HUMDINGER

HUMDINGER EQUIPMENT LTD.

TANA North America

From Waste to Value

HUMDINGER EQUIPMENT PRODUCT REGISTRATION

Please complete this form to register your product with our company. If you purchased multiple units of products please complete a separate form for each serial numbered product.

Warranty claims will not be accepted until this form has been received and accepted for each product serial number.

Model:	
Serial #:	
Dealer:	
Customer:	
Date Shipped to Dealer:	
Customer Purchase Price:	
Date Delivered to Customer:	
Company Name:	
First Name:	
Last Name:	
Address:	
City:	
State:	
Zip:	
Telephone:	
Mobile Phone:	

X _____

Dealer / Customer

X _____

Manufacturer Representative

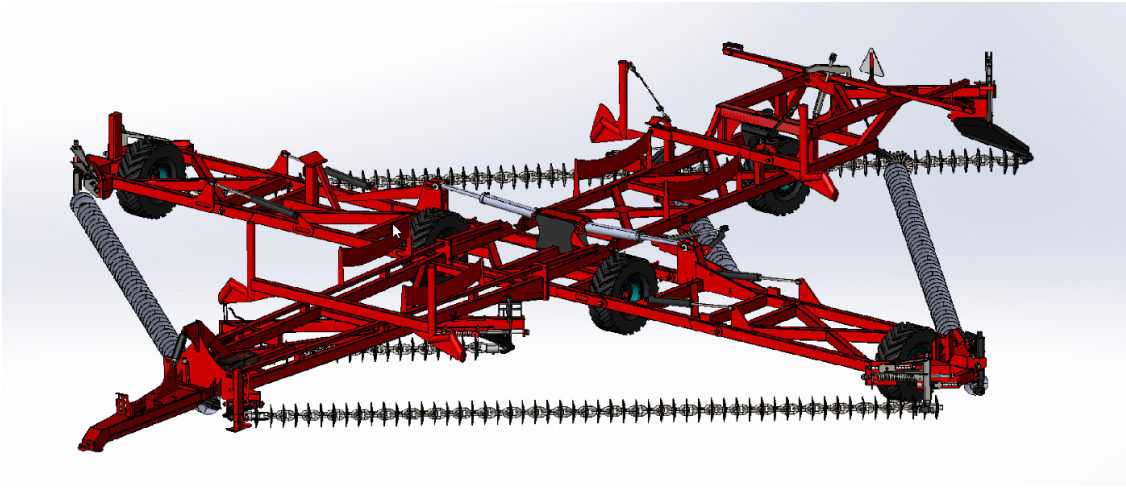
For Humdinger Use Only
Warranty Activation Date:

FROM WASTE TO VALUE

HUMDINGER

Service/Operation
&
Parts Manual
S/N 1601 and Up

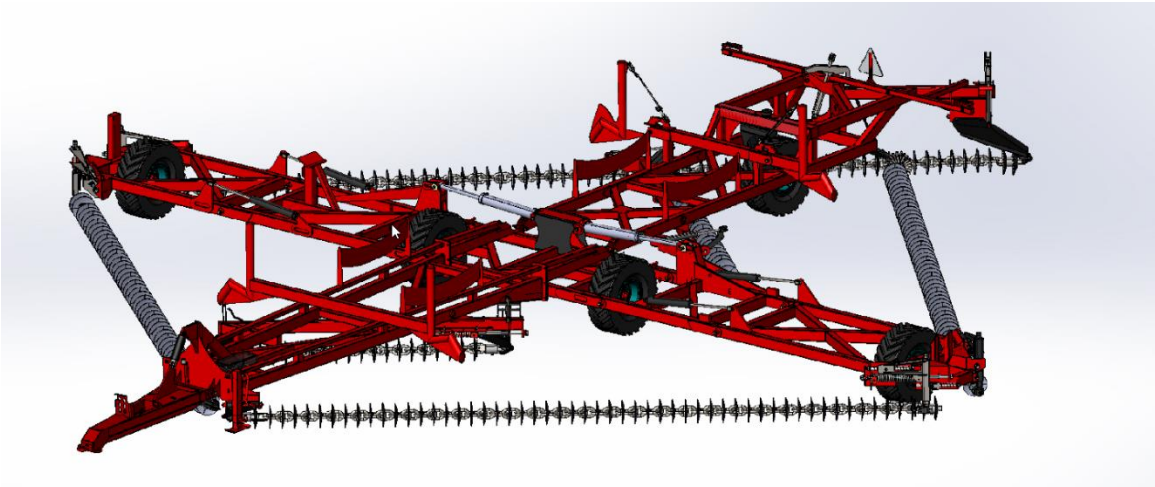
CDH 480 Chain Disc Harrow



March 2022
S/N 1601 & Up

Service & Operation Manual
S/N 1601 and Up

CDH 480 Chain Disc Harrow



March 2021
S/N 1601 & Up

Foreward

Humdinger Equipment LTD. is committed to your satisfaction with our products and services. Please review this manual and learn your product.

We want you productive and satisfied.

If you have questions about your machine, we encourage you to contact us at 806-771-9944.

We can also be located on the web at humdingerequipment.com. As our products evolve and improve, you can find the latest information on our website.

Thank You

Table of Contents

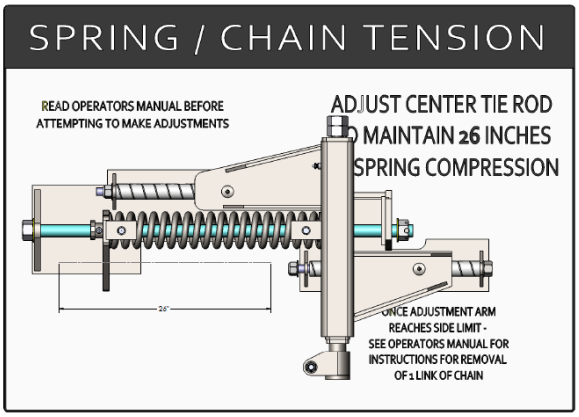
Safety Information

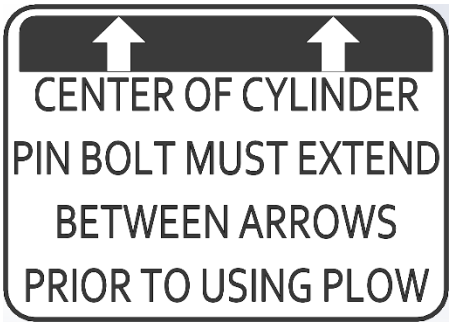
You must read and understand the manual to safely operate your chain harrow. You should also understand each of the safety decals on the machine.

The Red Cased Wording, “Danger” indicates a situation that if not avoided has the potential to cause DEATH OR SERIOUS INJURY.

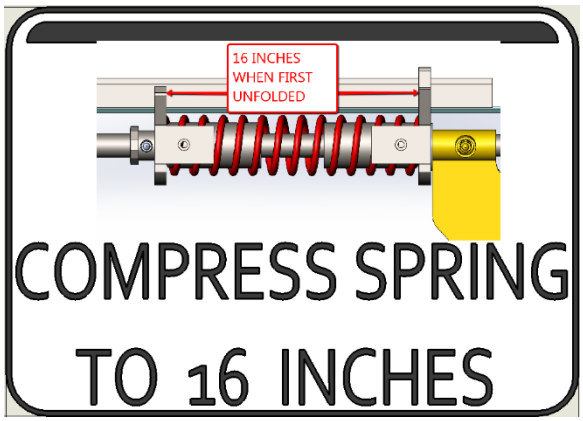
The Black Cased Wording, “Caution” indicates a potentially hazardous situation that if not avoided may cause INJURY.

Following are the Danger and Caution Decals on your machine. Should they become unreadable contact Humdinger Equipment LTD. for replacement decals.





Large Springs at Corners to 26 inches



Small Center Springs to 16 inches

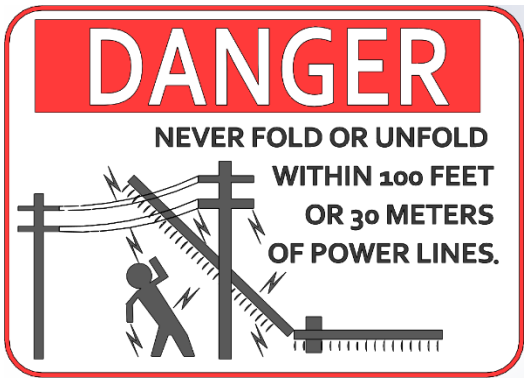
General Safe Operating Rules

Never travel on public roads greater than 15 mph.

Never allow anyone in the operating area of the machine while the machine is in operation.

You must operate cautiously around overhead power line and electrical poles. Never fold or unfold the harrow within 100 feet or 30 meters of power lines.

BEFORE FOLDING OR UNFOLDING THE CDH 455 THE FRONT TONGUE FRAME MUST BE LEVEL WITH THE MAIN FRONT FRAME. FAILURE TO DO SO WILL RESULT IN MAJOR FRAME DAMAGE.



HUMDINGER

Daily Walk Around Inspection

For maximum service life, performance, and safety; each machine should be inspected daily before operation.

Perform a general walk around looking for missing or loose bolts, pin clips, hydraulic leaks, structural damage or cracks, and buildup of trash or material on the machine. Repairs should be made before continued operation of the machine. Check that the tire pressure is 70 psi, the slow-moving vehicle sign is intact and that the turn signal lights are working properly.

See the Lubrication Section for Proper Maintenance

OPERATION

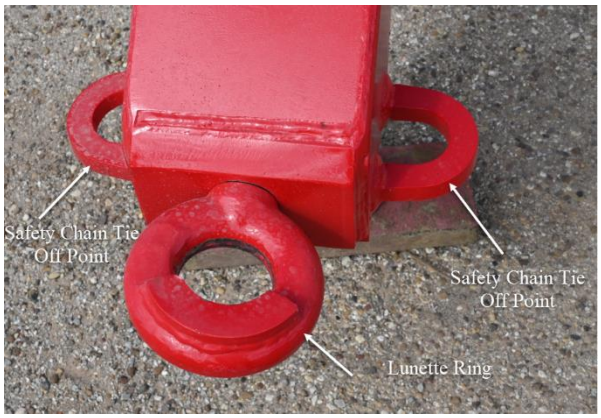
The operation of the CDH 480 is relatively straight forward.

Initial Hook Up

Adjust the tractor hydraulic flow settings to the lowest available. Failure to do this may cause instability in the folding and unfolding sequence.

SET HYDRAULIC FLOW RATES TO THE LOWEST SETTING.

Attach a tractor pin or pintle hook on the tractor through the lunette ring on the front of the chain disc harrow. The jack should be used to get the plow at the proper height for hook up.



For public road towing, use safety chains. Chain tie off points are provided on the front of the plow.

Connect the hydraulic circuits up. The hoses have extensions that can be removed if the hoses are too long.

The CDH 480 has three separate hydraulic circuits.

Circuit one does the following:

a. Folds the outer wings

Circuit two does the following:

a. Raises or lowers the tail chain hangers
b. Raises or lowers the inner chains
c. Folds or unfolds the main arms

Circuit three does the following:

a. Raises and lowers the tongue cylinder.

Once hooked to the tractor, raise the jack and move its handle to the storage position and lock the handle in place.

Insert the electrical connector to the tractor when travelling on roads to provide for trailering lights.

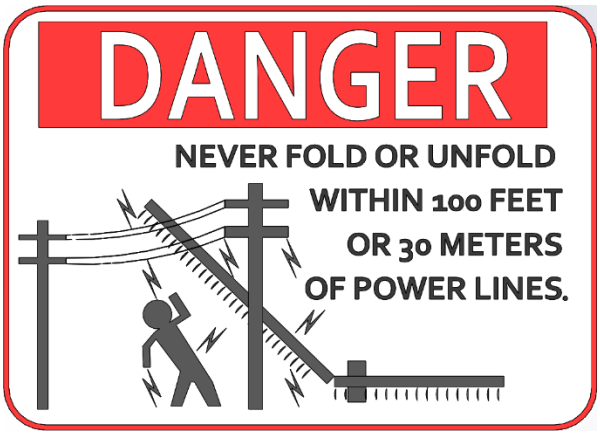
Electrical Connector Storage Location

Electrical connector inserted into tractor.

Three-point tractor hitches must be raised above the harrow hose stand to avoid damage during turning.

Pull the chain disc harrow to an area clear of overhead electrical lines and other obstructions to fold or unfold.

Never unfold within 100 feet or 30 meters of power lines.



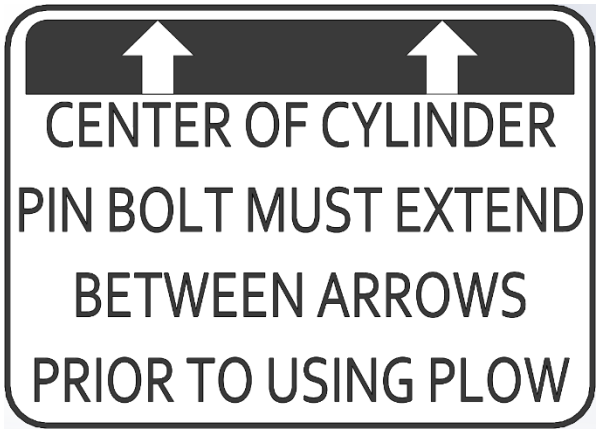
Never allow anyone to stand within the unfolding/folding radius of the chain disc harrow.

Lower the tongue on the machine to make the harrow **level** (circuit three).

Slowly use circuit one to unfold the outer arms. Do not use circuit two until the outer arms are unfolded.

After the outer arms are unfolded, use circuit two to lower the rear chain hanger, inner chains and the main arms.

Once unfolded on level ground the main lift cylinder pins must be centered inside of the slot. Failure to do so may cause damage to the pins and not allow the frame to properly float.



See the Unfolding and Folding Section for more details.

The Humdinger CDH 480 operating speed is from 4-12 mph depending on tractor size and **ground conditions**. At 6 mph you will cover more than 30 acres per hour.

Failure to keep the frame level will cause structural damage to the plow.

The front frame must be set level before using the CDH 480 in the field.

We recommend 4-wheel drive tractors of at least 230 horsepower.

Always operate the plow with all wings extended. Never operate the plow partially extended.

