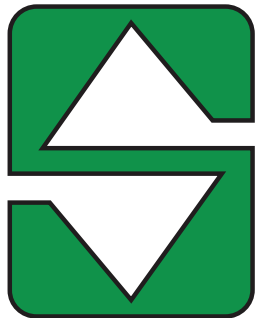


22' HITCH IMPLEMENTS 22' HITCH IMPLEMENTS



SUMMERS®

Operator's Manual

SUPERHARROW PLUS

SUPERHARROW 2650

8-BAR SUPERHARROW

HARROWPACKER

3/8" and 9/16" Diameter Tooth Sections

4-RANK SUPERWEEDER

IMPORTANT

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



CAUTION

READ & UNDERSTAND OPERATOR'S MANUAL BEFORE USING MACHINE.

See www.summersmfg.com for the latest version of all Summers Operator's Manuals.

SUMMERS MANUFACTURING CO., INC.

WEB SITE: www.summersmfg.com

DEVILS LAKE, NORTH DAKOTA 58301 (701) 662-5391

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 of purchase by the end user from Summers' dealer.

Summers' obligation is to replace free of charge any part of any product that Summers inspection shows to be defective excluding transportation charges to 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 herein 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, NORTH DAKOTA 58301

1/16

INTRODUCTION

This manual provides information about Safety, Assembly, Operation and Parts for the Summers Superharrow PLUS, Superharrow 2650, 8-Bar Superharrow, Harrow Packer and 4-Rank Superweeder featuring the Summers 22 Ft. Hitch.

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

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 back section of manual for description of each Part Number

It is the policy of the 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 any time without incurring obligations to install such changes on products previously delivered.

Summers Mfg. Co., Inc. strongly recommends that each Operator READ and UNDERSTAND the Operator’s Manual before using the machine. In addition, this 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.



NOTE: Operating Packer Coils in wet conditions will cause:

- 1. Excessive packing with possible soil surface crusting.**
- 2. Increased implement frame stress.**

Discontinue use of packer coils if mud build-up occurs.

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- Section 1: SAFETY: ALL MACHINES**
- Section 2: ASSEMBLY & OPERATION: SUPERHARROW PLUS**
- Section 3: ASSEMBLY & OPERATION: SUPERHARROW 2650**
- Section 4: ASSEMBLY & OPERATION: 8-BAR SUPERHARROW**
- Section 5: ASSEMBLY & OPERATION: HARROW PACKER**
- Section 6: ASSEMBLY & OPERATION: 4-RANK SUPERWEEDER**
- Section 7: PARTS: ALL 22 FT. HITCH MACHINES**

OWNER REGISTER

| | |
|-------------------|---|
| Name _____ | Size _____ |
| Address _____ | Serial Number _____ (located by the hitch piece) |
| City _____ | |
| State/Prov. _____ | Date Purchased _____ |
| Mail Code _____ | Dealer _____ |

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SECTION 1 -  SAFETY

SAFETY-ALERT SYMBOL



This symbol is used to denote possible danger and care should be taken to prevent bodily injury.
This symbol means:

**ATTENTION! BECOME ALERT!
YOUR SAFETY IS INVOLVED!**

Definition of each **Signal Word** used in conjunction with the **Safety-Alert** symbol.



indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.



indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

GENERAL SAFETY PRACTICES

1. **READ AND UNDERSTAND** Operator's Manual before using machine. Review at least annually thereafter.
2. **VERIFY** 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.
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 transport locks.

SAFETY DURING TRANSPORT

1. **ONLY TOW** at a safe speed. Use caution when making corners or meeting traffic.
2. **USE** a 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 maximum width regulations when transporting on highways.
5. **FREQUENTLY CHECK** for traffic from rear, especially during turns.



**IMPORTANT INFORMATION ON 22 FT. HITCH MACHINES
WITH NEGATIVE HITCH WEIGHT**

Because of the large wing size of certain Summers machines, namely the Superharrow PLUS, Superharrow 2650, Harrow Packer and 4-Rank Superweeder, the hitch on these machines often becomes “light” in transport position. This means there is no downward weight on the hitch and as a result, the hitch will rise if unhitched. In these cases, special precautions must be taken as discussed below.

NEVER unhitch a machine that has been opened up into field position and has not been completely lowered to the ground. If the machine has been completely lowered to the ground and parked in a level area, it may be unhitched with ordinary care. NEVER unhitch a machine in transport position from a tractor, pickup, truck or other towing unit unless the following precautions are taken.

1. Determine if the hitch has a positive or negative weight. Insure that there is no side pressure on the hitch pin before determining positive or negative tongue weight. If the Superharrow PLUS, Superharrow 2650, Harrow Packer or 4-Rank Superweeder’s hitch piece or clevis is resting on the towing unit’s hitch and cannot be lifted off, positive tongue weight exists. The machine can be unhitched by lowering the hitch jack, stabilizing with one wing tube jack and following steps 2 **and** 4. If positive tongue weight does not exist, follow steps 2 **through** 4.

2. Park machine on a level area and block the hitch tires and wing transport tires so machine cannot roll forward or backward. This is very important even if the machine is parked on level ground, strong winds can move unblocked machines.

3. Lower wing tube jacks until enough weight is transferred to hitch to keep it from rising. Check this by observing machine hitch. With hitch pin installed but not binding, check that the machine hitch no longer has a tendency to rise.

4. Disconnect all hydraulic lines and wiring. Again check that the hitch pin is free. There should be no side force on the pin and it should turn freely. If free, stand off to the left side of hitch and remove hitch pin. Carefully drive ahead.

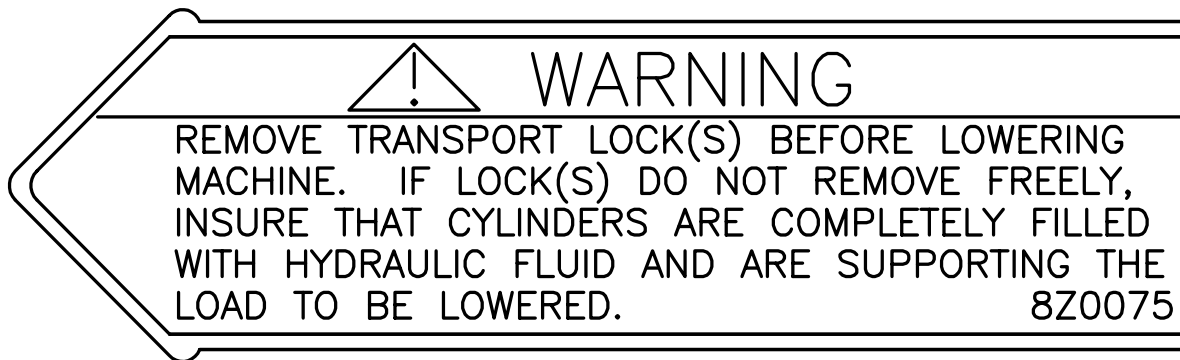
IMPORTANT: Positioning transport wheel assemblies on wing tubes of machine is very critical in determining hitch weight. Moving transport wheel assemblies forward will increase hitch weight and moving them rearward will decrease hitch weight.

SECTION 1 -  SAFETY

SAFETY DECALS

1. **KEEP SAFETY DECALS AND REFLECTORS CLEAN.**
2. **REPLACE** missing or unreadable decals. New decals are available from your Summers dealer by stating correct part number (PN) located in lower right hand corner.

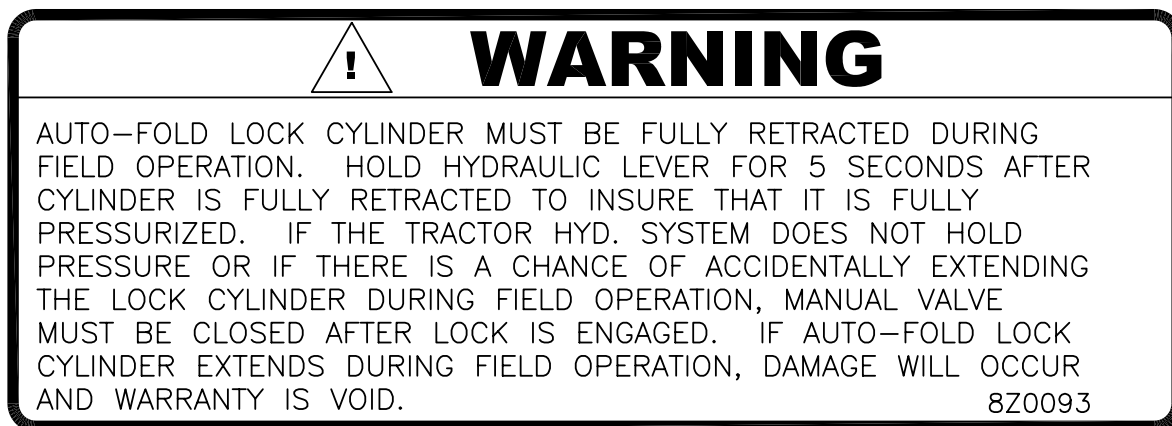
1. **TRANSPORT LOCK DECAL (PN 8Z0075).**



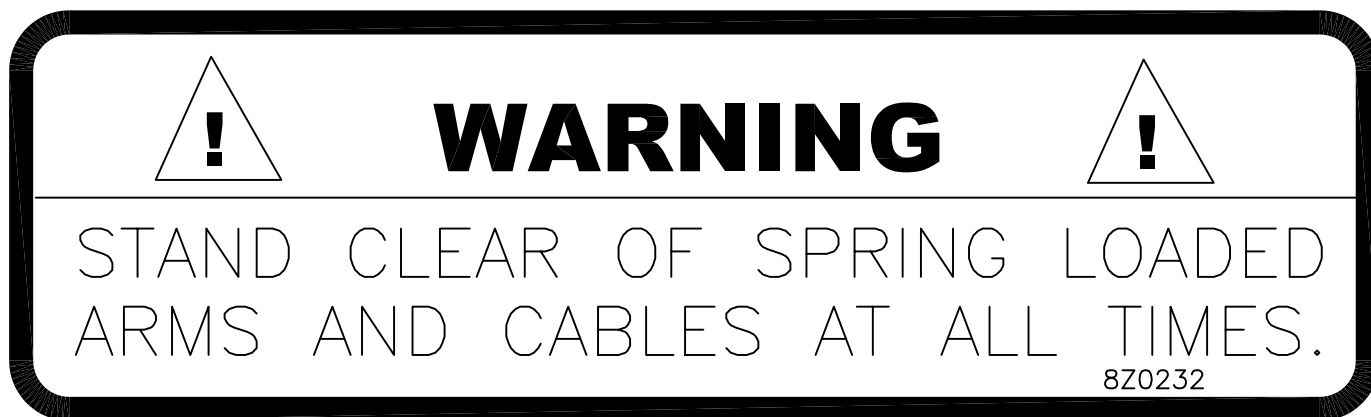
2. **HITCH WARNING DECAL (PN 8Z0092).**



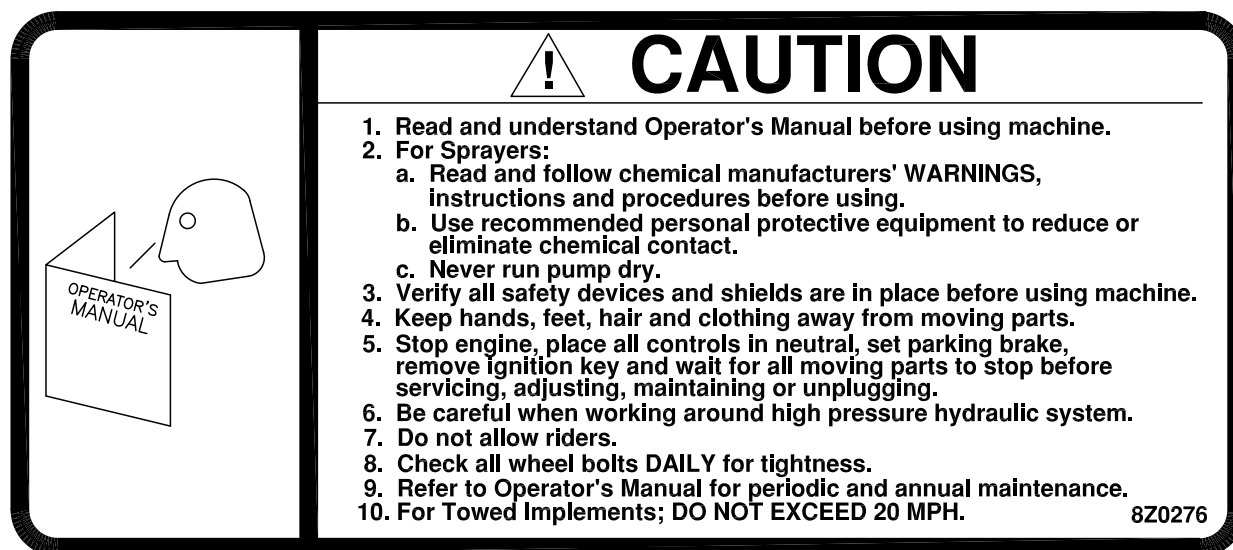
3. **AUTO-FOLD WARNING DECAL (PN 8Z0093).**



4. AUTO-FOLD ARM WARNING DECAL (PN 8Z0232).



5. GENERAL CAUTION DECAL (PN 8Z0276).





6. CYLINDER LOCKS DECAL (PN 8Z0342).





SECTION 1 -  SAFETY


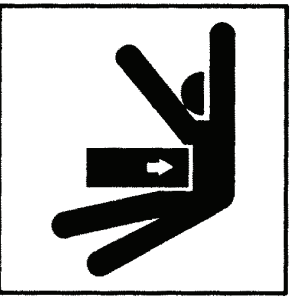

7. WING DANGER DECAL (PN 8Z0344).

| | |
|---|---|
|  |  DANGER |
| | <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 style="text-align: right;">8Z0344</p> |

8. ELECTROCUTION DANGER DECAL (PN 8Z0346).

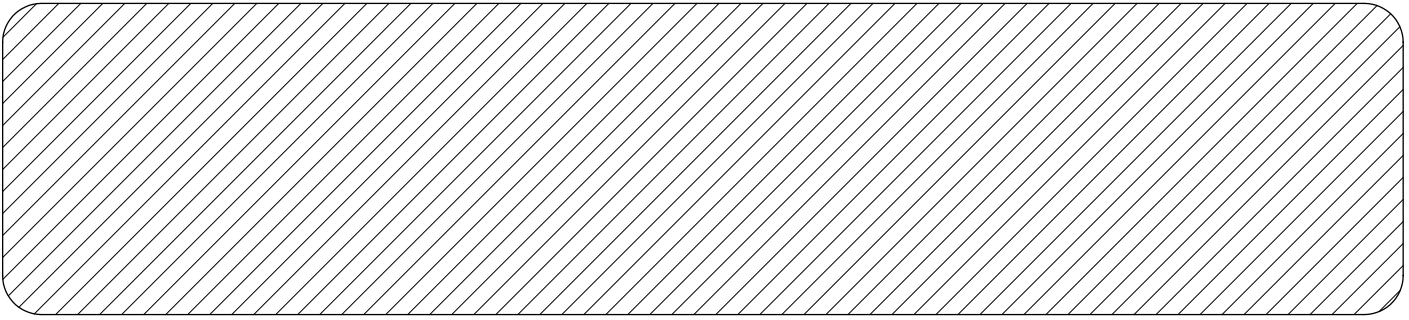
| | |
|---|---|
|  |  DANGER |
| | <p>TO AVOID INJURY OR DEATH DO NOT CONTACT ELECTRICAL LINES.</p> <p style="text-align: right;">8Z0346</p> |

9. PINCH POINT DECAL (PN 8Z0087).

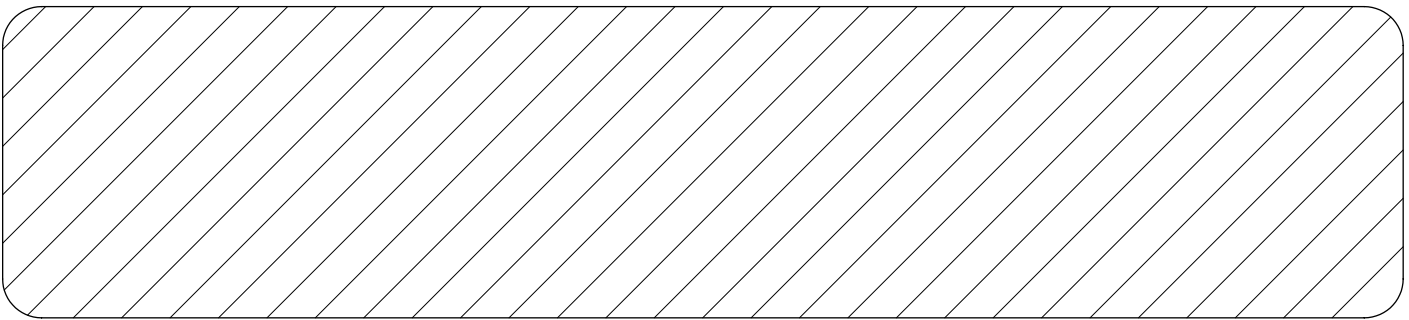
| | |
|---|---|
|   |  DANGER |
| | <p>FRAME PINCH POINT HAZARD <i>KEEP AWAY</i></p> <p>To prevent serious injury or death from crushing:</p> <ul style="list-style-type: none"> • Stay away from frame hinge area when folding wings. • Keep others away. • Do not fold wings when bystanders are present. <p style="text-align: right;">8Z0087</p> |

SECTION 1 -  SAFETY

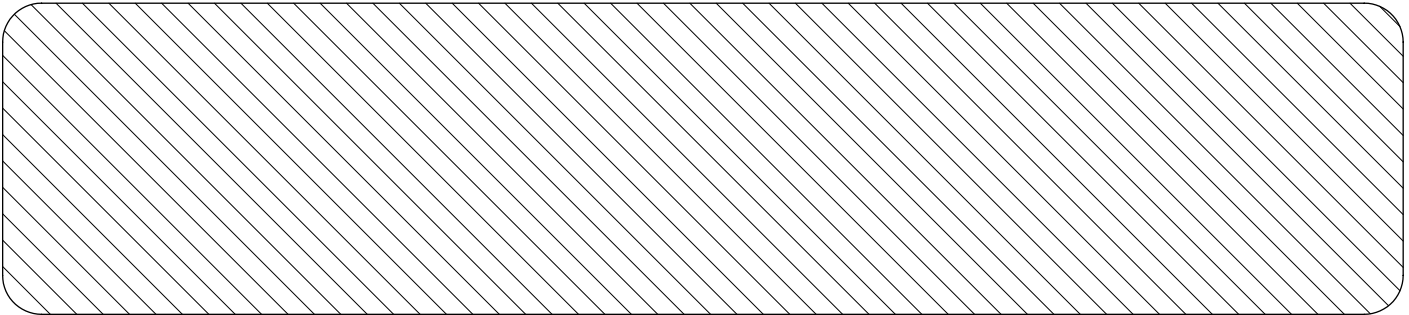
10. AMBER REFLECTOR (PN 8Z0800).



11. RED-ORANGE REFLECTOR (PN 8Z0805).



12. RED REFLECTOR (PN 8Z0810).

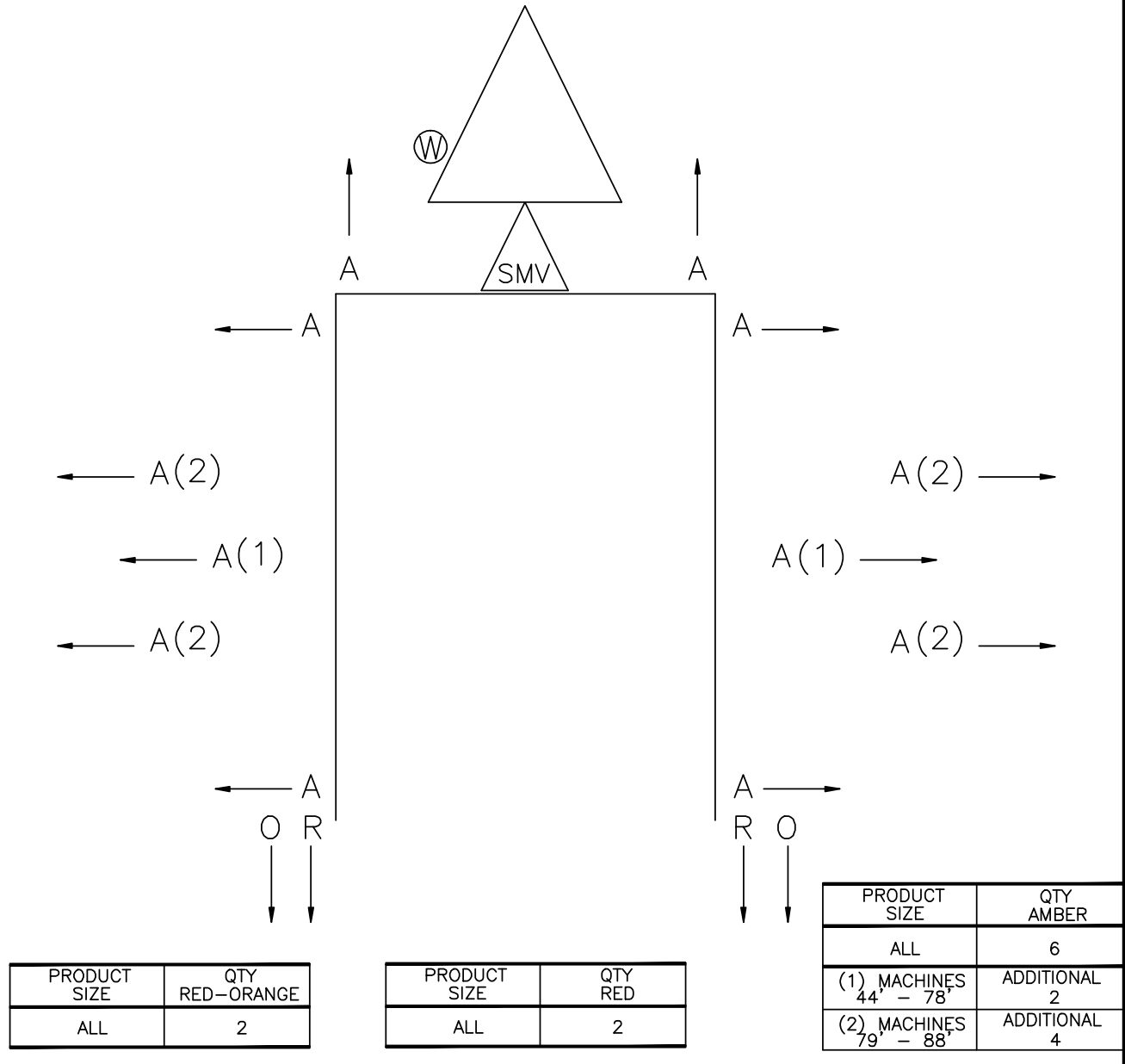


SAFETY LIGHT OPERATION

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.

REFLECTOR LOCATIONS

Summers Mfg. Co., Inc. Drawbar Tillage Implements



Legend

Ⓜ = Wing Danger Decal (8Z0344)

A = Amber Reflector (8Z0800)

O = Red-Orange Reflector (8Z0805)

R = Red Reflector (8Z0810)

 = SMV Attach Bracket (8K8210) w/Hardware

7/20/10 \ 22FTHITCH\REFLECTORS_22FT

SECTION 1 - SAFETY

GENERAL ASSEMBLY SAFETY PRACTICES



YOU ARE RESPONSIBLE for the safe assembly of the machine.



DO NOT ALLOW CHILDREN or other unauthorized persons within the assembly 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 modification 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. Reference to "RIGHT" and "LEFT" is determined when machine IS VIEWED FROM THE REAR.
3. Reference to "FORWARD" means TOWARDS THE TRACTOR.
4. Reference to "REAR" means AWAY FROM THE TRACTOR.

SECTION 2 - SUPERHARROW PLUS

SET-UP INSTRUCTIONS



Fig. 1: Field Position



Fig. 2: Transport Position

The machine should be placed in an area that allows ample room for assembly in field position (See Fig. 1).

CAUTION: For safety purposes, block equipment while working on it.

HITCH – Axles, Wheels and Jack

Attach hitch hydraulic depth adjustment and axle assemblies as shown on page 2-2 through page 2-5.

Mount hitch wheels and tires and install hitch jack.

DRAWBAR: Center, Hydraulic Lift Cylinders, Wings, Axles and Wheels.

Attach center drawbar to hitch using two 1-1/4" X 6" pins and secure with flat washers and 5/16" X 2-1/2" cotter pins. Mount main lift cylinders and transport locks. Route hoses as shown on page 2-7. Fully charge main lift cylinders with hydraulic fluid by extending and retracting until all air is purged from system.

Attach wing drawbars to knuckles using 1-1/2" X 11" pins. Secure with 1/2" X 2-1/2" bolt, washer and lock nut. Install 1-1/2" jam nut, center punch or spot weld to secure. Attach jack mounting swivels on the top of wing near knuckle in field position. Secure with 7/8" u-bolt, lockwashers and nuts.

Mount wing hydraulic depth adjustment assemblies as shown on page 2-5. Mount wing wheels and tires.

HYDRAULIC SYSTEMS

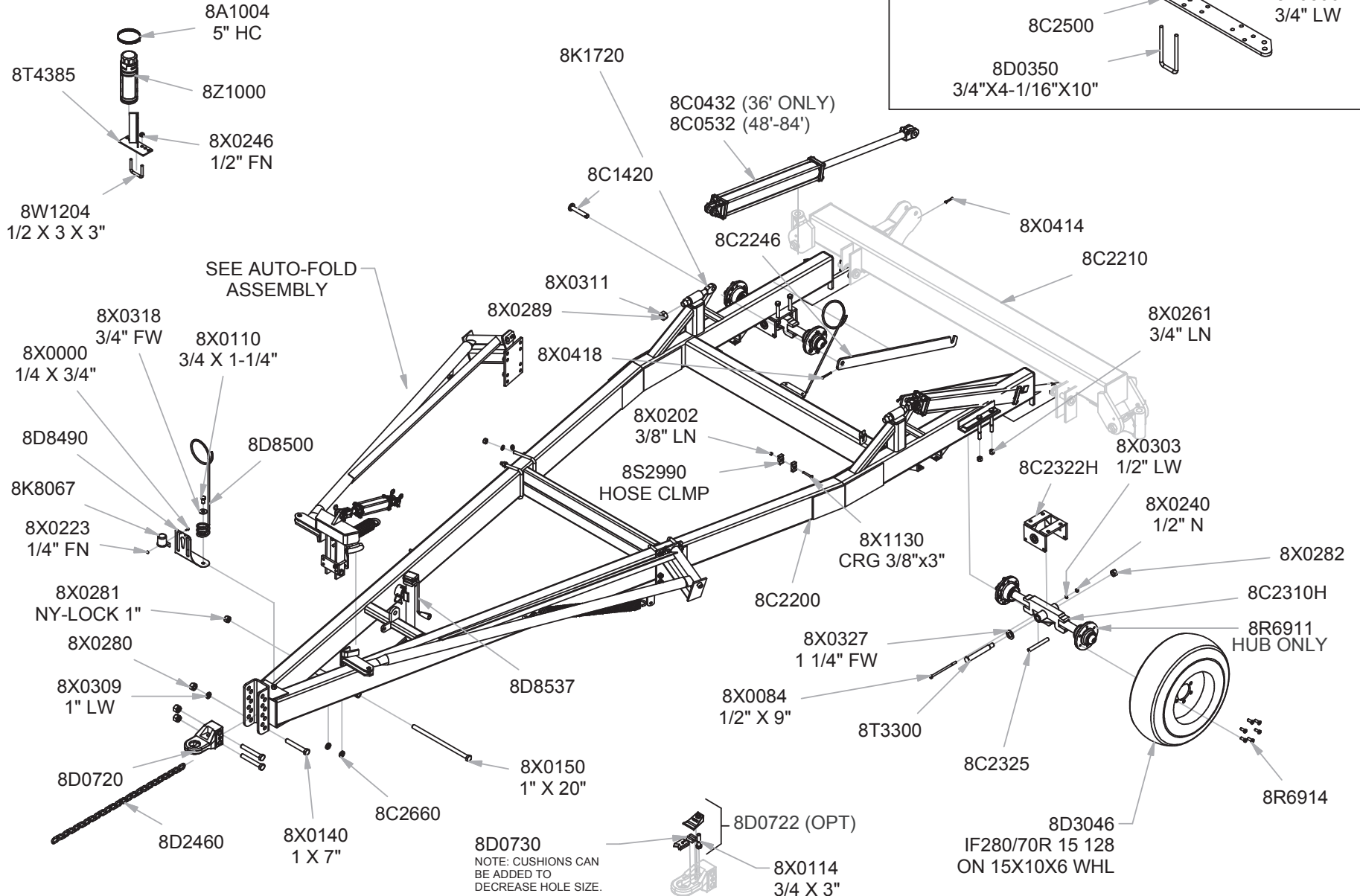
Mount Auto-Fold lock, cylinder and hoses as shown on page 2-7.

NOTE: The tractor hydraulic control valve operating Auto-Fold lock cylinder must hold pressure. If Auto-Fold lock cylinder extends during field operation, damage will occur, this damage is not covered by warranty

Mount Hydraulic Depth Adjustment cylinders and route hoses as shown on page 2-9 and photos on page 2-10. Allow enough hose at hinge points to avoid pinching or stretching hose. Clamps (8W1398) are provided to secure hydraulic hoses to drawbar. Attach hydraulic hose holder to rear hitch cross tube with 3/4" X 1-1/4" hex head cap screw and flat washers provided. Route hoses through loop to prevent ground contact in transport position. Bend loop closed to secure hoses.

22' MACHINE HITCH

NON AUTO-FOLD
ONLY

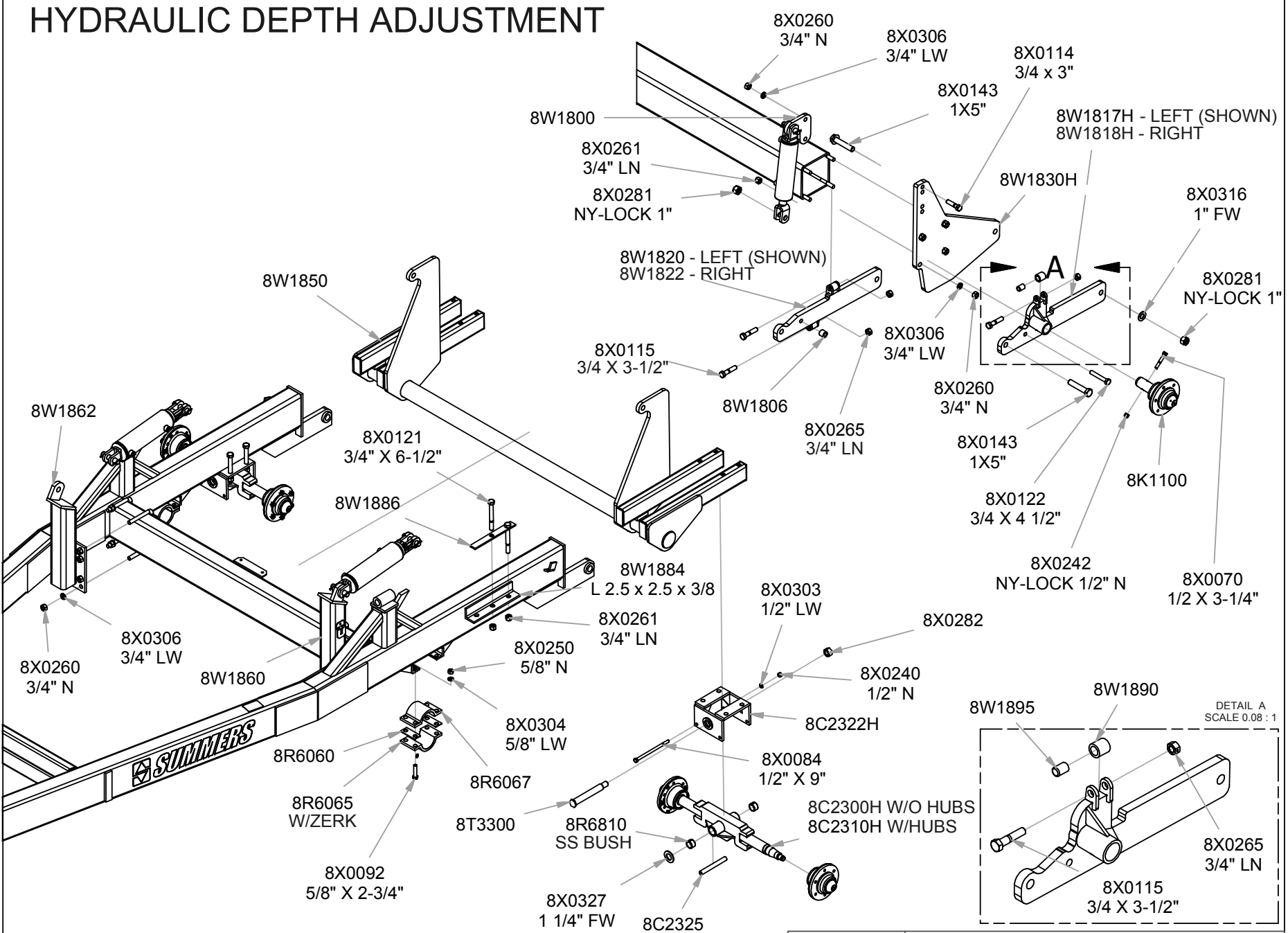


2/14/2017

9HD0880.iam/HITCH

HYDRAULIC DEPTH ADJUSTMENT

2-3



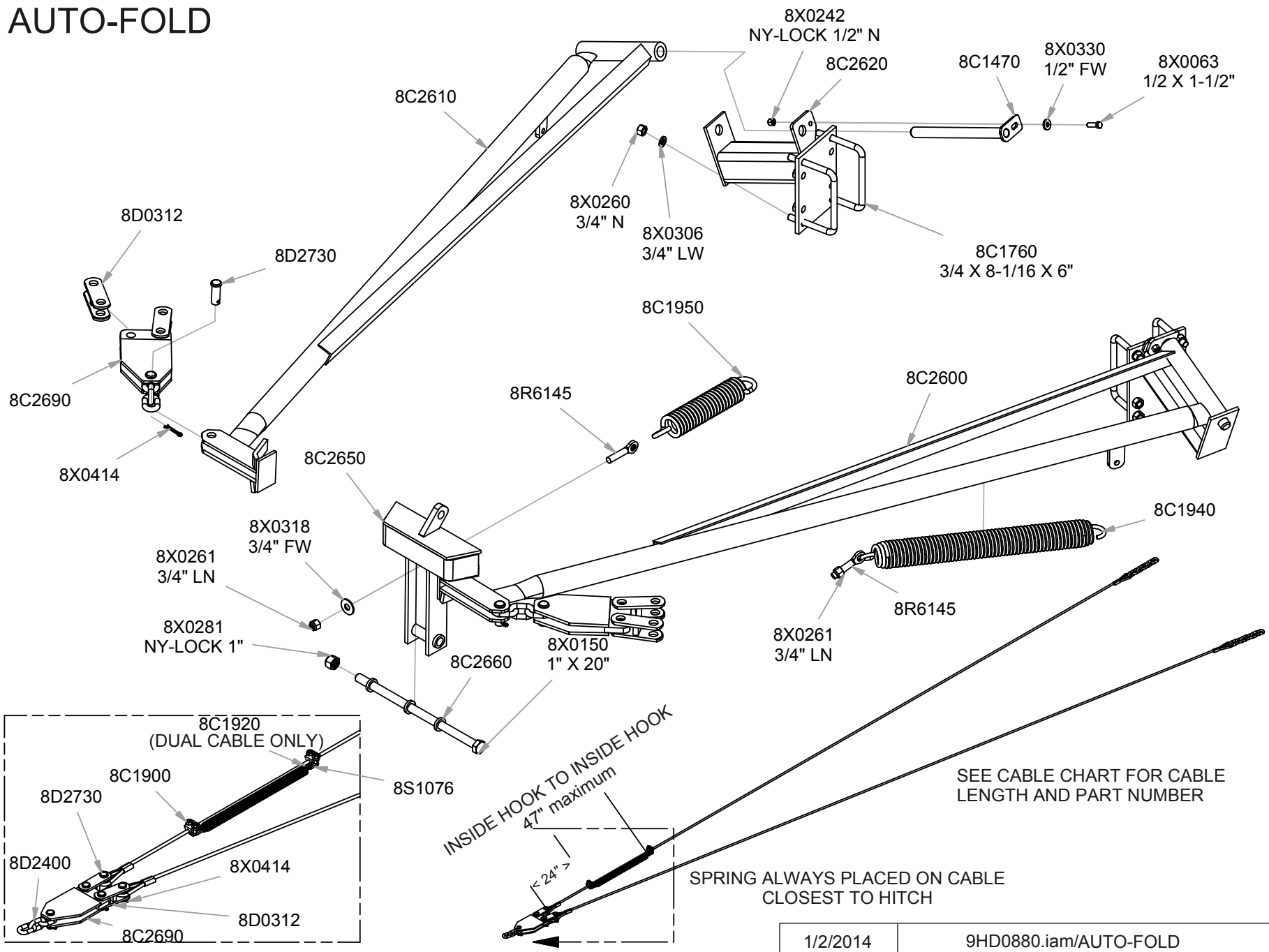
SECTION 2 - SUPERHARROW PLUS

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9HD0880.iam/HYD DEPTH CONTROL

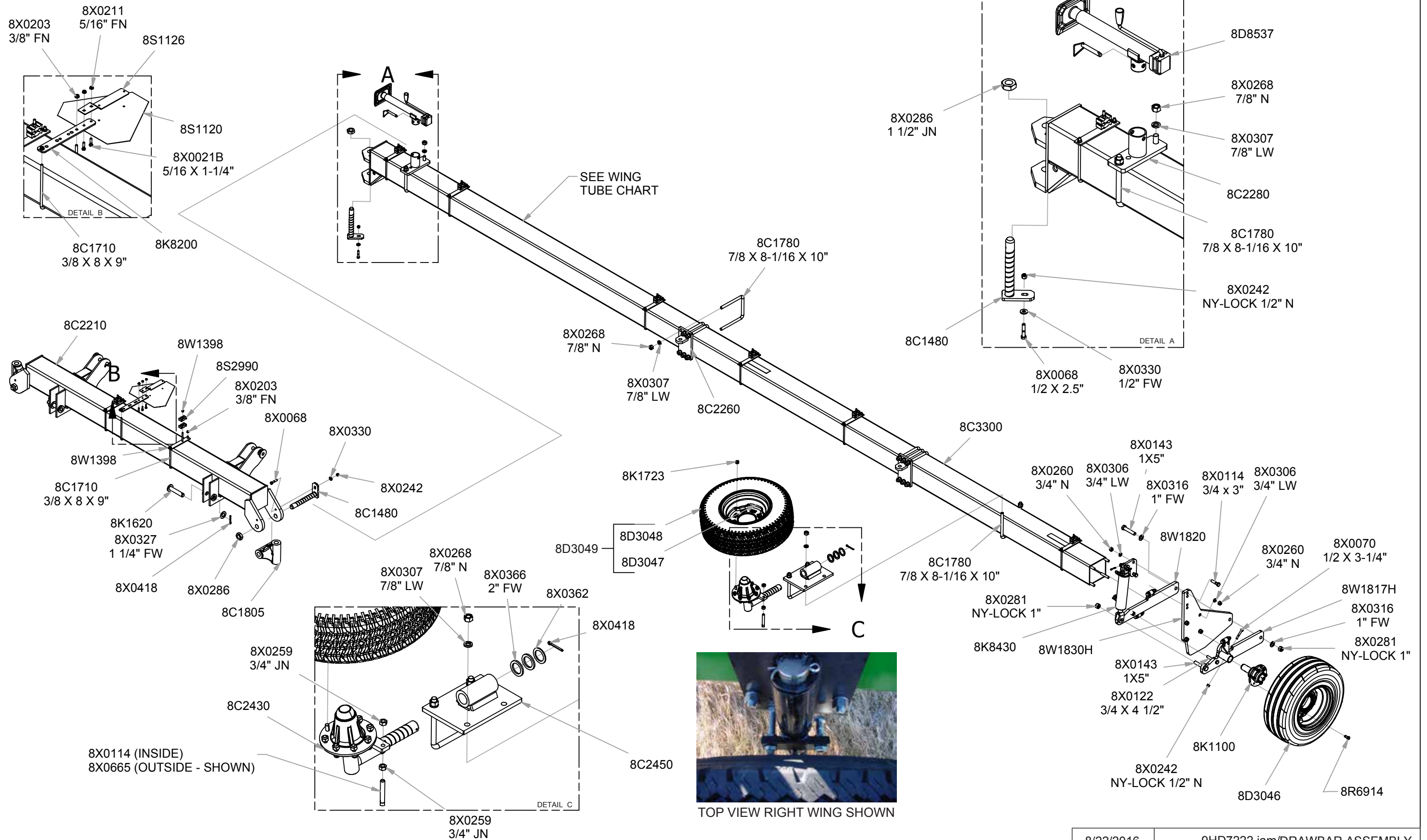
AUTO-FOLD

2-4

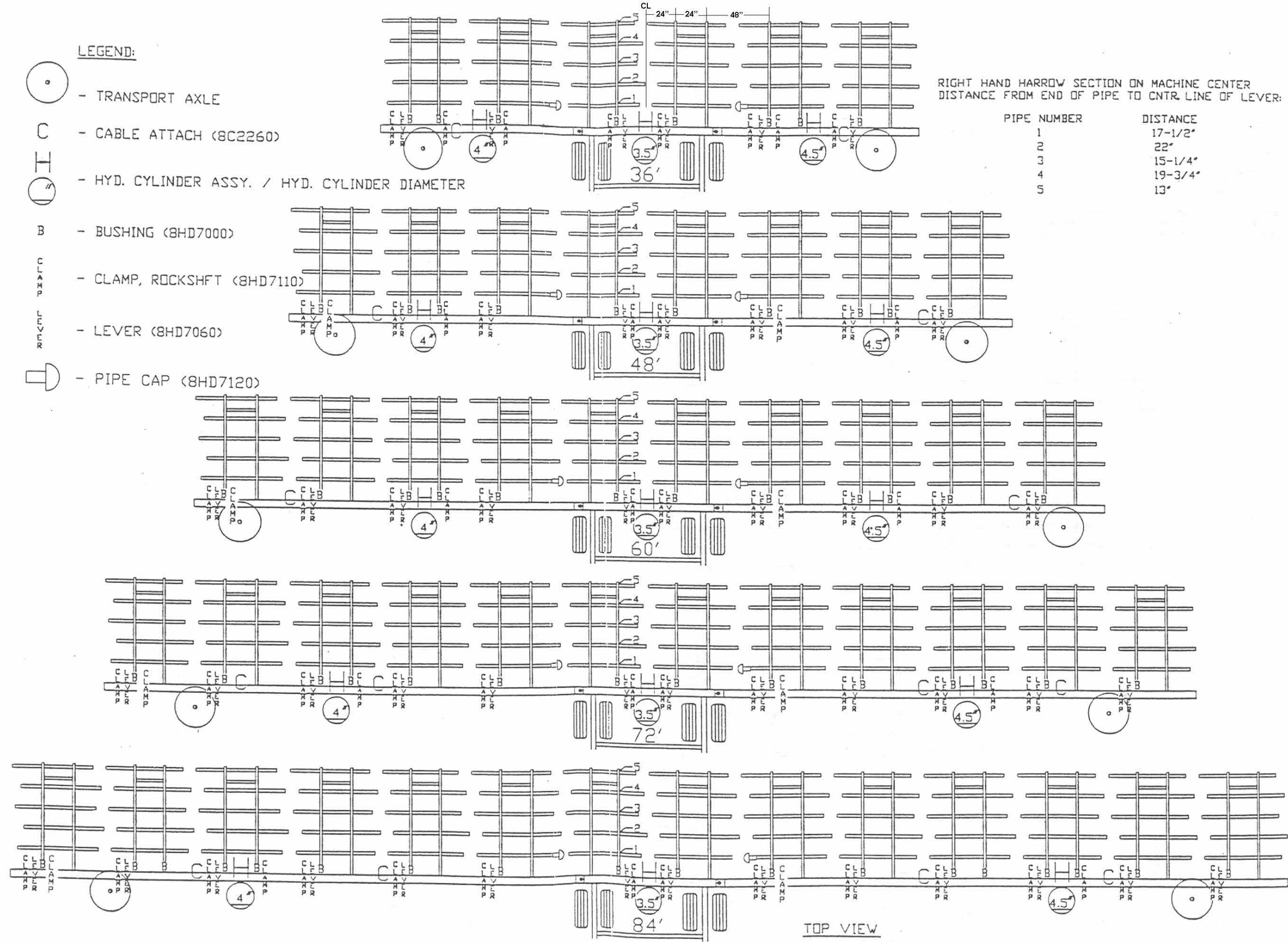


SECTION 2 - SUPERHARROW PLUS

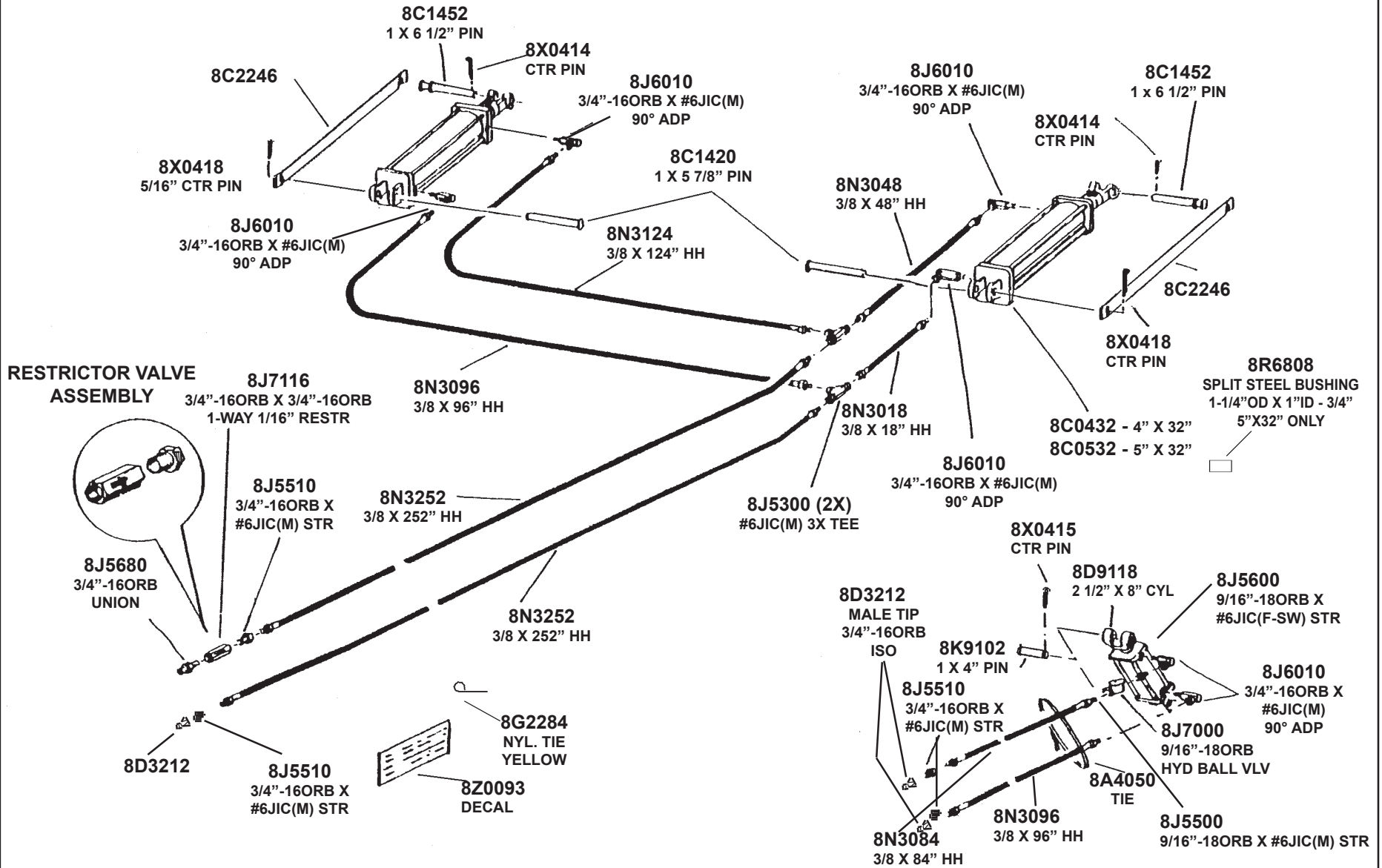
DRAWBAR ASSEMBLY



SECTION 2 - SUPERHARROW PLUS

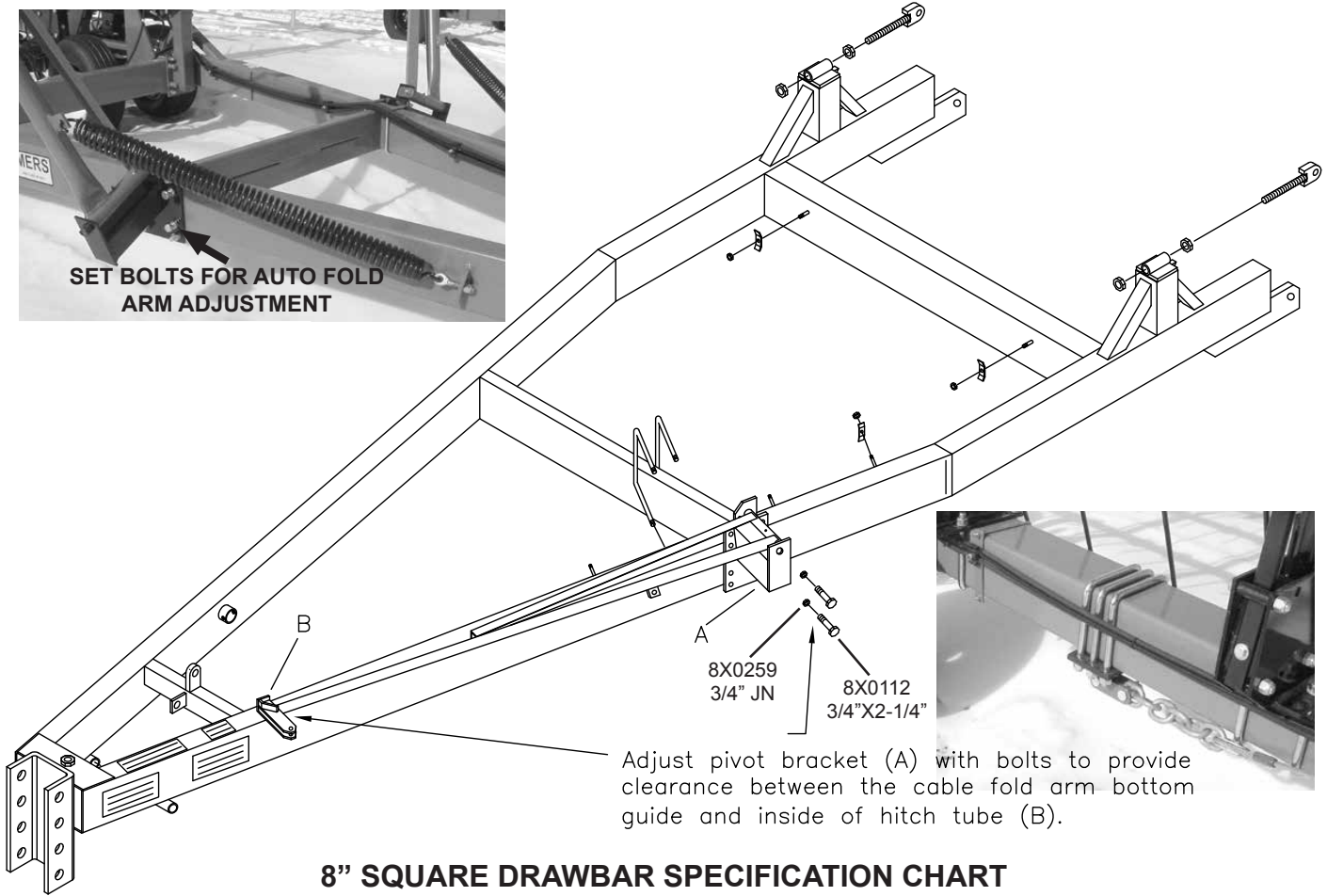
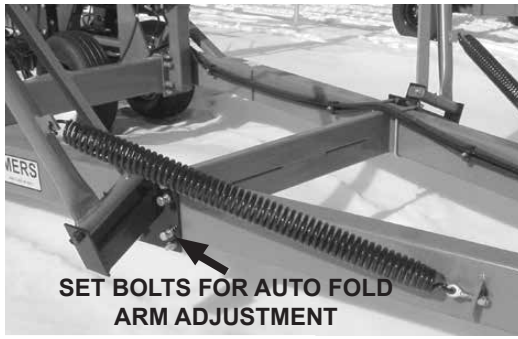


