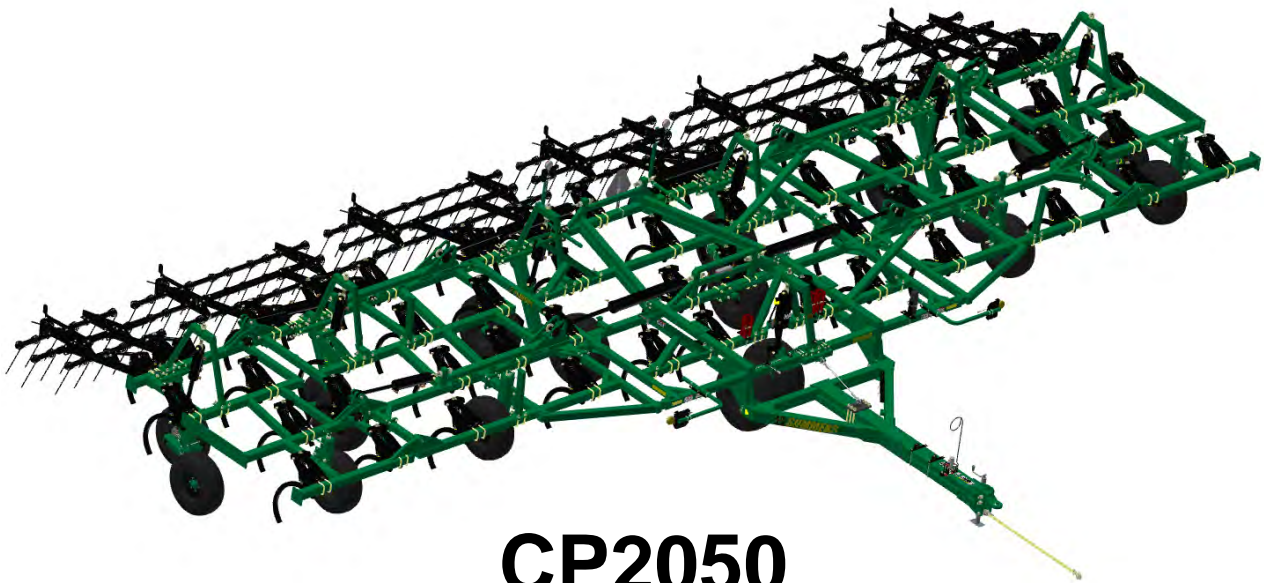


# **SUMMERS<sup>®</sup>**

## Operator's Manual



### **CP2050** (5 Section Superchisel)

#### **IMPORTANT**

THE OPERATOR IS RESPONSIBLE  
FOR ADJUSTING THE MACHINE SINCE  
MACHINE DOES NOT COME "FIELD  
READY" FROM FACTORY.



#### **CAUTION**

READ & UNDERSTAND OPERATOR'S  
MANUAL BEFORE USING MACHINE.

*See [www.summersmfg.com](http://www.summersmfg.com) for latest version of all Summers Operator's Manuals.*

**SUMMERS MANUFACTURING CO., INC.**

WEB SITE: [www.summersmfg.com](http://www.summersmfg.com)

DEVILS LAKE, NORTH DAKOTA 58301

(701) 662-5391



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## Preface

This manual is intended for use with CP2050 Chisel Plow for Summers® Manufacturing Company, Inc.

This book is composed of these basic sections: Safety, Assembly, Operation & Maintenance, Troubleshooting and Parts. The assembly section provides complete instructions for the proper assembly of your Summers Chisel Plow. The Operation & Maintenance section provides information for the proper operation and maintenance of your Summers Chisel Plow. A complete Parts breakdown is provided in the Parts section.

Parts are referenced in each drawing with the Summers Manufacturing part number. Use this part number when ordering replacement parts from your Summers dealer. See the back section of the manual for description of each part.

Reference to “Right” and “Left” in this book is determined when the machine is viewed from the rear.

## Disclaimer

It is the policy of this company to improve its products whenever possible and practical to do so. We reserve the right to make changes or improvements in the design or construction of parts at any time without incurring the obligation to install such changes on products previously delivered.

Summers Manufacturing Company, Inc. strongly recommends that each Chisel Plow operator READ and UNDERSTAND the Operator’s Manual before using the machine. In addition, the Operator’s Manual should be REVIEWED at least Annually thereafter.

Scan code to the right for the latest version of all Summers Operator’s Manuals.



## Contact Information

Summers Manufacturing Company, Inc.

103 Summers St. NW

Devils Lake, ND 58301

Toll Free: 1-800-732-4392

Local: 1-701-662-5391 (Devils Lake, ND)

1-605-226-3644 (Aberdeen, SD)

[www.summersmfg.com](http://www.summersmfg.com)

## Owner Registration Information

Bring this information when ordering parts (Serial Number is located at front of Chisel by hitch).

Name \_\_\_\_\_

Size \_\_\_\_\_

Address \_\_\_\_\_

Serial Number \_\_\_\_\_

City \_\_\_\_\_

(located by the hitch)

State/Prov. \_\_\_\_\_

Date Purchased \_\_\_\_\_

Mail Code \_\_\_\_\_

Dealer \_\_\_\_\_

# WARRANTY

---

Summers warrants only products of its manufacture against operational failure caused by defective materials or workmanship which occur during normal use within 36 months from the date by the end user from Summers' dealer.

Summers' obligation is to replace, free of charge, any part of the product that Summers inspection shows to be defective excluding transportation charges to Maddock, ND or Devils Lake, ND and return and also excluding all transportation costs from Summers' dealer to the dealer's customer and all other costs, such as removal and installation expense.

Summers shall not be liable for loss of time, manufacturing costs, labor, material, loss of profits, consequential damages, direct or indirect, because of defective products whether due to rights arising under the contract of sale or independently thereof, and whether or not such claim is based on contract, tort or warranty.

Written permission for any warranty claim return must be first obtained from authorized Summers' personnel. All returns must be accompanied with a complete written explanation of claimed defects and the circumstances of operational failure.

Written warranty for all component parts used in the manufacture of Summers products is available upon request. Warranty of such component parts will be determined by said component manufacturer upon their inspection of the claimed defective part.

This express warranty is the sole warranty of Summers. There are no warranties, which extend beyond the warranty therein expressly set forth. The sales for products of Summers under any other warranty or guarantee express or implied is not authorized. This warranty voids all previous issues.

**Summers® Manufacturing Co., Inc.**  
Devils Lake, ND 58301

01/16

## Safety Information



This safety alert symbol is used to denote possible danger and care should be taken to prevent bodily injury. When you see this symbol it means ATTENTION, BECOME ALERT! and/or YOUR SAFETY IS INVOLVED!

**WARNING: Safe practices must be followed when working on or operating this equipment. All personnel involved must:**



- Read and understand the instructions and manuals for this machine.
- Be instructed in the safe use of tools and all lifting devices involved in the assembly of this equipment.
- Clear the area of all personnel not involved in the assembly of this machine.

## General Safety Practices

1. READ and UNDERSTAND the Operator's Manual before using any equipment. Review at least annually thereafter.
2. VERIFY all safety devices and shields are in place before using any equipment.
3. KEEP hands, feet, hair and clothing away from moving parts.
4. STOP engine, place all controls in neutral, set parking brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, maintaining or unplugging.
5. BE CAREFUL when working around high pressure hydraulic system.
6. DO NOT ALLOW RIDERS.

## Safety During Transportation

1. ONLY TOW at a safe speed. Use caution when making corners and meeting traffic.
2. USE safety chain between tractor drawbar and implement hitch when transporting on public roads.
3. ALWAYS use transport locks when transporting on public roads.
4. COMPLY with local lighting, marking and oversize regulations when transporting on highways.
5. FREQUENTLY check for traffic from rear, especially during turns.

# SAFETY

---

## Safety Decals



Indicates an immediate hazardous situation that will result in death or serious injury. The color associated with Danger is RED.



Indicates a potentially hazardous situation that could result in death or serious injury. The color associated with Warning is ORANGE.



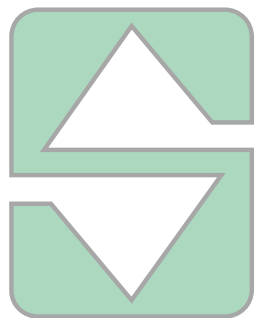
Indicates a potentially hazardous situation that may result in minor or moderate injury. It may also be used to alert against unsafe practices. The color associated with Caution is YELLOW.

The Notice decals and statements in this manual are to inform the operator of the correct fluids or operational practices for this machine. Failure to follow these notices will result in damage to the machine. The color associated with Notice is GREEN.

1. Keep safety signs clean and legible at all times.
2. Replace safety signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current sign.
4. Safety signs are available from your dealer's parts department or the factory.

### *How to install safety signs?*

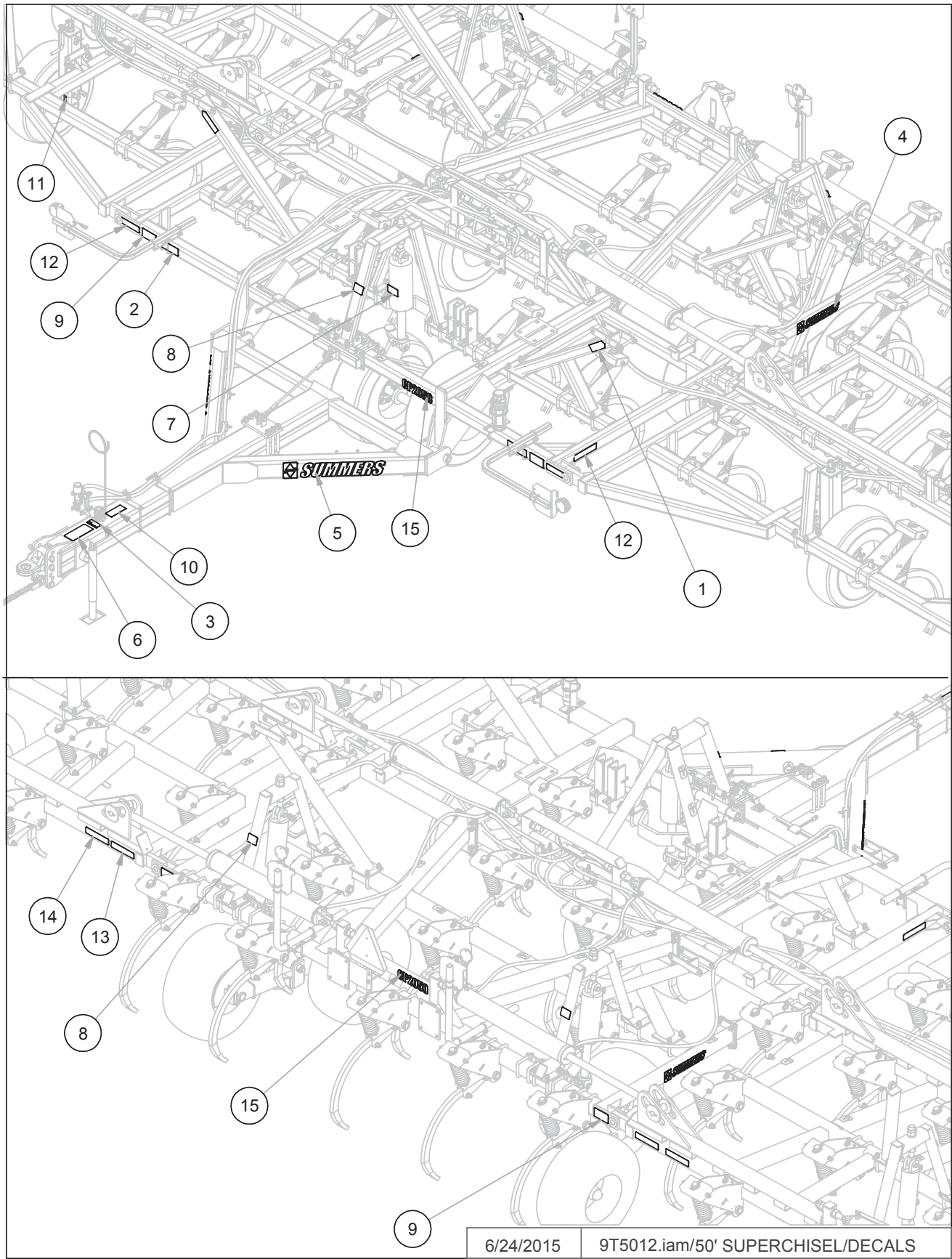
1. Be sure that the installation area is clean and dry.
2. Be sure the temperature is above 50° F (10° C).
3. Decide on the exact position before removing the backing paper.
4. Remove the smallest portion of the split backing paper.
5. Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
6. Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
7. Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.



***SUMMERS***®

# SAFETY

## Safety Decal Locations


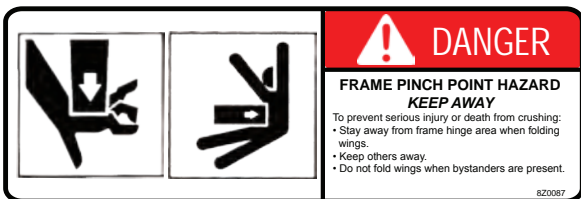





## Safety Decal Locations

The types of safety signs and locations on the equipment are shown in the illustrations below. Good safety requires that you familiarize yourself with the various safety signs, the type of WARNING and the area or particular function related to that area, that requires your SAFETY AWARENESS.

**IMPORTANT:** If Safety Signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

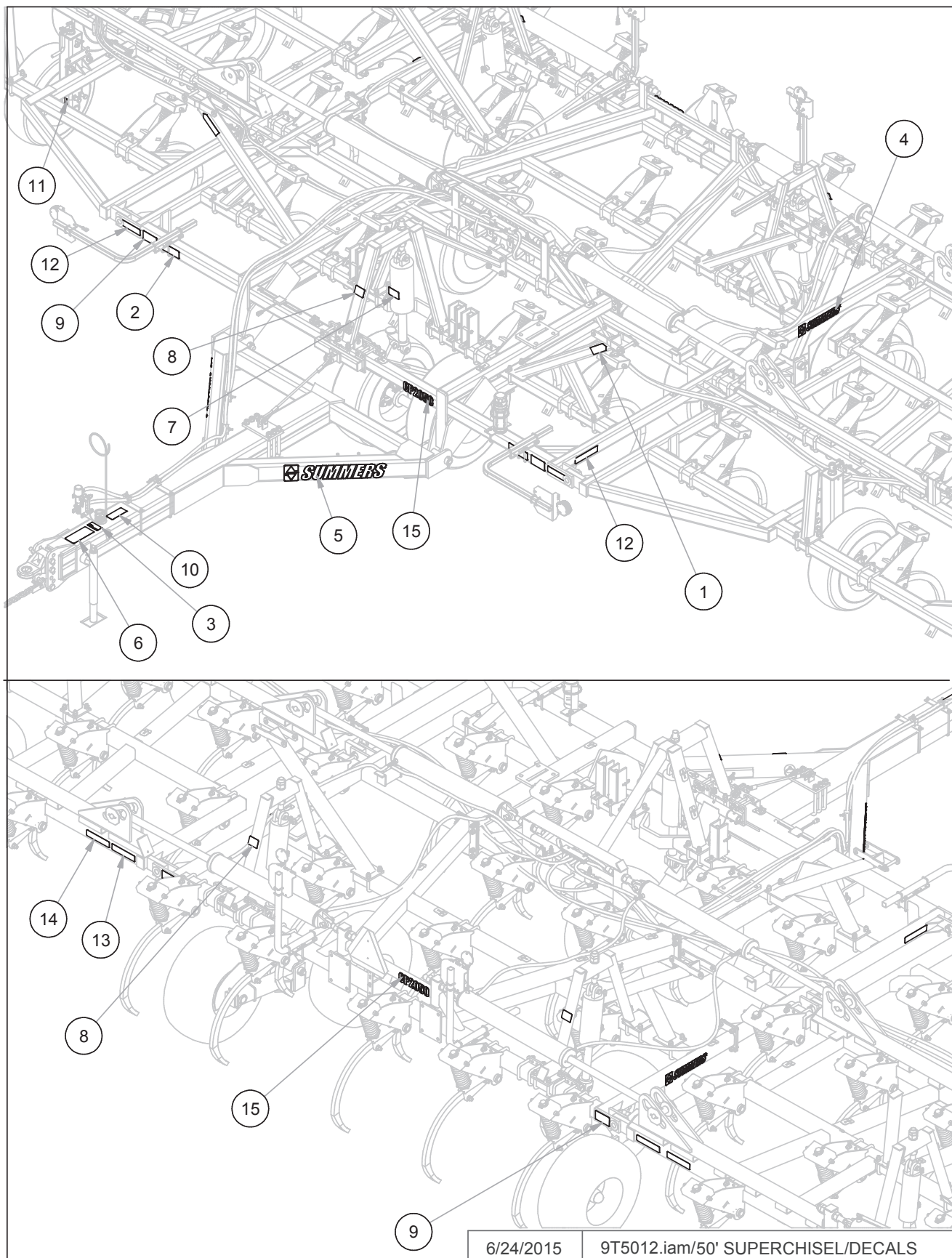
## Safety Decals

DECALS				
ITEM	PN	QTY	DESCRIPTION	
1	8Z0075	1	TRANSPORT LOCK DECAL	
2	8Z0087	4	PINCH POINT DECAL	
3	8Z0100	1	MADE IN THE USA DECAL	
4	8Z0202	4	3.5" SUMMERS DECAL	
5	8Z0204	2	5.5" SUMMERS DECAL	



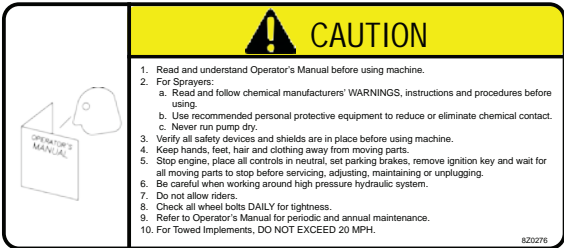
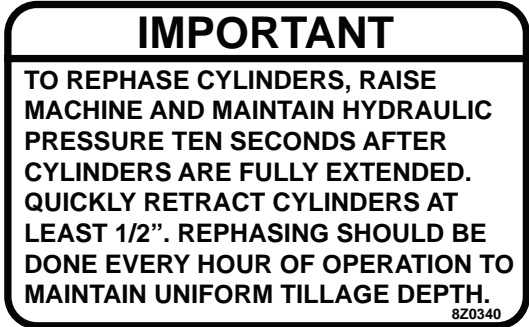


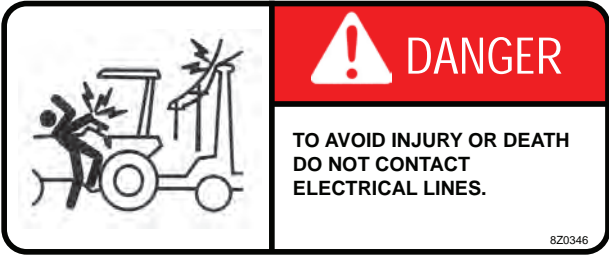
# SAFETY

## Safety Decal Locations (cont'd)



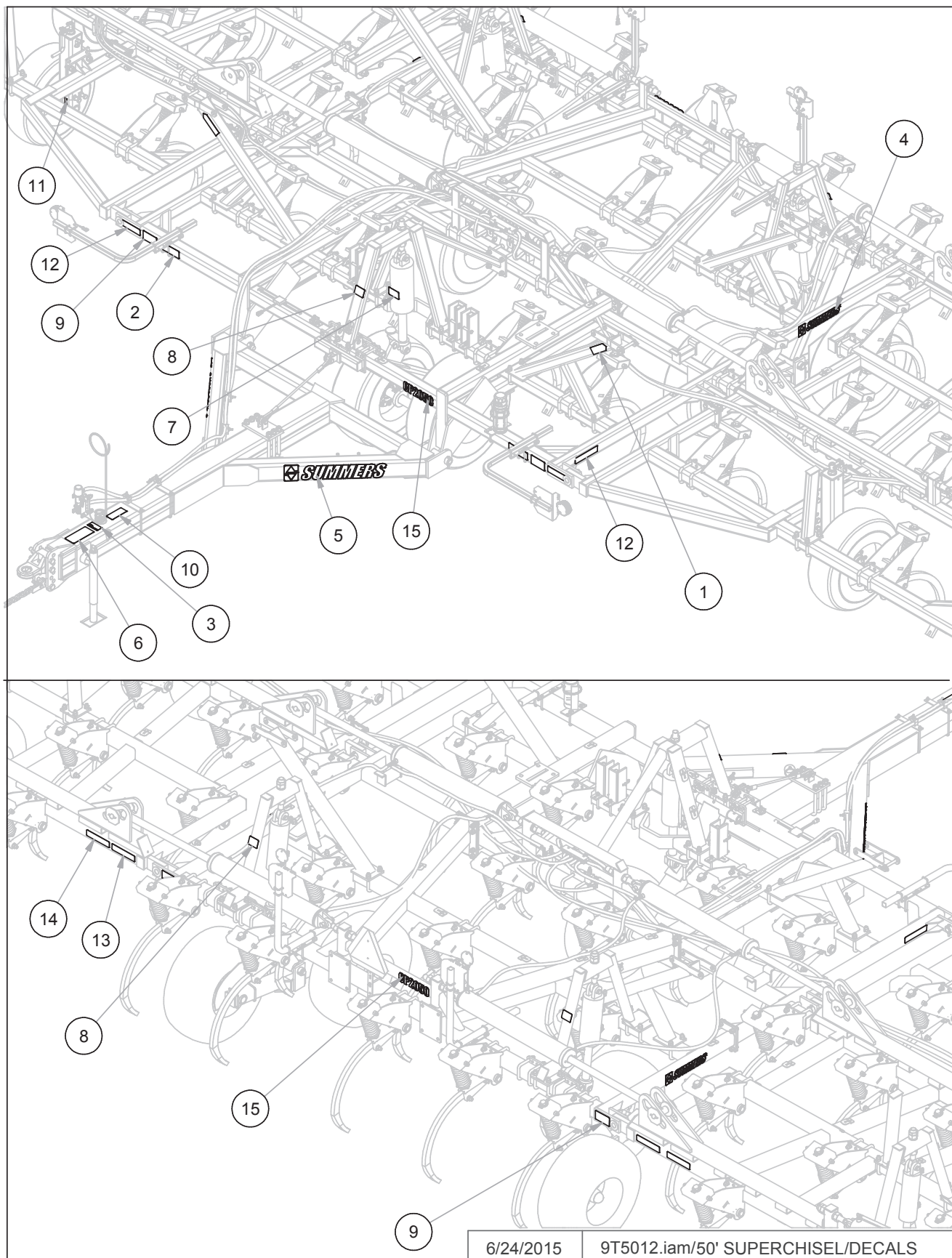


## Safety Decal Locations (cont'd)






6	8Z0276	1	GENERAL MACHINE CAUTION DECAL	 <p><b>CAUTION</b></p> <ol style="list-style-type: none"> <li>1. Read and understand Operator's Manual before using machine.</li> <li>2. For Sprayers:             <ol style="list-style-type: none"> <li>a. Read and follow chemical manufacturers' WARNINGS, instructions and procedures before using.</li> <li>b. Use recommended personal protective equipment to reduce or eliminate chemical contact.</li> <li>c. Never run pump dry.</li> </ol> </li> <li>3. Verify all safety devices and shields are in place before using machine.</li> <li>4. Keep hands, feet, hair and clothing away from moving parts.</li> <li>5. Stop engine, place all controls in neutral, set parking brakes, remove ignition key and wait for all moving parts to stop before servicing, adjusting, maintaining or unplugging.</li> <li>6. Be careful when working around high pressure hydraulic system.</li> <li>7. Do not allow riders.</li> <li>8. Check all wheel bolts DAILY for tightness.</li> <li>9. Refer to Operator's Manual for periodic and annual maintenance.</li> <li>10. For Towed Implements, DO NOT EXCEED 20 MPH.</li> </ol> <p>8Z0276</p>
7	8Z0340	1	REPHASING CYLINDERS DECAL	 <p><b>IMPORTANT</b></p> <p>TO REPHASE CYLINDERS, RAISE MACHINE AND MAINTAIN HYDRAULIC PRESSURE TEN SECONDS AFTER CYLINDERS ARE FULLY EXTENDED. QUICKLY RETRACT CYLINDERS AT LEAST 1/2". REPHASING SHOULD BE DONE EVERY HOUR OF OPERATION TO MAINTAIN UNIFORM TILLAGE DEPTH.</p> <p>8Z0340</p>
8	8Z0342	3	INSTALL CYL LOCKS DECAL	 <p><b>WARNING</b></p> <p>TO AVOID INJURY INSTALL CYLINDER LOCKS BEFORE TRANSPORTING OR SERVICING MACHINE.</p> <p>8Z0342</p>
9	8Z0344	4	WING DANGER DECAL	 <p><b>DANGER</b></p> <p>TO AVOID INJURY OR DEATH STAND CLEAR OF MACHINE WHEN WINGS ARE BEING RAISED AND LOWERED. MECHANICAL OR HYDRAULIC FAILURE CAN ALLOW WINGS TO FALL RAPIDLY.</p> <p>8Z0344</p>
10	8Z0346	1	ELECTROCUTION-TILLAGE EQUIP. DECAL	 <p><b>DANGER</b></p> <p>TO AVOID INJURY OR DEATH DO NOT CONTACT ELECTRICAL LINES.</p> <p>8Z0346</p>

# SAFETY

## Safety Decal Locations (cont'd)



**Safety Decal Locations (cont'd)**

11	8Z0348	4	GUAGE WHEEL DEPTH DECAL	
12	8Z0800	4	REFLECTOR - YELLOW - ADHESIVE BACKED	
13	8Z0805	4	REFLECTOR - RED- ORANGE ADHESIVE BACKED	
14	8Z0810	6	REFLECTOR - RED - ADHESIVE BACKED	
15	8Z2320	2	CP2050 DECAL	

**Safety Light Operation****Figure 1**

The Summers Safety Light Kit is equipped with a 7 pin connector which meets SAE J560 specification. To protect 7 pin connector, store in dust cap (8K8067) when not attached to towing vehicle.



## General Maintenance Safety Practices

**NOTE:** Read the entire section before beginning work.

### *Before You Begin*

- **YOU ARE RESPONSIBLE** for the safe maintenance of the chisel plow.
- **DO NOT ALLOW CHILDREN** or other unauthorized persons within the chisel plow operational area.
- **WEAR PERSONAL PROTECTIVE EQUIPMENT** which includes a hard hat, eye protection, work gloves and steel toed boots with slip resistant soles.
- **DO NOT MODIFY** the equipment or substitute parts in any way. Unauthorized modifications may impair the function and/or safety of the machine.
- **USE SUITABLE LIFTING DEVICE** for components which could cause personal injury.
- **BLOCK UP ANY RAISED PART** of the machine. Be sure machine is stable after blocking.
- **ALWAYS INSPECT LIFTING CHAINS AND SLINGS** for damage or wear.
- **BE SURE LIFTING DEVICE IS RATED TO HANDLE THE WEIGHT.**
- **STOP ENGINE**, place all controls in neutral, set parking brake, remove ignition key and wait for all moving parts to stop before servicing or adjusting.
- **BE SURE PRESSURE IS RELIEVED** from hydraulic circuits before servicing or disconnecting from tractor.
- **USE EXTREME CARE** when assembling, servicing or adjusting.

## General Assembly Instructions

1. READ AND UNDERSTAND Operator's Manual before assembly of machine.
2. Machine should be assembled in horizontal (field) position only.
3. If machine is to be assembled INDOORS, check that exit door is a MINIMUM OF 19'6" WIDE. Minimum height requirement is

<u>Machine Width</u>	<u>Height</u>
50'-54'	15'8"
56'-60'	17'8"

Shanks may be left off to reduce height and width requirement.

4. Reference to "RIGHT" and "LEFT" is determined when machine IS VIEWED FROM THE REAR.
5. Reference to "FORWARD" means TOWARDS THE TRACTOR.
6. Reference to "REAR" means AWAY FROM THE TRACTOR.

## Safety Alert Symbol



This symbol is an alert to the potential for personal injury. This symbol means

**ATTENTION! BECOME ALERT!**

**YOUR PERSONAL SAFETY IS INVOLVED!**

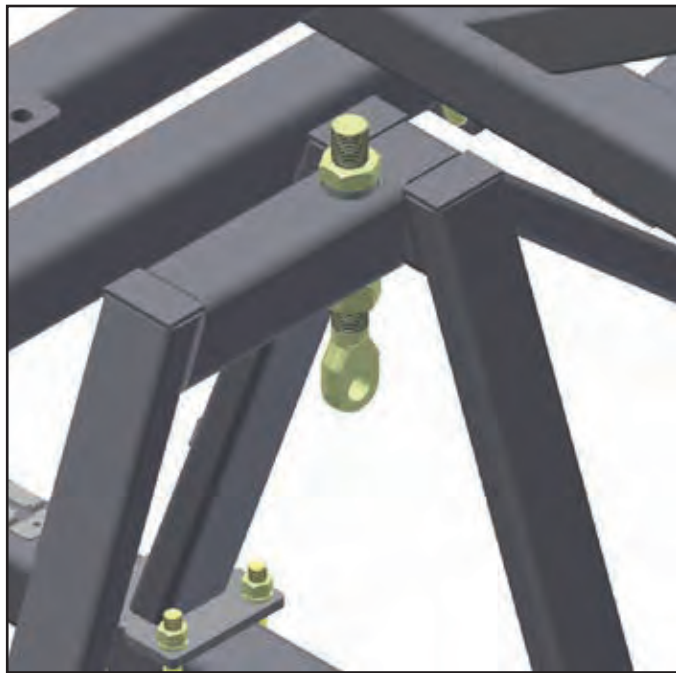
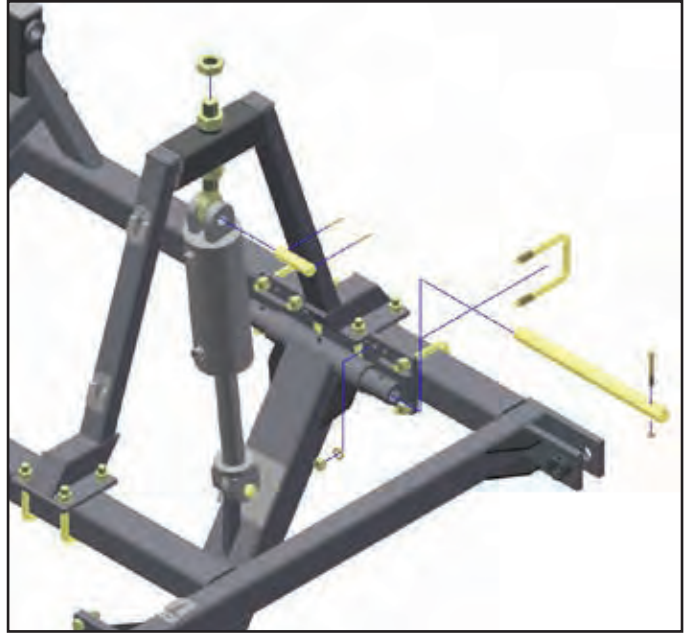


# ASSEMBLY - STANDARD CENTER

## Center Section

1. Place front and rear center section on floor with bolt plates facing each other.
2. Attach sections with 24 – 3/4"x2-1/4" bolts, lock washers and nuts.
3. Block center frames off the floor.
4. Position Rear cylinder attach brackets (8T4226) 62" from the center of the frame. Secure cylinder attach brackets with 3/4" u-bolts.

– Front cylinder attach bracket (8T4205) should be centered on the front of the frame.

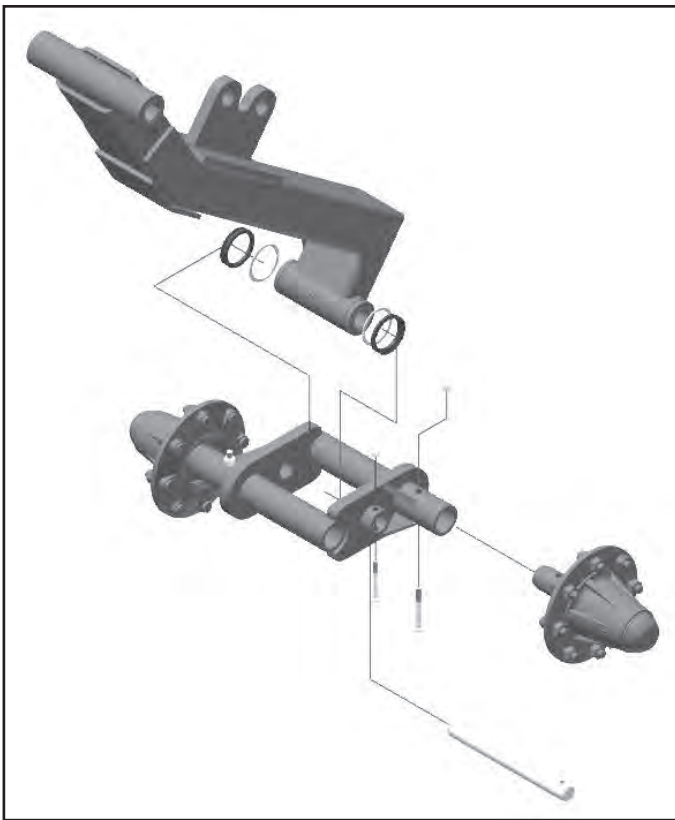


5. Insert eyebolts (8K1755) into each cylinder attach bracket. Tighten 1-1/2" nuts so the same amount of threads are above the top nut on all eyebolts. Ensure that cylinder attach holes are aligned when eyebolts are tightened.

6. All liftarms will be centered beneath cylinder attach brackets. Use 3/4" u-bolts for 4"x4" to attach liftarm pivots (8T4100) to frame. Slide pivot pin (8T3640) through liftarm and liftarm pivots. All lift-arms use the same pivot pin. Insert 7/16" x 3-1/2" bolt in retaining bolt holes. Secure with locknut.
7. Install walking tandem assemblies to bottom of rear liftarms. The left hand side of the center frame uses a left hand assembly (8T4166) and the right hand side uses a right hand assembly (8T4168). Slide pivot pin (8T3620) through walking tandem assembly and liftarm. Insert 7/16" x 3-1/2" bolt in retaining bolt holes. Secure with locknut. Install 8T4190 (left) and 8T4192 (right) mud guards as shown. Secure with 3/8" u-bolts and flange nuts.

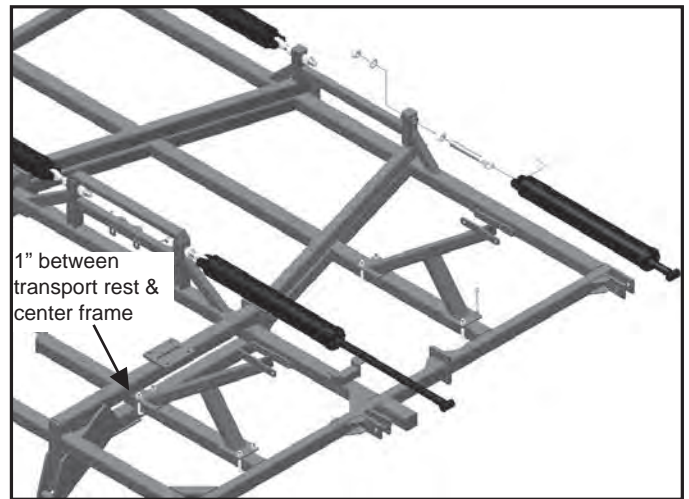


# ASSEMBLY - STANDARD CENTER



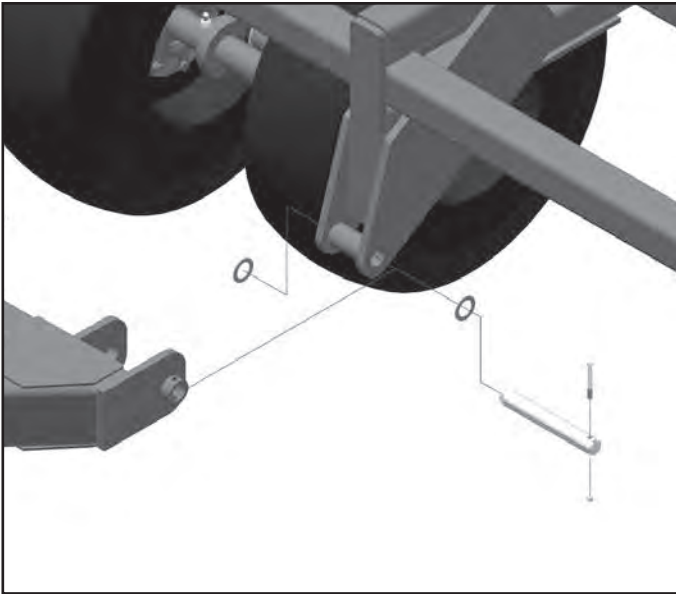
8. Install walking tandem assembly to bottom of front center lift arm. Check inside surface of walking tandem assembly (8T4132). A 3-3/4" diameter surface around the 1-1/2" dia. pivot hole must be smooth and burr-free. Remove any welding spatter or roughness prior to further assembly. Install snap rings (8K1920) past grooves of lower pivot tube. Install V-seals over lower pivot tube until solid side is against snap ring. Protect lip of V-seals during assembly. Install walking tandem assembly to the bottom of center liftarm. Mount so right axle is towards **front**. Insert pivot pin (8T3620) through walking tandem assembly and liftarm. Retain with 7/16" x 3-1/2" bolt and locknut. Push V-seals against walking tandem assembly and secure by placing snap ring into groove.

9. Hang cylinders in the appropriate location. Use pins and rollpins provided with cylinders. Use 5" x 10" (8T1050) on left hand side of center, 5-1/2" x 10" (8T1055) on right hand side of center, and 6" x 10" (8T1060) on center wheel assembly. The front center lift arm (8T4130) has two cylinder attach locations. If chisel plow will have a full set of mounted harrows, use rear cylinder attach hole. Cylinder attach location can be changed based on final adjustments. Connecting front center cylinder to rear hole will lower front end of chisel plow in transport position.
10. Install 8K1105S (8 bolt) axle and hub assembly into each walking tandem. Apply good quality anti-seize to axles before installation. Retain axle into receiver tube with 1/2" x 3-3/4" bolt and locknut.
11. Attach wheels onto hubs with 5/8" wheel nuts (torque required: 240 ft-lbs).
12. Attach wing transport locks to center frame with 3/4" u-bolts. *See below for location of front transport locks. Position rear transport locks at same distance from center.* Install Transport lock pins inside storage holes of transport locks.



13. Insert 1-1/2" x 10-3/8" eyebolts into wing lift cylinder attach base. Leave 1-1/2" nuts loose, they will need to be adjusted after wing is installed.
14. Attach wing lift cylinders to frame with pins and roll pins provided with cylinders. Four 5" x 36" cylinders (8K9650) are used.