The plow covers a width of about 48 feet. Each pass should slightly overlap to produce a completely prepared field.

If ridges or valleys remain after a complete land then refer to the adjustment section to leveling information.

Make large radius turns at the ends of the fields and make sure not to run the tractor tires or tracks into the nose of the harrow. This will cause structural damage to the harrow.

Make adjustments as necessary to obtain the desired results in the field. See the adjustment section for details.

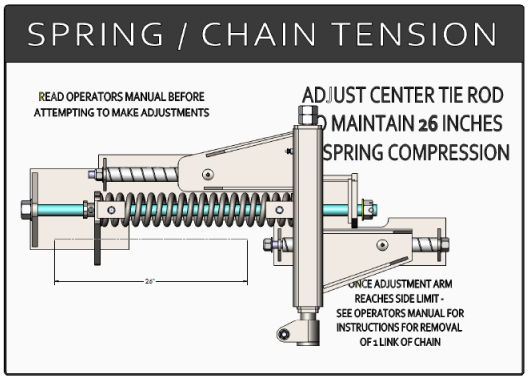
Never back up the CDH 480 without raising the tail and intermediate chain sections. Doing so will damage the chain hanger plates. Do Not back up in wet boggy conditions!

Adjustments

The Humdinger CDH 480 is fully adjustable to eliminate any ridges or valleys at the end of chain segments. The chain tension is also fully adjustable.

The CDH 480 has already been adjusted from the factory so modifications may not be necessary. As the chains and discs wear, then it will be necessary to adjust the chain.

<u>Chain Tension-Main Chains</u>



1) Check spring tension on a hard surface after unfolding plow. Not after pulling the plow. Once pulled, the springs will settle into "run" mode and not have a true base spring tension. Refold the plow and unfold it if you have to. Once unfolded, check the spring length it should be 25 to 27 inches. If over 27 inches:
    a. Clean off the threads of the horizontal 1 ½ inch center threaded rod; grease the chain compression plate lug and upper and lower carriage sliders.
    b. Use the supplied closed end quick wrench and rotate the 1 ½ inch threaded rod counter clockwise to reduce the distance to 26 inches.

2) Should the slider carriage ever travel far enough over that it is in contact with the side plate, and the chain has enough slack to cause chain jumping you may remove a chain link. To do this:

a. Clean off the threads of the horizontal 1 ½ inch center threaded rod; grease the slider plate lug and upper and lower carriage sliders.
b. Use supplied closed end quick wrench, rotate 1 ½ inch threaded rod counter clockwise to compress the spring to 25 to 27 inches.
c. Remove the temporary spacer bar.

d. Mount the temporary spacer bar horizontally between the chain compression plate assembly and the carriage.

e. Rotate the horizontal threaded 1 ½ inch threaded rod clockwise to bring the entire assembly back toward the chain and the chain tensioner plate is against the other side plate.
f. Now, remove the ¾ inch bolt holding the chain to the horizontal roller.
g. Use a torch to remove the last link of chain.
h. Reconnect the next chain link back to the roller.
i. Rotate the 1 ½ inch threaded rod counterclockwise until the chain begins to take on spring tension. SLIGHTLY BUT NOT COMPLETELY LOOSEN both ½ inch bolts that are holding the temporary spacer bar in place.
j. Continue to tighten the chain until the horizontal bar is no longer under spring tension. It will be easy to move this bar by hand at this point even

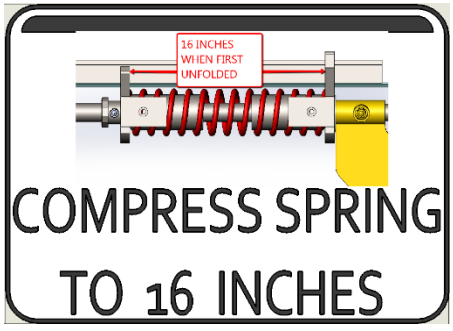
though the bolts are still in the holes.

k. Once the bar is free from spring tension, remove it and replace it on the carriage.

DO NOT SET CHAIN TENSION BELOW 24 INCHES--THIS WILL CAUSE DAMAGE TO THE PLOW DURING FOLDING!

The two center chains adjust in the same manner as the main chains. To adjust simply lower the chains down and follow the main chain adjustment procedure. After adjusting make sure the center chains do not contact the frame when they are in the raised position.

Chain Tension—Center Chains



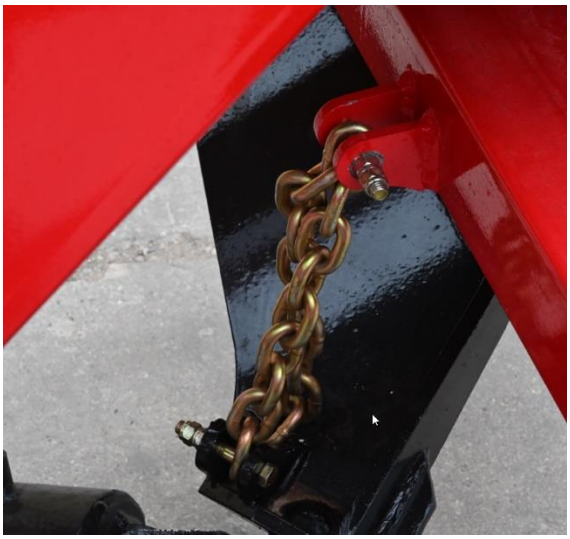
Chain Hanger Bracket Adjustment

There are 6 chain hanger brackets on the CDH 480 that should be adjusted for height to give the most level field possible.

If the outer edges of these chain segments are not cutting deep enough lengthen the chain.

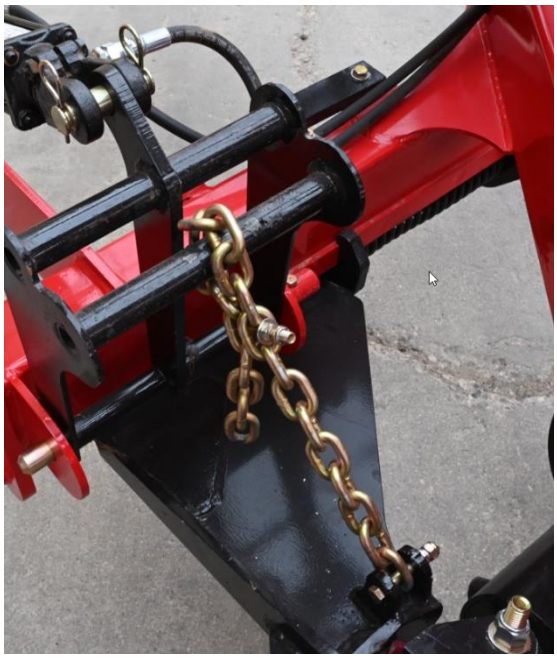
If the outer edges of these chain segments are cutting too deep then shorten the chain segments.

After reassembly, retest the CDH 480 for proper operation.



DO NOT SHORTEN THE CHAINS SO MUCH THAT THE DISK CHAIN CONTACTS THE FRAME WHEN THE PLOW IS IN THE FOLD POSITION. THIS WILL DAMAGE THE CHAIN HANGERS, SHAFTS, AND ADJUSTING MECHANISM.

Depending on the location of the chain attachment point you will find one of these types of adjusters. Use a jack or equivalent to relieve the tension off the chain and make the necessary adjustment.



At the rear of the last two main chains you will find two prickle discs welded on to the rotator. The purpose of these discs are to level the area behing the caster wheel. Depending on the soil condition and the speed of operation, these discs may need to be changed for each field or areas within the field. You can fine adjust using the turnbuckles to eliminate ridges.

Outer Chain Segment Height Adjustments

Height adjustments can be made to the outer chain segments.

Using the open-end adjusting tool found in the tool box, loosen the jam nut.

Take the closed end quick wrench and rotate the threaded rod. Counterclockwise lowers the chain. Clockwise raises the chain.

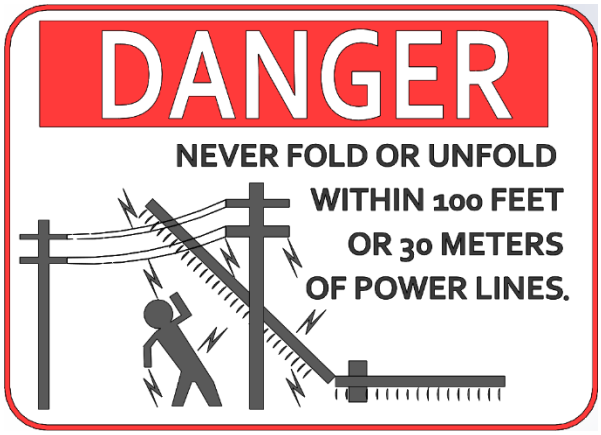
After the adjustment is completed use the open-end wrench to lock the nut.

Return the tools to the toolbox.

Folding and Unfolding Preparations

Pull the chain disc harrow to an area clear of overhead electrical lines and other obstructions.

NEVER UNFOLD WITHIN 100 FEET OR 30 METERS OF ELECTRICAL POWER LINES.



NEVER ALLOW ANYONE TO STAND WITHIN THE UNFOLDING OR FOLDING RADIUS OF THE CHAIN DISC HARROW.

These photos illustrate the proper folding sequences. Should the harrow not fold in this sequence you must return the harrow to the previous correct sequence point and restart. The typical cause of improper folding sequence is too much hydraulic flow. Reduce the flow rate on the tractor and restart the fold sequence.

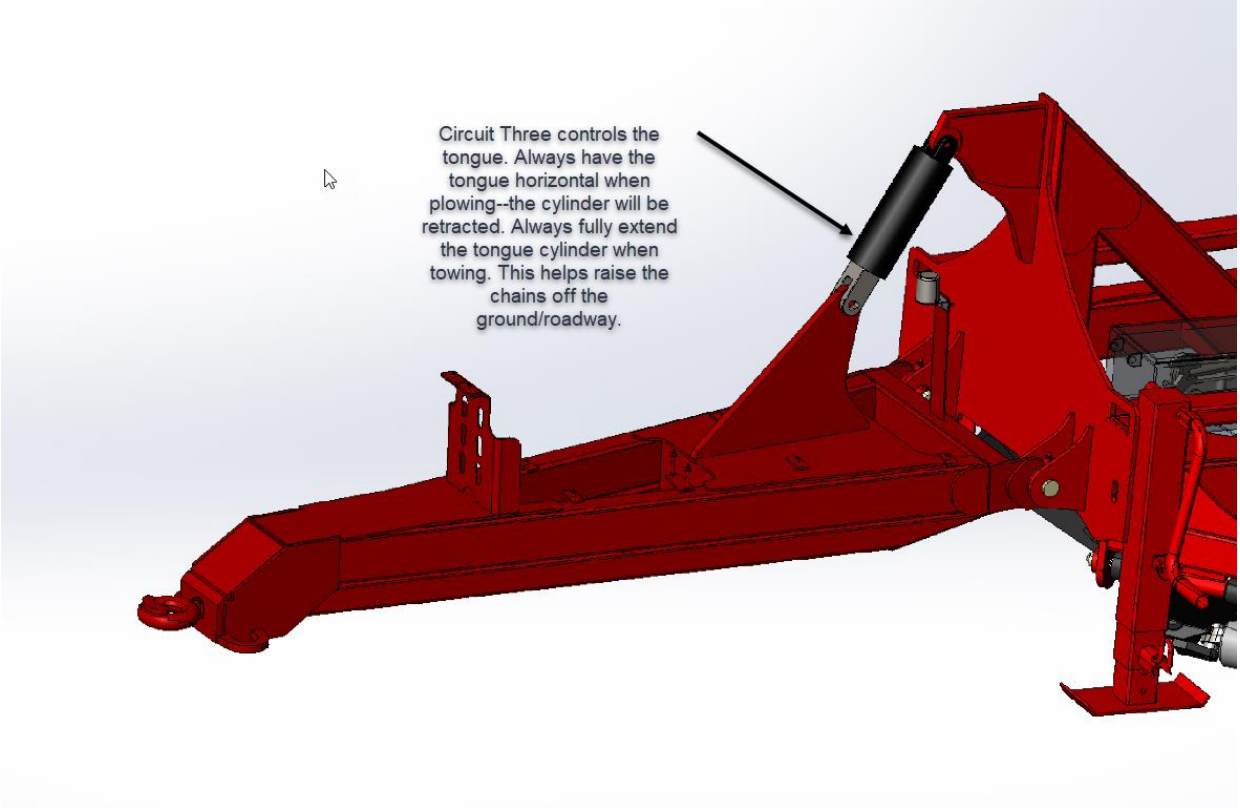
THE TONGUE FRAME MUST BE LEVEL WITH THE MAIN FRONT FRAME BEFORE FOLDING. FAILURE TO DO SO MAY RESULT IN MAJOR STRUCTURAL DAMAGE.

Folding the Machine

You will use the three circuits in this order:

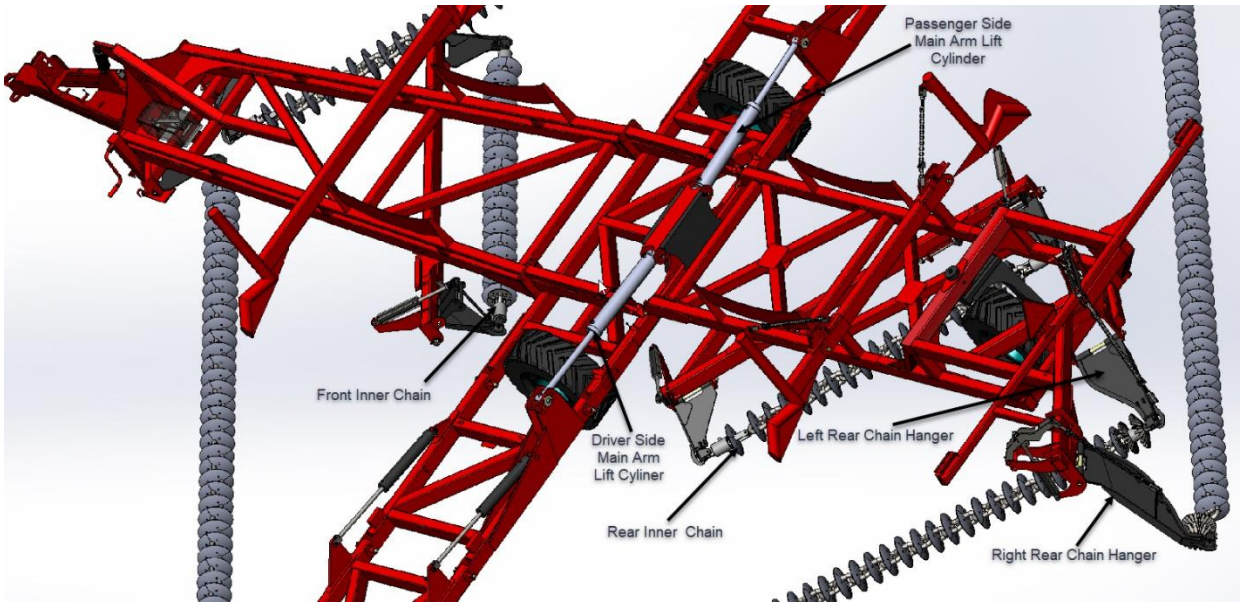
1) Circuit 3 to level the tongue.
2) Circuit 2 to raise the inner chains, raise the rear chain hangers, and finally raise the main arms.
3) Circuit 1 to fold the outer wing sections,

Circuit Three Controls the Tongue



The tongue must be in the horizontal position when starting the folding operation. If not, the chains may not find their folding positions. The plow should be on level ground during any folding or unfolding operations.