2-7



HYDRAULIC SYSTEM - 22 FT. HITCH

SECTION 2 - SUPERHARROW PLUS



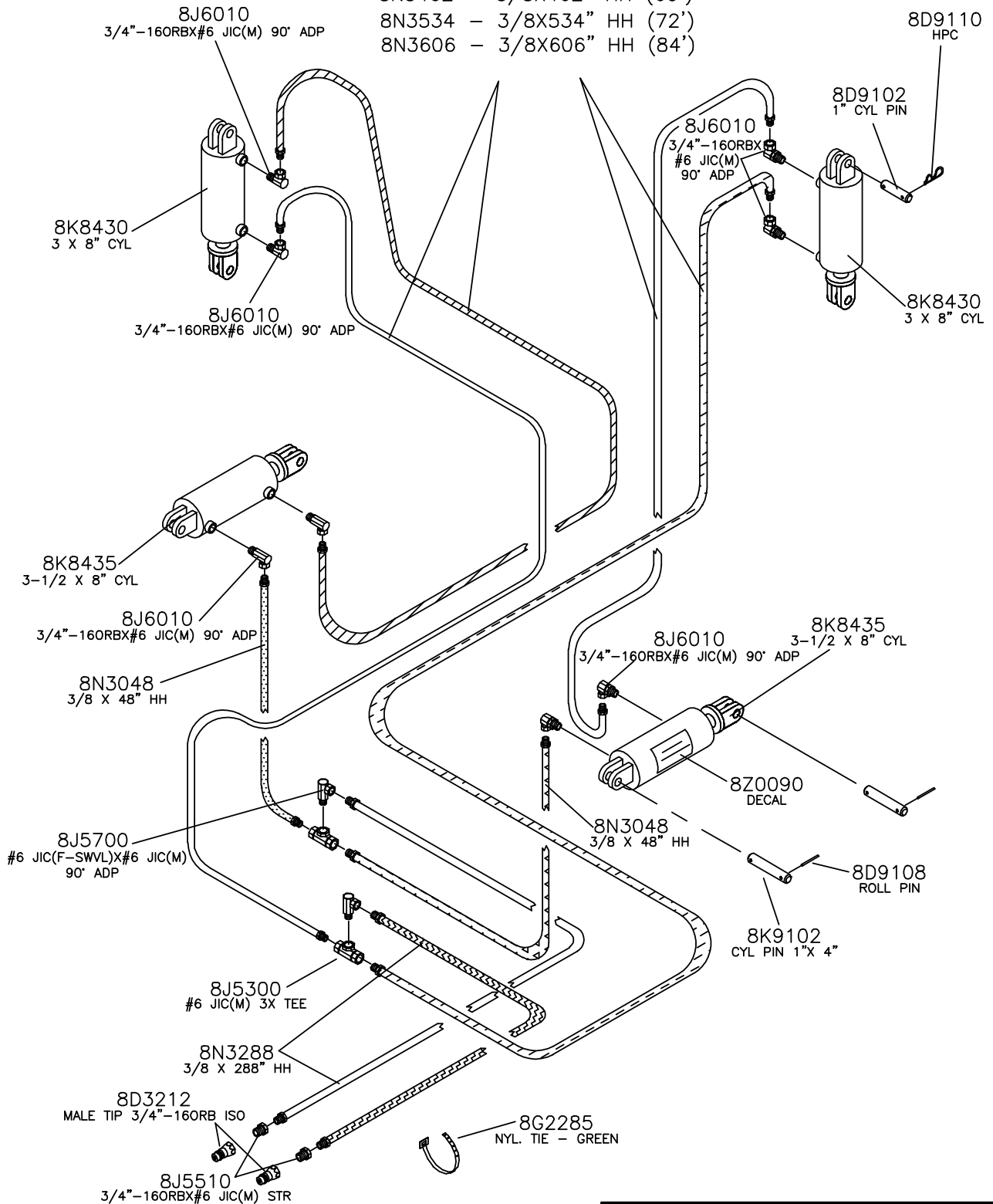
8" SQUARE DRAWBAR SPECIFICATION CHART

| Machine Size | Cable Length | PN-Cable | PN-Wing (Hngd Wing - Left Part 1) | PN-Hinged Wing - Right Part 1 | PN-Hinged Wing - End | PN-Lift Cylinder |
|---------------------------|--------------|----------|---|-------------------------------------|-------------------------|---------------------|
| SUPERHARROW PLUS | | | | | | |
| 36' (Solid Wing) | 246" | 8D1860 | 8HD6620 | | | 8C0432 |
| 48' (Solid Wing) | 281" | 8D1880 | 8HD6640 | | | 8C0432 |
| 60' (Solid Wing) | 324" | 8D1900 | 8HD6660 | | | 8C0432 |
| 60' (Hinged Wing) Inside | 246" | 8D1860 | 8HD6663 | 8HD6664 | 8HD6665 | 8C0432 |
| Outside | 324" | 8D1900 | | | | |
| 60' (No Auto-fold) Inside | 262" | 8D1870 | | | | |
| Outside | 341" | 8D1910 | | | | |
| 72' (Solid Wing) Inside | 262" | 8D1870 | 8C3300 | | | 8C0432 |
| Outside | 370" | 8D1920 | | | | |
| 72' (Hinged Wing) Inside | 246" | 8D1860 | 8HD6663 | 8HD6664 | 8HD6698 | 8C0432 |
| Outside | 370" | 8D1920 | | | | |
| 72' (No Auto-fold) Inside | 262" | 8D1870 | | | | |
| Outside | 383" | 8D1930 | | | | |
| 84' (Solid Wing) Inside | 262" | 8D1870 | 8HD6680 | | | 8C0432 |
| Outside | 383" | 8D1930 | | | | |
| 84' (Hinged Wing) Inside | 262" | 8D1870 | 8HD6684 | 8HD6685 | 8HD6698 | 8C0432 |
| Outside | 383" | 8D1930 | | | | |
| 84' (No Auto-fold) Inside | 262" | 8D1870 | | | | |
| Outside | 383" | 8D1930 | | | | |

SECTION 2 - SUPERHARROW PLUS

HYDRAULIC DEPTH ADJUSTMENT

- 8N3330 - 3/8X330" HH (36')
- 8N3390 - 3/8X390" HH (48')
- 8N3462 - 3/8X462" HH (60')
- 8N3534 - 3/8X534" HH (72')
- 8N3606 - 3/8X606" HH (84')



SECTION 2 - SUPERHARROW PLUS

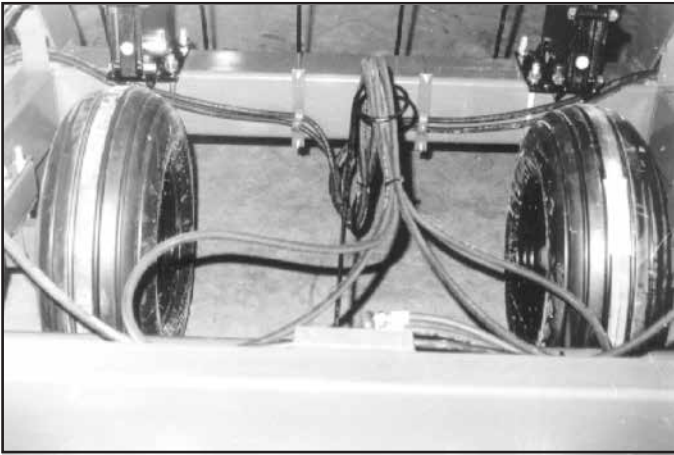


Fig. 3: Rear Hitch View



Fig. 3A: Left Knuckle

SECTIONS:

Attach sections to drawbar using 7/8" U-bolts and hardware provided. Position lift arms with following dimensions:

Distance from drawbar center to centerline of first lift arm on either side is 24".

Distance between centerlines of lift arms on sections is 24".

Distance between centerlines of lift arms between sections is 48".

To compensate for various soil conditions and tooth wear, the sections can be mounted in four different positions as shown in the following chart and (Fig. 4 to 7). On the center two sections only, move the Lower Stop Bolt and bushing to the front hole (Fig. 8). This will allow the sections to raise more evenly.

| Height Adjustment | | | |
|---------------------------|--------------|----------------------|--------|
| Suggested Initial Setting | U-Bolt Plate | Lift Arm/Spring Flat | Ref. |
| | Up | Up | Fig. 4 |
| | Down | Up | Fig. 5 |
| | Up | Down | Fig. 6 |
| | Down | Down | Fig. 7 |

- Initial Setting
- Settings for increased penetration and/or to compensate for harrow tooth wear

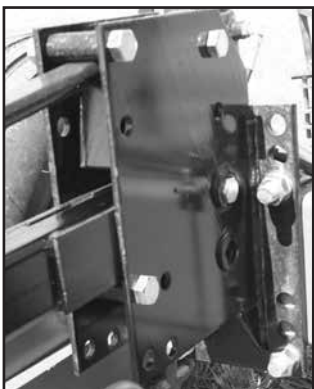


Fig. 4



Fig. 5



Fig. 6

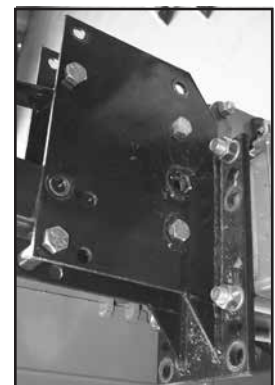


Fig. 7

SECTION 2 - SUPERHARROW PLUS

Wing Section Lower Stop Bolt Location

Center Section Stop Bolt Location
(shown installed)

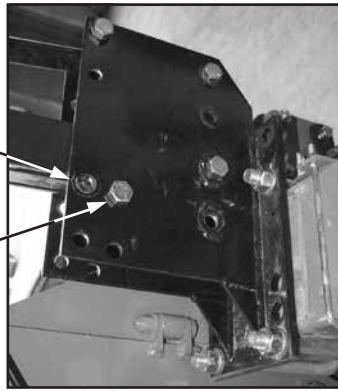


Fig. 8

The two front outside teeth on the center section (closest to knuckles) must be secured with PN 8HD6150 (ANGLE, tooth stop) and 1/2" X 3-3/4" cap screws as shown in Fig. 9. This prevents interference in transport position.

TRANSPORT WHEELS

Locate transport wheel assemblies over end harrow section on 36 through 60 ft. machines with pivot tube in higher position. Install between end section and second section on 72 ft. and over second section on 84 ft., both with pivot tube in lower position. Secure with 7/8" U-bolts and hardware.

Transport axle "toe-in" can be adjusted with the outside stop set bolt (8X0665, Page 2-8). Adjust inside stop bolt 3/8" away from pivot plate when resting on outside stop bolt. This adjustment will allow transport wheel to pivot inward while unfolding. Double lock stop bolts with 3/4" jam nuts provided.

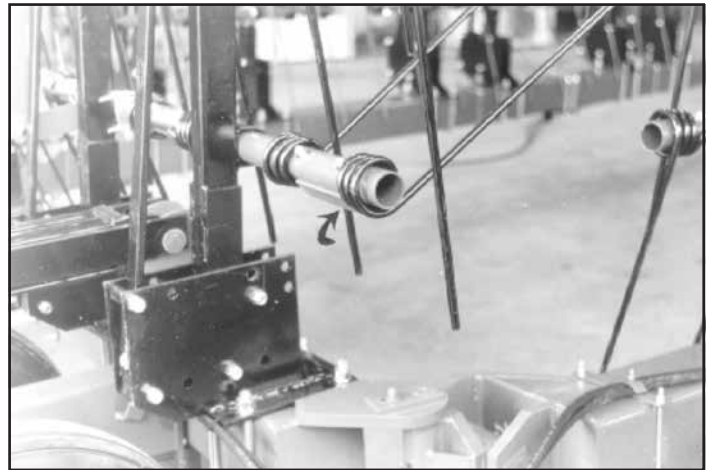


Fig. 9: ANGLE, tooth stop

AUTO-CABLE FOLD

Mount Auto-Fold pivot brackets ahead of welded stop. Do not fully tighten U-bolts. Attach left and right cable fold arms to pivot brackets with 1-1/4" X 14" pins and hardware.

Adjust pivot brackets to provide clearance between the cable fold arm bottom guide and hitch tube. This adjustment is made with 3/4" X 2-1/4" bolts (8X0112, Page 2-8). This adjustment will allow cable fold arms to pivot freely into transport position. Fully tighten mounting U-bolts after adjustment is made.

Attach tension springs with 3/4" eye bolts and lock nuts. Tighten eye bolts until spring coils begin to separate.

CABLES

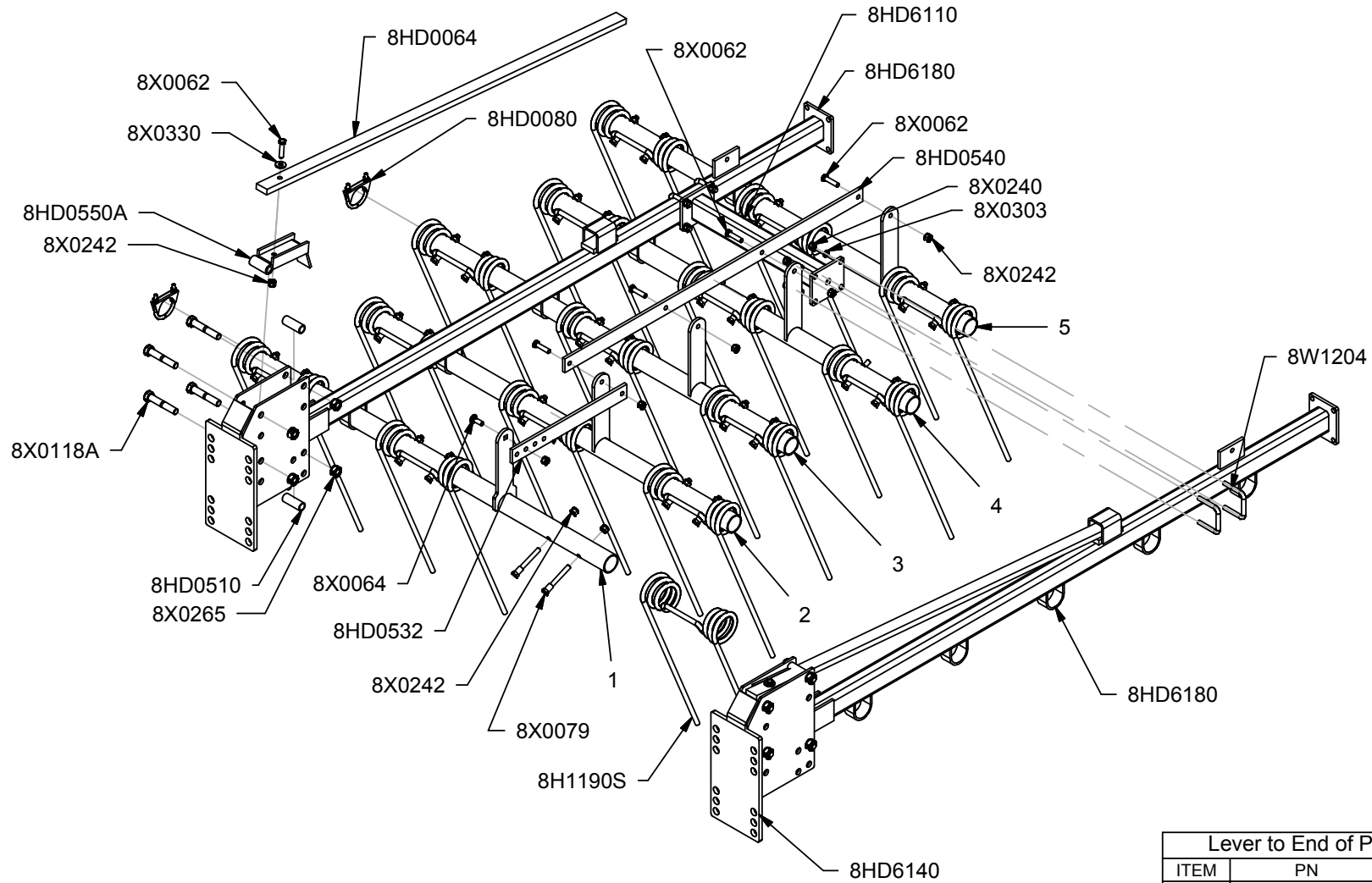
Install cable brackets and cable assemblies. Adjust cables so wings slightly lead the center. Tighten attachment U-bolt. Recheck tightness after first hour of field use. Install rear cables as shown on page 2-14. 72' and 84' SuperHarrow Plus ONLY: Install Cable Guides as shown on Page 2-15.

HYDRAULIC TINE ANGLE OPTION:

See following Set-Up Instructions and parts breakdown pages 2-16 through 2-24 and layout on page 2-6.

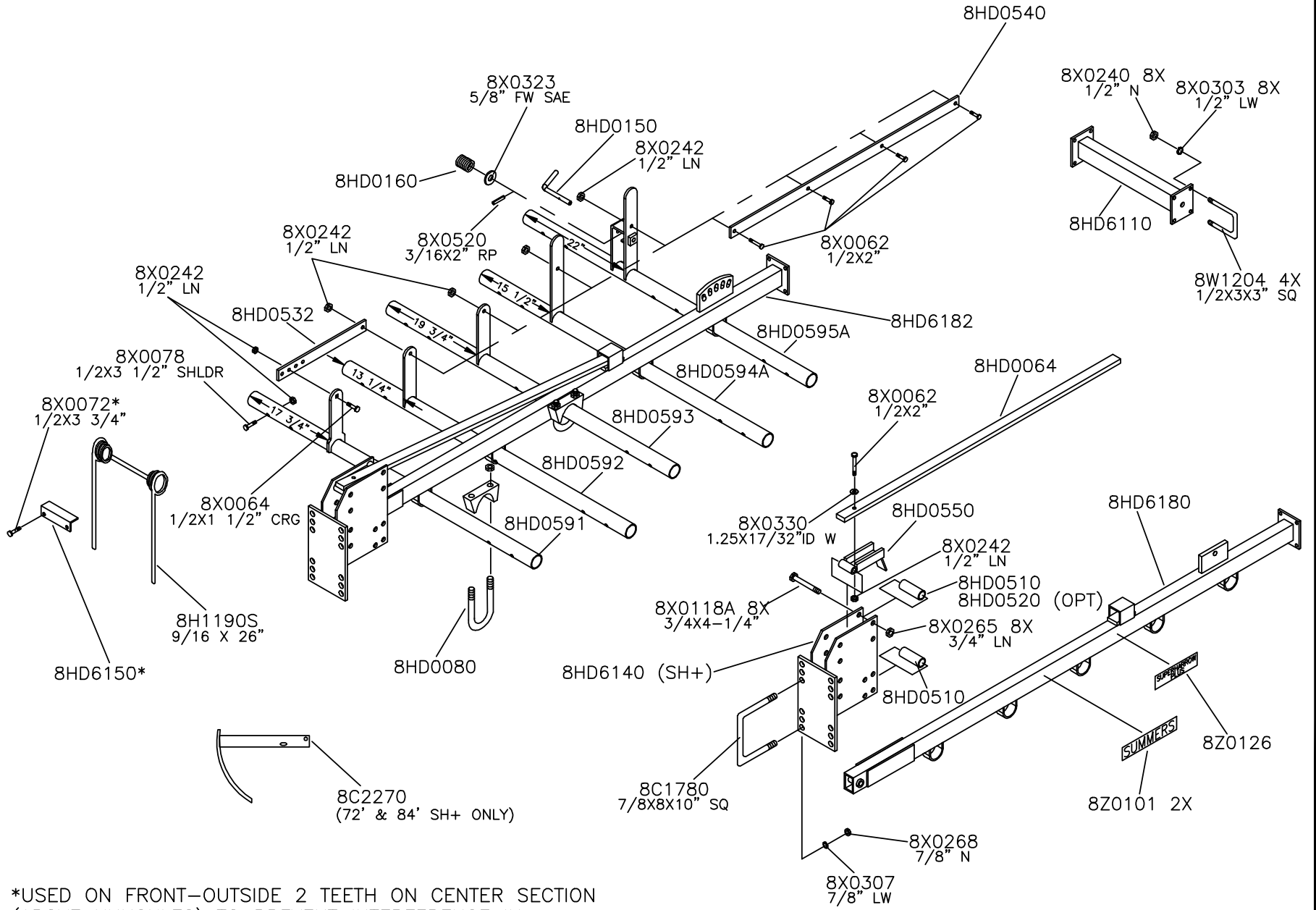
8HD6200L

2-12



| Lever to End of Pipe Distance | | |
|-------------------------------|----------|----------|
| ITEM | PN | Distance |
| 1 | 8HD0591L | 17 1/2" |
| 2 | 8HD0592L | 22" |
| 3 | 8HD0593L | 15 1/4" |
| 4 | 8HD0594L | 19 3/4" |
| 5 | 8HD0595L | 13" |

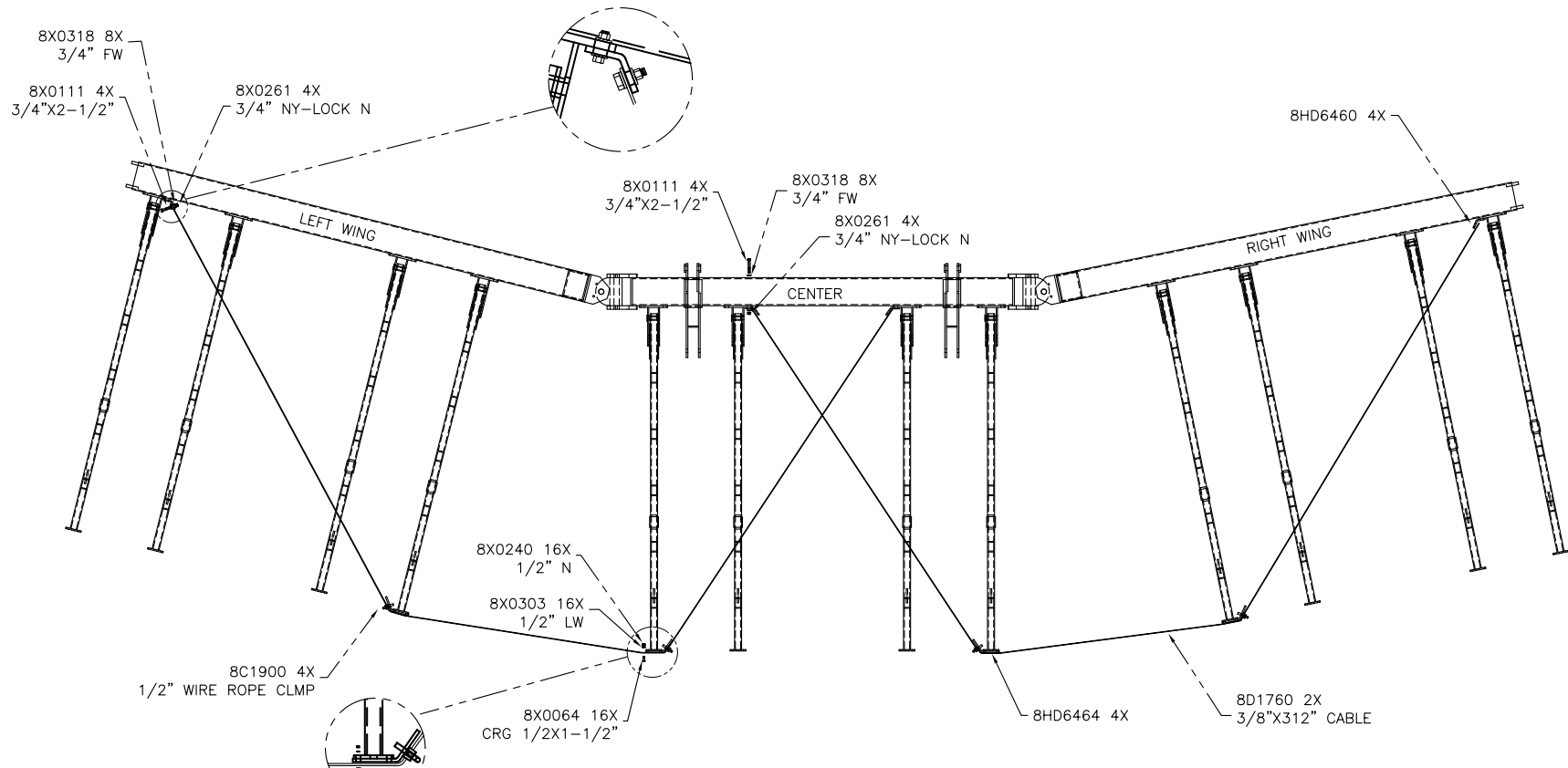
8HD6200 5-BAR SUPERHARROW PLUS SECTION, RIGHT HAND LEVERS



2-13

*USED ON FRONT-OUTSIDE 2 TEETH ON CENTER SECTION (ABOVE KNUCKLES) TO PREVENT INTERFERENCE IN TRANSPORT POSITION (SUPERHARROW PLUS ONLY).

2-14



| | | | | | | | | | | |
|------------------------|--|--|--|-----------------|--------------------|----------------------------------|---|---------------|------------------------|------------------------------------|
| SUMMERS MFG. CO., INC. | | | | DRAWN BY BKB | DESIGNED BY PDA | ORIGINAL DRAWING DATE 2/21/03 | TOLERANCE LINEAR ±1/32" ANGULAR ±1/2° | SCALE 1=30 | PART NUMBER 8HD6510 | PART NAME REAR CABLE OPTION SH+ |
|------------------------|--|--|--|-----------------|--------------------|----------------------------------|---|---------------|------------------------|------------------------------------|

SECTION 2 - SUPERHARROW PLUS

INSTALLATION INSTRUCTIONS 8C2270 - CABLE GUIDE BRACKET 72' & 84' SUPERHARROW PLUS

Parts required for installation:

| <u>Qty</u> | <u>PN</u> | <u>Description</u> |
|------------|-----------|---|
| 2 | 8C2270 | Cable Guide Bracket |
| 2* | 8X0113 | Bolt 3/4" x 5" (Use without Hyd. Tine Angle Pivot Bracket) |
| 4* | 8X0123 | Bolt 3/4" x 5-1/2" (Use with Hyd. Tine Angle Pivot Bracket) |
| 4 | 8X0317 | 3/4" Flat Washer |

Refer to the photos below to install the cable guides. The guides must be mounted on the top outside of the first mounting bracket on each wing. The guide prevents the inside pull cable from getting caught beneath the drawbar. Replace existing 3/4" bolts in mounting brackets with longer bolts to allow installation of 8C2270. Secure with existing 3/4" locknuts and flat washers.

CAUTION: Spring flat tension and weight of attached brackets must be supported when replacing 3/4" bolts.



SECTION 2 - SUPERHARROW PLUS

Procedure to mount Hydraulic Tine Angle Adjustment Option

Summers Mfg. recommends mounting the hydraulic tine angle adjustment option on the Superharrow Plus while machine is in transport position. The following instructions and photos refer to machine in transport position. Reference to left and right are determined when machine is viewed from the rear.

1. Tooth angle on each section must be set in least aggressive (45 degree) setting prior to installation of hydraulic tine angle option.
2. Park machine on a hard level surface in transport position and install transport locks.

CAUTION: For safety purposes, block wheels and frame to prevent movement of machine while working on it.

3. Replace section pipes (or entire section if included) on the right hand section on the machine center. These pipes (or section) have left hand levers which are required to connect hydraulic tine angle adjustment. Refer to hydraulic tine angle layout drawing for pipe locations. Reassemble left hand adjustment linkage (mirror image of right hand adjustment linkage).



4. Remove hardware from second and third levers.

Attach stiffener flat (8HD7100) to third lever using 1/2" x 2-1/2" bolt, washers and locknut. Install connecting tube (8HD7080) to second lever using 1/2" x 6" bolt, washers and locknut. Do not overtighten 1/2" locknuts as levers must be free to rotate.

The photo marked "L" is of the right hand harrow section on machine center. Photo marked "R" depicts remaining harrow sections.

Turn 3/4" jam nuts onto eye bolts (8R6145) and turn eye bolt into connecting tube. Procedure for adjusting and locking eye bolts will be covered in Step 10.

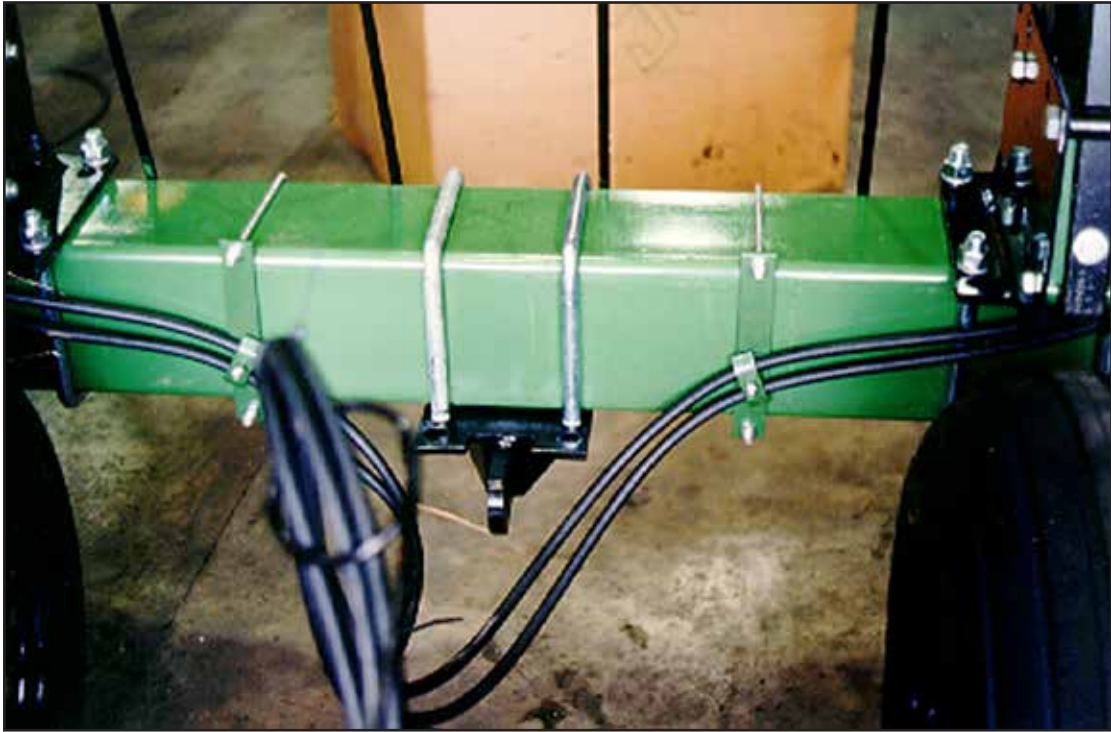


SECTION 2 - SUPERHARROW PLUS

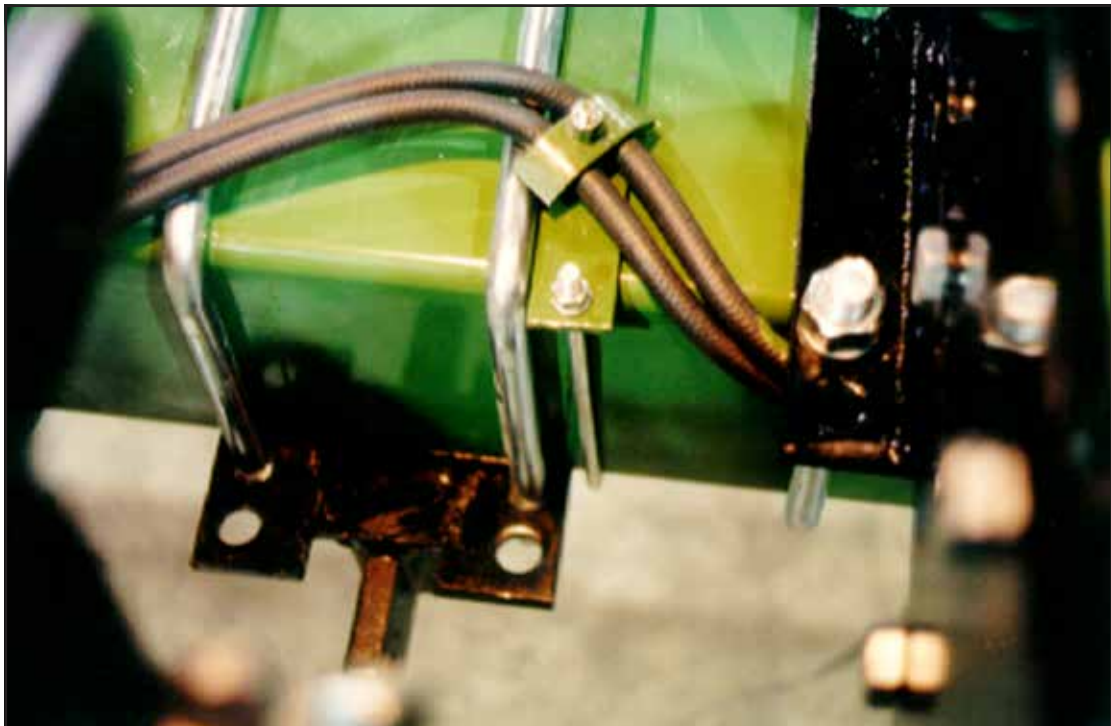
5. Mount cylinder attach brackets (8HD7020) onto 8" SQ drawbar using same set of holes used to attach the harrow section to 8" SQ tube. Locate center cylinder attach bracket at exact center of machine. Locate wing cylinder attach at locations shown in hydraulic tine angle layout drawing. Route hydraulic hoses as shown in photos.

NOTE: Hydraulic Tine Angle Option can be used in upper three manual height adjustment settings ONLY.

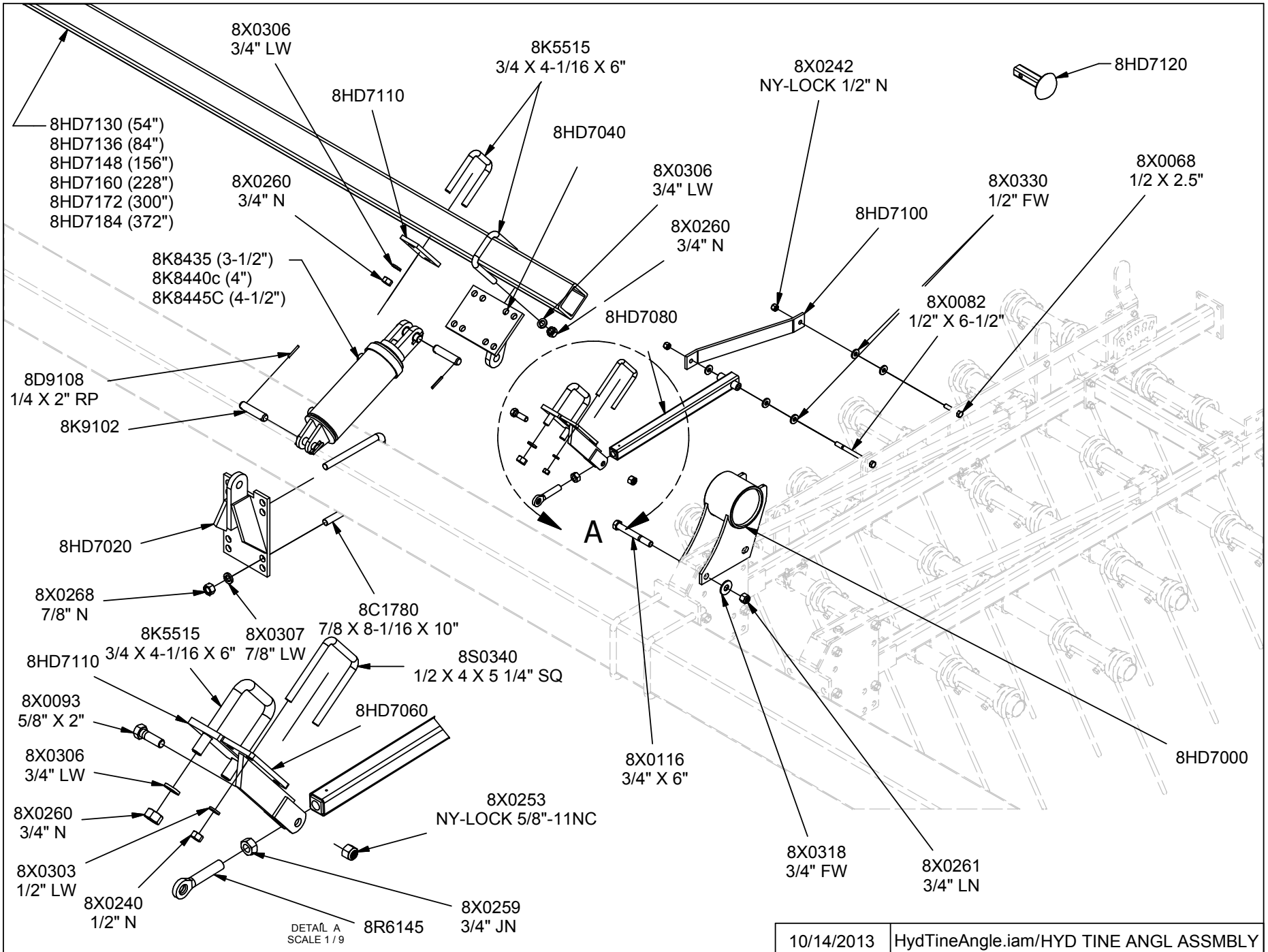
Center



Wing



2-18



SECTION 2 - SUPERHARROW PLUS

6. Remove existing front 3/4" X 5" bolts from inside mounting bracket on right hand section on the center of machine and secure spring flat to prevent movement.

Install rock shaft bushing (8HD7000) on section mounting bracket using 3/4" X 5-1/2" bolts provided.

Insert center rock shaft (8HD7130) into bushing, slide second bushing on rock shaft and secure this bushing on inside mounting bracket of left hand center section.

Position rock shaft to allow an equal amount of tubing to extend past each bushing.

7. Using 3/4" X 4" X 4" u-bolts, mount cylinder attach bracket (8HD7040) at centerline of middle rock shaft.

Install 3-1/2" X 8" hydraulic cylinder (8K8435).

Using 1/2" X 4" X 4" u-bolts, mount levers (8HD7060) on rock shaft on inside of each bushing.

8. Lay wing rock shafts on blocks next to implement wings. Slide bushings over rock shafts. (See photo and hydraulic tine angle layout drawing for correct number of bushings). Position as shown in drawing.

Elevate rock shaft and bushings to section mounting brackets. Beginning at one end of rock shaft, remove lower 3/4" X 5" bolts from section mounting bracket and secure spring flat to prevent movement.

Position rock shaft bushing over section mounting bracket. Insert 3/4" X 5-1/2" bolt in lower hole of bushing and mounting bracket. Retain with 3/4" locknut.

After installing all lower bolts, remove existing upper bolts. Further elevate rock shaft and insert top 3/4" X 5-1/2" bolts.

On right hand side of Superharrow Plus, position rock shaft so it extends 1" ahead of first bushing next to wing tube knuckle.

On left hand side of machine, rock shaft needs to extend 4-1/4" ahead of first bushing next to wing tube knuckle.



SECTION 2 - SUPERHARROW PLUS

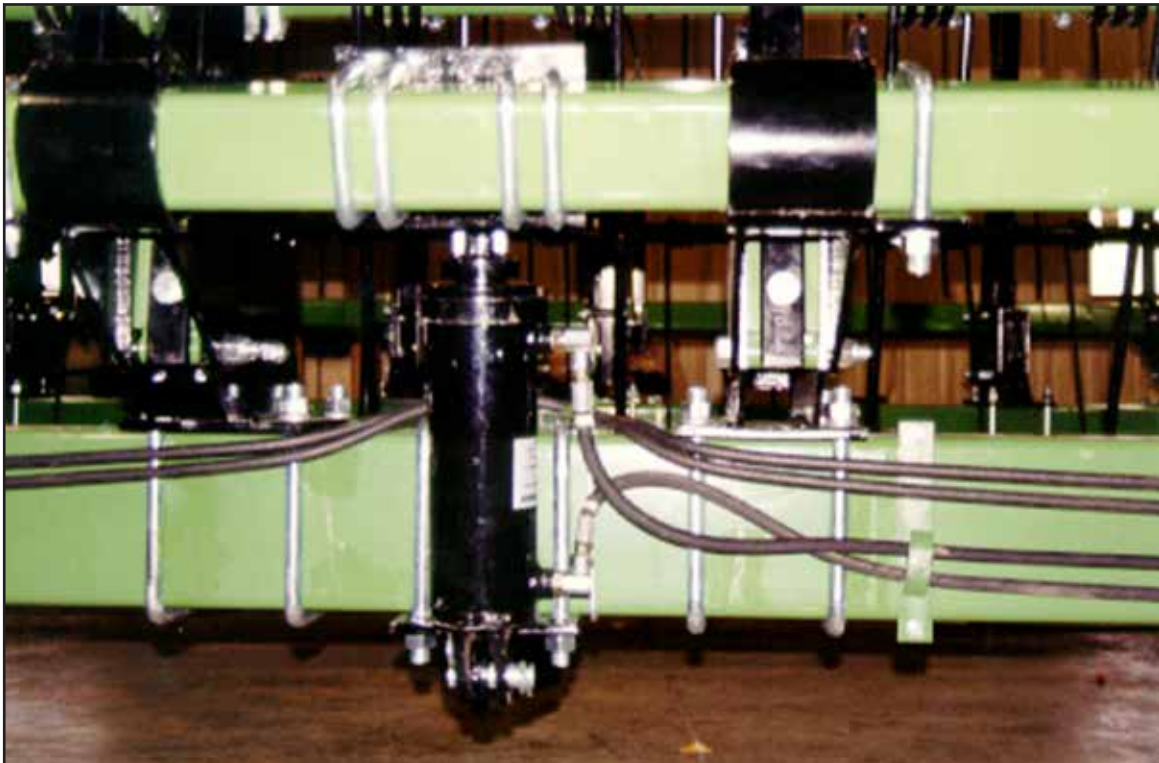
9. After installing all lower bolts, remove existing upper bolts. Further elevate rock shaft and insert top 3/4" X 5-1/2" bolts.