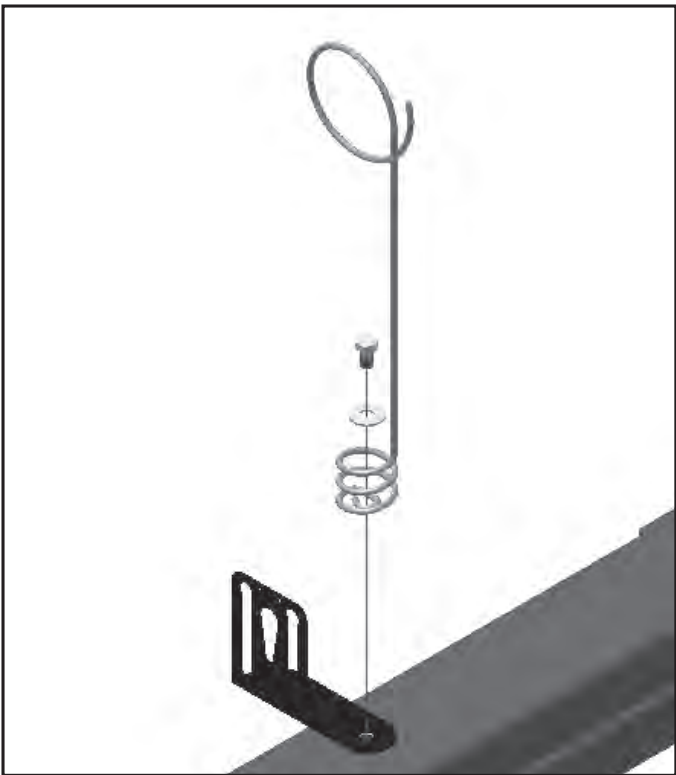
# ASSEMBLY - STANDARD CENTER



15. Attach hitch to center with 1-1/2" x 10-5/8" pins.

**NOTE:** Center with 1-1/2" ID 10 GA flat washers.

16. Install 7/16" x 3-1/2" retaining bolts through hitch pivot pins. Secure with locknuts.



17. Attach hydraulic hose holder and tip holder with 3/4" x 1-1/4" bolt and flat washer.

18. Attach hitch jack to jack spool.

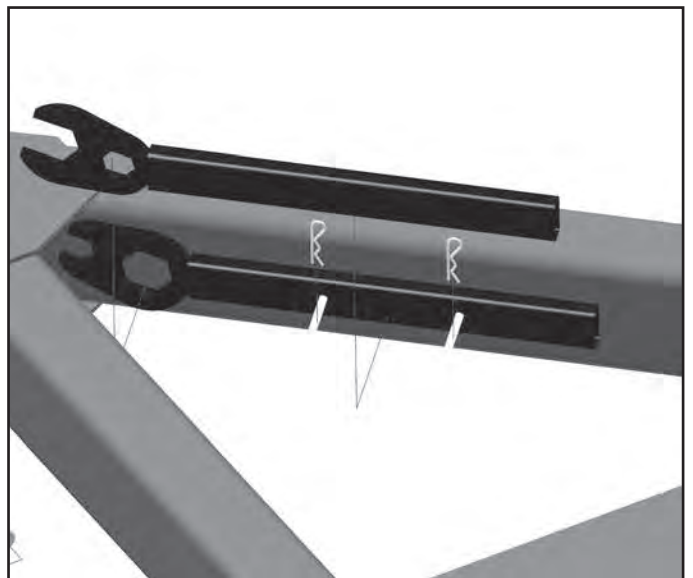
19. Remove blocks from under center frame and allow wheel assemblies to support machine. Block tires to prevent movement.

20. Add depth control cylinder locks and storage bases.

– Attach locks for rear cylinders by liftarm pivots located closest to center of machine.

– Locate lock for front center cylinder on front 4"x4" tube.

21. Install SMV sign mounting bracket and sign at center of rear rank.



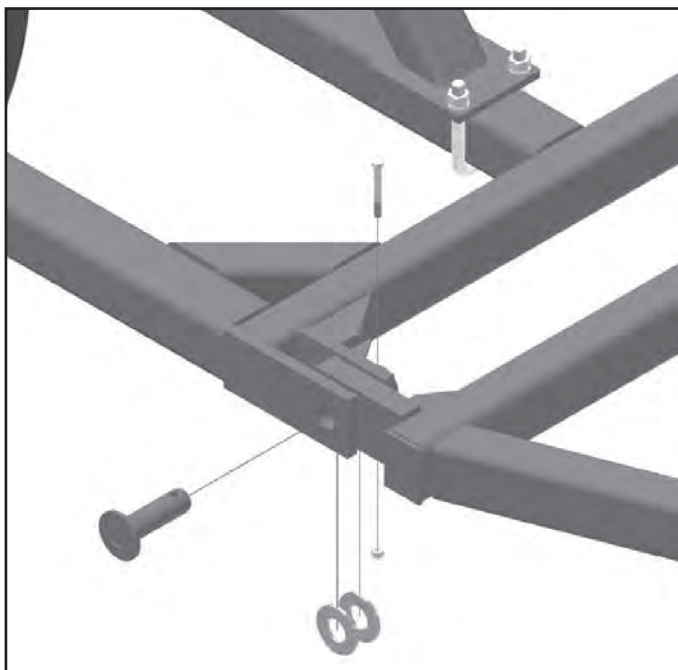
22. Place adjustment wrenches on clevis pins found on left hand of hitch. Retain with hair pin clips.

**NOTE:** It is recommended to set up both sides of machine at the same time.



# ASSEMBLY - STANDARD CENTER

## Part 1 Wing



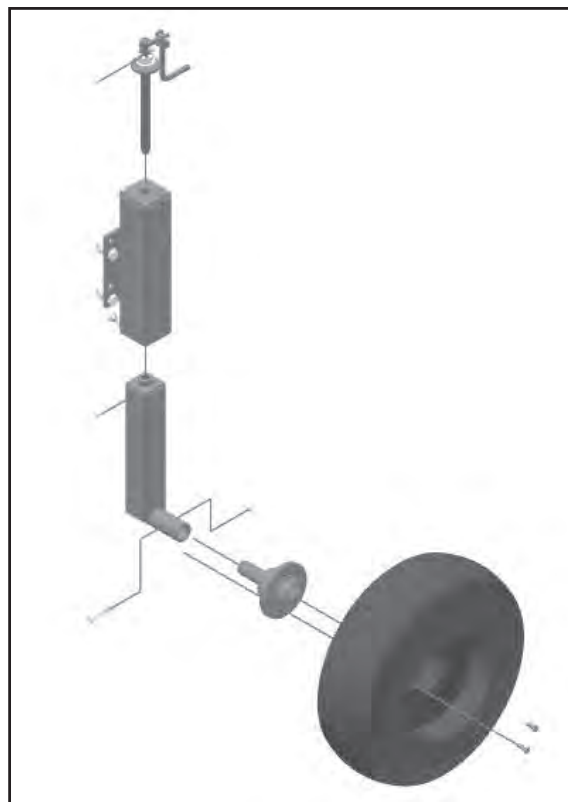
1. Attach wing to center section with pins, washers, bolts and locknuts.

– Washers are used to center wing in hinges and prevent shift.

2. Fasten cylinder attach brackets (8T4226) with 3/4" u-bolts. Bracket should be located 188" on 50'-54', 212" on 56'-60' from the center of the machine (See page 2-22 or 2-23).
3. Insert eyebolts (8K1755) into cylinder attach bracket. Tighten 1-1/2" nuts so the same amount of threads are above the top nut on all eyebolts. Ensure that cylinder attach holes are aligned when eyebolts are tightened.
4. Center liftarm under cylinder attach brackets. Use 3/4" u-bolts for 4"x4" tube to attach liftarm pivots (8T4100) to frame. Slide pivot pin (8T3640) through liftarm and liftarm pivots. Insert 7/16" x 3-1/2" bolt in retaining bolt holes. Secure with locknut.
5. Install walking tandem assembly to bottom of liftarm. The left hand wing will use a right hand assembly – 8T4168. The right hand wing will use a left hand assembly – 8T4166. Slide pivot pin (8T3620) through walking tandem assembly and liftarm. Insert 7/16" x 3-1/2" bolt in retaining bolt holes. Secure with locknut.

6. Hang cylinders in appropriate location. Use pins and roll pins provided with cylinders. Rod end of cylinder (positioned down) attaches to lift arm. Use 4.5" x 10" (8T1045) on left hand wing. Use 3.75" x 10" (8T1037) on right hand wing.
7. Install 8K1100 (6 bolt) axle and hub assembly into each walking tandem. Apply good quality anti-seize to axles before installation. Retain axle into receiver tube with 1/2" x 3-3/4" bolt and locknut.
8. Attach 11L x 15 wheels onto hubs with 9/16" wheel bolts (torque required: 170 ft-lbs).
9. Install gauge wheel support (8T4090) onto wing with 7/8" x 2-1/2" bolts.

*NOTE: STEPS 10 THROUGH 14 MAY HAVE BEEN PRE-ASSEMBLED AT FACTORY*



10. Apply anti-seize to jack bolt (8T6000) threads. Screw jack bolt into axle holder (8T4094) far enough to see hole on bottom of bolt through hole in axle holder. Insert 3/16" x 2" roll pin. Insert pin far enough so it will clear tube when rotated.
11. Place gauge wheel depth decal on axle holder. Locate decal 1" from bottom of 4"x4" tube. Make sure that decal faces the front of the machine. At-

# ASSEMBLY - STANDARD CENTER

tach decal off to one side of axle holder to avoid seam on support tube.

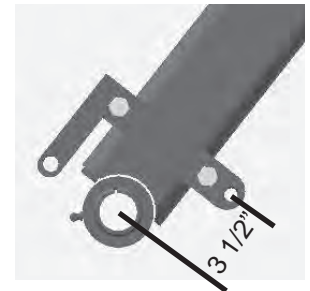
12. Slide axle holder and jack bolt into gauge wheel support. Slide 1-1/4" flat washer onto bolt and turn 1-1/4" slotted nut on. Do not tighten slotted nut.
13. Add gauge wheel screw top onto jack bolt. Insert 1/2 x 2-1/4" bolt into screw top and bolt. Secure with locknut.
14. Attach gauge wheel jack handle to screw top. Install 3/8 x 2" bolt in handle and screw top. Secure with locknut. Do not over tighten. Handle must pivot freely.
15. Check free operation of gauge wheel assembly. Loosen or tighten slotted nut for optimum performance of gauge wheel. Install 3/16" x 2" roll pin after slotted nut is adjusted properly.
16. Adjust clearance between 8T4090 and 8T4094 with 3/4" set bolts and jam nuts.
17. Install 8K1100 (6 bolt) axle and hub assembly into each receiver tube. Apply good quality anti-seize to axles before installation. Retain axle into receiver tube with 1/2"x3-3/4" bolt and locknut.
18. Attach 11L x 15 wheel to hub with 9/16" wheel bolts (torque required: 170 ft-lbs).

NOTE: It is recommended to set up both sides of the machine at the same time.

1. Insert eyebolts (8K1755) into part 2 wing lift cylinder bases. Leave eyebolts loose, they will need to be adjusted after charging hydraulic system.
2. Install four 4-1/2"x16" (8D9466) cylinders onto part 1 wings with pins provided.
3. Attach part 2 wing to part 1 wing with 8T3606 pins, 7/16" x 3-1/2" retaining bolts and locknuts. Grease zerks should point towards the front of the machine.
4. Fasten cylinder attach brackets (8T4224) with 3/4" u-bolts. Locate bracket 277" on 50'-54', 301" on 56'-60' from center of machine (See Page 2-22 or 2-23).
5. Insert eyebolts (8K1755) into cylinder attach brackets. Tighten 1-1/2" nuts so the same amount of threads are above top nut on all eyebolts.

6. Center liftarm under cylinder attach brackets. Use 3/4" u-bolts for to attach liftarm pivots (8T4100) to 4"x4" frame. The pivot closest to the center will be attached with 3/4" x 6-1/2" bolts and a trip assembly. Slide pivot pin (8T3640) through liftarm and liftarm pivots. Insert 7/16" x 3-1/2" bolt in retaining bolt holes. Secure with locknuts.
7. Install wheel spring liftarm support brackets onto bottom of liftarms. Use spring support (8T4177) on left wing liftarm. Use 8T4178 on right side. Install 1/2"x7-1/2" bolts through support bracket and 8T4174 bolt plate. (Third hole towards rear).

– **Locate bracket so cross bolts are 3-1/2" above center of pivot pin.**



8. Install walking tandem assembly to the bottom of the liftarm. The left hand wing will use a right hand assembly – 8T4168. The right hand wing will use a left hand assembly – 8T4166. Slide pivot pin (8T3620) through walking tandem assembly and liftarm. Insert 7/16" x 3-1/2" bolt in retaining bolt holes. Secure with locknut.
9. Hang cylinders in appropriate location. Use pins and roll pins provided with cylinders. Rod end of cylinder (positioned down) attaches to liftarm. Use 4" x 10" (8T1040B) on left hand wing. Use 3-1/2" x 10" (8T1035) on right hand wing.
10. Insert 8K1100 (6 bolt) axle and hub assembly into each walking tandem. Apply good quality anti-seize to axles before installation. Retain axle into receiver tube with 1/2" x 3-3/4" bolt and locknut. Install a right hand wheel spring support (8T4179) onto the front receiver tube on the right hand walking tandem. Install an 8T4178 on left hand walking tandem. Install an 8T4175 support on rear tubes of both walking tandems. Install 1/2" x 4-1/2" bolts to hold the spring support and axle onto the walking tandems. Secure with locknut.
11. Install eyebolts and springs between spring supports on each wheel assembly. **The spring assist assembly is designed to keep walking tandem parallel to the bottom of the chisel plow frame**

# ASSEMBLY - STANDARD CENTER

**when machine is raised up.** This will reduce interference when folding machine into transport. Adjust locknut on eyebolts so walking tandem stays in parallel position when wing is raised. Maximum extended length of spring is 11-3/8".

12. Attach 11L x 15 wheels onto hubs with 9/16" wheel bolts (torque required: 170 ft-lbs).

*NOTE: STEPS 14 THROUGH 18 MAY HAVE BEEN PRE-ASSEMBLED AT FACTORY.*

13. Install gauge wheel support (8T4090) onto wing with 7/8" x 2-1/2" bolts.

14. Apply anti-seize to jack bolt (8T6000) threads. Screw jack bolt into axle holder (8T4094) far enough to see hole on bottom of bolt through hole in axle holder. Insert 3/16" x 2" roll pin. Insert pin far enough so it will clear tube when rotated.

15. Place gauge wheel depth decal on axle holder. Locate decal 1" from bottom of 4"x4" tube. Make sure that decal faces the front of the machine. Attach decal off to one side of axle holder to avoid seam on support tube.

16. Slide axle holder and jack bolt into gauge wheel support. Slide 1-1/4" flat washer onto bolt and turn 1-1/4" slotted nut on. Do not tighten slotted nut.

17. Add gauge wheel screw top onto jack bolt. Insert 1/2" x 2-1/4" bolt into screw top and bolts. Secure with locknut.

18. Attach gauge wheel jack handle to screw top. Install 3/8" x 2" bolt in handle and screw top. Secure with locknut. Do not over tighten. Handle must pivot freely.

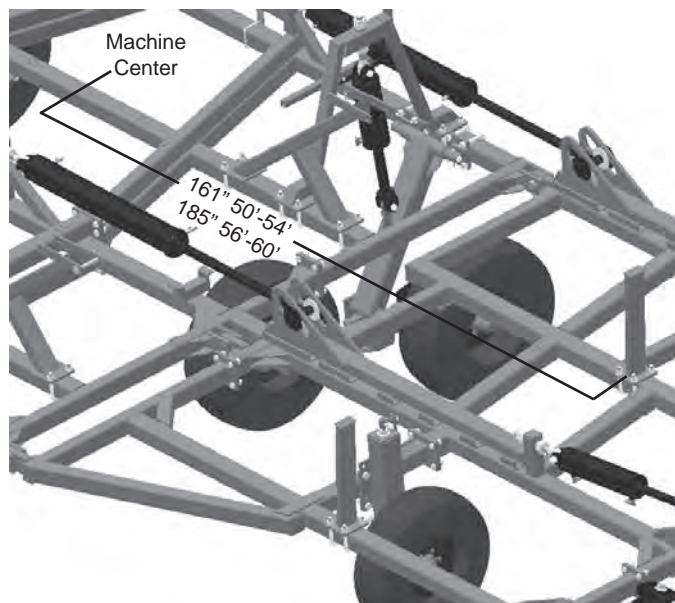
19. Check free operation of gauge wheel assembly. Loosen or tighten slotted nut for optimum performance of gauge wheel. Install 3/16" x 2" roll pin after slotted nut is adjusted properly.

20. Insert 8K1100 (6 bolt) axle and hub assembly into each receiver tube. Apply good quality anti-seize to axles before installation. Retain axle into receiver tube with 1/2" x 3-3/4" bolt and locknut.

21. Attach 11L x 15 wheel onto hub with 9/16" wheel bolts (torque required: 170 ft-lbs).

22. Fasten part 2 wing rests (8T4260) with 3/4" u-







bolts. Attach supports to part 1 wing on the first and third rank. Locate supports 161" on 50'-54', 185" on 56'-60' from center of the machine. Rotate supports so wing will rest flush when folded.

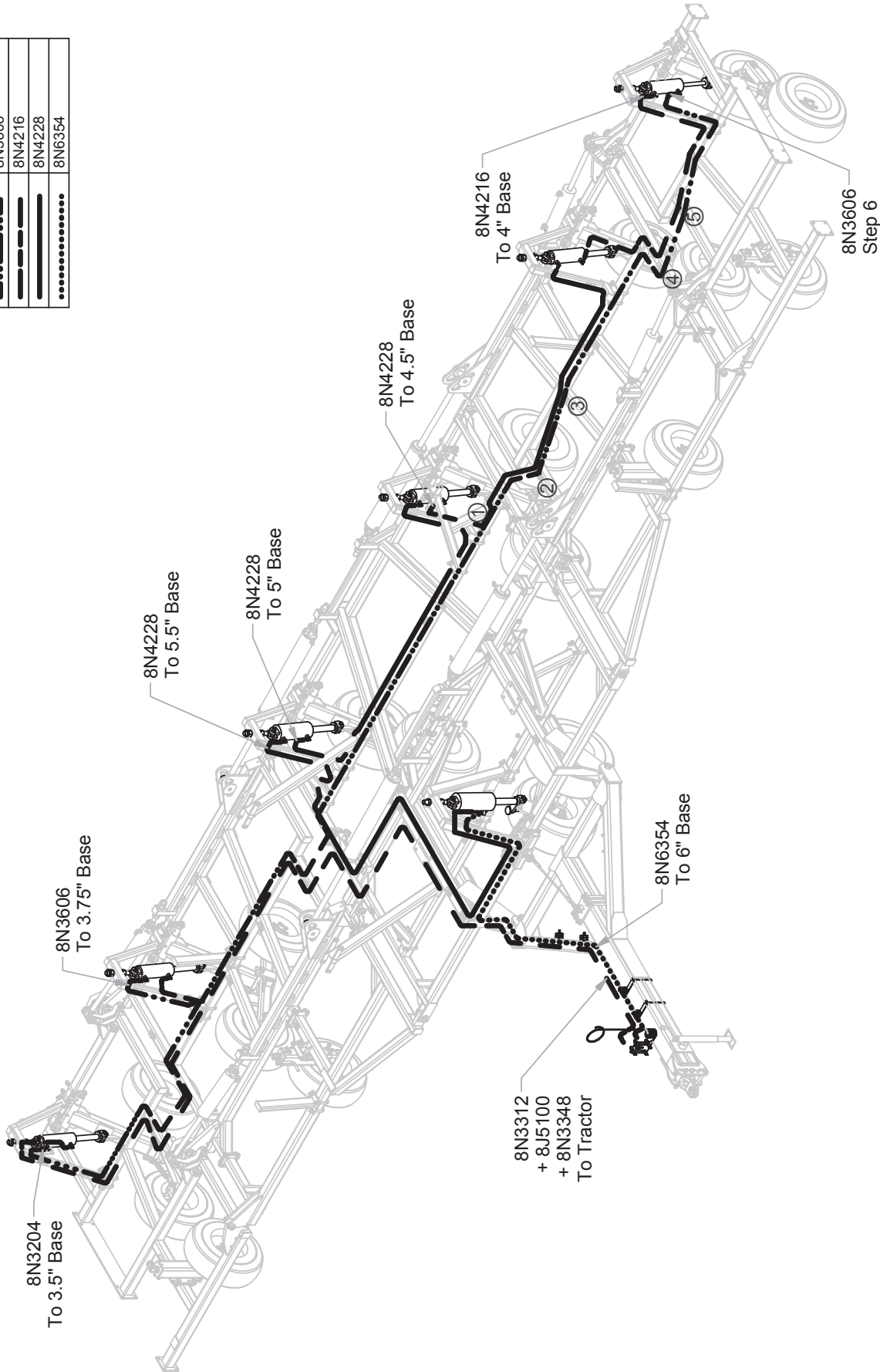


23. Install optional extensions as shown in shank layout drawings.

# ASSEMBLY - STANDARD CENTER

## 50'-54' MAIN LIFT HYDRAULICS

	8N3204
	8N3312
	8N3606
	8N4216
	8N4228
	8N6354



7/8/2015

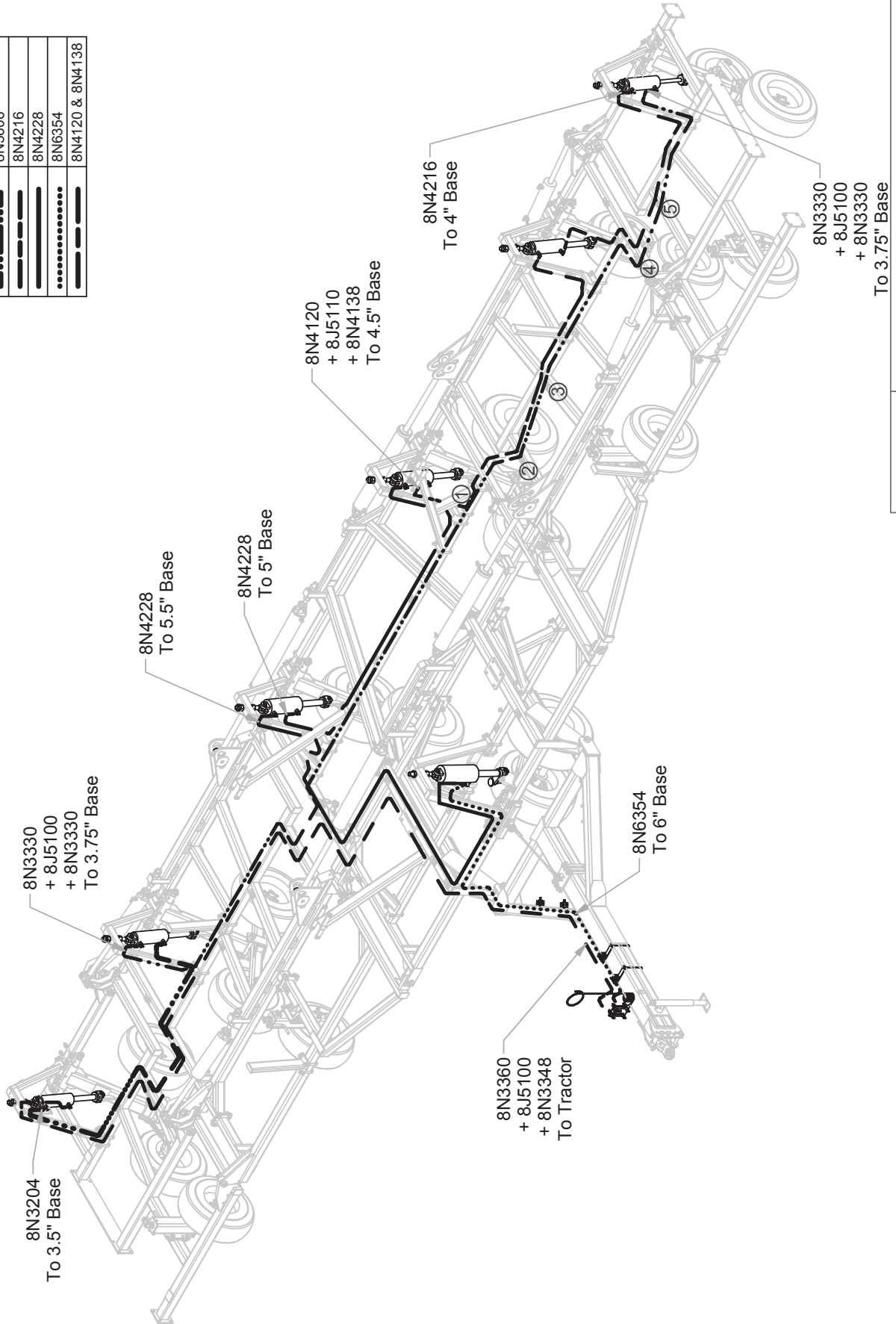
9T5012.iam/MAIN\_LIFT\_HYD



# ASSEMBLY - STANDARD CENTER

## 56'-60' MAIN LIFT HYDRAULICS

8N3204	8N3204
8N3312	8N3312
8N3606	8N3606
8N4216	8N4216
8N4228	8N4228
8N6354	8N6354
8N4120 & 8N4138	8N4120 & 8N4138



7/8/2015

MAIN\_LIFT\_HYD\_56-60'

# ASSEMBLY - STANDARD CENTER

## Main Lift Hydraulics

**NOTE:** The Summers Superchisel uses rephasing hydraulic depth control cylinders. Oil from the rod end of largest cylinder travels to the base end of second cylinder and so forth. It is very important that all hoses are routed correctly or machine will not operate properly.

**Helpful Hint:** Leave rubber backed clamps and plastic clamps loose at locations where depth control hoses will use the same bolts as wing lift hoses. (Wherever there is more than one clamp, wait to tighten until wing lift hoses are installed.)

1. It is best to start by routing the 3/4" hose for the 6" x 10" cylinder. Route hose along hitch frame. Use rubber-backed hose clamps provided. Do not tighten until routing is complete. Rubber backed clamps will be placed on top of plastic hose clamp bolts. Install correct quantity of plastic clamps before installing rubber backed clamps. (2 plastic clamps per bolt are needed on the hitch and front center section. 3 plastic clamps per bolt are needed on rear center section. 1 plastic clamp is needed on right hand rear cylinder attach.) **Plastic clamps are made to have the round surface point towards the surface that you are mounting to. Leave plenty of slack by hitch pivot. The hitch pivot point will move up and down from transport position to field position. Hoses must be loose enough to allow full range of motion.** Continue to route 3/4" hose to front center cylinder. Hose Clamp Attachments welded to the frame show routing. Attach this supply hose to the port that is connected to the poppet valve.
2. Route 1/2" hose from the 6" x 10" to the 5-1/2" x 10" cylinder along center section. Route hose under transport lock and up the right hand rear center cylinder attach bracket to the 5-1/2" x 10" cylinder. This hose must be attached to the base end (top) of the 5-1/2" x 10" cylinder.
3. Route 1/2" hose from the 5-1/2" x 10" to the 5" x 10" cylinder. This hose must go from the rod end (bottom) of the 5-1/2" x 10" to the base end (top) of the 5" x 10" cylinder. Route this hose under transport locks.
4. Route 1/2" hose from the 5" x 10" to the 4-1/2"

x 10" cylinder. 2 plastic hose clamps should be installed by the left hand rear transport lock and at points 2 and 3 on drawing. **Leave slack between points 1 and 2 to keep hose from stretching during folding and field operation. Pull hose tight between points 2 and 3. This will prevent hose from laying in the way of the transport lock when wing is folded.** Hose must go from the rod end (bottom) of the 5" x 10" to the base end (top) of the 4-1/2" x 10".

5. Route 1/2" hose from the 4-1/2" x 10" to the 4" x 10". **Leave slack between points 4 and 5 to keep hose from stretching during folding and field operation.** The hose must go from the rod end (bottom) of the 4-1/2" x 10" to the base end (top) of the 4" x 10".
6. Route 3/8" hose from the 4" x 10" to the 3-3/4" x 10". This hose must follow the reverse path through points 5, 4, 3, 2 and 1 and then cross the rear center section and go out to the 3-3/4" x 10" cylinder through points 1, 2 and 3 on the right hand side of the machine. This hose must go from the rod end of the 4" x 10" to the base end of the 3-3/4" x 10".
7. Route 3/8" hose from the 3-3/4" x 10" cylinder to the 3-1/2" x 10" cylinder. Follow the same path through points 4 and 5 as described in step 5. This hose must go from the rod end of the 3-3/4" x 10" to the base end of the 3-1/2" x 10".
8. Route 3/8" hose from the 3-1/2" x 10" cylinder to the front of the hitch. Follow reverse path through points 5, 4, 3, 2 and 1 to the center section. Then follow bolt locations to the front of the hitch. Leave slack by hitch pivot. The hose must be loose enough to allow a full range of motion of the hitch without stretching. Attach green nylon ties near the Hyd. Tips and Master Cylinder to identify depth control hoses. Tighten hose clamps enough to secure hose but not enough to crush it.
9. Charge the depth control cylinder system.

**NOTE: Grease all pivot points before raising machine.**

10. Connect Chisel Plow to tractor drawbar with a locked draw pin. Connect depth control cylinder hoses to tractor. Raise chisel plow slowly. One

## ASSEMBLY - STANDARD CENTER

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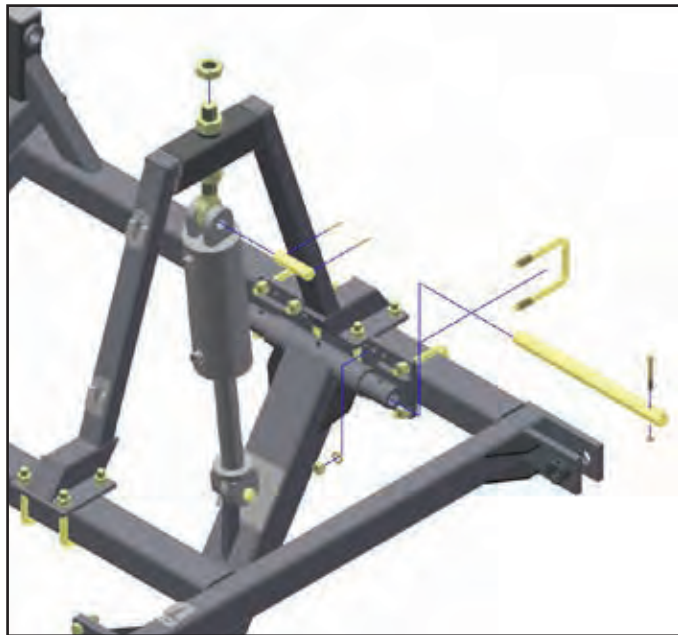
cylinder will extend at a time. Do not allow anyone to stand near the Chisel Plow. When all cylinders are fully extended, fully cycle circuit four times to make sure that all air has been removed from system.

11. Lower chisel plow before the next step.

# ASSEMBLY - CASTER WHEEL CENTER

## Center Section

1. Place front and rear center section on floor with bolt plates facing each other.
2. Attach sections with 24 – 3/4"x2-1/4" bolts, lock washers and nuts.
3. Block center frames off the floor.
4. Position Rear cylinder attach brackets (8T4226) 62" from the center of the frame. Secure cylinder attach brackets with 3/4" u-bolts.
5. Insert eyebolts (8K1755) into each cylinder attach bracket. Tighten 1-1/2" nuts so the same amount of threads are above the top nut on all eyebolts. Ensure that cylinder attach holes are aligned when eyebolts are tightened.

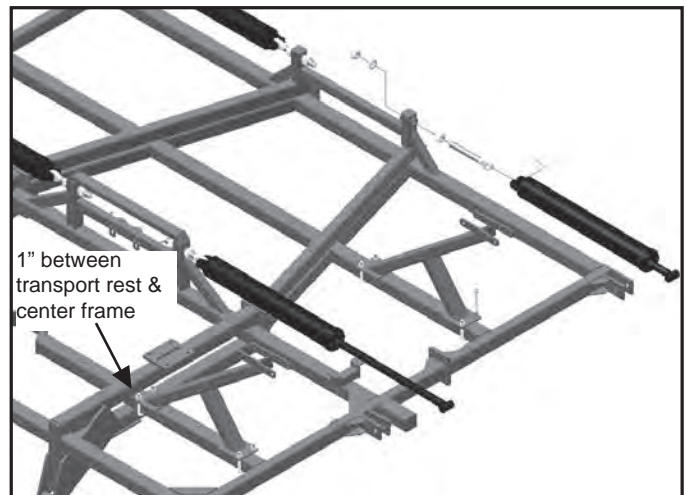


6. All liftarms will be centered beneath cylinder attach brackets. Use 3/4" u-bolts for 4"x4" to attach liftarm pivots (8T4100) to frame. Slide pivot pin (8T3640) through liftarm and liftarm pivots. All liftarms use the same pivot pin. Insert 7/16" x 3-1/2" bolt in retaining bolt holes. Secure with locknut.
7. Install walking tandem assemblies to bottom of rear liftarms. The left hand side of the center frame uses a left hand assembly (8T4166) and the right hand side uses a right hand assembly (8T4168). Slide pivot pin (8T3620) through walking tandem assembly and liftarm. Insert 7/16" x 3-1/2" bolt in retaining bolt holes. Secure with locknut. Install

8T4190 (left) and 8T4192 (right) mud guards as shown. Secure with 3/8" u-bolts and flange nuts.



8. Hang cylinders in the appropriate location. Use pins and rollpins provided with cylinders.
9. Install 8K1105S (8 bolt) axle and hub assembly into each walking tandem. Apply good quality anti-seize to axles before installation. Retain axle into receiver tube with 1/2" x 3-3/4" bolt and locknut.
10. Attach wheels onto hubs with 5/8" wheel nuts (torque required: 240 ft-lbs).
11. Attach wing transport locks to center frame with 3/4" u-bolts. *See below for location of front transport locks. Position rear transport locks at same distance from center.* Install Transport lock pins inside storage holes of transport locks.



12. Insert 1-1/2" x 10-3/8" eyebolts into wing lift cylinder attach base. Leave 1-1/2" nuts loose, they



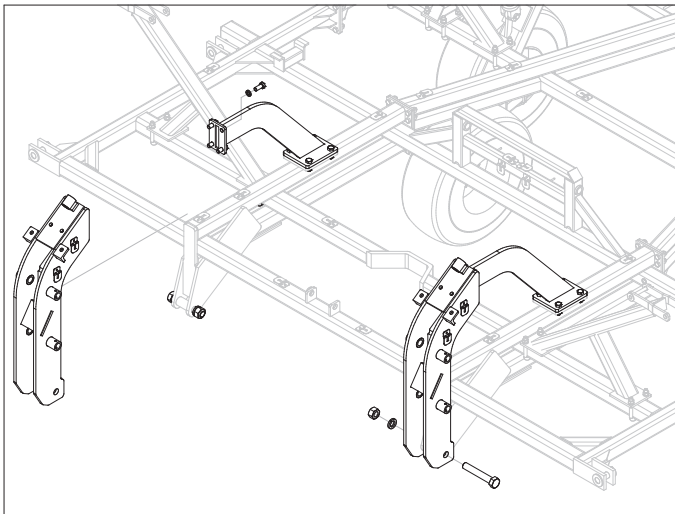
# ASSEMBLY - CASTER WHEEL CENTER

will need to be adjusted after wing is installed.

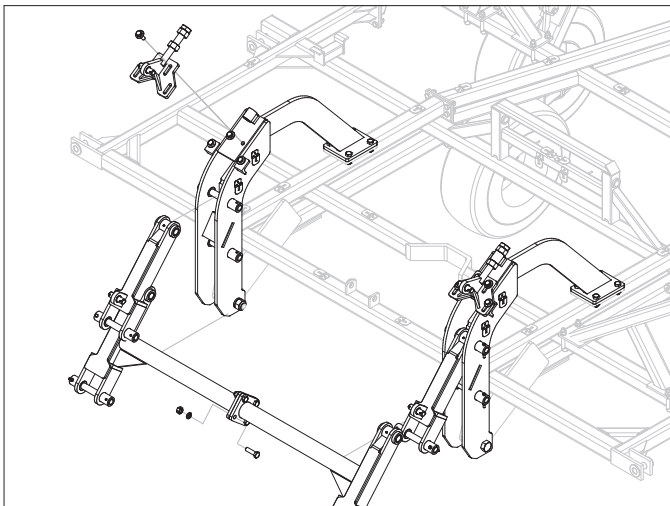
13. Attach wing lift cylinders to frame with pins and roll pins provided with cylinders. Four 5" x 36" cylinders (8K9650) are used.

**NOTE: Leave all fasteners loose until instructed to tighten.**

14. Install two 8T3955 onto bolt plate on top of front center frame using 7/8" x 2-1/2" bolt, lock washer and nut. Attach two 8T3950 to front center frame using 1.5"x9" bolt, lock washer and nut. Bolt 8T3955 and 8T3950 together using 7/8" x 2" bolt and lockwasher. Leave hardware loose.

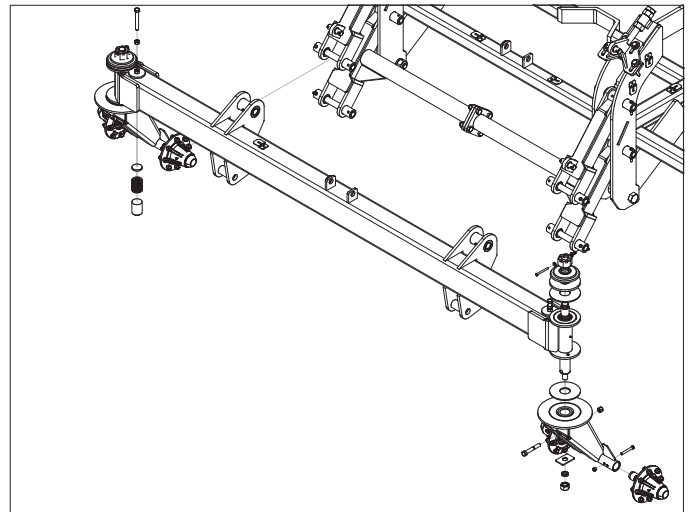


15. Install two 8CC6026 and two 8CC6022 onto 8T3950 with pins. Secure pins with roll pins. Connect the two 8CC6026 together using 7/8" x 3" bolts, lockwashers and nuts.



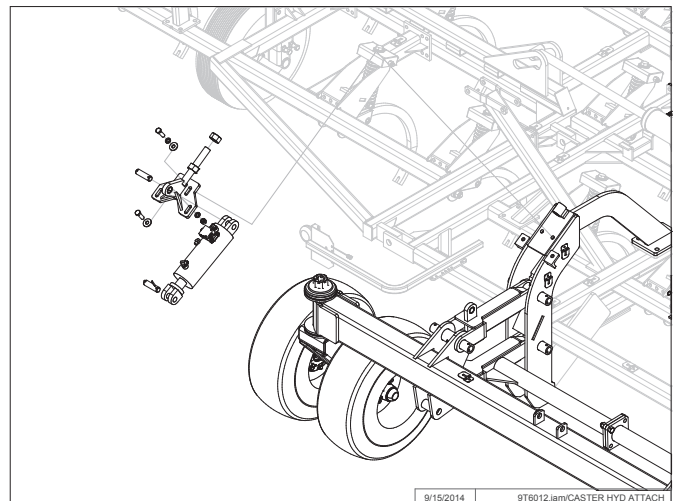
16. Install 8CC6000B (pivot tube) onto 8CC6022

using 8T3620 pin. Secure with roll pins. Tighten all hardware. Install 8L0246 bushings into caster ends of 8CC6000B.