Circuit Two controls the Two Inner Chains, Rear Chain Hangers, Main Arms

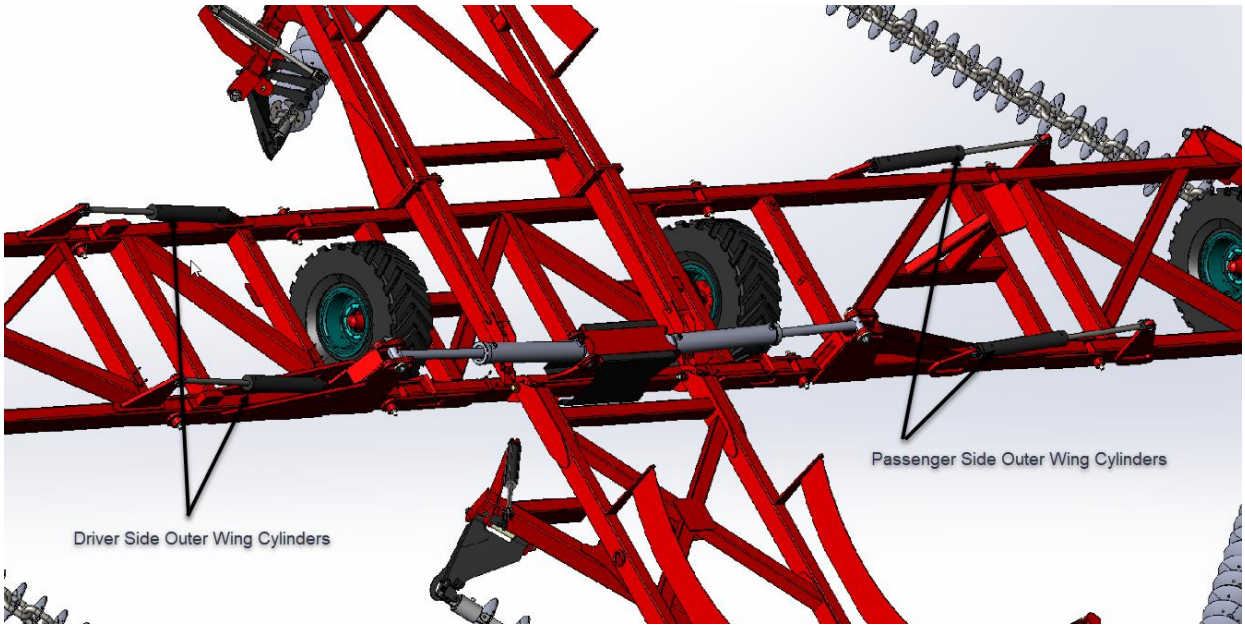


Use circuit two after the tongue has been leveled for folding.

Use circuit two to raise the two inner chains, raise the two rear chain hangers, and the main arms. The sequence you will see is the two inner chains will lift, the two rear chains will lift and then the two main arms will lift. At this point the machine will be in the “goal post” position.

The Goal Post Postion.

Circuit One controls the two outer wings



Note: This graphic is showing the position of the wing cylinders. The machine is not in the goal post position.

Once the machine is in the goal post configuration. the final fold sequence can be started. Using circuit one, start the wing folding. The first wing to fold down is the driver side wing. It will fold down and mechanically latch into the vertical passenger side main arm. This photo shows the latch about to be made.

This photo shows the latch is complete.

Now one half of the wings are folded. If both wings fold at the same time, the tractor hydraulic flow is too high. Continue to activate the Circuit One control and then the drivers side wing will fold. At this point, the machine is ready for transport. Make sure the electrical lights are plugged into the tractor, the jack is in the up position and secured, and the pin or pintle hook is properly inserted in the lunette ring.

Now is the time to make sure the tongue is in the travel position, cylinder fully extended.

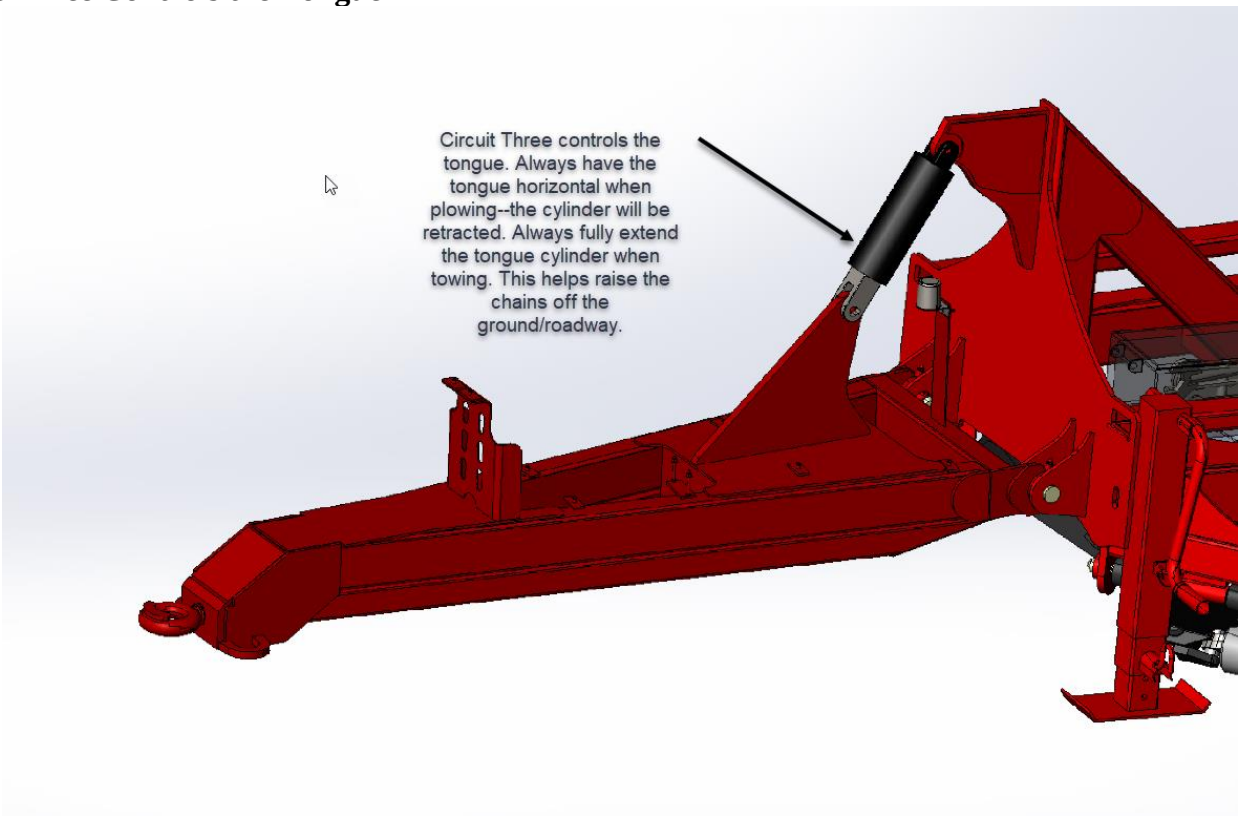

The jack is shown in the up position.

Unfolding The Machine

The machine should be on level ground and clear of all overhead obstructions and power lines. You will use the three circuits in this order:

1) Circuit 3 to level the tongue.
2) Circuit 1 to unfold the outer wings to the "goal post" position.
3) Circuit 2 to lower the main arms, lower the main chains and lower the inner chains.

Circuit Three Controls the Tongue



The tongue must be in the horizontal position when starting the unfolding operation. If not, the chains may damage the structure during the unfolding operation. The plow should be on level ground during unfolding operations.

Circuit one controls the unfolding of the two outer wings

Use circuit one to extend the wing cylinders. The passenger side wing will move to the vertical position first followed by the driver's side wing. This will put the plow into the

"goal post" position. NEVER USE CIRCUIT TWO UNTIL THE MACHINE IS IN THE GOAL POST POSITION—THIS WILL DAMAGE THE STRUCTURE.

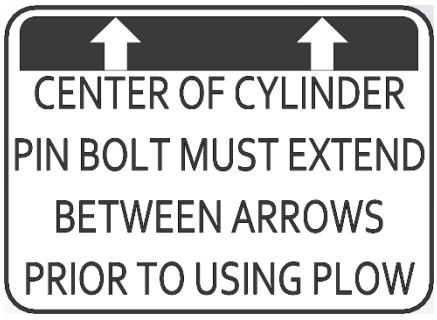
Photo of the passenger wing moved to the upright position.

After the passenger side wing goes straight up the driver's side wing will move to the straight up position forming the goal post as noted before.

Circuit Two Controls the Lowering of the Main Arms and All Chains

Once circuit two is actuated, the two inner chains will lower, and the rear chain hangers will lower. After this, the main arms will start to lower. The driver side main arm will lower first then the passenger arm. During this operation, the transport wheel on the driver's side may temporarily rise off the ground. Modulation of circuit one will get this wheel lowered.

Once unfolded on level ground the main lift cylinder pins must be centered inside of the slot. Failure to do so may cause damage to the pins and not allow the frame to properly float.



Make sure all the chains are properly located and the tongue is level. The plow is now ready for field work.

Fold/Unfold Problems

Many folding problems are related to either high flow rate settings on the tractor or low relief pressure settings on the tractor. The tractor must have a 2900 psi relief valve setting for the CDH 480 to function properly.

If a folding problem is encountered, the first step is to turn the tractor flow rate down to its lowest setting.

The CDH 480 is equipped with a breakaway shear bolt on the rear chain hangers. In the instance that a chain is caught under the rear chain hangers, the ¼ inch bolt will shear allowing the hanger to rotate up and out of the way preventing frame damage. As soon as possible replace the ¼ inch bolt.

Travel

Observe all local, state, and federal laws while towing the CDH 480 on public roads. Never travel above 15 mph.

Make sure the CDH 480 is properly attached to the towing vehicle.

Use tow chains. Tie off points are provided on the CDH 480.

The CDH 480 is equipped with a special lighting arrangement that simulates turn and brake signals.

Make sure the lighting receptacle is plugged into the tractor and is working properly when being towed.

When the tractor turn signal is activated, the light on that side of the CDH 480 will flash and the opposite light with brighten indicating braking.

Make sure all harrow disc chains have been securely hooked before entering roadways.

Make sure the slow-moving vehicle sign is intact and visible from behind.

Maintenance Section

Torque Specifications

Warning: All fasteners on the CDH 480 are grade 8. When replacing fasteners use grade 8 or better. Humdinger Equipment parts should be used to protect your investment. Every nut, except lug nuts, on this machine is a locknut because of vibration. You must replace these with new locknuts if they are removed for service.

General Torque Specifications

Size	Torque Ft Lbs
5/16-18	18
3/8-16	35
7/16-14	52
1/2-13	78
5/8-11	160
3/4-10	273
7/8-9	469
1-8	670
1 1/8-7	962

Tire lug nuts should be checked monthly.

Tire Inflation

Recommended tire inflation pressure for factory supplied tires is 70 psi.

Lubricants

Use the hydraulic fluid recommended by your tractor supplier.

Lubrication

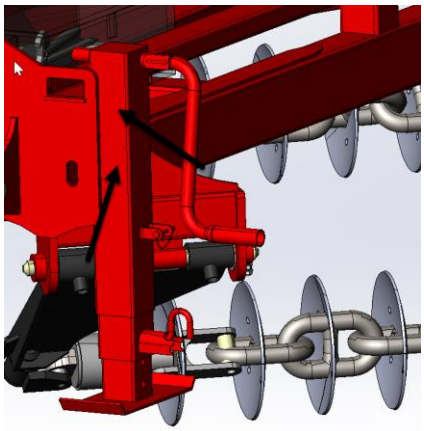
Lubricate all grease zerks once per week and before extended storage. This includes all front frame pivot pins, tail wheel, and chain adjustment devices.

The rotators should be greased annually. Put 2-3 pumps of High Temp grease into the rotators. More than this can damage seals.

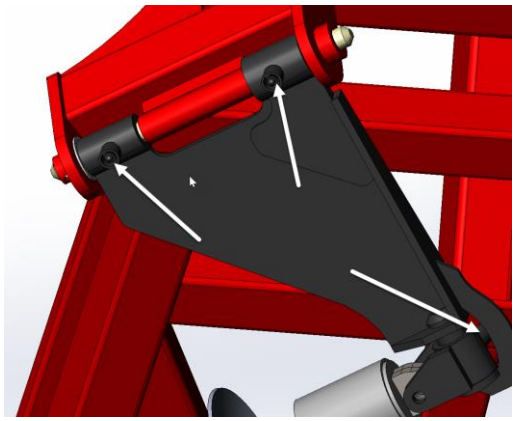
Tensioning mechanisms should be cleaned and lubed daily.

In addition, the tensioning mechanism should be cleaned and lubed before adjustments or before removing links from the chain.