On right hand side of Superharrow Plus, position rock shaft so it extends 1" ahead of first bushing next to wing tube knuckle.

On left hand side of machine, rock shaft needs to extend 4-1/4" ahead of first bushing next to wing tube knuckle.



10. Install cylinder attach brackets and hydraulic cylinders onto rock shafts at locations shown in hydraulic tine angle layout drawing. Secure levers and clamps (8HD7110) next to bushings to prevent side to side movement of rock shaft.



SECTION 2 - SUPERHARROW PLUS

11. Tighten all mounting hardware.

Insure all three hydraulic cylinders are fully retracted.

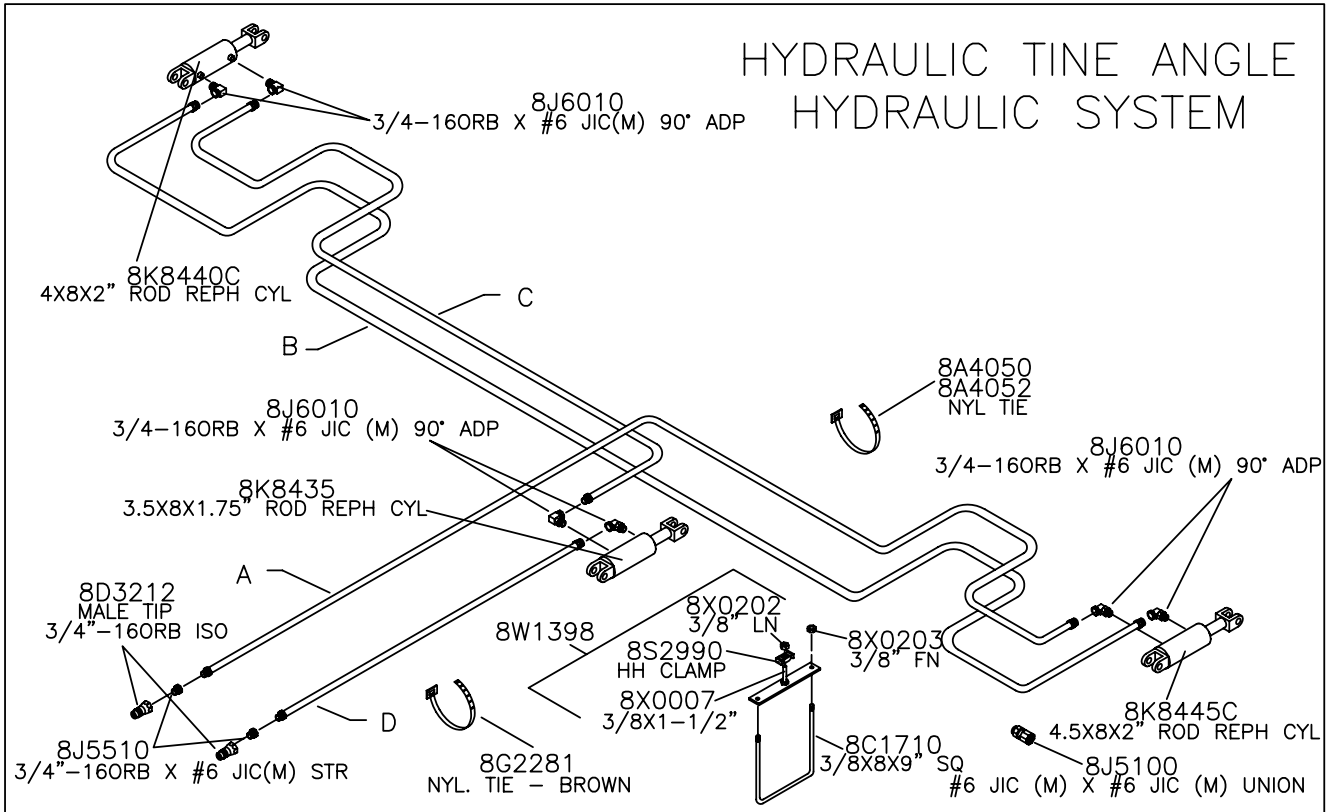
Adjust eye bolts to line up with clevis in levers.

Secure eye bolts to levers with 5/8 X 2" bolts and locknuts.

Tighten locknuts until they contact lever clevis flat.



SECTION 2 - SUPERHARROW PLUS



HYDRAULIC HOSES

| Machine Size | 36' | 48' | 60' | 72' | 84' |
|--------------|-------------|-------------|-------------|----------------------------|----------------------------|
| HOSE | Length PN | Length PN | Length PN | Length PN | Length PN |
| HOSE A | 534" 8N3534 | 570" 8N3570 | 570" 8N3570 | 312" 8N3312 330" 8N3330 | 360" 8N3360 360" 8N3360 |
| HOSE B | 330" 8N3330 | 432" 8N3432 | 432" 8N3432 | 570" 8N3570 | 360" 8N3360 348" 8N3348 |
| HOSE C | 180" 8N3180 | 216" 8N3216 | 216" 8N3216 | 288" 8N3288 | 360" 8N3360 |
| HOSE D | 360" 8N3360 | 360" 8N3360 | 360" 8N3360 | 360" 8N3360 | 360" 8N3360 |

All hoses listed are 3/8" diameter. Use 8J5100 #6 JIC union where combined length of two hoses are used.

SECTION 2 - SUPERHARROW PLUS

12. Install hydraulic fittings and hoses as shown in hydraulic hose layout drawing (Page 2-22). Secure hoses next to existing hydraulic hoses on drawbar and hitch with clamps and nylon ties provided. Allow ample hose at hinge points to avoid pinching or stretching when folding and unfolding machine.

Route hose through loop at rear of hitch to prevent ground contact in transport position.

The Hydraulic Tine Angle option utilizes a master – slave hydraulic system. Oil is delivered to base end of the largest cylinder (4-1/2" diameter located on left hand wing) and returns to tractor from rod end of smallest cylinder (3-1/2" diameter located on machine center).



SECTION 2 - SUPERHARROW PLUS

13. IMPORTANT: BEFORE ACTIVATING HYDRAULIC CYLINDERS, DISCONNECT EXISTING PINS USED FOR TINE ANGLE ADJUSTMENT.

- a. Remove roll pin from 5/8" diameter pin.
- b. Remove 5/8" pin, spring and washer from section.

14. Install hydraulic tips.

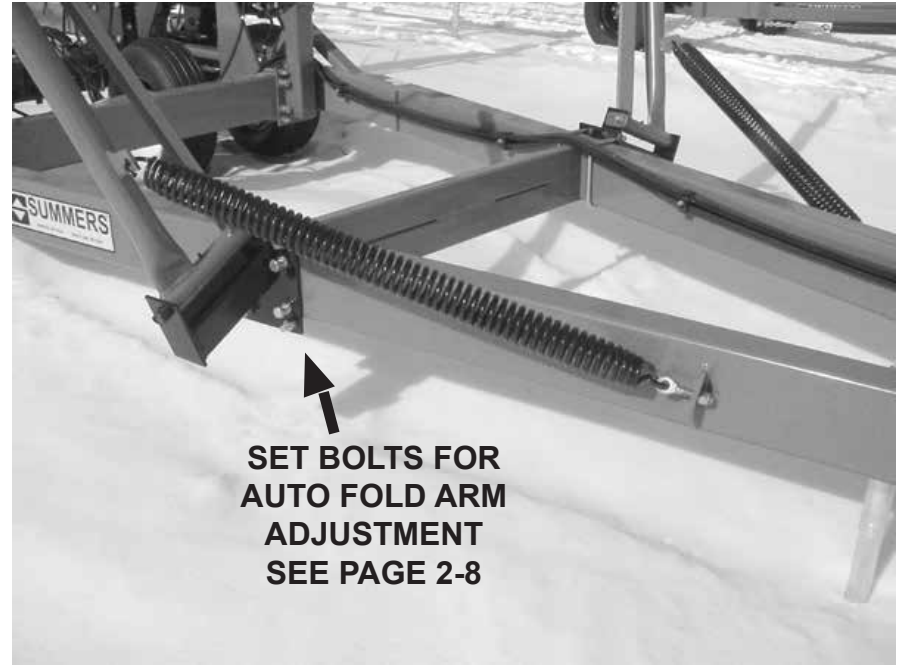
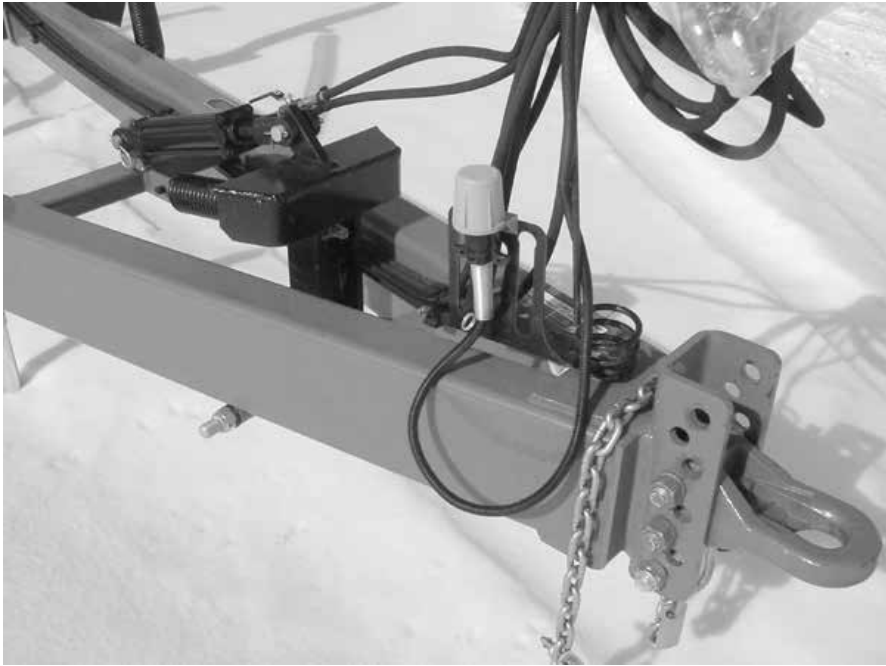
15. Initial Start-Up for HTA hydraulic cylinders:



Hydraulic cylinders for the HTA option should not be charged with oil until machine is lowered into field position. There must be pressure on harrow tines for cylinders to extend and retract properly.

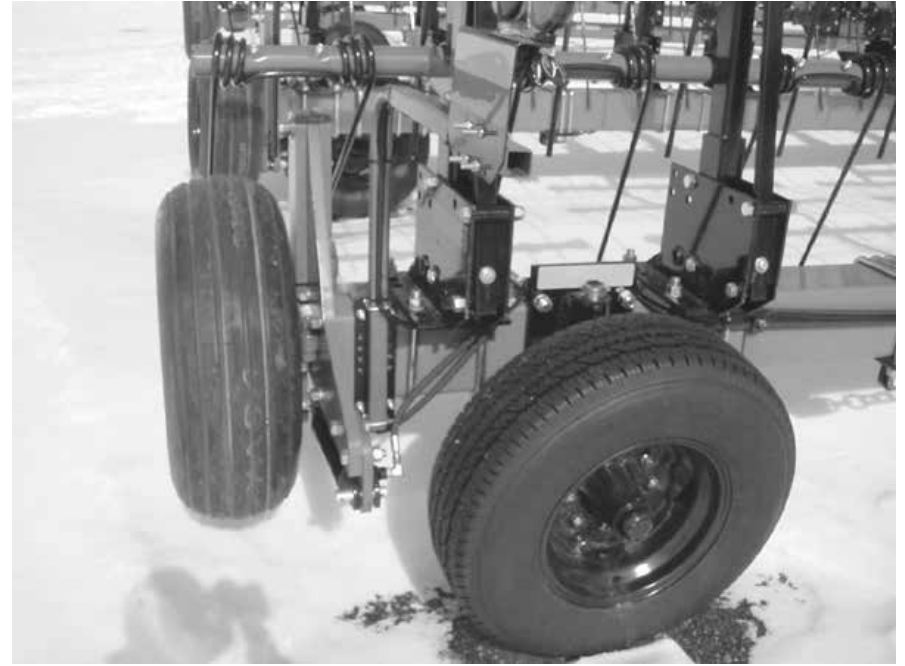
- A. Lower machine slowly into field position. Insure that hydraulic hoses do not get pinched or stretched.
- B. Slowly extend Tine Angle hydraulic cylinders. Check for interference and leaks, correct if they occur.

The Hydraulic Tine Angle option is operated with a master – slave hydraulic system. Fully extend hydraulic cylinders and hold hydraulic lever for 30 seconds to insure that all air is purged from system. Each cylinder has rephasing slots located on rod end of barrel. When cylinder is fully extended, these slots allow oil to flow through.



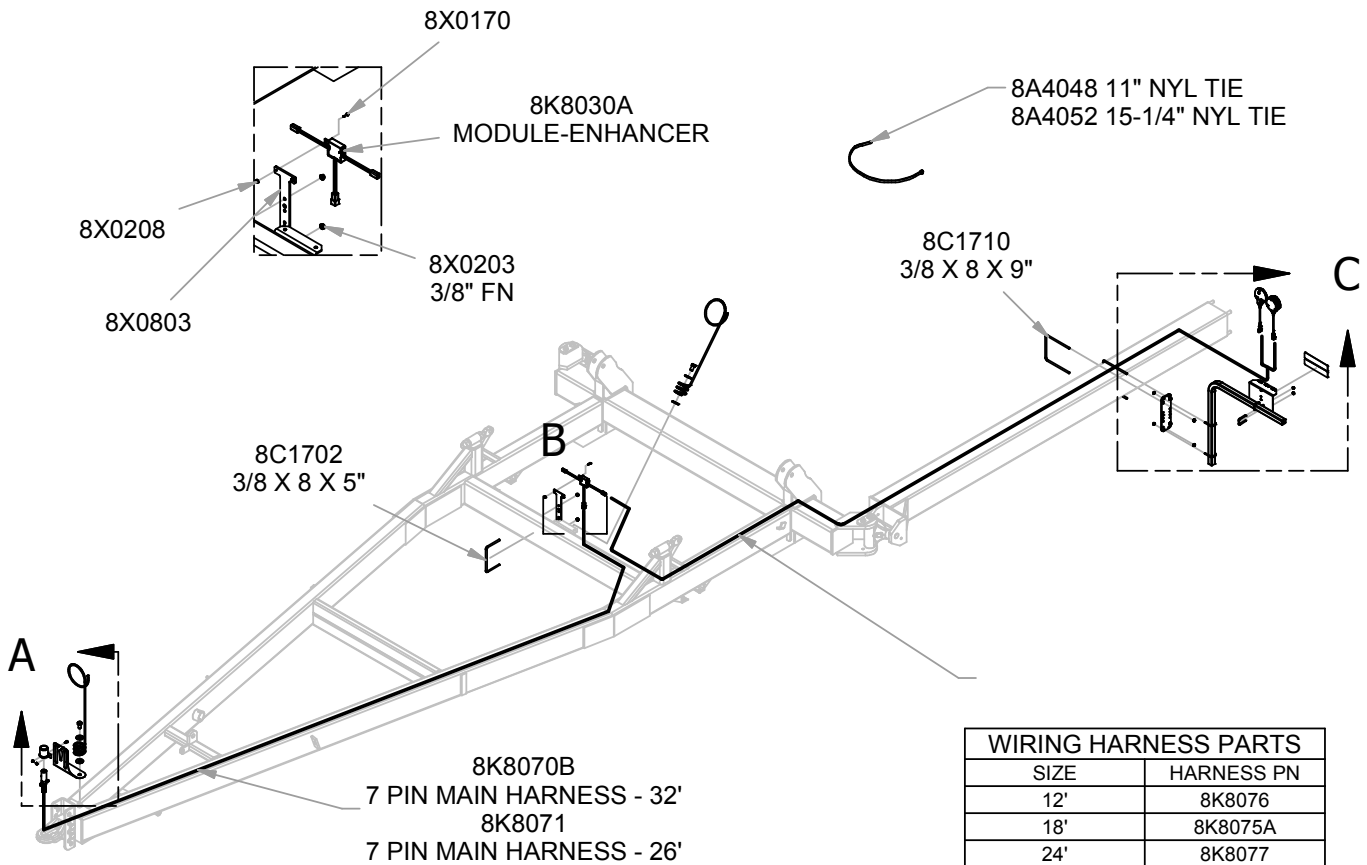
SET BOLTS FOR
AUTO FOLD ARM
ADJUSTMENT
SEE PAGE 2-8

2-25

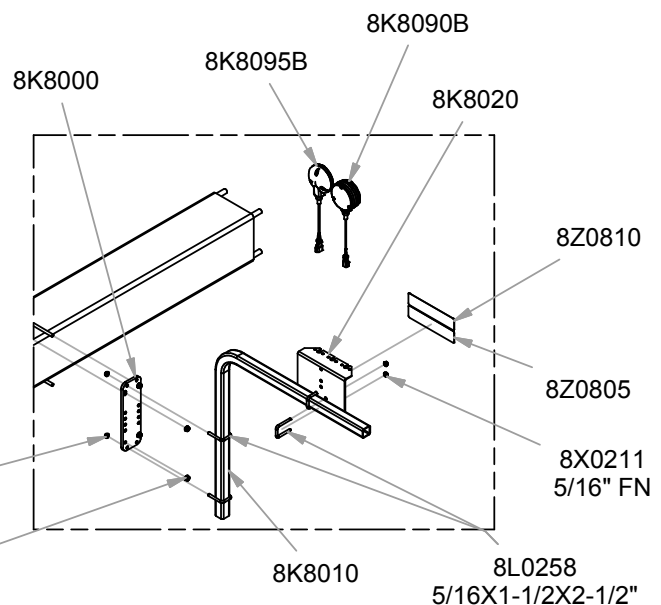
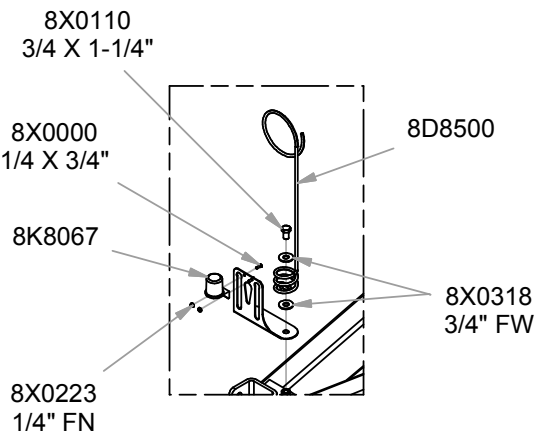


SECTION 2 - SUPERHARROW PLUS

LIGHT KIT, 8"SQ DRAWBAR



| WIRING HARNESS PARTS | |
|----------------------|------------|
| SIZE | HARNESS PN |
| 12' | 8K8076 |
| 18' | 8K8075A |
| 24' | 8K8077 |
| 30' | 8K8078 |
| 36' | 8K8079 |
| 42' | 8K8081 |
| 48' | 8K8082 |
| 50' | 8K8080A |



WIRING IS SYMMETRICAL BEHIND 8K8070B/8K8071.

LEFT HAND LAYOUT SHOWN.

AVOID SHARP EDGES AND PINCH POINTS WHEN ROUTING CABLES.

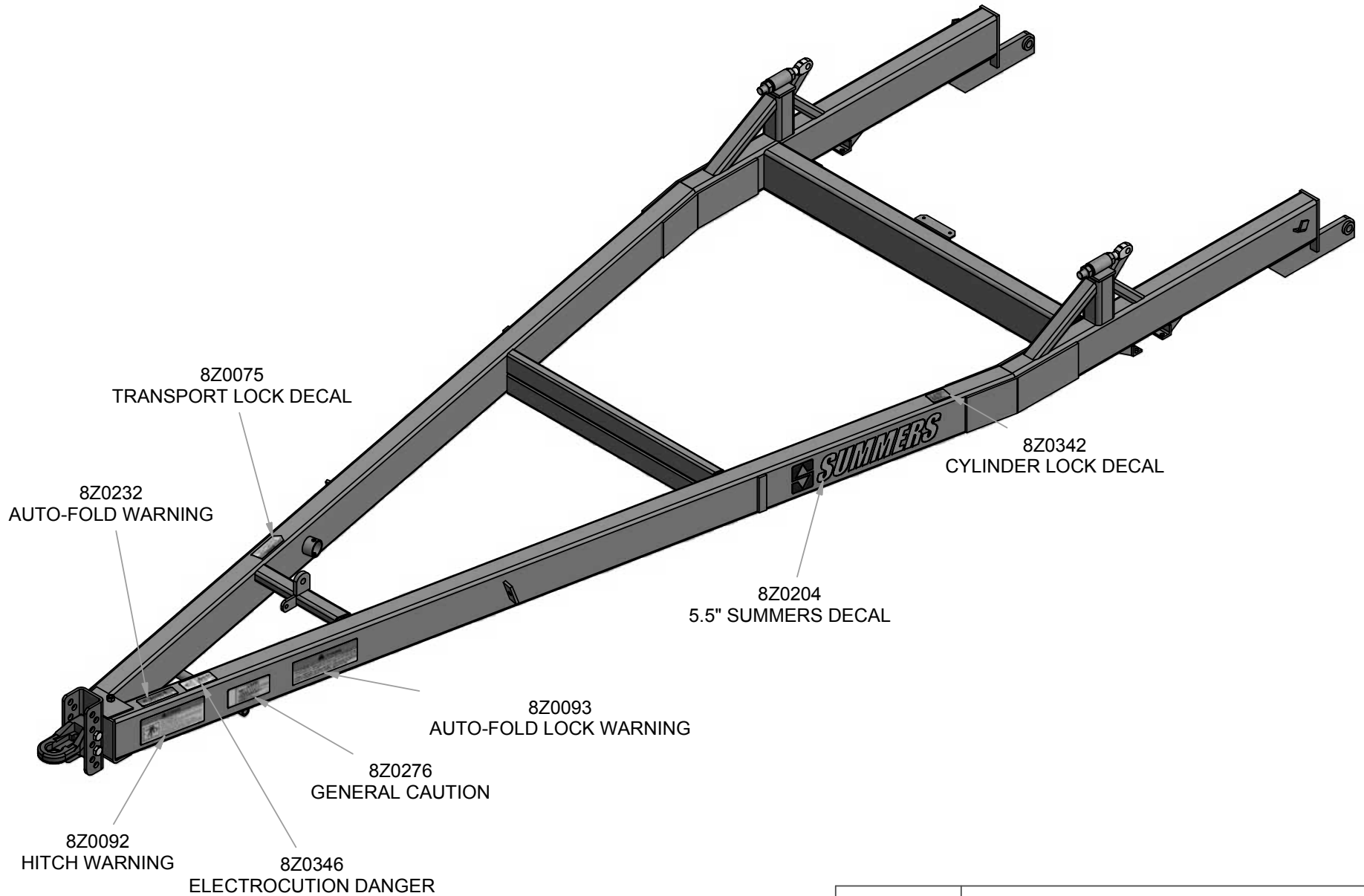
LEAVE SLACK AT HINGES AND KNUCKLES. SECURE WITH NYLON TIES.

10/3/2016

LIGHT KITS, 8"SQ DRWBR

DECALS

2-27



SECTION 2 - SUPERHARROW PLUS

OPERATING INSTRUCTIONS

TRANSPORT TO FIELD POSITION

1. Hitch machine to tractor drawbar using a locking pin and safety chain. Connect hydraulic hoses and wiring. Retract jacks and rotate into storage position
2. Select level area to lower machine into field position.
3. **IMPORTANT:** Remove transport locks. Store locks in storage guide shown in Figure 10.

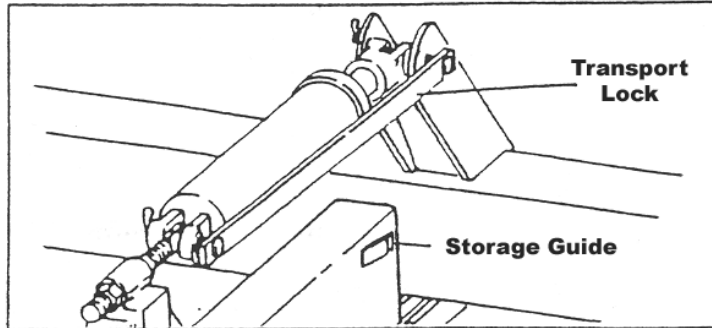
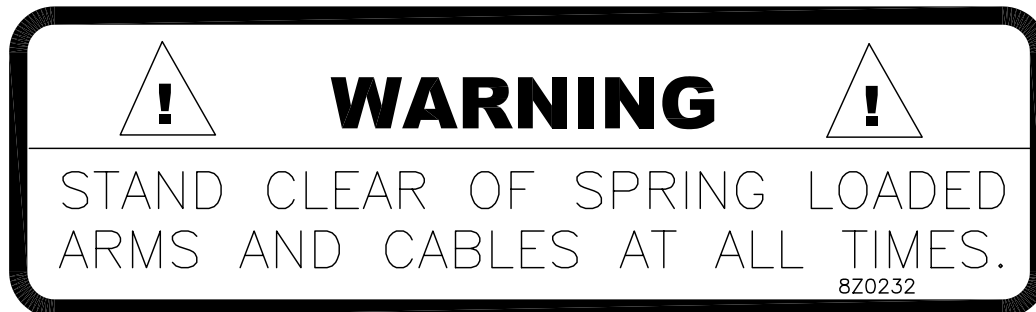


Fig. 10: Transport Lock in Locked Position

4. Back up machine slowly, maneuvering so wings open evenly. If wings do not open evenly, pull ahead and repeat procedure. Cables must not catch on machine while backing up. If cable becomes caught on machine, drive forward until wings are in transport position and carefully unhook cable from obstruction. See WARNING 8Z0232 below and 8Z0276 on page 1-4.



Open wings until auto-fold arms rest on hitch and cables become slack. Fully retract auto-fold lock cylinder (See Warning-Fig. 11).

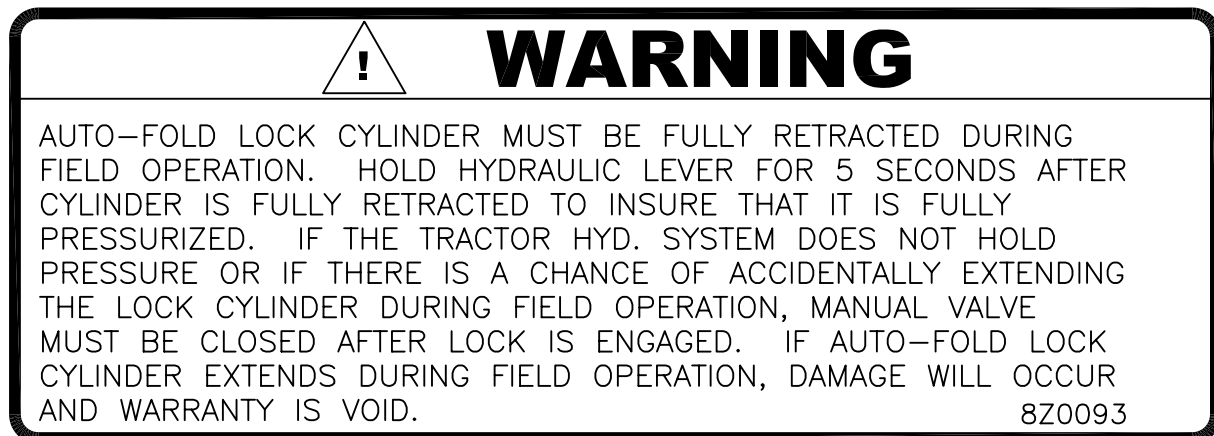


Fig. 11: Warning Decal

5. Extend hydraulic lift cylinders to lower machine into field position. If pull cables become tight before transport wheels are off the ground, back up to provide slack in cables.

SECTION 2 - SUPERHARROW PLUS

SECTION ADJUSTMENT

Section down pressure can be increased or decreased hydraulically by adjusting lift cylinders and manually by adjusting the lift cylinder adjustment bolt (8K1720, Page 2-2). Down pressure on wing sections can be increased by replacing the top spacer tubes (8HD0510) with extra pressure spacer tubes (8HD0520). Lower stop bushings can also be replaced with 8HD0520 to adjust individual sections so the machine raises more evenly.



CAUTION: For safety purposes, block equipment while working on it.

Adjust teeth angle for penetration and trash clearance required. Lift arms should run level to insure equal penetration of all teeth. If all lift arms run high in back, the following adjustments can be made to level section:

1. Adjust front bar teeth only in a less aggressive setting using front adjustment bar.
2. Adjust all teeth in a less aggressive setting.
3. Raise entire section with hydraulic depth adjustment or manually (See Height Adjustment Instructions, Page 2-10).

If all lift arms run low in the back, the following adjustments can be made to level section:

1. Adjust front bar teeth only in a more aggressive setting using front adjustment bar.
2. Adjust all teeth in a more aggressive setting.
3. Lower entire section with hydraulic depth adjustment or manually (See Height Adjustment Instructions, Page 2-10).

HYDRAULIC DEPTH ADJUSTMENT (HDA) OPERATION

To set depth, install stroke control collars on 3-1/2" X 8" stroke (HDA) control cylinders located on hitch. Collars of identical thickness must be installed on both cylinders.

Rephasing cylinders are used for hydraulic depth adjustment. Do not operate your Superharrow PLUS with HDA cylinders fully extended. Immediately after fully raising the hydraulic depth adjustment cylinders, quickly lower 1/2". If hydraulic depth adjustment cylinders are left in the fully raised position, cylinders will settle.

If machine has settled unevenly, fully extend HDA cylinders and hold hydraulic lever until the machine levels. Immediately after it levels, quickly lower 1/2".

NOTE: Fully retract hydraulic depth adjustment cylinders before folding machine into transport position.

CABLE PULL BRACKETS

Under severe conditions (heavy machine draft due to deep penetration or high field speed), cable pull brackets may slide on drawbar wing tube, resulting in improper cable adjustment. The recommended solution for this is to relocate cable pull brackets at desired position then weld a stop on drawbar next to cable pull brackets.

HYDRAULIC TINE ANGLE (HTA) OPTION OPERATION

To set harrow tine angle, extend or retract cylinders to correct position for field conditions. There must be pressure on harrow tines for cylinders to extend and retract properly. The HTA option is operated with a master-slave hydraulic system. Each cylinder has rephasing slots located at rod end of barrel. When cylinder is fully extended, these slots allow oil to flow through insuring that all cylinders are fully extended.

If HTA cylinders are not extended equally during field operation, fully extend cylinders and hold hydraulic lever for additional 10 seconds. Do not allow hydraulic lever to return to neutral position.

Immediately retract cylinders to desired tine angle. HTA cylinders should not be operated in fully extended position. Immediately retract 1/2" after full extension.

SECTION 2 - SUPERHARROW PLUS

NOTE: Hydraulic Tine Angle option can be used in upper three manual height adjustment settings **ONLY**. (See page 2-10).

FIELD TO TRANSPORT POSITION


1. Stop in a level area and back tractor up to provide slack in pull cables.
2. Open manual lock valve on auto-fold lock cylinder. Fully extend auto-fold lock cylinder.
3. **Fully** retract Hydraulic Depth Adjust cylinders.
4. **Fully** retract lift cylinders raising sections.
5. While machine is resting on its transport wheels, drive tractor forward. Wings should fold to transport position. **NOTE:** Transport wheels must rotate against “toe-in” adjustment cap screws and follow directly behind knuckles. Transport wheel “toe-in” can be adjusted by moving outside 3/4” adjustment set screws (8X0665, Page 2-5). “Toe-in” and proper lubrication of pivot will make it easier to unfold machine into field position. Wing support wheels must not contact in transport position.
6. **IMPORTANT:** Install transport locks.

UNHITCHING MACHINE

1. Park machine on a level area. Block wheels to prevent machine from rolling.
2. Follow steps outlined in **WARNING – NEGATIVE HITCH WEIGHT** on page 1-2.

SUMMERS SUPERHARROW PLUS (SH+) PERFORMANCE ADJUSTMENTS:

NOTE: These are suggested initial settings, further adjustments may be necessary to match field conditions.

 **WARNING**



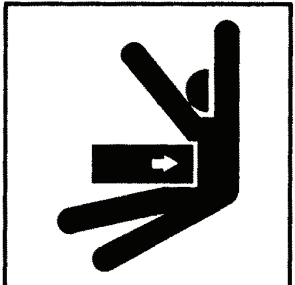

LOWER WING TUBE JACKS AND BE CERTAIN THAT NO UPWARD OR SIDE PRESSURE IS EXERTED ON TOWING UNIT HITCH BEFORE DISCONNECTING.


BEFORE LOWERING MACHINE INTO FIELD POSITION, HITCH MUST BE SECURED WITH A LOCKING HITCH PIN IN THE HITCH CLEVIS OF A LARGE FARM TRACTOR.

INSTALL TRANSPORT LOCKS BEFORE TOWING MACHINE.

COIL MACHINES ONLY: DO NOT RAISE MACHINE INTO TRANSPORT POSITION IF MUD HAS BUILT UP ON COILS. SERIOUS DAMAGE WILL OCCUR IF MUD IS NOT REMOVED FROM COILS BEFORE RAISING MACHINE FOR TRANSPORT.

8Z0092



 **DANGER**

FRAME PINCH POINT HAZARD
KEEP AWAY

To prevent serious injury or death from crushing:

- Stay away from frame hinge area when folding wings.
- Keep others away.
- Do not fold wings when bystanders are present.

8Z0087

SECTION 2 - SUPERHARROW PLUS

Spring Seedbed Preparation

Suggested settings and adjustments for Spring Seedbed Preparation with the Summers SH+.

IMPORTANT: SH+ sections are designed to run level insuring that all teeth work at the same depth. If rear of section is running higher than the front, the section is incorrectly adjusted and component failure may occur. Summers products are NOT warranted for damage caused by improper adjustment

- a. Extend hydraulic depth adjustment cylinders 1/2 way. Begin with tine angle adjustment in a middle setting. Adjust tine angle so that only the rear two bars run full of residue. This will allow maximum tine penetration. If section plugging does not occur, tine angle can be adjusted more vertical. Speed will also affect the amount of residue held by the section: for proper tooth action run the SH+ between 5-1/2 MPH and 7-1/2 MPH.
- b. If rear of sections run higher than the front, adjust front bar teeth in a less vertical setting using front adjustment bar.
- c. Section down pressure can be increased or decreased hydraulically by positioning lift cylinders and manually by equally positioning lift cylinder adjustment bolts. Lift cylinder adjustment bolts must extend at least 3/8" ahead of front 1-1/4" NC nut.
Down pressure on wing sections can be increased by replacing top spacer tubes (8HD0510) with extra pressure spacer tubes (8HD0520).
Raising the front of the hitch by adjusting hitch piece (8D0720) will also provide more section down pressure.
- d. After establishing desired down pressure, lower drawbar with hydraulic depth adjustment until rear of sections begin to lift higher than front of section. Raise drawbar 1/2". If required, section height can also be adjusted manually as explained on page 2-10.

With maximum down pressure and these adjustments, tines are working as deep as field conditions will allow.

Residue Management

Suggested settings and adjustments for Residue Management with the Summers SH+.

NOTE: Hot, dry weather is the optimum condition for spreading and breaking up crop residue.

- a. Extend hydraulic depth adjustment cylinders 1/2 way. Begin with tine angle adjustment in least vertical position. Adjust front bar teeth in a one hole more vertical setting using front adjustment bar. These settings will allow the most soil action without plugging section. If section plugging does not occur, tine angle can be adjusted more vertical.
- b. SPEED is important. The SH+ should be pulled at 7 MPH to 9 MPH for proper tooth action in high residue conditions.
- c. Section down pressure can be increased or decreased hydraulically by positioning the lift cylinders and manually by equally positioning lift cylinder adjustment bolts. Lift cylinder adjustment bolts must extend at least 3/8" ahead of front 1-1/4" NC nut.
Down pressure on wing sections can be increased by replacing top spacer tubes (8HD0510) with extra pressure spacer tubes (8HD0520).
Raising the front of the hitch by adjusting hitch piece (8D0720) will also provide more section down pressure.
- d. After establishing desired down pressure, lower drawbar with hydraulic depth adjustment until rear of sections begin to lift higher than front of section. Raise drawbar 1/2". If required, section height can be adjusted manually as explained on page 2-10.

With maximum down pressure and these adjustments, tines are working as aggressively as field conditions will allow.

SECTION 2 - SUPERHARROW PLUS

MAINTENANCE AND SERVICE

Daily Maintenance:

Check all wheel and frame bolts for tightness.

Daily Greasing:

Two zerks on each knuckle.

One zerk on each transport axle pivot.

Two zerks on each cable auto-fold arm.

Two zerks on hitch hydraulic depth adjustment – pillow block casting (8R6065, page 2-3).

60-84 ft. with hinged wing only: One zerk on each Hinged Wing Pivot.

Weekly Maintenance:

Inspect wheel bearings for tightness.

Seasonal Maintenance:

Disassemble, clean and repack wheel bearings.

Lubricate all zerks with a good grade of general purpose grease.

NOTE: To insure years of trouble free use of your SH+, periodically inspect entire machine for loose or worn parts and fasteners. Tighten or replace as required.

Over Winter:

Coat extended hydraulic cylinder rods with grease to prevent corrosion. Remove this grease before retracting cylinders.

TIRE INFLATION:

Hitch Tires: 11L X 15 LRF – 80 PSI

Opt. 31 X 13.5 – 35PSI

Wing Support Tires: 11L X 15 LRF – 38 PSI

Transport Tires: LT RADIAL x 16 – 80PSI

IMPORTANT: Implement tires are rated at **20 MPH maximum. Exceeding this speed voids warranty.**





WARNING

HIGH-PRESSURE FLUID HAZARD

To prevent serious injury or death:

- Relieve pressure on system before repairing or adjusting or disconnecting.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all components in good repair.

SW700

TROUBLESHOOTING

| PROBLEM | CAUSE | CORRECTION |
|--|---|--|
| 1. Wings trail too far apart in transport. | Insufficient transport wheel toe-in. | Adjust transport wheel toe-in. |
| 2. Wings are not pulling evenly in field position. | Cable pull brackets are improperly located. | Relocate cable pull brackets so wings slightly lead center. |
| 3. Auto-Fold arms do not rotate into transport position. | Improper pivot bracket adjustment. | Adjust pivot bracket with bolts to provide clearance between the cable fold arm bottom guide and hitch tube. (2-8) |
| 4. Lift arms do not run level. | Improper section adjustment. | See Section Adjustment, pages 2-10 and 2-29. |

SECTION 3 - SUPERHARROW 2650

SET-UP INSTRUCTIONS

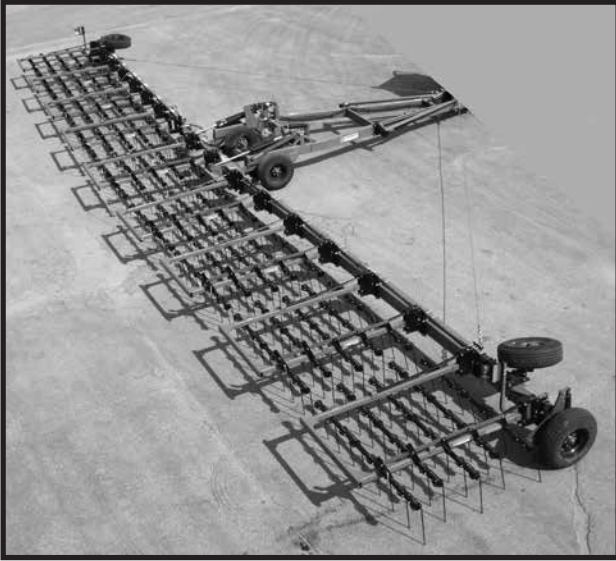


Fig. 1: Field Position



Fig. 2: Transport Position

The machine should be placed in an area that allows ample room for assembly in field position (See Fig. 1).

CAUTION: For safety purposes, block equipment while working on it.

Refer to illustrations and parts listing and follow these steps when assembling.

HITCH – Axles, Wheels and Jack

Attach hitch hydraulic depth adjustment and axle assemblies as shown on pages 3-2 through 3-4. Mount hitch wheels and tires and install hitch jack.

DRAWBAR: Center, Hydraulic Lift Cylinders, Wings, Axles and Wheels.

Attach center drawbar to hitch using two 1-1/4" X 6" pins and secure with flat washers and 5/16" X 2-1/2" cotter pins. Mount main lift cylinders and transport locks. Route hoses as shown on page 3-6. Fully charge main lift cylinders with hydraulic fluid by extending and retracting until all air is purged from system.

Attach wing drawbars to knuckles using 1-1/2" X 11" pins. Secure with 1/2" X 2-1/2" bolt, washer and lock nut. Install 1-1/2" jam nut, center punch or spot weld to secure. Attach jack mounting swivels on the top of wing near knuckle in field position. Secure with 7/8" u-bolt, lockwashers and nuts.

Mount wing hydraulic depth adjustment assemblies as shown on page 3-3. Mount wing wheels and tires.

HYDRAULIC SYSTEMS

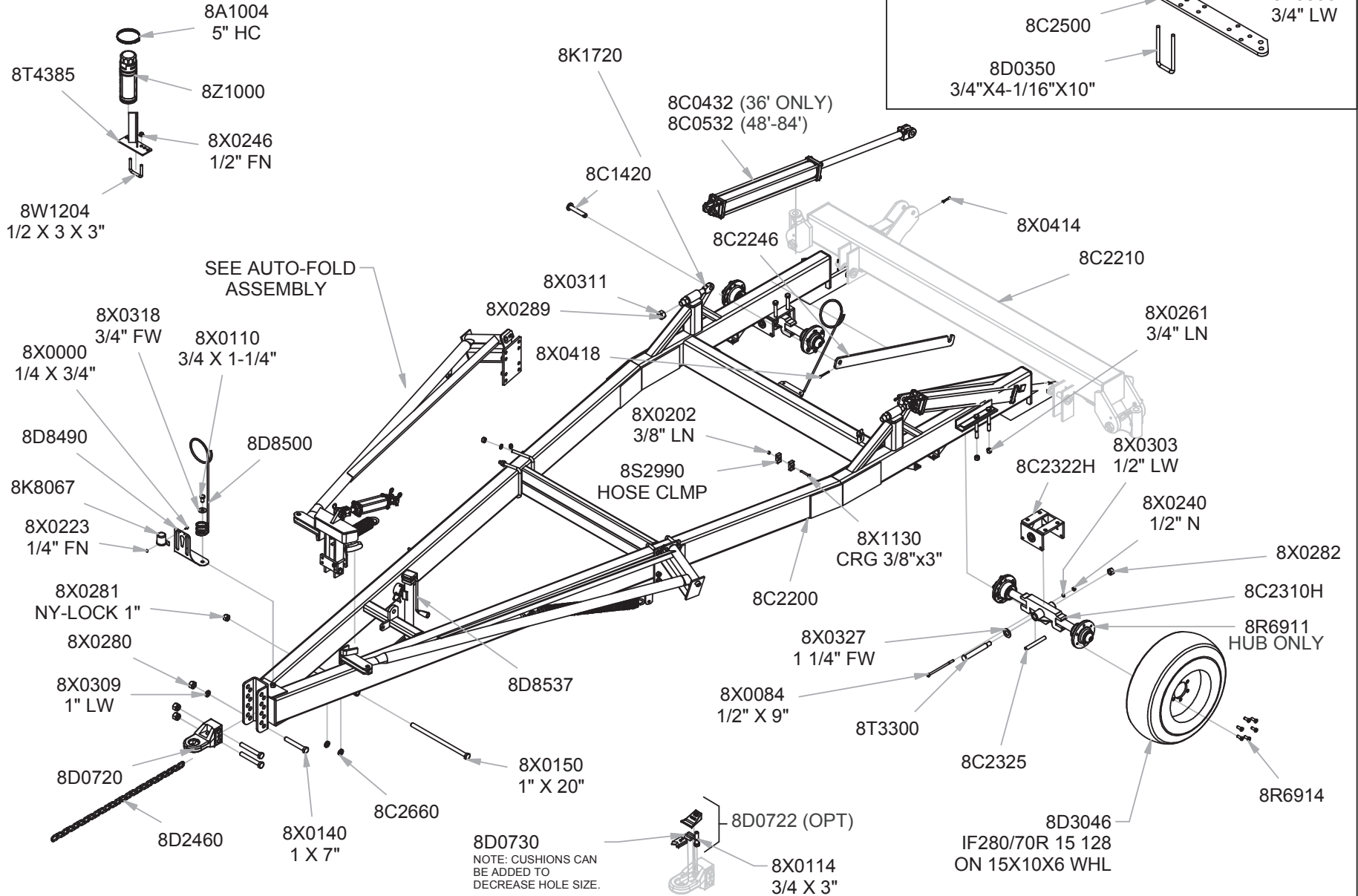
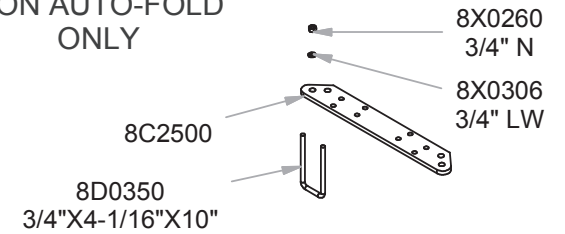
Mount Auto-Fold lock, cylinder and hoses as shown on page 3-6.

NOTE: The tractor hydraulic control valve operating Auto-Fold lock cylinder must hold pressure. If Auto-Fold lock cylinder extends during field operation, damage will occur.

Mount Hydraulic Depth Adjustment cylinders and route hoses as shown on pages 3-8 and 3-10. Allow enough hose at hinge points to avoid pinching or stretching hose. Clamps (8W1398) are provided to secure hydraulic hoses to drawbar. Attach hydraulic hose holder to rear hitch cross tube with 3/4" X 1-1/4" hex head cap screw and flat washers provided. Route hoses through loop to prevent ground contact in transport position. Bend loop closed to secure hoses.