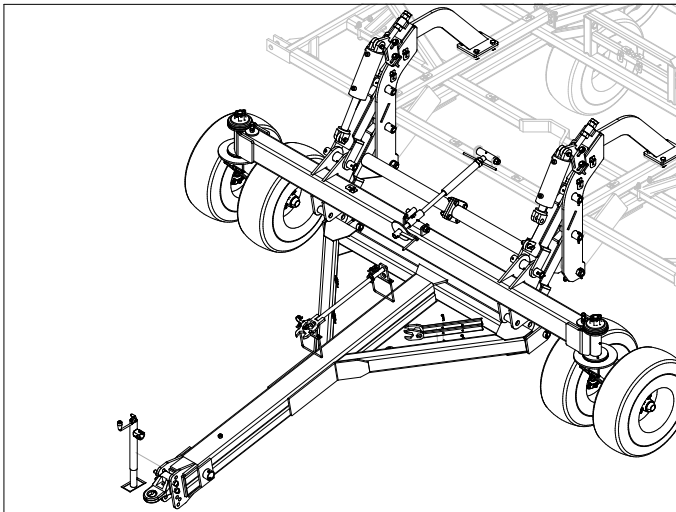
17. Install caster assemblies as shown. Tighten locking nut to 800 ft. lbs. (check frequently). Set hubs to wide position to prevent mud buildup.

18. Install 8T1050 (hydraulic cylinders) and attachments (shown below).



19. Install hitch using pin and roll pins. Use shims on hitch if necessary.

# ASSEMBLY - CASTER WHEEL CENTER



on poppet. Attach 8N6354 to 8J6020 (on end of poppet) and route to front of machine.



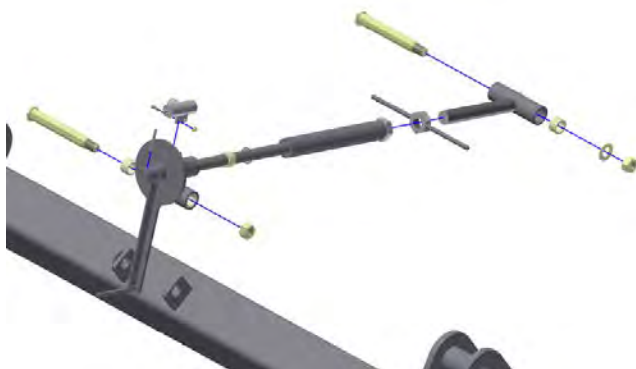
20. Install 8J6020 into base and rod ends of 8T1045, 8T1040B, 8T1037 cylinders. Hang cylinders according to layout.

21. Attach hydraulic connections to both 8J1050 hydraulic cylinders - Install 8J7108 to base end. Install 8J5312 (tee) into port 1 of 8J7108. Install 8J5690 into port 3 and 8J5520 into port 2. Install 8J6020 into rod end of 8T1050s. Attach cylinders to 8T3950s using pin and roll pins with hydraulic ports facing front of machine.

22. Install 8N4216 from T's of 8J7108s to base ends of 8T1045s. Install 8N4010s from rod ends of 8T1050s to other end of tees.

23. Assembly Single Point Depth Control. Note that 8T1010 (poppet) must be positioned with short end facing rear of machine.

26. Install 8J5310 and 8J5710 along center of machine. Join 8N4198 and 8N4160 using one 8J5510 and attach to 8J5710. Run other end to front of machine. Join two 8N4216s using one 8J5110 to run off each side of 8J5310. Attach other end of this to rod ends of 8T1037.



24. Install 8J5312 (T) onto side of poppet. Install 8J5710 from each end of poppet. Install 8J6020 on end of poppet.

25. Attach 8N4060s from port 2 of 8J7108s to 8J5710s

27. Install 8N4228 from rod end of 8T1045 and base end of 8T1040B on each side of machine. Install 8N4216 from rod end of 8T1040B to base end of 8T1037 on each side of machine.

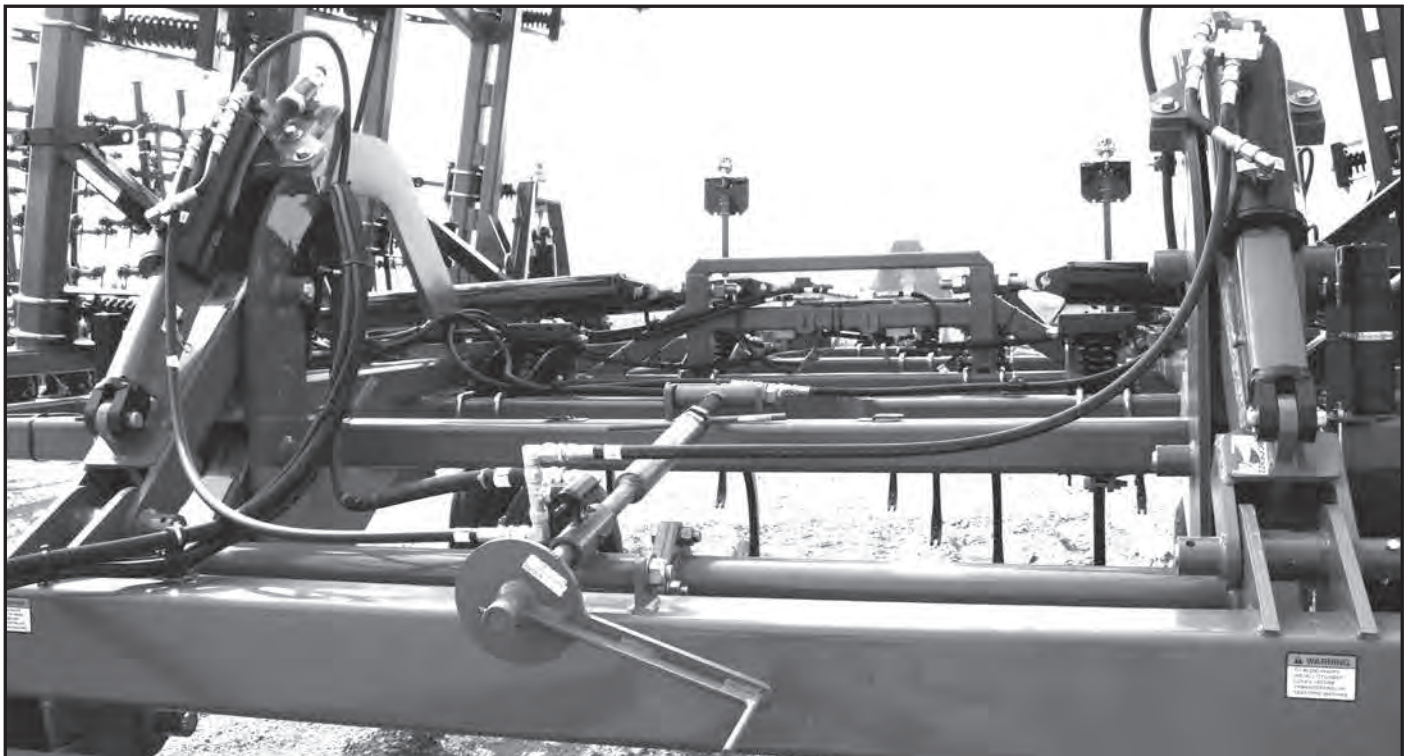
28. Rubber backed clamps will be placed on top of plastic hose clamp bolts. Install correct quantity of plastic clamps before installing rubber backed clamps. (2 plastic clamps per bolt are needed on the hitch and front center section. 3 plastic clamps per bolt are needed on rear center section. 1 plastic clamp is needed on right hand rear cylinder attach.) Plastic clamps are made to have the round surface point towards the surface that you are



## ASSEMBLY - CASTER WHEEL CENTER

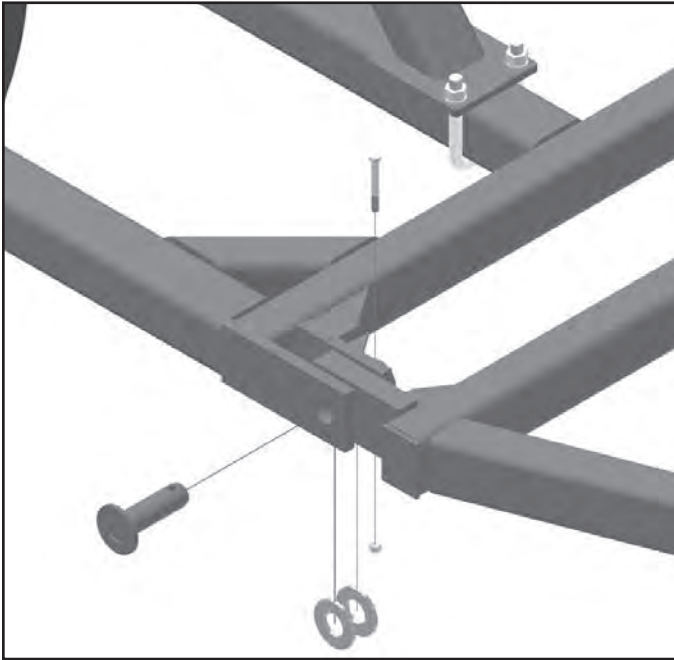
mounting to. Leave plenty of slack by hitch pivot. The hitch pivot point will move up and down from transport position to field position. Hoses must be loose enough to allow full range of motion. See pictures to right and below for routing.

29. Attach green nylon ties near the Hyd. Tips and Master Cylinder to identify depth control hoses. Tighten hose clamps enough to secure hose but not enough to crush it.
30. Grease all pivot points before raising machine. Connect Chisel Plow to tractor drawbar with a locked draw pin. Connect depth control cylinder hoses to tractor. Raise chisel plow slowly. One cylinder will extend at a time. Do not allow anyone to stand near the Chisel Plow. When all cylinders are fully extended, fully cycle circuit four times to make sure that all air has been removed from system.



# ASSEMBLY - CASTER WHEEL CENTER

## Part 1 Wing



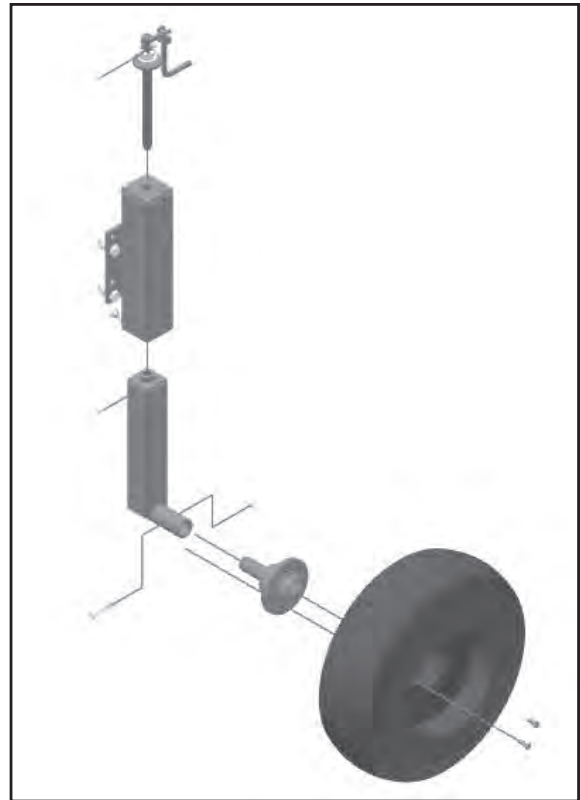
1. Attach wing to center section with pins, washers, bolts and locknuts.

– Washers are used to center wing in hinges and prevent shift.

2. Fasten cylinder attach brackets (8T4226) with 3/4" u-bolts. Bracket should be located 188" on 50'-54', 212" on 56'-60' from the center of the machine (See page 2-22 or 2-23).
3. Insert eyebolts (8K1755) into cylinder attach bracket. Tighten 1-1/2" nuts so the same amount of threads are above the top nut on all eyebolts. Ensure that cylinder attach holes are aligned when eyebolts are tightened.
4. Center liftarm under cylinder attach brackets. Use 3/4" u-bolts for 4"x4" tube to attach liftarm pivots (8T4100) to frame. Slide pivot pin (8T3640) through liftarm and liftarm pivots. Insert 7/16" x 3-1/2" bolt in retaining bolt holes. Secure with locknut.
5. Install walking tandem assembly to bottom of liftarm. The left hand wing will use a right hand assembly – 8T4168. The right hand wing will use a left hand assembly – 8T4166. Slide pivot pin (8T3620) through walking tandem assembly and liftarm. Insert 7/16" x 3-1/2" bolt in retaining bolt holes. Secure with locknut.

6. Hang cylinders in appropriate location. Use pins and roll pins provided with cylinders. Rod end of cylinder (positioned down) attaches to lift arm. Use 4.5" x 10" (8T1045) on left hand wing. Use 3.75" x 10" (8T1037) on right hand wing.
7. Install 8K1100 (6 bolt) axle and hub assembly into each walking tandem. Apply good quality anti-seize to axles before installation. Retain axle into receiver tube with 1/2" x 3-3/4" bolt and locknut.
8. Attach 11L x 15 wheels onto hubs with 9/16" wheel bolts (torque required: 170 ft-lbs).
9. Install gauge wheel support (8T4090) onto wing with 7/8" x 2-1/2" bolts.

*NOTE: STEPS 10 THROUGH 14 MAY HAVE BEEN PRE-ASSEMBLED AT FACTORY*



10. Apply anti-seize to jack bolt (8T6000) threads. Screw jack bolt into axle holder (8T4094) far enough to see hole on bottom of bolt through hole in axle holder. Insert 3/16" x 2" roll pin. Insert pin far enough so it will clear tube when rotated.
11. Place gauge wheel depth decal on axle holder. Locate decal 1" from bottom of 4"x4" tube. Make sure that decal faces the front of the machine. At-

# ASSEMBLY - CASTER WHEEL CENTER

tach decal off to one side of axle holder to avoid seam on support tube.

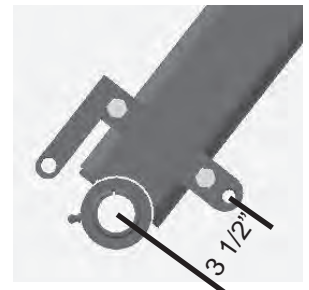
12. Slide axle holder and jack bolt into gauge wheel support. Slide 1-1/4" flat washer onto bolt and turn 1-1/4" slotted nut on. Do not tighten slotted nut.
13. Add gauge wheel screw top onto jack bolt. Insert 1/2 x 2-1/4" bolt into screw top and bolt. Secure with locknut.
14. Attach gauge wheel jack handle to screw top. Install 3/8 x 2" bolt in handle and screw top. Secure with locknut. Do not over tighten. Handle must pivot freely.
15. Check free operation of gauge wheel assembly. Loosen or tighten slotted nut for optimum performance of gauge wheel. Install 3/16" x 2" roll pin after slotted nut is adjusted properly.
16. Adjust clearance between 8T4090 and 8T4094 with 3/4" set bolts and jam nuts.
17. Install 8K1100 (6 bolt) axle and hub assembly into each receiver tube. Apply good quality anti-seize to axles before installation. Retain axle into receiver tube with 1/2"x3-3/4" bolt and locknut.
18. Attach 11L x 15 wheel to hub with 9/16" wheel bolts (torque required: 170 ft-lbs).

NOTE: It is recommended to set up both sides of the machine at the same time.

1. Insert eyebolts (8K1755) into part 2 wing lift cylinder bases. Leave eyebolts loose, they will need to be adjusted after charging hydraulic system.
2. Install four 4-1/2"x16" (8D9466) cylinders onto part 1 wings with pins provided.
3. Attach part 2 wing to part 1 wing with 8T3606 pins, 7/16" x 3-1/2" retaining bolts and locknuts. Grease zerks should point towards the front of the machine.
4. Fasten cylinder attach brackets (8T4224) with 3/4" u-bolts. Locate bracket 277" on 50'-54', 301" on 56'-60' from center of machine (See Page 2-22 or 2-23).
5. Insert eyebolts (8K1755) into cylinder attach brackets. Tighten 1-1/2" nuts so the same amount of threads are above top nut on all eyebolts.

6. Center liftarm under cylinder attach brackets. Use 3/4" u-bolts for to attach liftarm pivots (8T4100) to 4"x4" frame. The pivot closest to the center will be attached with 3/4" x 6-1/2" bolts and a trip assembly. Slide pivot pin (8T3640) through liftarm and liftarm pivots. Insert 7/16" x 3-1/2" bolt in retaining bolt holes. Secure with locknuts.
7. Install wheel spring liftarm support brackets onto bottom of liftarms. Use spring support (8T4177) on left wing liftarm. Use 8T4178 on right side. Install 1/2"x7-1/2" bolts through support bracket and 8T4174 bolt plate. (Third hole towards rear).

– **Locate bracket so cross bolts are 3-1/2" above center of pivot pin.**



8. Install walking tandem assembly to the bottom of the liftarm. The left hand wing will use a right hand assembly – 8T4168. The right hand wing will use a left hand assembly – 8T4166. Slide pivot pin (8T3620) through walking tandem assembly and liftarm. Insert 7/16" x 3-1/2" bolt in retaining bolt holes. Secure with locknut.
9. Hang cylinders in appropriate location. Use pins and roll pins provided with cylinders. Rod end of cylinder (positioned down) attaches to liftarm. Use 4" x 10" (8T1040B) on left hand wing. Use 3-1/2" x 10" (8T1035) on right hand wing.
10. Insert 8K1100 (6 bolt) axle and hub assembly into each walking tandem. Apply good quality anti-seize to axles before installation. Retain axle into receiver tube with 1/2" x 3-3/4" bolt and locknut. Install a right hand wheel spring support (8T4179) onto the front receiver tube on the right hand walking tandem. Install an 8T4178 on left hand walking tandem. Install an 8T4175 support on rear tubes of both walking tandems. Install 1/2" x 4-1/2" bolts to hold the spring support and axle onto the walking tandems. Secure with locknut.
11. Install eyebolts and springs between spring supports on each wheel assembly. **The spring assist assembly is designed to keep walking tandem parallel to the bottom of the chisel plow frame**



# ASSEMBLY - CASTER WHEEL CENTER

**when machine is raised up.** This will reduce interference when folding machine into transport. Adjust locknut on eyebolts so walking tandem stays in parallel position when wing is raised. Maximum extended length of spring is 11-3/8".

12. Attach 11L x 15 wheels onto hubs with 9/16" wheel bolts (torque required: 170 ft-lbs).

*NOTE: STEPS 14 THROUGH 18 MAY HAVE BEEN PRE-ASSEMBLED AT FACTORY.*

13. Install gauge wheel support (8T4090) onto wing with 7/8" x 2-1/2" bolts.

14. Apply anti-seize to jack bolt (8T6000) threads. Screw jack bolt into axle holder (8T4094) far enough to see hole on bottom of bolt through hole in axle holder. Insert 3/16" x 2" roll pin. Insert pin far enough so it will clear tube when rotated.

15. Place gauge wheel depth decal on axle holder. Locate decal 1" from bottom of 4"x4" tube. Make sure that decal faces the front of the machine. Attach decal off to one side of axle holder to avoid seam on support tube.

16. Slide axle holder and jack bolt into gauge wheel support. Slide 1-1/4" flat washer onto bolt and turn 1-1/4" slotted nut on. Do not tighten slotted nut.

17. Add gauge wheel screw top onto jack bolt. Insert 1/2" x 2-1/4" bolt into screw top and bolts. Secure with locknut.

18. Attach gauge wheel jack handle to screw top. Install 3/8" x 2" bolt in handle and screw top. Secure with locknut. Do not over tighten. Handle must pivot freely.

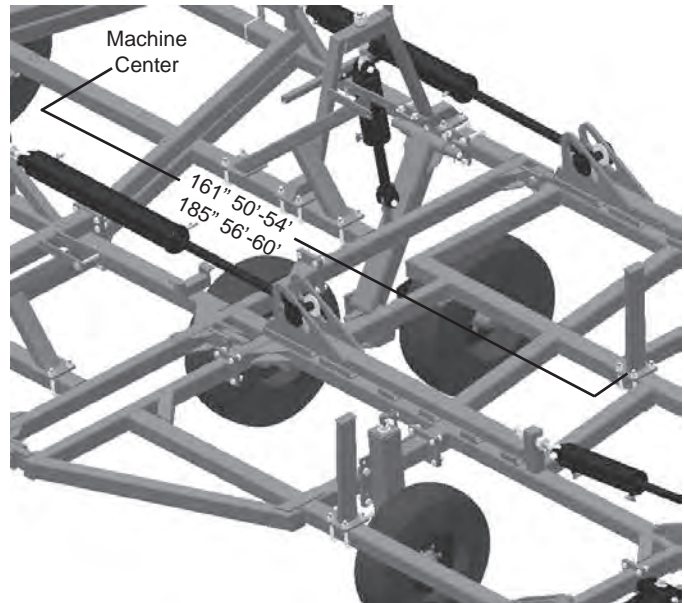
19. Check free operation of gauge wheel assembly. Loosen or tighten slotted nut for optimum performance of gauge wheel. Install 3/16" x 2" roll pin after slotted nut is adjusted properly.

20. Insert 8K1100 (6 bolt) axle and hub assembly into each receiver tube. Apply good quality anti-seize to axles before installation. Retain axle into receiver tube with 1/2" x 3-3/4" bolt and locknut.

21. Attach 11L x 15 wheel onto hub with 9/16" wheel bolts (torque required: 170 ft-lbs).

22. Fasten part 2 wing rests (8T4260) with 3/4" u-

bolts. Attach supports to part 1 wing on the first and third rank. Locate supports 161" on 50'-54', 185" on 56'-60' from center of the machine. Rotate supports so wing will rest flush when folded.



23. Install optional extensions as shown in shank layout drawings.

# ASSEMBLY - CASTER WHEEL CENTER

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## Main Lift Hydraulics

**NOTE:** The Summers Superchisel uses rephasing hydraulic depth control cylinders. Oil from the rod end of largest cylinder travels to the base end of second cylinder and so forth. It is very important that all hoses are routed correctly or machine will not operate properly.

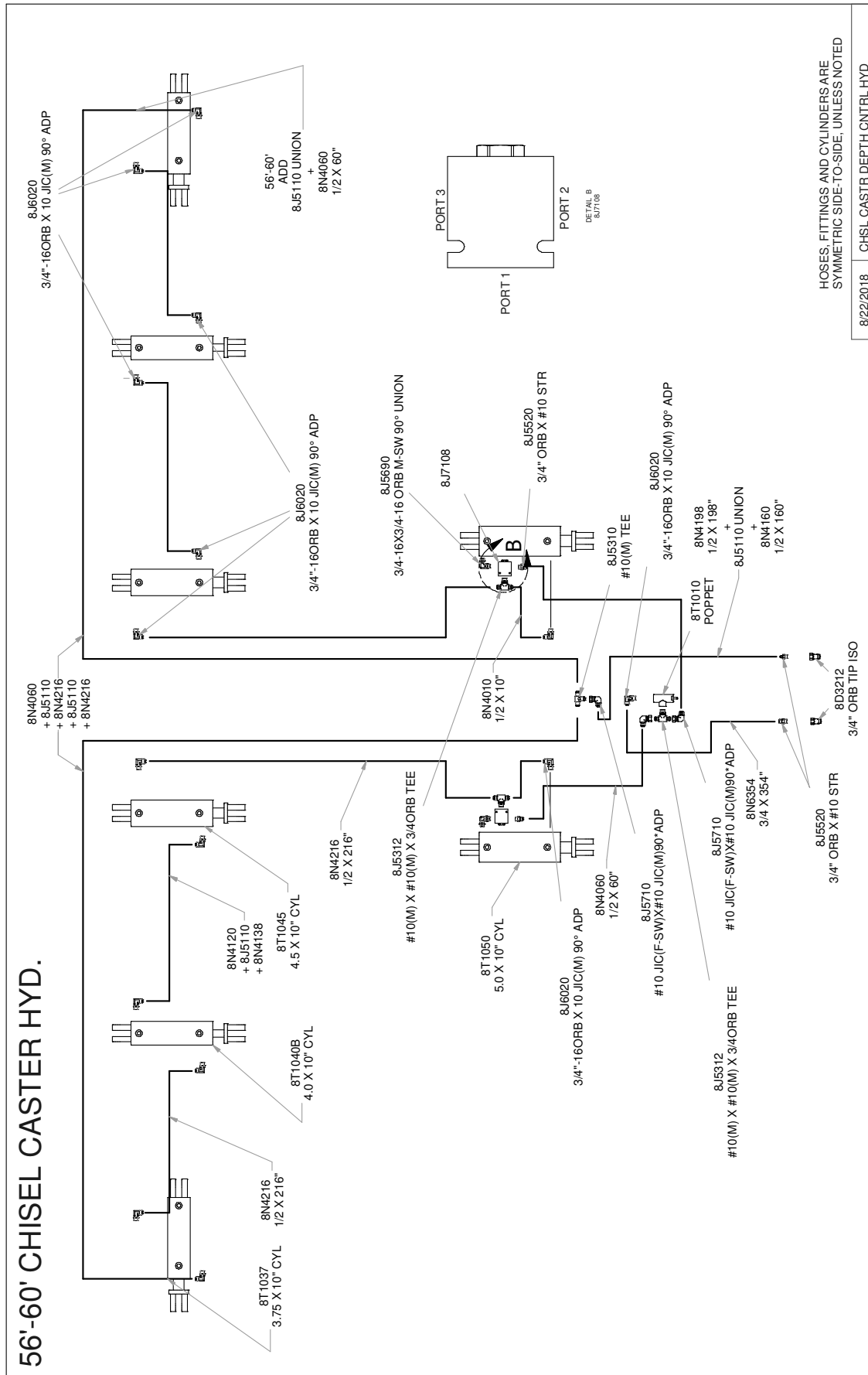
**Helpful Hint:** Leave rubber backed clamps and plastic clamps loose at locations where depth control hoses will use the same bolts as wing lift hoses. (Wherever there is more than one clamp, wait to tighten until wing lift hoses are installed.)

## 8Z1098 / 12-2016





# ASSEMBLY - CASTER WHEEL CENTER

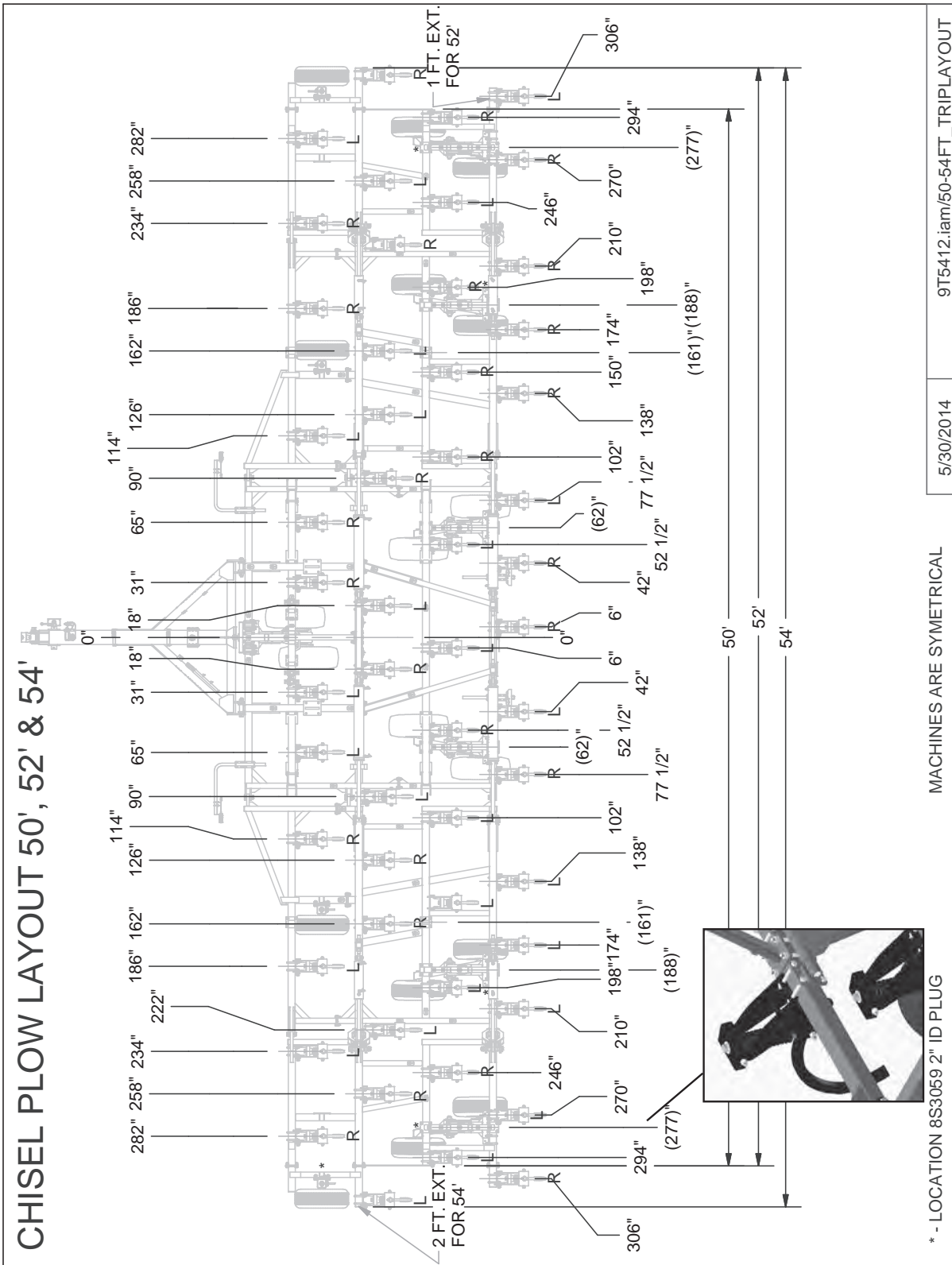


# ASSEMBLY - ALL MACHINES

## Trip Assemblies

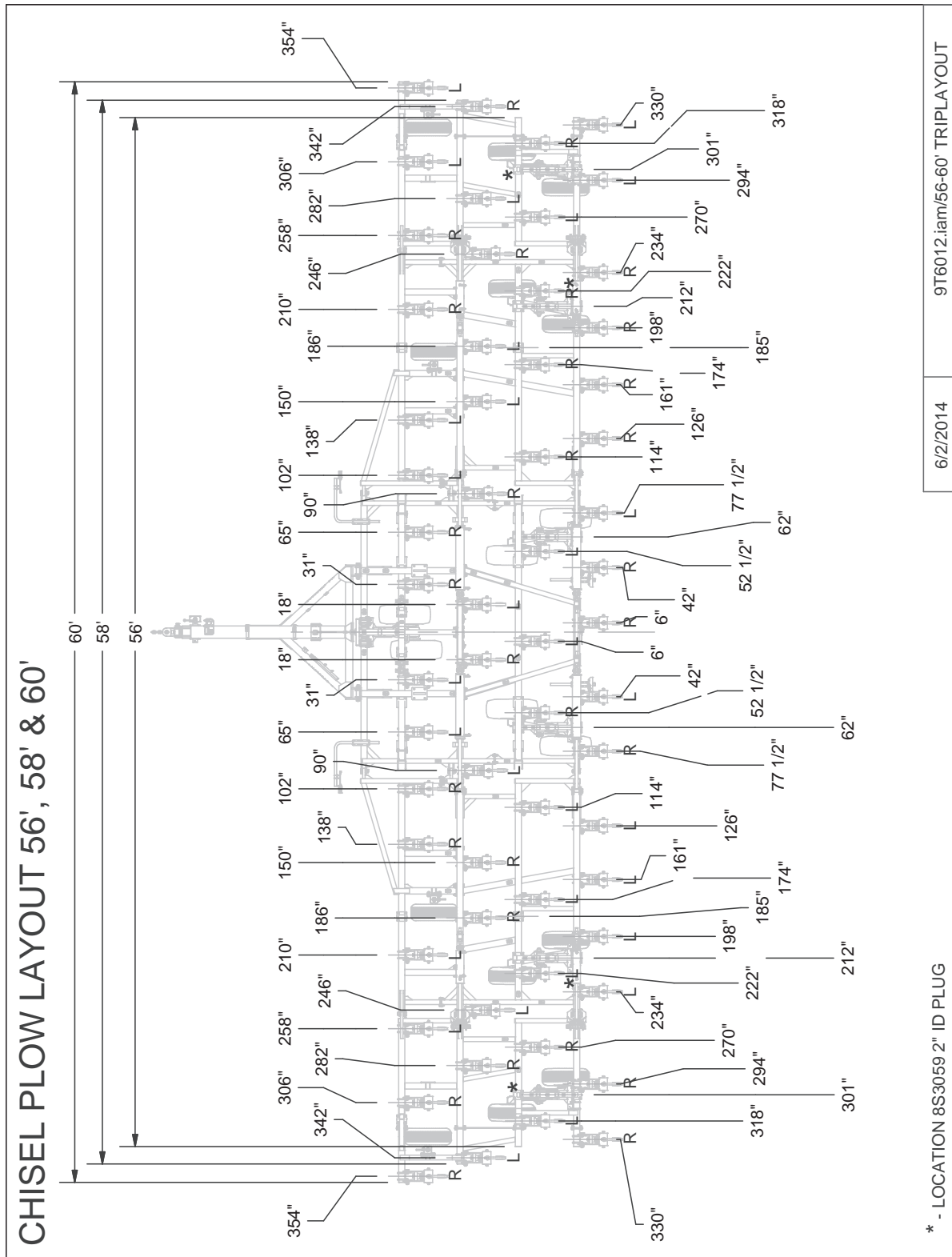
*NOTE: Installation of trip assemblies can be done after machine is raised. Complete hydraulic assembly before mounting trip assemblies if preferred.*

1. Hang trip assemblies according to layout. Use 3/4" u-bolts for 4"x4" tube with 3/4" lock washers and 3/4" nuts. Tighten u-bolts an equal amount on top and bottom. The same amount of threads should appear on top and bottom of the u-bolt.



## ASSEMBLY - ALL MACHINES

2. Trip assemblies located at 270" on 50'-54', 294" on 56'-60' from center are attached with 3/4" x 6-1/2" (8X0121) bolts (see drawing on next page). These bolts also hold the liftarm pivot bracket at that location.
3. Install shanks into trip assemblies. Slide shank into shank holder. Install 3/4" x 4" bolts and tighten securely. Shanks will fit snugly into shank holder. If tapping bottom of shank does not work, it may be necessary to remove burrs or paint from shank or shank holder.



# ASSEMBLY - ALL MACHINES

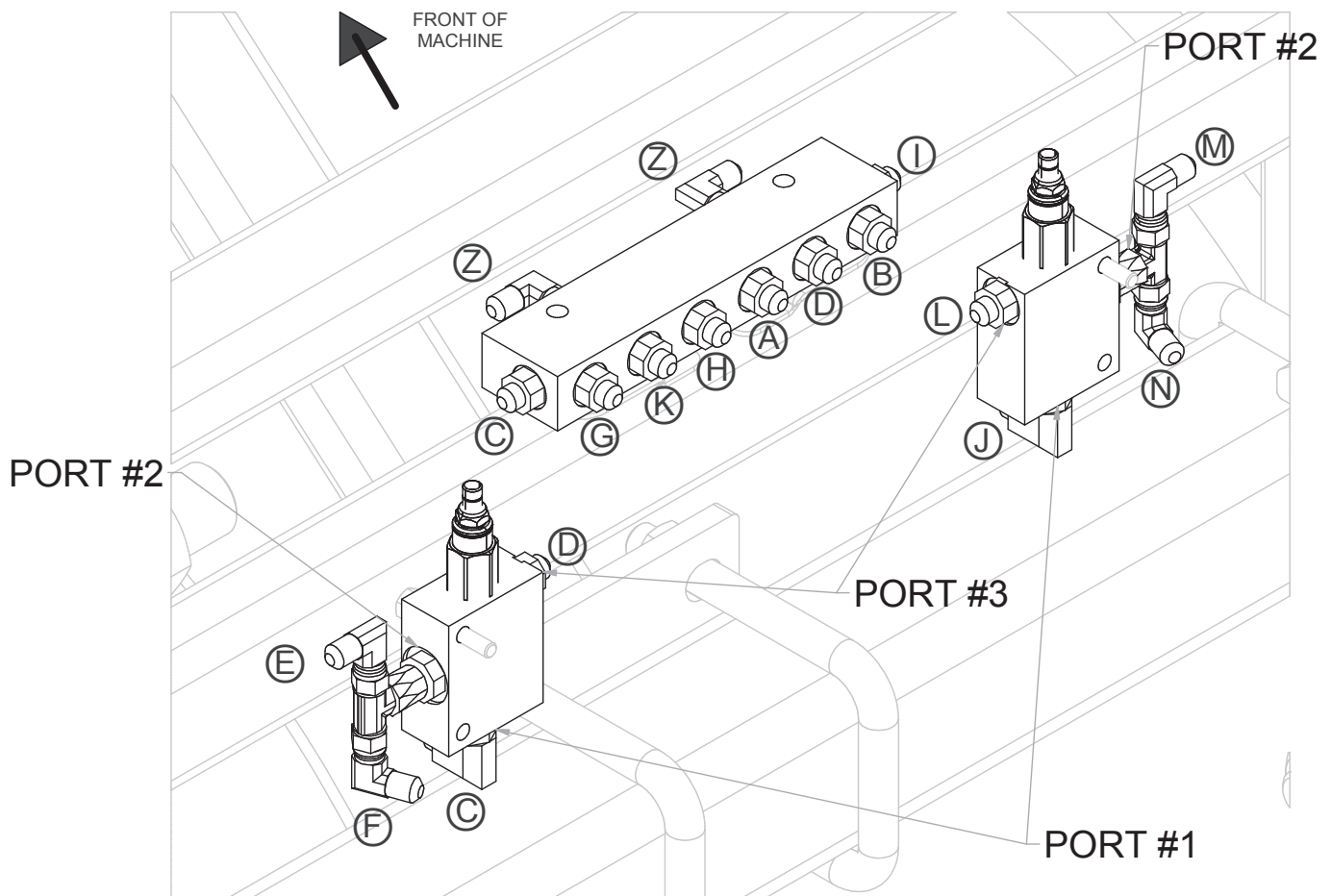
## WING LIFT HYDRAULICS - ALL MACHINES

**Note:** The Summers Superchisel uses in-line restrictors to control hydraulic flow of the part 2 wing lift cylinders and extension (lowering) of the part 1 wing lift cylinders. It is important that restrictors are installed in the wing lift circuit. This chisel plow uses sequencing valves to ensure the wings fold properly. After installation, it may be necessary to change the pressure level of these valves for the wings to fold properly. See page 4-3, 6-27 AND 6-28 for Wing Lift layout.

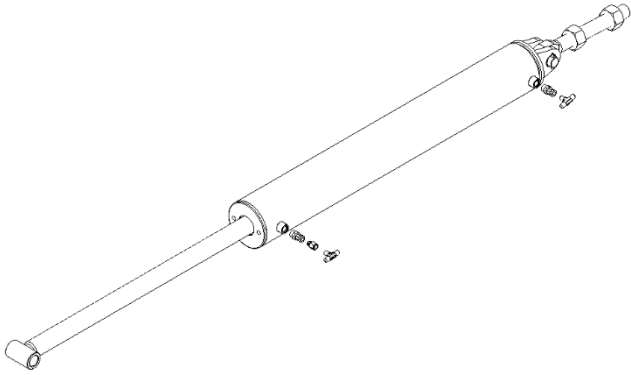
1. Install fittings into manifold block (8W1360) as shown in drawing. Install eight 8J5500 - 9/16" ORB x 6 JIC(M) and two 8J6000 - 9/16" ORB x 6 JIC 90°(M) fittings into manifold block (8W1360). Install fittings as shown. Attach manifold block onto the front center of chisel plow. There are two bolts on the top of the cross member for the cylinder support that hold the block. Secure with

lock nuts.