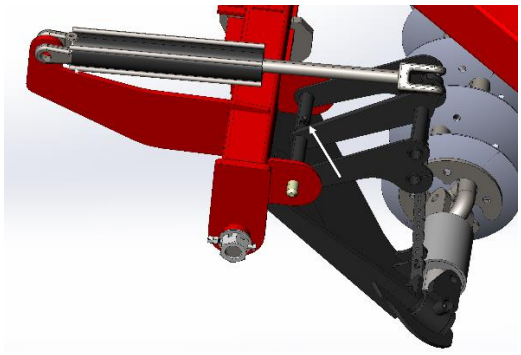
Wheel bearings should be cleaned and repacked with Hi Temp grease annually.



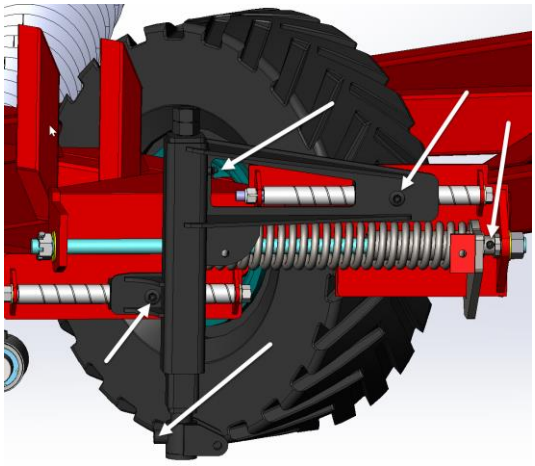
Jack Two Zerks



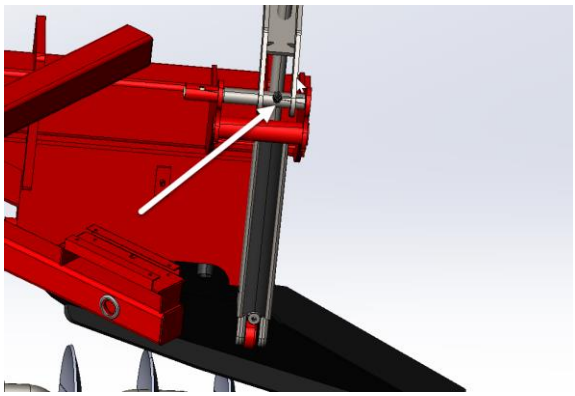
Two Front Chain Hangers 3 Zerks



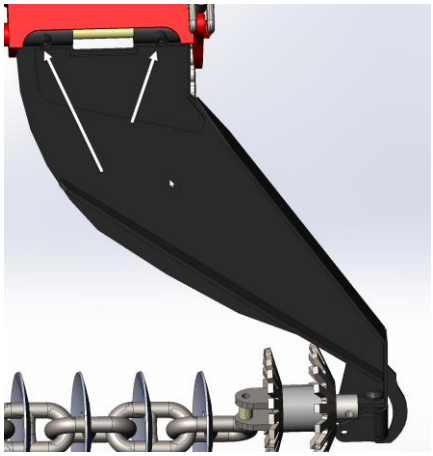
Front Passenger Inner Chain Lift 1 Zerk
Passenger Side Inner Chain Lift 1 Zerk



Four Main Chain Hangers 5 Zerks

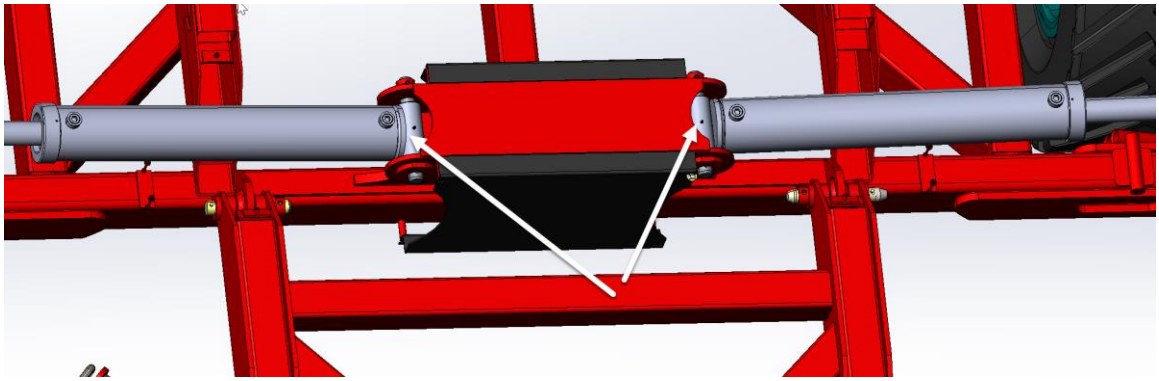


Two Rear Chain Lifts 1 Zerk



Two Rear Chain Hangers 2 Zerks

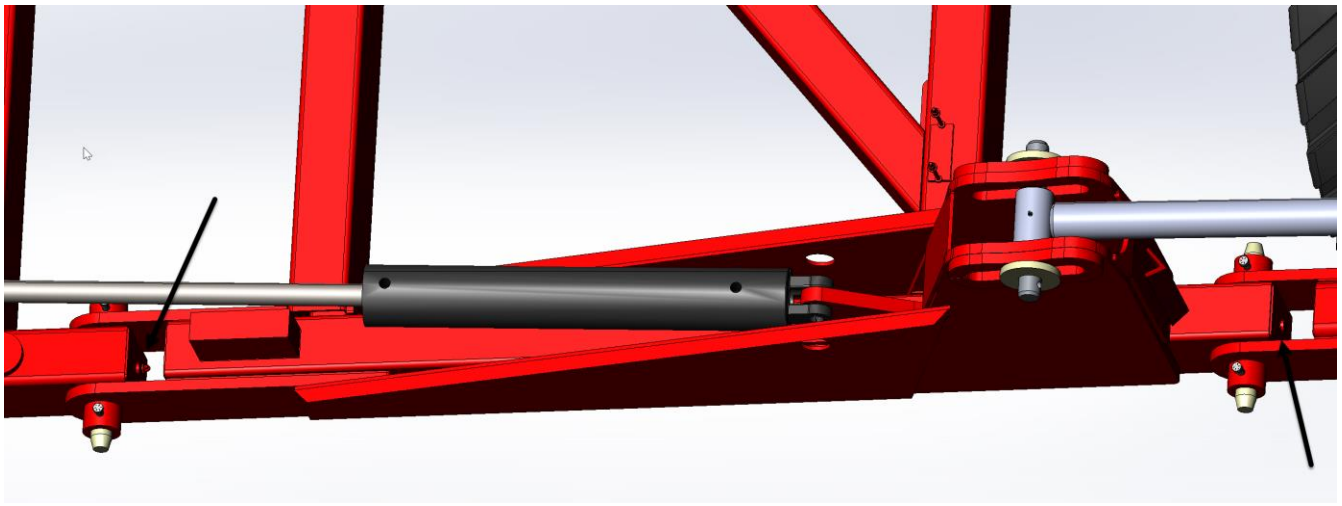
Two Rear Chain Hangers Swivels 1 Zerk



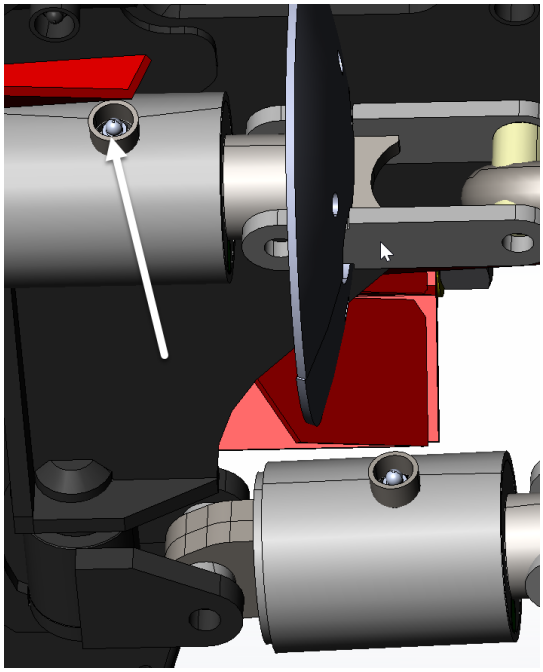
Two Main Lift Cylinders 1 Zerk

Caster Pivot 1 Zerk

9



Main Arm and Outer Wing Pivot Pins Four Places Two Zerks



12 Rotators 1 Zerk

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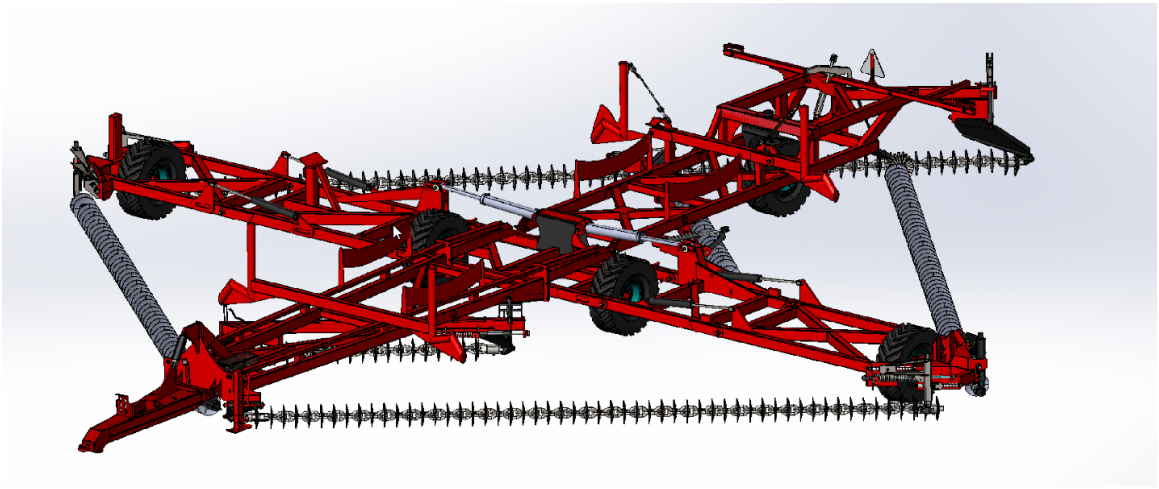
Problems

1. Wings Bounce Excessively
    a. Check that the tire pressure is at 70 psi.
    b. Tighten the main chains gradually.
    c. Tighten the middle chains gradually.
    d. Rough conditions may require a lower ground speed.
2. Fold/Unfold Problems—
    a. Lower hydraulic flow by ½.
    b. Move to level ground.
    c. Check that the chain sliders are free and move correctly.
    d. Make sure the tongue is level with the ground.
3. Chain not rotating
    a. Check for debris jamming the rotators.
    b. Change out frozen rotators.
4. Ridges at rear
    a. Adjust the rear of the rear main chains gradually to eliminate.
5. Inner chains are jumping
    a. The chains are too loose—tighten them to stop the vibrations. Failure to do so will cause structural damage.

HUMDINGER

Parts Manual
S/N 1601 and Up

CDH 480 Chain Disc Harrow



March 2022
S/N 1601 & Up

HUMDINGER

Serial Number:

Date In Service:

Dealer:

Notes:

HUMDINGER

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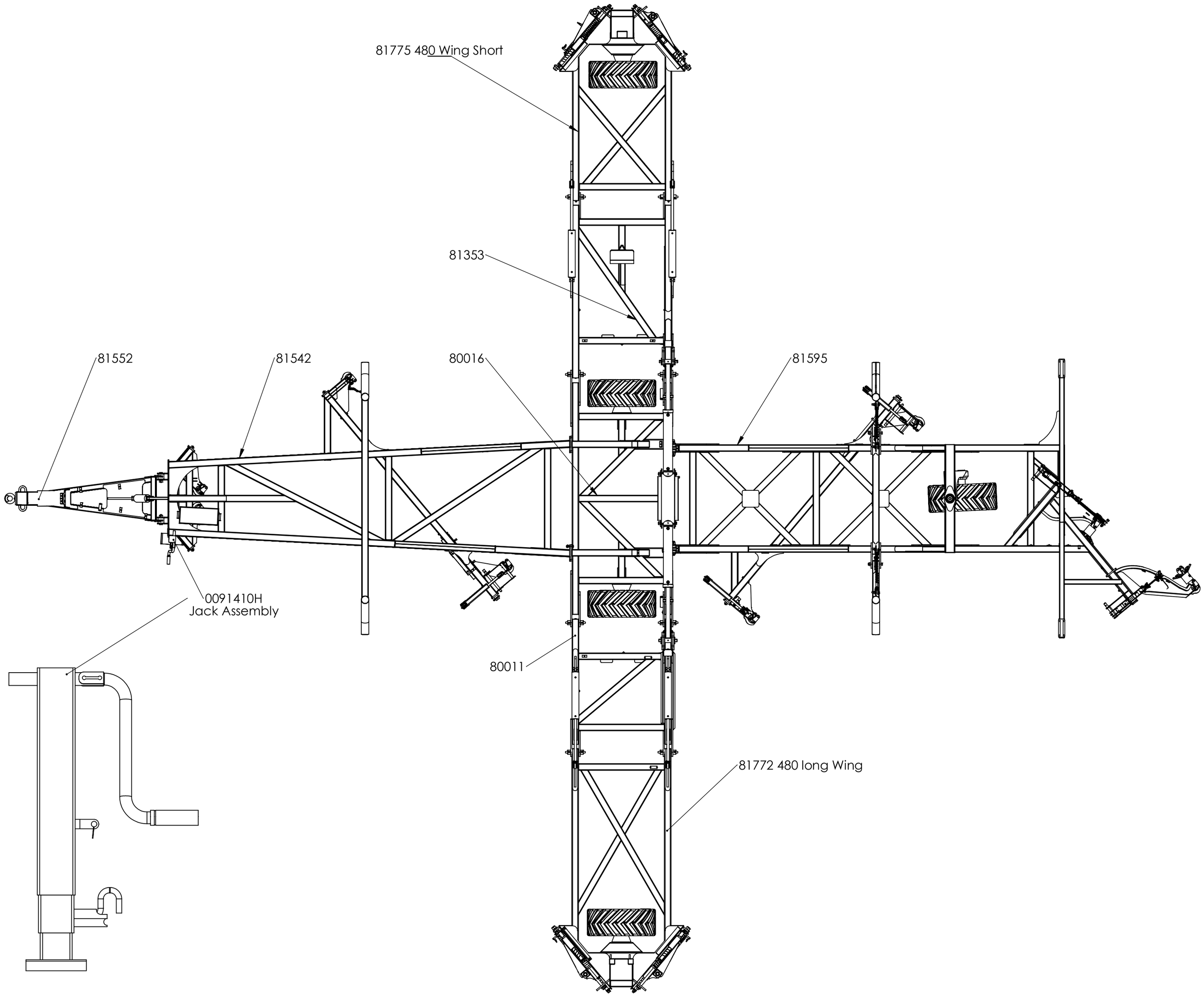
March 2021
S/N 1601 & Up



Humdinger Equipment, Ltd.