22' MACHINE HITCH

NON AUTO-FOLD
ONLY



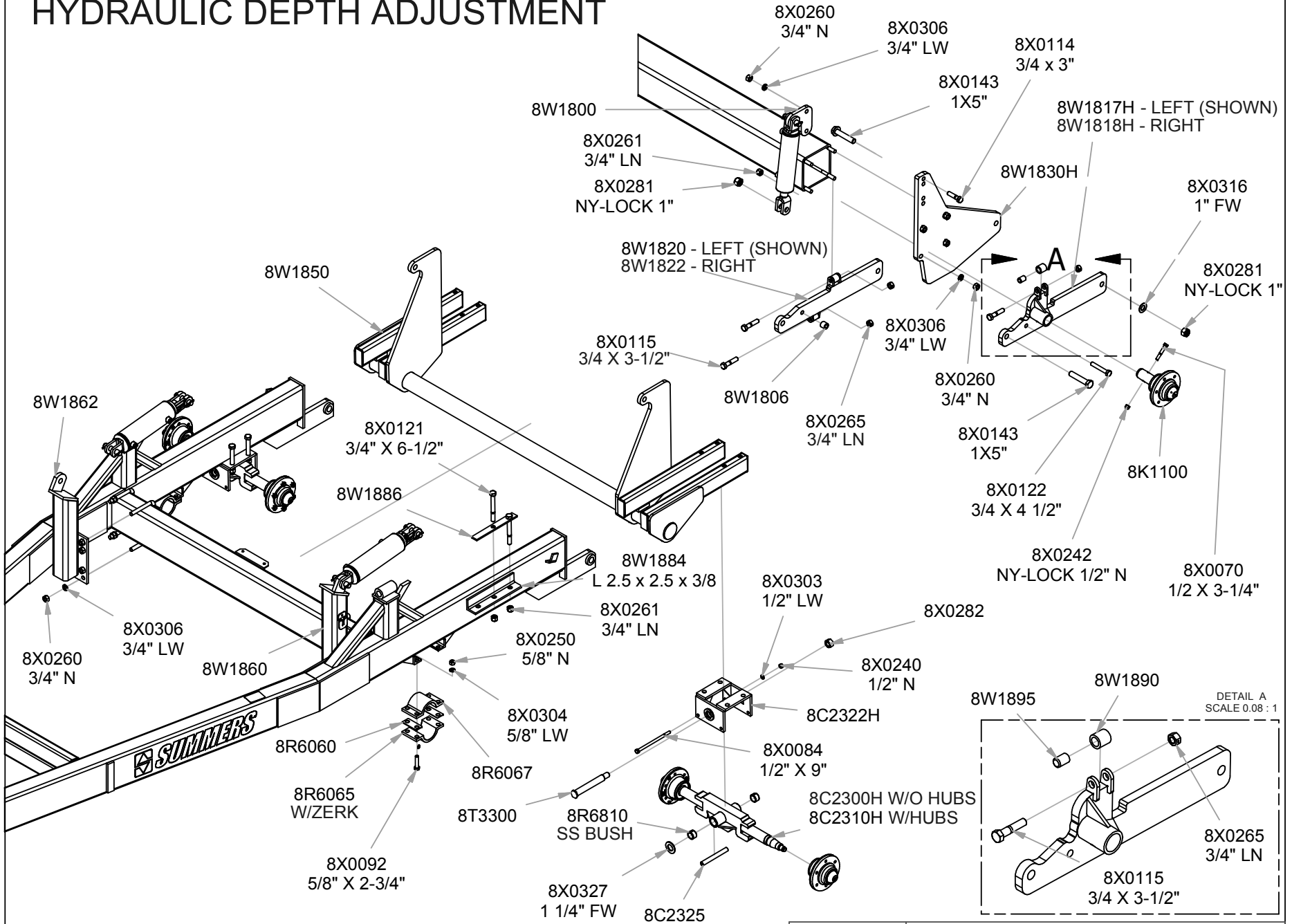
3-2

2/14/2017

9HD0880.iam/HITCH

HYDRAULIC DEPTH ADJUSTMENT

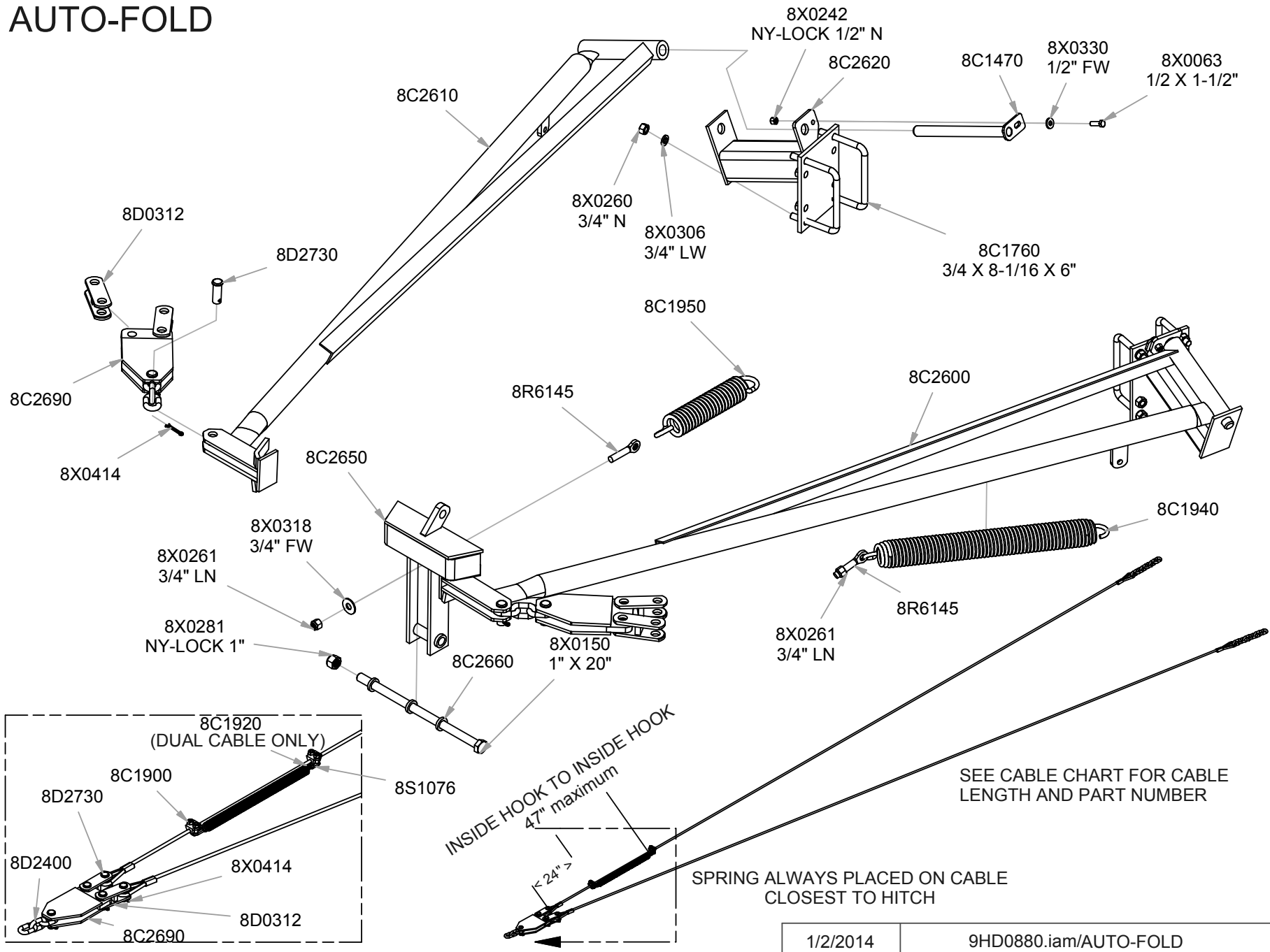
3-3



1/13/2014

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AUTO-FOLD

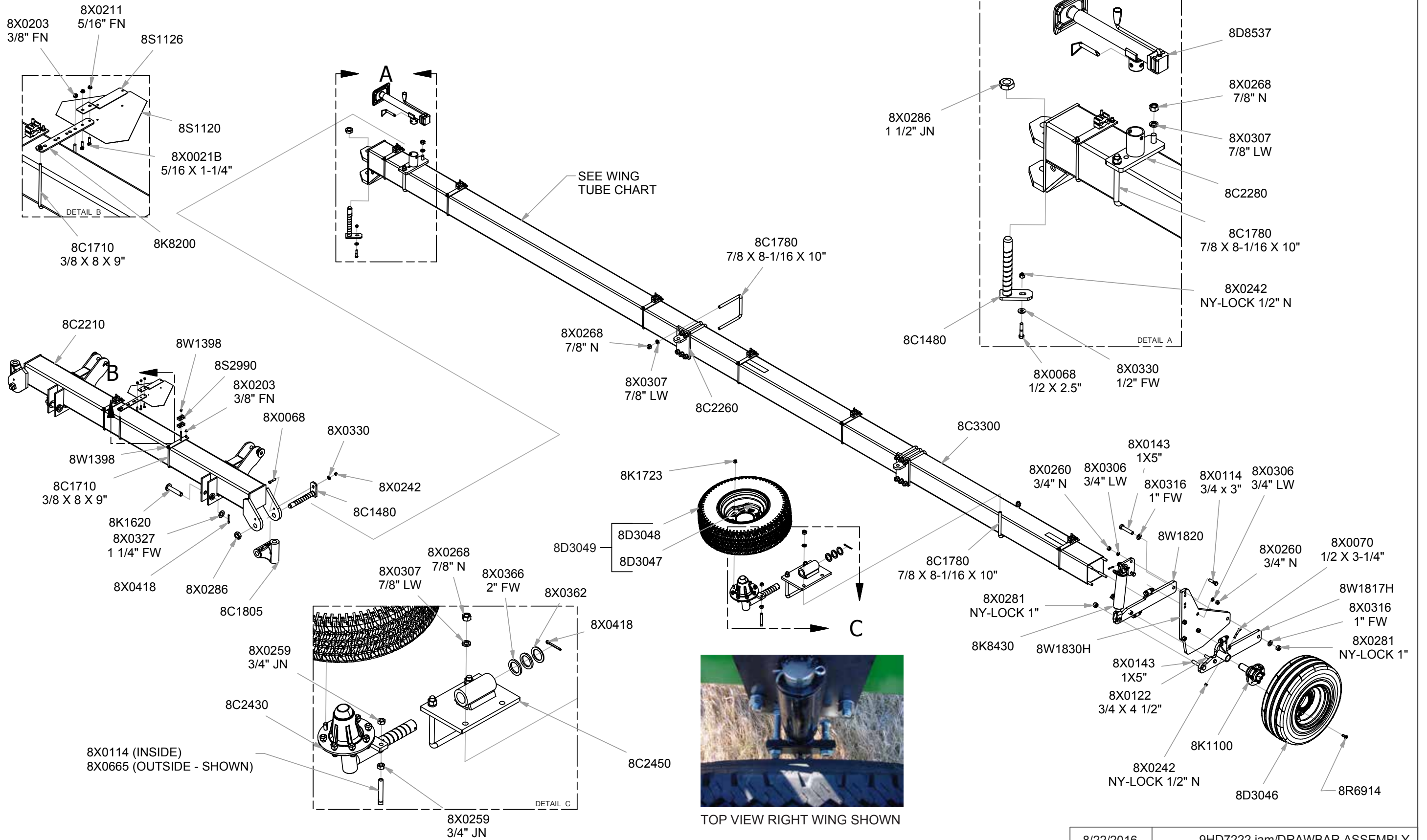


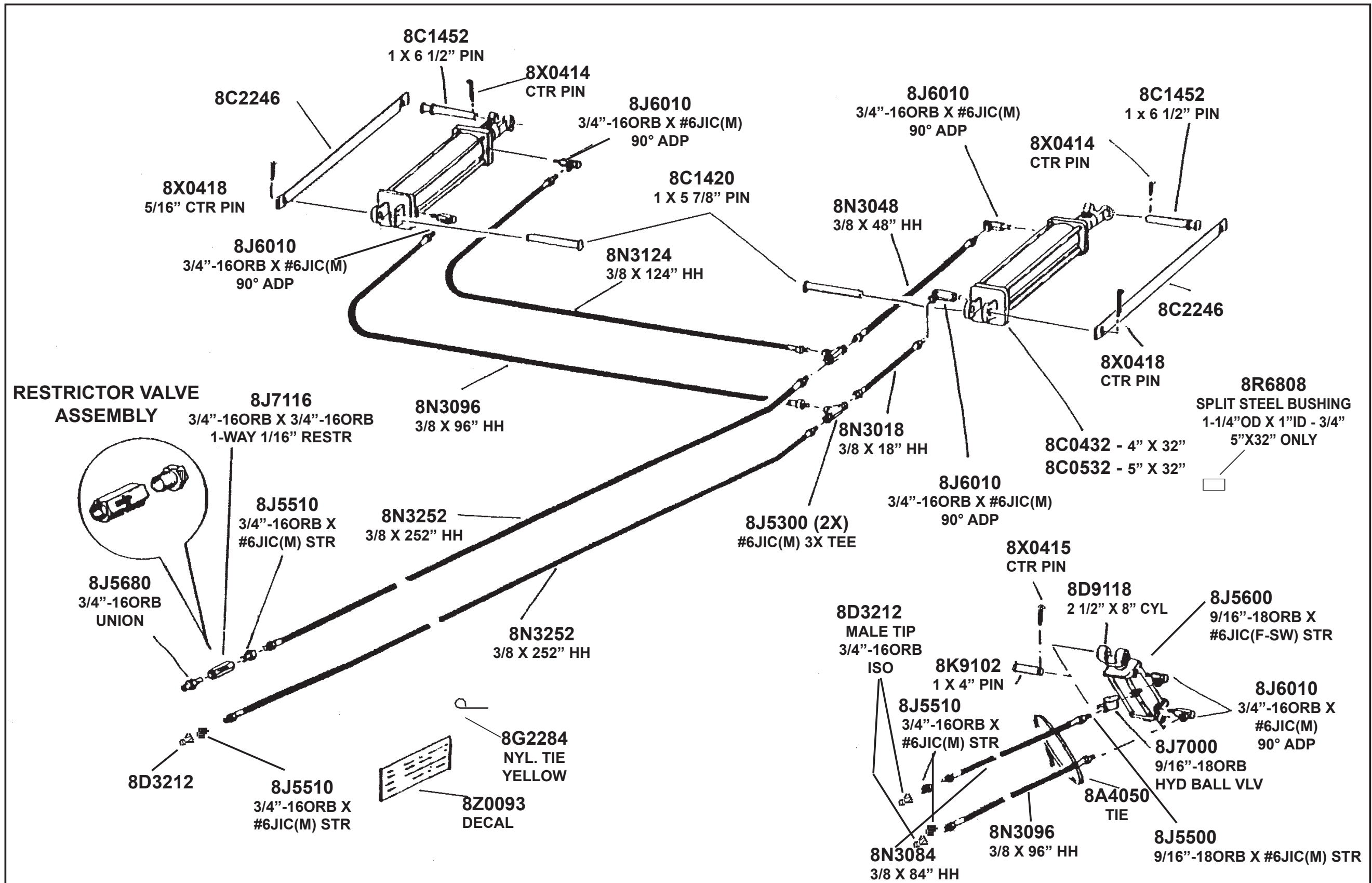
3-4

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DRAWBAR ASSEMBLY

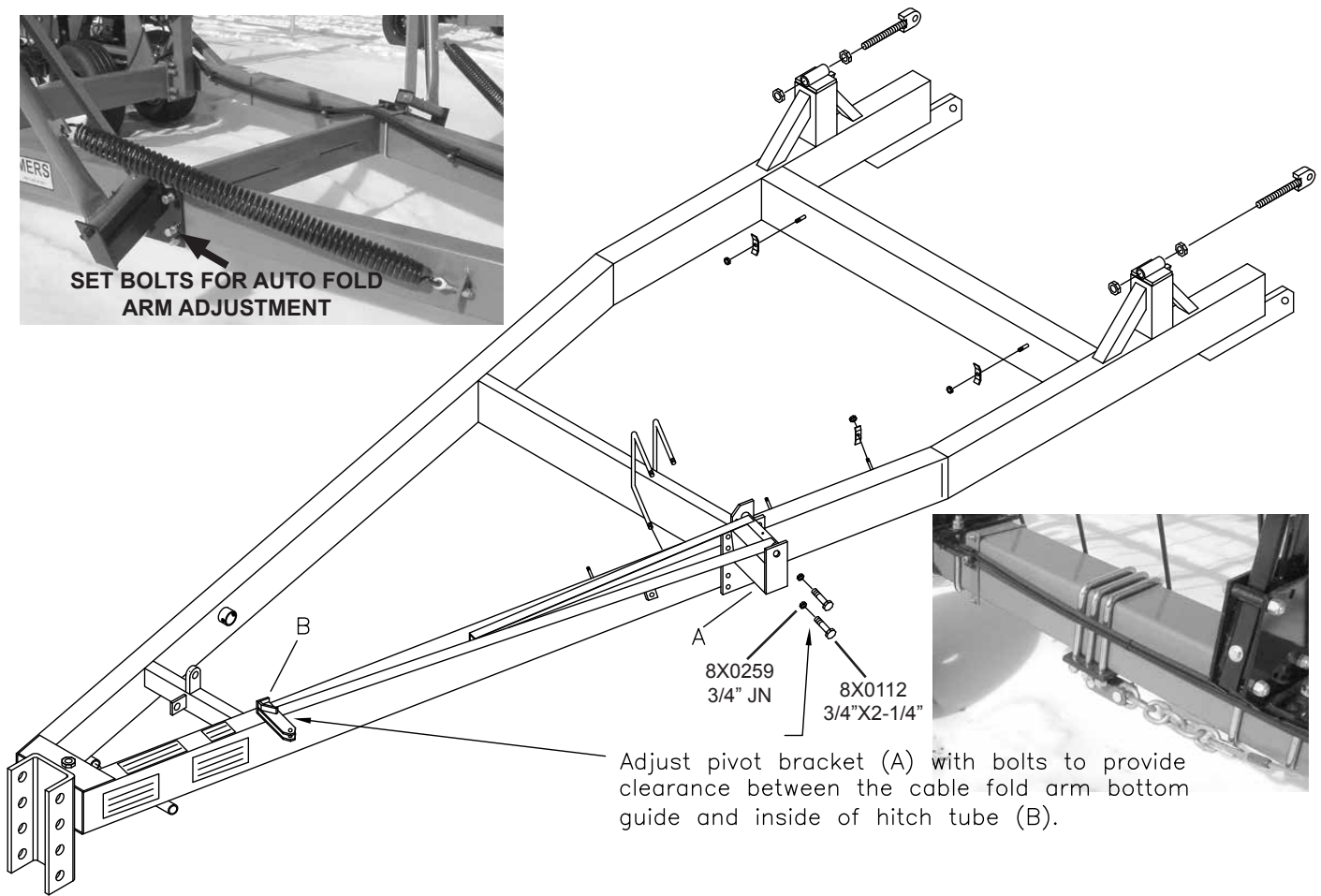
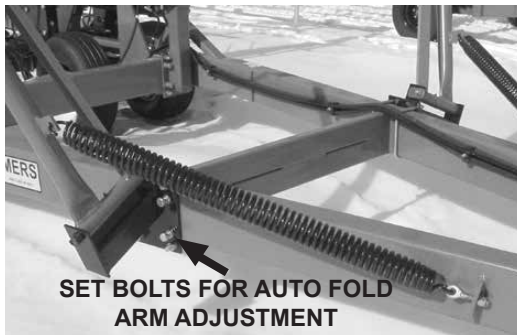




HYDRAULIC SYSTEM - 22 FT. HITCH

3/13/14

SECTION 3 - SUPERHARROW 2650



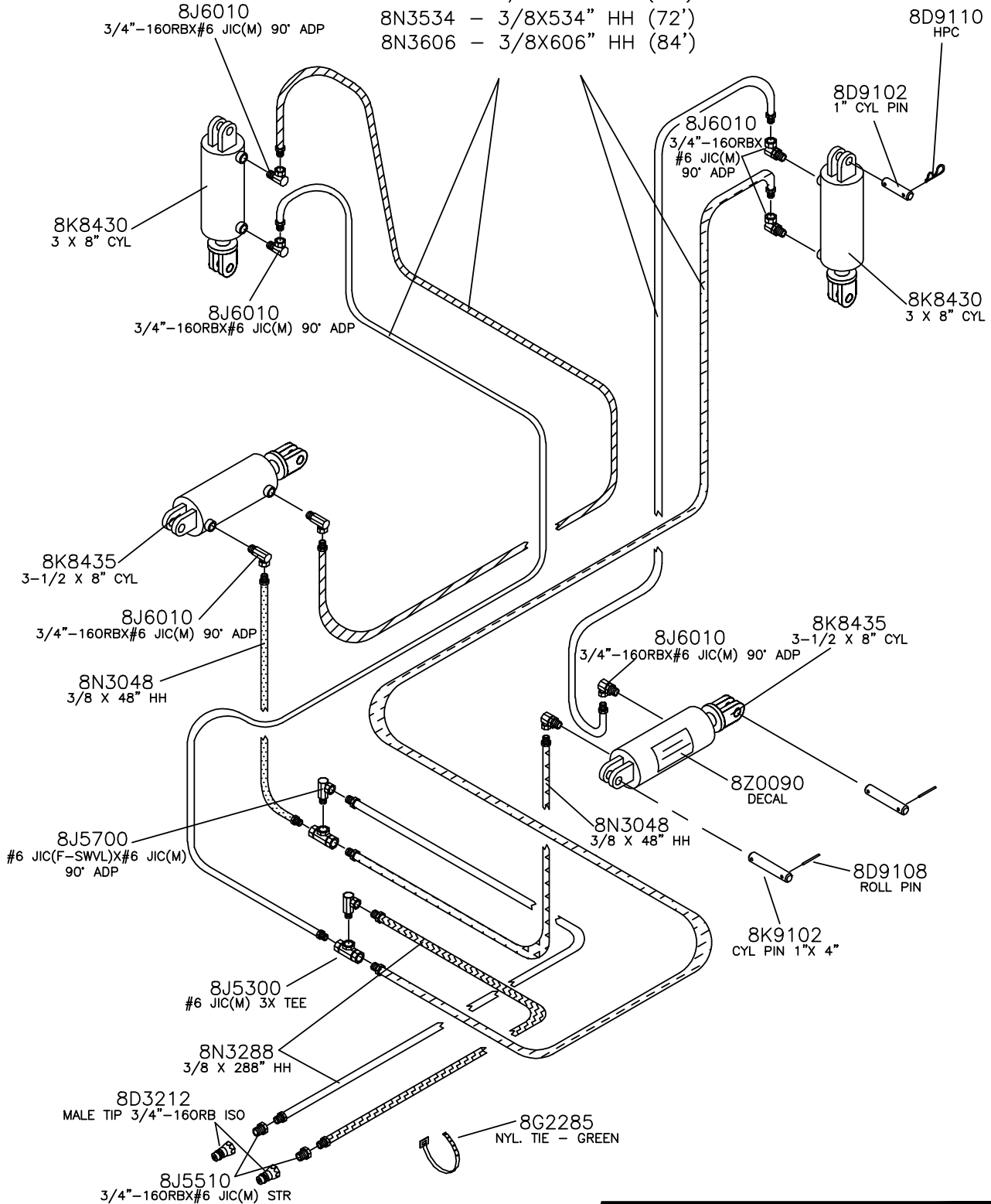
22' HITCH — 8" SQUARE DRAWBAR
Specification Chart

| Machine Size | Cable Length | PN-Cable | PN-Wing (Hngd Wing - Left Part 1) | PN-Lift Cylinder |
|-------------------------|--------------|----------|---|---------------------|
| SUPERHARROW 2650 | | | | |
| 56' | 324" | 8D1900 | 8HD6650 (20'11") | 8C0432 |
| 72' Inside | 262" | 8D1870 | 8C3300 (28'11") | 8C0432 |
| Outside | 370" | 8D1920 | | |
| 88' Inside | 262" | 8D1870 | 8HD6682 (36'11") | 8C0432 |
| Outside | 383" | 8D1930 | | |

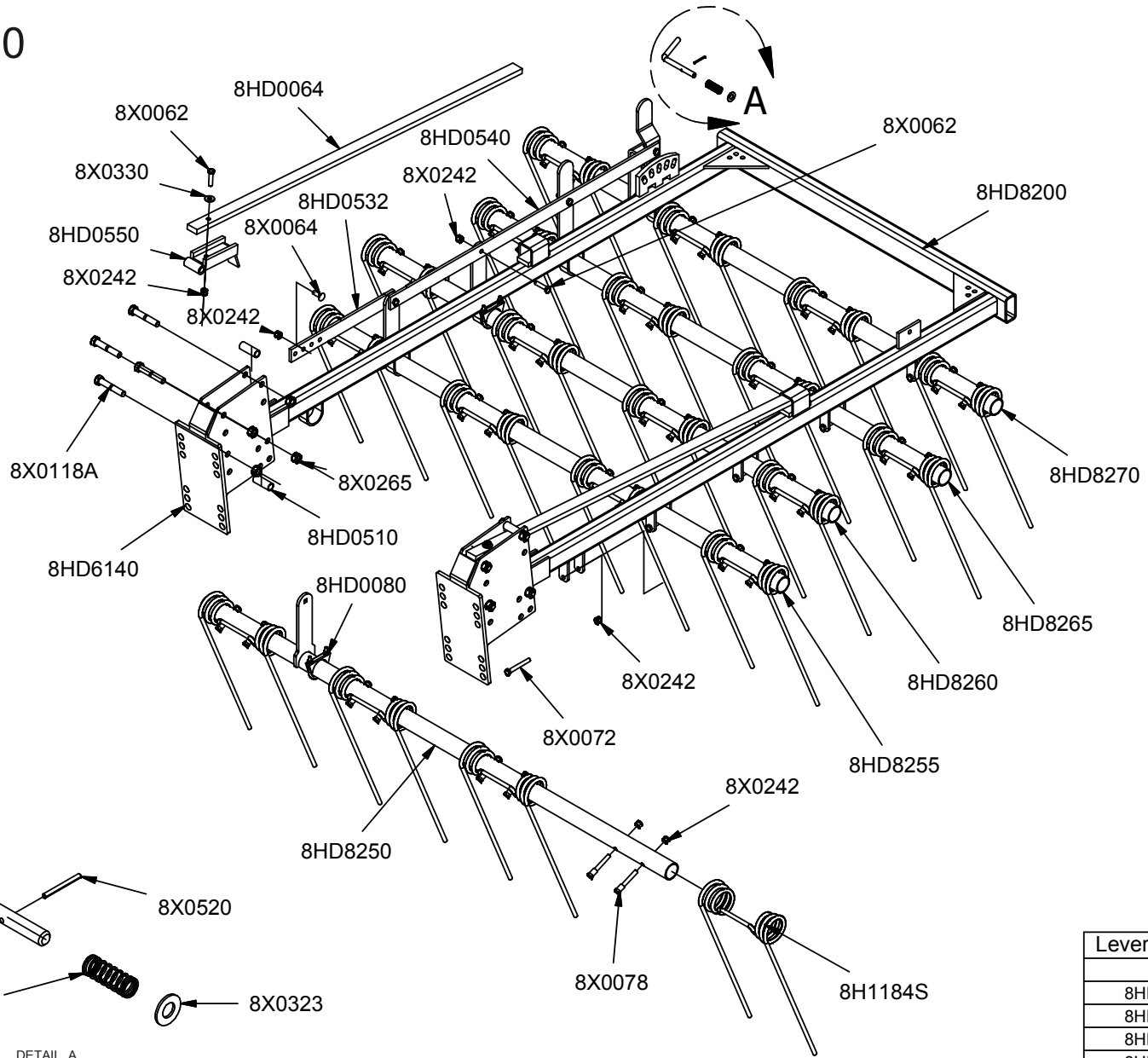
SECTION 3 - SUPERHARROW 2650

HYDRAULIC DEPTH ADJUSTMENT

- 8N3330 - 3/8X330" HH (36')
- 8N3390 - 3/8X390" HH (48')
- 8N3462 - 3/8X462" HH (60')
- 8N3534 - 3/8X534" HH (72')
- 8N3606 - 3/8X606" HH (84')



8HD8400



3-9

DETAIL A
SCALE 1/6

| PN | QTY |
|---------|-----|
| 8H1184S | 20 |
| 8HD0064 | 2 |
| 8HD0080 | 2 |
| 8HD0150 | 1 |
| 8HD0160 | 1 |
| 8HD0510 | 4 |
| 8HD0532 | 1 |
| 8HD0540 | 1 |
| 8HD0550 | 2 |
| 8HD6140 | 2 |
| 8HD8200 | 1 |
| 8HD8250 | 1 |
| 8HD8255 | 1 |
| 8HD8260 | 1 |
| 8HD8265 | 1 |
| 8HD8270 | 1 |
| 8X0062 | 6 |
| 8X0064 | 1 |
| 8X0072 | 5 |
| 8X0078 | 40 |
| 8X0118A | 8 |
| 8X0242 | 52 |
| 8X0265 | 8 |
| 8X0323 | 1 |
| 8X0330 | 2 |
| 8X0520 | 1 |

| Lever to End of Pipe Distance | |
|-------------------------------|----------|
| PN | Distance |
| 8HD8270 | 22" |
| 8HD8265 | 15 1/2" |
| 8HD8260 | 19 3/4" |
| 8HD8255 | 13 1/4" |
| 8HD8250 | 17 3/4" |

SECTION 3 - SUPERHARROW 2650

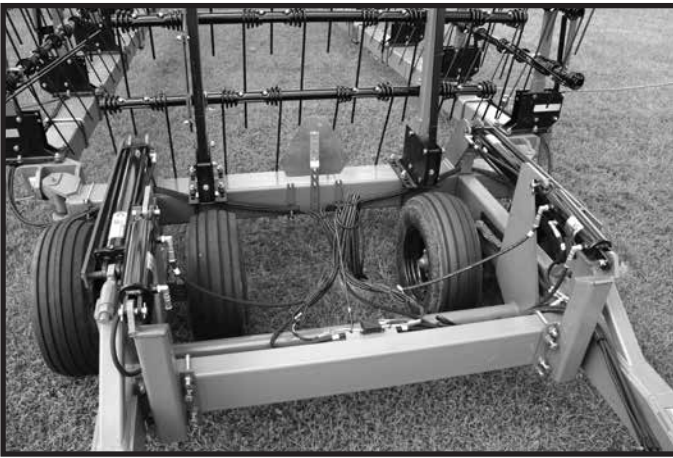


Fig. 3: Rear Hitch View

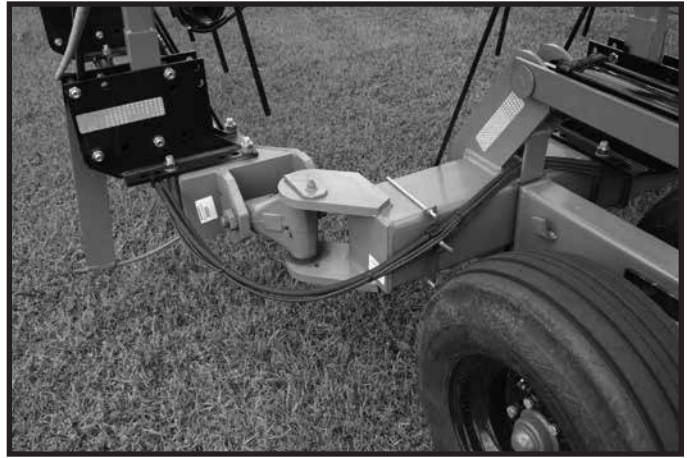


Fig. 3A: Right Knuckle

SECTIONS:

Attach sections to drawbar using 7/8" U-bolts and hardware provided. Position lift arms with following dimensions:
Distance from drawbar center to centerline of first lift arm on either side is 24".

Distance between centerlines of lift arms is 48".

To compensate for various soil conditions and tooth wear, the sections can be mounted in four different positions as shown in the following chart and (Fig. 4 to 7). On center section only, move the Lower Stop Bolt and bushing to the front hole (Fig. 8). This will allow the sections to raise more evenly.

| Height Adjustment | | | |
|---------------------------|--------------|-----------------------|--------|
| Suggested Initial Setting | U-Bolt Plate | Lift Arm/ Spring Flat | Ref. |
| | Up | Up | Fig. 4 |
| | Down | Up | Fig. 5 |
| | Up | Down | Fig. 6 |
| | Down | Down | Fig. 7 |

- Initial Setting
- Settings for increased penetration and/or to compensate for harrow tooth wear

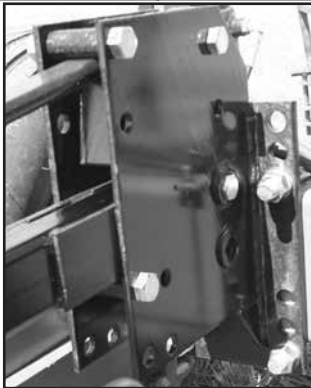


Fig. 4

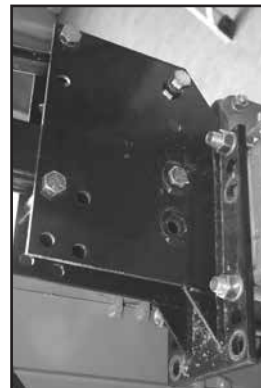


Fig. 5

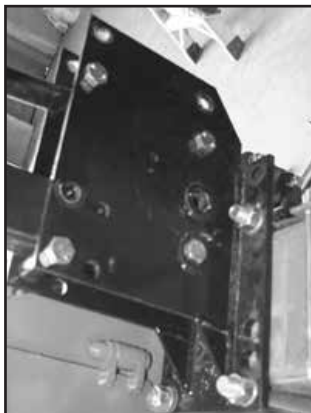


Fig. 6

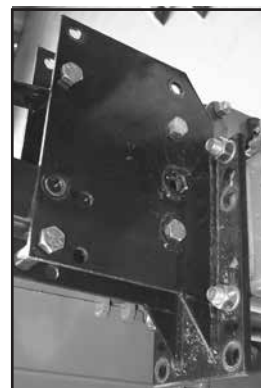
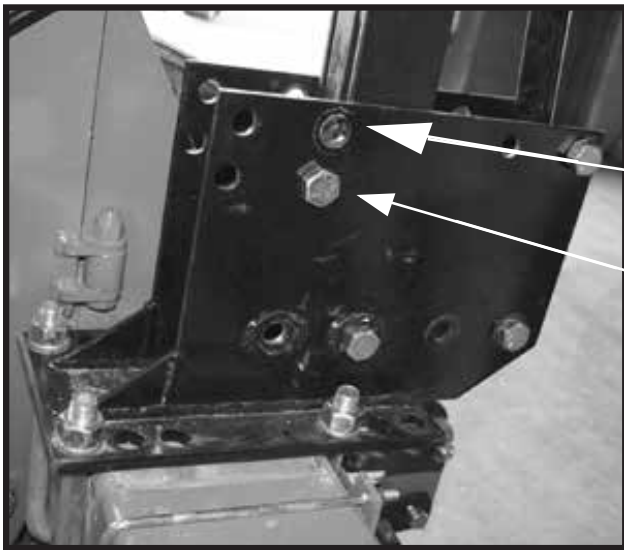


Fig. 7

SECTION 3 - SUPERHARROW 2650



Wing Section Lower Stop Bolt Location

Center Section Stop Bolt Location
(shown installed)

Fig. 8

The two front teeth on the wing (closest to knuckles) must be secured with PN 8HD6150 (ANGLE, tooth stop) and 1/2" X 3-3/4" cap screws as shown in Fig. 9. This prevents interference in transport position.

TRANSPORT WHEELS

Locate transport wheel assemblies over end harrow section on 56 ft. machine with pivot tube in higher position. Install between end section and second section on 88 ft., with pivot tube in lower position. Secure with 7/8" U-bolts and hardware.

Transport axle "toe-in" can be adjusted with the outside stop set bolt (8X0665, Page 3-5). Adjust inside stop bolt 3/8" away from pivot plate when resting on outside stop bolt. This adjustment will allow transport wheel to pivot inward while unfolding. Double lock stop bolts with 3/4" jam nuts provided.

AUTO-CABLE FOLD

Mount Auto-Fold pivot brackets ahead of welded stop. Do not fully tighten U-bolts. Attach left and right cable fold arms to pivot brackets with 1-1/4" X 14" pins and hardware.

Adjust pivot brackets to provide clearance between the cable fold arm bottom guide and hitch tube. This adjustment is made with 3/4" X 2-1/4" bolts (8X0112, Page 3-7). This adjustment will allow cable fold arms to pivot freely into transport position. Fully tighten mounting U-bolts after adjustment is made.

Attach tension springs with 3/4" eye bolts and lock nuts. Tighten eye bolts until spring coils begin to separate.

CABLES

Install cable brackets and cable assemblies. Adjust cables so wings lead the center by 2 degrees. Tighten attachment U-bolt. Recheck tightness after first hour of field use. Install rear cables as shown on page 3-13 through 3-15. 72' and 88' SuperHarrow 2650 ONLY: Install Cable Guides as shown on next page.



Fig. 9: ANGLE, tooth stop

SECTION 3 - SUPERHARROW 2650

INSTALLATION INSTRUCTIONS 8C2270 - CABLE GUIDE BRACKET 72' & 88' SUPERHARROW 2650

Parts required for installation:

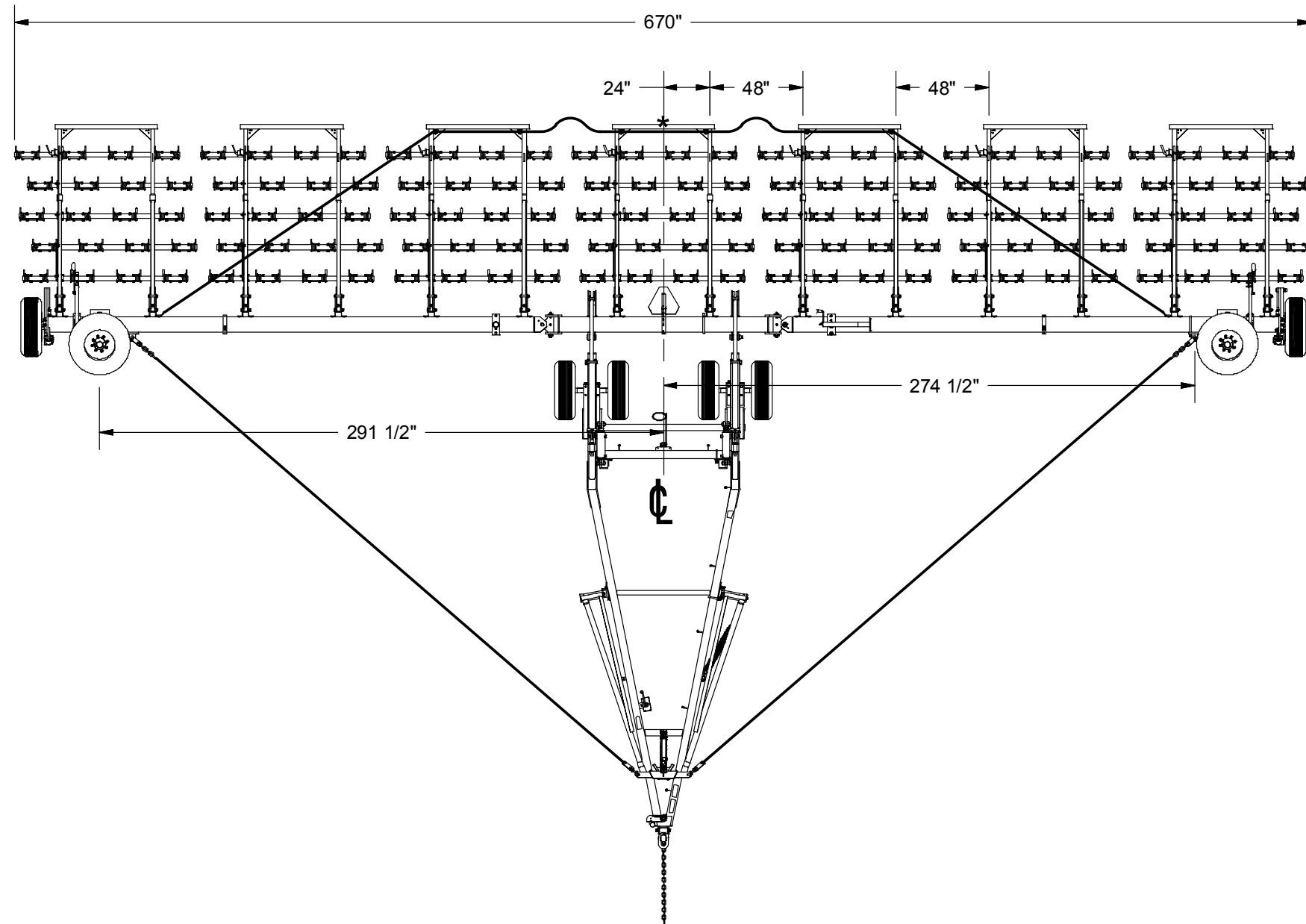
| <u>Qty</u> | <u>PN</u> | <u>Description</u> |
|------------|-----------|---|
| 2 | 8C2270 | Cable Guide Bracket |
| 2* | 8X0113 | Bolt 3/4" x 5" (Use without Hyd. Tine Angle Pivot Bracket) |
| 4* | 8X0123 | Bolt 3/4" x 5-1/2" (Use with Hyd. Tine Angle Pivot Bracket) |
| 4 | 8X0317 | 3/4" Flat Washer |

Refer to the photos below to install the cable guides. The guides must be mounted on the top outside of the first mounting bracket on each wing. The guide prevents the inside pull cable from getting caught beneath the drawbar. Replace existing 3/4" bolts in mounting brackets with longer bolts to allow installation of 8C2270. Secure with existing 3/4" locknuts and flat washers.

CAUTION: Spring flat tension and weight of attached brackets must be supported when replacing 3/4" bolts.



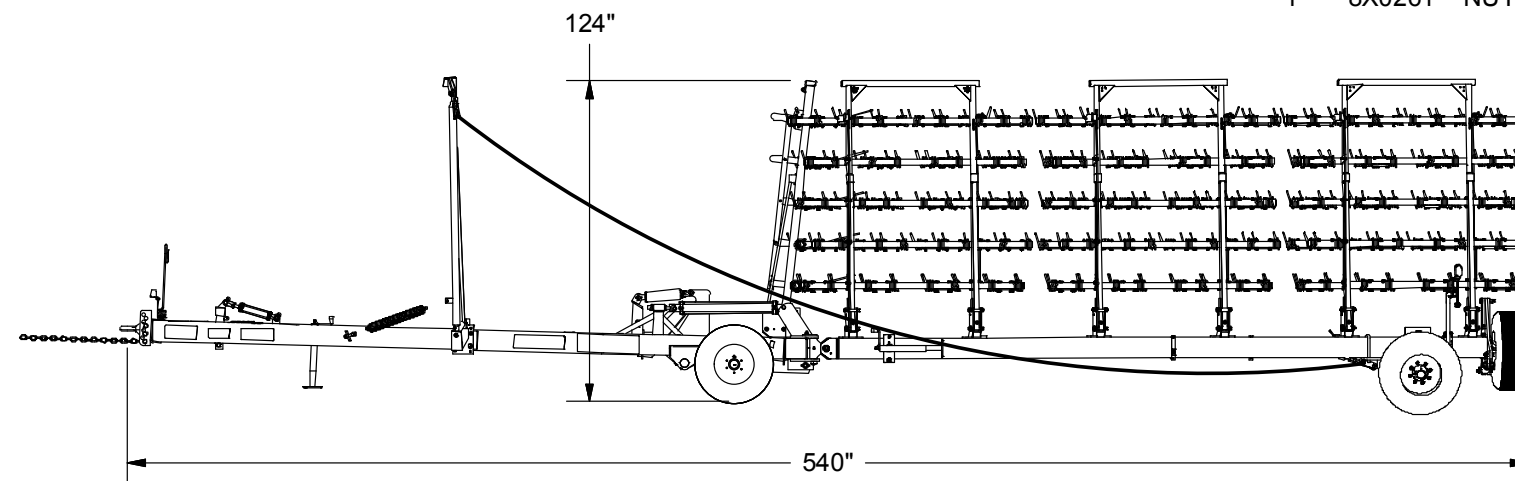
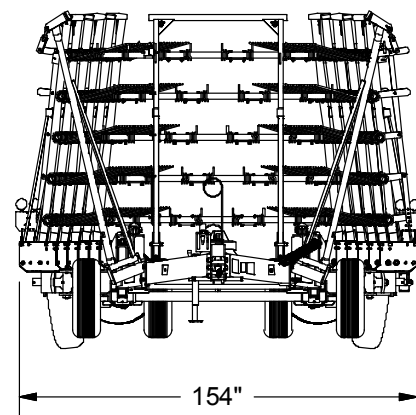
SECTION 3 - SUPERHARROW 2650



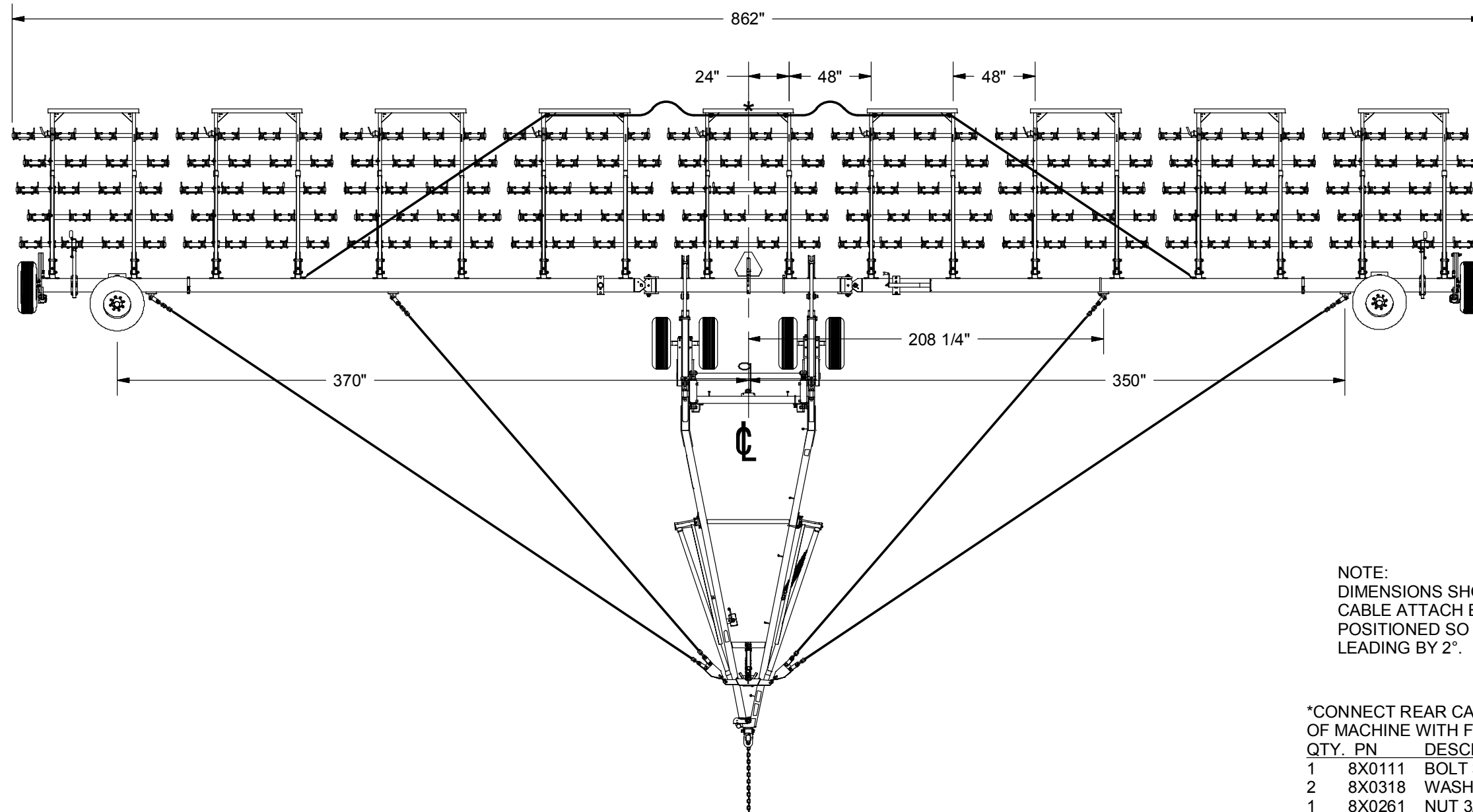
NOTE:
DIMENSIONS SHOWN ARE APPROXIMATE.
CABLE ATTACH BRACKETS SHOULD BE
POSITIONED SO WING TUBES ARE
LEADING BY 2°.