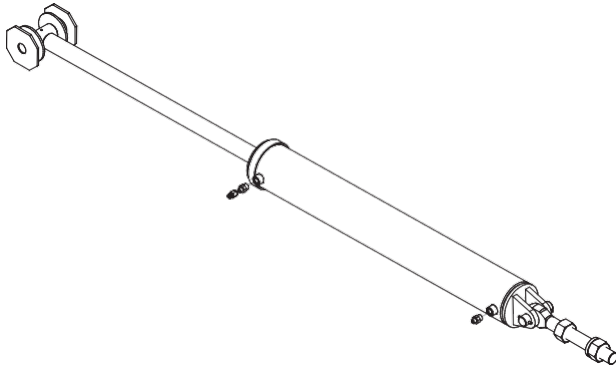
2. Install fittings into sequencing valves (8T8100) as shown in drawing. Install 8J6010 - 3/4" ORB x 6 JIC(M) x 90 adapters into port #1 on the valve bodies. This is the main supply port for each valve. Install 8J5500 - 9/16" ORB x 6 JIC(M) fittings into port #3 on the valve bodies. This is the drain port for each valve. Install 8J5620 - 3/4" ORB x 6 JIC(F-SW) fittings into port #2 and then attach one 8J5300 - 6 JIC(M) T and two 8J5700 - 6 JIC(F-SW) x 6 JIC(M) x 90 adapters to each of these fittings. This is the supply to the cylinders that are being sequenced. Place the sequencing valves behind the cross member the manifold block is attached to. Position so both port #3's are toward the center of the machine.



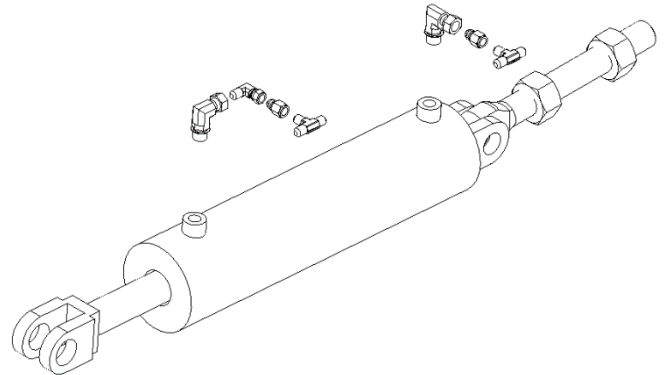
# ASSEMBLY - ALL MACHINES



3. Install hoses that supply base end of part 1 wing lift cylinders. Install 35" hose from one right hand port of the manifold block (A & B) to the base end of both front 5" x 36" cylinders. Connect base end of rear 5" x 36" cylinders to front cylinders with 70" hoses.



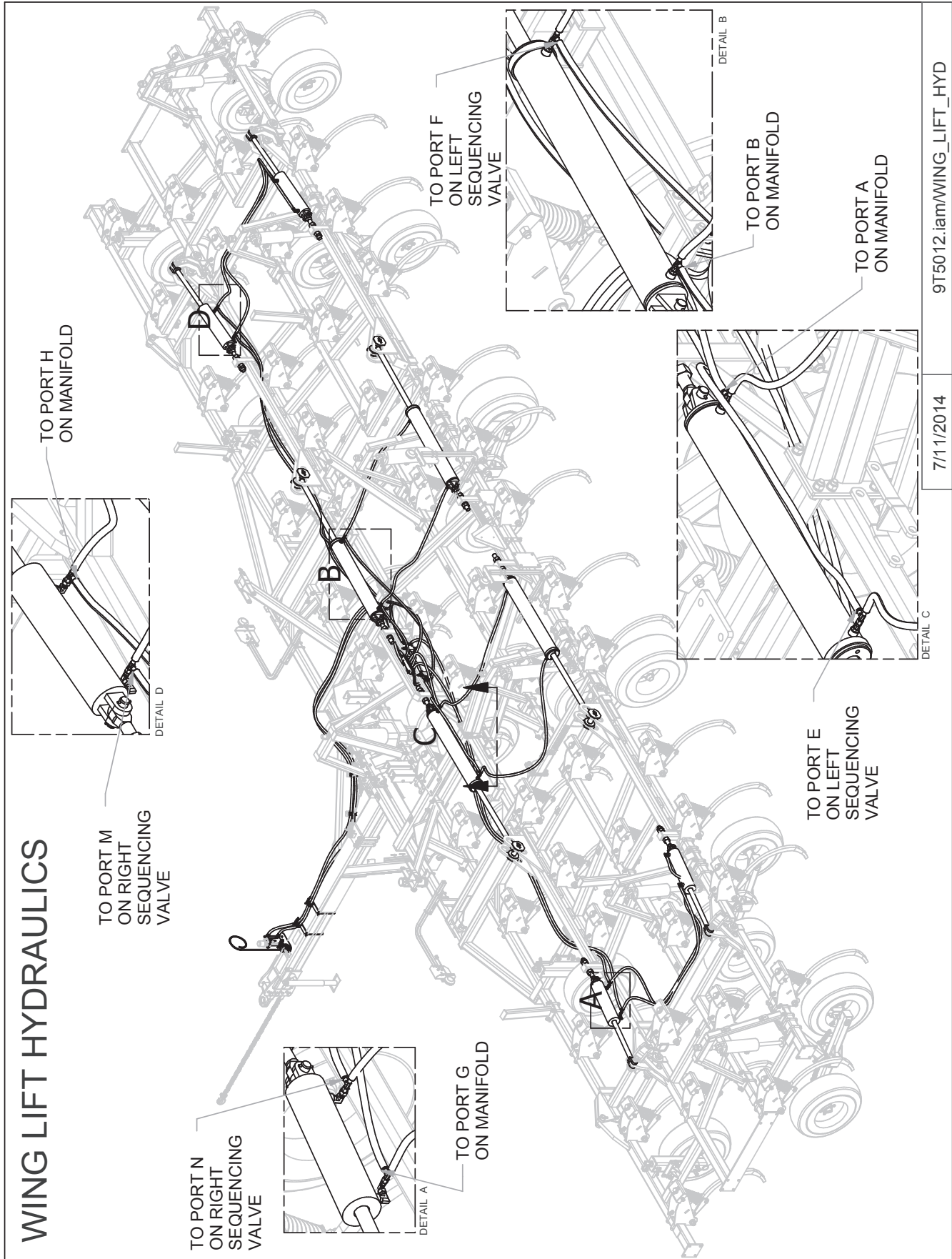
4. Retraction of part 1 wing lift cylinders is controlled with a sequencing valve. This step will show proper plumbing for this part of the wing lift circuit. Connect an 18" hose from the left hand end of the manifold block (C) to port #1 (C) on the left hand sequencing valve. Connect another 18" hose from the middle port on the right hand side of the manifold block (D) to port #3 (D) on the left sequencing valve. This hose will allow draining of the valve. Connect a 60" (E) and an 84" (F) hose to the T on port #2 of the left sequencing valve. The 84" hose will go to right side of the machine. Route hoses to rod end of the front 5" x 36" cylinders. Install fitting shown and a 6 JIC(F) x 6 JIC(M) 1/16" restrictor to rod end of each 5" x 36" cylinder. Connect rod end of rear 5" x 36" cylinders to front cylinders with 70" hoses.



5. Plumbing rod ends of part 2 wing lift cylinders. Connect a 228" (252" on 56'-60') hose to two rear ports on the left hand side of the manifold block (G & H). Route these hoses to front 4-1/2" x 16" cylinders on wings along second rank. Install a 6 JIC(M) T at the end of these hoses. Connect 124" hose on one side of each T. Be sure that 1/16" restrictors are installed with fittings shown. Connect 124" hoses to rod end of rear 4-1/2" x 16" cylinders as shown.
6. Extension of part 2 wing lift cylinders is controlled with a sequencing valve. This step will show proper plumbing for this part of the wing lift circuit. Connect an 18" hose from the right hand end of the manifold block (I) to port #1 (J) on the right hand sequencing valve. Connect another 18" hose from the middle port on the left hand side of the manifold block (K) to port #3 (L) on the sequencing valve. This hose will allow draining of the valve. Connect a 204" (M) and a 228" (N) (228" and 252" on 56'-60') hose to the T on port #2 of the sequencing valve. The longer hose will go to left side of the machine. Route these hoses to front 4-1/2" x 16" cylinders on wings along second rank. Connect a 6 JIC(M) T to the end of each of these hoses. Connect a 96" hose to each T. Be sure that 1/16" restrictors are installed with fittings shown. Connect 96" hoses to the base end of each rear 4-1/2" x 16" cylinder as shown.



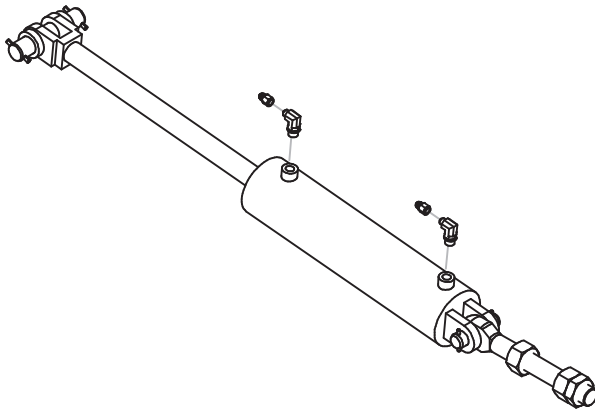
# ASSEMBLY - ALL MACHINES



9T5012.iam/WING\_LIFT\_HYD

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# ASSEMBLY - ALL MACHINES

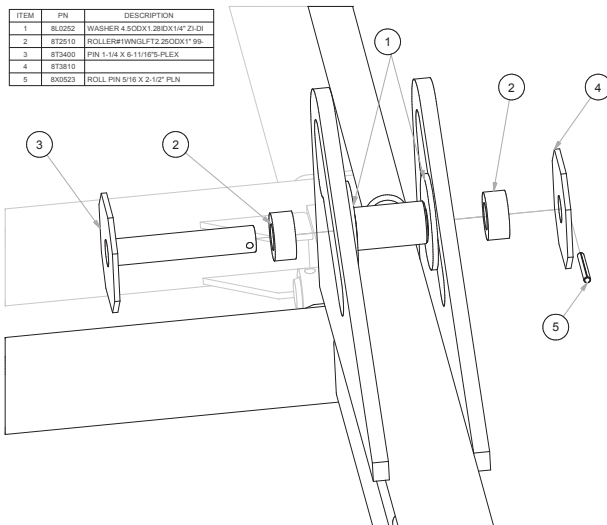


7. Connect two 330" hoses to front side of manifold block (Z). Route these hoses to front of hitch along same path as depth control hoses. Leave slack by the hitch pivot. Install 3/4" ORB x 6 JIC(M) adapters and ISO tips onto ends of 330" hoses. Install yellow nylon ties by tips and closest cylinder to identify Wing Lift circuit. Use nylon ties to hold hoses away from pinch points.

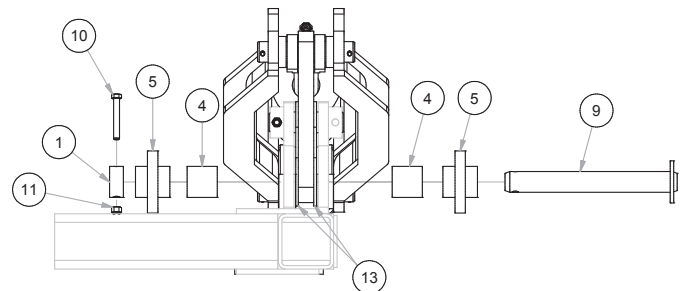
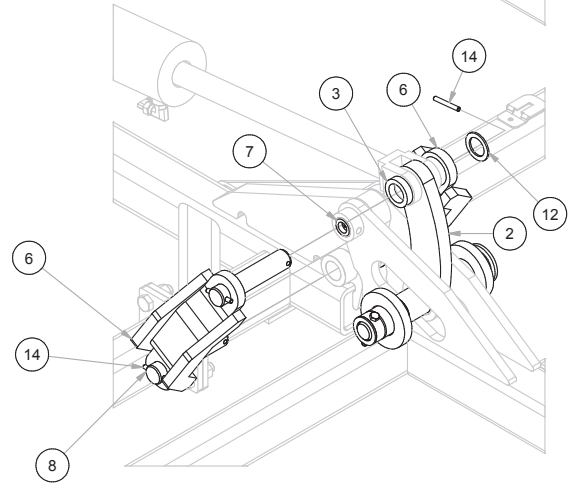
**NOTE: Hydraulic hoses will expand and shorten when pressurized. Do not overtighten hose clamps. Leave some slack between all clamps.**

8. Charge wing lift cylinder system. Block rod end of cylinders up so that cylinder shafts can be extended without hitting anything. Fully cycle cylinders several times to make sure that all air has been removed from the system. Leave cylinders in fully extended position.

END VIEW PART 1 WING LIFT PIN



9. Connect rod end of 5" x 36" cylinders to part 1 wing. Install wing lift pin, rollers and washers onto the wing and cylinder rod tube. Secure pin with 8T3810 washer and roll pin. The 8L0250 1/4" thick washers must slide freely inside wing flamecuts. The drawing below shows an end view of this connection. Grease rod end tube on 5" x 36" cylinders before lifting wings. Also grease part 2 wing pivot pins.



Ref PN DESCRIPTION

- |    |        |                                 |
|----|--------|---------------------------------|
| 1  | 7T2532 | TUBE                            |
| 2  | 8T0400 | FC 7T0400 PNTD                  |
| 3  | 8T2514 | SPACER PART 1 TO 2 LINK         |
| 4  | 8T2520 | ROLLER PART 2 WING LIFT         |
| 5  | 8T2530 | ROLLER W/TUBE                   |
| 6  | 8T3590 | LINK PART 1 TO 2 FOR 5 PLEX     |
| 7  | 8T3606 | PART 2 HINGE PIN 5 PLEX         |
| 8  | 8T3608 | PIN HARDENED                    |
| 9  | 8T3625 | PIN, W/ WELDED WASHER- HARDENED |
| 10 | 8X0041 | BOLT 7/16"-14NC X 3" GR5 ZDI    |
| 11 | 8X0234 | NUT 7/16"-14NC NY-LOCK GR2 ZDI  |
| 12 | 8X0355 | WASHER 1-1/2"IDX2.25"X10GA PLN  |
| 13 | 8X0365 | WASHER 2-1/2"IDX3.5"X 3/16"PLN  |
| 14 | 8X0523 | ROLL PIN 5/16" X 2-1/2" PLN     |

# ASSEMBLY - ALL MACHINES

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10. Connect rod end of 4-1/2" x 16" cylinders to part 2 wing. Install one 8T3608 pin with 5/16" roll pin and 1-1/2" FW into an 8T3590 link and insert it into the collar on the part 1 wing. Install another 8T3590 link onto the other side of pin and secure with 1-1/2" FW (as required to remove clearance, must be free to pivot) and 5/16" roll pin. Install an 8T3608 pin with 5/16" roll pin and 1-1/2" FW into the opposite end of the 8T3590 link. Slide an 8T2514 spacer onto pin. Slide pin through one side of cylinder clevis and through 8T0400 lift link. Continue to push pin through clevis, another spacer and top of other 8T3590 link. Secure pin with FW (as required) and roll pin. With the 8T0400 link resting between the two flame cuts with slots, install an 8T3625 pin into an 8T2530 and 8T2520 roller and slide pin through slot and into bottom of the lift link (8T0400). Apply anti-seize to 8T3625 prior to installation. Repeat sequence on other side of slot. Secure pin with 1-1/2" FW (as required) retaining collar (7T2532), 7/16" x 3" bolt and locknut. Repeat these steps for all 4 part 2 wing lift cylinders.

11. Before raising outer wings for the first time, make sure wing lift cylinder attach eyebolts are loose. Slowly raise part 2 wings into transport position. Fully retract part 2 cylinders and let wings rest against transport supports. Test adjustment of sequencing valve before turning set screw. If valve is set with too much pressure, part 1 wings will not rise. To reduce the amount of pressure, turn set screw outward. With cylinders fully retracted and part 2 wings resting on transport supports, adjust cylinder attach eyebolts so cylinders allow lift link rollers to rest on the bottom of slot. Tighten nuts.

12. Before raising part 1 wings for the first time, make sure cylinder attach eyebolts are loose. Slowly raise wings by fully retracting part 1 wing lift cylinders, allow wings to rest against the transport locks. If wing does not rest against both locks, adjust locks accordingly. Tighten cylinder attach eyebolts so cylinders allow part 1 wing lift rollers to rest on the bottom of slot.

13. Lower wings to field position. Make sure the part 1 wing lift cylinders fully extend before part 2 wings start to move. Test the adjustment before turning set screw. If the valve is set with too much pressure, the part 2 wings will not unfold. To reduce

the amount of pressure, turn set screw outward.

14. Fold and unfold machine again to make sure that everything is working properly.

## Safety Lights

1. Install light module (8K8030A) onto frame. Route wiring harness (8K8075A) along frame according to drawing on Page 6-30 in Parts List. Connect wire ends to light assemblies. Use nylon ties to secure to frame. Connect main harness (8K8070B) to module and route along hitch to front of machine. The 7 pin connector stores in dust cap (8K8067) when not in use.

## Decals

1. Install danger, warning and caution decals. Part numbers can be found on the lower right hand corner of each decal. Match this number with decal location drawing on Pages 1-4 through 1-9. – The drawing gives approximate locations of decals. Decals must be clearly visible. – Order replacement decals if any are damaged.
2. Install reflectors. Attach Amber reflectors (8Z0800) on front corners and sides of machine in transport position. Attach Red-orange reflectors (8Z0805) on outside back of machine in transport position. Attach Red reflectors (8Z0810) on outside back of machine in transport position.

## Options

See Parts Section for layout of Optional Mounted Harrows and Rear Hitch.

# OPERATION SAFETY

---

## Operation Safety

1. READ AND UNDERSTAND Operator's Manual before using machine. Review at least annually thereafter.
2. VERIFY that all safety devices and shields are in place before using machine.
3. KEEP hands, feet, hair and clothing away from moving parts.
4. STOP engine, place all controls in neutral, set parking brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, maintaining or unplugging.
5. BE CAREFUL when working around high pressure hydraulic system.
6. ALWAYS make sure that pressure is relieved from hydraulic circuits before servicing or disconnecting from tractor.
7. DO NOT ALLOW RIDERS.
8. USE EXTREME CARE when making adjustments.
9. KEEP CHILDREN AWAY from machinery at all times.
10. NEVER ALLOW anyone to walk or work under a raised piece of equipment without installing cylinder and transport locks.

## Steps Prior to Operation

1. COMPLETE WARRANTY REGISTRATION CARD
  - A. Complete and return WARRANTY REGISTRATION CARD located at the beginning of this manual. **RETURNING CARD ENTITLES YOU TO A FREE GIFT.**
  - B. Complete the OWNER REGISTER also located at the beginning of this manual (Serial Number is located by the hitch piece). OWNER REGISTER INFORMATION MAY BE NEEDED WHEN ORDERING PARTS.
2. VERIFY TRACTOR REQUIREMENTS
  - A. Recommended engine horsepower is 8-11 per foot.

**NOTE: It may be necessary to reduce tillage depth, change tillage tools or perform multiple passes if below this horsepower range.**
3. FINAL CHECK
  - A. After receiving or assembling your Chisel Plow, it is a good practice to double check the entire machine so that all fasteners are securely tightened.
  - B. Make sure all grease fittings are in place and greased properly.
  - C. Inflate tires to recommended inflation pressure (see page 5-4) and check that wheel bolts are tight.





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## Initial Hookup

1. Make tractor to hitch connection with locking draw pin and safety chain.
2. Retract jack and rotate into storage position. Connect Safety Light Kit to 7 pin receptacle.
3. Plug wing lift hoses into desired tractor outlet. Ensure that tips and couplers are CLEAN.
4. Plug depth control hoses into desired tractor outlet.
5. Park tractor and chisel plow on a level surface.
6. Remove transport lock pins on wings.



# OPERATION

## 7. Lower the wings with caution.

- A. Do not raise or lower the wings when moving. Operate tractor hydraulics from operator station only. Do not allow anyone to stand near the Chisel Plow when folding or unfolding.
- B. Make sure the part 1 wing lift cylinders are fully extended before the part 2 wings start to move.
- C. If part 2 wings move, sequencing valve pressure for base end of the 4-1/2" x 16" cylinders must be increased. To increase the sequencing valve pressure, loosen the jam nut on the valve (valve is located at the right hand side of the center section on the 2nd rank). Use an allen wrench to turn the set screw on the poppit 1/2 turn inward to increase pressure. Test new adjustment before turning the set screw anymore. If the valve is set with too much pressure, the part 2 wings will not unfold. To reduce the amount of pressure, turn the set screw outward.
- D. Fold and unfold the machine again to make sure that everything is working properly.
- E. Slowly raise the part 2 wings into transport position.
- F. Fully retract the part 2 cylinders and let wings rest against transport supports. If part 1 wings start to rise before part 2 cylinders are completely retracted, the sequencing valve pressure that feeds rod ends of 5" x 36" cylinders must be increased. To increase the sequencing valve pressure, loosen the jam nut on the valve (valve is located on the left hand side of the center section on the 2nd rank). Use an allen wrench to turn the set screw on the poppit 1/2 turn inward to increase pressure. Test new adjustment before turning the set screw any-

more. If the valve is set with too much pressure, the part 1 wings will not rise. To reduce the amount of pressure, turn the set screw outward.

- G. Slowly raise wings. Retract part 1 wing lift cylinders fully to allow wings to rest against transport locks. If wing does not rest against both locks, adjust locks.
- H. Return machine to field position when sequencing adjustments are complete.

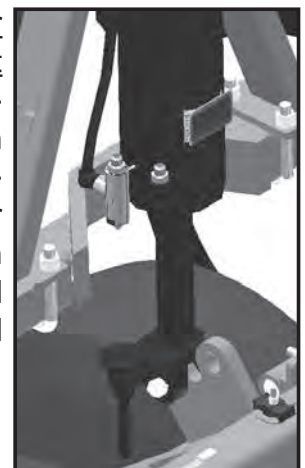
**IMPORTANT!** *Restrictors are installed in the part 2 wing lowering and raising hydraulic circuit. They are also installed in the part 1 wing lowering hydraulic circuit. This has been done to reduce the chance of wing free fall. Do not remove these restrictors.*

- 8. Fully extend depth control cylinders and maintain hydraulic pressure for 30 seconds to ensure that all air has been purged from the system.

**NOTE:** **This machine has rephasing style depth control cylinders. When cylinders are fully extended, oil will bypass through a rephasing slot on each cylinder in order to equalize the system.**

## 9. Remove depth control cylinder transport locks.

- A. Store transport locks in their appropriate holders.
- B. Become familiar with single point depth control. Control can be found on 6" x 10 cylinder located on the center section. A hairpin clip is used to hold plunger in desired location.



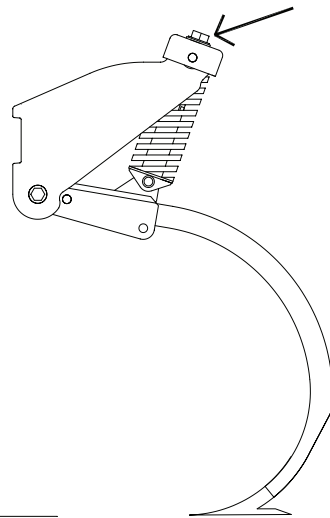
## Field Operation

1. Always rephase cylinders before starting field operation.
2. Choose a flat spot in a field to set depth and level the chisel plow.

**IMPORTANT!** *The operator is responsible for adjusting the machine since machine does not come “Field Ready” from the factory.*

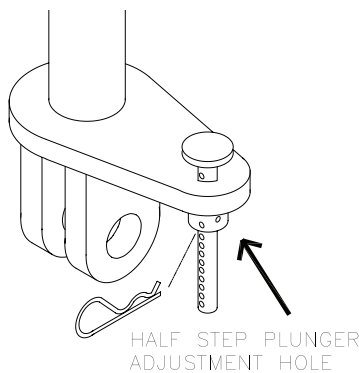
3. Determine desired tillage depth by working test strips within the field.

**NOTE:** Optimum performance of the machine is achieved by tilling at a depth and moving at a speed that does not go beyond the limit of the trip assemblies. This limit is exceeded if the connecting bolt (shown to right) continually rides above the trip assembly cap.

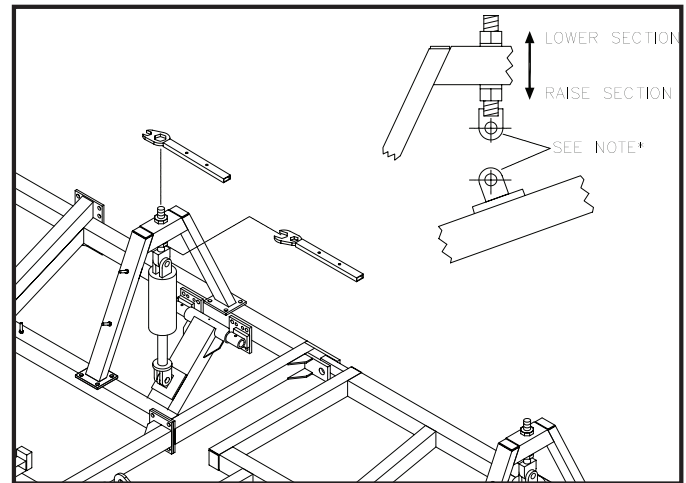


**NOTE:** Increased draft will occur if connecting bolt continually rides above the trip assembly cap. This will consume horsepower as well as reduce the life of the trip assembly.

4. After determining desired tillage depth, set depth control plunger accordingly. Standard plunger hole spacing gives 5/16" cylinder stroke adjustment. By rotating plunger 90 degrees, a half step adjustment can be



achieved.



5. Leveling the chisel plow from side to side. Stop the tractor with the machine still in the ground. Check the depth of tillage on the left wing, center, and right wing. If leveling is necessary, use wrenches provided to adjust the eyebolts on the cylinder attachments located at the rear of the machine.

**\*NOTE:** Ensure that cylinder attach holes are aligned when eyebolts are tightened.

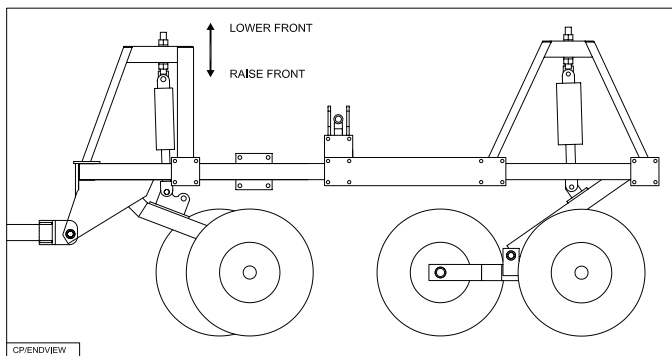
**IMPORTANT!** *Pressure must be removed from cylinders before adjusting eyebolts. Rest chisel plow on top of the ground, shut tractor off and relieve pressure by cycling remote lever back and forth.*

One turn of the 1-1/2" NC Cylinder Attach Eyebolt Nut changes chisel height 3/8". One inch of adjustment moves chisel plow height over 2 inches. It may be necessary to move eyebolts a small amount to attain correct adjustment of each section.

**NOTE:** It is best to check levelness of the chisel plow after each adjustment by working test strips within the field.

6. Leveling the machine from front to back. Check depth of tillage at front and back of the machine. If leveling is necessary, use wrenches provided to adjust the eyebolt on the front wheel assembly up or down.

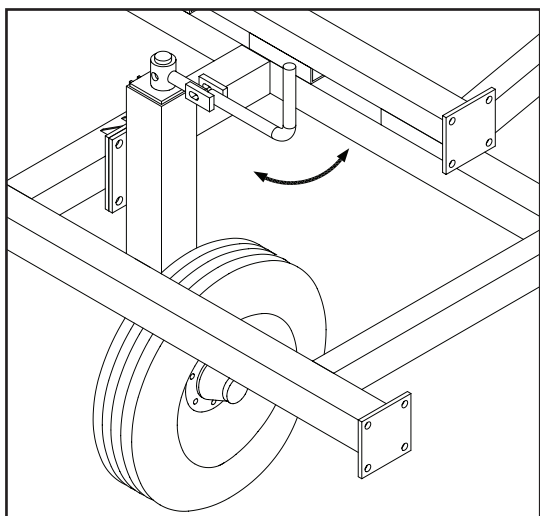
# OPERATION



The front center lift arm has two cylinder attach locations. If chisel plow has a full set of mounted harrows or if rear of machine is low in transport position, use rear cylinder attach hole. Connecting front center cylinder to rear hole will lower front of chisel plow in transport position.

**IMPORTANT!** Pressure must be removed from cylinders before adjusting eyebolts. Rest chisel plow on top of the ground. Shut tractor off and relieve pressure by cycling remote lever back and forth.

7. Setting gauge wheels. After depth has been established and chisel plow has been leveled, operator must set gauge wheels. Stop tractor with chisel plow in the ground. Adjust crank assembly until wheel rests on top of the ground. Set bolts are installed on each gauge wheel assembly. Adjust set bolts so gauge wheel depth can still be changed but rotation of assembly is limited. If running at a consistent depth, set bolts can be securely tightened to lock gauge wheels.



**IMPORTANT!** Gauge wheels are only intended to stabilize the machine. They should not be used to support entire weight of the wings. Tough soil conditions may create “suction” on the front of the chisel plow. As long as the machine is not operated beyond the trip assembly limit (see page 4-3), the gauge wheels are being used properly. Failure to follow these guidelines may result in machine damage.

A depth decal is attached to the axle holder to help the operator in setting the gauge wheels.

## 8. Operation “Tips”

- The 7 solid lift arms on this machine are designed to prevent skewing from side to side. To avoid damage to the lift arms and wheel assemblies, do not take sharp corners with the chisel plow in the ground.
- Floating hitch machines are designed to follow contours of the ground. The Summers chisel plow has a short wheel base in field position that allows it to smoothly follow through ditches and gullies. This machine will also follow deep furrows in the field. The operator may want to till through deep furrows at an angle to maintain a more uniform tillage depth.
- Rephase cylinders every hour. If the chisel plow is raised and lowered only a small amount during operation, the cylinders will not remain in phase. Since each section is supported by individual cylinders, it is important to keep these cylinders in phase in order to maintain uniform tillage depth.

**NOTE:** Sweeps that are 14” and less can be used without trimming. Wider sweeps may need to be trimmed by tires and/or walking tandems.

## Transporting

1. Park tractor and chisel plow on level surface with depth control cylinders fully raised.
2. Raise wings with caution.
3. Install transport lock pins on wings and cylinder locks on depth control cylinders.



4. Use a safety chain between tractor drawbar and chisel plow hitch when transporting.
5. Only tow at a safe speed – 20 MPH MAXIMUM. Use caution when making corners or meeting traffic.
6. Follow all local laws governing transporting of farm machinery.
7. Be aware of and comply with all height and width transport requirements. (See specifications page 5-4).
8. Stay clear of overhead lines.
9. Frequently check for traffic from rear, especially during turns.
10. Avoid sharp turns on hard surfaces. Solid mounted lift arms may cause wheel assemblies to scuff. Damage to tires and machine could occur.

## Unhooking From Tractor

1. Lower Chisel Plow into field position and relieve hydraulic pressure from cylinders before disconnecting from tractor.
2. Disconnect hydraulics and safety light kit wiring harness.
3. Rotate jack into standing position and extend jack.
4. Block tires to prevent movement of machine after unhooking.
5. Remove draw pin and safety chain.



# OPERATION

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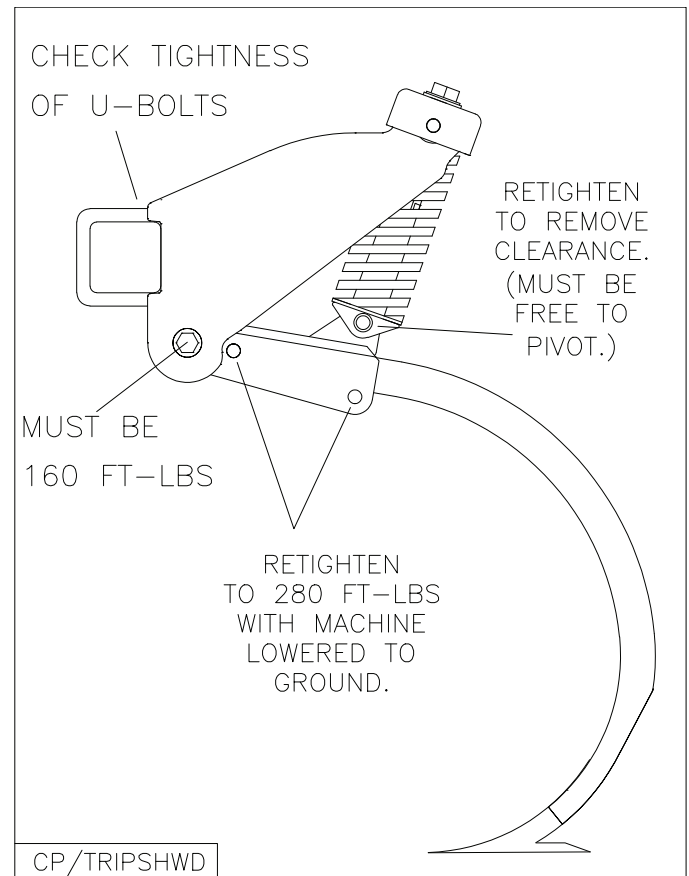
# MAINTENANCE & SPECIFICATIONS

## Maintenance Safety

1. **STOP** engine, place all controls in neutral, set parking brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting or maintaining.
2. **BE CAREFUL** when working around high pressure hydraulic system.
3. **ALWAYS** make sure that pressure is relieved from hydraulic circuits before servicing or disconnecting from tractor.
4. **USE EXTREME CARE** when making adjustments.
5. **KEEP CHILDREN AWAY** from machinery at all times.
6. **NEVER ALLOW** anyone to walk or work under a raised piece of equipment without installing cylinder and transport locks.

## Maintenance after the 1st day and week of Operation

1. Grease lift arms, walking tandem assemblies, wing pivots, and hitch pivots.
2. Check all hydraulic components for leaks daily.
3. Check tightness of all wheel bolts daily.
4. Check tightness of wheel bearings.
5. Check tightness of trip assembly hardware as indicated in sketch.



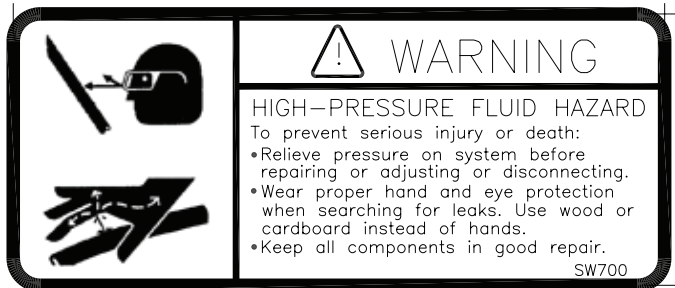
6. Check tightness of all hardware. Pay special attention to hitch bolts and all pivot retaining bolts.

# MAINTENANCE & SPECIFICATIONS

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## Daily Maintenance

1. Grease lift arms, walking tandem assemblies, wing pivots, and hitch pivots.
2. Check all hydraulic components for leaks.
3. Check tightness of all wheel bolts.



## Periodic Maintenance

1. Repack wheel bearings and check their tightness (See Page 6-36).
2. Check tire air pressure (See specification page 5-4).
3. Check tightness of trip assembly hardware as explained under "Maintenance for after the first day and week of operation".
4. Check tightness of all hardware. Pay special attention to hitch bolts and all pivot retaining bolts.
5. Check chisel plow for damaged or worn parts. Replace as needed.

## Storage

1. Clean and remove all excessive dirt and grease from the chisel plow.
2. Grease all zerks.
3. To prevent rusting, repaint any areas that have been worn, chipped or scratched.
4. Retract cylinders when possible. Apply grease\* to any exposed part of cylinder shafts.

**\*NOTE:** Before returning chisel plow into service, all grease must be removed from cylinder shafts to prevent damage to seals.

# MAINTENANCE & SPECIFICATIONS

PROBLEM	CAUSE	CORRECTION
1. Not tilling level.	A. Depth control cylinders out of phase.	Rephase cylinders. See Page 4-3.
	B. Eyebolts not adjusted properly.	Adjust with wrenches provided. See pages 4-4.
	C. Gauge wheels not adjusted properly.	Adjust gauge wheels so they ride freely on top of the ground.
	D. Hard soils conditions.	Use different tillage tool or perform multiple passes, starting at less depth.
2. Not pulling straight.	A. Chisel plow not tilling level.	See “not tiling level” above.
3. Inconsistent tillage depth.	A. Excessive travel speed.	Reduce speed.
	B. Hard soil conditions.	Use different tillage tool or perform multiple passes, starting at less depth.
	C. Deep furrows.	Travel across field furrows at an angle.
4. Plugging.	A. Working in extremely heavy trash.	If equipped with mounted harrows, reduce aggressiveness of harrows or lock harrows in the up position.
	B. Tillage tool (spike, sweep, etc.) causing plugging.	Change type of tool. Make sure twisted spikes are not throwing soil towards wheels.
5. Poor penetration.	A. Machine not running level front to back.	Adjust eyebolts on front center wheel assembly.
	B. Gauge wheels adjusted improperly.	Adjust gauge wheels so they ride freely on top of the ground.
	C. Hard soil conditions.	Use different tillage tool.
6. Depth control cylinders not working properly.	A. Depth control cylinders out of phase.	Rephase cylinders by fully extending and holding tractor remote lever for 30 seconds.
	B. Hydraulic hoses not connected properly or faulty coupler.	Reconnect hydraulic hoses or replace hydraulic coupler.
	C. Tractor hydraulics not set properly.	Adjust tractor hydraulic flow rate to maximum on Depth Control Circuit.
7. Wing lift cylinders move too fast.	A. One way restrictor(s) not installed properly.	Check restrictors (PN 8J7116). See Page 4-3 and Parts breakdown.
	B. Tractor hydraulics not set properly.	Reduce flow rate to Wing Lift Cylinder Circuit.
8. Wings do not unfold properly.	A. Part 2 wing lift cylinder moving before part 1 wing lift cylinders fully extend.	Increase pressure in sequencing valve that feeds base end of part 2 cylinders.
	B. Part 2 wing lift cylinders not extending.	Decrease pressure in sequencing valve that feeds base end of part 2 cylinders.
9. Wings do not fold properly.	A. Part 1 wing lift cylinders moving before part 2 wing lift cylinders fully retract.	Increase pressure in sequencing valve that feeds rod end of part 1 cylinders.
	B. Part 1 wing lift cylinders not retracting.	Decrease pressure in sequencing valve that feeds rod end of part 1 cylinders.