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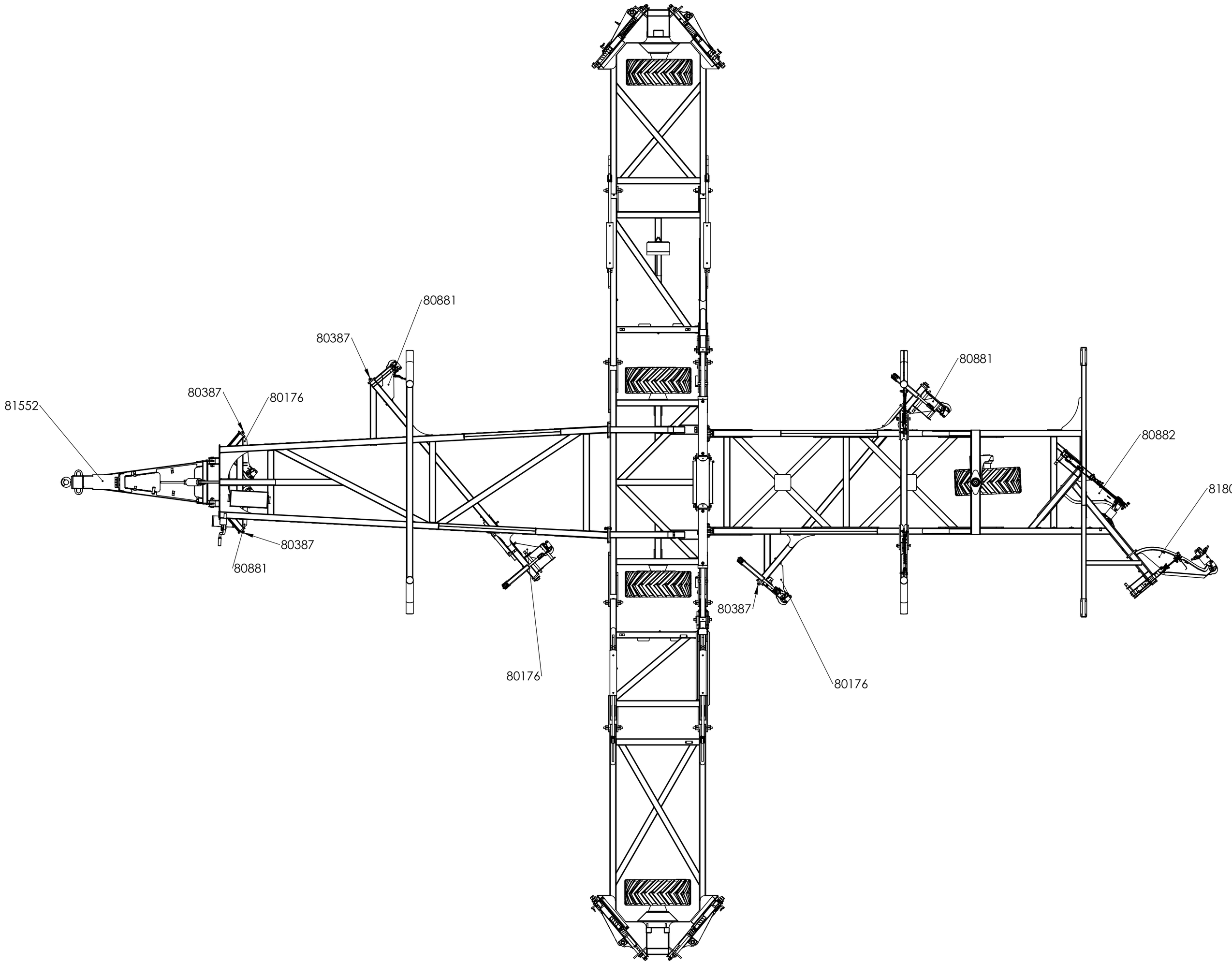
480 Parts Book

S/N CRDA1601 & Up

Structures 1



Humdinger Equipment, Ltd.

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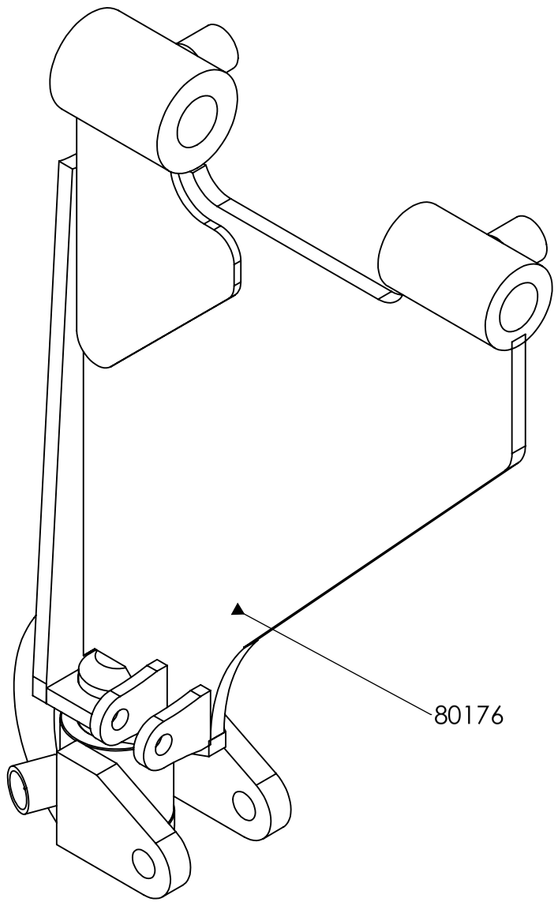
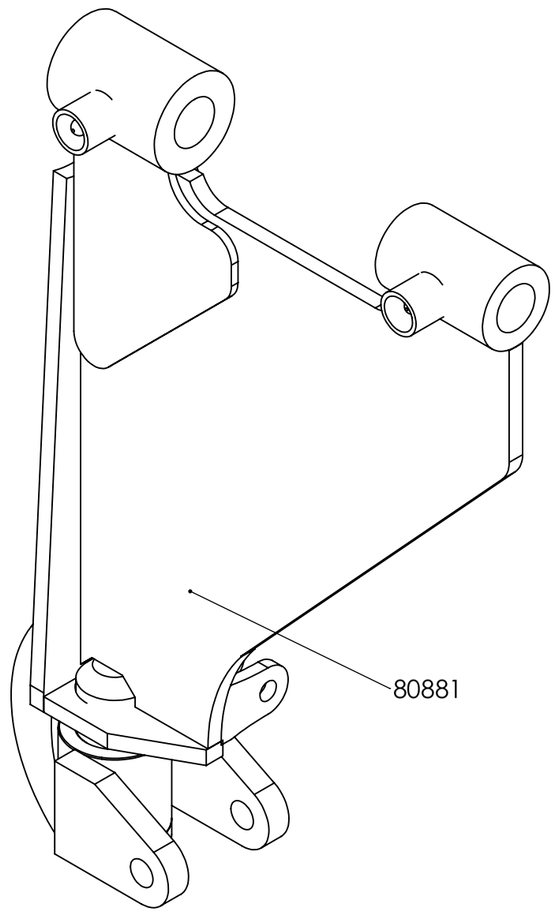
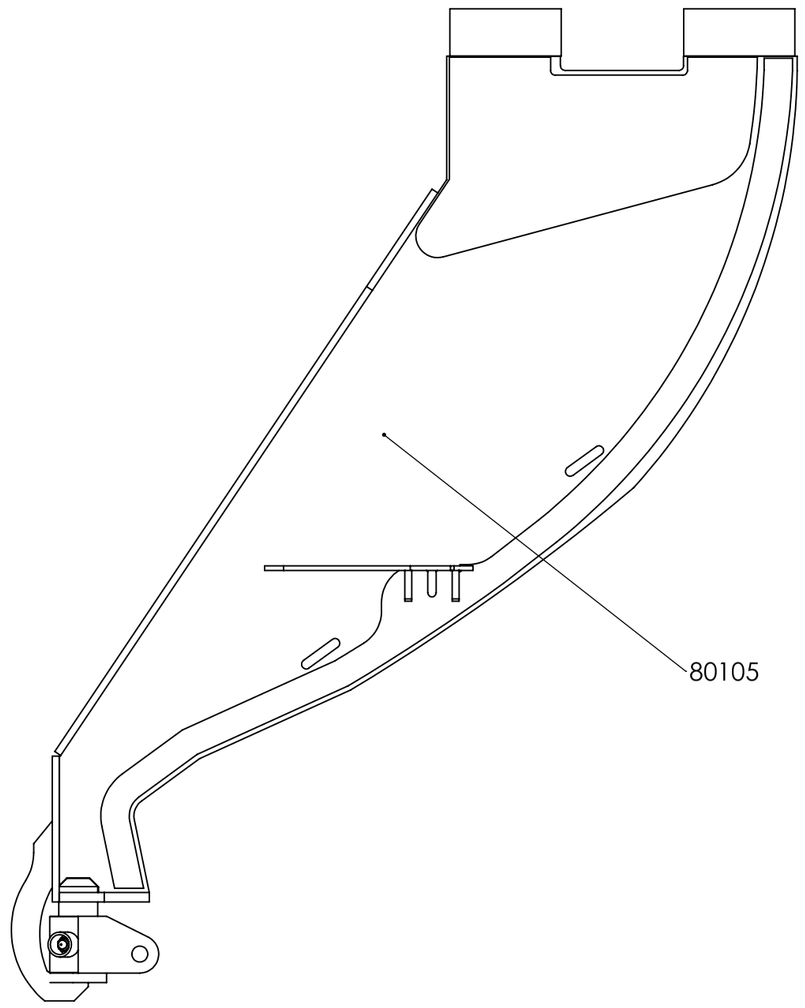
480 Parts Book **2**

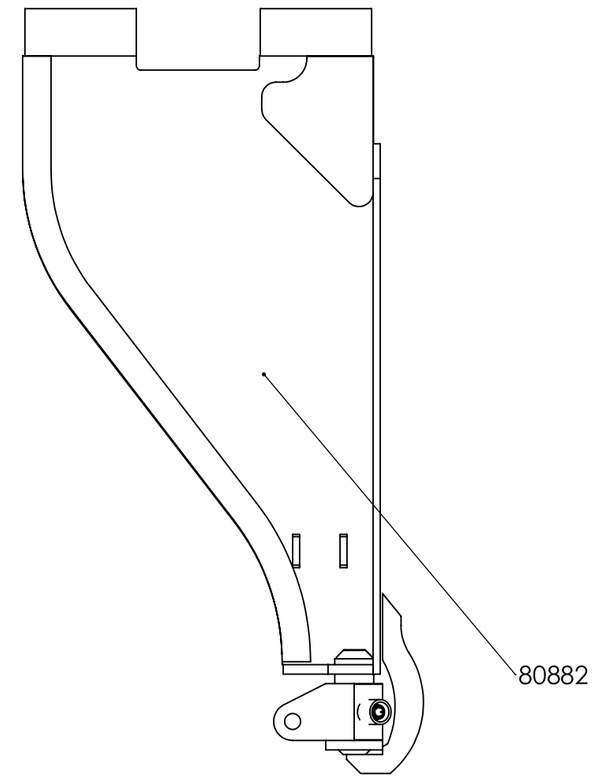
Chain Hangers & Shafts

S/N CRDA1601 & Up









This Shaft Used in
PN 80176 & 80881

This Shaft Used in
PN 80105 & 80882

Humdinger Equipment, Ltd.

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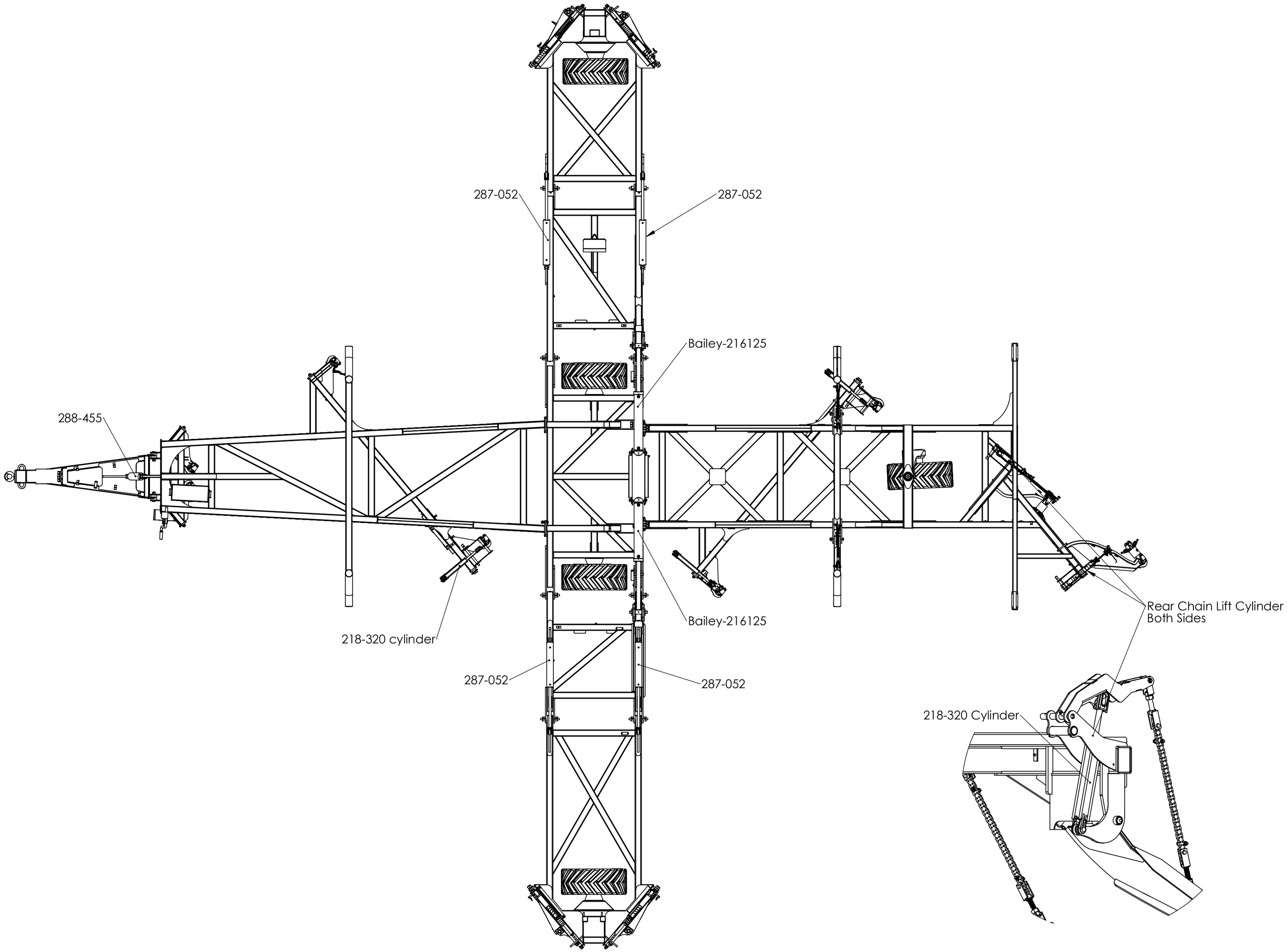
480 Parts Book **3**

S/N CRDA1601 & Up

Chain Hangers Detail



Humdinger Equipment, Ltd.