*CONNECT REAR CABLES (8D1760) AT
CENTER OF MACHINE WITH FOLLOWING
HARDWARE:

| QTY. | PN | DESCRIPTION |
|------|--------|-------------------------------|
| 1 | 8X0111 | BOLT 3/4-10NC X 2-1/2" GR5 YZ |
| 2 | 8X0318 | WASHER 3/4" FLAT YZ |
| 1 | 8X0261 | NUT 3/4"-10NC NY-LOCK GR2 YZ |



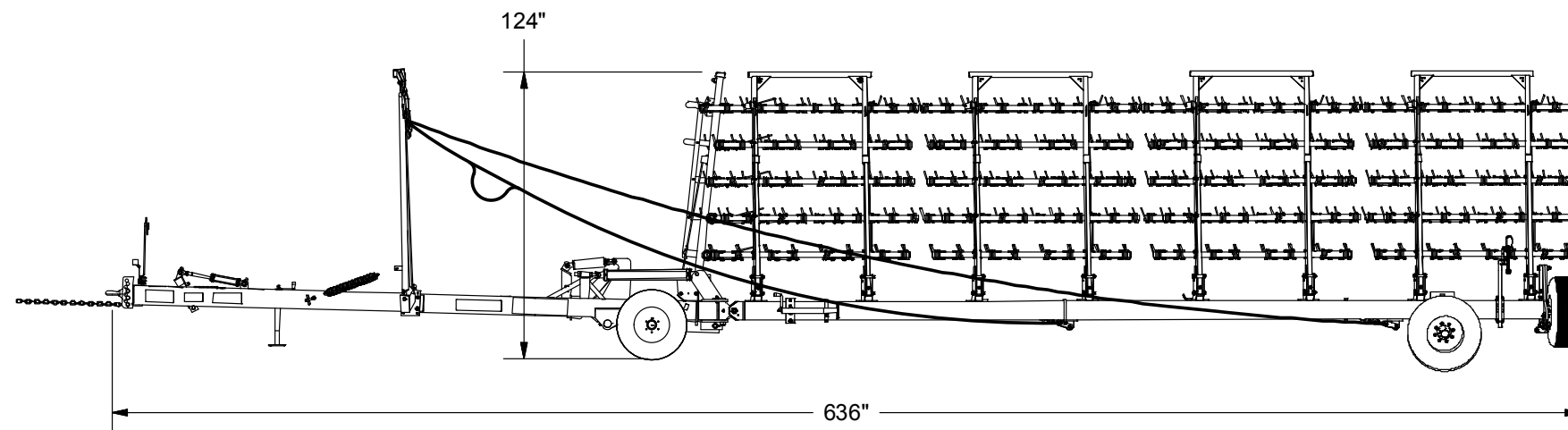
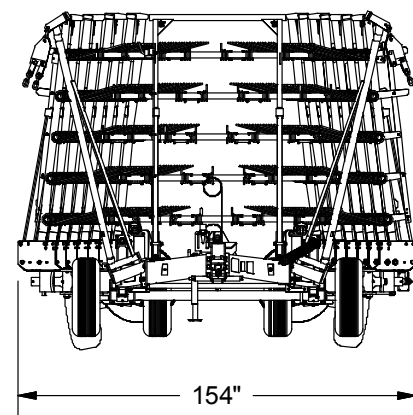
SECTION 3 - SUPERHARROW 2650



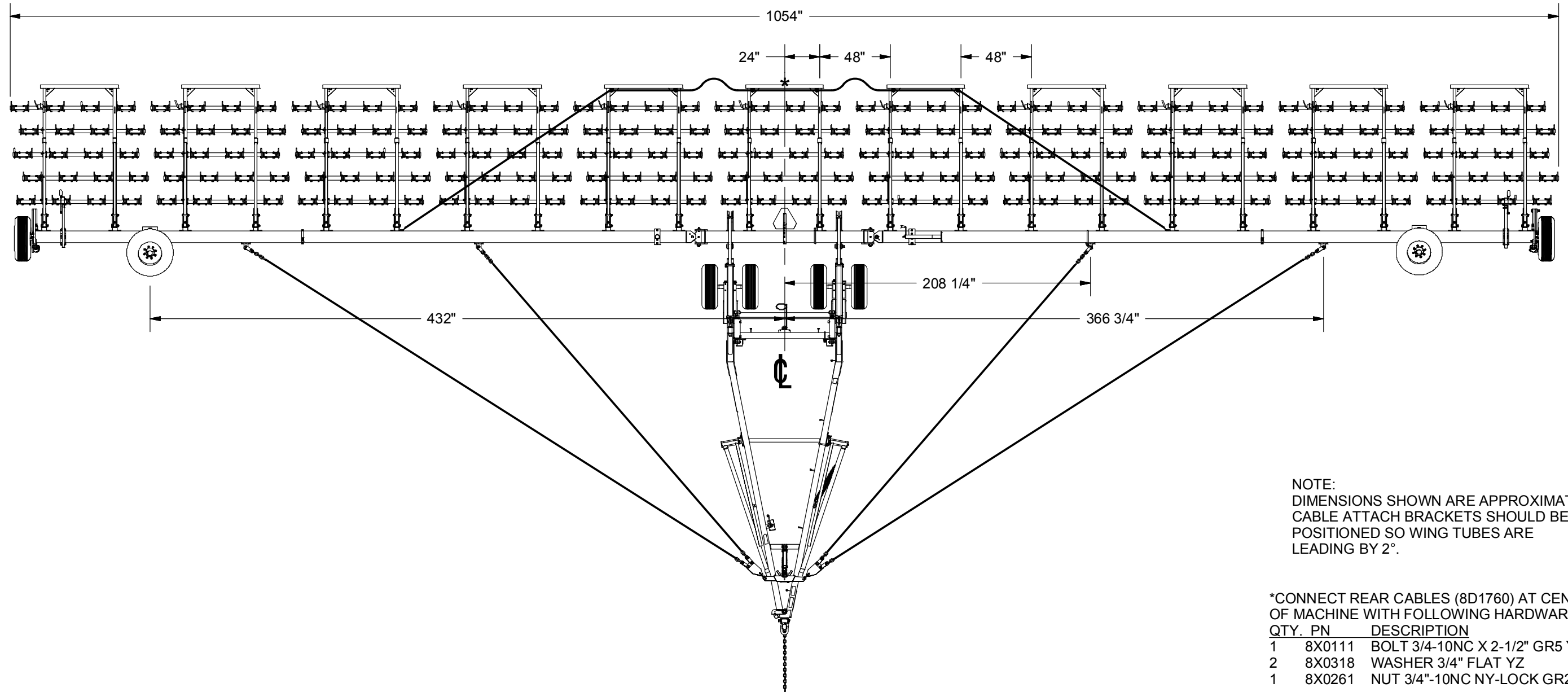
NOTE:
DIMENSIONS SHOWN ARE APPROXIMATE.
CABLE ATTACH BRACKETS SHOULD BE
POSITIONED SO WING TUBES ARE
LEADING BY 2°.

*CONNECT REAR CABLES (8D1760) AT CENTER
OF MACHINE WITH FOLLOWING HARDWARE:

| QTY. | PN | DESCRIPTION |
|------|--------|-------------------------------|
| 1 | 8X0111 | BOLT 3/4-10NC X 2-1/2" GR5 YZ |
| 2 | 8X0318 | WASHER 3/4" FLAT YZ |
| 1 | 8X0261 | NUT 3/4"-10NC NY-LOCK GR2 YZ |



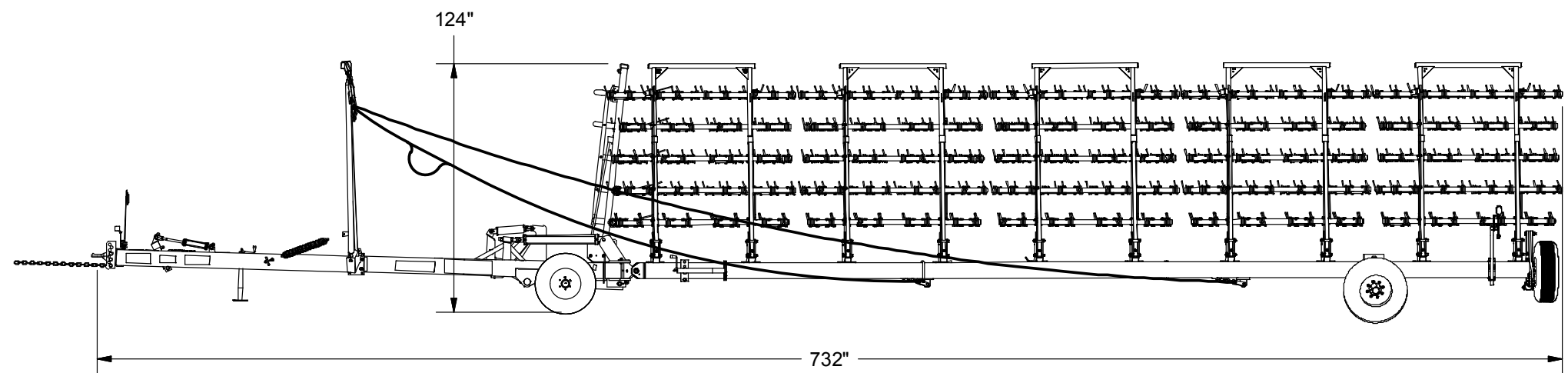
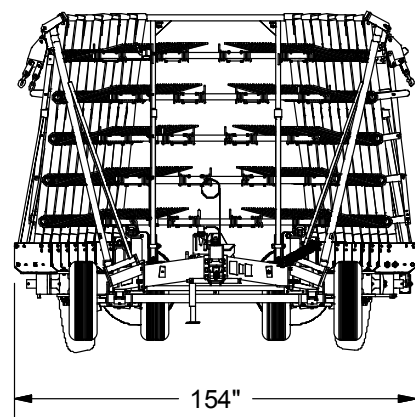
SECTION 3 - SUPERHARROW 2650



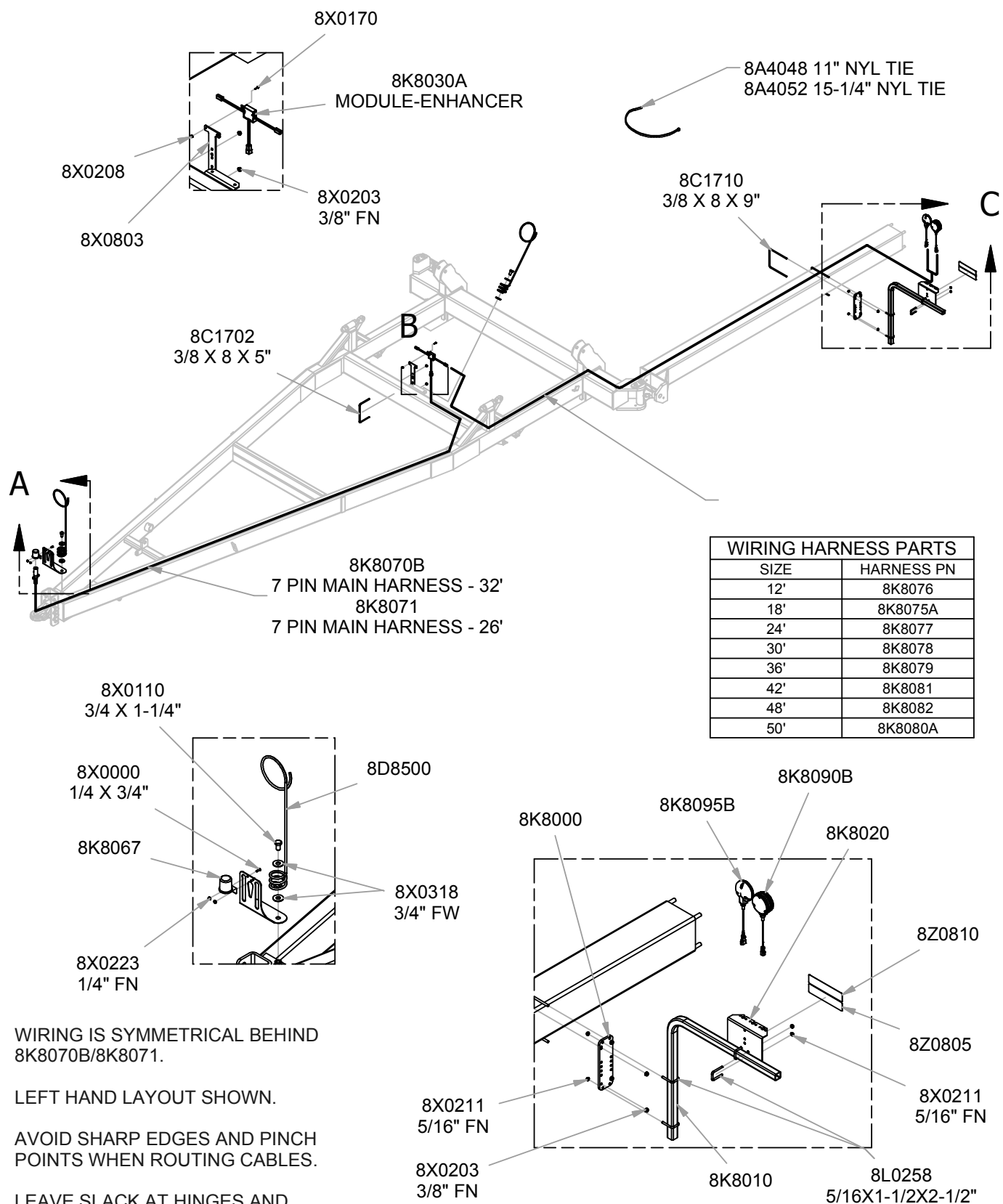
NOTE:
DIMENSIONS SHOWN ARE APPROXIMATE.
CABLE ATTACH BRACKETS SHOULD BE
POSITIONED SO WING TUBES ARE
LEADING BY 2°.

*CONNECT REAR CABLES (8D1760) AT CENTER
OF MACHINE WITH FOLLOWING HARDWARE:

| QTY. | PN | DESCRIPTION |
|------|--------|-------------------------------|
| 1 | 8X0111 | BOLT 3/4-10NC X 2-1/2" GR5 YZ |
| 2 | 8X0318 | WASHER 3/4" FLAT YZ |
| 1 | 8X0261 | NUT 3/4"-10NC NY-LOCK GR2 YZ |



LIGHT KIT, 8"SQ DRAWBAR



WIRING IS SYMMETRICAL BEHIND 8K8070B/8K8071.

LEFT HAND LAYOUT SHOWN.

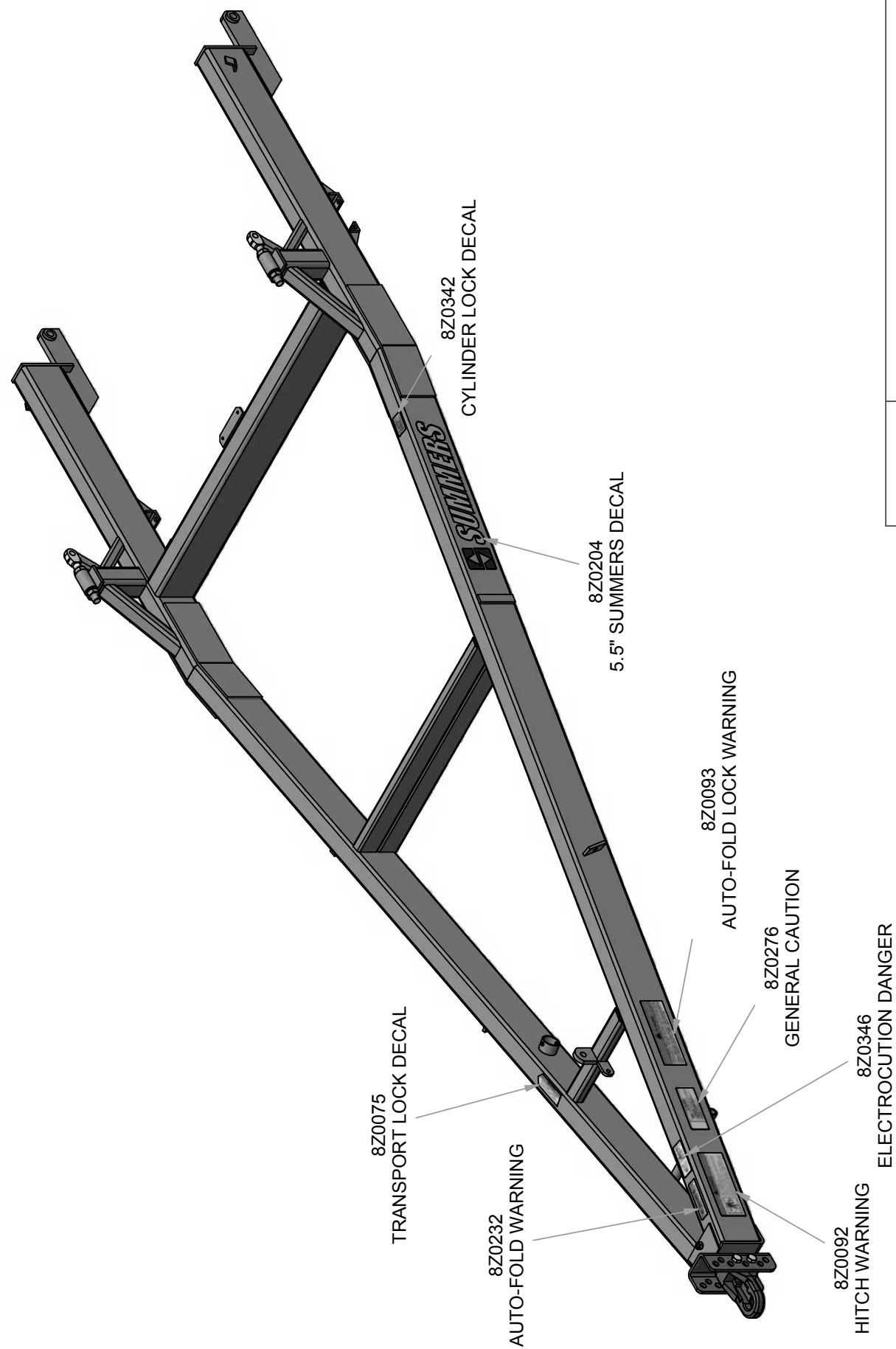
AVOID SHARP EDGES AND PINCH POINTS WHEN ROUTING CABLES.

LEAVE SLACK AT HINGES AND KNUCKLES. SECURE WITH NYLON TIES.

10/3/2016

LIGHT KITS, 8"SQ DRWBR

DECALS



8C2200.iam/SH DECALS

12/17/2013

SECTION 3 - SUPERHARROW 2650

OPERATING INSTRUCTIONS

TRANSPORT TO FIELD POSITION

1. Hitch machine to tractor drawbar using a locking pin and safety chain. Connect hydraulic hoses and wiring. Retract jacks and rotate into storage position
2. Select level area to lower machine into field position.
3. **IMPORTANT:** Remove transport locks. Store locks in storage guide shown in Figure 10.

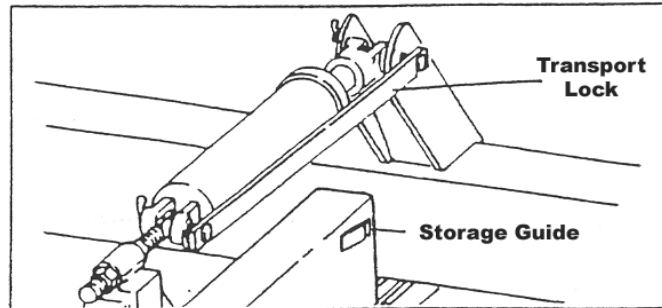
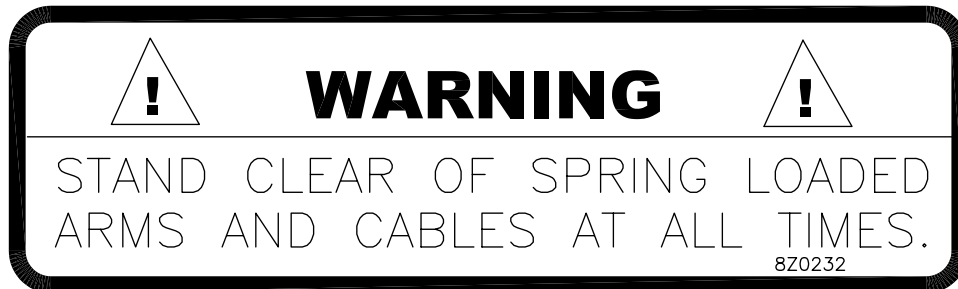


Fig. 10: Transport Lock in Locked Position

4. Back up machine slowly, maneuvering so wings open evenly. If wings do not open evenly, pull ahead and repeat procedure. Cables must not catch on machine while backing up. If cable becomes caught on machine, drive forward until wings are in transport position and carefully unhook cable from obstruction. See WARNING 8Z0232 below and 8Z0276 on page 1-4.



Open wings until auto-fold arms rest on hitch and cables become slack. Fully retract auto-fold lock cylinder (See Warning-Fig. 11).

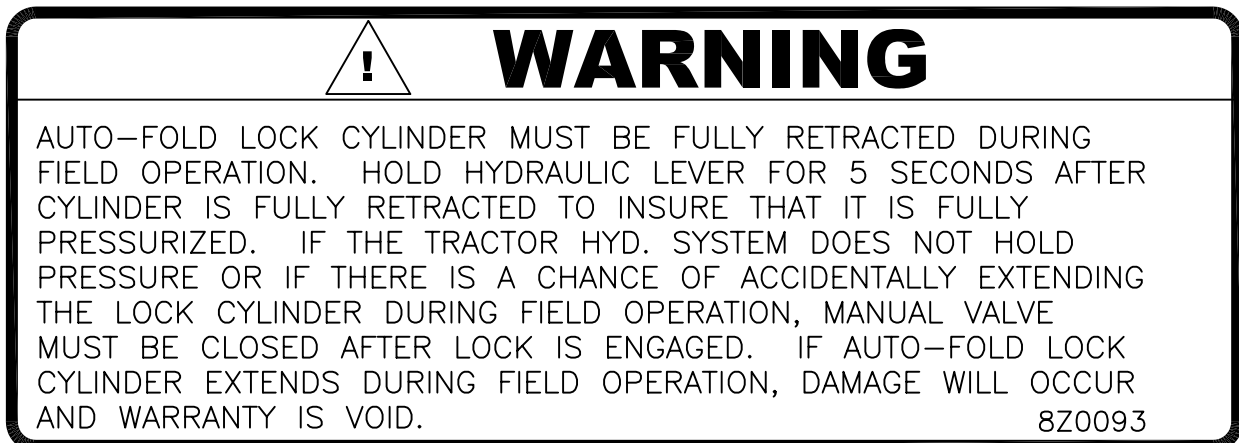


Fig. 11: Warning Decal

5. Extend hydraulic lift cylinders to lower machine into field position. If pull cables become tight before transport wheels are off the ground, back up to provide slack in cables.

SECTION 3 - SUPERHARROW 2650

SECTION ADJUSTMENT

Section down pressure can be increased or decreased hydraulically by adjusting lift cylinders and manually by adjusting the lift cylinder adjustment bolt (8K1720, Page 3-2). Down pressure on wing sections can be increased by replacing the top spacer tubes (8HD0510) with extra pressure spacer tubes (8HD0520). Lower stop bushings can also be replaced with 8HD0520 to adjust individual sections so the machine raises more evenly.



CAUTION: For safety purposes, block equipment while working on it.

Adjust teeth angle for penetration and trash clearance required. Lift arms should run level to insure equal penetration of all teeth. If all lift arms run high in back, the following adjustments can be made to level section:

1. Adjust front bar teeth only in a less aggressive setting using front adjustment bar.
2. Adjust all teeth in a less aggressive setting.
3. Raise entire section with hydraulic depth adjustment or manually (See Height Adjustment Instructions, Page 3-10).

If all lift arms run low in the back, the following adjustments can be made to level section:

1. Adjust front bar teeth only in a more aggressive setting using front adjustment bar.
2. Adjust all teeth in a more aggressive setting.
3. Lower entire section with hydraulic depth adjustment or manually (See Height Adjustment Instructions, Page 3-10).

HYDRAULIC DEPTH ADJUSTMENT (HDA) OPERATION

To set depth, install stroke control collars on 3-1/2" X 8" stroke (HDA) control cylinders located on hitch. Collars of identical thickness must be installed on both cylinders.

Rephasing cylinders are used for hydraulic depth adjustment. Do not operate your Superharrow 2650 with HDA cylinders fully extended. Immediately after fully raising the hydraulic depth adjustment cylinders, quickly lower 1/2". If hydraulic depth adjustment cylinders are left in the fully raised position, cylinders will settle.

If machine has settled unevenly, fully extend HDA cylinders and hold hydraulic lever until the machine levels. Immediately after it levels, quickly lower 1/2".

NOTE: Fully retract hydraulic depth adjustment cylinders before folding machine into transport position.

CABLE PULL BRACKETS

Under severe conditions (heavy machine draft due to deep penetration or high field speed), cable pull brackets may slide on drawbar wing tube, resulting in improper cable adjustment. The recommended solution for this is to relocate cable pull brackets at desired position then weld a stop on drawbar next to cable pull brackets.

SECTION 3 - SUPERHARROW 2650

FIELD TO TRANSPORT POSITION


1. Stop in a level area and back tractor up to provide slack in pull cables.
2. Open manual lock valve on auto-fold lock cylinder. Fully extend auto-fold lock cylinder.
3. **Fully** retract Hydraulic Depth Adjust cylinders.
4. **Fully** retract lift cylinders raising sections.
5. While machine is resting on its transport wheels, drive tractor forward. Wings should fold to transport position. NOTE: Transport wheels must rotate against “toe-in” adjustment cap screws and follow directly behind knuckles. Transport wheel “toe-in” can be adjusted by moving outside 3/4” adjustment set screws (8X0665, Page 3-5). “Toe-in” and proper lubrication of pivot will make it easier to unfold machine into field position. Wing support wheels must not contact in transport position.
6. **IMPORTANT:** Install transport locks.

UNHITCHING MACHINE


1. Park machine on a level area. Block wheels to prevent machine from rolling.
2. Follow steps outlined in **WARNING – NEGATIVE HITCH WEIGHT** on page 1-2.

SUMMERS SUPERHARROW 2650 PERFORMANCE ADJUSTMENTS:

NOTE: These are suggested initial settings, further adjustments may be necessary to match field conditions.



WARNING



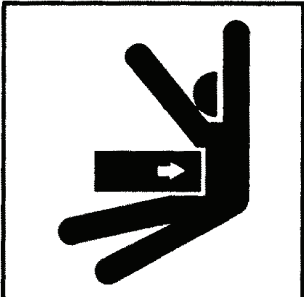

LOWER WING TUBE JACKS AND BE CERTAIN THAT NO UPWARD OR SIDE PRESSURE IS EXERTED ON TOWING UNIT HITCH BEFORE DISCONNECTING.


BEFORE LOWERING MACHINE INTO FIELD POSITION, HITCH MUST BE SECURED WITH A LOCKING HITCH PIN IN THE HITCH CLEVIS OF A LARGE FARM TRACTOR.

INSTALL TRANSPORT LOCKS BEFORE TOWING MACHINE.

COIL MACHINES ONLY: DO NOT RAISE MACHINE INTO TRANSPORT POSITION IF MUD HAS BUILT UP ON COILS. SERIOUS DAMAGE WILL OCCUR IF MUD IS NOT REMOVED FROM COILS BEFORE RAISING MACHINE FOR TRANSPORT.

8Z0092





DANGER

FRAME PINCH POINT HAZARD
KEEP AWAY

To prevent serious injury or death from crushing:

- Stay away from frame hinge area when folding wings.
- Keep others away.
- Do not fold wings when bystanders are present.

8Z0087

SECTION 3 - SUPERHARROW 2650

Spring Seedbed Preparation

Suggested settings and adjustments for Spring Seedbed Preparation with the Summers Superharrow 2650.

IMPORTANT: Sections are designed to run level insuring that all teeth work at the same depth. If rear of section is running higher than the front, the section is incorrectly adjusted and component failure may occur. Summers products are NOT warranted for damage caused by improper adjustment

- a. Extend hydraulic depth adjustment cylinders 1/2 way. Begin with tine angle adjustment in a middle setting. Adjust tine angle so that only the rear two bars run full of residue. This will allow maximum tine penetration. If section plugging does not occur, tine angle can be adjusted more vertical. Speed will also affect the amount of residue held by the section: for proper tooth action run between 5-1/2 MPH and 7-1/2 MPH.
- b. If rear of sections run higher than the front, adjust front bar teeth in a less vertical setting using front adjustment bar.
- c. Section down pressure can be increased or decreased hydraulically by positioning lift cylinders and manually by equally positioning lift cylinder adjustment bolts. Lift cylinder adjustment bolts must extend at least 3/8" ahead of front 1-1/4" NC nut.
Down pressure on wing sections can be increased by replacing top spacer tubes (8HD0510) with extra pressure spacer tubes (8HD0520).
Raising the front of the hitch by adjusting hitch piece (8D0720) will also provide more section down pressure.
- d. After establishing desired down pressure, lower drawbar with hydraulic depth adjustment until rear of sections begin to lift higher than front of section. Raise drawbar 1/2". If required, section height can also be adjusted manually as explained on page 3-10.
With maximum down pressure and these adjustments, tines are working as deep as field conditions will allow.

Residue Management

Suggested settings and adjustments for Residue Management with the Summers Superharrow 2650.

NOTE: Hot, dry weather is the optimum condition for spreading and breaking up crop residue.

- a. Extend hydraulic depth adjustment cylinders 1/2 way. Begin with tine angle adjustment in least vertical position. Adjust front bar teeth in a one hole more vertical setting using front adjustment bar. These settings will allow the most soil action without plugging section. If section plugging does not occur, tine angle can be adjusted more vertical.
- b. SPEED is important. The SH 2650 should be pulled at 7 MPH to 9 MPH for proper tooth action in high residue conditions.
- c. Section down pressure can be increased or decreased hydraulically by positioning the lift cylinders and manually by equally positioning lift cylinder adjustment bolts. Lift cylinder adjustment bolts must extend at least 3/8" ahead of front 1-1/4" NC nut.
Down pressure on wing sections can be increased by replacing top spacer tubes (8HD0510) with extra pressure spacer tubes (8HD0520).
Raising the front of the hitch by adjusting hitch piece (8D0720) will also provide more section down pressure.
- d. After establishing desired down pressure, lower drawbar with hydraulic depth adjustment until rear of sections begin to lift higher than front of section. Raise drawbar 1/2". If required, section height can be adjusted manually as explained on page 3-10.
With maximum down pressure and these adjustments, tines are working as aggressively as field conditions will allow.

SECTION 3 - SUPERHARROW 2650

MAINTENANCE AND SERVICE

Daily Maintenance:

Check all wheel and frame bolts for tightness.

Daily Greasing:

Two zerks on each knuckle.

One zerk on each transport axle pivot.

Two zerks on each cable auto-fold arm.

Two zerks on hitch hydraulic depth adjustment – pillow block casting (8R6065, page 3-3).

Weekly Maintenance:

Inspect wheel bearings for tightness.

Seasonal Maintenance:

Disassemble, clean and repack wheel bearings.

Lubricate all zerks with a good grade of general purpose grease.

NOTE: To insure years of trouble free use of your SH 2650, periodically inspect entire machine for loose or worn parts and fasteners. Tighten or replace as required.

Over Winter:

Coat extended hydraulic cylinder rods with grease to prevent corrosion. Remove this grease before retracting cylinders.

TIRE INFLATION:

Hitch Tires: 11L X 15 LRF – 80 PSI
 Opt. 31 X 13.5 – 35PSI
 Wing Support Tires: 11L X 15 LRF – 38 PSI
 Transport Tires: LT RADIAL x 16 – 80PSI

IMPORTANT:

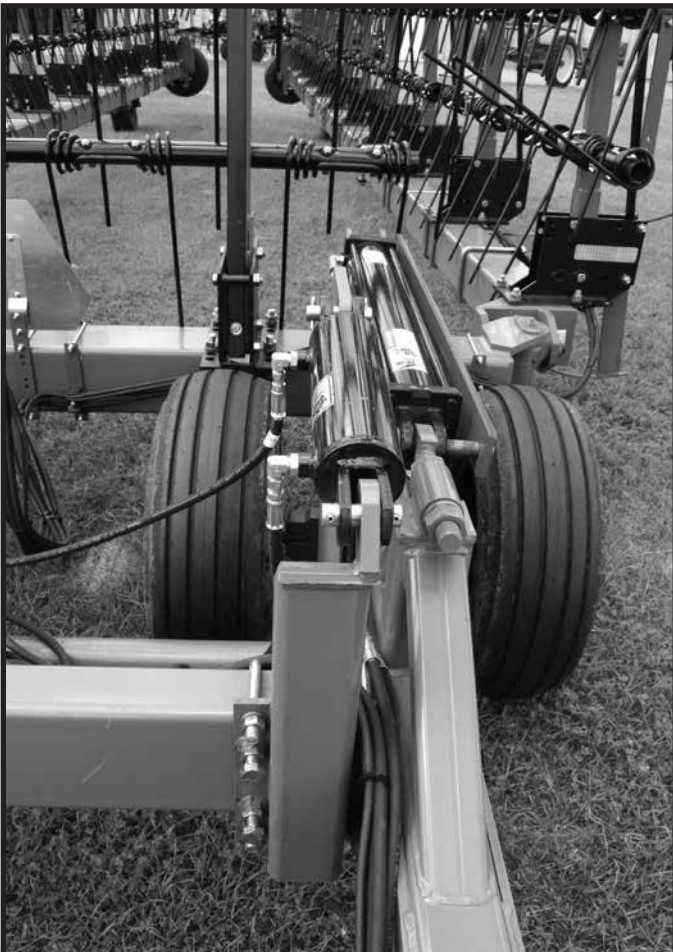
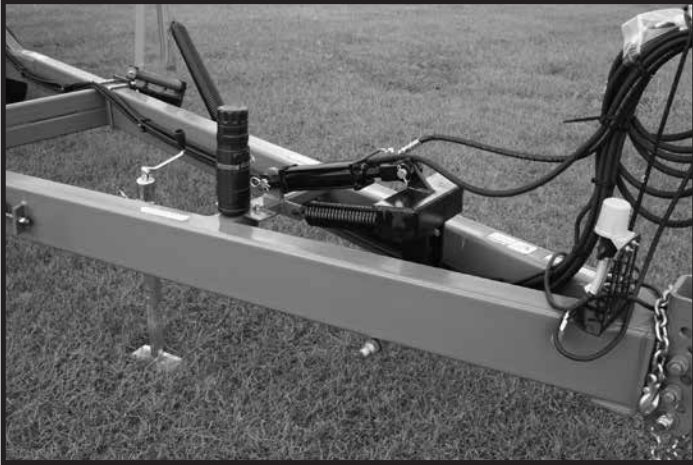
Implement tires are rated at 20 MPH maximum. Exceeding this speed voids warranty.

| | |
|---|--|
|  | <div style="text-align: center; border-bottom: 1px solid black; margin-bottom: 5px;">  WARNING </div> <p>HIGH-PRESSURE FLUID HAZARD To prevent serious injury or death:</p> <ul style="list-style-type: none"> •Relieve pressure on system before repairing or adjusting or disconnecting. •Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands. •Keep all components in good repair. <p style="text-align: right; font-size: 10px;">SW700</p> |
|---|--|

TROUBLESHOOTING

| PROBLEM | CAUSE | CORRECTION |
|--|---|--|
| 1. Wings trail too far apart in transport. | Insufficient transport wheel toe-in. | Adjust transport wheel toe-in. |
| 2. Wings are not pulling evenly in field position. | Cable pull brackets are improperly located. | Relocate cable pull brackets so wings slightly lead center. |
| 3. Auto-Fold arms do not rotate into transport position. | Improper pivot bracket adjustment. | Adjust pivot bracket with bolts to provide clearance between the cable fold arm bottom guide and hitch tube. (3-7) |
| 4. Lift arms do not run level. | Improper section adjustment. | See Section Adjustment, pages 3-10 and 3-20. |

SECTION 3 - SUPERHARROW 2650



SECTION 4 - 8-BAR SUPERHARROW



Fig. 1: Field Position



Fig. 2: Transport Position

The machine should be placed in an area that allows ample room for assembly in field position (See Fig. 1).

CAUTION: For safety purposes, block equipment while working on it.

Refer to illustrations and parts listing and follow these steps when assembling.

HITCH – Axles, Wheels and Jack

Attach hitch hydraulic depth adjustment and axle assemblies as shown on pages 4-2 through 4-4.

Mount hitch wheels and tires and install hitch jack.

DRAWBAR: Center, Hydraulic Lift Cylinders, Wings, Axles and Wheels.

Attach center drawbar to hitch using two 1-1/4" X 6" pins and secure with flat washers and 5/16" X 2-1/2" cotter pins. Mount main lift cylinders and transport locks. Route hoses as shown on page 4-6. Fully charge main lift cylinders with hydraulic fluid by extending and retracting until all air is purged from system.

Attach wing drawbars to knuckles using 1-1/2" X 11" pins. Secure with 1/2" X 2-1/2" bolt, washer and lock nut. Install 1-1/2" jam nut, center punch or spot weld to secure. Attach jack mounting swivels on the top of wing near knuckle in field position. Secure with 7/8" u-bolt, lockwashers and nuts.

Mount wing hydraulic depth adjustment assemblies as shown on page 4-3. Mount wing wheels and tires.

HYDRAULIC SYSTEMS

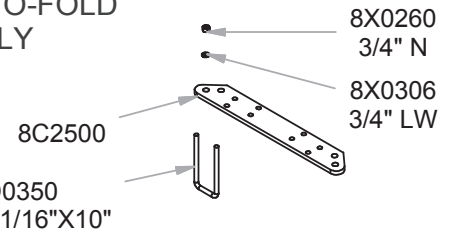
Mount Auto-Fold lock, cylinder and hoses as shown on page 4-6.

NOTE: The tractor hydraulic control valve operating Auto-Fold lock cylinder must hold pressure. If Auto-Fold lock cylinder extends during field operation, damage will occur.

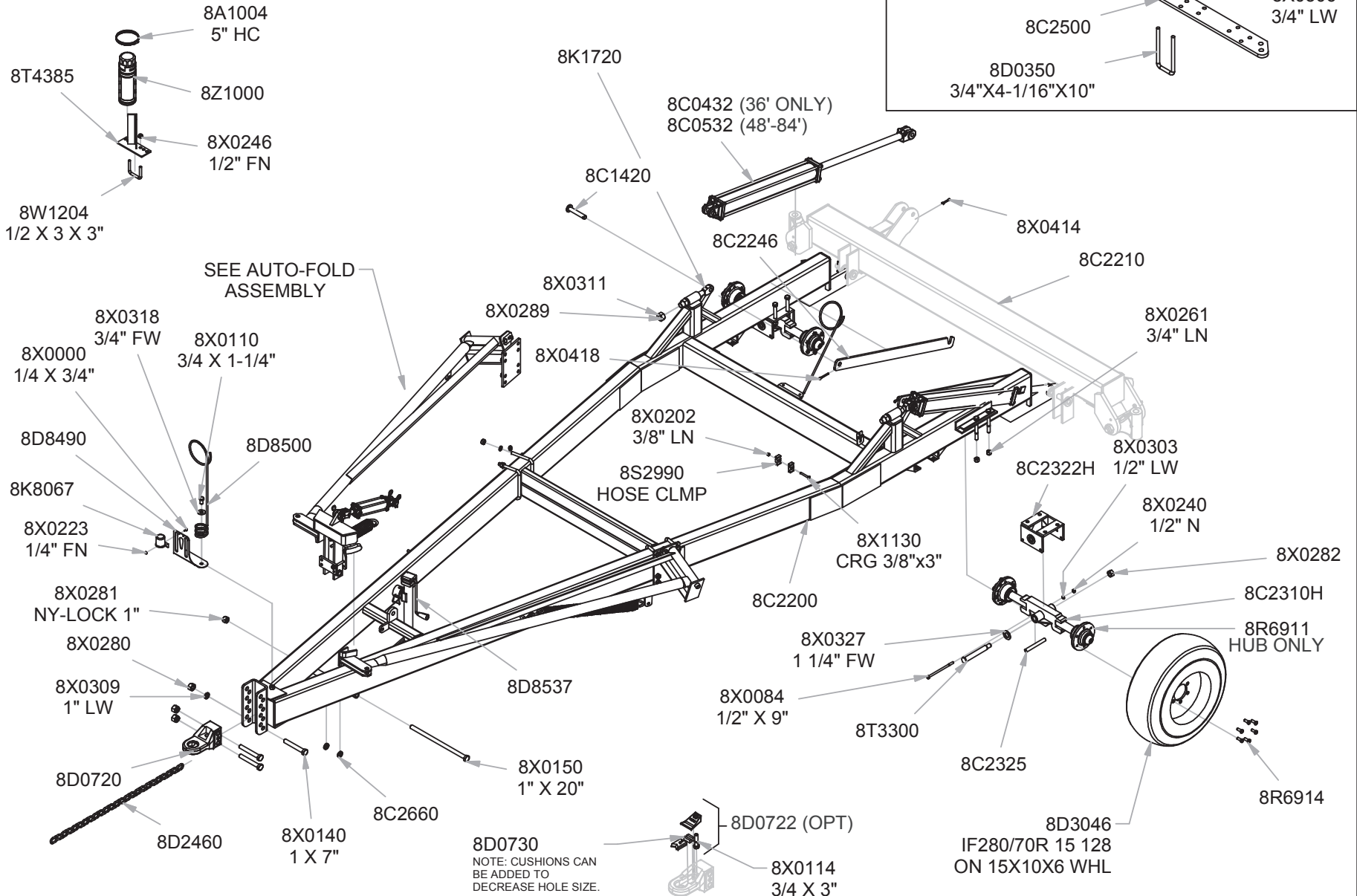
Mount Hydraulic Depth Adjustment cylinders and route hoses as shown on pages 4-8 and 4-12. Allow enough hose at hinge points to avoid pinching or stretching hose. Clamps (8W1398) are provided to secure hydraulic hoses to drawbar. Attach hydraulic hose holder to rear hitch cross tube with 3/4" X 1-1/4" hex head cap screw and flat washers provided. Route hoses through loop to prevent ground contact in transport position. Bend loop closed to secure hoses.