# MAINTENANCE & SPECIFICATIONS

## WIDTH, HEIGHT, WEIGHT, LENGTH

SIZE	APPROX. TRANSPORT WIDTH	APPROX		WEIGHT W/3BAR 104 HARROWS	LENGTH W/3BAR 104 HARROWS
		TRANSPORT HEIGHT	STANDARD WEIGHT		
50'	19'2"	15'8"	21,896	23,809	33'
52'	19'2"	15'8"	22,190	24,140	33'
54'	19'2"	15'8"	22,670	24,674	33'
56'	19'2"	17'8"	26,302*	26,302*	33'
58'	19'2"	17'8"	26,836*	26,836*	33'
60'	19'2"	17'8"	27,401*	27,401*	33'

\* Available with Mounted Harrows Only.

## TIRE SPECIFICATIONS

LOCATION	TIRE SIZE	PLY RATING	AIR PRESSURE (PSI)
CENTER SECTION	12.5L x 15	LRF	90
PART 1 & 2 WINGS	11L x 15	LRF	85

\* To increase penetration depth, inflation pressure can be reduced by up to 33% on rear tires and 25% on front center tires.

## PROPER BOLT USE

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

BOLT SIZE	WRENCH SIZE	GRADE 5		GRADE 8	
		ft-lbs	N • m	ft-lbs	N • m
1/4"	7/16" or 3/8"	7	9.5	12	17
5/16"	1/2"	15	20	25	34
3/8"	9/16"	30	41	45	61
7/16"	5/8" or 11/16"	45	61	70	95
1/2"	3/4"	70	95	105	142
9/16" wheel bolts	7/8"	170	231		
5/8"	15/16"	170	231	210	285
5/8" wheel nuts	1-1/16"	240	325		
3/4"	1-1/16"* or 1-1/8"	250	339	375	509
7/8"	1-5/16"	350	475	600	814
1"	1-1/2"	450	610	880	1193
1-1/4"	1-7/8"	500	678		
1-1/2"	2-1/4"	570	773		
2"	3-1/8"	1200	1627		

\*Nylon Lock Nut

3/8/12 TILLAGE



SAE  
GRADE 5



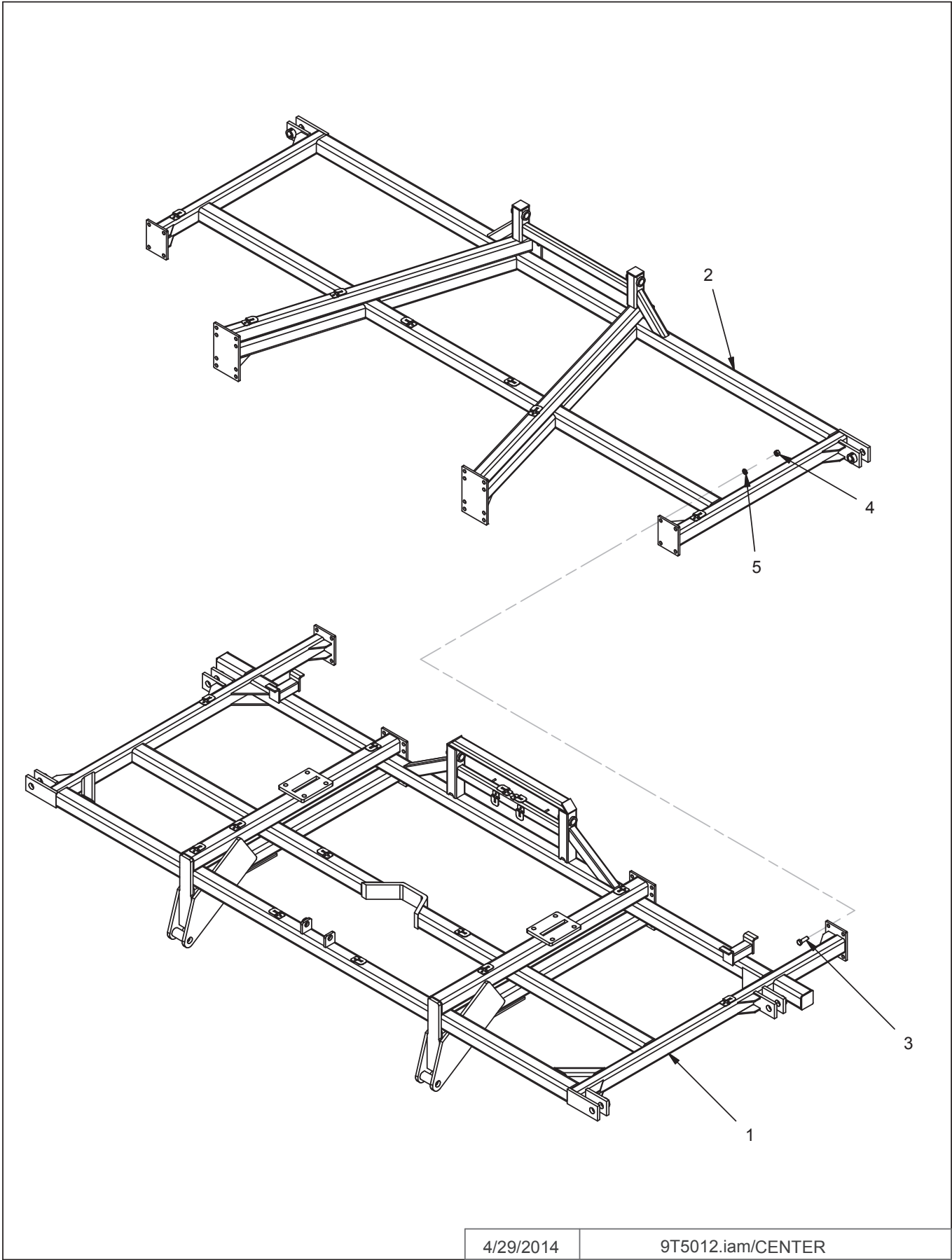
SAE  
GRADE 8



## **Parts Ordering Procedure**

When ordering parts for your Summers chisel plow, please contact an authorized Summers dealer in your area. If the parts are associated with a possible warranty claim, make sure that you contact the original dealer from which you purchased the Summers implement. Make sure to provide the Summers implement model, Serial number, Part number, Part description and quantity.

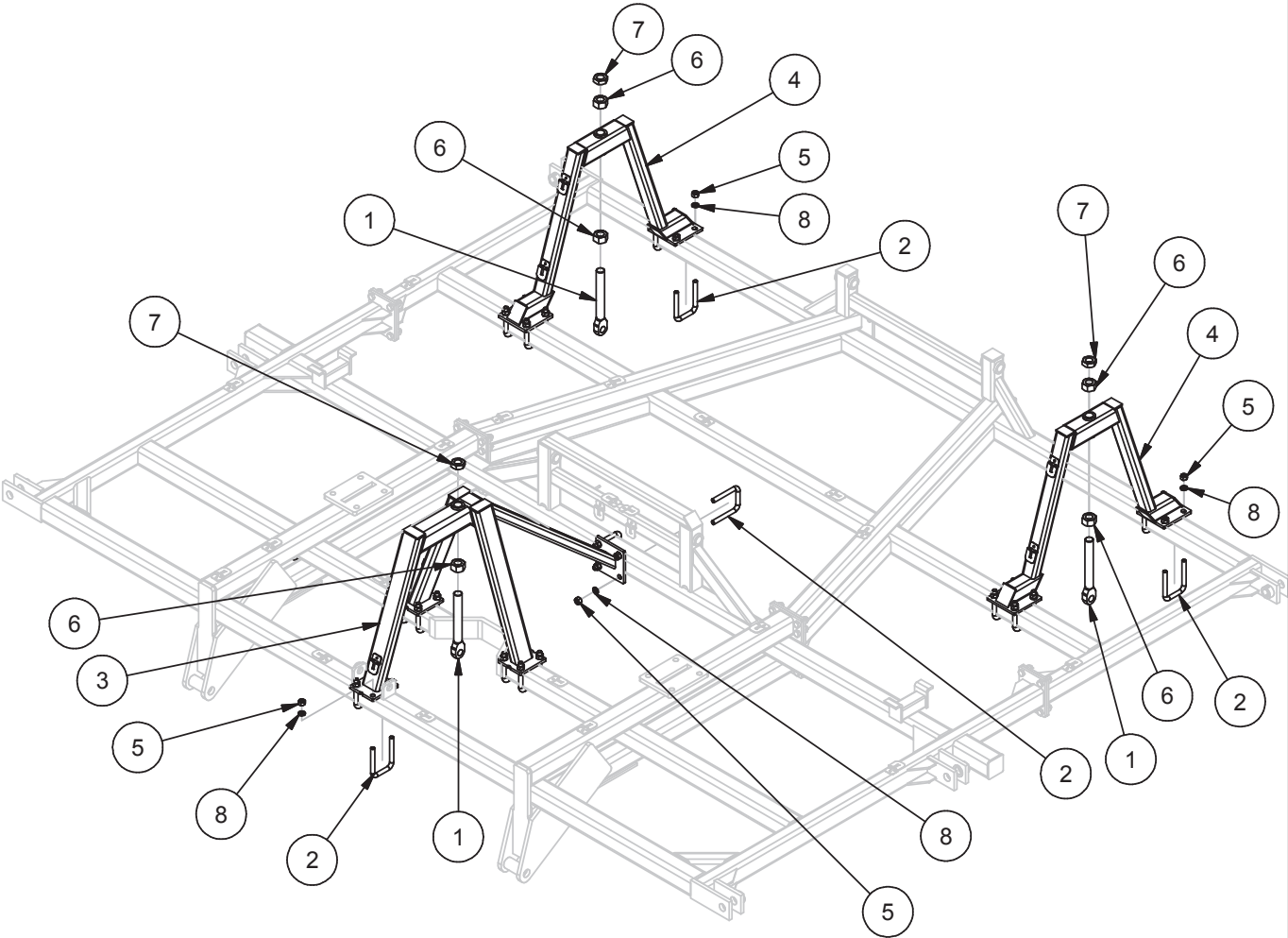
# PARTS LIST



# PARTS LIST

CENTER PARTS LIST				
Ref.	FN	Part Number	Model	Description
1		8T4020		FRAME, FRONT CENTER CHISEL PLOW
2		8T4032		FRAME, REAR CNTR 5 PLEX CHPLOW
3		8X0112		BOLT 3/4"-10NC X 2-1/4" GR5 ZDI
4		8X0260		NUT 3/4"-10NC HEX GR2 ZDI
5		8X0306		LOCKWASHER 3/4" YLW ZNC

# PARTS LIST

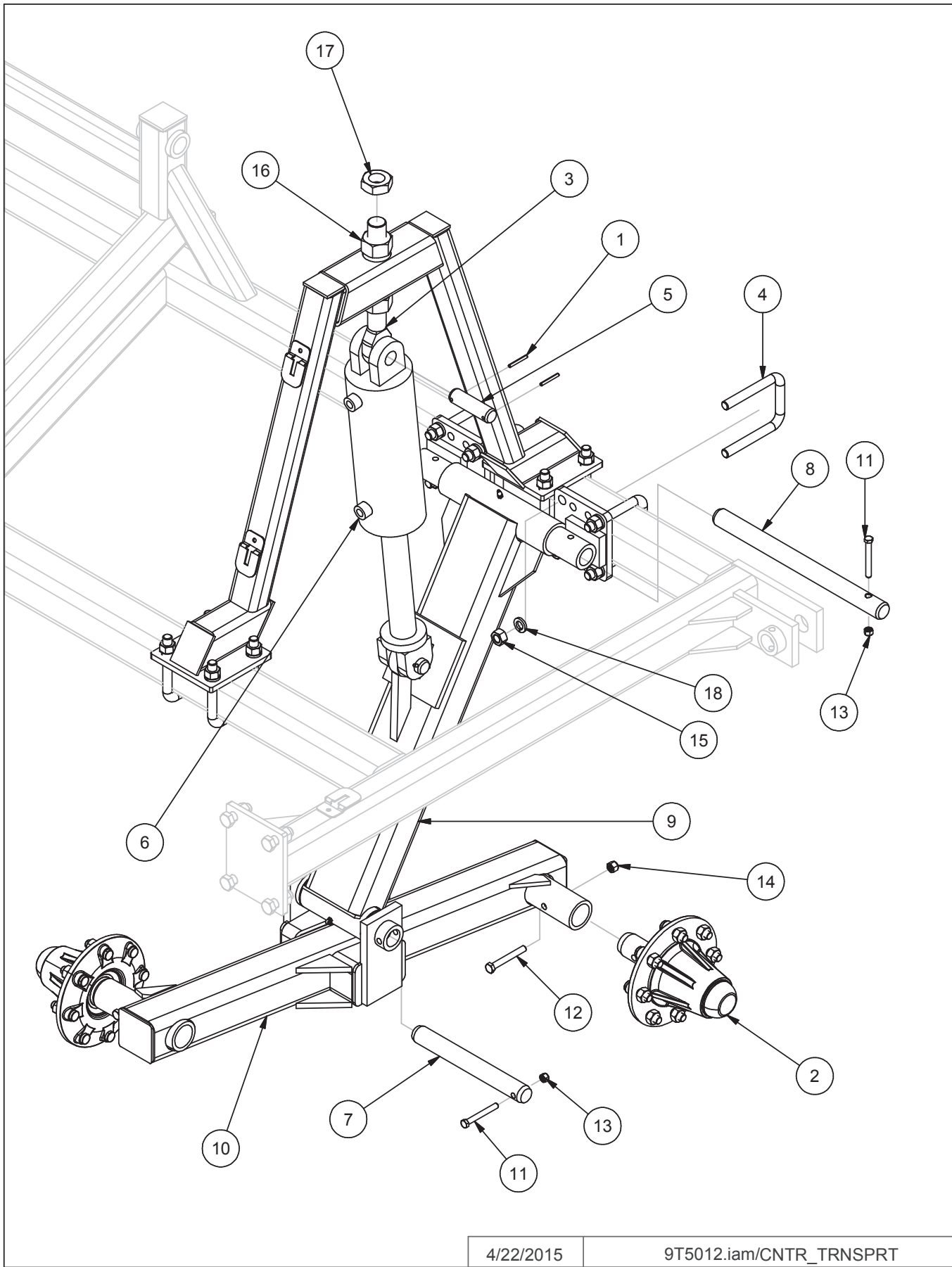


# PARTS LIST

STANDARD CENTER TRANSPORT ASSEMBLY PARTS LIST				
Ref.	FN	Part Number	Model	Description
1		8K1755		EYEBOLT 1.5"DIA X 1.26"EYE X 14" YZ
2		8K5515		U-BOLT 3/4" X 4-1/16 X 6" SQ
3		8T4205		CYL ATTCH FRNT CNTR CHSL 10-
4		8T4226		CYL ATTCH, OFFSET REAR 5PLEX
5		8X0260		NUT 3/4"-10NC HEX GR2 ZDI
6		8X0285		NUT 1-1/2"-6NC HEX GR2 YZ
7		8X0286		NUT 1-1/2"-6NC JAM GR2 ZDI
8		8X0306		LOCKWASHER 3/4" YLW ZNC



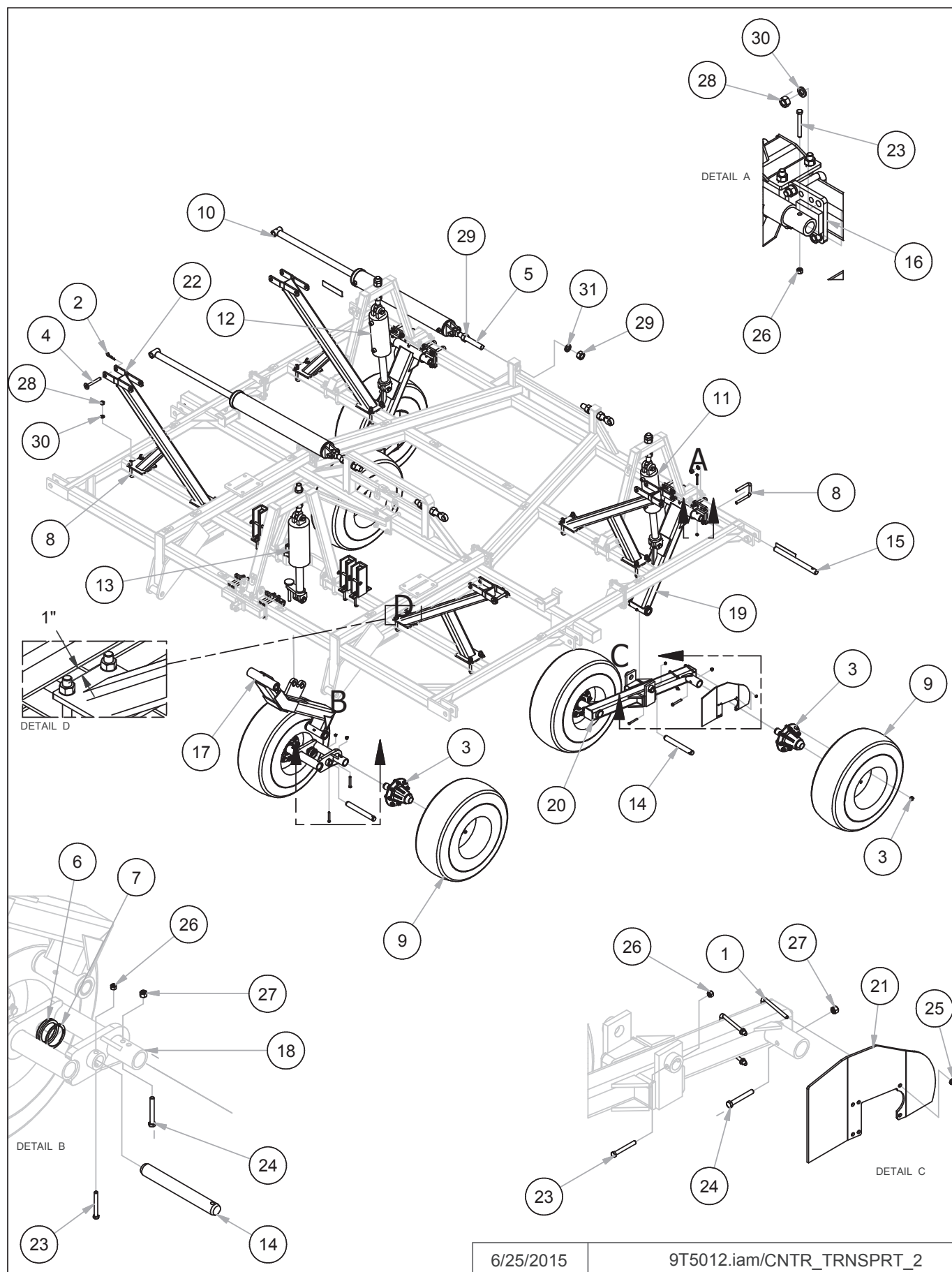
# PARTS LIST



# PARTS LIST

REAR CENTER TRANSPORT PARTS LIST				
Ref	FN	Part Number	Model	Description
1		8D9108		ROLL PIN 1/4" X 2" YLW ZNC
2		8K1105S		HUB&AXLE ASSY HD812 (2"RCVR)
3		8K1755		EYEBOLT 1.5"DIA X 1.26"EYE X 14" YZ
4		8K5515		U-BOLT 3/4" X 4-1/16 X 6" SQ
5		8K9106		PIN 1-1/4" X 4-3/8" HARDENED
6		8T1050		HYD CYL 5.0" X 10" REPHASE 96-
7		8T3620		PIN 1-1/2" X 12-1/2" HRDND&ZINC
8		8T3640		PIN 1-1/2" X 19" HARDENED 98-
9		8T4140		LIFTARM REAR WLKNG TNDM CH96-
10		8T4166		WALKNG TNDM W/ANGLD4X4LEFT99-
11		8X0044		BOLT 7/16"-14NC X 3-1/2"GR5 ZDI
12		8X0072		BOLT 1/2"-13NC X 3-3/4" GR5 YZ
13		8X0234		NUT 7/16"-14NC NY-LOCK GR2 ZDI
14		8X0242		NUT 1/2"-13NC NY-LOCK GR2 YZ
15		8X0260		NUT 3/4"-10NC HEX GR2 YZ
16		8X0285		NUT 1-1/2"-6NC HEX GR2 YZ
17		8X0286		NUT 1-1/2"-6NC JAM GR2 YZ
18		8X0306		LOCKWASHER 3/4" YLW ZNC

# PARTS LIST



6/25/2015

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# PARTS LIST

STANDARD CENTER TRANSPORT PARTS LIST				
Ref	FN	Part Number	Model	Description
1		8A1156		U-BOLT 3/8 X 4-1/16 X 5" SQ
2		8D9110		HAIR PIN CLIP LARGE(1"CYL PIN)
3		8K1105S		HUB&AXLE ASSY HD812 (2"RCVR)
4		8K1610		PIN 3/4 X 6 1/4" SAFETYLOCK
5		8K1755		EYEBOLT 1.5DIA X 1.26"EYE X 14" YZ
6		8K1900		SEAL GBGI V WALKING TANDEM 01-
7		8K1920		RETAINING RING 2-7/8" INV 00-
8		8K5515		U-BOLT 3/4 X 4-1/16 X 6" SQ
9		8K7042		12.5L X 15 LRF ON 15X10X8 WHL
10		8K9650		5" DIA. X 33" STR. CYL. ASSY
11		8T1050		HYD CYL 5.0 X 10" REPHASE 96-
12		8T1055		HYD CYL 5.5 X 10" REPHASE 96-
13		8T1060		HYD CYL 6 X 10 W/ STRK CNTRL 96-
14		8T3620		PIN 1-1/2 X 12-1/2" HRDND&ZINC
15		8T3640		PIN 1-1/2 X 19" HARDENED 98-
16		8T4100		PIVOT W/BLTPLATE LIFTARM 96-
17		8T4130		LIFTARM FRONT CNTR CHSL 98-
18		8T4132		WLKNG TNDM 7.5"C-C 2" ID 98-
19		8T4140		LIFTARM REAR WLKNG TNDM CH96-
20		8T4166		WALKNG TNDM W/ANGLD4X4LEFT99-
21		8T4190 8T4192		MUD DFLCTR W/T 7T0125 BNT LEFT MUD DFLCTR W/T 7T0125 BNT RIGHT
22		8T4325		WING LCK, 5 PLEX CHPLOW
23		8X0044		BOLT 7/16-14NC X 3-1/2"GR5 ZDI
24		8X0072		BOLT 1/2-13NC X 3-3/4" GR5 YZ
25		8X0203		NUT 3/8"-16NC SERFLANG GR2 YZ
26		8X0234		NUT 7/16"-14NC NY-LOCK GR2 ZDI
27		8X0242		NUT 1/2"-13NC NY-LOCK GR2 YZ
28		8X0260		NUT 3/4"-10NC HEX GR2 YZ
29		8X0285		NUT 1-1/2"-6NC HEX GR2 YZ
30		8X0306		LOCKWASHER 3/4" YLW ZNC
31		8X0315		LOCKWASHER 1-1/2" YLW ZNC

# PARTS LIST

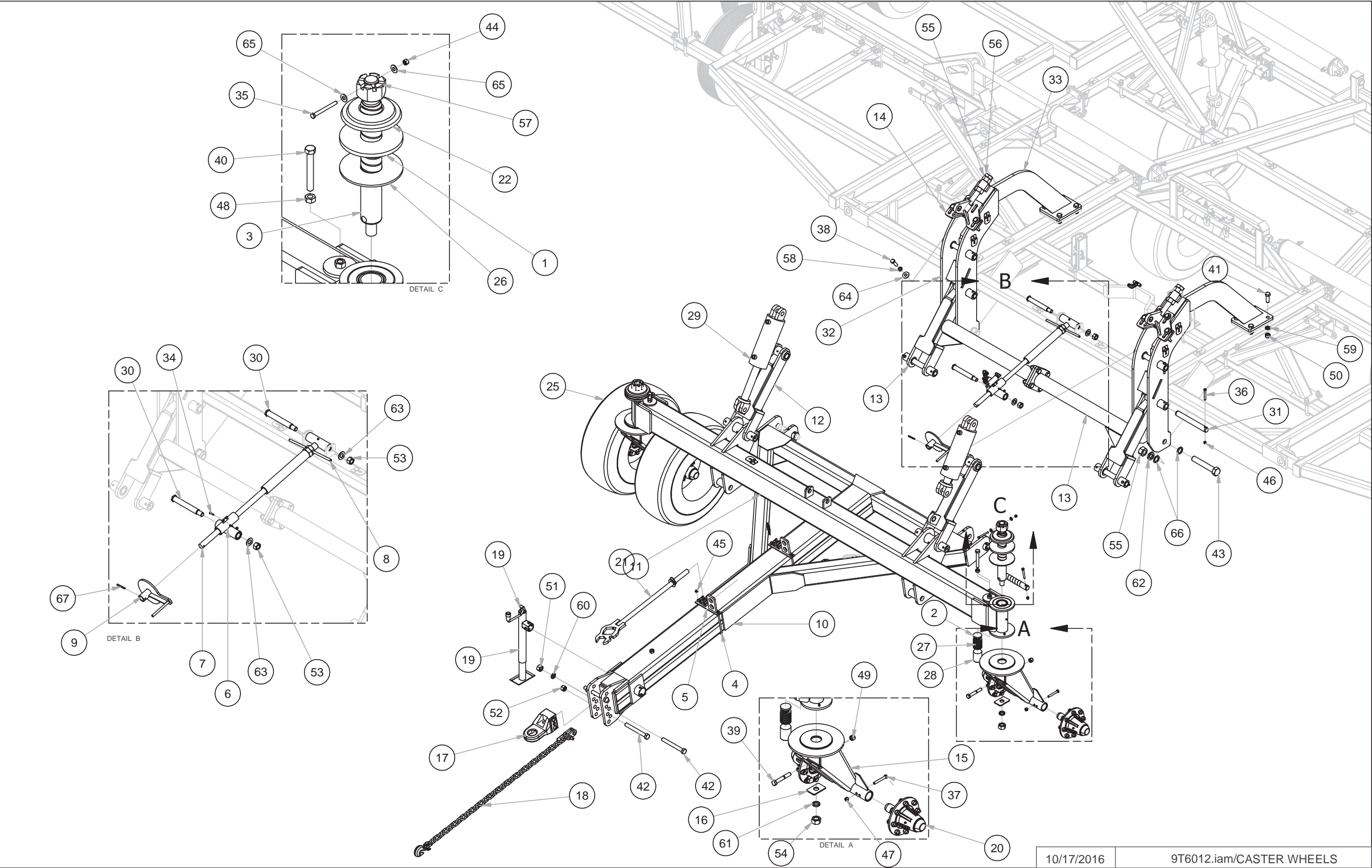
## CASTER WHEEL HITCH PARTS LIST

Ref	FN	Part Number	Model	Description
1		7L2150		STL 1/2 X 7-1/2"OD X 2-9/16"ID
2		7P7289		STL
3		7P8530		ROUND CR 2 1/2"-22 1/4" 07-
4		8C1710		U-BOLT 3/8 X 8 X 9" SQ
5		8CC0600		HOLDDOWN HOSE 8" WDTN W/ WRNCH
6		8CC0750		CROSS TUBE POPPET MNT
7		8CC0756		LINK ROD SNGL PT DPTH ADJ
8		8CC0780		NUT JAM 1-1/2 W/ HNDL
9		8CC0785		POPPET STOP W/ HANDLE
10		8CC4000		HITCH
11		8CC6000B		D/C CHSL&STD DSK CSTR MNT
12		8CC6022		D/C CHSL LINK W/ CYLATTCH
13		8CC6026		PARALLEL LINK W/ RCKSHFT
14		8CC6028		PARALLEL LNK ADJ CYL ATTCH R2
15		8CC6030B		D/C CHSL DUAL CASTER ARM
16		8CC6035		WASHER 2.5X4X 1.281ID
17		8D0720		HITCH PIECE CAST CAT.3CTD PNT
18		8D2470		SAFETY CHAIN 7/16" X 5'
19		8D8522		JACK 5000# TOP CRANK 15"LIFT
20		8K1105S		HUB&AXLE ASSY HD812 (2"RCVR)
21		8K3002		GANG WRENCH
22		8K5200		WASHER GANG BOLT 2.030"ID
23		8K6940		SWEEP 16" 50* 1/2"BLT 2.25C-C
24		8K6942		SPIKE REVERSIBL4.5"WDTX1/4"
25		8K7042		12.5L X 15 LRF ON 15X10X8 WHL
26		8L0320		PLATE 2PT CASTER WEAR
27		8P7200		SPRING 2.5" OD-1.5 ID-3" 10-
28		8P7210		ROUND 2.5" UHMW BRAKE
29		8T1050		HYD CYL 5.0 X 10" REPHASE 96-
30		8T3300		PIVOT BOLT CHSLTRP&WNGFLT YZ
31		8T3620		PIN 1-1/2 X 12-1/2" HRDND&ZINC
32		8T3950		CHSL HITCH TOWER
33		8T3955		CHSL HITCH TOWER BRACE
34		8X0000B		BOLT 1/4-20NC X 1" GR5 ZDI
35		8X0015		BOLT 3/8-16NC X 3-3/4" GR5 ZDI

Ref	FN	Part Number	Model	Description
36		8X0044		BOLT 7/16-14NC X 3-1/2"GR5 ZDI
37		8X0072		BOLT 1/2-13NC X 3-3/4" GR5 YZ
38		8X0111		BOLT 3/4-10NC X 2-1/2" GR5 YZ
39		8X0113		BOLT 3/4-10NC X 5" GR5 YZ
40		8X0123A		BOLT 3/4NCX 5.5"FULLTHD GR5
41		8X0132		BOLT 7/8-9NC X 2-1/2" GR5 ZDI
42		8X0146		BOLT 1-8NCX8.5" W/1.5"THD GR5ZDI
43		8X0155		BOLT 1.5-6NC X 9" GR5 ZDI
44		8X0202		NUT 3/8"-16NC NY-LOCK GR2 YZ
45		8X0203		NUT 3/8"-16NC SERFLANG GR2 YZ
46		8X0234		NUT 7/16"-14NC NY-LOCK GR2 ZDI
47		8X0242		NUT 1/2"-13NC NY-LOCK GR2 YZ
48		8X0259		NUT JAM 3/4"-10NC GR2 ZDI
49		8X0261		NUT 3/4"-10NC NY-LOCK GR2 YZ
50		8X0268		NUT 7/8"-9NC HEX GR2 YZ
51		8X0280		NUT 1"-8NC HEX GR2 YZ
52		8X0281		NUT 1"-8NC NY-LOCK GR2 YZ
53		8X0282		NUT 1"-14TPI TOPLOCK GR B Z
54		8X0284		NUT 1-1/4"-7NC HEX GR2 YZ
55		8X0285		NUT 1-1/2"-6NC HEX GR2 YZ
56		8X0286		NUT 1-1/2"-6NC JAM GR2 YZ
57		8X0292		NUT 2"-4.5 HVY HEXSLOT GR2 PLN
58		8X0306		LOCKWASHER 3/4" YLW ZNC
59		8X0307		LOCKWASHER 7/8" YLW ZNC
60		8X0309		LOCKWASHER 1" YLW ZNC
61		8X0311		LOCKWASHER 1-1/4" YLW ZNC
62		8X0315		LOCKWASHER 1-1/2" YLW ZNC
63		8X0316		WASHER 1" SAE FLAT YZ
64		8X0318		WASHER 3/4"(13/16"ID)FLAT YZ
65		8X0320		WASHER 3/8" (7/16" ID)FLAT ZDI
66		8X0355		WASHER 1-1/2"IDX2.25"X10GA PLN
67		8X0523		ROLL PIN 5/16 X 2-1/2" PLN

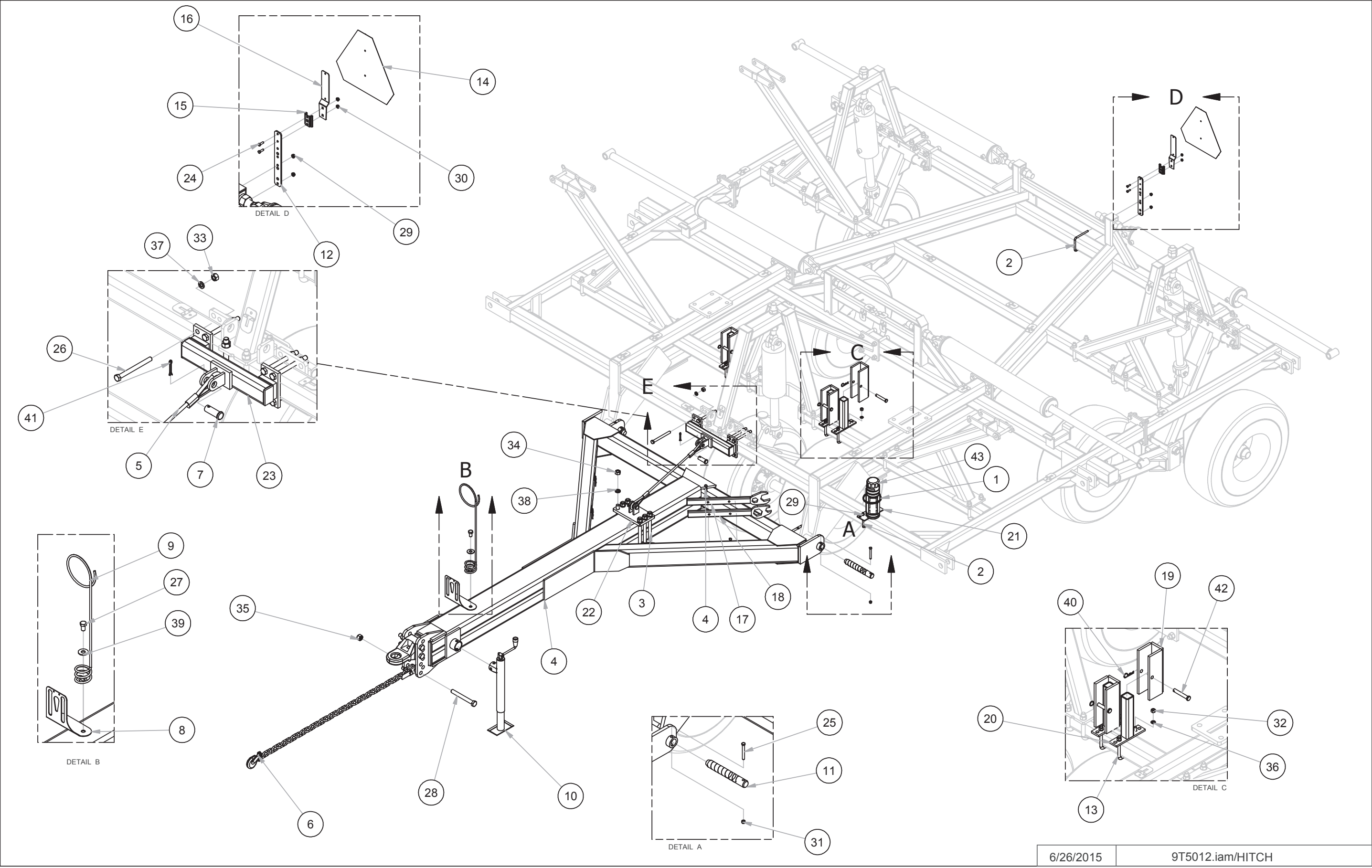


PARTS LIST



10/17/2016

9T6012.iam/CASTER WHEELS



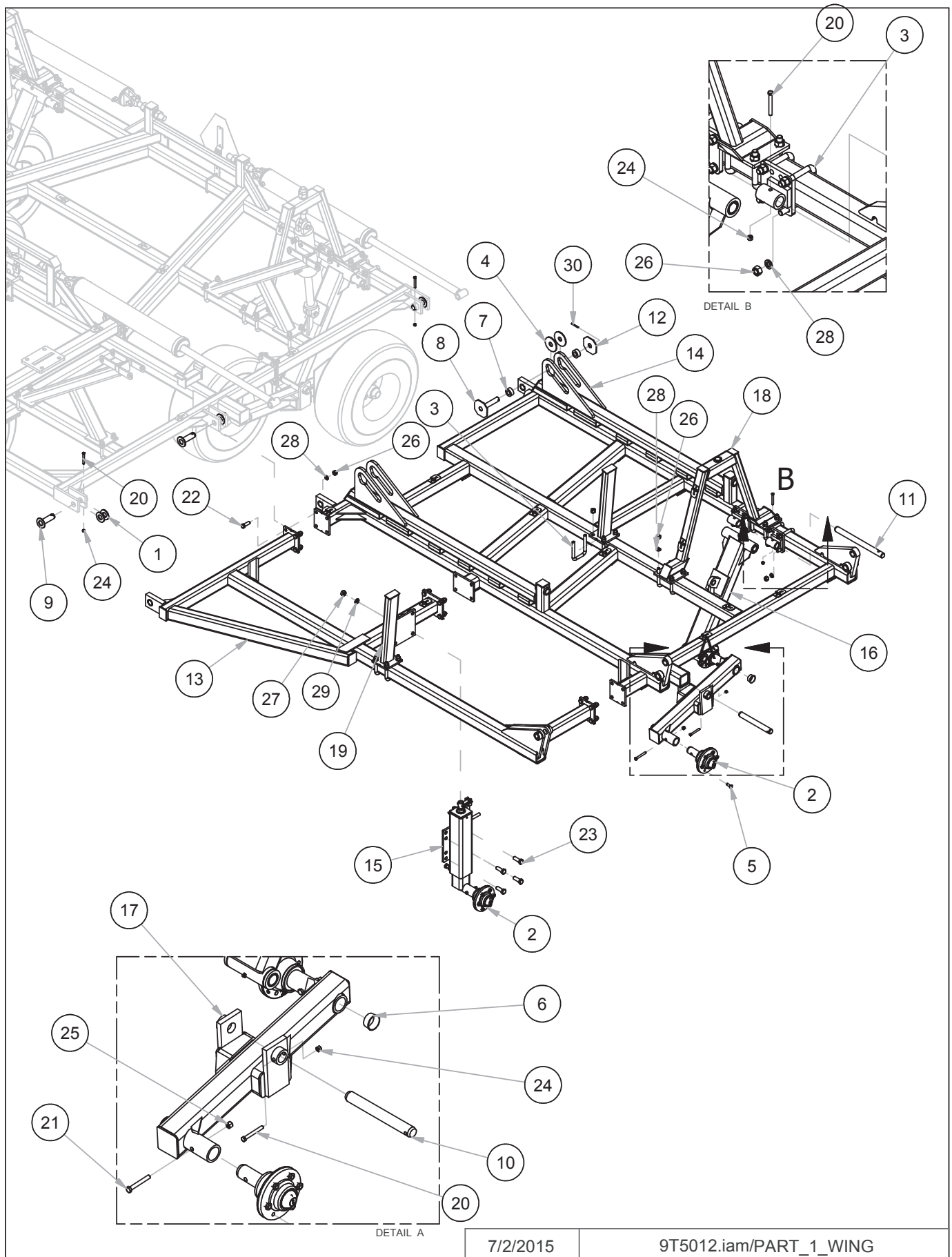
# PARTS LIST

## STANDARD CENTER HITCH PARTS LIST

Ref	FN	Part Number	Model	Description
1		8A1004		CLAMP HOSE 5" #72
2		8A1156		U-BOLT 3/8" X 4-1/16" X 5" SQ
3		8C1780		U-BOLT 7/8" X 8-1/16" X 10" SQ
4		8CC4000		HITCH
5		8D1770		CABLE 1/2" X 30.5"EYE-EYE
6		8D2470		SAFETY CHAIN 7/16" X 5'
7		8D2730		PIN 1" X 2-3/4" CABLE PLATED
8		8D8490		PIONEER/ISO TIP HLDR BNT
9		8D8500		HYD HOSE HOLDER PNTD BLK 91-
10		8D8522		JACK 5000# TOP CRANK 15"LIFT
11		8K1640		PIN 1-1/2" X 10-5/8" HITCH 84-
12		8K8200		BRCKT SMV ATTCH 4-8"FRAME98-
13		8S0340		U-BOLT 1/2" X 4" X 5-1/4" SQ
14		8S1120		SIGN SLOW MOVING VEHICLE(SMV)
15		8S1124		MOUNTING SOCKET SMV SIGN ZDI
16		8S1126		MNT SPADE W/HRDWR SMV SIGN
17		8T0606		WRNCH 2.25" OPEN, 1.5" BOX
18		8T0608		WRNCH 1.5" OPEN, 2.25" BOX
19		8T4350		CYL LOCK
20		8T4380		HOLDER CYL LOCK 4"&6" MNT 96-
21		8T4385		HOLDER MANUAL-PAK
22		8T4405		BRCKT LIMIT CBL8"SQ HTCH
23		8T4410		SUPPORT CABLE LIMIT/FRM
24		8X0021A		BOLT 5/16"-18NC X 1" GR5 YZ
25		8X0044		BOLT 7/16"-14NC X 3-1/2"GR5 YZ
26		8X0099		BOLT 5/8"-11NC X 6.75"
27		8X0110		BOLT 3/4"-10NC X 1-1/4" GR5 YZ
28		8X0146		BOLT 1"-8NCX8.5" W/1.5"THD GR5 YZ
29		8X0203		NUT 3/8"-16NC SERFLANG GR2 YZ
30		8X0211		NUT 5/16"-18NC SERFLANG GR2 YZ
31		8X0234		NUT 7/16"-14NC NY-LOCK GR2 YZ
32		8X0240		NUT 1/2"-13NC HEX GR2 YZ
33		8X0250		NUT 5/8"-11NC HEX GR2 YZ
34		8X0268		NUT 7/8"-9NC HEX GR2 YZ
35		8X0281		NUT 1"-8NC NY-LOCK GR2 YZ
36		8X0303		LOCKWASHER 1/2" YLW ZNC
37		8X0304		LOCKWASHER 5/8" YLW ZNC
38		8X0307		LOCKWASHER 7/8" YLW ZNC
39		8X0318		WASHER 3/4"(13/16"ID)FLAT YZ
40		8X0402		HAIR PIN CLIP 1/8" X 2-9/16"
41		8X0414		COTTER PIN 1/4" X 2" YZ
42		8X0440		CLEVIS PIN 5/8" X 3-7/8" YZ
43		8Z1000		MANUAL-PAK 3"DIA X 11.75" 09-