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480 Parts Book

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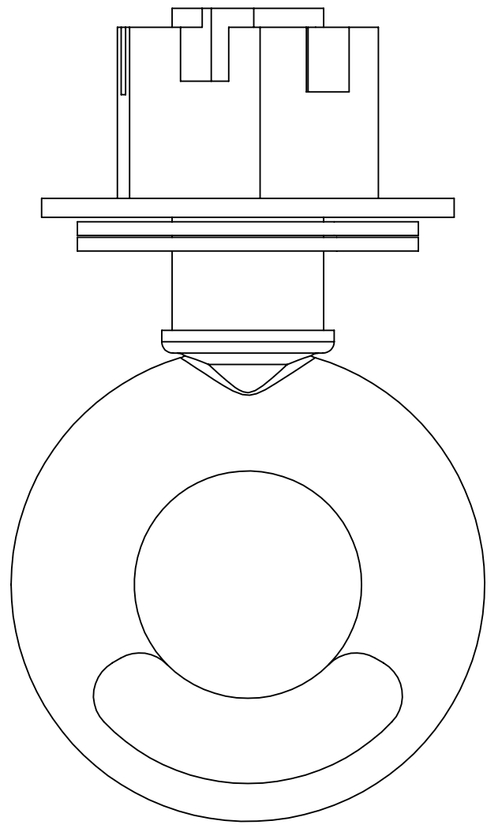
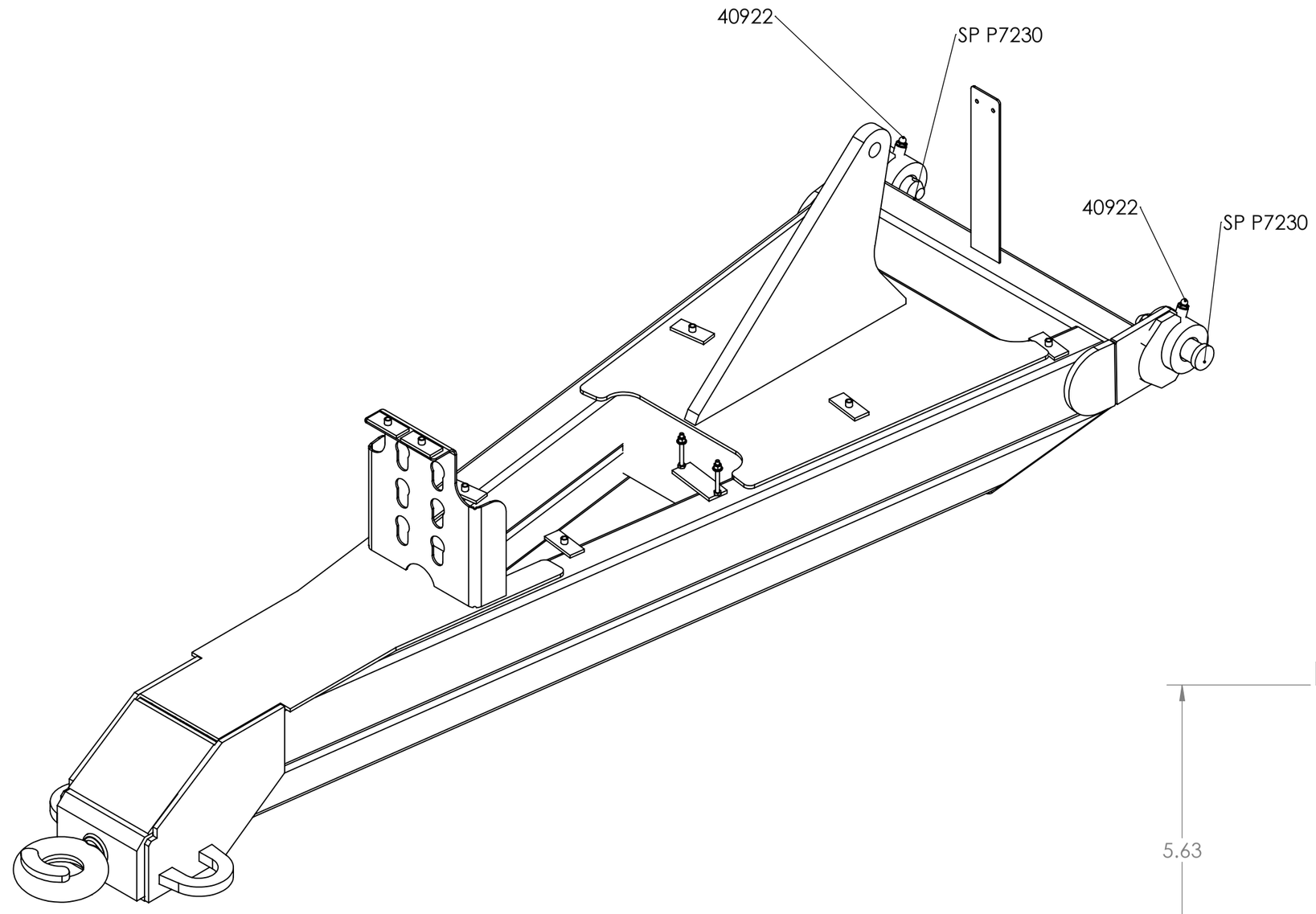
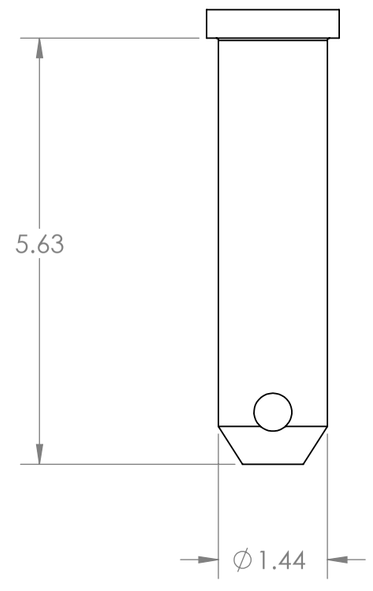
S/N CRDA1601 & Up

Hydraulic Cylinders



Lunette Ring Assembly is 81769





SP P7230

S/N CRDA1601 & Up

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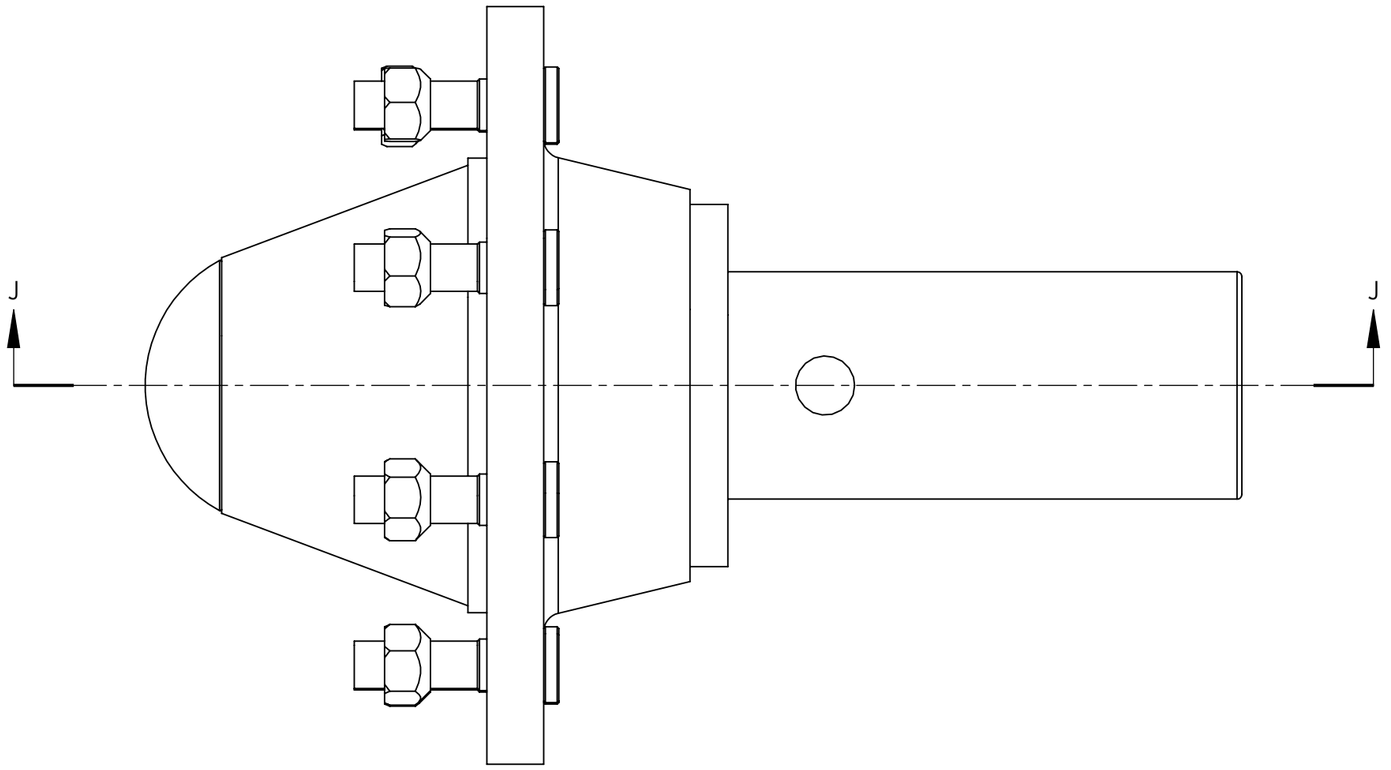
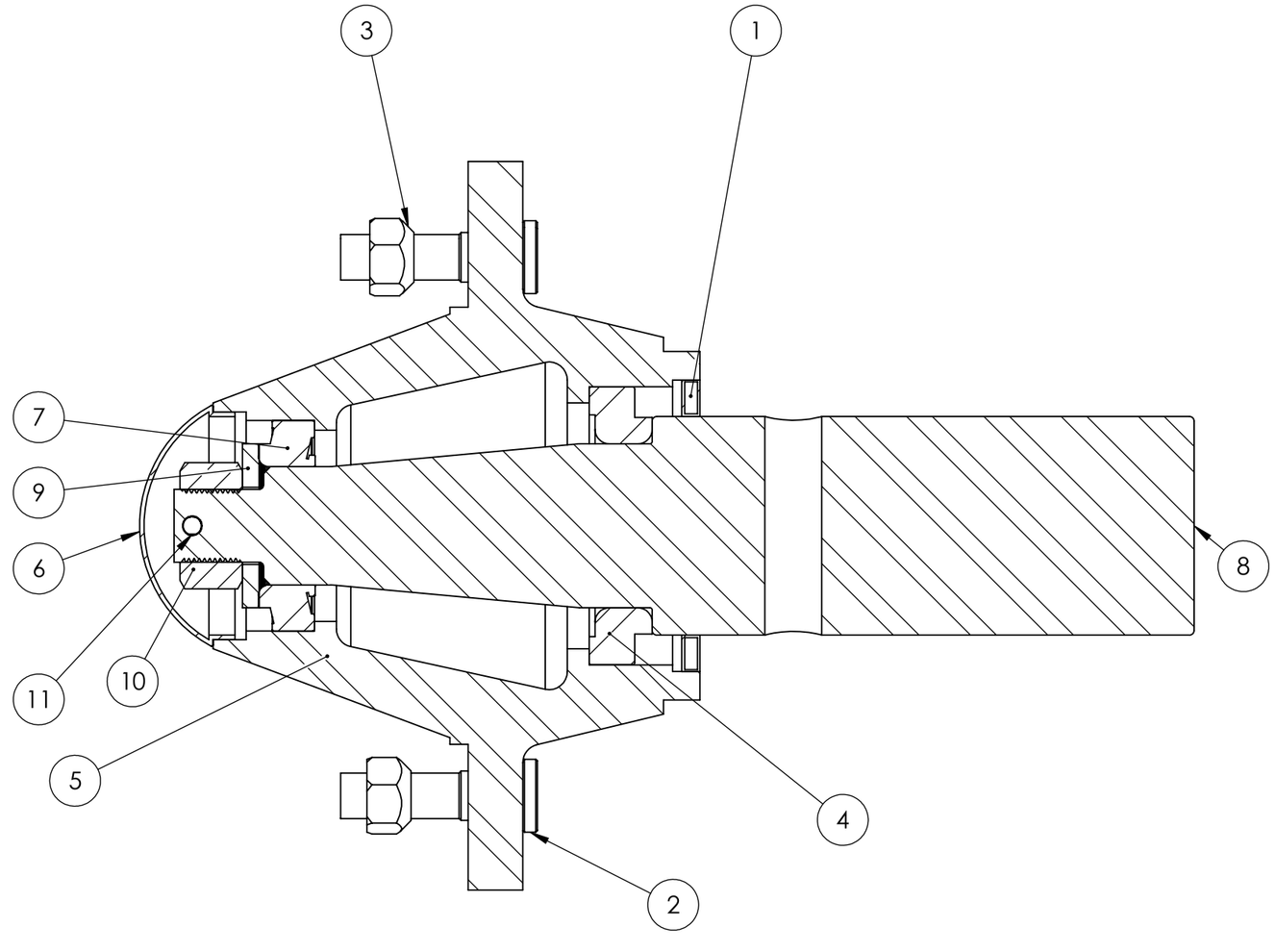
480 Parts Book **5**

Tongue



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	946486	seal for 75-8 c/r29968 4" OD	1
2	943541 Northfield	Wheel stud 5/8-18 G8 1 5/8 thd length 2 1/2 Overall	8
3	913557 northfield	5/8-18 Wheel Nut	8
4	387AS-382A	Inner 75 bearings 910358 Cup/ 910359 Cone	1
5	221189	Hub	1
6	909912	909912 Dust cap for 60 and 75	1
7	LM501310-LM501349	outer cup 910272 and cone 910273 for 60 and 75 hubs	1
8	281911	Spindle 75-8	1
9	913624	60/75 washer heavy	1
10	912959	northfield special nut	1
11	905941	northfield cotter	1



SECTION J-J
SCALE 1 : 2

Humdinger Equipment, Ltd.