22' MACHINE HITCH

NON AUTO-FOLD
ONLY



4-2

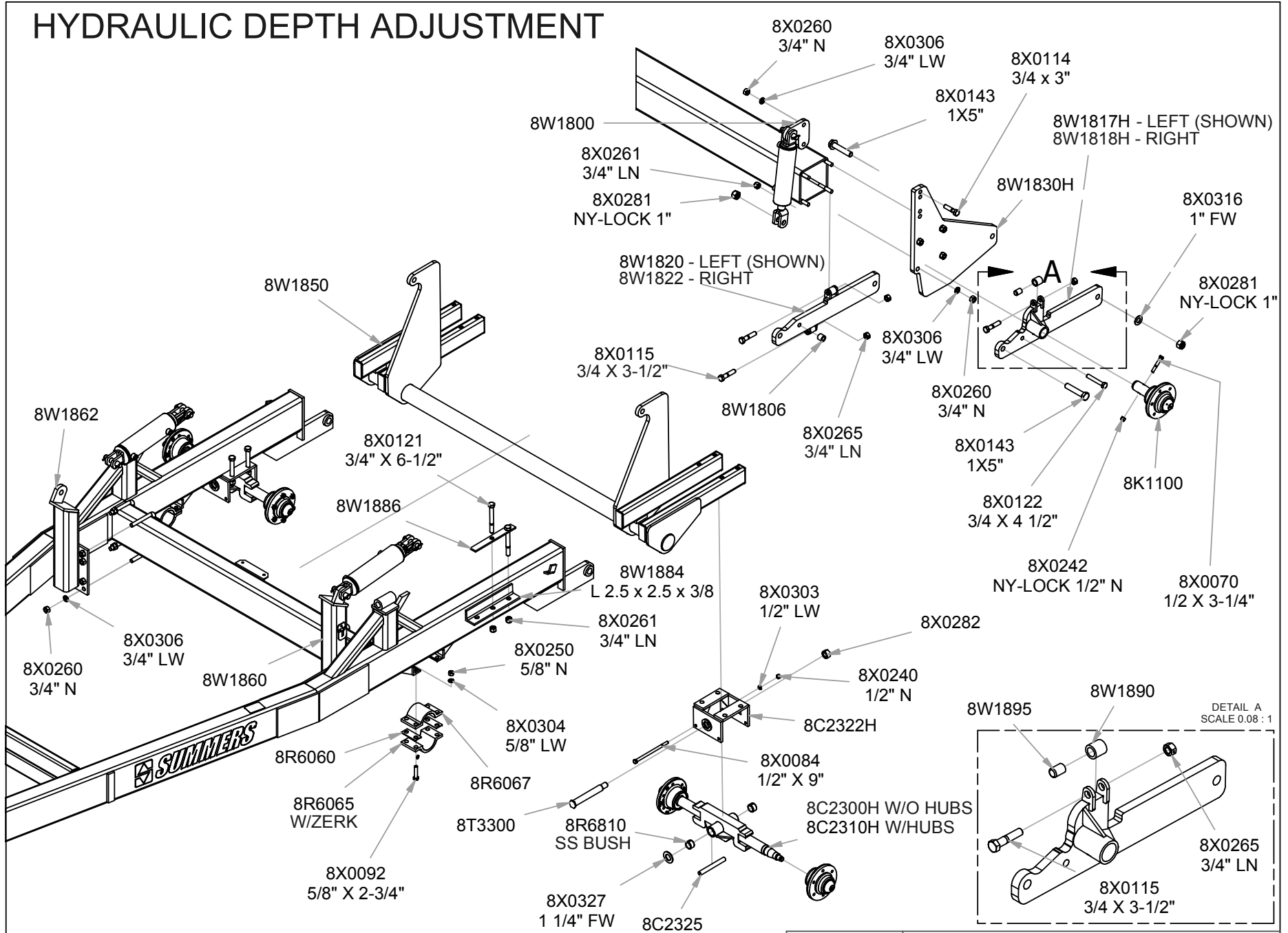


2/14/2017

9HD0880.iam/HITCH

HYDRAULIC DEPTH ADJUSTMENT

4-3



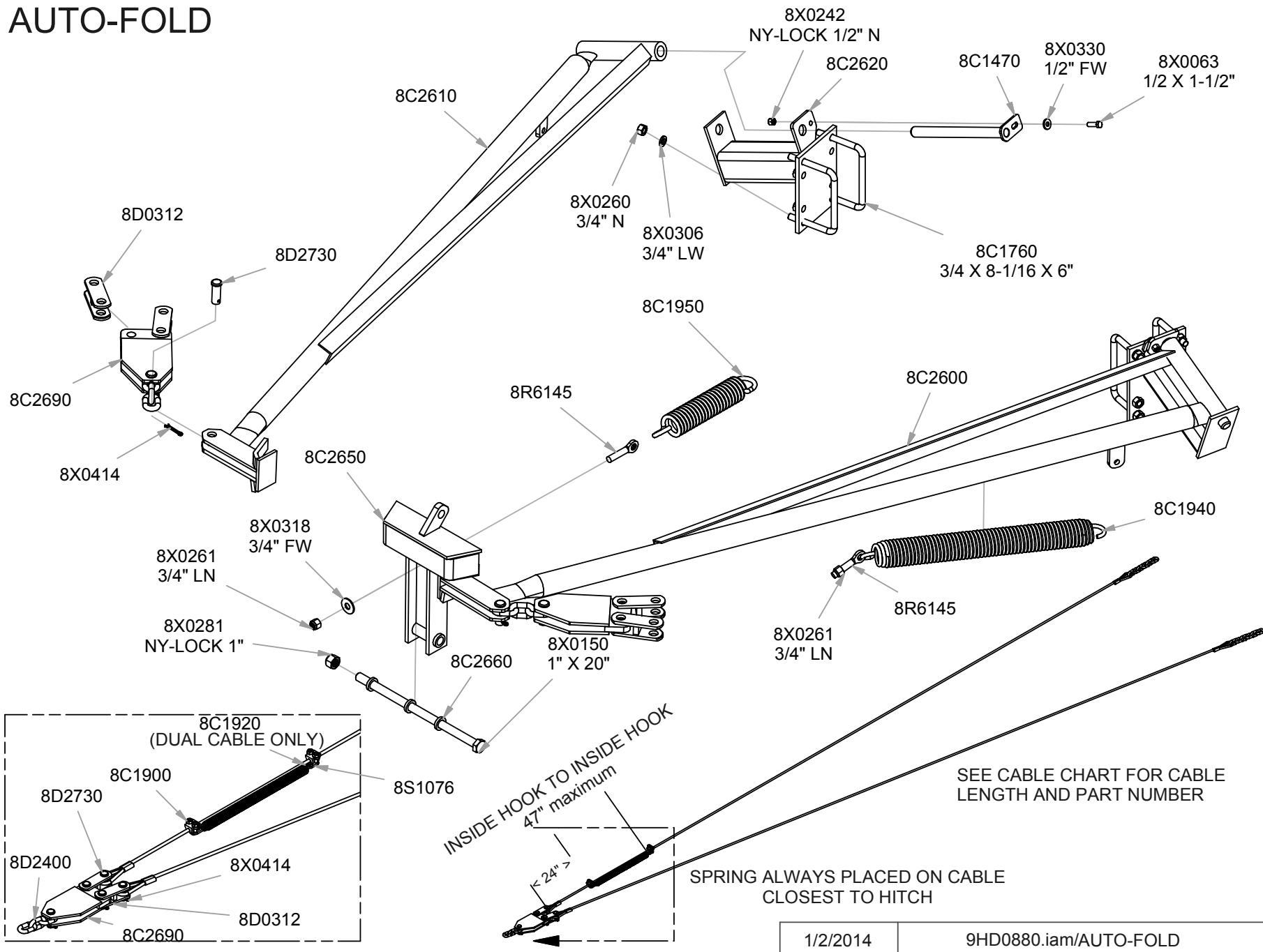
SECTION 4 - 8-BAR SUPERHARROW

1/13/2014

9HD0880.iam/HYD DEPTH CONTROL

DETAIL A
SCALE 0.08 : 1

AUTO-FOLD



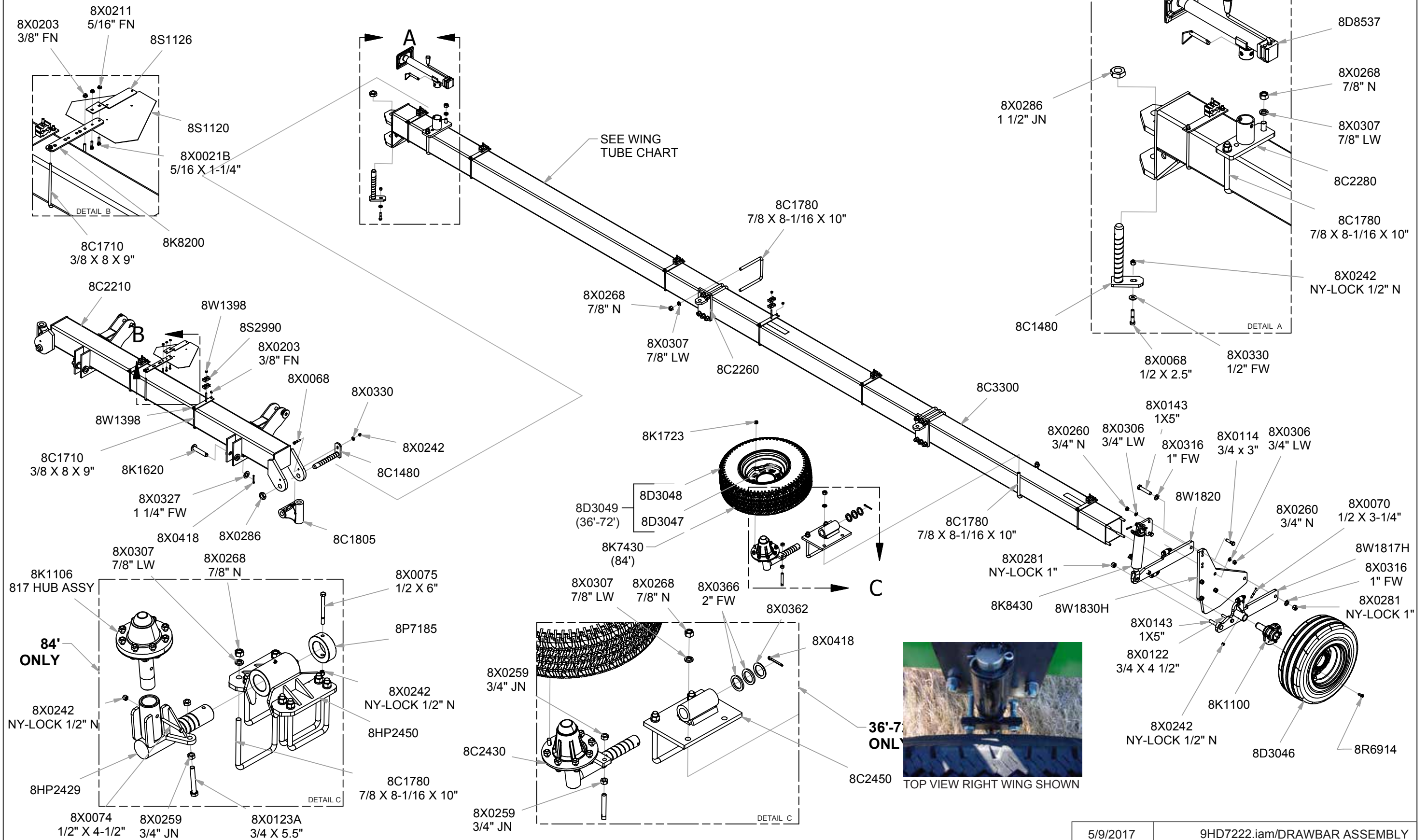
4-4

1/2/2014

9HD0880.iam/AUTO-FOLD

SECTION 4 - 8-BAR SUPERHARROW

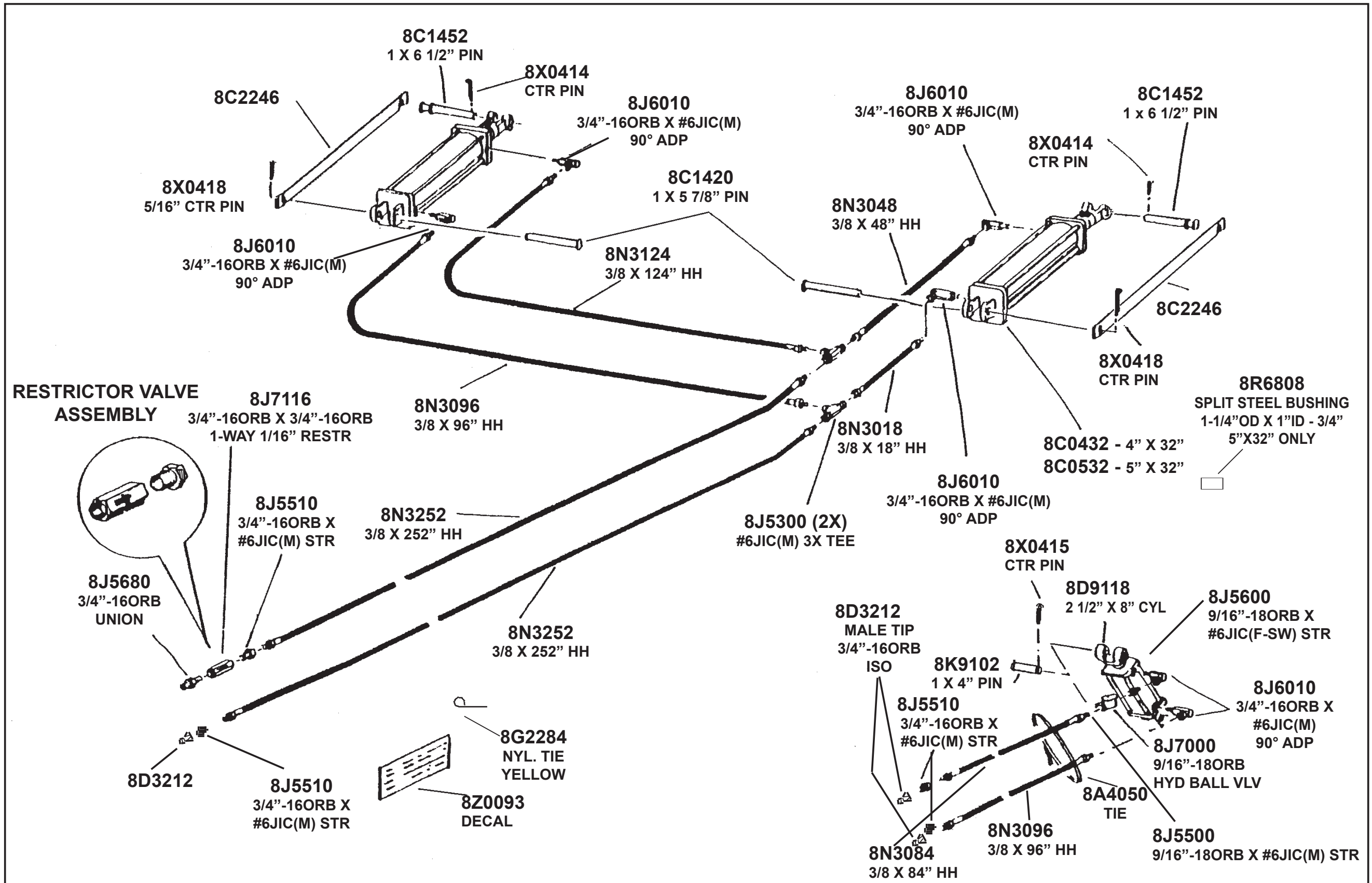
DRAWBAR ASSEMBLY



5/9/2017

9HD7222.iam/DRAWBAR ASSEMBLY

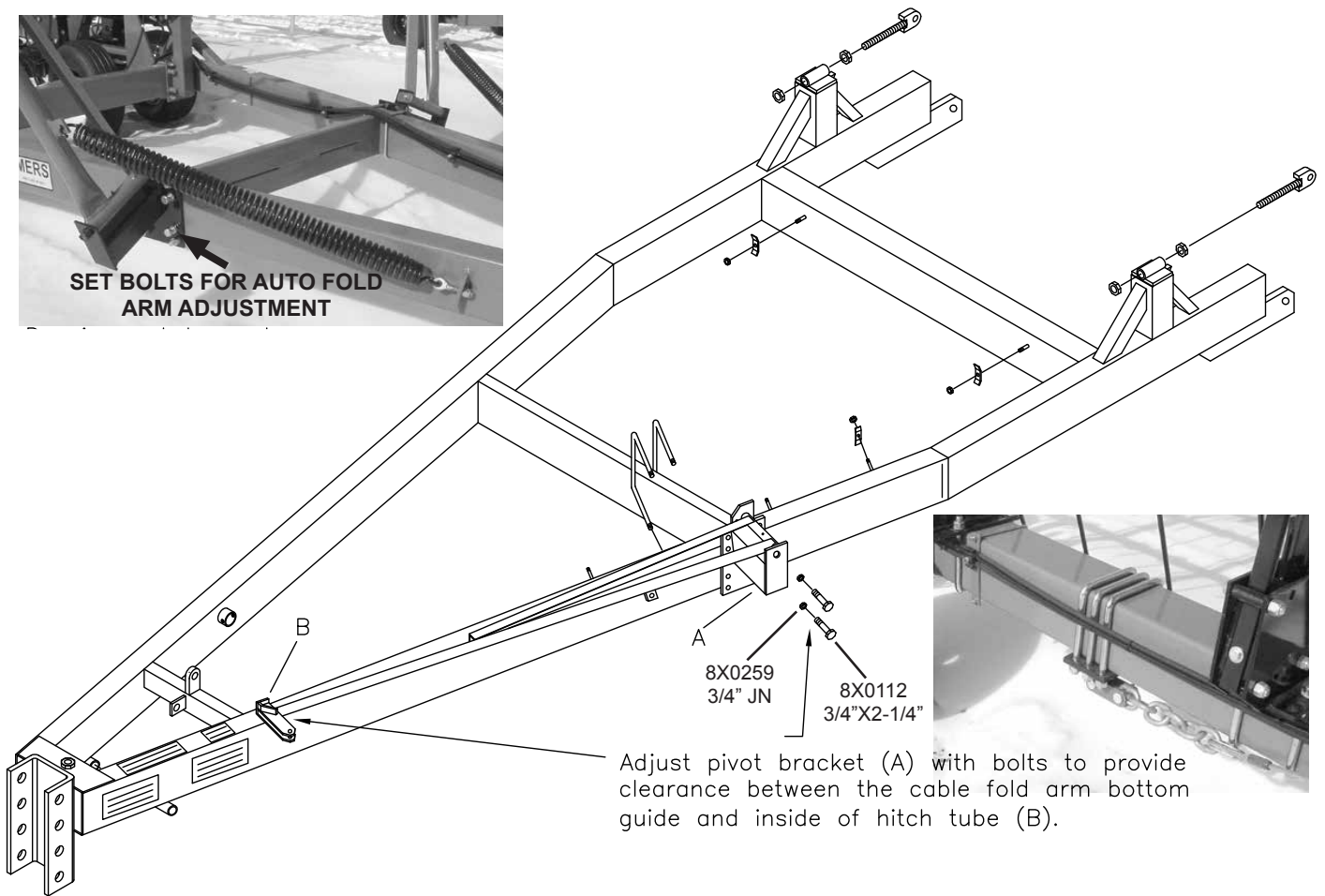
SECTION 4 - 8-BAR SUPERHARROW



HYDRAULIC SYSTEM – 22 FT. HITCH

3/13/14

SECTION 4 - 8-BAR SUPERHARROW



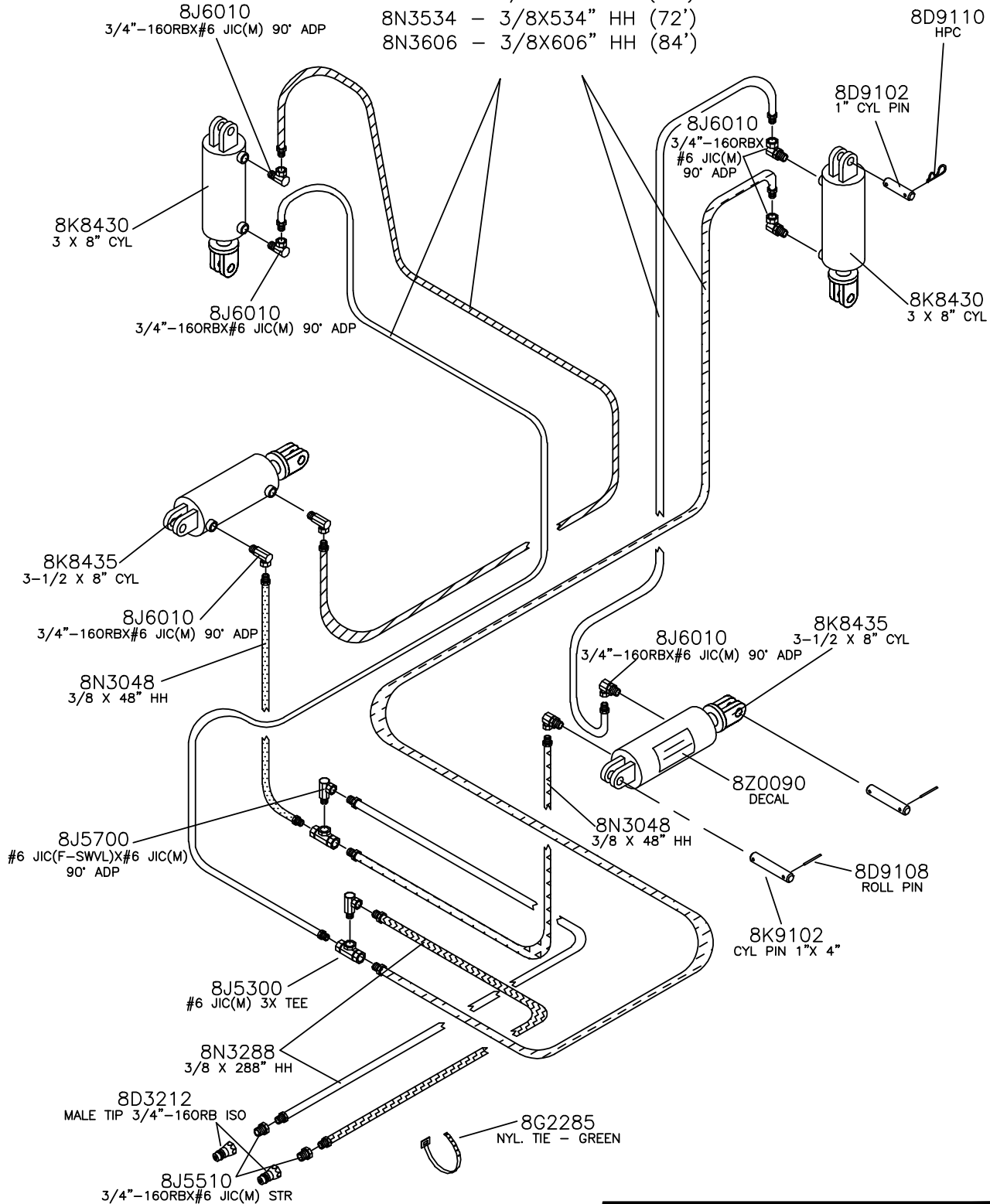
22' HITCH — 8" SQUARE DRAWBAR Specification Chart

| Machine Size | Cable Length | PN-Cable | PN-Wing (Hngd Wing - Left Part 1) | PN-Hinged Wing - Right Part 1 | PN-Hinged Wing - End | PN-Lift Cylinder |
|--------------------------|--------------|----------|---|-------------------------------------|-------------------------|---------------------|
| 8 BAR SUPERHARROW | | | | | | |
| 36' (Solid Wing) | 246" | 8D1860 | 8HD6620 | | | 8C0432 |
| 48' (Solid Wing) | 281" | 8D1880 | 8HD6640 | | | 8C0532 |
| 60' (Solid Wing) | 324" | 8D1900 | 8HD6660 | | | 8C0532 |
| 72' (Solid Wing) Inside | 262" | 8D1870 | 8C3300 | | | 8C0532 |
| Outside | 370" | 8D1920 | | | | |
| 84' (Solid Wing) Inside | 262" | 8D1870 | 8HD6680 | | | 8C0532 |
| Outside | 383" | 8D1930 | | | | |

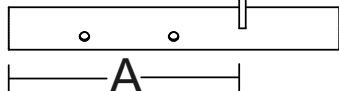
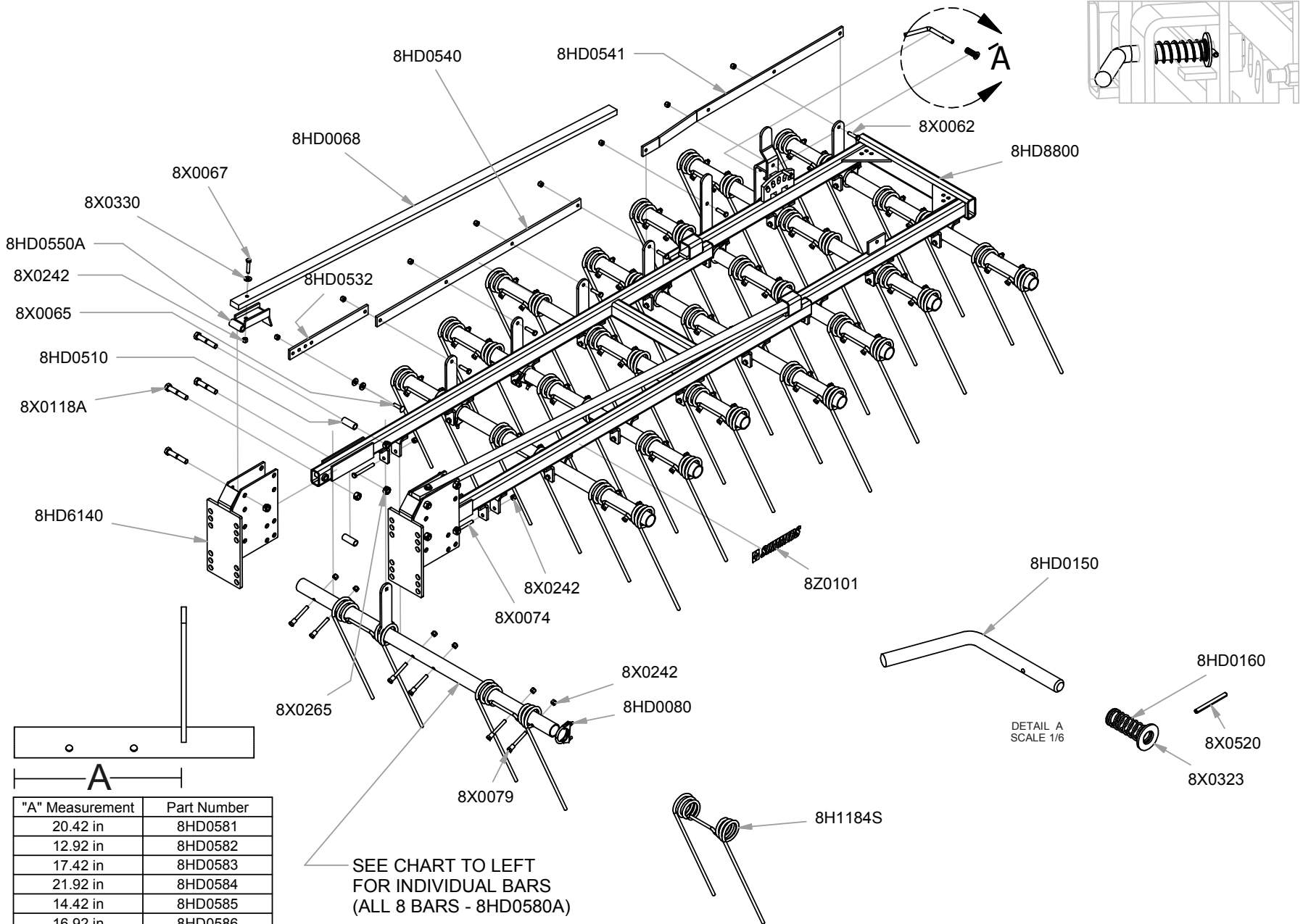
SECTION 4 - 8-BAR SUPERHARROW

HYDRAULIC DEPTH ADJUSTMENT

- 8N3330 - 3/8X330" HH (36')
- 8N3390 - 3/8X390" HH (48')
- 8N3462 - 3/8X462" HH (60')
- 8N3534 - 3/8X534" HH (72')
- 8N3606 - 3/8X606" HH (84')



4-9

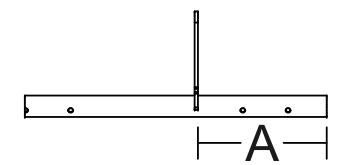
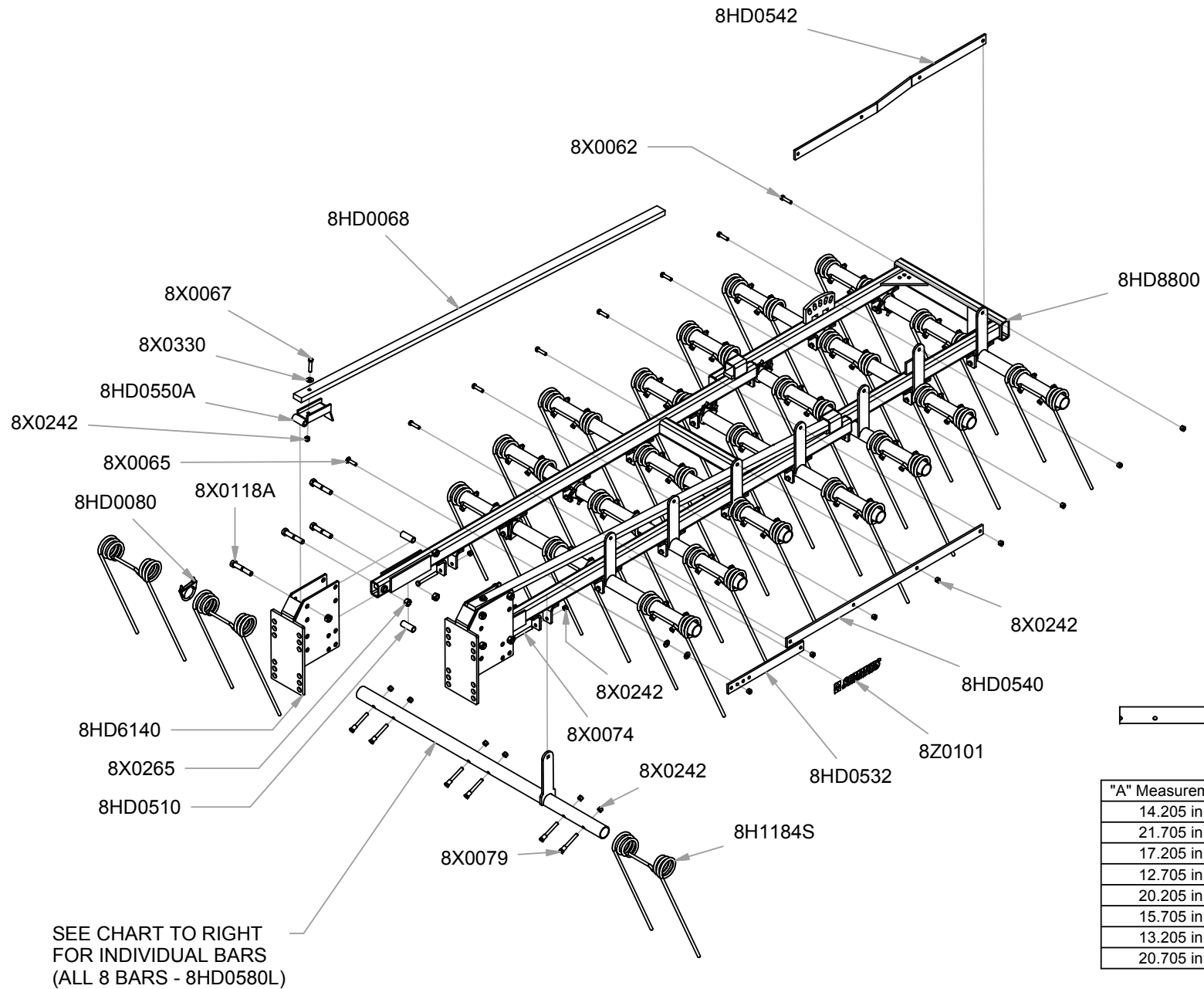


| "A" Measurement | Part Number |
|-----------------|-------------|
| 20.42 in | 8HD0581 |
| 12.92 in | 8HD0582 |
| 17.42 in | 8HD0583 |
| 21.92 in | 8HD0584 |
| 14.42 in | 8HD0585 |
| 16.92 in | 8HD0586 |
| 18.456 in | 8HD0587 |
| 13.92 in | 8HD0588 |

SEE CHART TO LEFT FOR INDIVIDUAL BARS (ALL 8 BARS - 8HD0580A)

DETAIL A SCALE 1/6

4-10



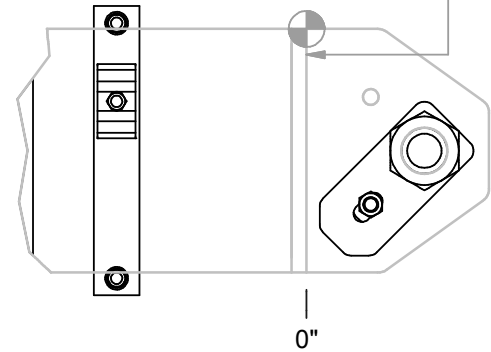
| "A" Measurement | Part Number |
|-----------------|-------------|
| 14.205 in | 8HD0581L |
| 21.705 in | 8HD0582L |
| 17.205 in | 8HD0583L |
| 12.705 in | 8HD0584L |
| 20.205 in | 8HD0585L |
| 15.705 in | 8HD0586L |
| 13.205 in | 8HD0587L |
| 20.705 in | 8HD0588L |

SEE CHART TO RIGHT FOR INDIVIDUAL BARS (ALL 8 BARS - 8HD0580L)

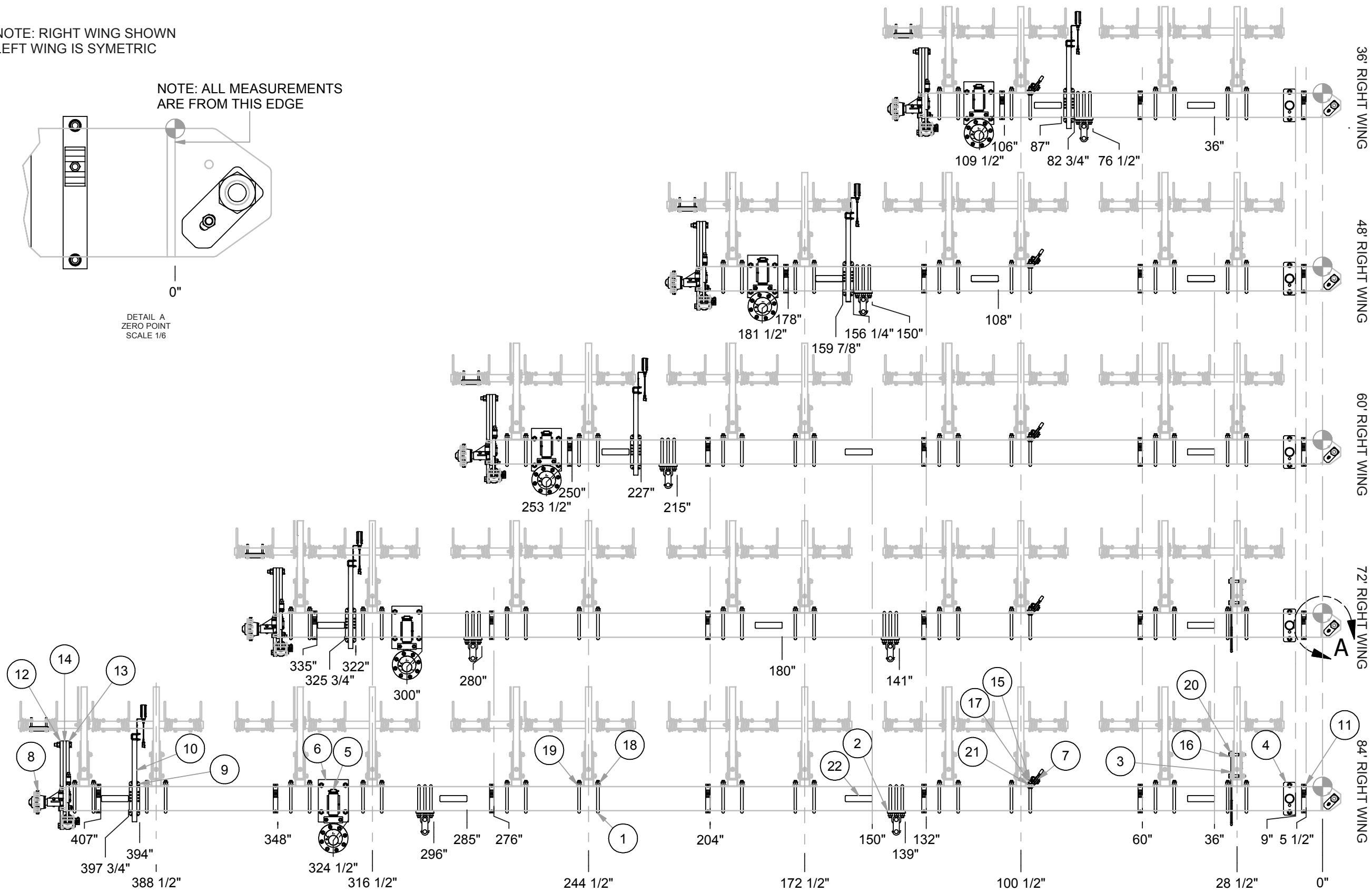
SECTION 4 - 8-BAR SUPERHARROW

NOTE: RIGHT WING SHOWN
LEFT WING IS SYMETRIC

NOTE: ALL MEASUREMENTS
ARE FROM THIS EDGE



DETAIL A
ZERO POINT
SCALE 1/6



| ITEM | PART NUMBE |
|------|------------|
| 1 | 8C1780 |
| 2 | 8C2260 |
| 3 | 8C2270 |
| 4 | 8C2280 |
| 5 | 8C2430 |
| 6 | 8C2450 |
| 7 | 8HD6460 |
| 8 | 8K1100 |
| 9 | 8K8000 |
| 10 | 8K8010 |
| 11 | 8W1398 |
| 12 | 8W1818H |
| 13 | 8W1822 |
| 14 | 8W1830H |
| 15 | 8X0111 |
| 16 | 8X0113 |
| 17 | 8X0261 |
| 18 | 8X0268 |
| 19 | 8X0307 |
| 20 | 8X0317 |
| 21 | 8X0318 |
| 22 | 8Z0800 |

NOTE: NOT ALL
PARTS ON
WING ARE
CALLED OUT

SECTION 4 - 8-BAR SUPERHARROW

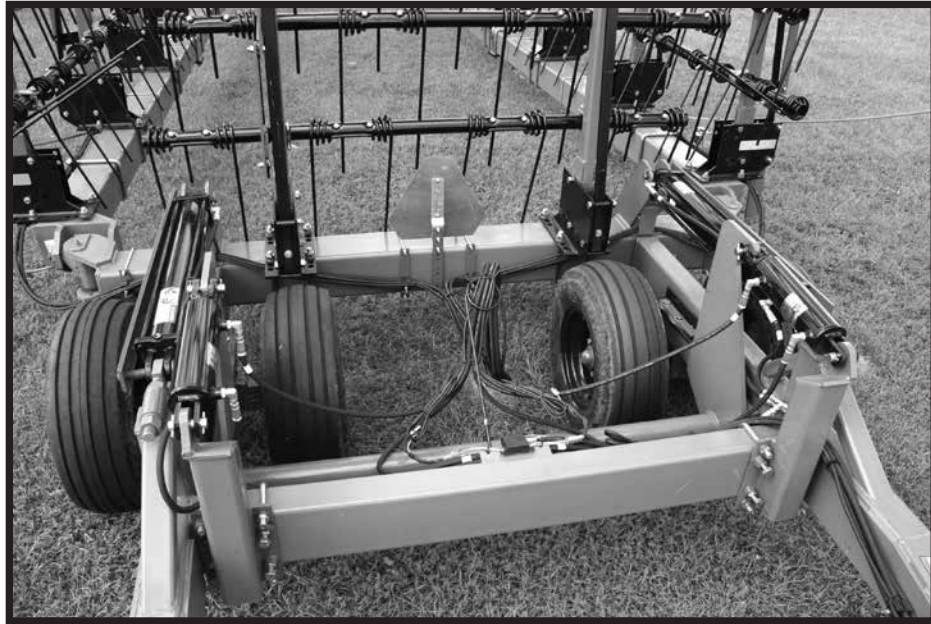


Fig. 3: Rear Hitch View



Fig. 3A: Right Knuckle



Fig. 4

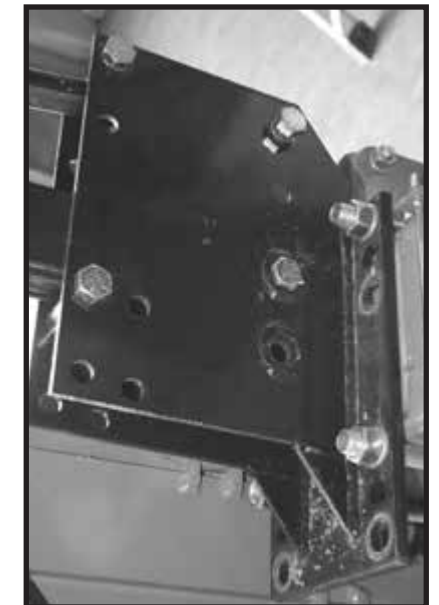


Fig. 5

SECTIONS:

Attach sections to drawbar using 7/8" U-bolts and hardware provided. Position lift arms with following dimensions:

Distance from drawbar center to centerline of first lift arm on either side is 24".

Distance between centerlines of lift arms is 48".

To compensate for various soil conditions and tooth wear, the sections can be mounted in four different positions as shown in the following chart and (Fig. 4 to 7). On center section only, move the Lower Stop Bolt and bushing to the front hole (Fig. 8). This will allow the sections to raise more evenly.

| Height Adjustment | | | |
|---------------------------|--------------|----------------------|--------|
| Suggested Initial Setting | U-Bolt Plate | Lift Arm/Spring Flat | Ref. |
| | Up | Up | Fig. 4 |
| | Down | Up | Fig. 5 |
| | Up | Down | Fig. 6 |
| | Down | Down | Fig. 7 |

- Initial Setting
- Settings for increased penetration and/or to compensate for harrow tooth wear



Fig. 6

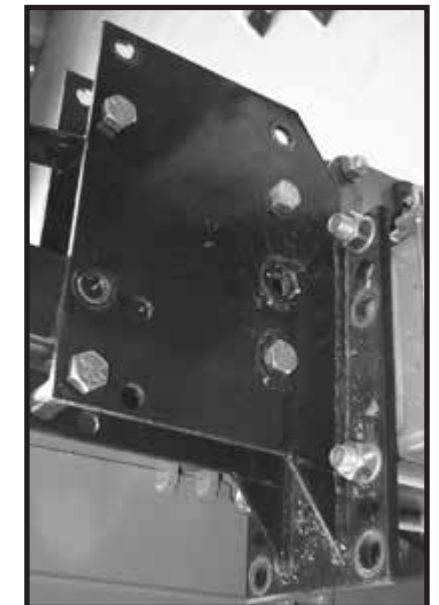
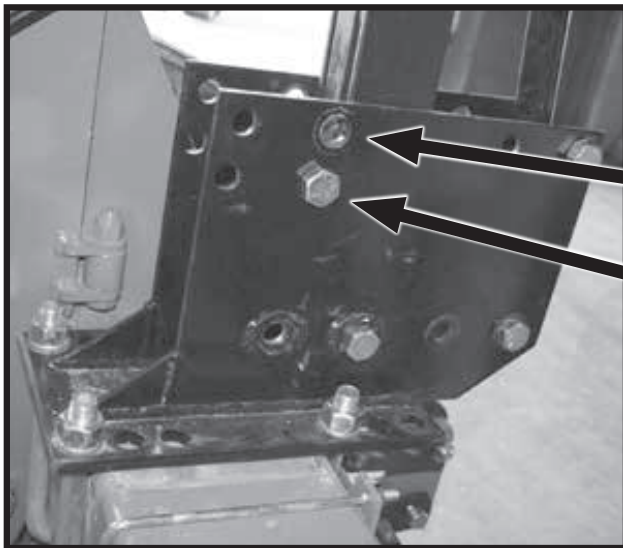


Fig. 7

SECTION 4 - 8-BAR SUPERHARROW



Wing Section Lower Stop Bolt Location

Center Section Stop Bolt Location
(shown installed)

Fig. 8

The two front outside teeth on the center section (closest to knuckles) must be secured with PN 8HD6150 (ANGLE, tooth stop) and 1/2" X 3-3/4" cap screws as shown in Fig. 9. This prevents interference in transport position.

TRANSPORT WHEELS

Locate transport wheel assemblies over end harrow section on 36 through 60 ft. machines with pivot tube in higher position. Install between end section and second section on 72 ft. and over second section on 84 ft., both with pivot tube in lower position. Secure with 7/8" U-bolts and hardware.

Transport axle "toe-in" can be adjusted with the outside stop set bolt (8X0665, Page 4-5). Adjust inside stop bolt 3/8" away from pivot plate when resting on outside stop bolt. This adjustment will allow transport wheel to pivot inward while unfolding. Double lock stop bolts with 3/4" jam nuts provided.

AUTO-CABLE FOLD

Mount Auto-Fold pivot brackets ahead of welded stop. Do not fully tighten U-bolts. Attach left and right cable fold arms to pivot brackets with 1-1/4" X 14" pins and hardware.

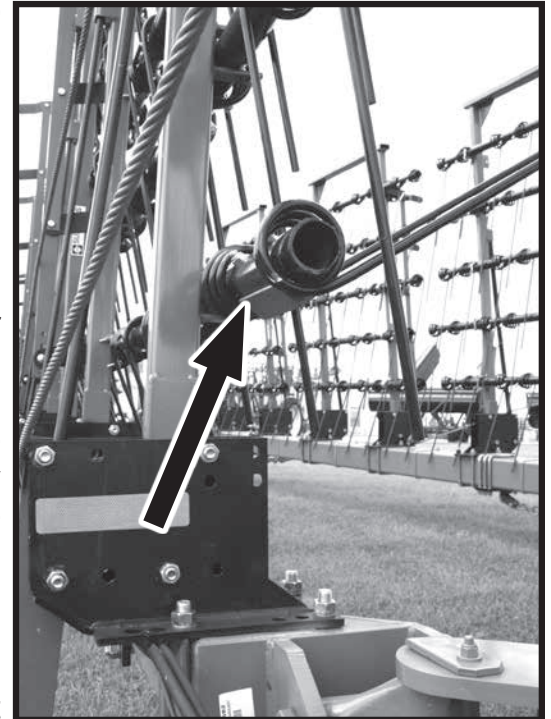


Fig. 9: ANGLE, tooth stop

Adjust pivot brackets to provide clearance between the cable fold arm bottom guide and hitch tube. This adjustment is made with 3/4" X 2-1/4" bolts (8X0112, Page 4-5). This adjustment will allow cable fold arms to pivot freely into transport position. Fully tighten mounting U-bolts after adjustment is made.

Attach tension springs with 3/4" eye bolts and lock nuts. Tighten eye bolts until spring coils begin to separate.

CABLES

Install cable brackets and cable assemblies. Adjust cables so wings slightly lead the center. Tighten attachment U-bolt. Recheck tightness after first hour of field use. Install rear cables as shown on page 4-15.

SECTION 4 - 8-BAR SUPERHARROW

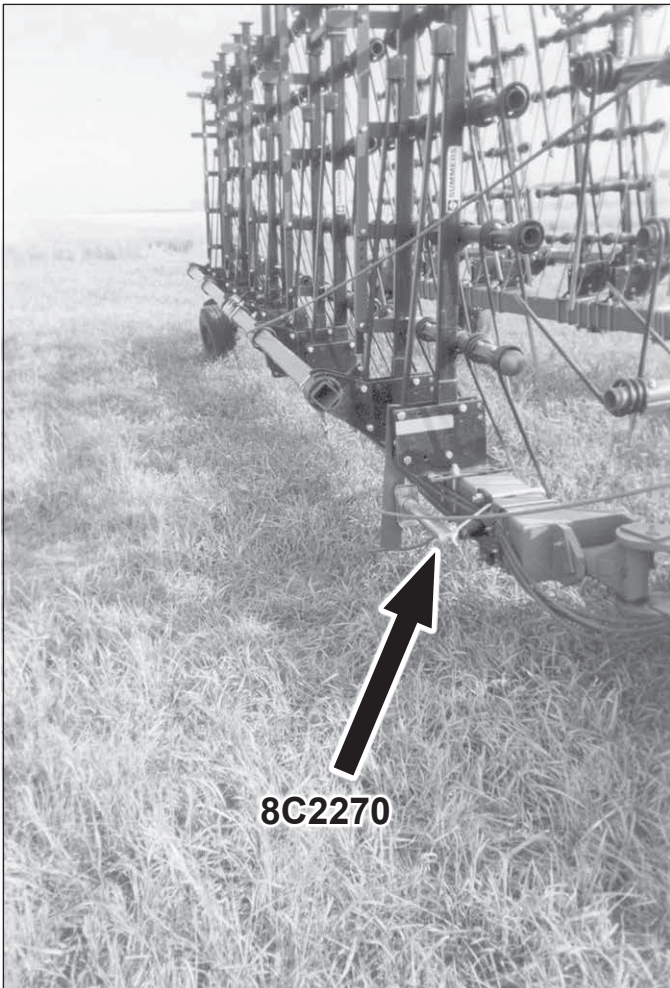
INSTALLATION INSTRUCTIONS 8C2270 - CABLE GUIDE BRACKET 8-BAR SUPERHARROW (72' & 84' ONLY)

Parts required for installation:

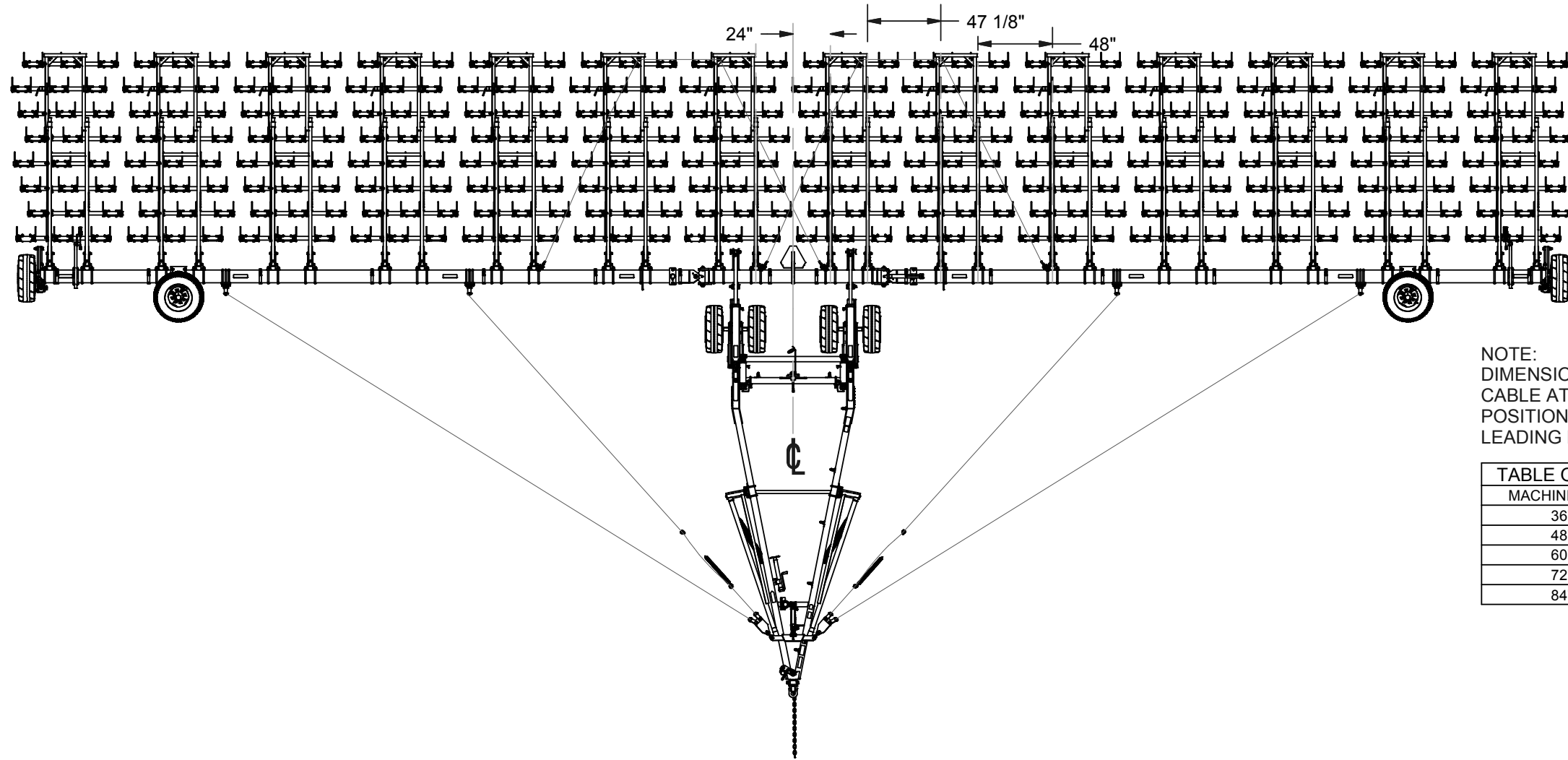
| <u>Qty</u> | <u>PN</u> | <u>Description</u> |
|------------|-----------|---|
| 2 | 8C2270 | Cable Guide Bracket |
| 2* | 8X0113 | Bolt 3/4" x 5" (Use without Hyd. Tine Angle Pivot Bracket) |
| 4* | 8X0123 | Bolt 3/4" x 5-1/2" (Use with Hyd. Tine Angle Pivot Bracket) |
| 4 | 8X0317 | 3/4" Flat Washer |

Refer to the photos below to install the cable guides. The guides must be mounted on the top outside of the first mounting bracket on each wing. The guide prevents the inside pull cable from getting caught beneath the drawbar. Replace existing 3/4" bolts in mounting brackets with longer bolts to allow installation of 8C2270. Secure with existing 3/4" locknuts and flat washers.

