 5.7.2 Reinstall Axle

Next, reinstall the axle to the caster forks according to which side it is mounted. When the caster forks are facing towards the back, the wheel nuts should be on the outside, as shown.

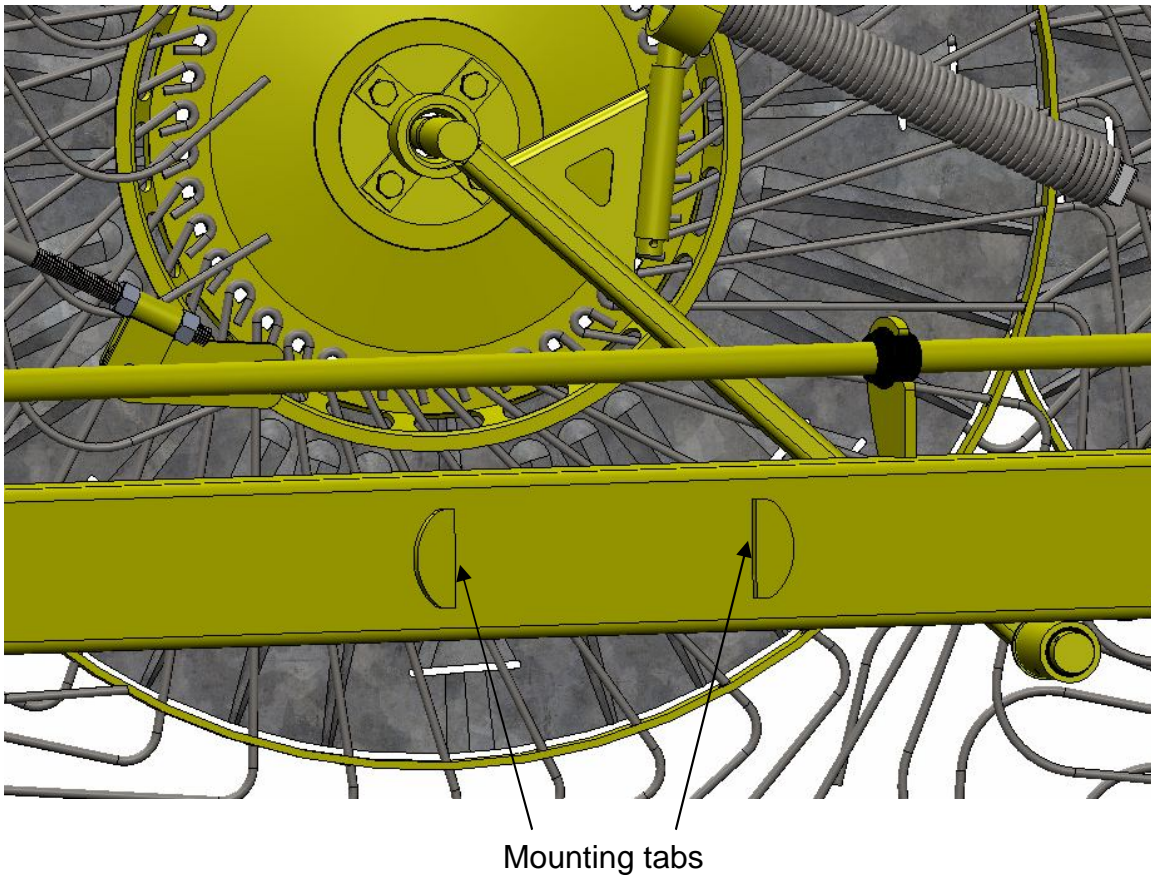




Insert the 3/8"x1 3/4" bolts and nylon lock nuts into the teardrops, making sure that the spacers are between the forks and hub. Finally, tighten the assembly with the castle nut, and secure with the cotter pin.

### 5.7.3 Install Flanged Caster Mount

Once the wheel is reinstalled on the axle, the entire caster assembly should be bolted to the rake arm. The caster flange should mount between the tabs on the rake arm, and secured using two 3/4" U-bolts and serrated flange nuts.



Repeat on opposite side.

**- Assembly is now complete -**



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