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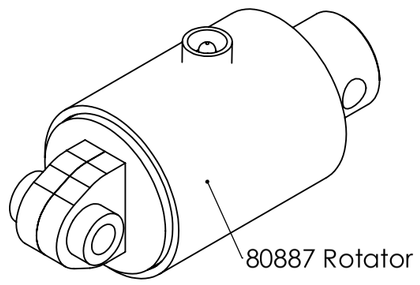
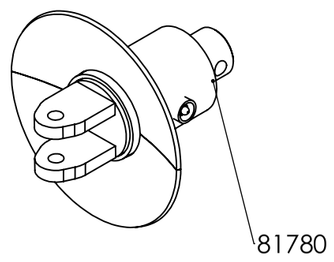
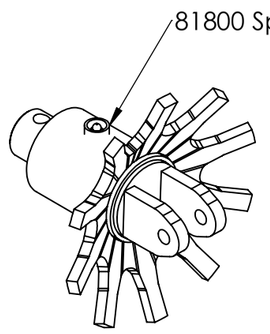
480 Parts Book **6**

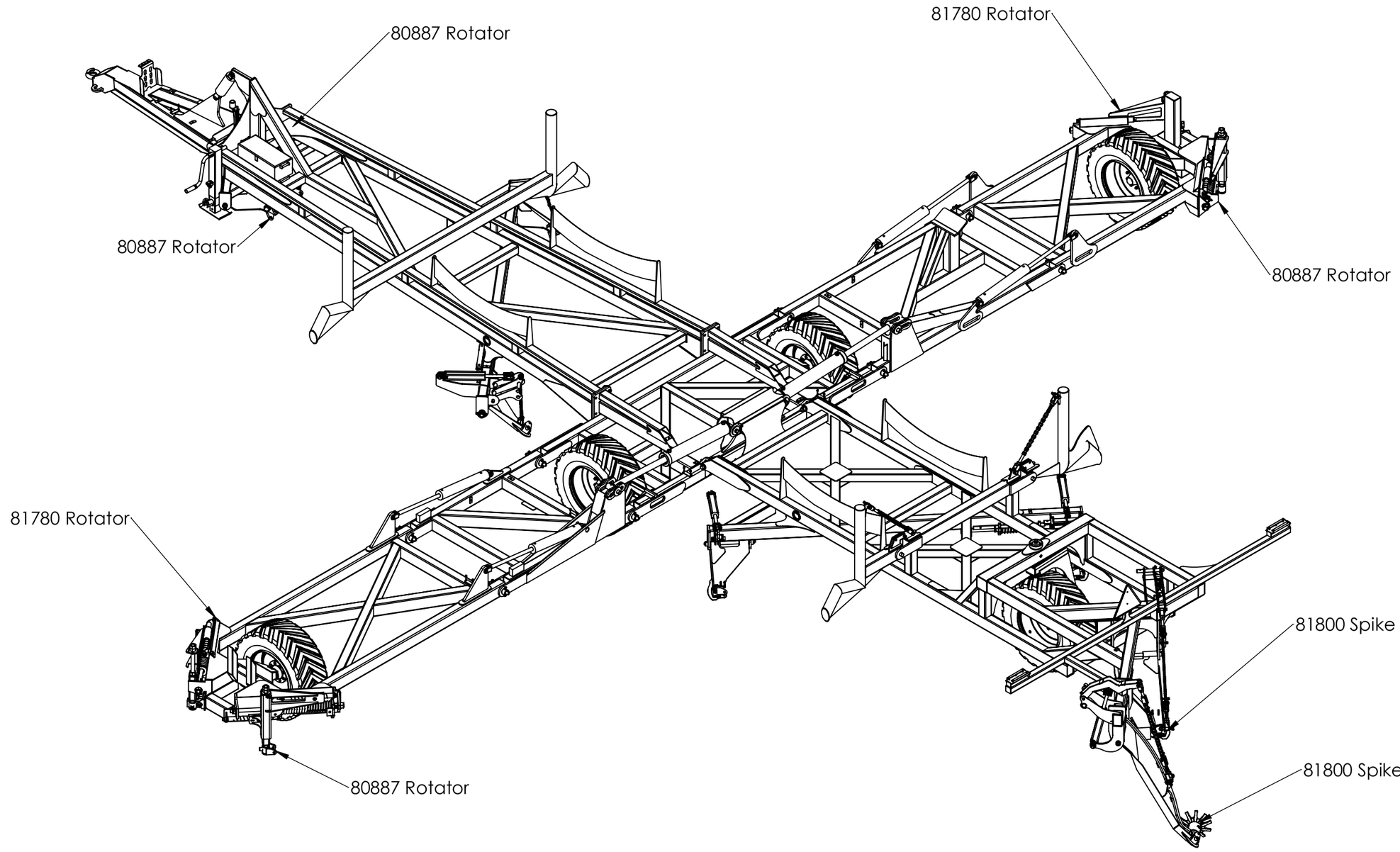
S/N CRDA1601 & Up

Hub & Spindle









Humdinger Equipment, Ltd.

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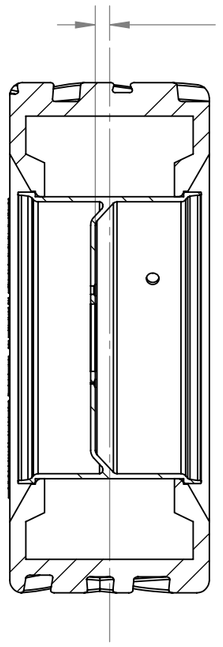
480 Parts Book 7

Rotators & Locations

S/N CRDA1601 & Up



SECTION L-L
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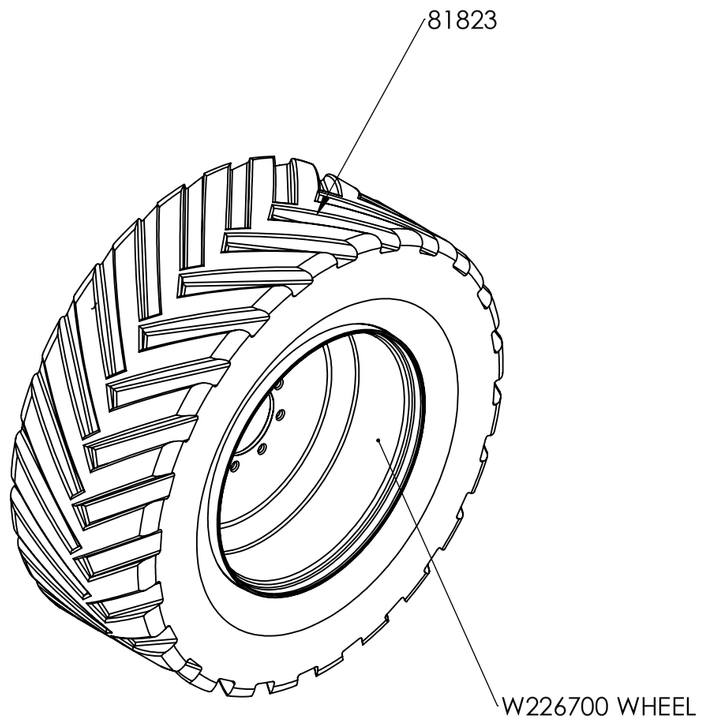

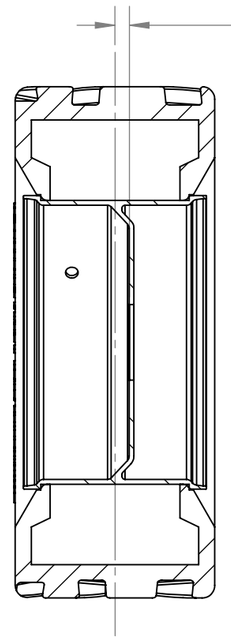

SECTION M-M
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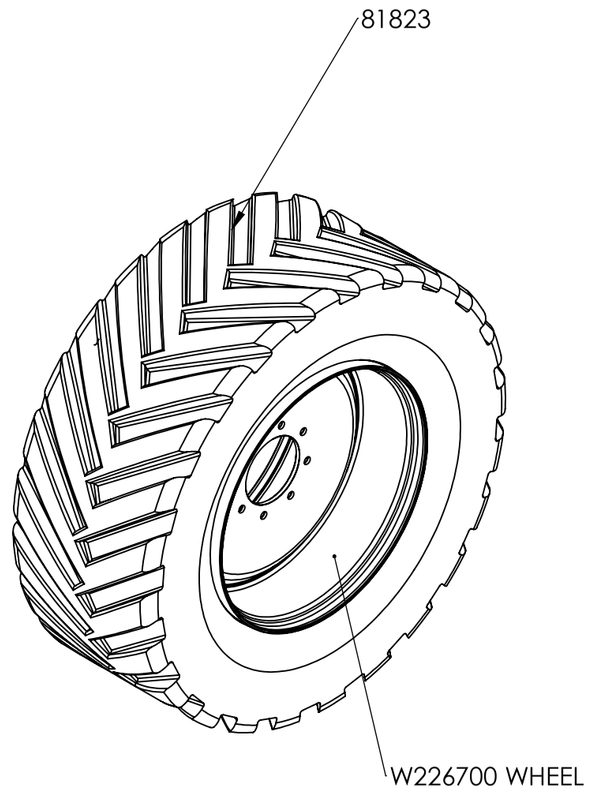
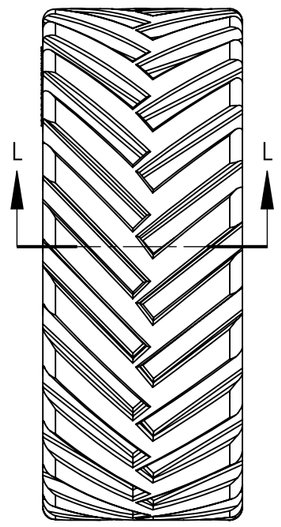
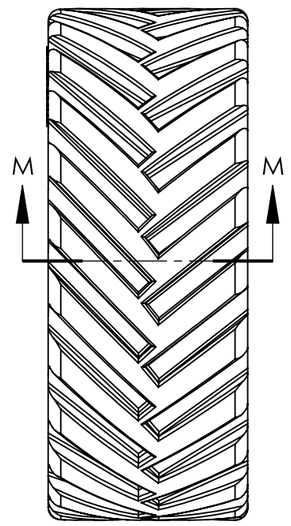




Left Hand Mount



Right Hand Mount

Note That the Direction of the Off Set Determines a Right or Left Hand MountedAssembly

Humdinger Equipment, Ltd.

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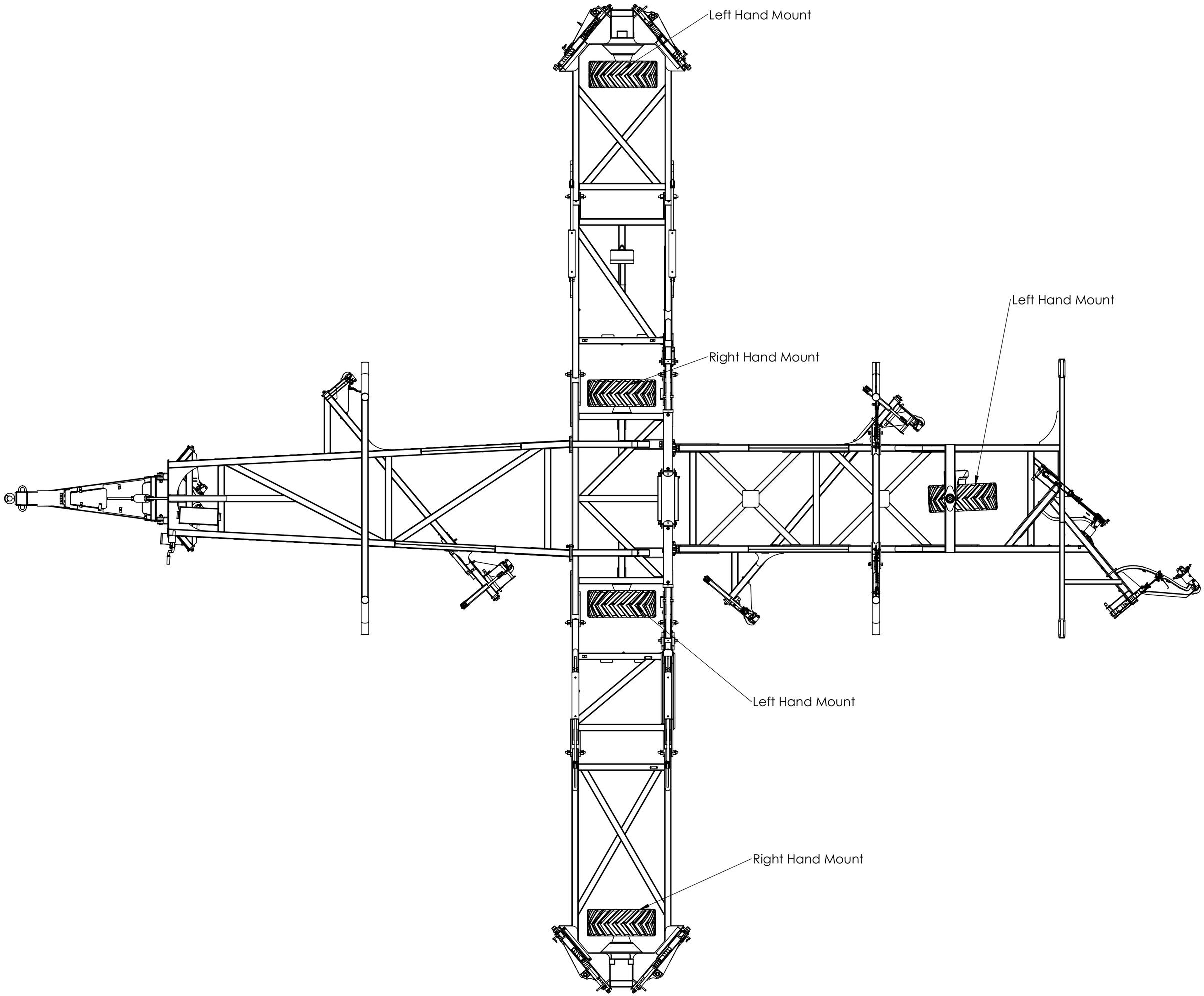
480 Parts Book **8**

S/N CRDA1601 & Up

Tire and Wheel Assembly



Humdinger Equipment, Ltd.