CAUTION: Spring flat tension and weight of attached brackets must be supported when replacing 3/4" bolts.



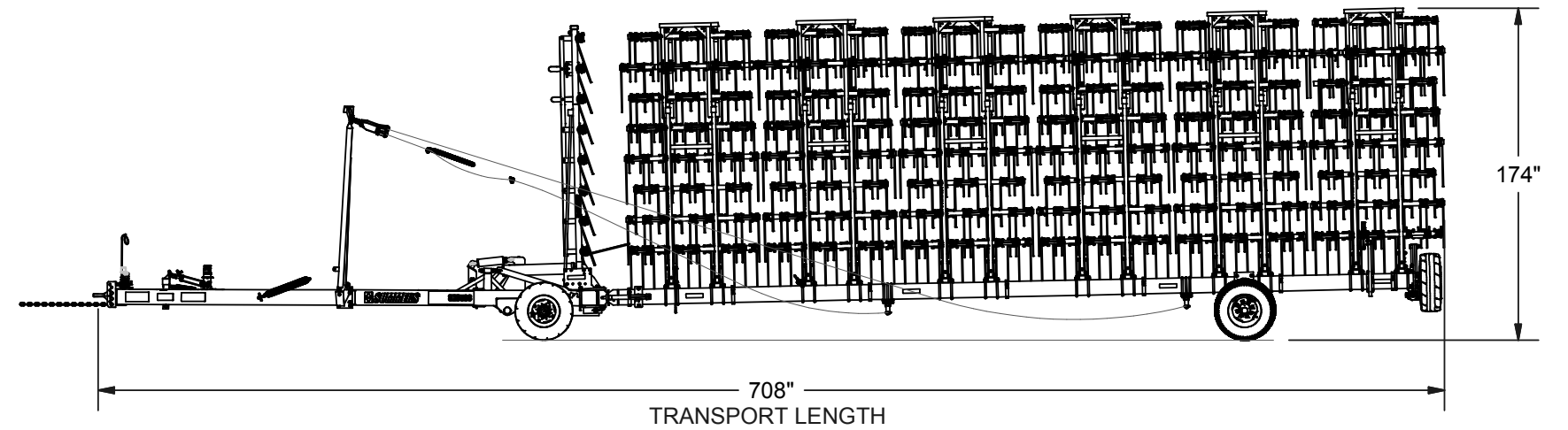
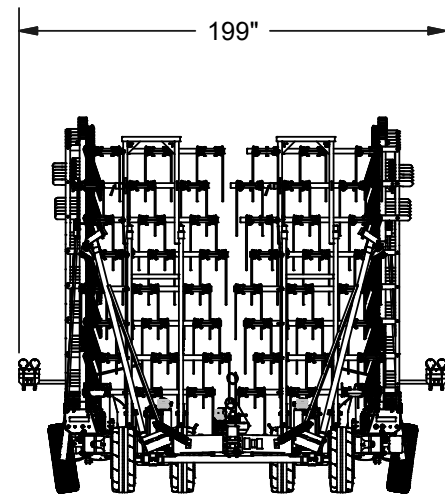
SECTION 4 - 8-BAR SUPERHARROW



NOTE:
DIMENSIONS SHOWN ARE APPROXIMATE.
CABLE ATTACH BRACKETS SHOULD BE
POSITIONED SO WING TUBES ARE
LEADING BY 2°.

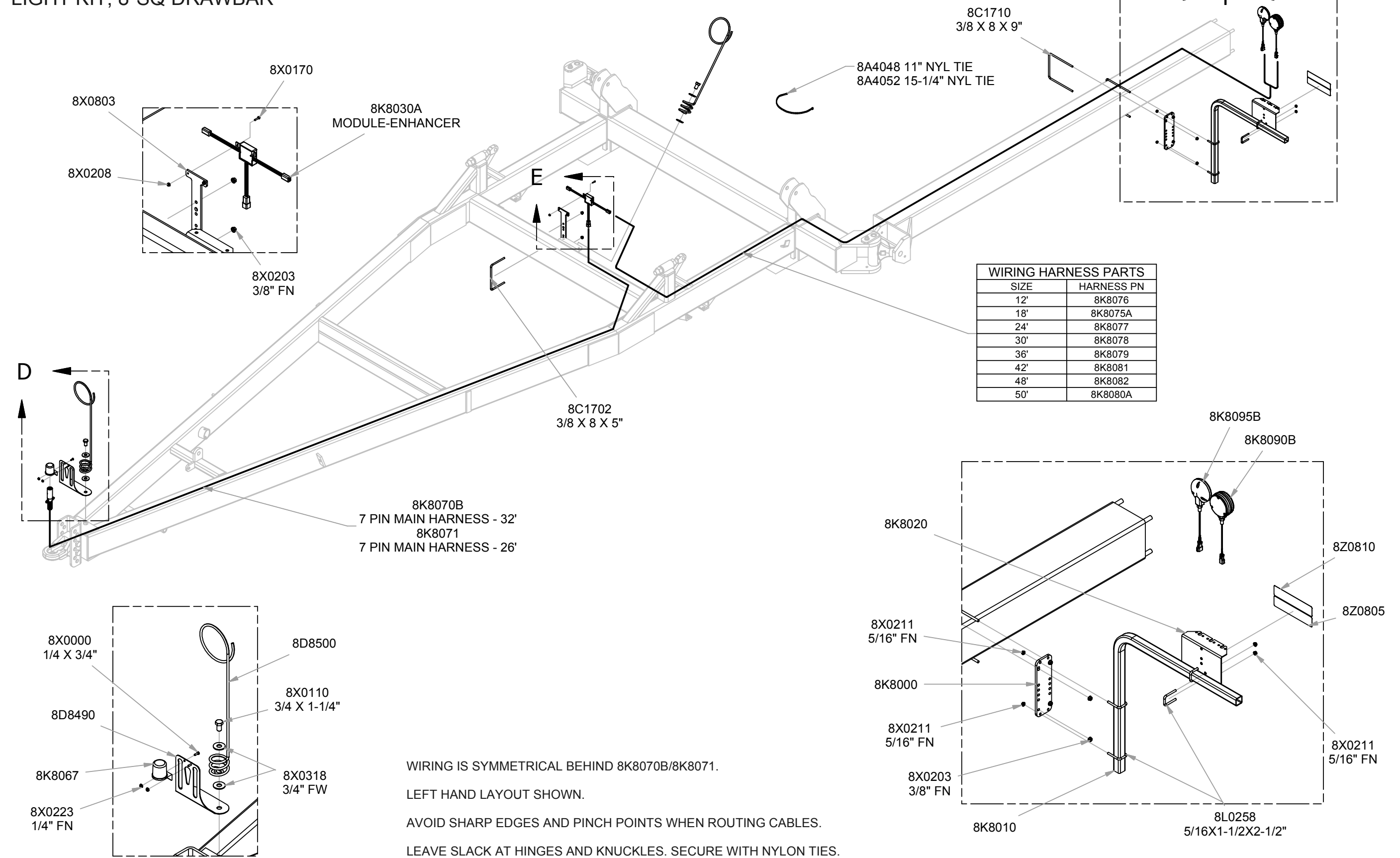
| TABLE OF TRANSPORT LENGTHS | |
|----------------------------|------------------|
| MACHINE SIZE | TRANSPORT LENGTH |
| 36' | 420" |
| 48' | 492" |
| 60' | 564" |
| 72' | 636" |
| 84' | 708" |

84' 8BAR SH+ SHOWN



SECTION 4 - 8-BAR SUPERHARROW

LIGHT KIT, 8"SQ DRAWBAR

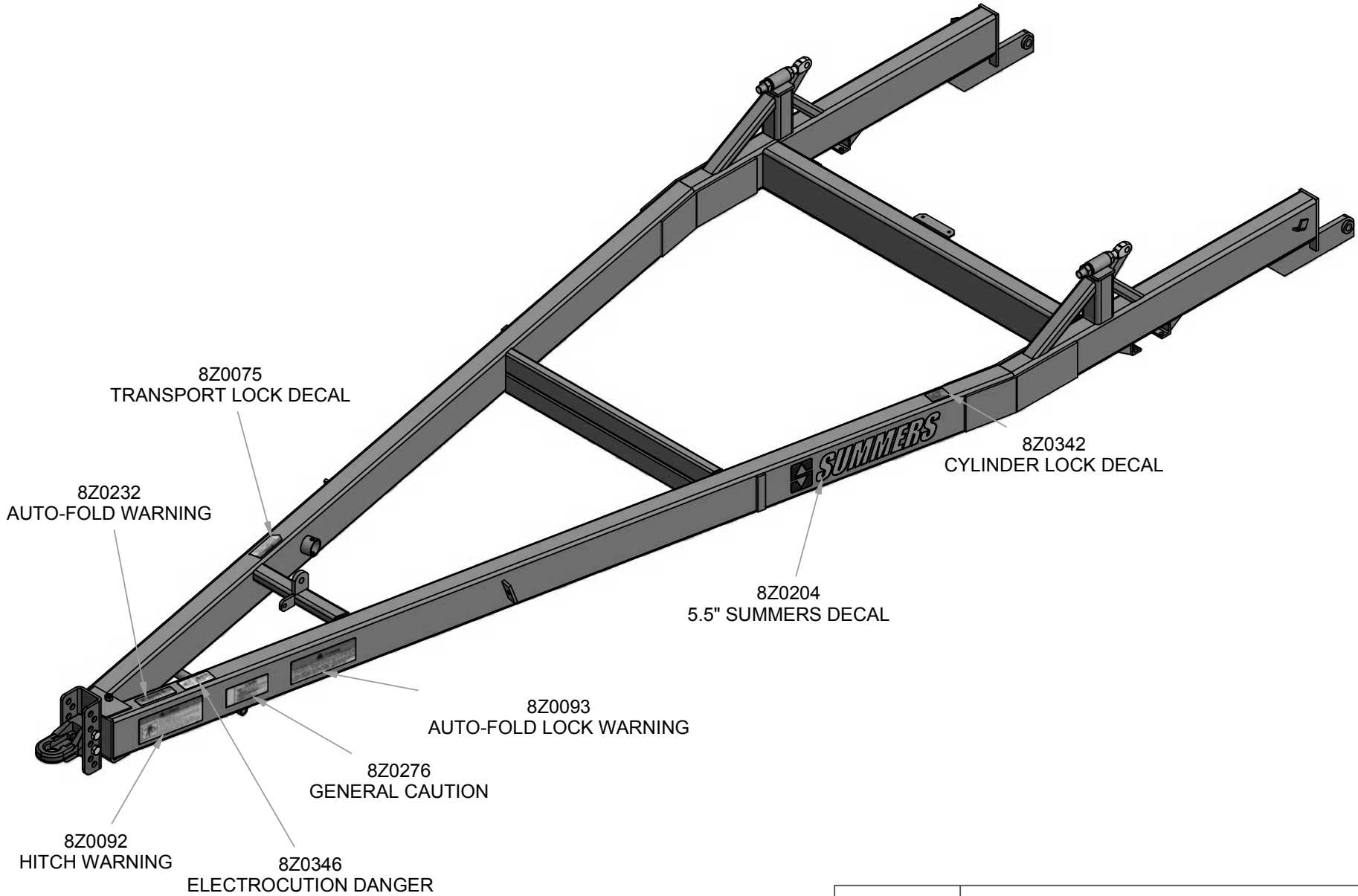


| WIRING HARNESS PARTS | |
|----------------------|------------|
| SIZE | HARNESS PN |
| 12' | 8K8076 |
| 18' | 8K8075A |
| 24' | 8K8077 |
| 30' | 8K8078 |
| 36' | 8K8079 |
| 42' | 8K8081 |
| 48' | 8K8082 |
| 50' | 8K8080A |

WIRING IS SYMMETRICAL BEHIND 8K8070B/8K8071.
 LEFT HAND LAYOUT SHOWN.
 AVOID SHARP EDGES AND PINCH POINTS WHEN ROUTING CABLES.
 LEAVE SLACK AT HINGES AND KNUCKLES. SECURE WITH NYLON TIES.

DECALS

4-17



12/17/2013

8C2200.iam/SH DECALS

SECTION 4 - 8-BAR SUPERHARROW

OPERATING INSTRUCTIONS

TRANSPORT TO FIELD POSITION

1. Hitch machine to tractor drawbar using a locking pin and safety chain. Connect hydraulic hoses and wiring. Retract jacks and rotate into storage position
2. Select level area to lower machine into field position.
3. **IMPORTANT:** Remove transport locks. Store locks in storage guide shown in Figure 10.

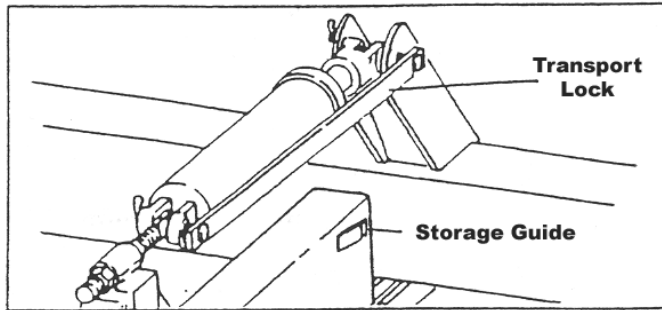
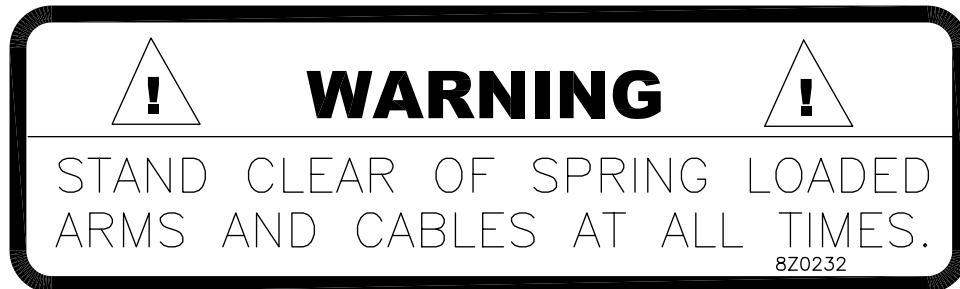


Fig. 10: Transport Lock in Locked Position

4. Back up machine slowly, maneuvering so wings open evenly. If wings do not open evenly, pull ahead and repeat procedure. Cables must not catch on machine while backing up. If cable becomes caught on machine, drive forward until wings are in transport position and carefully unhook cable from obstruction. See WARNING 8Z0232 below and 8Z0276 on page 1-4.



Open wings until auto-fold arms rest on hitch and cables become slack. Fully retract auto-fold lock cylinder (See Warning-Fig. 11).

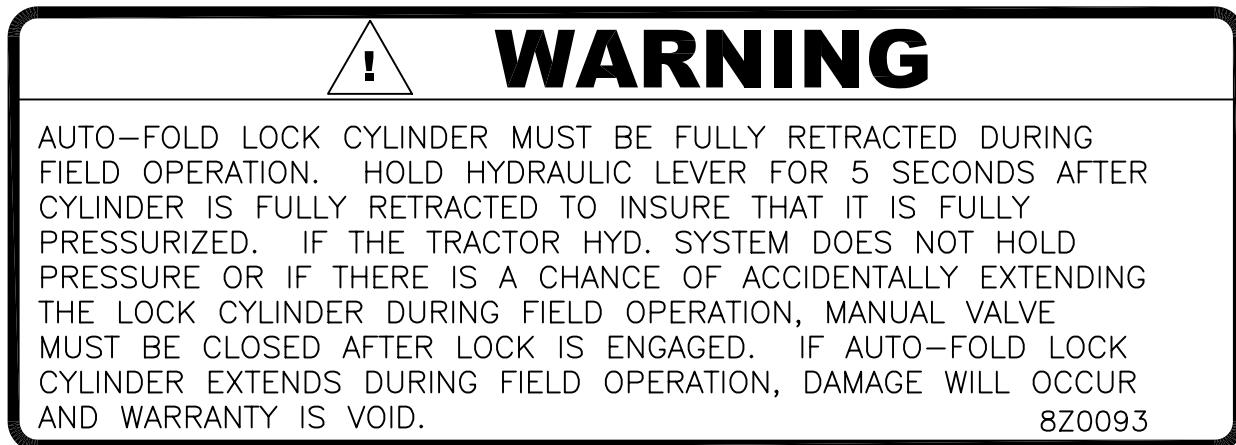


Fig. 11: Warning Decal

5. Extend hydraulic lift cylinders to lower machine into field position. If pull cables become tight before transport wheels are off the ground, back up to provide slack in cables.

SECTION 4 - 8-BAR SUPERHARROW

SECTION ADJUSTMENT

Section down pressure can be increased or decreased hydraulically by adjusting lift cylinders and manually by adjusting the lift cylinder adjustment bolt (8K1720, Page 4-2). Down pressure on wing sections can be increased by replacing the top spacer tubes (8HD0510) with extra pressure spacer tubes (8HD0520). Lower stop bushings can also be replaced with 8HD0520 to adjust individual sections so the machine raises more evenly.



CAUTION: For safety purposes, block equipment while working on it.

Adjust teeth angle for penetration and trash clearance required. Lift arms should run level to insure equal penetration of all teeth. If all lift arms run high in back, the following adjustments can be made to level section:

1. Adjust front bar teeth only in a less aggressive setting using front adjustment bar.
2. Adjust all teeth in a less aggressive setting.
3. Raise entire section with hydraulic depth adjustment or manually (See Height Adjustment Instructions, Page 4-12).

If all lift arms run low in the back, the following adjustments can be made to level section:

1. Adjust front bar teeth only in a more aggressive setting using front adjustment bar.
2. Adjust all teeth in a more aggressive setting.
3. Lower entire section with hydraulic depth adjustment or manually (See Height Adjustment Instructions, Page 4-12).

HYDRAULIC DEPTH ADJUSTMENT (HDA) OPERATION

To set depth, install stroke control collars on 3-1/2" X 8" stroke (HDA) control cylinders located on hitch. Collars of identical thickness must be installed on both cylinders.

Rephasing cylinders are used for hydraulic depth adjustment. Do not operate your Superharrow 3568 with HDA cylinders fully extended. Immediately after fully raising the hydraulic depth adjustment cylinders, quickly lower 1/2". If hydraulic depth adjustment cylinders are left in the fully raised position, cylinders will settle.

If machine has settled unevenly, fully extend HDA cylinders and hold hydraulic lever until the machine levels. Immediately after it levels, quickly lower 1/2".

NOTE: Fully retract hydraulic depth adjustment cylinders before folding machine into transport position.

CABLE PULL BRACKETS

Under severe conditions (heavy machine draft due to deep penetration or high field speed), cable pull brackets may slide on drawbar wing tube, resulting in improper cable adjustment. The recommended solution for this is to relocate cable pull brackets at desired position then weld a stop on drawbar next to cable pull brackets.

SECTION 4 - 8-BAR SUPERHARROW

FIELD TO TRANSPORT POSITION


1. Stop in a level area and back tractor up to provide slack in pull cables.
2. Open manual lock valve on auto-fold lock cylinder. Fully extend auto-fold lock cylinder.
3. **Fully** retract Hydraulic Depth Adjust cylinders.
4. **Fully** retract lift cylinders raising sections.
5. While machine is resting on its transport wheels, drive tractor forward. Wings should fold to transport position. NOTE: Transport wheels must rotate against “toe-in” adjustment cap screws and follow directly behind knuckles. Transport wheel “toe-in” can be adjusted by moving outside 3/4” adjustment set screws (8X0665, Page 4-5). “Toe-in” and proper lubrication of pivot will make it easier to unfold machine into field position. Wing support wheels must not contact in transport position.
6. **IMPORTANT:** Install transport locks.

UNHITCHING MACHINE


1. Park machine on a level area. Block wheels to prevent machine from rolling.
2. Follow steps outlined in **WARNING – NEGATIVE HITCH WEIGHT** on page 1-2.

SUMMERS SUPERHARROW 2650 PERFORMANCE ADJUSTMENTS:

NOTE: These are suggested initial settings, further adjustments may be necessary to match field conditions.



WARNING




LOWER WING TUBE JACKS AND BE CERTAIN THAT NO UPWARD OR SIDE PRESSURE IS EXERTED ON TOWING UNIT HITCH BEFORE DISCONNECTING.

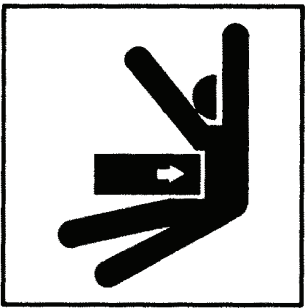
BEFORE LOWERING MACHINE INTO FIELD POSITION, HITCH MUST BE SECURED WITH A LOCKING HITCH PIN IN THE HITCH CLEVIS OF A LARGE FARM TRACTOR.


INSTALL TRANSPORT LOCKS BEFORE TOWING MACHINE.

COIL MACHINES ONLY: DO NOT RAISE MACHINE INTO TRANSPORT POSITION IF MUD HAS BUILT UP ON COILS. SERIOUS DAMAGE WILL OCCUR IF MUD IS NOT REMOVED FROM COILS BEFORE RAISING MACHINE FOR TRANSPORT.

8Z0092







DANGER

FRAME PINCH POINT HAZARD
KEEP AWAY

To prevent serious injury or death from crushing:

- Stay away from frame hinge area when folding wings.
- Keep others away.
- Do not fold wings when bystanders are present.

8Z0087

SECTION 4 - 8-BAR SUPERHARROW

Spring Seedbed Preparation

Suggested settings and adjustments for Spring Seedbed Preparation with the Summers Superharrow 3568.

IMPORTANT: Sections are designed to run level insuring that all teeth work at the same depth. If rear of section is running higher than the front, the section is incorrectly adjusted and component failure may occur. Summers products are NOT warranted for damage caused by improper adjustment

- a. Extend hydraulic depth adjustment cylinders 1/2 way. Begin with tine angle adjustment in a middle setting. Adjust tine angle so that only the rear two bars run full of residue. This will allow maximum tine penetration. If section plugging does not occur, tine angle can be adjusted more vertical. Speed will also affect the amount of residue held by the section: for proper tooth action run between 5-1/2 MPH and 7-1/2 MPH.
- b. If rear of sections run higher than the front, adjust front bar teeth in a less vertical setting using front adjustment bar.
- c. Section down pressure can be increased or decreased hydraulically by positioning lift cylinders and manually by equally positioning lift cylinder adjustment bolts. Lift cylinder adjustment bolts must extend at least 3/8" ahead of front 1-1/4" NC nut.
Down pressure on wing sections can be increased by replacing top spacer tubes (8HD0510) with extra pressure spacer tubes (8HD0520).
Raising the front of the hitch by adjusting hitch piece (8D0720) will also provide more section down pressure.
- d. After establishing desired down pressure, lower drawbar with hydraulic depth adjustment until rear of sections begin to lift higher than front of section. Raise drawbar 1/2". If required, section height can also be adjusted manually as explained on page 4-12.
With maximum down pressure and these adjustments, tines are working as deep as field conditions will allow.

Residue Management

Suggested settings and adjustments for Residue Management with the Summers Superharrow 3568.

NOTE: Hot, dry weather is the optimum condition for spreading and breaking up crop residue.

- a. Extend hydraulic depth adjustment cylinders 1/2 way. Begin with tine angle adjustment in least vertical position. Adjust front bar teeth in a one hole more vertical setting using front adjustment bar. These settings will allow the most soil action without plugging section. If section plugging does not occur, tine angle can be adjusted more vertical.
- b. SPEED is important. The SH 3568 should be pulled at 7 MPH to 9 MPH for proper tooth action in high residue conditions.
- c. Section down pressure can be increased or decreased hydraulically by positioning the lift cylinders and manually by equally positioning lift cylinder adjustment bolts. Lift cylinder adjustment bolts must extend at least 3/8" ahead of front 1-1/4" NC nut.
Down pressure on wing sections can be increased by replacing top spacer tubes (8HD0510) with extra pressure spacer tubes (8HD0520).
Raising the front of the hitch by adjusting hitch piece (8D0720) will also provide more section down pressure.
- d. After establishing desired down pressure, lower drawbar with hydraulic depth adjustment until rear of sections begin to lift higher than front of section. Raise drawbar 1/2". If required, section height can be adjusted manually as explained on page 4-12.
With maximum down pressure and these adjustments, tines are working as aggressively as field conditions will allow.

SECTION 4 - 8-BAR SUPERHARROW

MAINTENANCE AND SERVICE

Daily Maintenance:

Check all wheel and frame bolts for tightness.

Daily Greasing:

Two zerks on each knuckle.

One zerk on each transport axle pivot.

Two zerks on each cable auto-fold arm.

Two zerks on hitch hydraulic depth adjustment – pillow block casting (8R6065, page 4-3).

Weekly Maintenance:

Inspect wheel bearings for tightness.

Seasonal Maintenance:

Disassemble, clean and repack wheel bearings.

Lubricate all zerks with a good grade of general purpose grease.

NOTE: To insure years of trouble free use of your Superharrow, periodically inspect entire machine for loose or worn parts and fasteners. Tighten or replace as required.

Over Winter:

Coat extended hydraulic cylinder rods with grease to prevent corrosion. Remove this grease before retracting cylinders.

TIRE INFLATION:

Hitch Tires: 11L X 15 LRF – 80 PSI

Opt. 31 X 13.5 – 35PSI

Wing Support Tires: 11L X 15 LRF – 38 PSI

Transport Tires: LT RADIAL x 16 – 80PSI

IMPORTANT:

Implement tires are rated at 20 MPH maximum. Exceeding this speed voids warranty.





WARNING

HIGH-PRESSURE FLUID HAZARD

To prevent serious injury or death:

- Relieve pressure on system before repairing or adjusting or disconnecting.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all components in good repair.

SW700

TROUBLESHOOTING

| PROBLEM | CAUSE | CORRECTION |
|--|---|--|
| 1. Wings trail too far apart in transport. | Insufficient transport wheel toe-in. | Adjust transport wheel toe-in. |
| 2. Wings are not pulling evenly in field position. | Cable pull brackets are improperly located. | Relocate cable pull brackets so wings slightly lead center. |
| 3. Auto-Fold arms do not rotate into transport position. | Improper pivot bracket adjustment. | Adjust pivot bracket with bolts to provide clearance between the cable fold arm bottom guide and hitch tube. (4-7) |
| 4. Lift arms do not run level. | Improper section adjustment. | See Section Adjustment, pages 4-12, 4-19, and 4-21. |

SECTION 5 - HARROW PACKER

SET-UP INSTRUCTIONS

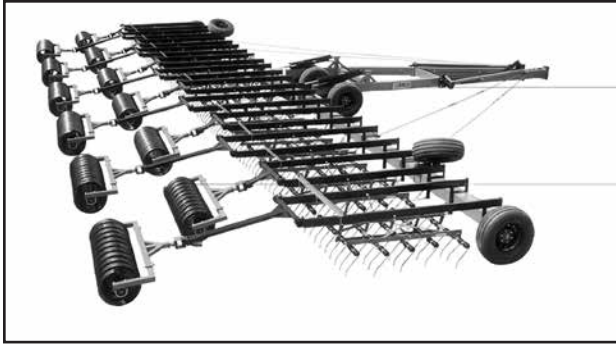


Fig. 1: Field Position



Fig. 2: Transport Position

The machine should be placed in an area that allows ample room for field position assembly (See Fig. 1).

Refer to illustrations and parts listings in this section. Position center of axles 19" ahead of the rear of the hitch 8" X 4" tube. Mount hitch wheels and tires and install hitch jack. If machine is equipped with optional Hydraulic Depth Adjustment, see pages 5-3 through 5-7 for (HDA) assembly.

DRAWBAR – Center, Hydraulic Lift Cylinders, Wings, Axles and Wheels.

Attach center drawbar to hitch using two 1-1/4" X 6" pins and secure with flat washers and 5/16" X 2-1/2" cotter pins. Mount main lift cylinders and transport locks. Route hoses as shown on page 5-6. Fully charge main lift cylinders with hydraulic fluid by extending and retracting until all air is purged from system.

Knuckles may be marked left and right. Before attaching wings, check that knuckles are on correct side of machine. Attach wings to knuckles using 1-1/2" X 11" pins. Secure with 1/2" x 2-1/2" bolt, flat washer and lock nut. Install 1-1/2" jam nuts, center punch or spot weld to secure. Attach jack mounting swivels on top of wing near knuckle in field position. Secure with 7/8" u-bolt, lockwashers and nuts. Mount wing axle plate with spindle down. Mount wing wheels and tires. Do not mount transport wheel assemblies until lift arms are positioned.

HYDRAULIC SYSTEMS

Mount Auto-Fold lock, cylinder and hoses shown on page 5-6.

NOTE: The tractor hydraulic control valve operating auto-fold lock cylinder must hold pressure. If auto-fold lock cylinder extends during field operation, damage will occur.

LIFT ARMS AND SECTIONS

Sections with 3/8" diameter teeth:

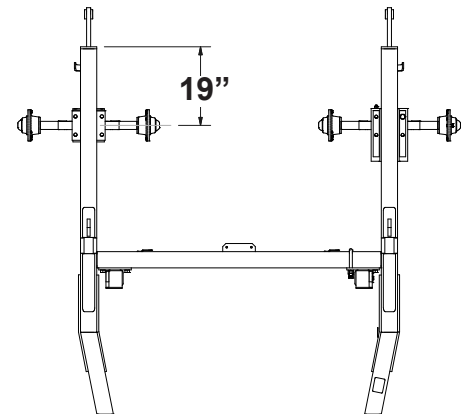
Attach lift arms to drawbar using 3/4" X 10" cap screws. Position lift arms with following dimensions: Distance from drawbar center to centerline of first lift arm on either side is 15".

Distance from centerline of lift arms over sections is 30".

Distance between centerline of lift arms between sections is 30".

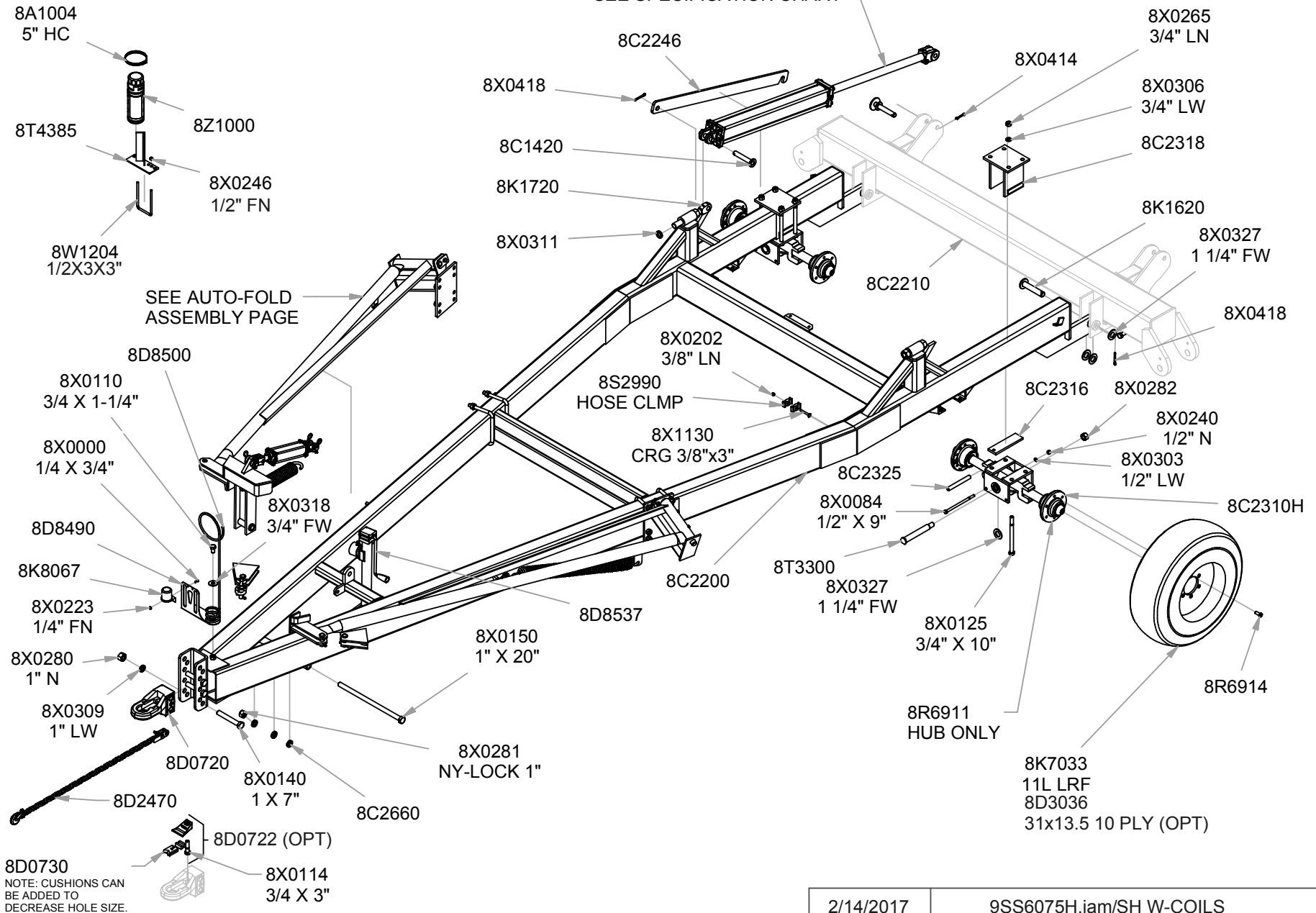
Use two long lift arms for first section to left of center. Lift arms for adjoining sections must be alternating lengths (short and long).

Assemble sections as shown in parts breakdown on page 5-9. Attach sections to lift arms with chains and hardware provided. The 9-link lift chain must be attached to the back hole in both lift arm and section. Mount OPTIONAL SPRING PRESSURE in front hole in both lift arm and section. Spring pressure rod must not lift harrow section into transport position. Use 8 of 9 chain links to insure that chain lifts section.



22' MACHINE HITCH (NO HDA)

(3/8" TOOTH HARROW PACKER & SUPERWEEDER)

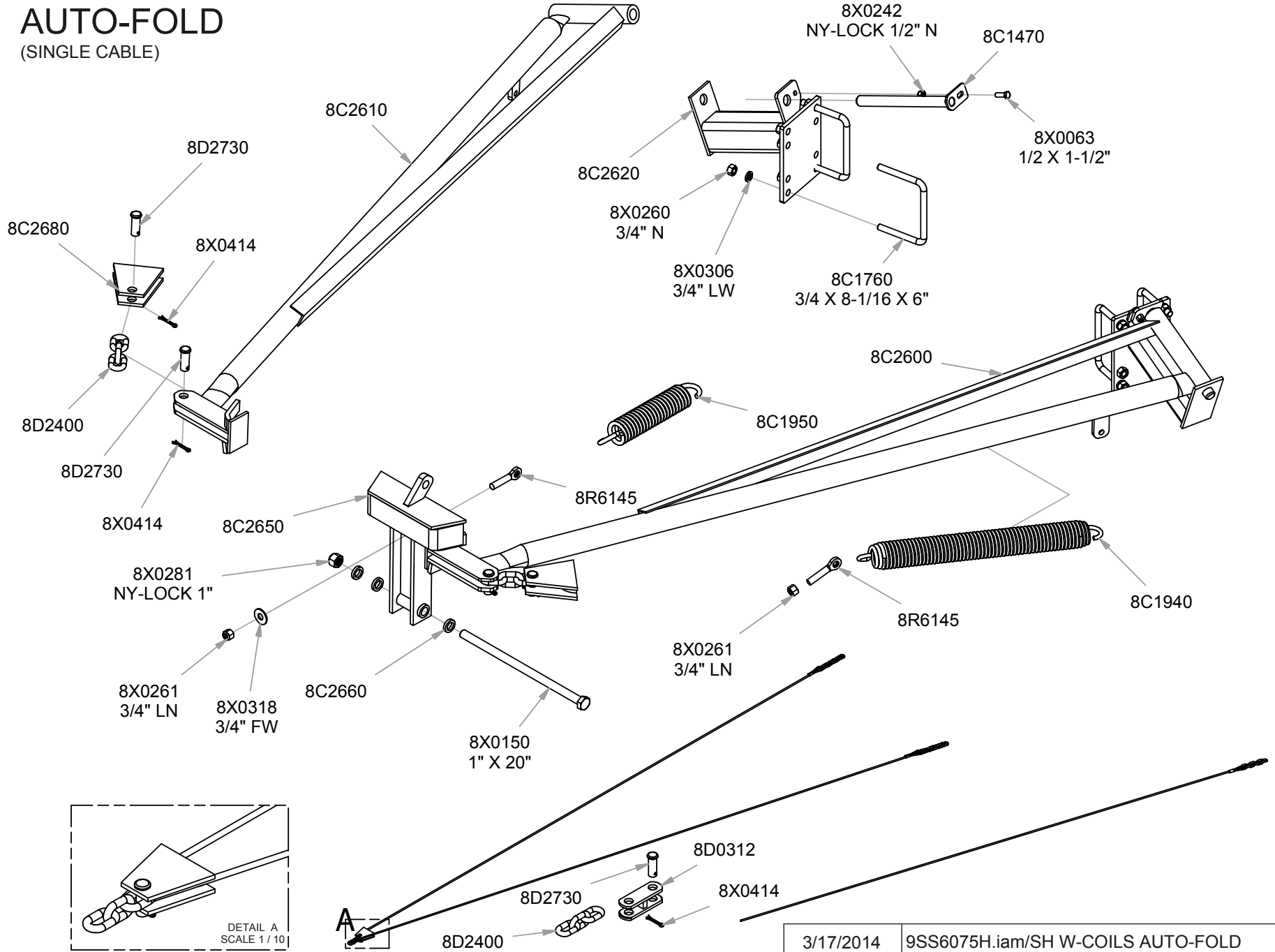


5-2

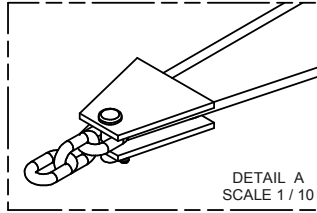
2/14/2017

9SS6075H.iam/SH W-COILS

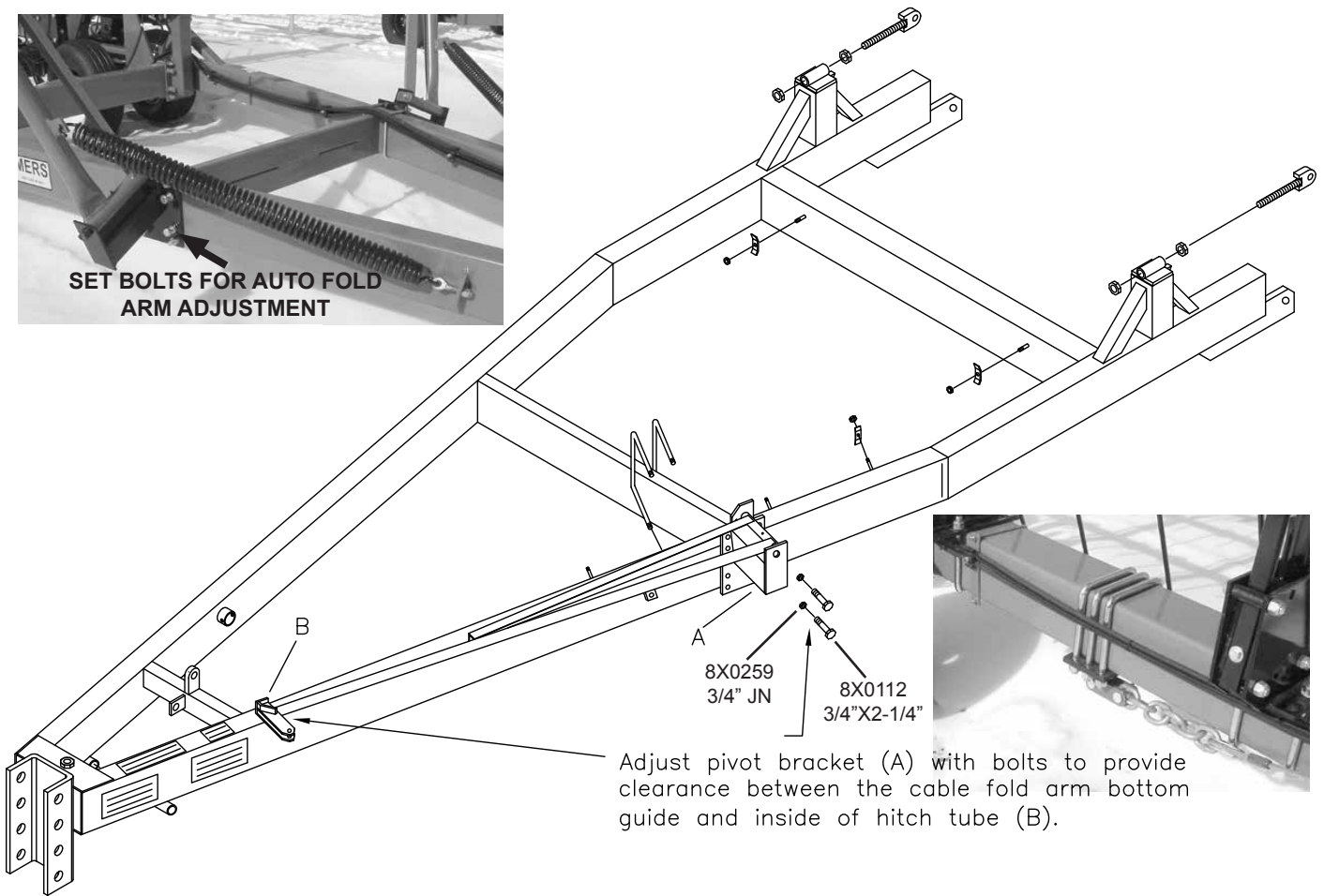
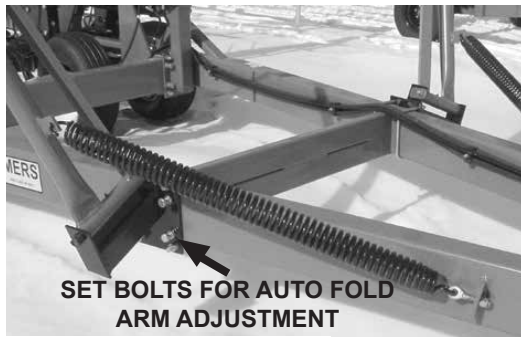
AUTO-FOLD (SINGLE CABLE)



5-3



SECTION 5 - HARROW PACKER



22' HITCH — 8" SQUARE DRAWBAR Specification Chart

| Machine Size | Cable Length | PN-Cable | PN-Wing (Hngd Wing - Left Part 1) | PN-Hinged Wing - Right Part 1 | PN-Hinged Wing - End | PN-Lift Cylinder |
|--------------------------------------|--------------|----------|---|-------------------------------------|-------------------------|---------------------|
| SH+ COIL PACKER (9/16" Tooth) | | | | | | |
| 36' | 246" | 8D1860 | 8HD6620 | | | 8C0432 |
| 48' | 521" | 8D1970 | 8HD6640 | | | 8C0532 |
| 60' | 581" | 8D1980 | 8HD6660 | | | 8C0532 |

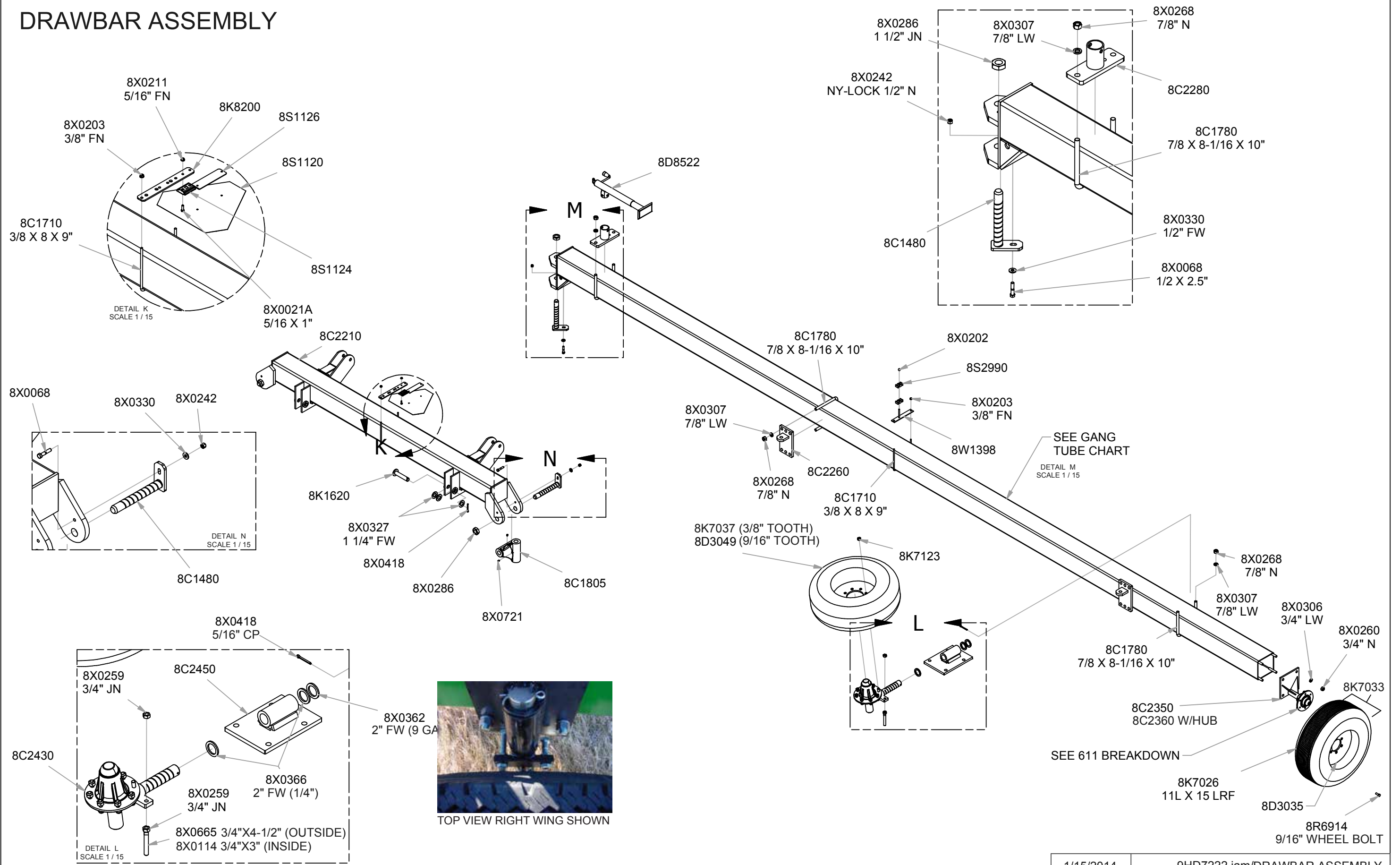
HARROW PACKER (3/8" Tooth)

| | | | | | | |
|-----|------|--------|--------|--|--|--------|
| 30' | 227" | 8D1850 | 8C3100 | | | 8C0432 |
| 40' | 262" | 8D1870 | 8C3150 | | | 8C0432 |
| 50' | 521" | 8D1970 | 8C3200 | | | 8C0432 |
| 60' | 581" | 8D1980 | 8C3250 | | | 8C0432 |
| 70' | 661" | 8D2000 | 8C3300 | | | 8C0432 |