# PARTS LIST



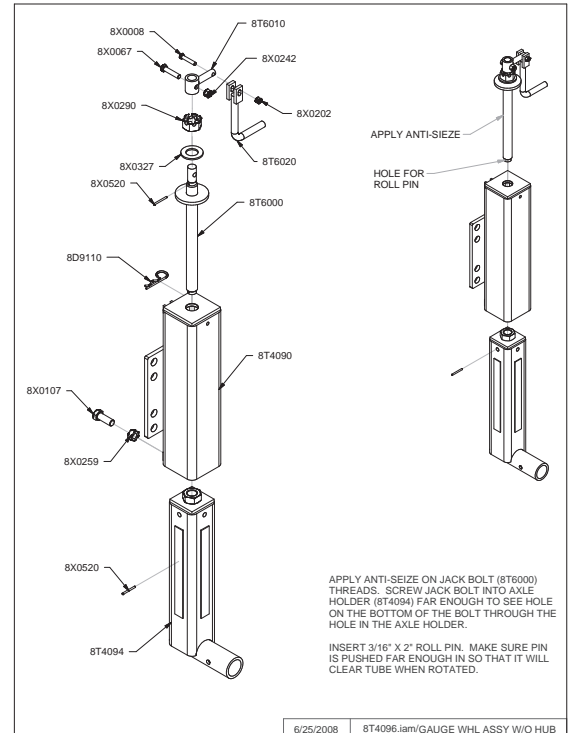
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9T5012.iam/PART\_1\_WING

# PARTS LIST

## PART 1 WING PARTS LIST

Ref	FN	Part Number	Model	Description
1		8C6015		WASHER 1.53"ID X 3-1/16"ODX1/4"
2		8K1100		HUB&AXLE ASSY 614(GBGI-2"RCVR)
3		8K5515		U-BOLT 3/4" X 4-1/16" X 6" SQ
4		8L0252		WASHER 4.5"ODX1.28"IDX1/4" ZI-DI
5		8R6914		BOLT WHEEL 9/16"-18 UNF- 1.25"
6		8S3059		CAPLUG FITS 2.067"ID TUBE96-
7		8T2510		ROLLER#1WNGFLT2.25"ODX1" 99-
8		8T3400		PIN 1-1/4" X 6-11/16"5-PLEX
9		8T3600		PIN 1-1/2" X 4-7/8" WNG PIVT98-
10		8T3620		PIN 1-1/2" X 12-1/2" HRDND&ZINC
11		8T3640		PIN 1-1/2" X 19" HARDENED 98-
12		8T3810		7T4286 HEX WASHER PNTD 99-
13		8T4054F 8T4056F 8T4058F 8T4059F		WING PT1 LFT FRNT 50'-54' WING PT 1 RGHT FRNT 50'-54' 12- WING PT 1 LFT FRNT 56'-60' 07- WING PT1 RGHT FRNT 56'-60' 07-
14		8T4054R 8T4056R 8T4058R 8T4059R		WING PT1 LFT REAR 50'-54' WING PT 1 RGHT REAR 50'-54' WING PT1 LFT REAR 56'-60' WING PT 1 RGHT REAR 56'-60'
15		8T4096		GAUGE WHEEL ASSY W/O HUB 04-
16		8T4140		LIFTARM REAR WLKNG TNDM CH96-
17		8T4168		WALKNG TNDM W/ANGLD4X4RGHT99-
18		8T4226		CYL ATTCH, OS REAR 5PLEX
19		8T4260		PART 2 WING REST
20		8X0044		BOLT 7/16"-14NC X 3-1/2"GR5 ZDI
21		8X0072		BOLT 1/2"-13NC X 3-3/4" GR5 YZ
22		8X0112		BOLT 3/4"-10NC X 2-1/4" GR5 YZ
23		8X0132		BOLT 7/8"-9NC X 2-1/2" GR5 ZDI
24		8X0234		NUT 7/16"-14NC NY-LOCK GR2 ZDI
25		8X0242		NUT 1/2"-13NC NY-LOCK GR2 YZ
26		8X0260		NUT 3/4"-10NC HEX GR2 YZ
27		8X0268		NUT 7/8"-9NC HEX GR2 YZ
28		8X0306		LOCKWASHER 3/4" YLW ZNC
29		8X0307		LOCKWASHER 7/8" YLW ZNC
30		8X0523		ROLL PIN 5/16" X 2-1/2" PLN

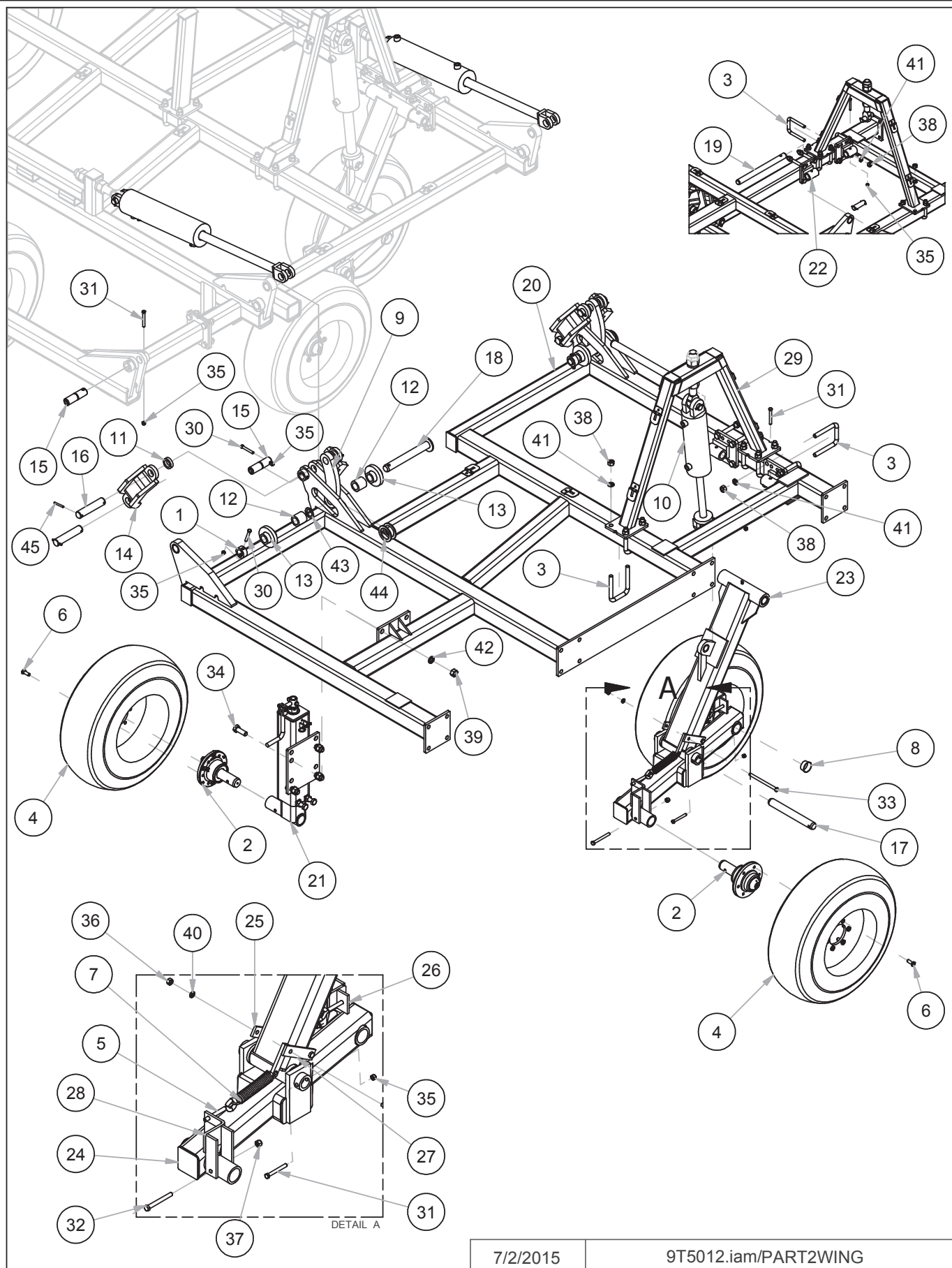


## Gauge Wheel Part Numbers

Ref	Part Number	Description
1	8D9110	HAIR PIN CLIP LARGE(1"CYL PIN)
2	8T4090	SUPPORT GAUGE WHEEL(5"SQ) 97-
3	8T4094	HOLDER GAUGE WHL AXL(4"SQ) 97-
4	8T6000	GAUGE WHEEL JACKBLT PLTD 96-
5	8T6010	GAUGE WHEEL SCREW TOP 96-
6	8T6020	GAUGE WHEEL JACK HANDL 96-
7	8X0008	BOLT 3/8"-16NC X 2" GR5 ZDI
8	8X0067	BOLT 1/2"-13NC X 2-1/4" GR5 ZDI
9	8X0107	BOLT 3/4"-10NC X 2" GR5 ZDI
10	8X0202	NUT 3/8"-16NC NY-LOCK GR2 ZDI
11	8X0242	NUT 1/2"-13NC NY-LOCK GR2 ZDI
12	8X0259	NUT JAM 3/4"-10NC GR2 ZDI
13	8X0290	NUT 1-1/4"-7NC HEXSLOT GR2 ZDI
14	8X0327	WASHER SAE FLAT 1-1/4" ZDI
15	8X0520	ROLL PIN 3/16" X 2" PLN
	8X1510	COPPER BASED ANTI-SEIZE



# PARTS LIST



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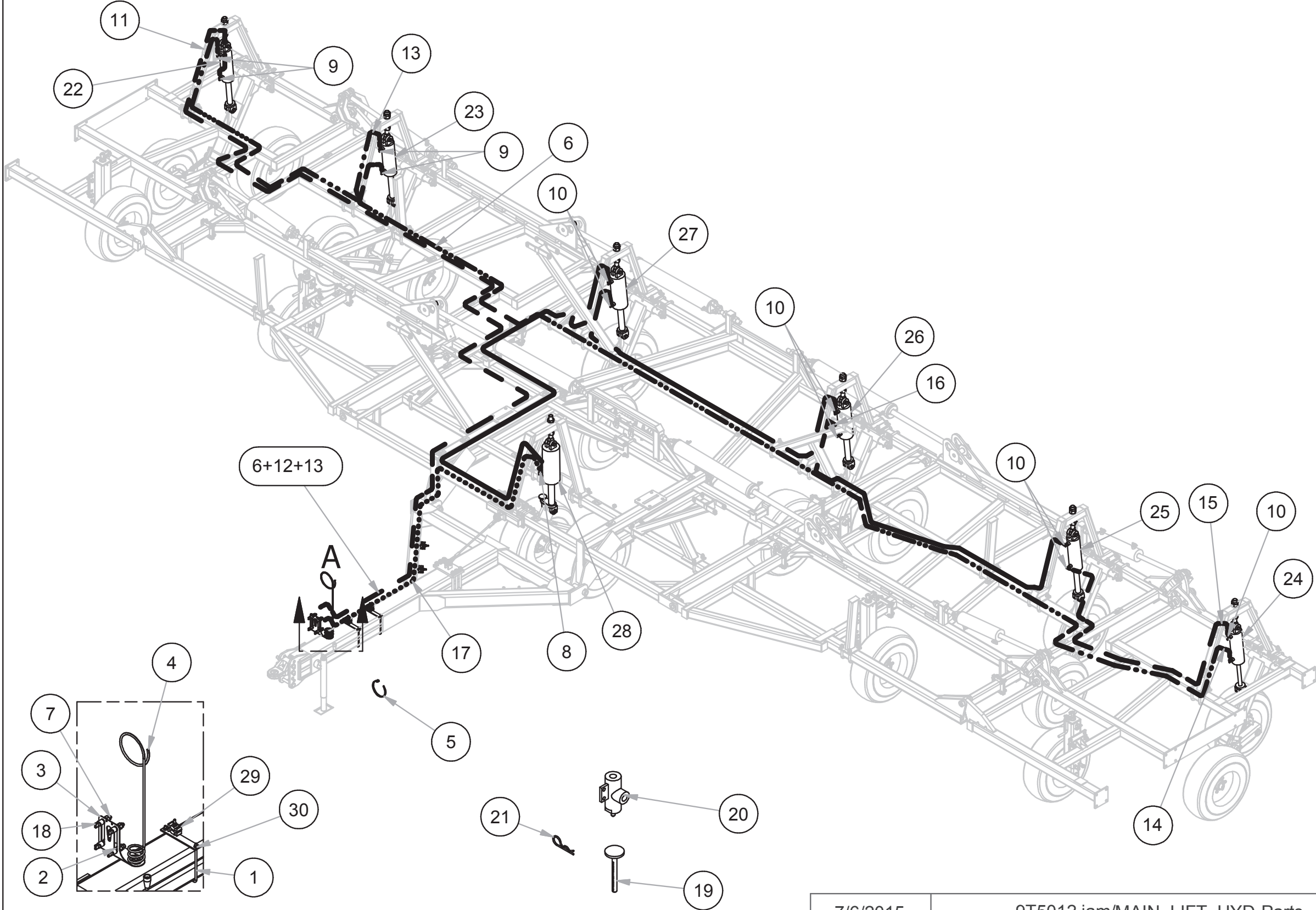
# PARTS LIST

PART 2 WING PARTS LIST				
Ref	FN	Part Number	Model	Description
1		7T2532		TUBE
2		8K1100		HUB&AXLE ASSY 614(GBGI-2"RCVR)
3		8K5515		U-BOLT 3/4" X 4-1/16 X 6" SQ
4		8K7033		11L X 15 LRF ON 15X8X6 WHEEL
5		8L0300		EYE BOLT 1/2"-13NC X 1"EYE X 4"
6		8R6914		BOLT WHEEL 9/16"-18 UNF- 1.25"
7		8S0660		SPRING 1.42"ODX 7.81"EXT PNTD
8		8S3059		CAPLUG FITS 2.067"ID TUBE96-
9		8T0400		FC 7T0400 PNTD
10		8T1040B		HYD CYL 4.0" X10" FOR 5PLX
11		8T2514		SPACER PART 1 TO 2 LINK
12		8T2520		ROLLER PART 2 WING LIFT
13		8T2530		ROLLER W/TUBE
14		8T3590		LINK PART 1 TO 2 FOR 5 PLEX
15		8T3606		PART 2 HINGE PIN 5 PLEX
16		8T3608		PIN HARDENED
17		8T3620		PIN 1-1/2 X 12-1/2" HRDND&ZINC
18		8T3625		PIN, W/ WELDED WASHER- HARDENED
19		8T3640		PIN 1-1/2" X 19" HARDENED 98-
20		8T4046 8T4048		WING 6' FOR 5-PLEX LH WING 6' FOR 5-PLEX RH
21		8T4096		GAUGE WHEEL ASSY W/O HUB 04-
22		8T4100		PIVOT W/BLTPLATE LIFTARM 96-
23		8T4140		LIFTARM REAR WLKNG TNDM CH96-
24		8T4168		WALKNG TNDM W/ANGLD4X4RGHT99-
25		8T4174		FLAT
26		8T4175		REAR SPRING ATTCH BRCKT 50'-60'
27		8T4176 8T4177		SUPPORT-WHL SPRG LARM LEFT99- SUPPORT-WHL SPRG LARM RGHT99-
28		8T4178 8T4179		FRONT-SPRG I-BLT ATTCH LEFT 99- FRONT-SPRG I-BLT ATTCH RGHT 99-
29		8T4224		CYL ATTCH "A" REAR CHSL 99-
30		8X0041		BOLT 7/16"-14NC X 3" GR5 YZ
31		8X0044		BOLT 7/16"-14NC X 3-1/2"GR5 YZ
32		8X0074		BOLT 1/2"-13NC X 4-1/2" GR5 YZ
33		8X0077		BOLT 1/2"-13NC X 7-1/2" GR5 YZ
34		8X0132		BOLT 7/8"-9NC X 2-1/2" GR5 YZ
35		8X0234		NUT 7/16"-14NC NY-LOCK GR2 YZ
36		8X0240		NUT 1/2"-13NC HEX GR2 YZ
37		8X0242		NUT 1/2"-13NC NY-LOCK GR2 YZ
38		8X0260		NUT 3/4"-10NC HEX GR2 YZ
39		8X0268		NUT 7/8"-9NC HEX GR2 YZ
40		8X0303		LOCKWASHER 1/2" YLW ZNC
41		8X0306		LOCKWASHER 3/4" YLW ZNC
42		8X0307		LOCKWASHER 7/8" YLW ZNC
43		8X0355		WASHER 1-1/2"IDX2.25"X10GA PLN
44		8X0365		WASHER 2-1/2"IDX3.5"X 3/16"PLN
45		8X0523		ROLL PIN 5/16" X 2-1/2" PLN

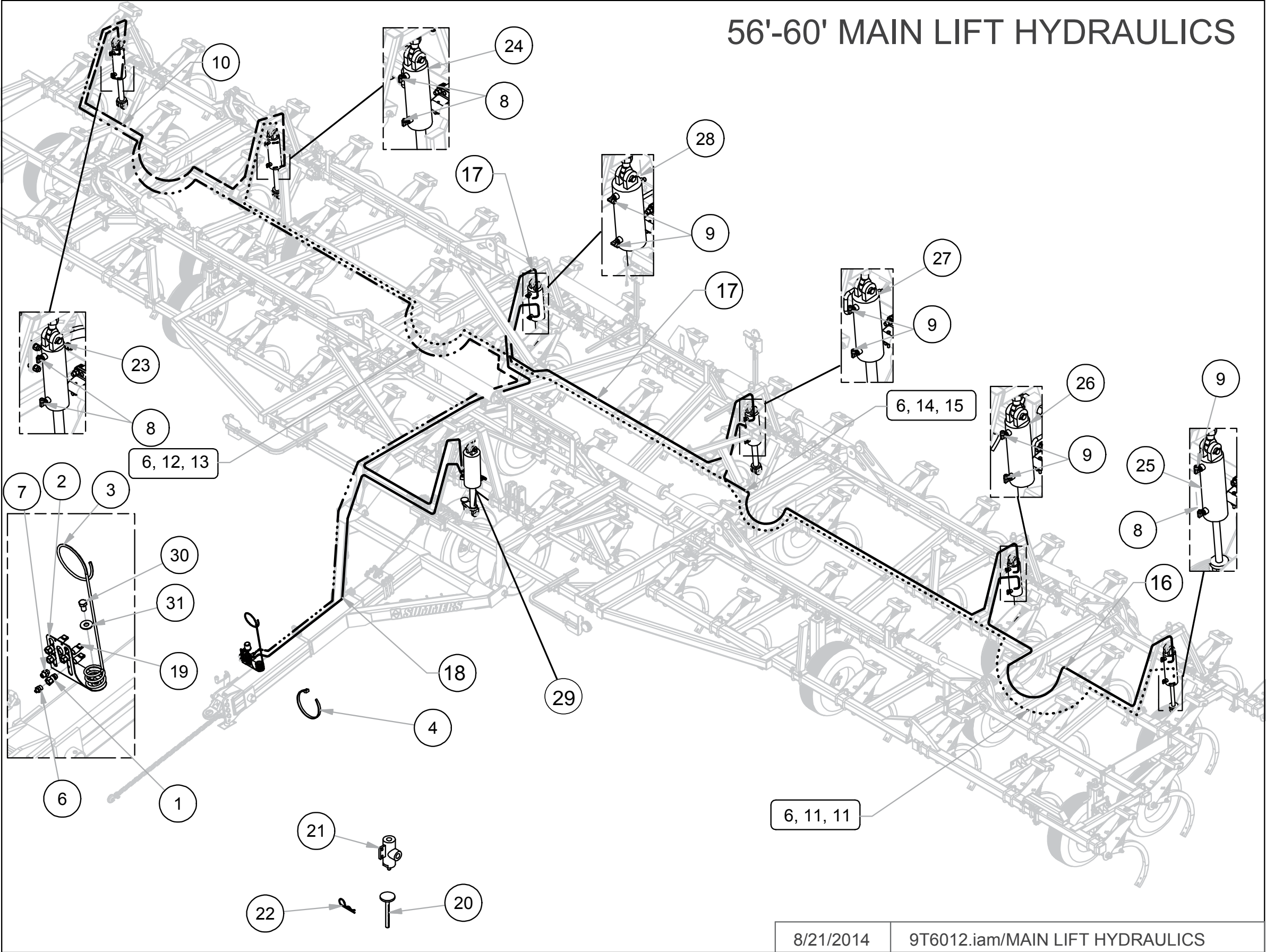
# PARTS LIST

STANDARD CENTER MAIN LIFT HYDRAULICS PARTS LIST (50'-54')				
Ref	FN	Part Number	Model	Description
1		8C1710		U-BOLT 3/8" X 8" X 9" SQ
2		8D3212		3/4" ORB TIP ISO
3		8D8490		PIONEER TIP HLDR BNT
4		8D8500		HYD HOSE HOLDER PNTD BLK 91-
5		8G2285		NYLON TIE GREEN
6		8J5100		#6 JIC(M) X #6 JIC(M) UNION
7		8J5510		3/4" ORB X #6 JIC(M)
8		8J5520		3/4" ORB X #10 STR
9		8J6010		3/4"-16ORB X #6JIC(M) 90° ADP
10		8J6020		3/4"-16 ORB X #10JIC(M) 90° ADP
11		8N3204		3/8"X204" HYD HOSE #6FJX3000PSI
12		8N3312		3/8"X312" HYD HOSE #6FJX3000PSI
13		8N3348		3/8"X348" HYD HOSE #6FJX3000PSI
14		8N3606		3/8"X606" HYD HOSE #6FJX3000PSI
15		8N4216		1/2"X216" HYD HOSE #10FJX3000PSI
16		8N4228		1/2"X228" HYD HOSE #10FJX3000PSI
17		8N6354		3/8"X354" HYD HOSE #10FJX3000PSI
18		8S3095		HYD CAPLUG
		8T1004		PLUNGER REPAIR KIT (96-02) 1/4" SHAFT
19		8T1006		PLUNGER
		8T1008		PLUNGER REPAIR KIT (02- ) 3/8" SHAFT
20		8T1010		POPPET
21		8T1015		HAIRPIN CLIP
22		8T1035		HYD CYL 3.5" X 10" R35SM-10BP
23		8T1037		HYD CYL 3.75" X 10" R3755M-10BP
24		8T1040B		HYD CYL 4.0" X 10" FOR 5PLX
25		8T1045		HYD CYL 4.5" X 10" REPHASE 96-
26		8T1050		HYD CYL 5.0" X 10" REPHASE 96-
27		8T1055		HYD CYL 5.5" X 10" REPHASE 96-
28		8T1060		HYD CYL 6" X 10" W/STRK CNTRL 96-
29		8W1398		HOLDDOWN HOSE 8" WIDTH
30		8X0203		NUT 3/8"-16NC SER FLANG GR2ZDI

50'-54' MAIN LIFT HYDRAULICS







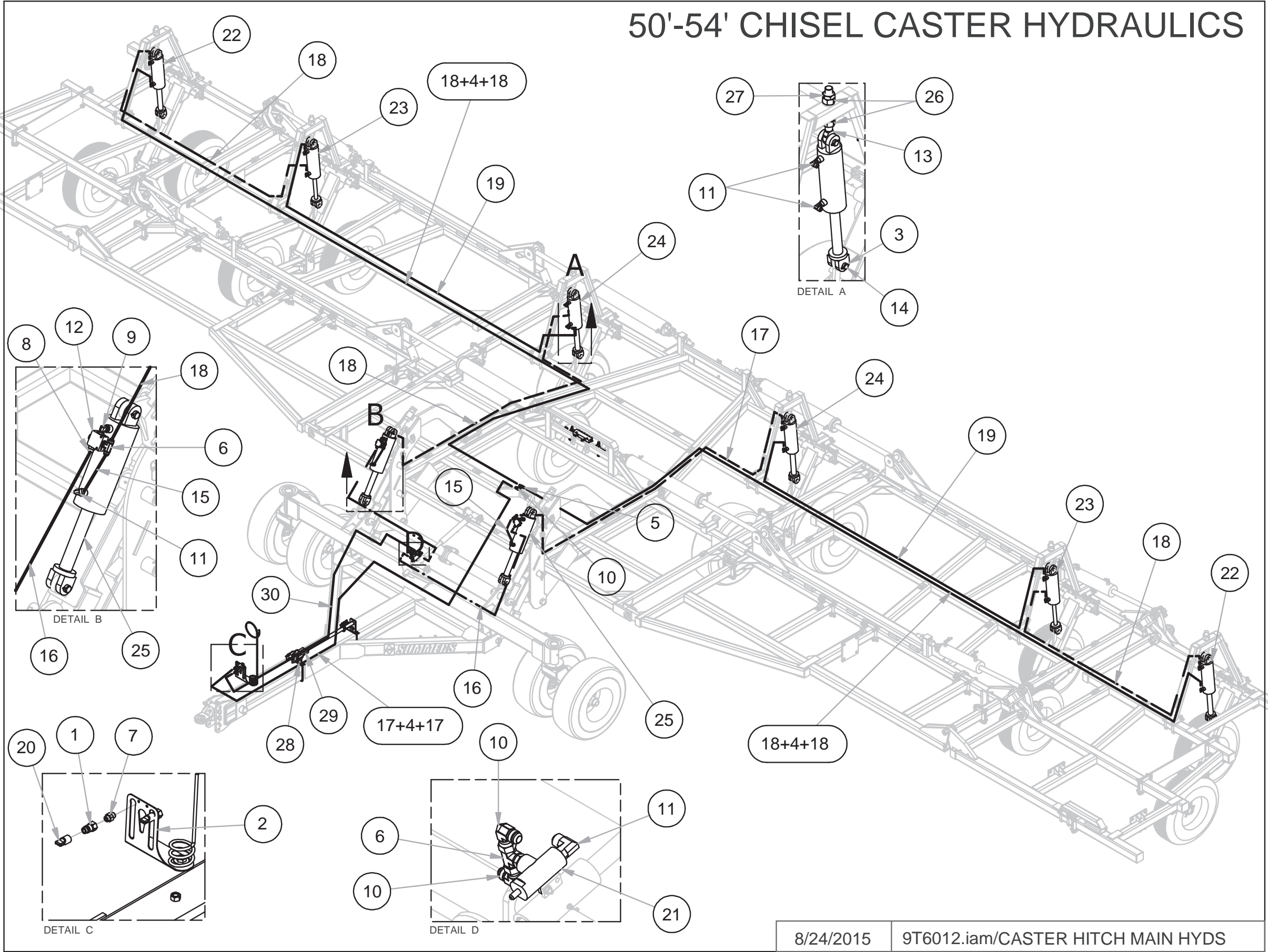


STANDARD CENTER MAIN LIFT HYDRAULICS PARTS LIST (56'-60')				
Ref	FN	Part Number	Model	Description
1		8D3212		3/4" ORB TIP ISO
2		8D8490		PIONEER TIP HLDR BNT
3		8D8500		HYD HOSE HOLDER PNTD BLK 91-
4		8G2285		NYLON TIE GREEN
5		8J5100		#6 JIC(M) X #6 JIC(M) UNION
6		8J5510		3/4" ORB X #6 JIC(M)
7		8J5520		3/4" ORB X #10 STR
8		8J6010		3/4"-16ORB X #6JIC(M) 90° ADP
9		8J6020		3/4"-16 ORB X #10JIC(M) 90° ADP
10		8N3204		3/8"X204" HYD HOSE #6FJX3000PSI
11		8N3330		3/8"X330" HYD HOSE #6FJX3000PSI
12		8N3348		3/8"X348" HYD HOSE #6FJX3000PSI
13		8N3360		3/8"X360" HYD HOSE #6FJX3000PSI
14		8N4120		1/2"X120" HYD HOSE #10FJX3000PSI
15		8N4138		1/2"X138" HYD HOSE #10FJX3000PSI
16		8N4216		1/2"X216" HYD HOSE #10FJX3000PSI
17		8N4228		1/2"X228" HYD HOSE #10FJX3000PSI
18		8N6354		3/4"X354" HYD HOSE #10FJX3000PSI
19		8S3095		HYD CAPLUG
		8T1004		PLUNGER REPAIR KIT (96-02) 1/4" SHAFT
20		8T1006		PLUNGER
		8T1008		PLUNGER REPAIR KIT (02- ) 3/8" SHAFT
21		8T1010		POPPET
22		8T1015		HAIRPIN CLIP
23		8T1035		HYD CYL 3.5" X 10" R35SM-10BP
24		8T1037		HYD CYL 3.75" X 10" R375M-10BP
25		8T1040B		HYD CYL 4.0" X 10" FOR 5PLX
26		8T1045		HYD CYL 4.5" X 10" REPHASE 96-
27		8T1050		HYD CYL 5.0" X 10" REPHASE 96-
28		8T1055		HYD CYL 5.5" X 10" REPHASE 96-
29		8T1060		HYD CYL 6" X 10" W/STRK CNTRL 96-
30		8X0110		BOLT 3/4"-10NC X 1-1/4" GR5 YZ
31		8X0318		WASHER 3/4"(13/16"ID)FLAT YZ

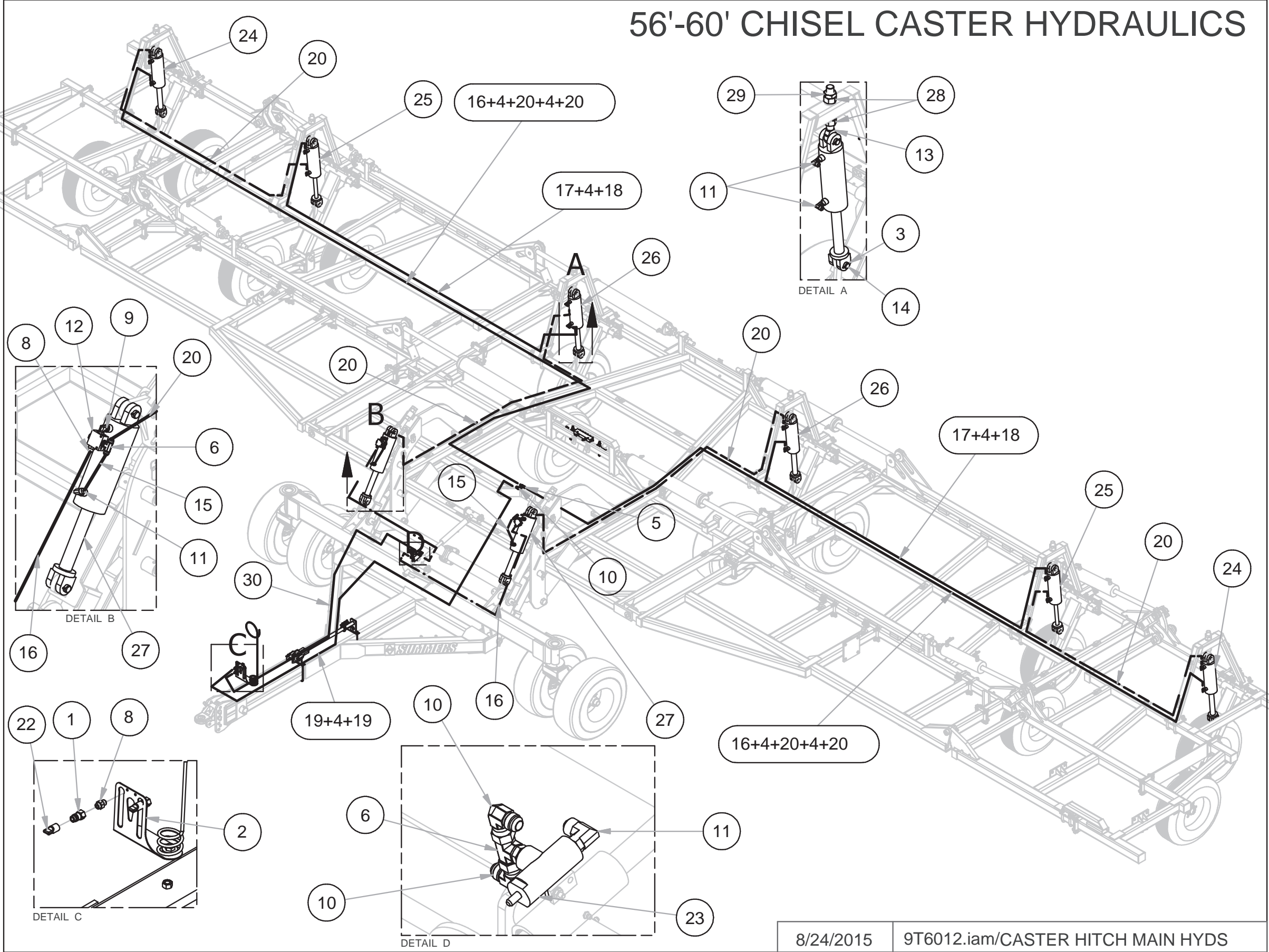
# PARTS LIST

CASTER HITCH HYDRAULICS PARTS LIST (50'-54')				
Ref	FN	Parts Number	Model	Description
1		8D3212		MALE TIP 3/4"-16 ORB ISO
2		8D8490		PIONEER/ISO TIP HLDR BNT
3		8D9108		ROLL PIN 1/4 X 2" YLW ZNC
4		8J5110		#10 JIC(M) X #10 JIC(M) UNION
5		8J5310		#10 JIC (MALE) 3X TEE
6		8J5312		TEE #10JIC(M2X)X3/4-16ORBBRNCH
8		8J5520		3/4" -16 ORB X #10 JIC(M) STR
9		8J5690		3/4-16X3/4-16 ORB M-SW90*UNION
10		8J5710		#10 JIC(F-SW)X#10 JIC(M)90*ADP
11		8J6020		3/4"-16 ORB X #10 JIC(M)90*ADP
12		8J7108		CHECKVLV 3/4-16ORB PILOT-OPEN
13		8K1755		EYEBOLT 1.5DIA X 1.26"EYE X 14" YZ
14		8K9106		PIN 1-1/4 X 4-3/8" HARDENED
15		8N4010		1/2" X 10" HYD HOSE #10FJX3000PSI
16		8N4060		1/2" X 60" HYD HOSE #10FJX3000PSI
17		8N4160		1/2" X 160" HYD HOSE #10FJX3000PSI
18		8N4216		1/2" X 216" HYD HOSE #10FJX3000PSI
19		8N4228		1/2" X 228" HYD HOSE #10FJX3000PSI
20		8S3095		CAPLUG FITS ISO HYD COUPLR 08-
21		8T1010		POPPET ASSY HD BLT-ON RAM02-
22		8T1037		HYD CYL 3.75 X 10"R3755M-10BP
23		8T1040B		HYD CYL 4.0 X10" FOR 5PLX
24		8T1045		HYD CYL 4.5 X 10" REPHASE 96-
25		8T1050		HYD CYL 5.0 X 10" REPHASE 96-
26		8X0285		NUT 1-1/2"-6NC HEX GR2 YZ
27		8X0286		NUT 1-1/2"-6NC JAM GR2 YZ
28		8CC0600		HOLDDOWN HOSE 8" WDT W/WRNCH
29		8K3002		GANG WRENCH
30		8N6354		3/4" X 354" HYD HOSE #10FJX3000PSI