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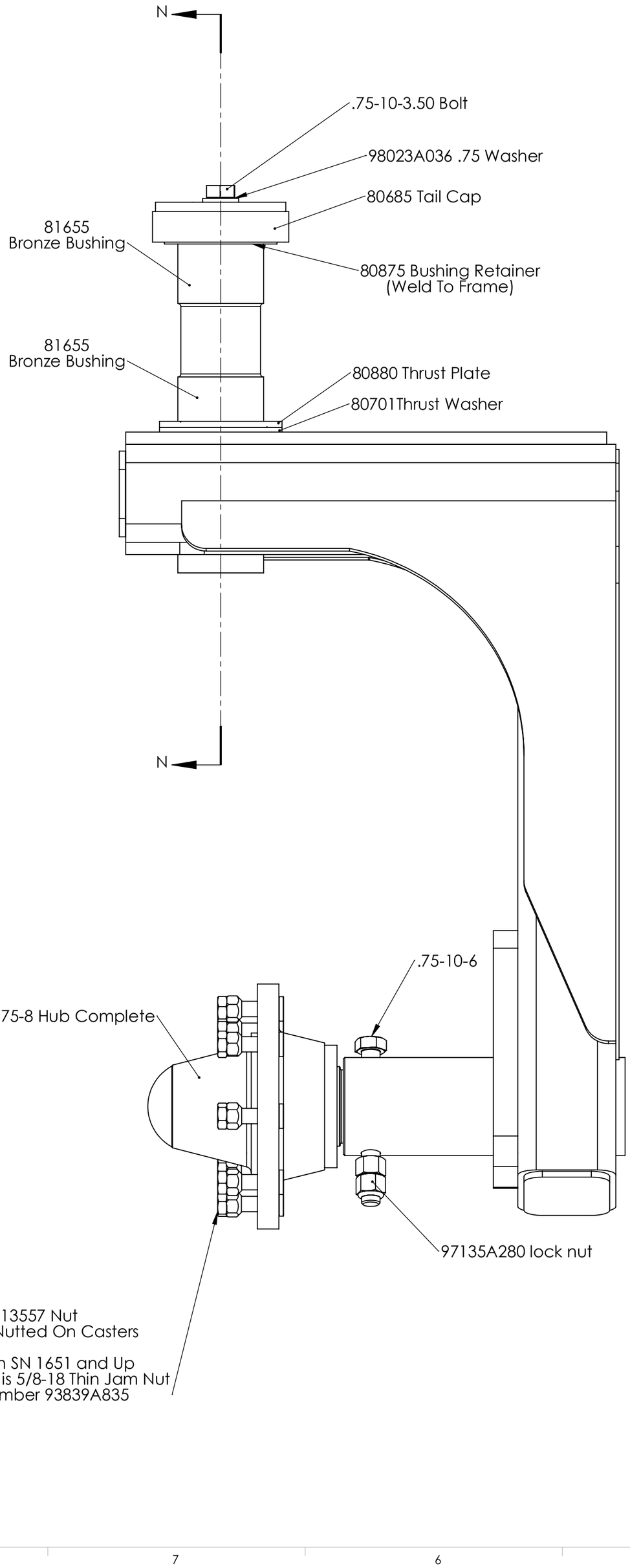
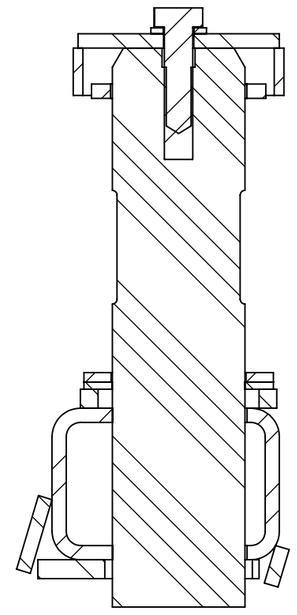
480 Parts Book **9**

S/N CRDA1601 & Up

Wheel Assembly Locations





SECTION N-N
SCALE 1 : 4

Humdinger Equipment, Ltd.

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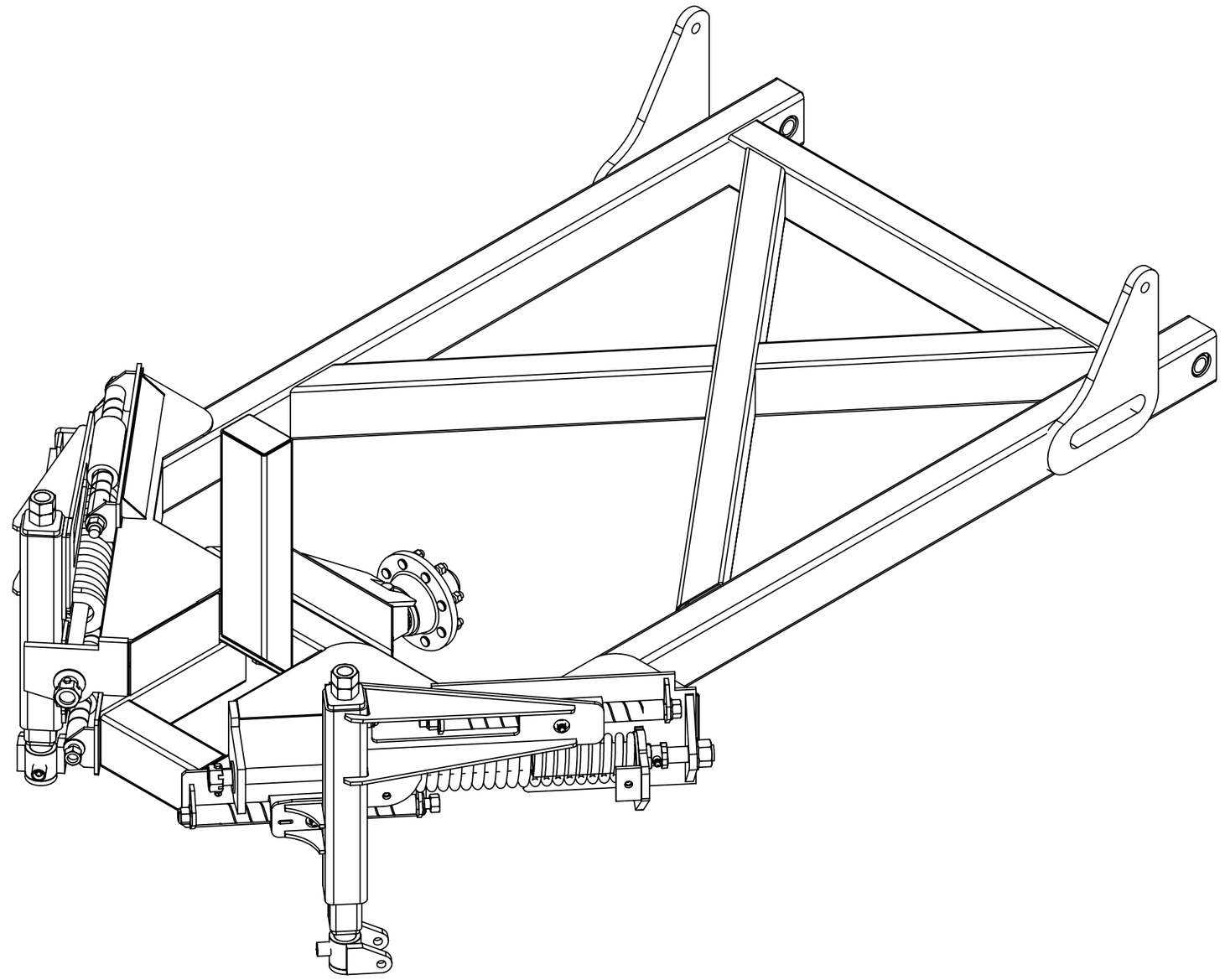
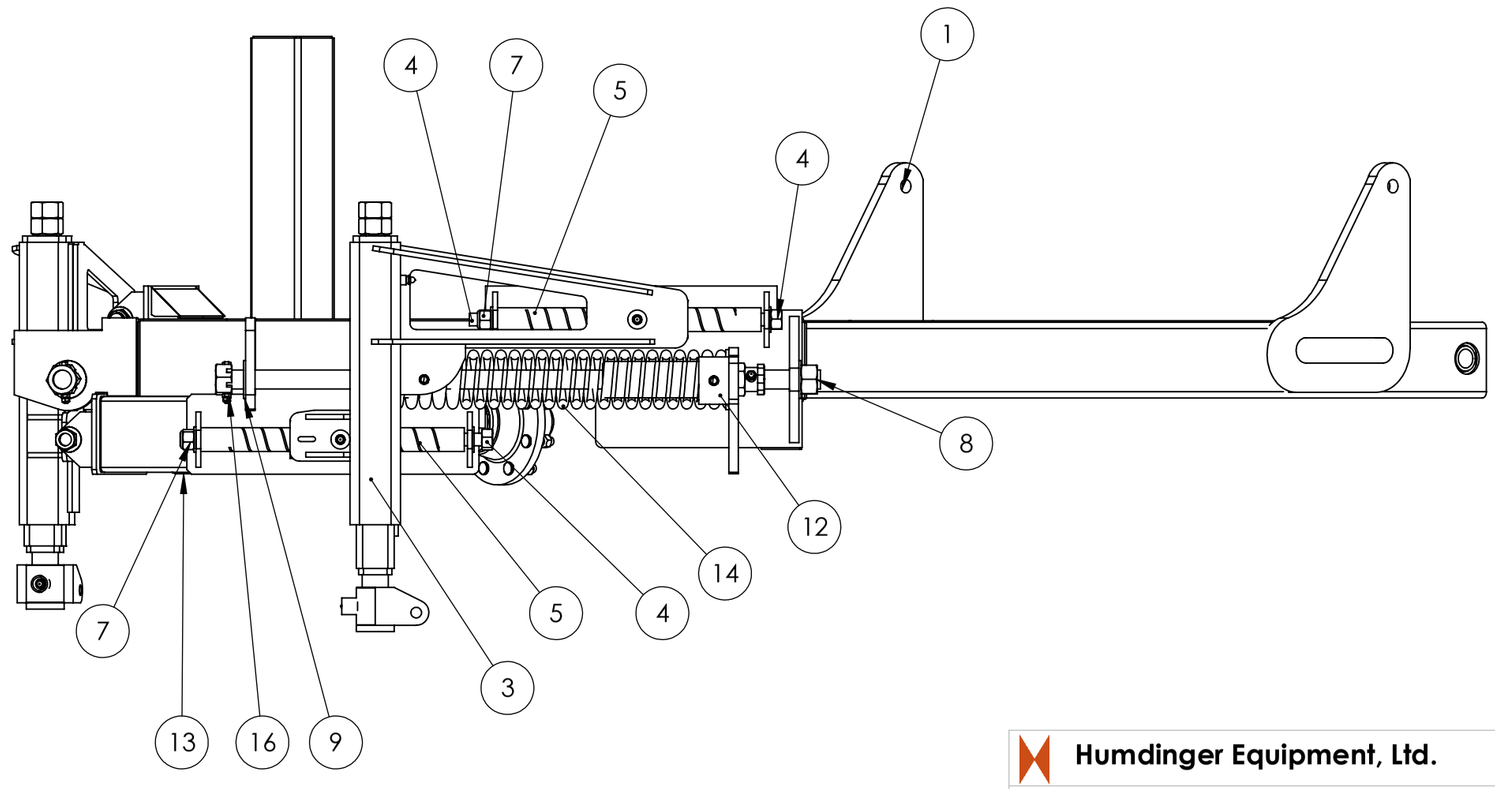
480 Parts Book **10**

S/N CRDA1601 & Up

Caster Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	81775 480 Wing Short	PS Outer Wing	1
2	81790	Chain adjustment group Roller lf rr	1
3	81781	Chain adjustment group Roller lf rr	1
4	81484	1 INCH ROD	4
5	81368	Bar - tensioner Slider	4
6	98023A038	1" Grade 8 Washer	8
7	97135A038	1-8 inserted nylon locknut	4
8	81483		2
9	40478	90108A041 1 1/2 flat washer	4
10	95030A370	1 1/2-6 Slotted Nut	2
11	91257A636		2
12	81293	Copression Plate - Spring	1
13	81252	Compression Plate - Spring	1
14	81251	Spring 3.170x24x.5310	2
15	80997	Spring Preset Bar 3/4 laser	1
16	90630A110	3/8 inch lock nut nylon	4





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480 Parts Book **11**

S/N CRDA1601 & Up

Chain Adjusters