50'-54' CHISEL CASTER HYDRAULICS



56'-60' CHISEL CASTER HYDRAULICS





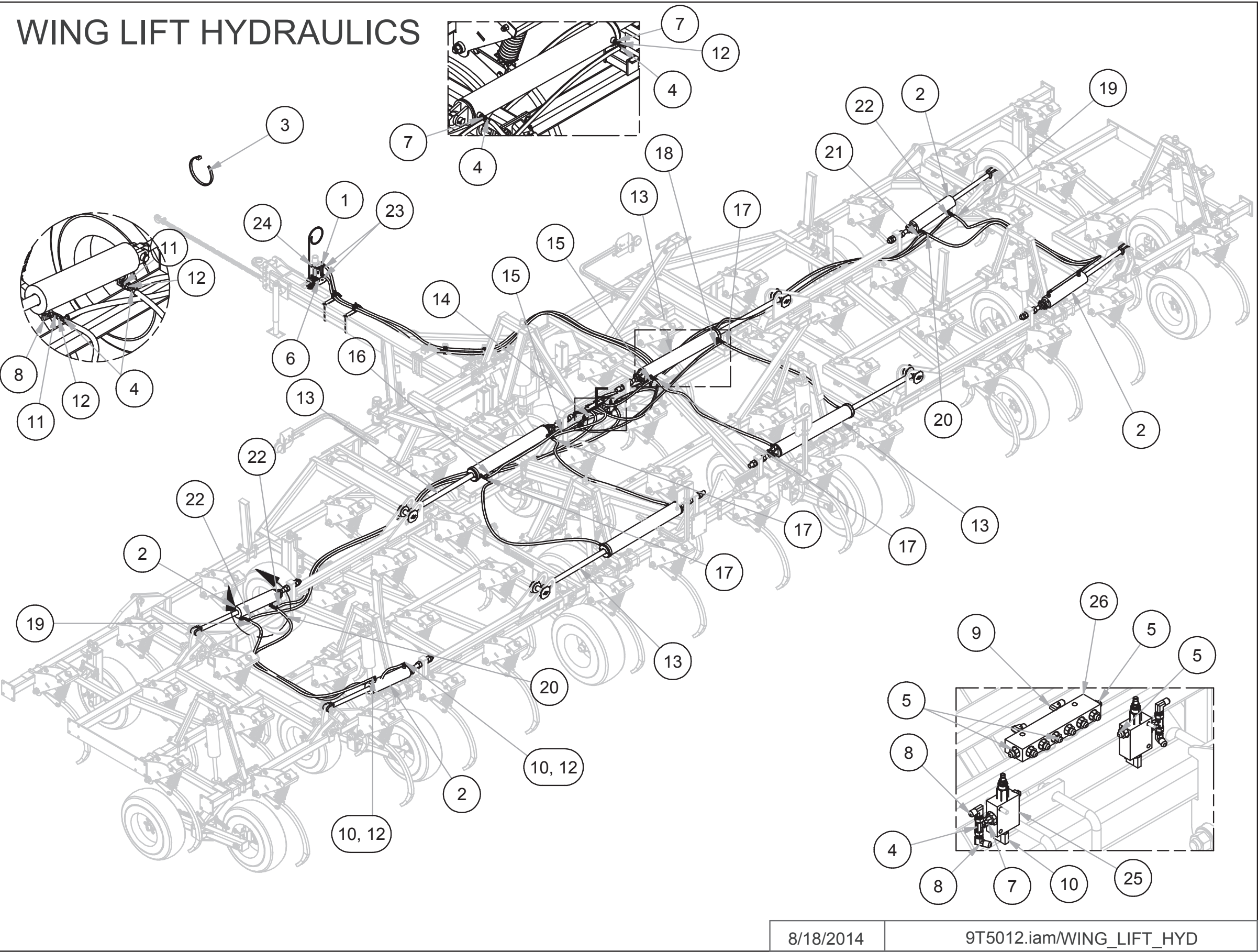
# PARTS LIST

CASTER HITCH HYDRAULICS PARTS LIST (56'-60')				
Ref	FN	Parts Number	Model	Description
1		8D3212		MALE TIP 3/4"-16 ORB ISO
2		8D8490		PIONEER/ISO TIP HLDR BNT
3		8D9108		ROLL PIN 1/4 X 2" YLW ZNC
4		8J5110		#10 JIC(M) X #10 JIC(M) UNION
5		8J5310		#10 JIC (MALE) 3X TEE
6		8J5312		TEE #10JIC(M2X)X3/4-16ORBBRNCH
8		8J5520		3/4" -16 ORB X #10 JIC(M) STR
9		8J5690		3/4-16X3/4-16 ORB M-SW90*UNION
10		8J5710		#10 JIC(F-SW)X#10 JIC(M)90*ADP
11		8J6020		3/4"-16 ORB X #10 JIC(M)90*ADP
12		8J7108		CHECKVLV 3/4-16ORB PILOT-OPEN
13		8K1755		EYEBOLT 1.5DIA X 1.26"EYE X 14" YZ
14		8K9106		PIN 1-1/4 X 4-3/8" HARDENED
15		8N4010		1/2" X 10" HYD HOSE #10FJX3000PSI
16		8N4060		1/2" X 60" HYD HOSE #10FJX3000PSI
17		8N4120		1/2" X 120" HYD HOSE #10FJX3000PSI
18		8N4138		1/2" X 138" HYD HOSE #10FJX3000PSI
19		8N4160		1/2" X 160" HYD HOSE #10FJX3000PSI
20		8N4216		1/2" X 216" HYD HOSE #10FJX3000PSI
22		8S3095		CAPLUG FITS ISO HYD COUPLR 08-
23		8T1010		POPPET ASSY HD BLT-ON RAM02-
24		8T1037		HYD CYL 3.75 X 10"R3755M-10BP
25		8T1040B		HYD CYL 4.0 X10" FOR 5PLX
26		8T1045		HYD CYL 4.5 X 10" REPHASE 96-
27		8T1050		HYD CYL 5.0 X 10" REPHASE 96-
28		8X0285		NUT 1-1/2"-6NC HEX GR2 YZ
29		8X0286		NUT 1-1/2"-6NC JAM GR2 YZ
30		8N6354		3/4" X 354" HYD HOSE #10FJX3000PSI

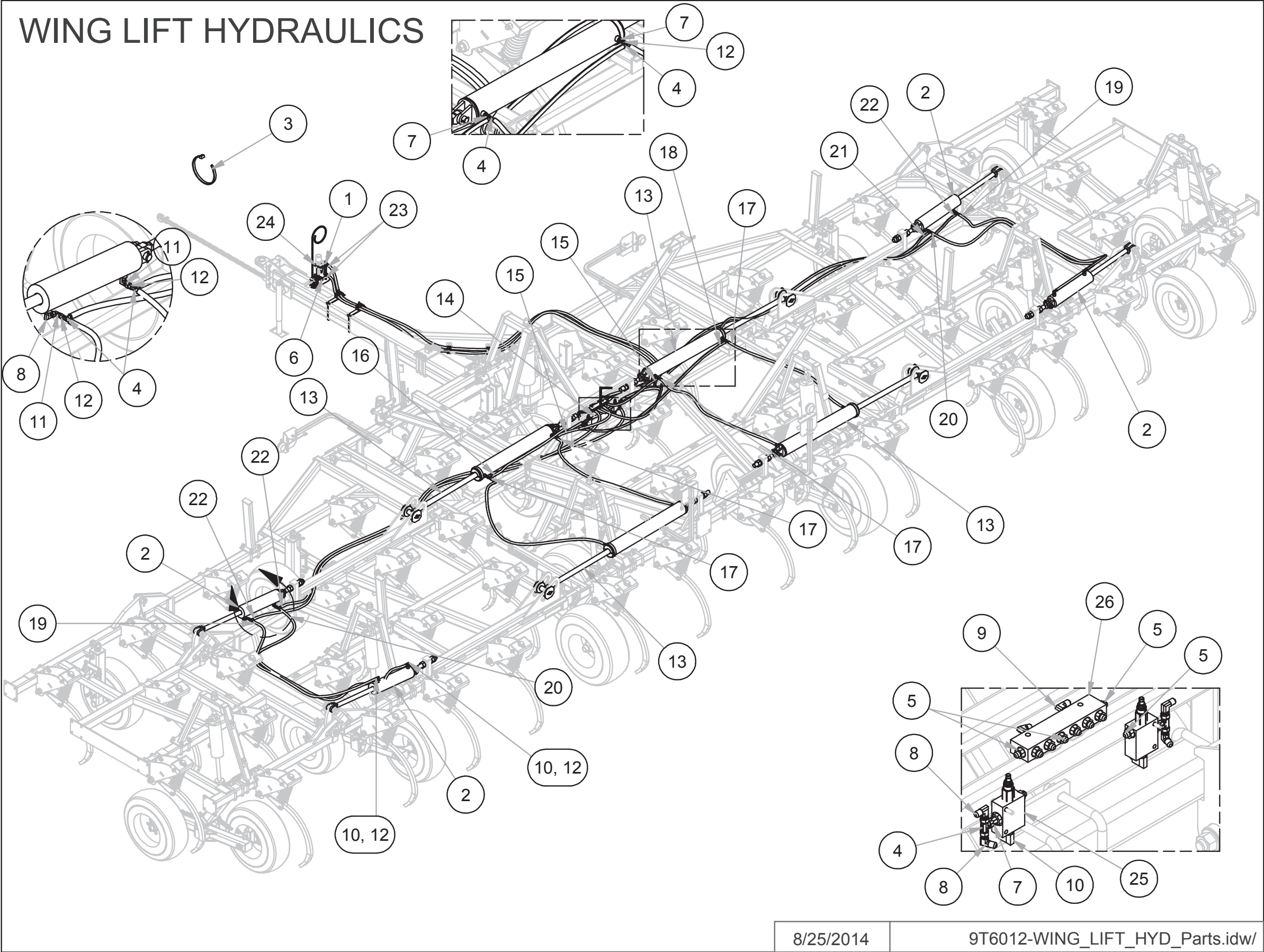


# PARTS LIST

WING LIFT HYDRAULICS PARTS LIST (50'-54')				
Ref	FN	Parts Number	Model	Description
1		8D3212		MALE TIP 3/4"-16 ORB PIONEER
2		8D9466		HYD CYLINDER 4" X 16" 3000PSI
3		8G2284		NYLON TIE YELLOW
4		8J5300		#6 JIC (MALE) 3X TEE
5		8J5500		9/16"-18 ORB X #6 JIC(M) STR
6		8J5510		3/4"-16 ORB X #6 JIC(M) STR
7		8J5620		3/4"-16 ORB X #6 JIC(F-SW) STR
8		8J5700		#6 JIC (F-SW) X #6 JIC(M) 90° ADP
9		8J6000		9/16"-18 ORB X #6 JIC(M) 90° ADP
10		8J6010		3/4"-16 ORB X #6 JIC(M) 90° ADP
11		8J6060		3/4"-16 ORB X #6 JIC(F) 90° ADP
12		8J7216		#6JIC(M) X 6JIC(F) 1/16" RSTR BLK 2
13		8K9650		HYD CYLINDER 5" X 33"
14		8N3018		3/8X18" HYD HOSE #6FJX3000PSI
15		8N3035		3/8X35" HYD HOSE #6FJX3000PSI
16		8N3060		3/8X60" HYD HOSE #6FJX3000PSI
17		8N3070		3/8X70" HYD HOSE #6FJX3000PSI
18		8N3084		3/8X84" HYD HOSE #6FJX3000PSI
19		8N3096		3/8X96" HYD HOSE #6FJX3000PSI
20		8N3124		3/8X124" HYD HOSE #6FJX3000PSI
21		8N3204		3/8X204" HYD HOSE #6FJX3000PSI
22		8N3228		3/8X228" HYD HOSE #6FJX3000PSI
23		8N3330		3/8X330" HYD HOSE #6FJX3000PSI
24		8S3095		HYD CAPLUG
25		8T8100		WING FOLD SEQUENCE VALVE 99-
26		8W1360		MANIFOLD BLOCK 10PORT



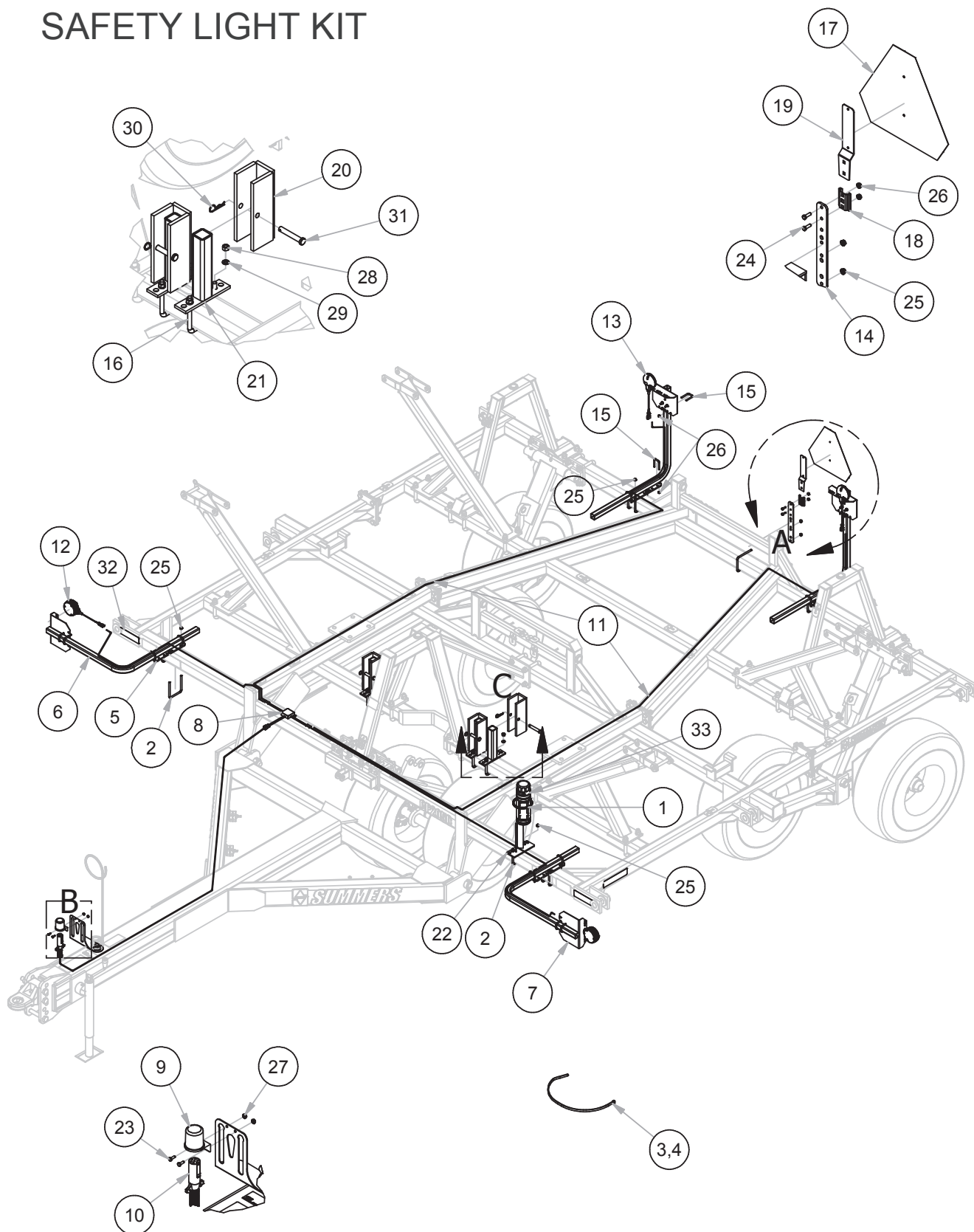




WING LIFT HYDRAULICS PARTS LIST (56'-60')				
Ref	FN	Part Number	Model	Description
1		8D3212		MALE TIP 3/4"-16 ORB PIONEER
2		8D9466		HYD CYLINDER 4" X 16" 3000PSI
3		8G2284		NYLON TIE YELLOW
4		8J5300		#6 JIC (MALE) 3X TEE
5		8J5500		9/16"-18 ORB X #6 JIC(M) STR
6		8J5510		3/4"-16 ORB X #6 JIC(M) STR
7		8J5620		3/4"-16 ORB X #6 JIC(F-SW) STR
8		8J5700		#6 JIC (F-SW) X #6 JIC(M) 90° ADP
9		8J6000		9/16"-18 ORB X #6 JIC(M) 90° ADP
10		8J6010		3/4"-16 ORB X #6 JIC(M) 90° ADP
11		8J6060		3/4"-16 ORB X #6 JIC(F) 90° ADP
12		8J7216		#6JIC(M) X #6JIC(F) 1/16" RSTR BLK 2
13		8K9650		HYD CYLINDER 5" X 33"
14		8N3018		3/8X18" HYD HOSE #6FJX3000PSI
15		8N3035		3/8X35" HYD HOSE #6FJX3000PSI
16		8N3060		3/8X60" HYD HOSE #6FJX3000PSI
17		8N3070		3/8X70" HYD HOSE #6FJX3000PSI
18		8N3084		3/8X84" HYD HOSE #6FJX3000PSI
19		8N3096		3/8X96" HYD HOSE #6FJX3000PSI
20		8N3124		3/8X124" HYD HOSE #6FJX3000PSI
21		8N3228		3/8X228" HYD HOSE #6FJX3000PSI
22		8N3252		3/8X252" HYD HOSE #6FJX3000PSI
23		8N3330		3/8X330" HYD HOSE #6FJX3000PSI
24		8S3095		HYD CAPLUG
25		8T8100		WING FOLD SEQUENCE VALVE 99-
26		8W1360		MANIFOLD BLOCK 10PORT

# PARTS LIST

## SAFETY LIGHT KIT



7/6/2015

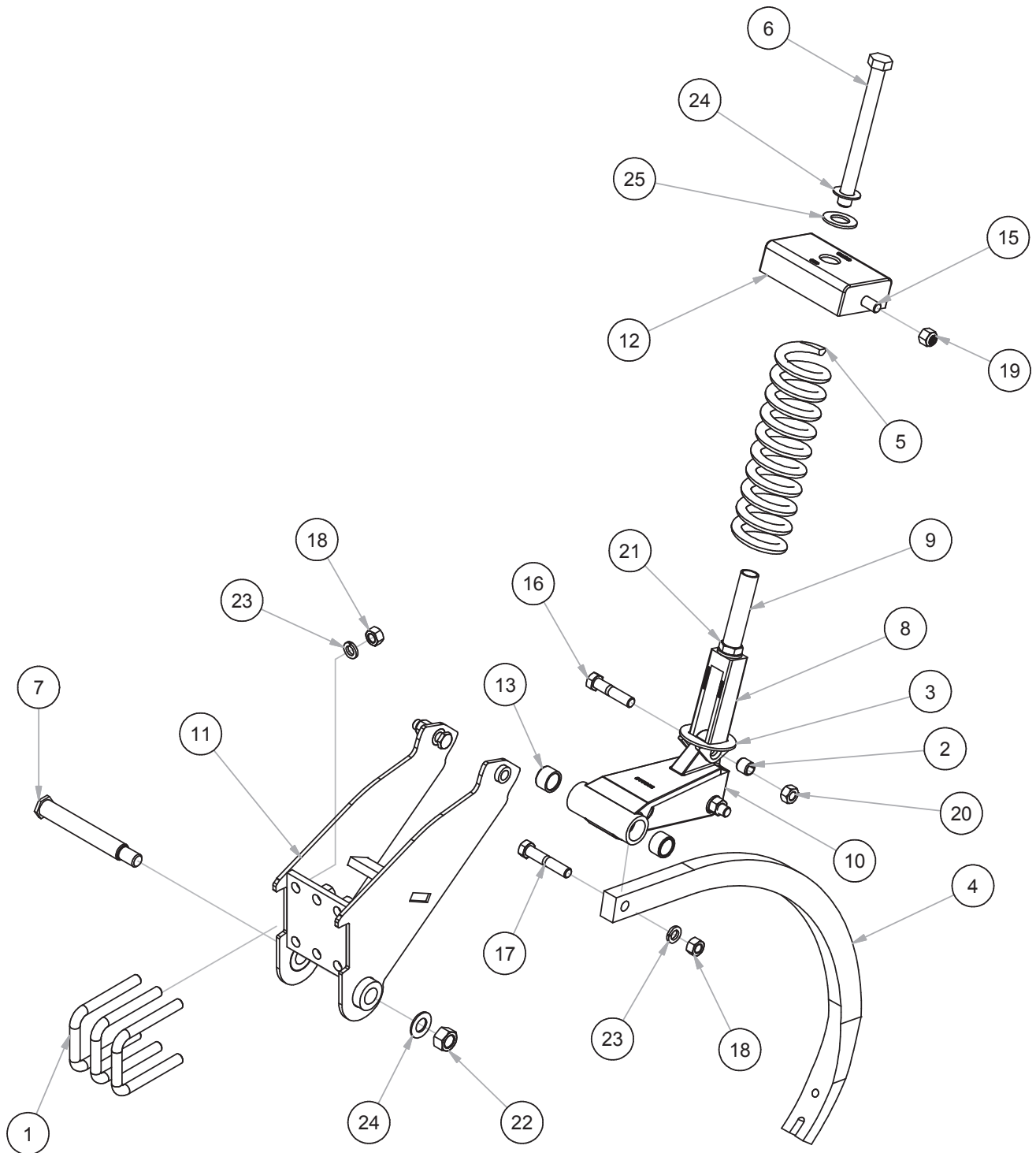
9T5012.iam/SAFETY

SAFETY LIGHT KIT PART NUMBERS				
Item	FN	Part Numbers	Model	Description
1		8A1004		CLAMP HOSE 5" #72
2		8A1156		U-BOLT 3/8" X 4-1/16" X 5" SQ
3		8A4048		11" NYL TIE
4		8A4052		15-1/4" NYL TIE
5		8K8000		STL 7K2045 3/8" X3.5" PNTDLGHT
6		8K8010		TUBE LGHT BRCKT1.5" SQ55.5"00-
7		8K8020		MOUNTNG BRCKT LIGHT 00-
8		8K8030A		MODULE AG ENHNCDW/BRAKE6PIN08-
9		8K8067		DUST CAP FOR 7PIN CONNECT00-
10		8K8070B		7-PIN MAIN HARNESS
12		8K8075A		EXT HRNSS NONDRAWBR DEUTSCH 07-
12		8K8090B		2 WIRE LED AMBER LIGHT W/DEUTSCH
13		8K8095B		3 WIRE LED RED LIGHT W/DEUTSCH
14		8K8200		BRCKT SMV ATTCH 4-8"FRAME98-
15		8L0258		U-BOLT 5/16" X 1-1/2" X 2-1/2" SQ
16		8S0340		U-BOLT 1/2" X 4" X 5-1/4" SQ.
17		8S1120		SIGN SLOW MOVING VEHICLE(SMV)
18		8S1124		MOUNTING SOCKET SMV SIGN YZ
19		8S1126		MNT SPADE W/HRDWR SMV SIGN
20		8T4350		CYL LOCK
21		8T4380		HOLDER CYL LOCK 4"&6" MNT 96-
22		8T4385		HOLDER MANUAL-PAK
23		8X0000		BOLT 1/4"-20X3/4"FULLTHDGR5 YZ
24		8X0021A		BOLT 5/16"-18NC X 1" GR5 YZ
25		8X0203		NUT 3/8"-16NC SER FLANG GR2 YZ
26		8X0211		NUT 5/16"-18NC SERFLANG GR2 YZ
27		8X0223		NUT 1/4"-20NC SER FLANG GR2 YZ
28		8X0240		NUT 1/2"-13NC HEX GR2 YZ
29		8X0303		LOCKWASHER 1/2" YLW ZNC
30		8X0402		HAIR PIN CLIP 1/8" X 2-9/16"
31		8X0440		CLEVIS PIN 5/8" X 3-7/8" YZ
32		8Z0800		REFLECTOR - YELLOW - ADHESIVE BACKED
33		8Z1000		MANUAL-PAK 3DIA X 11.75" 09-



# PARTS LIST

## TRIP ASSEMBLY



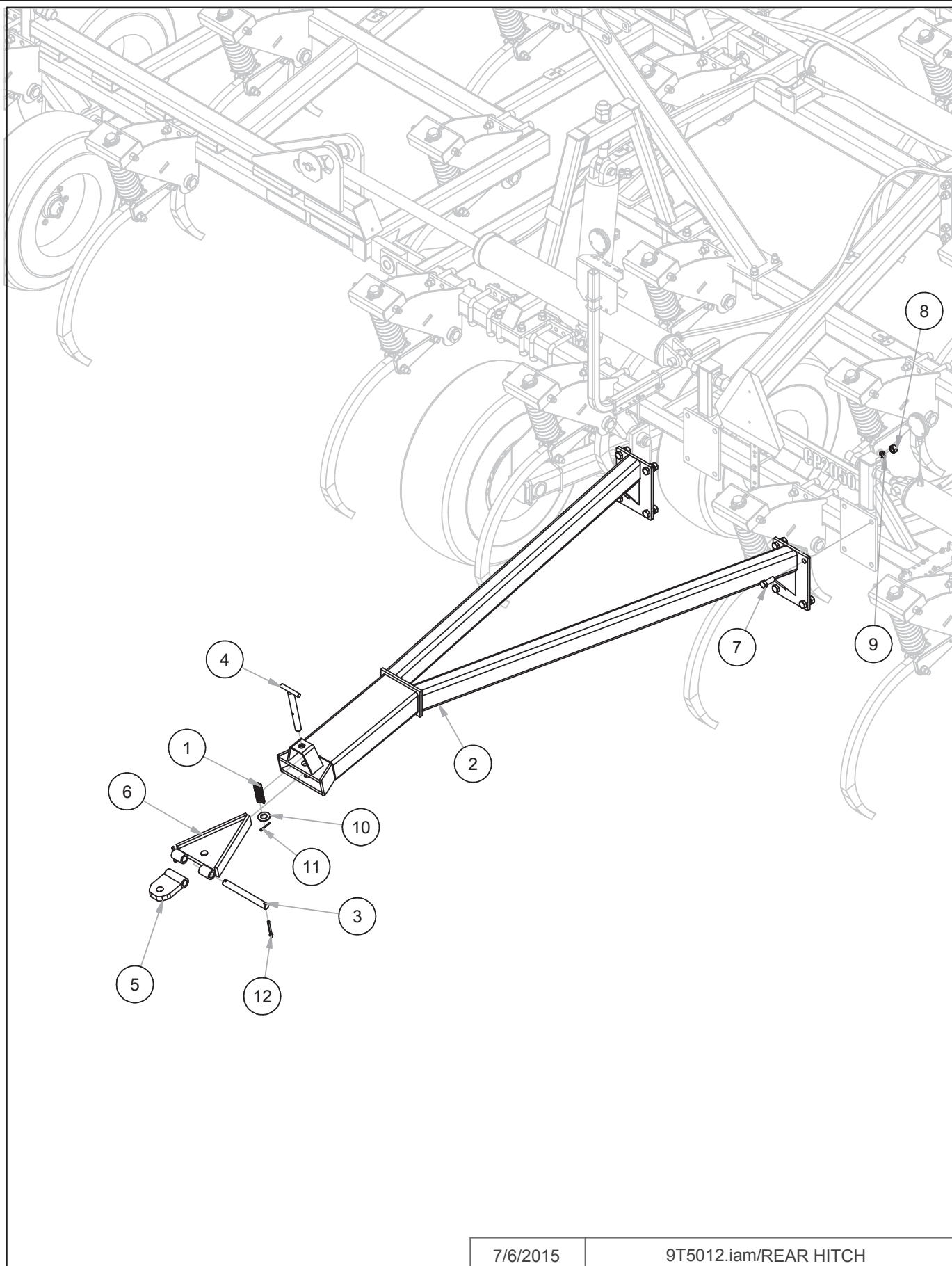
8/13/2014

Trip Assembly.iam/

# PARTS LIST

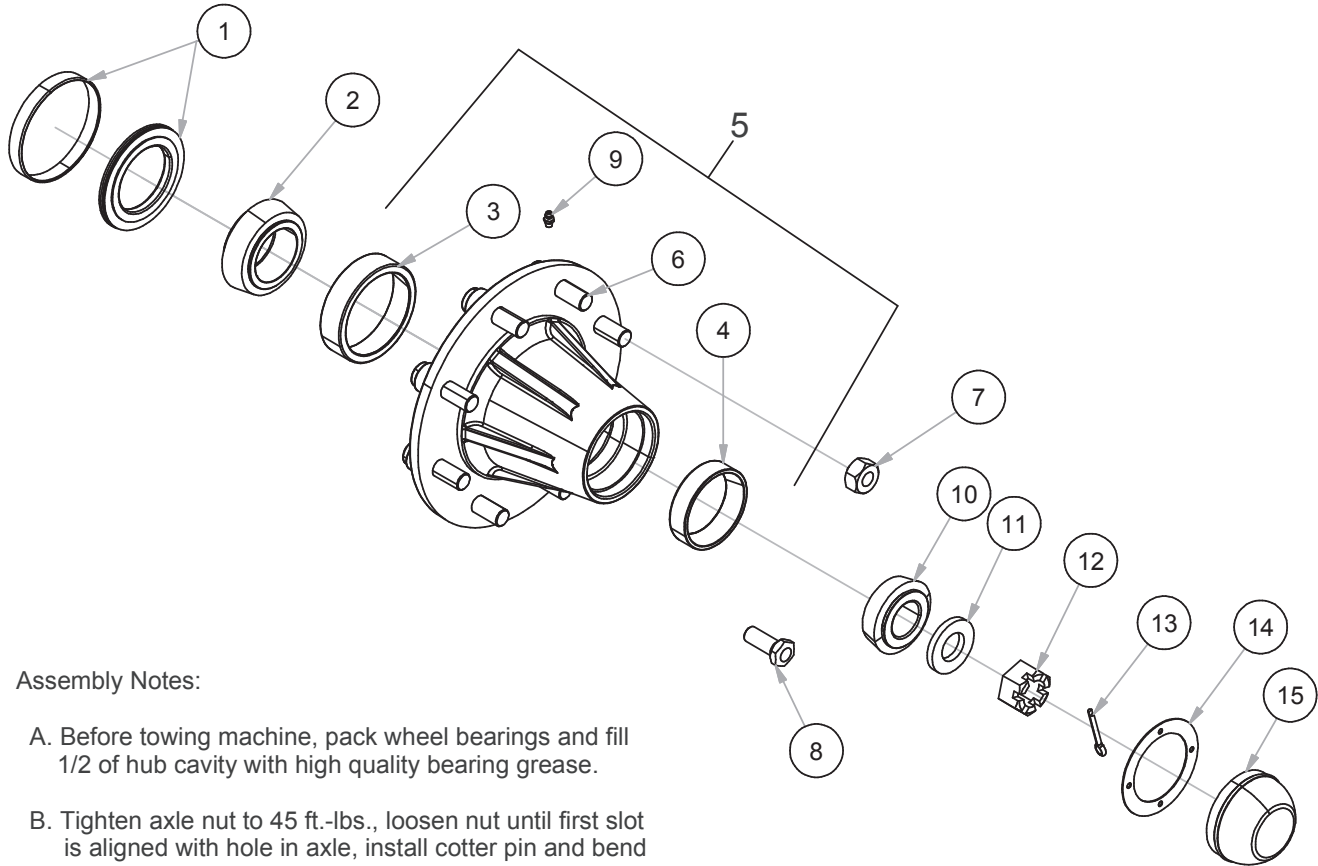
TRIP ASSEMBLY PARTS LIST				
Ref	FN	Part Number	Model	Description
1		8K5515		U-BOLT 3/4" X 4-1/16" X 6" SQ
2		8R6805		SPLIT STEEL BUSHING 1" X .75" ID- 1"
3		8T0100		WAQSHER SPRG BASE SQHL TRIP 97-
4		8T0500		SHANK CHISEL EDGE-ON
5		8T0600		SPRING CHSL TRIP 700# BLACK 96-
6		8T3200		BOLT 1"-8NC X 11" W/6.5" THD GR5 YZ
7		8T3300		BOLT PIVOT CHSL TRP & WNGFLT YZ
8		8T5000		HOLDER SPRNG-TRIP ASSY CAST 96-
9		8T5020		PIPE 1" X 5" - 9-1/16" SPRG STP CP 96-
10		8T5050		HOLDER SHANK TRIP W/BSHNGS 96-
11		8T5150		BRCKT CHSL TRIP ASSY MNTNG 96-
12		8T5200		CAP SWIVEL CAST HRDND CHSL 96-
13		8T6810		PLST BSH 1-5/8" X 1.25"ID - 1" 96-
14		8T7500		SPRING CHSL TRIP 700#BLK03-
15		8X0106		BOLT 3/4" X 2.75" W/1.38" THD GR8 YZ
16		8X0115B		BOLT 3/4"10NC X 3-1/2" GR8 YZ
17		8X0118		BOLT 3/4"-10NC X 4" GR5 YZ
18		8X0260		NUT 3/4"-10NC HEX GR2 YZ
19		8X0261		NUT 3/4"-10NC NY-LOCK GR2 YZ
20		8X0264		NUT 3/4"-10NC BEVL CNRLCK YZ
21		8X0278		NUT 1"-8NC JAM TOPLOCK GR2 YZ
22		8X0282		NUT 1"-14TPI TOPLOCK GR8 YZ
23		8X0306		LOCKWASHER 3/4" YLW ZNC
24		8X0316		WASHER 1" SAE FLAT YZ
25		8X0327		WASHER 1-1/4" SAE FLAT YZ

# PARTS LIST



REAR HITCH PARTS LIST				
Ref	FN	Part Number	Model	Description
1		8T0550		SPRING REAR HTCH PIN 97-
2		8T4510		FRAME REAR HITCH 98-
3		8T4520		PIN 1 X 9-11/16"REAR HTCH 98-
4		8T4530		PIN 1 X 8-1/2"RRHITCHSPRING98-
5		8T4540		SWIVEL REAR HITCH 98-
6		8T4550		SLIDE REAR HITCH 98-
7		8X0107		BOLT 3/4-10NC X 2" GR5 YZ
8		8X0260		NUT 3/4"-10NC HEX GR2 YZ
9		8X0306		LOCKWASHER 3/4" YLW ZNC
10		8X0316		WASHER 1" SAE FLAT YZ
11		8X0415		COTTER PIN 3/16 X 1-1/2"
12		8X0418		COTTER PIN 5/16 X 2-1/2" YZ

# PARTS LIST



## Assembly Notes:

- A. Before towing machine, pack wheel bearings and fill 1/2 of hub cavity with high quality bearing grease.
- B. Tighten axle nut to 45 ft.-lbs., loosen nut until first slot is aligned with hole in axle, install cotter pin and bend to retain.

HUB	1. SEAL	2. INNER BEARING	3. INNER RACE	4. OUTER RACE	5. HUB ASSY	6. WHEEL STUD	7. WHEEL NUT	8. WHEEL BOLT	9. HUB ZERK	10. OUTER BEARING	11. AXLE WASHER	12. AXLE NUT	13. COTTER PIN	14. HUB CAP GASKET	15. HUB CAP	16. HUB CAP BOLT
H211	8G8220 SE10	8G8217 L44643	8G8230 8L44610	8G8230 L44610	8G8211 HDA211	N/A	N/A	8D5114 WB10	8X0708 1/4-28NF	8G8217 L44643	8D5119 3/4" ID.	8D5112 3/4"-16	8X0410 3/16X1"	N/A	8G8213 DC11	N/A
H517	8D5234 8D5236 8D5238	8D5217 LM48548	8D5332 LM48510	8D5336 LM67010	8D5210 H517	8D5215 WB16	8D5214 1/2-20UNF	N/A	8X0708 1/4-28NF	8D5117 LM67048	8D5219 7/8" ID.	8D5212 7/8"-14	8X0415 3/16X1-1/2"	N/A	8D5213 DC13	N/A
H611	8D5221 SEB	8D5317 LM29749	8D5334 LM29710	8D5336 LM67010	8D5311-09 8D5316 10- H611	N/A	N/A	8D5114 WB10-09 8R6914 WB12 10-	8X0708 1/4-28NF	8D5117 LM67048	8D5319 1" ID.	8D5312 1"-14	8X0415 3/16X1-1/2"	N/A	8D5213 DC13	N/A
H614	8R6922** SEGB9C1 INSTRUCTIONS	8R6917 LM603049	8R6925 LM603011	8D5332 LM48510	8R6911 H614	N/A	N/A	8R6914 WB12	8X0708 1/4-28NF	8D5217 LM48548	8D5319 1" ID.	8D5312 1"-14	8X0415 3/16X1-1/2"	N/A	8R6913 DC15	N/A
HD812	8K7127*** SEAL SE77 8K7128*** SLEEVE SE77-1	8K7117 LM3780	8K7130 LM3720	8K7132 LM2720	8K7111 HD812	8K7115-9/16** 8K7122-5/8"	8K7116-9/16** 8K7123-5/8"	N/A	8X0708 1/4-28NF	8K7118 LM2790	8D5319 1" ID.	8D5312 1"-14	8X0415 3/16X1-1/2"	N/A	8K7113 DC17	N/A
HD817	8K7344 SE42	7K7342 LM387AS	8K7346 382A	8K7347 LM5010	8K7340 HD817	8K7122-5/8"	8K7123-5/8"	N/A	8X0708 1/4-28NF	8K7343 LM50149	8X0328 1312 ID.	8D5314 1-1/4"-12	8X0414 1/4X2"	N/A	8K7341 DC26	N/A
H1010 LT	8K7220 SE48	7K7217 39585	8K7230 39520	8K7232 453A	8K7211 H1010-9	8K7215 WB51	8K7216 WB52	N/A	8X0708 1/4-28NF	8K7218 460	8X0328 1312 ID.	8D5314 1-1/4"-12	8X0414 1/4X2"	8K7212 SE49	8K7213 DC27	8K7214 WB53
H1010 HVV	8K7221 SE67	8K7219 33275	8K7231 33462	8K7232 453A	8K7210 H1010-11	8K7215 WB51	8K7216 WB52	N/A	8X0708 1/4-28NF	8K7218 460	8X0328 1312 ID.	8D5314 1-1/4"-12	8X0414 1/4X2"	8K7212 SE49	8K7213 DC27	8K7214 WB53
H1020	8K7320 SE55	8K7317 HM218248	8K7330 HM218210	8K7332 HM212010	8K7209 HDA1020	8K7215 WB51	8K7216 WB52	N/A	8X0708 1/4-28NF	8K7318 HM212049	8X0366 2.03" ID	8D5318 2"-12WB65	8X0418 5/16 X2-1/2"	8K7312 SE59	8K7313 DC28	8K7214 WB53

\*Pre 2000

\*\*GBGI(Not Shown), 8R6921 Triple Lip (Shown)

\*\*\*Pre 2006 8K7120 (SE17)

CD2\MANUALS\10 2-26 HUB-AXLE COMPONENTS

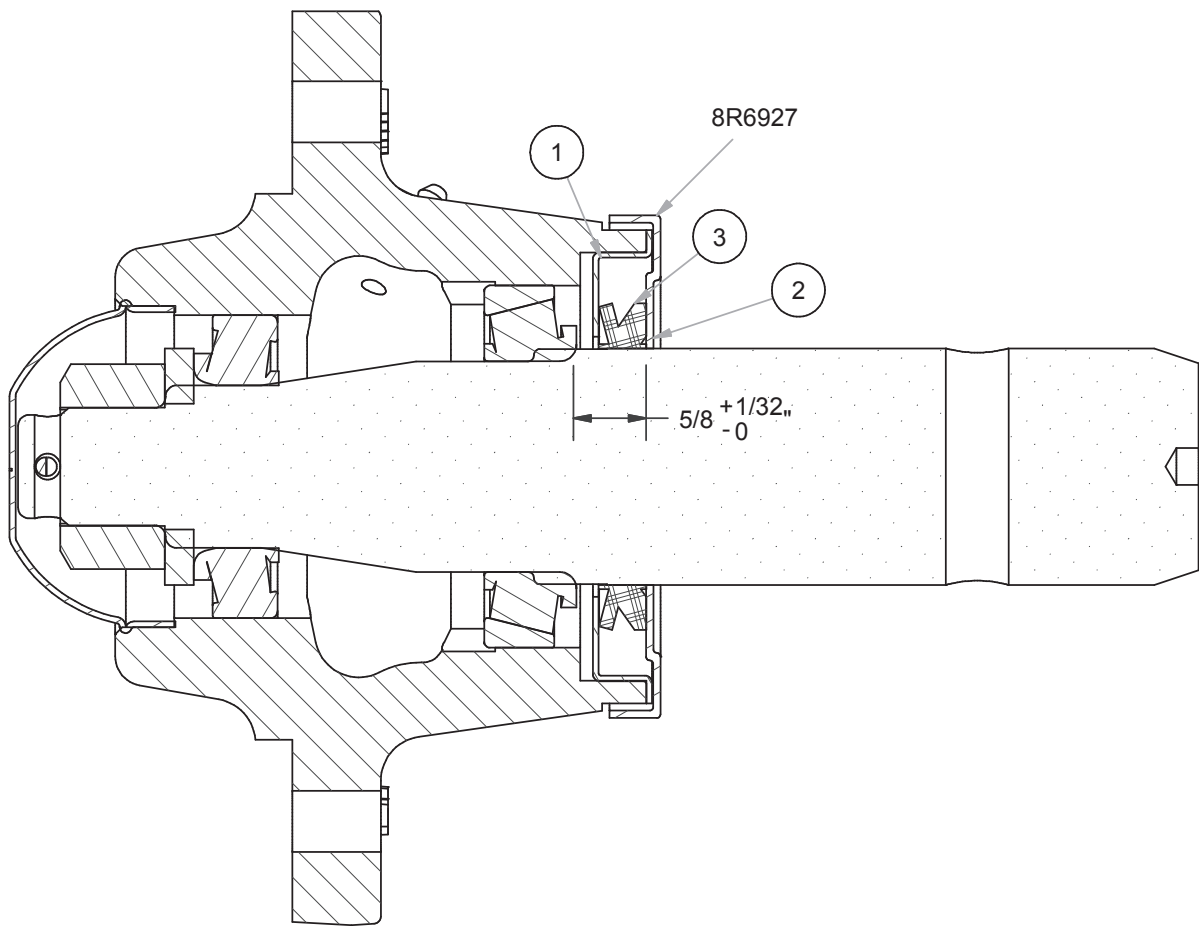
LAST REVISION: 1/17/2011

8/13/2014

8K1105S.iam/HUB&AXLE ASSY



## 614 HUB W/GBGI SEAL



### INSTALLATION INSTRUCTIONS FOR 8R6922 SEAL ASSEMBLY (3 PIECE-GBGI) FOR H614 HUB:

#### SEAL SUPPORT (2 - 8R6927)

PRESS SEAL SUPPORT (2) ONTO SPINDLE 5/8" (+1/32", -0") PAST INNER BEARING RETAINING SHOULDER.

- A. IF SEAL SUPPORT IS NOT PRESSED ON SPINDLE FAR ENOUGH THE SEAL SUPPORT WILL RUB ON HUB.
- B. IF SEAL SUPPORT IS PRESSED TOO FAR ONTO SPINDLE IT WILL CAUSE IMPROPER CONTACT BETWEEN RUBBER SEAL (3) AND INNER SEAL SUPPORT (1) RESULTING IN BEARING CONTAMINATION AND FAILURE.

NOTE: APPLY THIN LAYER OF GREASE TO COUNTERFACE (1) SURFACE AT TIME OF SEAL INSTALLATION.

#### SEAL COUNTERFACE (1 - 8R6924)

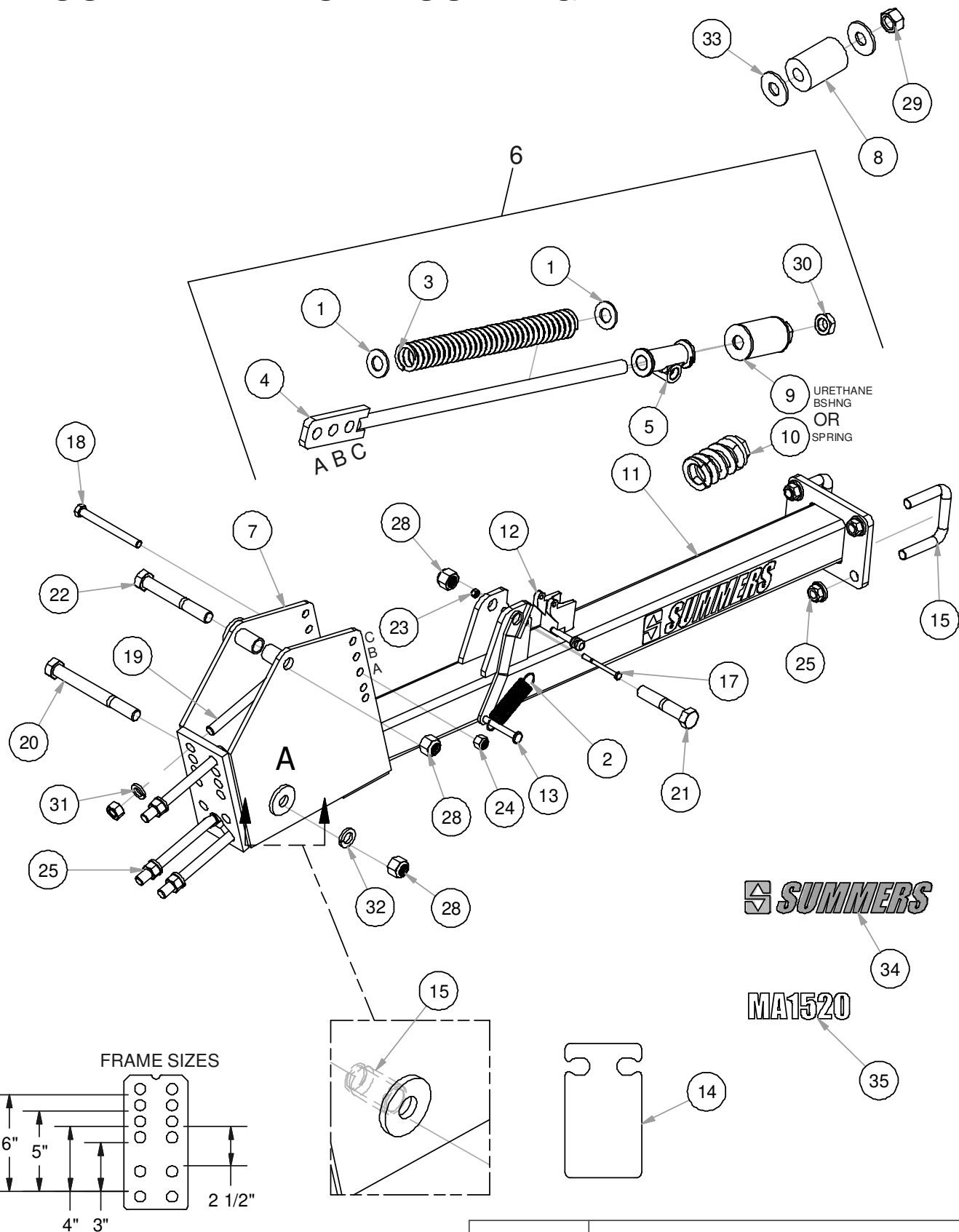
PRESS SEAL COUNTERFACE INTO HUB UNTIL SHOULDER CONTACTS HUB.

#### V-SEAL (3 - 8R6923 (A-994))

STRETCH V-SEAL OVER SEAL SUPPORT UNTIL ITS BACK IS SEATED AGAINST THE BACK SHOULDER OF SEAL SUPPORT AND LIES SMOOTH ALL AROUND.

# PARTS LIST

## MOUNTED HARROW MOUNTING ARM



9/18/2018

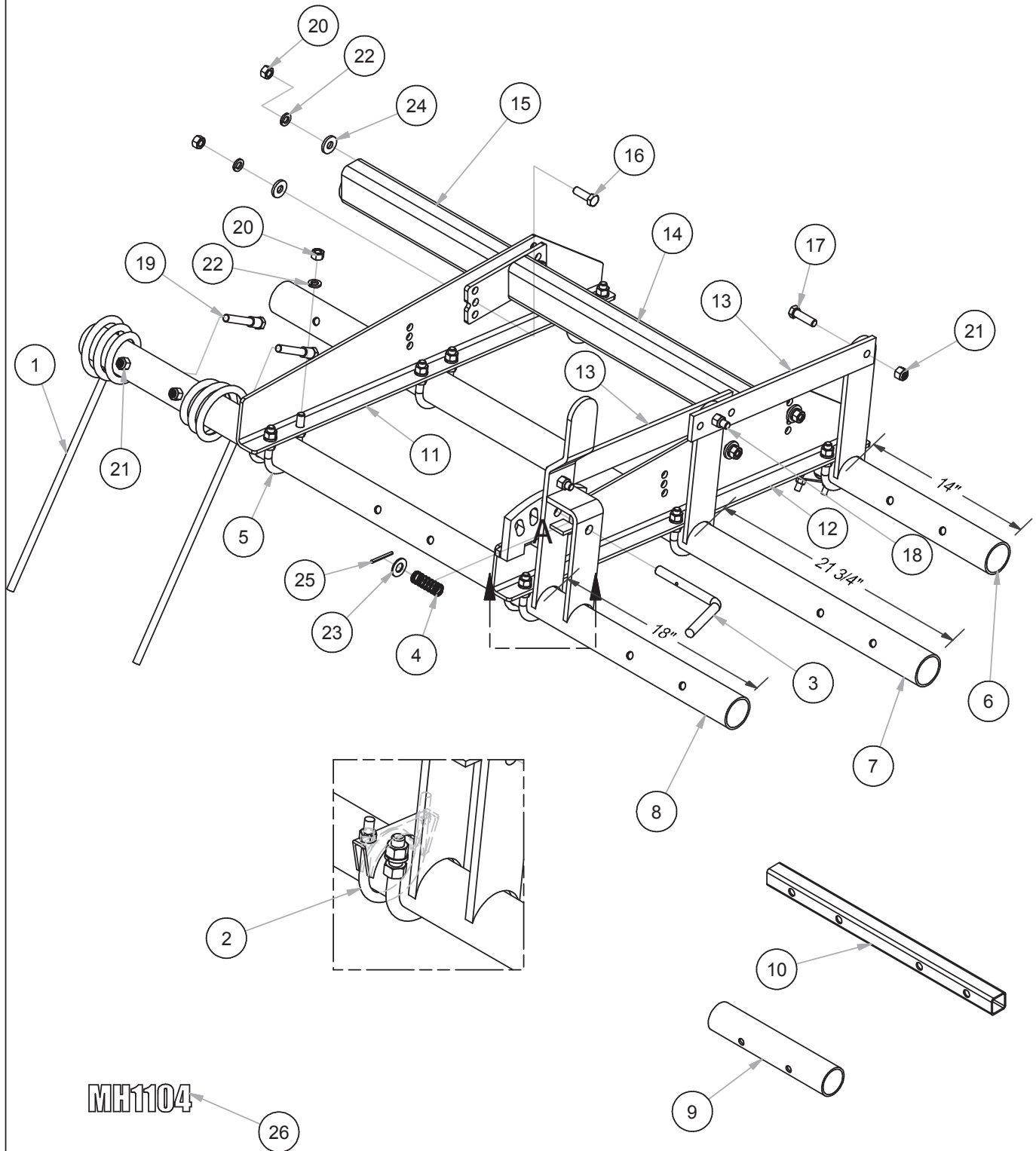
8H2314.iam/MH MNTNG ARM ASSY

# PARTS LIST

MOUNTED HARRW MOUNTING ARM				
Ref	FN	Part Number	Model	Description
1		8D5219		WASHER, FLAT 1.75"ODx29/32"ID - 10GA
2		8H1280		M94 AUTO LOCK SPRING
3		8H1309		SPRING COMP 15.5"X1.65"OD PNTD
4		8H1315		SUPPORT ROD WLDD ASSY 7/8 09-
5		8H1327A		SWIVEL AUSTEMPERED
6		8H1394		SUPPORT ROD ASSY 7/8" MNTD
7		8H2120		MOUNTING BRACKET M94/104/106
8		8H2128		SPRING 2.25ODx7/8IDx3.25L POLY
9		8H2129		SPRING KIT - HI IMPCT MNTD ATTCH
10		8H2131A		ADJ NUT W/WLDD SPRING 7/8
11		8H2132 8H2142 8H2144		CARRIER ARM, 32" CARRIER ARM, 42" CARRIER ARM, 52"
12		8H2184		AUTOLOCKUP 7/8" DRLD & PNTD
13		8H2190		HANDLE W/PIN, AUTO LOCKUP 1ARM
14		8H2295		MNTNG HEAD SPACER BLOCK 12-
15		8W1205		U-BOLT 5/8" X 3 X 3" SQ
16		8W1897		NYLATRON 1"OD X .75"ID - 1-3/4"
17		8X0014		BOLT 1/4-20NC X 3" GR5 YZ
18		8X0073		BOLT 1/2-13NC X 5" GR5 YZ
19		8X0099		BOLT 5/8-11NC X 6.75"
20		8X0117		BOLT 3/4-10NC X 7" GR5 YZ
21		8X0118		BOLT 3/4-10NC X 4" GR5 YZ
22		8X0123		BOLT 3/4-10NC X 5.5" GR5 YZ
23		8X0222		NUT 1/4"-20NC NY-LOCK GR2 YZ
24		8X0242		NUT 1/2"-13NC NY-LOCK GR2 YZ
25		8X0250		NUT 5/8"-11NC HEX GR2 YZ
26		8X0256		NUT 5/8"-11NC SER FLANG GR2 YZ
27		8X0256		NUT 5/8"-11NC SER FLANG GR2 YZ
28		8X0261		NUT 3/4"-10NC NY-LOCK GR2 YZ
29		8X0268		NUT 7/8"-9NC HEX GR2 YZ
30		8X0269		NUT 7/8"-9NC JAM GR2 ZDI
31		8X0304		LOCKWASHER 5/8" YLW ZNC
32		8X0306		LOCKWASHER 3/4" YLW ZNC
33		8X0338		WASHER 7/8"IDx2.25"OD FLAT YZ
34		8Z0101		2" SUMMERS DECAL
35		8Z2006		DECAL MA1520 52" MNTNG ARM

# PARTS LIST

## 3 BAR MOUNTED HARROW



7/9/2015

8HD5361.iam/3BR MNT HRRW

# PARTS LIST

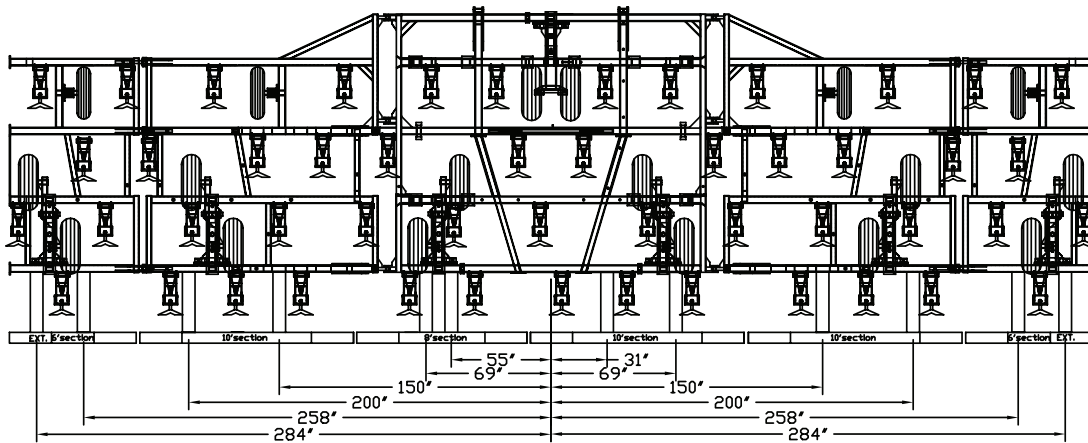
3 BAR MOUNTED HARROW				
Ref	FN	Part Number	Model	Description
1		8H1180S 8H1190S		HARROW TOOTH 1/2 X 20" HARROW TOOTH 9/16 X 26"
2		8HD0080		PIPE CLAMP 2-1/2"ID PLATED ZDI
3		8HD0150		PIN
4		8HD0160		COMPRESSION SPRING
5		8HD0200		U-BOLT 1/2" X 2-3/8" X 3-9/16" RND
6		8HD5052 8HD5072 8HD5082		1ST PIPE W/LVR 6' 1ST PIPE W/LVR 8' 1ST PIPE W/LVR 10'
7		8HD5054 8HD5074 8HD5084		2ND PIPE W/LVR 6' 2ND PIPE W/LVR 8' 2ND PIPE W/LVR 10'
8		8HD5056Q 8HD5076Q 8HD5086Q		3RD PIPE W/LVR 6' (01- ) 3RD PIPE W/LVR 8' (01- ) 3RD PIPE W/LVR 10' (01- )
9		8HD5094		EXTENSION PIPE
10		8HD5096		EXTENSION TUBE
11		8HD5101		SIDE PLT 1/4"3BR 104/6 LEFT
12		8HD5102		SIDE PLT 1/4"3BR 104/6 RGHT
13		8HD5115		ADJUSTABLE CONNECTING BAR
14		8HD5140 8HD5150 8HD5160		CROSS TUBE W/FLAT 6' CROSS TUBE W/FLAT 8' (ALSO USED TO CONNECT (2) 6' SECTIONS) CROSS TUBE W/FLAT 10'
15		8HD5180		EXT. BKT. 2 ND MTG. ARM M94 & M104
16		8X0063		BOLT 1/2-13NC X 1-1/2" GR5 YZ
17		8X0066		BOLT 1/2-13NC X 1-3/4" GR5 YZ
18		8X0067		BOLT 1/2-13NC X 2-1/4" GR5 YZ
19		8X0078		BOLT 1/2-13X3.63"SHOULDR GR2 YZ
20		8X0240		NUT 1/2"-13NC HEX GR2 YZ
21		8X0242		NUT 1/2"-13NC NY-LOCK GR2 YZ
22		8X0303		LOCKWASHER 1/2" YLW ZNC
23		8X0323		WASHER 5/8" SAE FLAT YZ
24		8X0330		WASHER 17/32"ID X 1.25"OD YZ
25		8X0520		ROLL PIN 3/16 X 2" ZINC CLEAR
26		8Z0114		MH1104 DECAL



# PARTS LIST

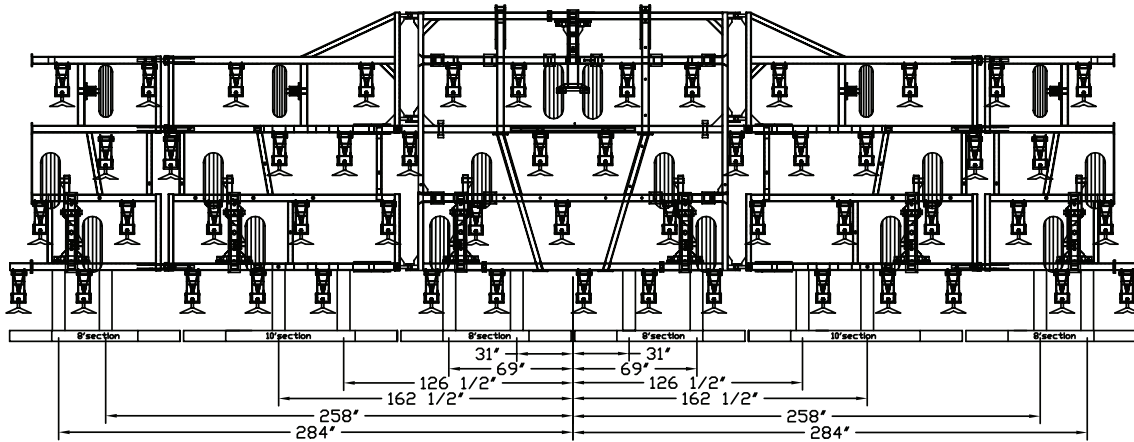
9T5012

50'



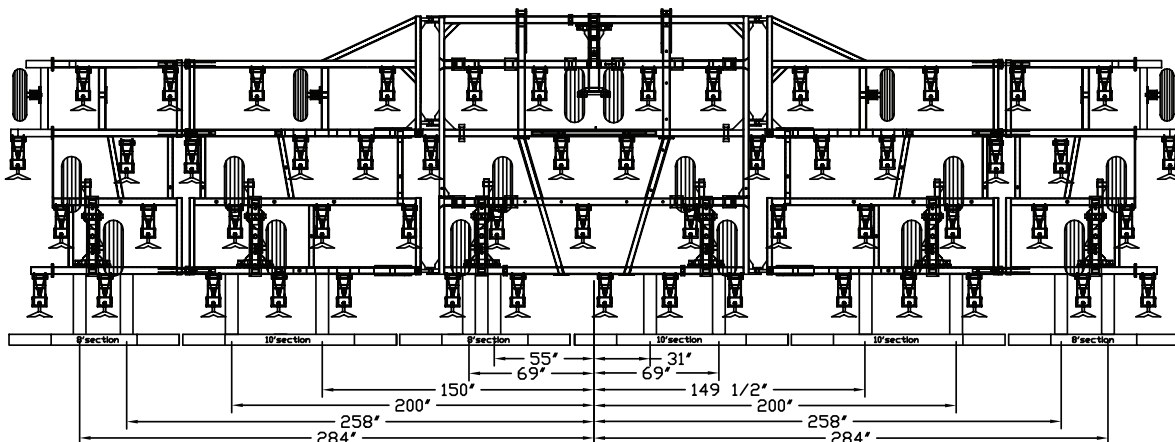
9T5012 + 8T9002

52'



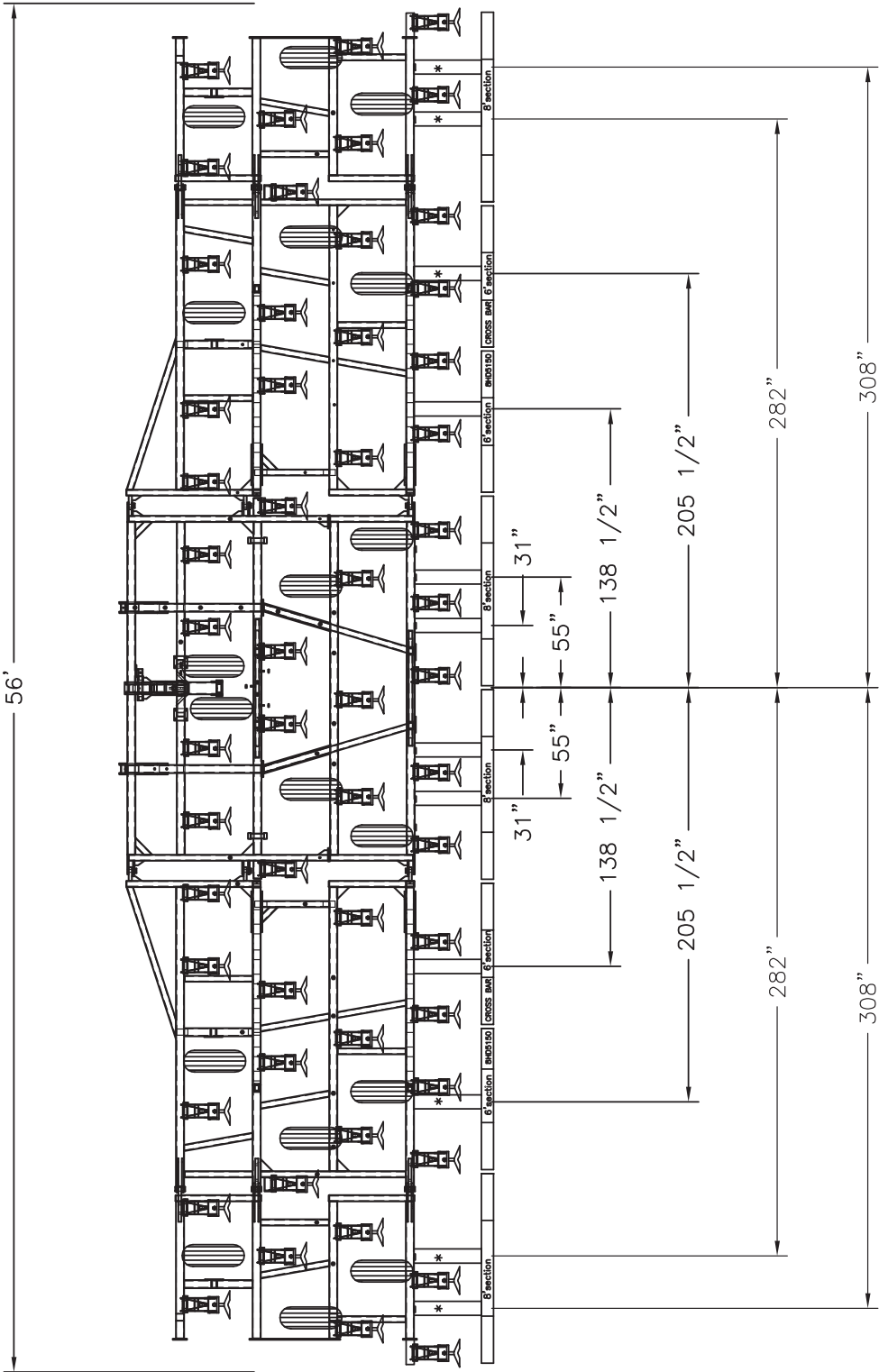
9T5012 + 8T9004G

54'



5POM/5CP6-12MH 9/22/00

9T5412 + 8T9002

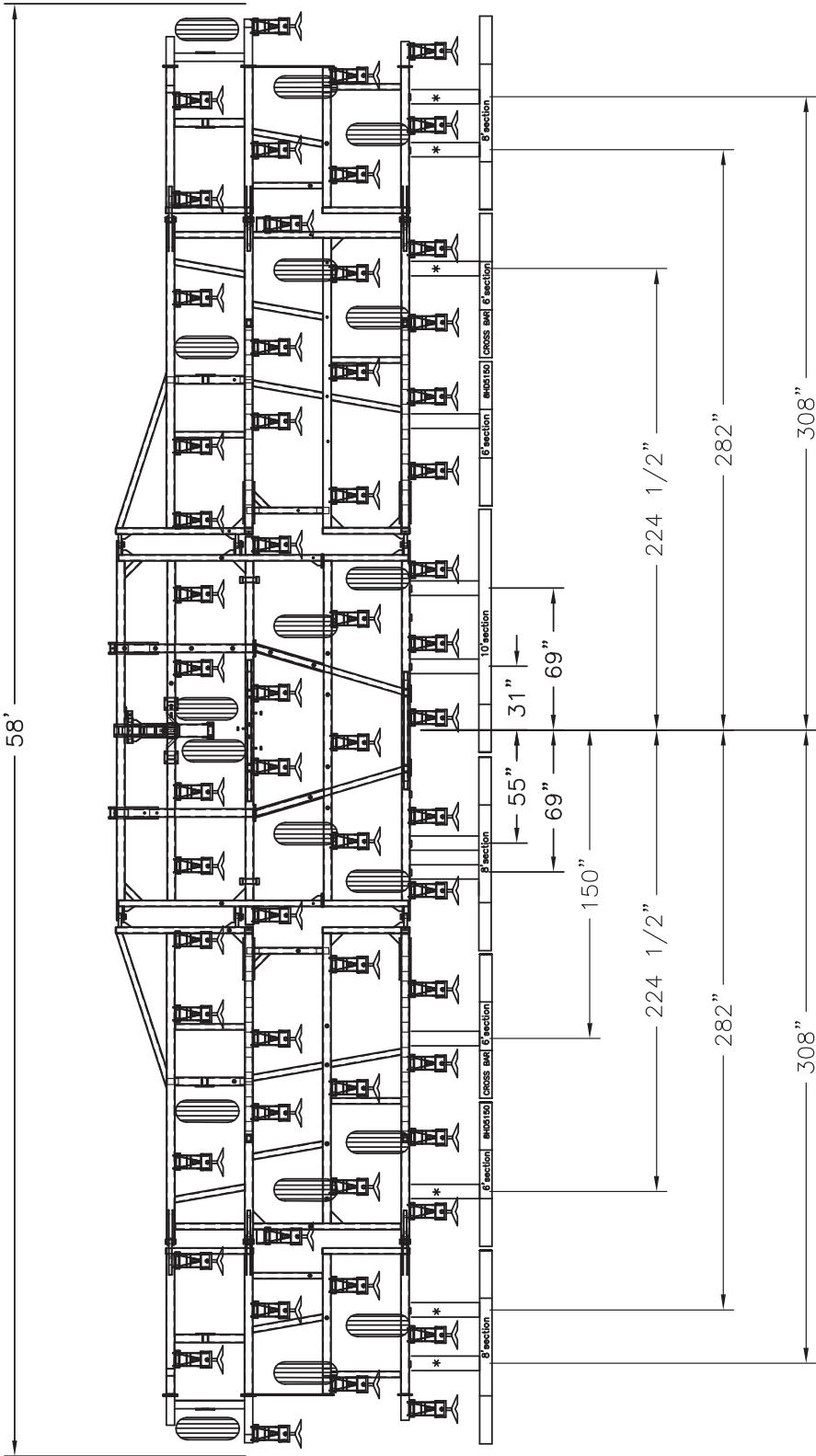


\* LOCATION OF 1/2 X 5" PIVOT STOP BOLT, SECURE WITH LOCKNUT, DO NOT OVER TIGHTEN.

5POM\5CP6-12MH(56)	56' CP MNT HARROW LAYOUT
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PARTS LIST

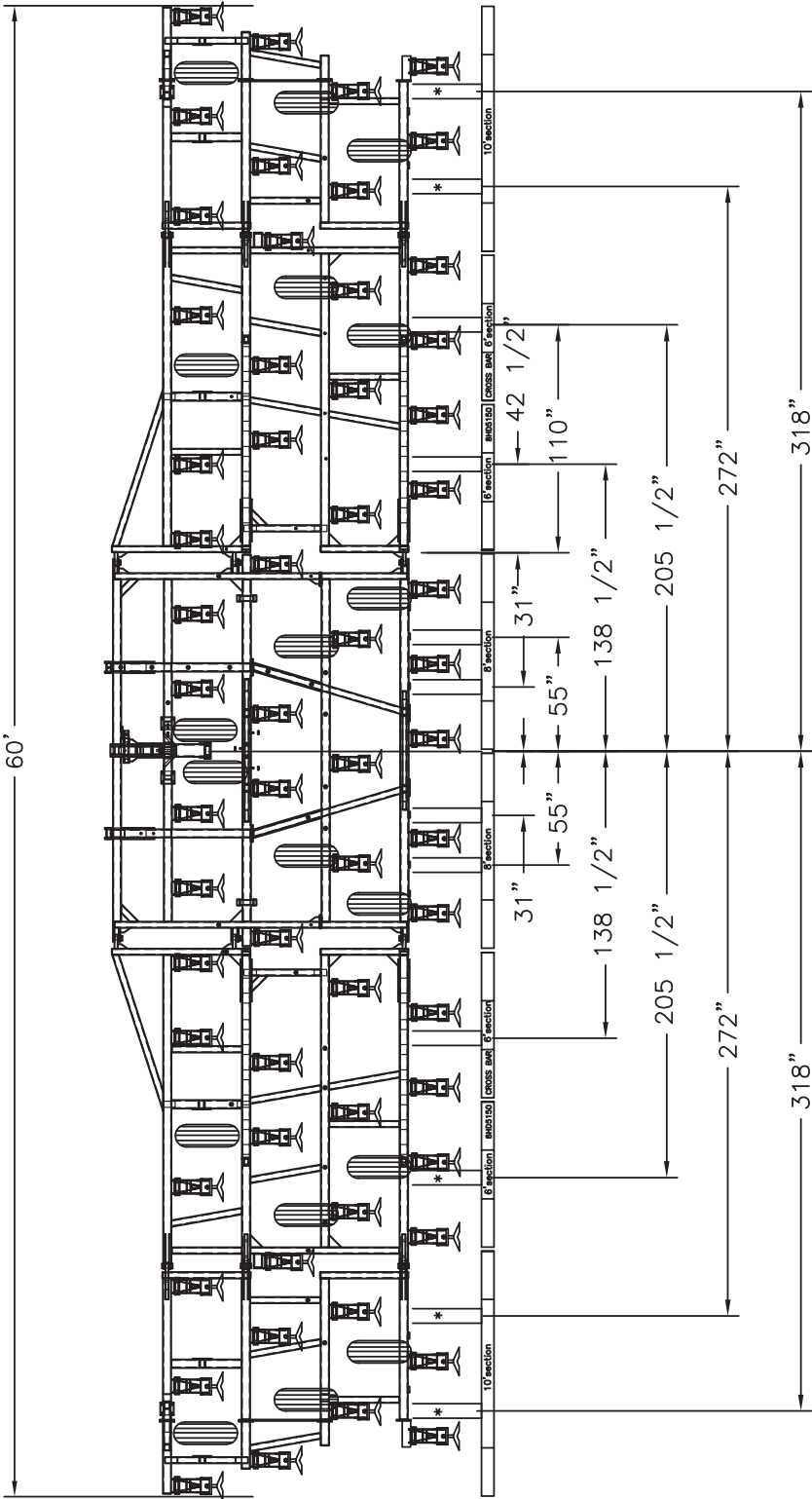
9T5412 + 8T9004G



\* LOCATION OF 1/2 X 5" PIVOT STOP BOLT, SECURE WITH LOCKNUT, DO NOT OVER TIGHTEN.

5POM\5CP6-12MH(56-60) 58' CP MNT HARROW LAYOUT

9T5412 + 8T9006T



\* LOCATION OF 1/2 X 5" PIVOT STOP BOLT, SECURE WITH LOCKNUT, DO NOT OVER TIGHTEN.

5POM\5CP6-12MH(56-60) 60' CP MNT HARROW LAYOUT

# PARTS LIST

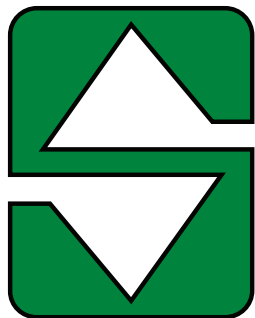
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# History of Summers Manufacturing Co., Inc.

- 1965 – Summers Manufacturing is founded by Harley Summers, who purchases patent rights for Goebel truck and pickup hoists from the Goebel Brothers of Lehr, ND. These hoists, produced in Harley Summers' blacksmith shop the first year, were distributed nationwide by a Cincinnati, Ohio, dealer. With increasing sales, the company soon outgrows the small shop. Summers wins the Herman harrow contract, beginning the company's Herman culti-harrow line. Summers builds a 7,200 square-foot factory in Maddock to meet the demand for truck and pickup hoists, as well as Herman harrows.
- 1969 – Firm incorporates and becomes officially known as Summers Manufacturing Company, Inc.
- 1970 – Summers purchases rights to manufacture/market the Herman Harrow.
- 1973 – Company builds new 20,000 square-foot plant and offices in Maddock, adding a 20,000 square-foot assembly plant in the fall of 1975 (completed in January 1976), bringing total square footage of Maddock factories to 47,000.
- 1977 – Summers introduces the Agri-sprayer, used in conjunction with the Herman culti-harrow to incorporate herbicides and liquid fertilizer.
- 1980 – Company purchases manufacturing and distributing rights to Crown rockpickers from Crown Manufacturers of Regina, Saskatchewan. This forces another expansion project – a 26,000 square foot factory on a 24 acre site in Devils Lake, ND Industrial Park.
- 1981 – Company establishes a branch facility in Regina, Saskatchewan.
- 1982 – Devils Lake plant begins operations in January, manufacturing supersprayers and rockpickers. The Maddock factory begins producing the Superweeder, a combination cultivator and harrow.
- 1983 – Summers buys manufacturing and distributing rights to the Fargo Field Sprayer line from Mid America Steel (formerly Fargo Foundry), Fargo. This field sprayer line is manufactured at the Devils Lake plant. Harley Summers is selected North Dakota's small-businessman of the year by the Small Business Administration.
- 1984 – Herman Diamond Disk, a disk harrow made in a diamond shape to reduce blade breakage from rocks, comes off the assembly line.
- 1985 – Summers signs a contract with Melroe Company of Bismarck to obtain exclusive manufacturing rights to the Melroe harrow line.
- 1989 – Summers purchases TorMaster Company of Hordean, Manitoba, giving the company a line of rolling packer equipment, comprised of harrow packers and hydraulic fold coil packers.
- 1992 – A new engineering office/parts department is added to the Devils Lake factory.
- 1993 – Company adds two new products: a pickup-mounted sprayer with booms of 80 and 90 feet, and the Summers Superharrow, an extra-heavy-duty residue-management tool designed for the minimum and no-till farmer.
- 1994 – a 50 by 125 foot addition to the Maddock factory is completed. Construction begins on a 24,576 square-foot addition to the Devils Lake factory, which enables the company to increase production of truck-mounted and pull-type supersprayers and rockpickers.
- 1996 – 1500 square foot office area added to the Maddock plant. Company introduces Chisel Plow with floating hitch and 700# trip assembly.
- 1997 – 16,800 square foot warehouse in Maddock purchased from local business.
- 1999 - Company introduces the Ultimate suspended boom trailer sprayer with hydraulic folding booms. Additional sizes added to the Chisel Plow line, now ranging from 28' to 54'.
- 2000 - Company introduces the Supercoulter, the innovative solution for excessive field residue management on no-till, minimum-till, and conventional-till farming operations.
- 2001 - Cold storage building completed at Devils Lake. Company extends boom lengths up to 110 feet on the Ultimate Supersprayer.
- 2002 - Company adds a warehouse and service man in Aberdeen, SD.
- 2003 - Company introduces the Ultimate NT Supersprayer featuring a bolt on axle for easier adjustment, and a new family of tanks that feature a drainable sump and a common width dimension.
- 2004 - A 124 ft. x 310 ft. addition is added onto the current Devils Lake plant.
- 2005 - The Summers Superroller is added to the "Field Tested Tough" product line. Additional sizes of 56', 58' and 60' are added to the Superchisel line. Ultimate-Ultra NT Supersprayer introduced featuring 120' & 133' booms.
- 2006 - The Summers Coulter-Chisel, Rolling Choppers and 30' Superroller were included in product line.
- 2007 - 62' & 84' 5 Section Landrollers and a 20' Coulter-Chisel were introduced.
- 2008 - Disk-Chisels, ranging from 16' to 40' widths, are added to product line.
- 2009 – M105 and M108 Mounted Harrows added to selection of Mounted Attachments. SuperHarrow 2650, 50' SuperCoulter, Hydraulic Fold Rolling Chopper and 36" diameter Landrollers introduced.
- 2010 – Rolling Basket and 47' Diamond Disk added to product line. A 124 ft. x 310 ft. addition to Devils Lake factory built for a state of the art paint system.
- 2011 – Additional Supercoulter sizes were added along with larger tires for tillage implements. Ultimate and Ultra Supersprayers received an additional tank size of 1650 gallons. Front Caster Wheel option was made available for chisel implements.
- 2012 – 41', 46' & 53' Trail Type Landroller added to product line. Additional Superchisel sizes of 16' & 20' were added.
- 2013 – DT9530 added to product line. Internal Scraper in Rolling Baskets introduced. Finishing Coulter Gang becomes standard on the Diamond Disk and 2510 DT. Corporate offices opened at Devils Lake plant. New building and location for the Aberdeen warehouse.
- 2014 – Introduced the VRT2530 (Variable Rate Tillage).
- 2015 – Introduced the VT Flex Applicator and Spray Fill Xpress.

Summers distributes on a wholesale level to dealers and distributors throughout markets in North Dakota, South Dakota, Minnesota, Montana, Iowa, Washington, Idaho, Oregon, Utah, Colorado, Kansas, Nebraska, Oklahoma, Texas, Manitoba, Saskatchewan, Alberta, British Columbia, Kazakhstan, Russia and Australia, making it an international company.



# **SUMMERS<sup>®</sup>**

*... Field Tested TOUGH!*



**Tillage**



**Rock Picker**



**Land Rollers/Packers**



**Cultivators/Harrows**



**Mounted Attachments**



**Sprayers**