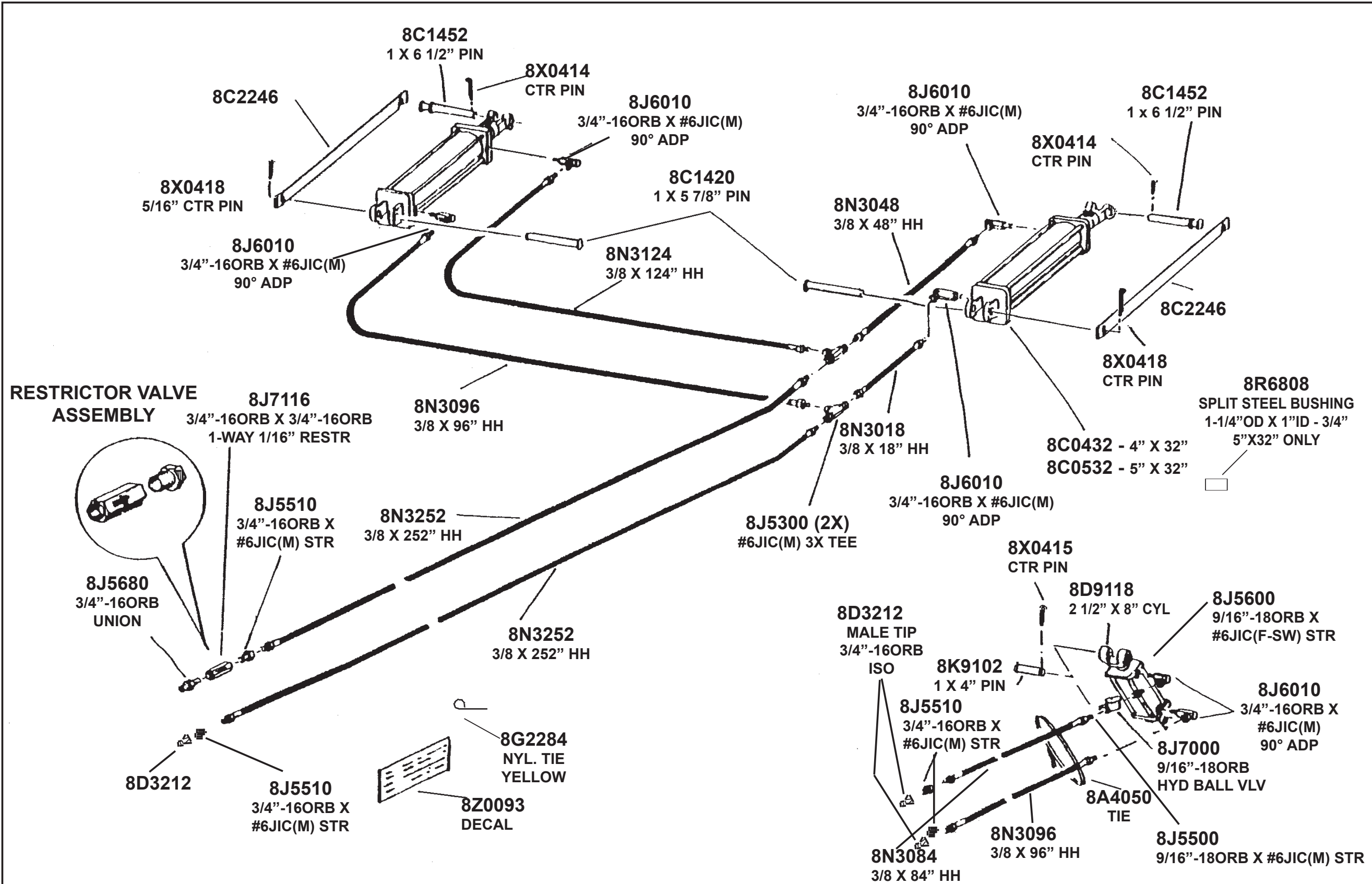
* Used on 9-link pull chain (Part Number 8D2410)

SECTION 5 - HARROW PACKER

DRAWBAR ASSEMBLY



SECTION 5 - HARROW PACKER

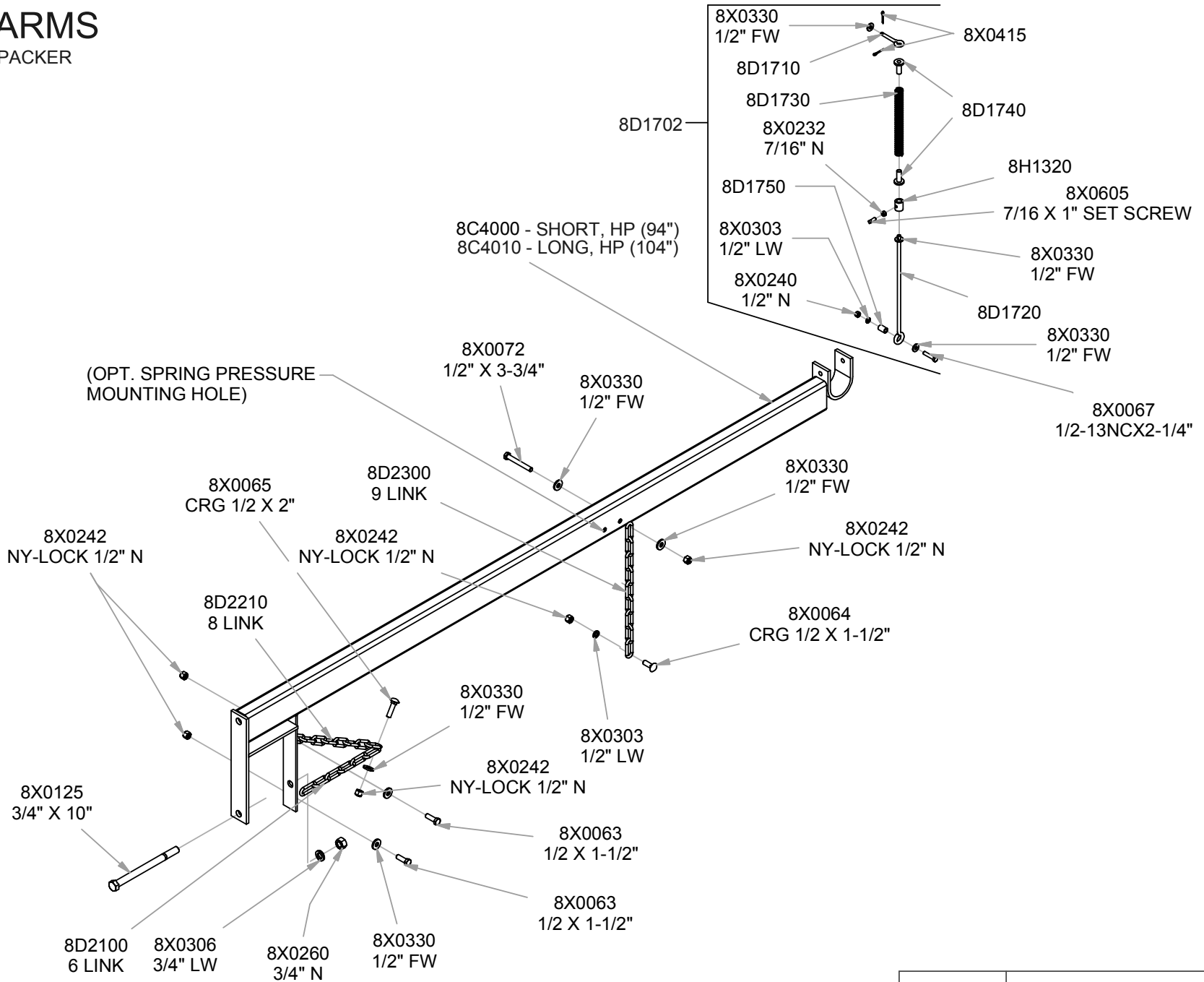


HYDRAULIC SYSTEM – 22 FT. HITCH

3/13/14

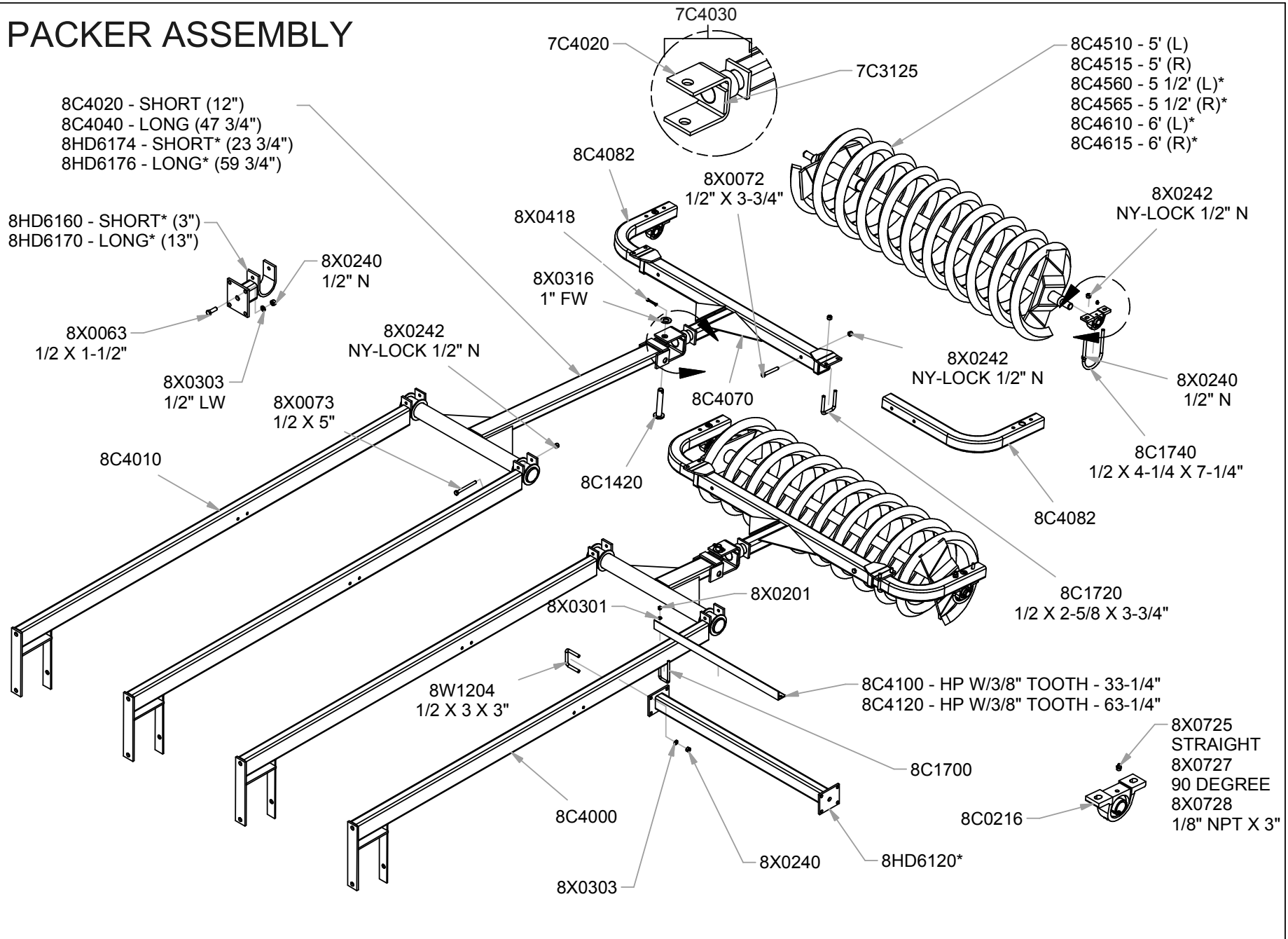
LIFT ARMS

HARROW PACKER



5-7

PACKER ASSEMBLY

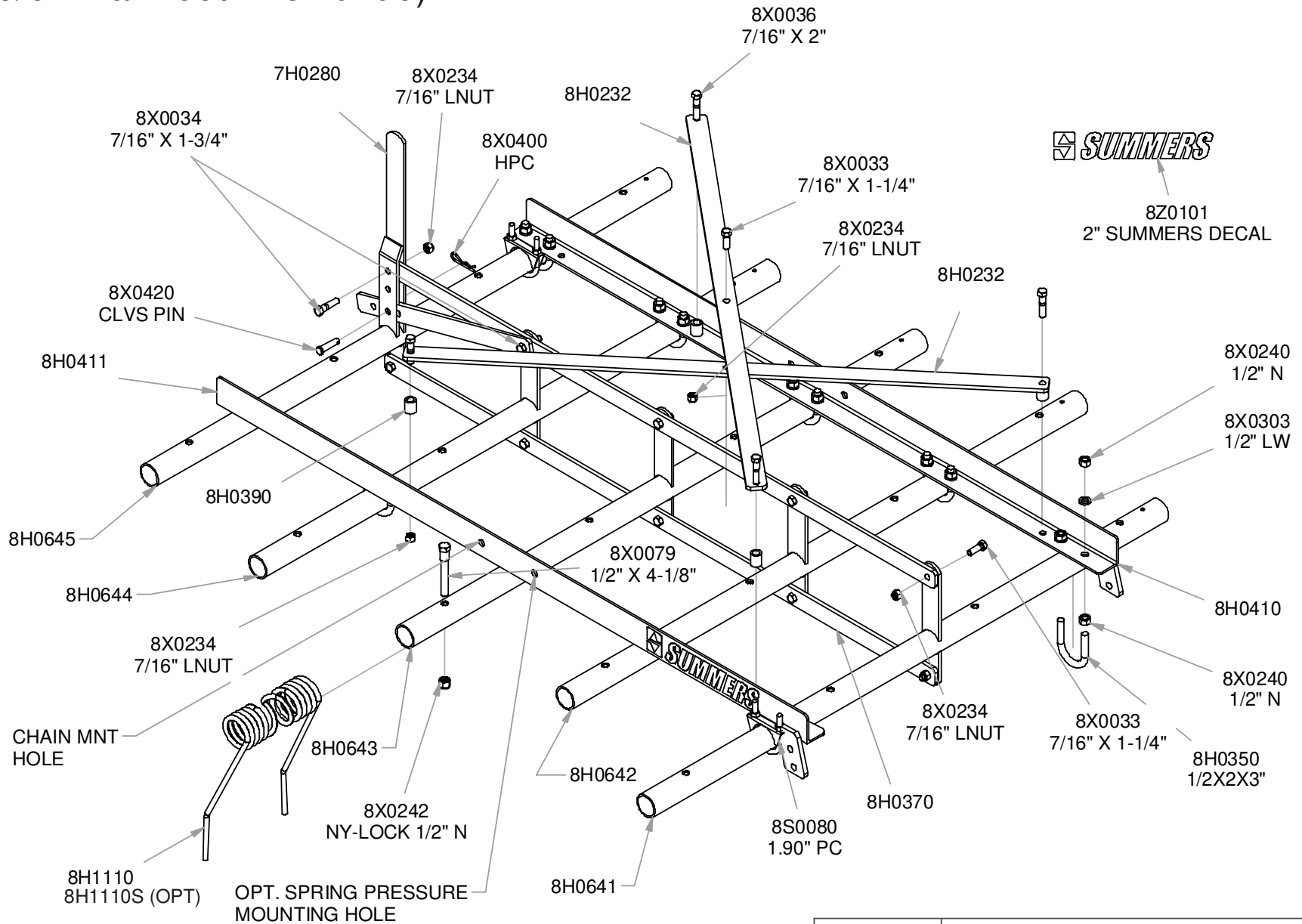


5-8

* SUPERHARROW PLUS WITH COIL PACKER ONLY

5 FT. HARROW SECTION - 5 BAR (3/8" Dia. Tooth - 8H0795)

5-9



8/7/2018

8H0795.iam/5 BAR 5' HRRW SECTION

SECTION 5 - HARROW PACKER

Sections with 9/16" diameter teeth:

See assembly instructions on page 2-10 for installation of sections. Attach two long lift arm extensions to the lift arms on the first section to left of center. Extensions for adjoining sections must be alternating lengths (short and long).

See Figures 3 & 4 (Page 5-12) for alteration instructions of two tines above knuckles.

NOTE: Do not use 8HD6150 (Angle, tooth stop – shown on page 2-11). Cut off the front outside teeth as shown to prevent interference with knuckles in transport position.

PIVOT ARMS

Attach short pivot arms to short lift arms and long pivot arms to long lift arms with 1/2" X 5" cap screws and lock nuts. Do not overtighten lock nuts. Pivot arms must swing freely. Install pivot arms with knuckle pivot stop up in field position.

SECTION BRACES

Sections with 3/8" diameter teeth:

Attach angle braces to lift arms near packer pivots using 3/8" u-bolts and hardware. Use 33" long braces over lift arms between harrow sections (except over knuckles and end sections). Use 63-1/4" long braces over outside three lift arms.

Sections with 9/16" diameter teeth:

Attach tube braces to lift arms between sections (as shown in Figure 4) using 1/2" u-bolts and hardware. Locate braces near extension splice. Insure that brace location does not interfere with section adjustment or coil travel. Do not install tube braces over knuckles.

PACKER SECTIONS

Attach pull frames to pivot arms with 1" X 6" pins. Secure with flat washers and cotter pins. Insert and secure adjustment arms in the following settings:

*Machines with 9/16" diameter tines:

Add 8C4090 counter balance to left side adjustment arm of left center coil. Replace 8HD0510 with 8HD0520 below all sections. Trim inside of front pipe of first section on left wing at 3-1/2" from bolt hole center to end of pipe.

| Coil Size | Machine/Location | Adjustment |
|-----------|-------------------------------|--------------------------------|
| 5' | 3/8" Tooth HP/All | Middle Setting |
| 5-1/2' | 9/16" Tooth HP Center Only | Inside Arm- Widest Setting |
| | | Outside Arm- Middle Setting |
| 6' | 9/16" Tooth HP | Widest Setting |

Attach left hand coils to long pivot arms and right hand coils to short pivot arms. Secure pillow block bearing to adjustment arm with 1/2" u-bolt and hardware. Center coil and secure bearing to coil shaft with set screws.

TRANSPORT WHEELS

Locate transport wheel assemblies over end harrow section on 30 to 40 ft. machines with pivot tube in higher position. Install between end section and second section on 48 to 60 ft. machines with pivot tube in higher position. Install over second section on 70 ft. machines with pivot tube in higher position. Secure with 7/8" u-bolts and hardware.

Transport axle "toe-in" can be adjusted with outside stop set bolt (8X0665, page 5-5). Adjust inside stop bolt 3/8" away from pivot plate when resting on outside stop bolt. This adjustment will allow transport wheel to pivot inward while unfolding. Double lock stop bolts with 3/4" jam nuts provided.

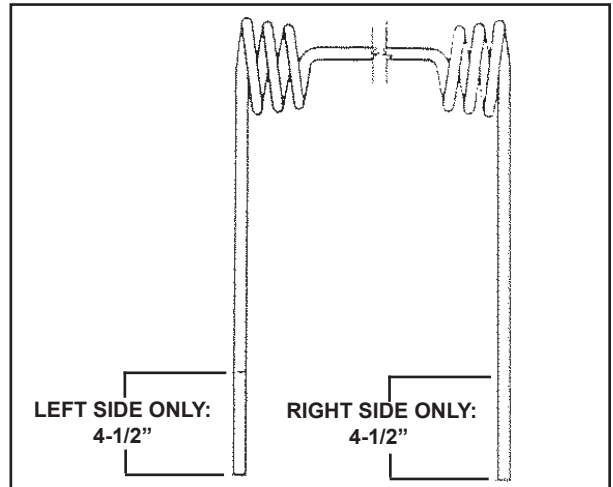
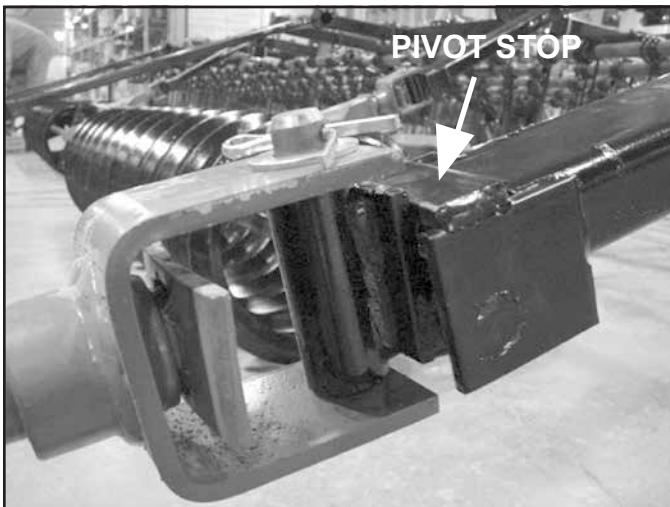
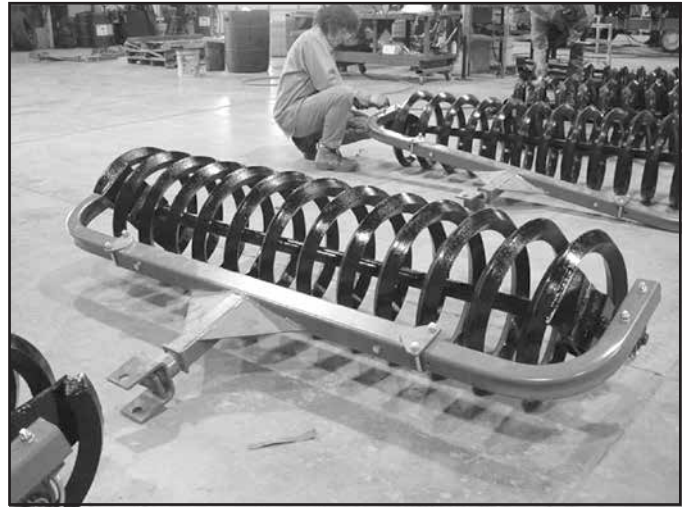


Fig. 3: Tine Alteration

SECTION 5 - HARROW PACKER



AUTO-CABLE FOLD

Mount auto-fold pivot brackets ahead of welded stop. Do not fully tighten u-bolts. Attach left and right cable fold arms to pivot brackets with 1-1/4" X 14" pins and hardware.

Adjust pivot brackets to provide clearance between cable fold arm bottom guide and hitch tube. This adjustment is made with 3/4" X 2-1/4" bolts (8X0112, page 5-4). This adjustment will allow cable fold arms to pivot freely into transport position. Fully tighten mounting u-bolts after adjustment is made.

Attach tension springs with 3/4" eye bolts and lock nuts. Tighten eye bolts until spring coils begin to separate.

CABLES

Install cable brackets and cable assemblies. Adjust cables so wings slightly lead the center. Tighten attachment u-bolts and recheck tightness after first hour of field use.

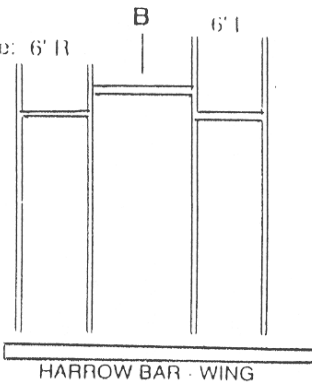
HYDRAULIC TINE ANGLE OPTION (9/16" DIAMETER TEETH ONLY)

See pages 2-6 and 2-16 through 2-24 of Superharrow Plus section.

Locations of Cross Bars and Tine Modifications for Superharrow Plus with Packer Coils

36' Machine

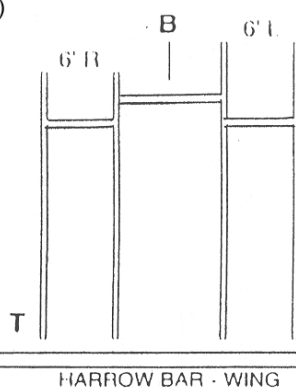
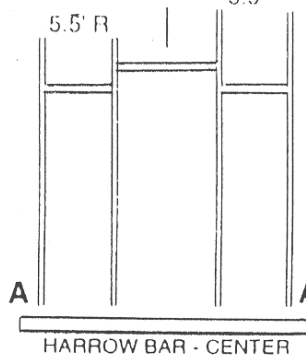
Coil Size: 6' R



CB

B 5.5

CB (2X)

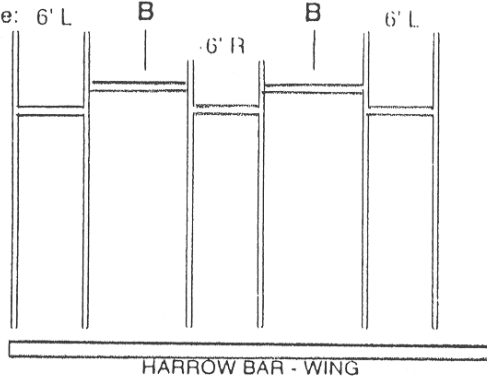


ALL WIDTHS: replace lower stop pipe w/8HD0520 on wing sections only.

At "A", cut off 4-1/2" of front outside line to provide clearance over harrow bar knuckle, see Fig. 3.
"B" - Locations of cross braces (8HD6120).

48' Machine

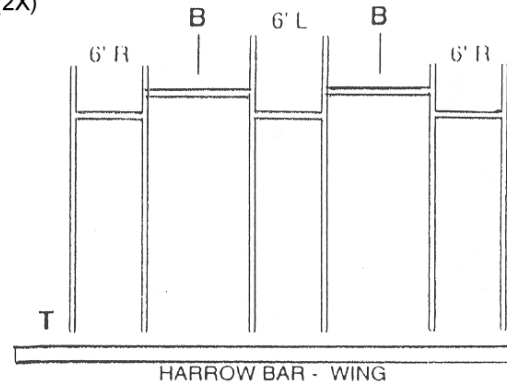
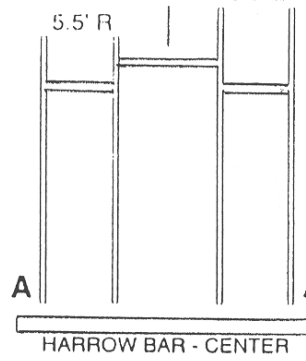
Coil Size: 6' L



CB

B 5.5' L

CB (2X)

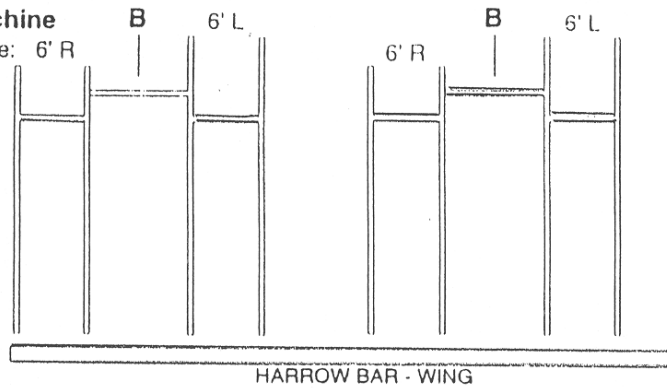


CB = Counter-balance (PN 8C4090)
T = Trim pipe 3-1/2" maximum from hole center to end of pipe.

5-12

60' Machine

Coil Size: 6' R



CB

B 5.5' R

CB (2X)

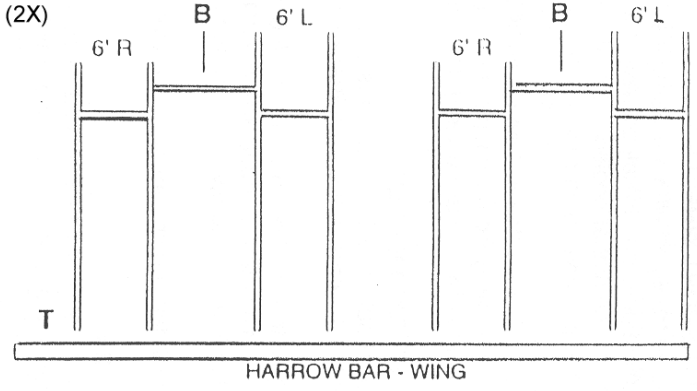
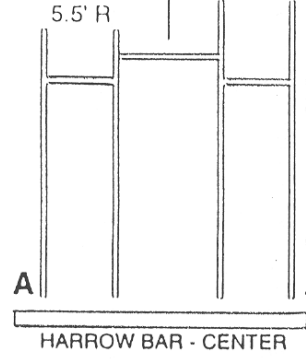
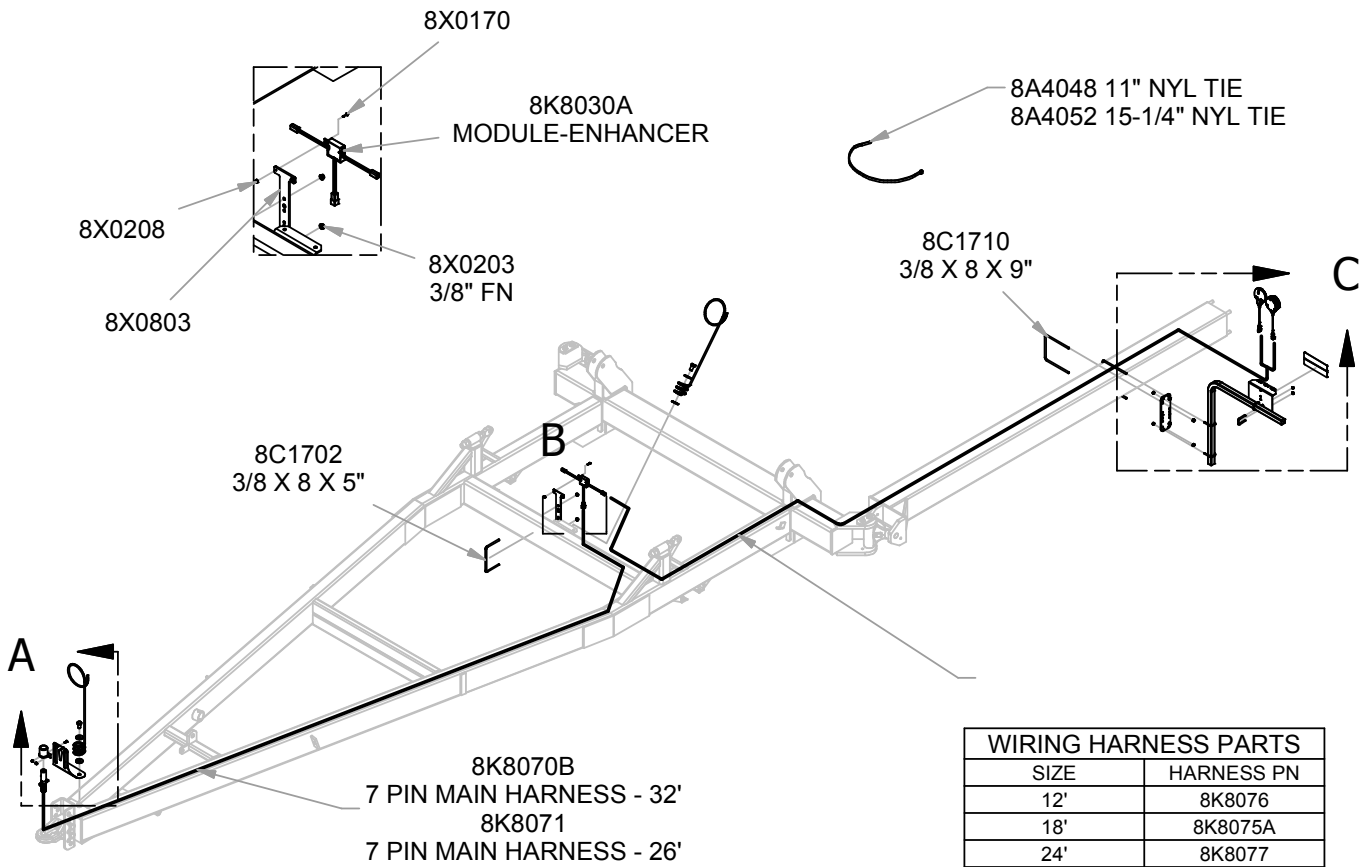


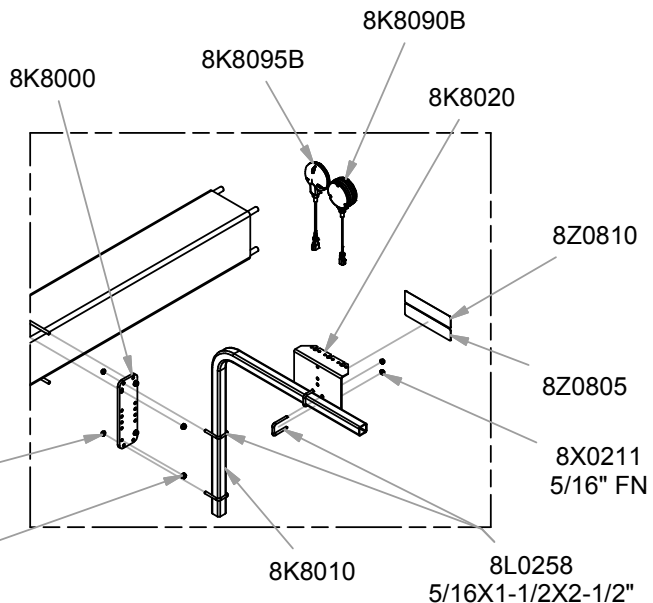
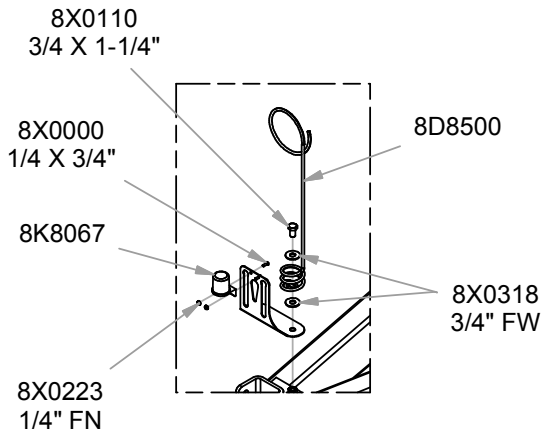
Fig. 4

SECTION 5 - HARROW PACKER

LIGHT KIT, 8"SQ DRAWBAR



| WIRING HARNESS PARTS | |
|----------------------|------------|
| SIZE | HARNESS PN |
| 12' | 8K8076 |
| 18' | 8K8075A |
| 24' | 8K8077 |
| 30' | 8K8078 |
| 36' | 8K8079 |
| 42' | 8K8081 |
| 48' | 8K8082 |
| 50' | 8K8080A |



WIRING IS SYMMETRICAL BEHIND 8K8070B/8K8071.

LEFT HAND LAYOUT SHOWN.

AVOID SHARP EDGES AND PINCH POINTS WHEN ROUTING CABLES.

LEAVE SLACK AT HINGES AND KNUCKLES. SECURE WITH NYLON TIES.

8A4048 11" NYL TIE
8A4052 15-1/4" NYL TIE

SECTION 5 - HARROW PACKER

OPERATING INSTRUCTIONS

TRANSPORT TO FIELD POSITION

1. Hitch machine to tractor drawbar using a locking hitch pin and safety chain. Connect hydraulic hoses and wiring. Retract jacks and rotate into storage position.
2. Select level area to lower machine into field position.
3. **IMPORTANT:** Remove transport locks. Store locks in storage guide shown in Figure 5.

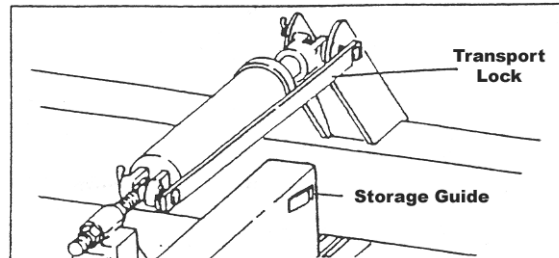
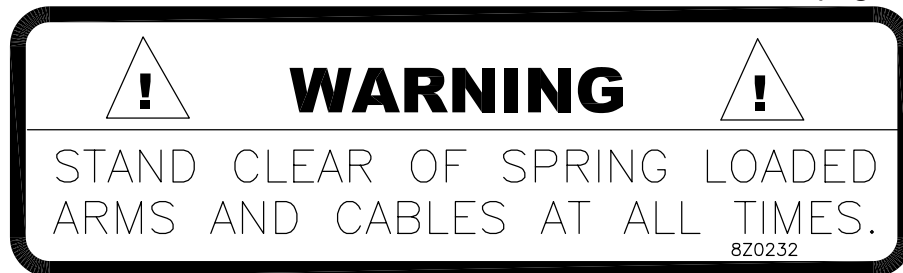


Fig. 5: Transport Lock in Locked Position

4. Back up machine slowly, maneuvering so wings open evenly. If wings do not open evenly, pull ahead and repeat procedure. Cables must not catch on machine while backing up. If cable becomes caught on machine, drive forward until wings are in transport position and carefully unhook cable from obstruction. See WARNING 8Z0232 below and 8Z0276 on page 1-4.



Open wings until auto-fold arms rest on hitch and cables become slack. Fully retract auto-fold lock cylinder (See Warning Fig. 6).

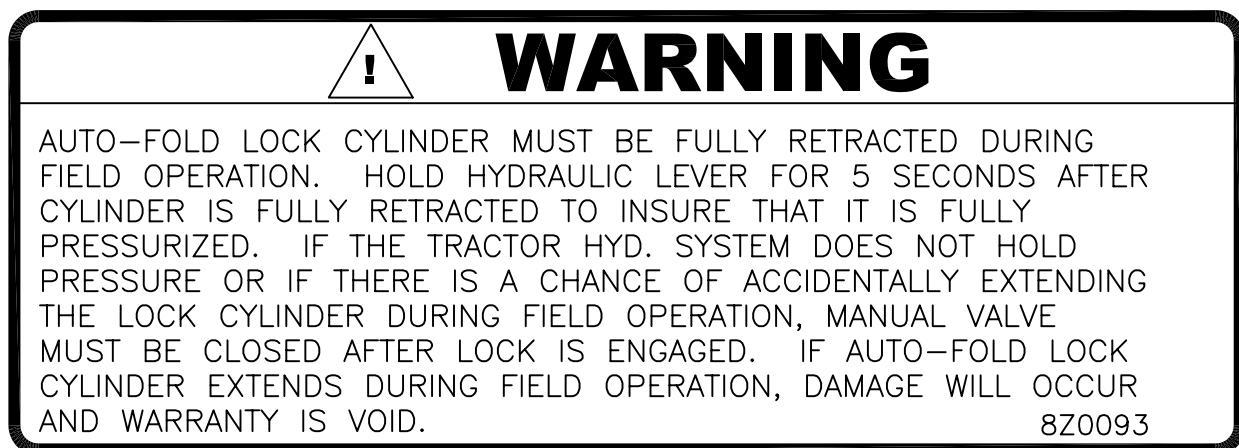


Fig. 6: Warning Decal

5. Extend hydraulic lift cylinders and lower packers until first coil contacts the ground. After first coil makes contact, drive slowly forward while at the same time extending lift cylinders until all sections rest on the ground.

IMPORTANT: Do not allow packer coils to fold beneath harrow sections while lowering machine.

SECTION 5 - HARROW PACKER

CABLE PULL BRACKETS

Under severe conditions (heavy machine draft due to deep penetration or high field speed) cable brackets may slide on drawbar wing tube, resulting in improper cable adjustment. The recommended solution for this is to relocate cable pull brackets at desired position and weld a stop on drawbar next to cable pull brackets.

FIELD TO TRANSPORT POSITION


1. Stop in a level area and back tractor up to provide slack in pull cables.
2. Open manual lock valve on auto-fold lock cylinder. Fully extend auto-fold lock cylinder.
3. Fully retract hydraulic depth adjustment cylinders (if so equipped).
4. Fully retract main lift cylinders raising sections.
5. While machine is resting on its transport wheels, drive tractor forward. Wings should fold to transport position.


NOTE: Transport wheels must rotate against “toe-in” adjustment cap screws and follow directly behind knuckles. Transport wheel “toe-in” can be adjusted by moving outside 3/4” adjustment set screws (8X0665, page 5-5). “Toe-in” and proper lubrication of pivot will make it easier to unfold machine into field position. Wing support wheels must not contact in transport position.

6. **IMPORTANT:** Install transport locks.

UNHITCHING MACHINE

1. Park machine on a level area. Block wheels to prevent machine from rolling.
2. Follow steps outlined in **WARNING – NEGATIVE HITCH WEIGHT** on page 1-2.

 **WARNING**



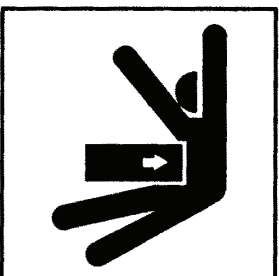

LOWER WING TUBE JACKS AND BE CERTAIN THAT NO UPWARD OR SIDE PRESSURE IS EXERTED ON TOWING UNIT HITCH BEFORE DISCONNECTING.


BEFORE LOWERING MACHINE INTO FIELD POSITION, HITCH MUST BE SECURED WITH A LOCKING HITCH PIN IN THE HITCH CLEVIS OF A LARGE FARM TRACTOR.

INSTALL TRANSPORT LOCKS BEFORE TOWING MACHINE.

COIL MACHINES ONLY: DO NOT RAISE MACHINE INTO TRANSPORT POSITION IF MUD HAS BUILT UP ON COILS. SERIOUS DAMAGE WILL OCCUR IF MUD IS NOT REMOVED FROM COILS BEFORE RAISING MACHINE FOR TRANSPORT.

8Z0092



 **DANGER**

FRAME PINCH POINT HAZARD
KEEP AWAY

To prevent serious injury or death from crushing:

- Stay away from frame hinge area when folding wings.
- Keep others away.
- Do not fold wings when bystanders are present.

8Z0087

SECTION 5 - HARROW PACKER

MAINTENANCE & SERVICE

Daily Maintenance:

Check all wheel bolts for tightness.

Daily Greasing:

Two zerks on each knuckle.

Two zerks on each cable auto-fold arm.

One zerk on each transport axle pivot.

Weekly Greasing:

One zerk on each packer bearing (one stroke only).

Weekly Maintenance:

Inspect all wheel bearings for tightness.

Seasonal Maintenance:

Disassemble, clean and repack wheel bearings.

Lubricate all zerks with a good grade of general purpose grease.

Inspect entire machine for loose or worn fasteners. Tighten or replace as required.

Over Winter:


Coat extended hydraulic cylinder rods with grease to prevent corrosion. Remove this grease before retracting cylinders.

TIRE INFLATION:

| | |
|---------------------|-------------------------|
| Hitch Tires: | 11L X 15 LRF – 80 PSI |
| | Opt. 31 X 13.5 – 35 PSI |
| Wing Support Tires: | 11L X 15 LRF – 38 PSI |
| Transport Tires: | 11L X 15 LRF – 80 PSI |

IMPORTANT: Implement tires are rated at 20 MPH maximum. Exceeding this speed voids warranty.





WARNING

HIGH-PRESSURE FLUID HAZARD

To prevent serious injury or death:

- Relieve pressure on system before repairing or adjusting or disconnecting.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all components in good repair.

SW700

TROUBLESHOOTING

| PROBLEM | CAUSE | CORRECTION |
|---|---|--|
| 1. Wings trail too far apart in transport. | Insufficient transport wheel toe-in. | Adjust transport wheel toe-in. |
| 2. Wings are not pulling evenly in field position. | Cable pull brackets are improperly located. | Relocate cable pull brackets so wings slightly lead center. |
| 3. Auto-Fold arms do not rotate into transport position. | Improper pivot bracket adjustment. | Adjust pivot bracket with bolts to provide clearance between the cable fold arm bottom guide and hitch tube. (5-4) |
| 4. Wings of machine bounce excessively. | Improper wing support tire inflation. | Inflate tires to proper pressure. |
| 5. Harrow Packer with 3/8" diameter teeth: Sections not riding level. | Top pull chains are improperly adjusted. | Adjust top pull chain by placing pin in different adjustment hole on lift arm. |
| 6. Harrow Packer with 3/8" diameter teeth: End harrow riding up on support tires while turning, right side. | Turning sharp. | Remove front outside tooth, cut 8" off pipe and install 8S0080 clamp to secure pipe. |

IMPORTANT: Never turn Harrow Packer with lift arms raised higher than level, in field position.

NOTE: For additional Operating, Maintenance and Service information for 9/16" diameter teeth Harrow Packers, see Superharrow Plus section.

SECTION 6 - 4-RANK SUPERWEEDER

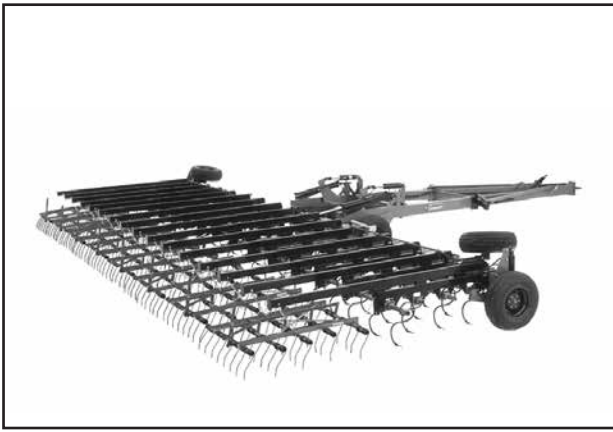


Fig. 1: Field Position

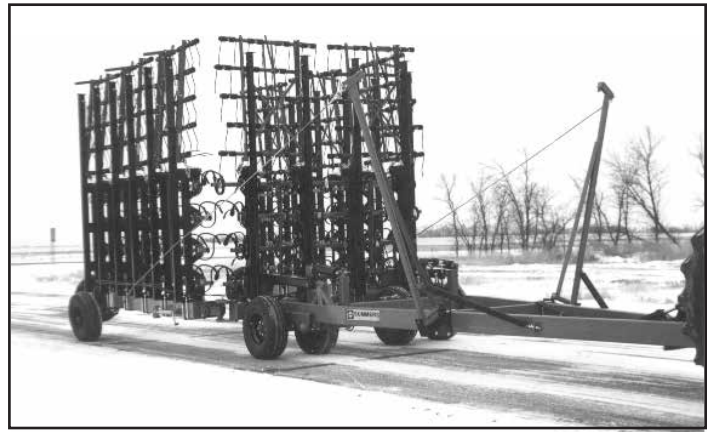


Fig. 2: Transport Position

The machine should be placed in an area that allows ample room for field position assembly (See Fig. 1).

CAUTION: For safety purposes, block equipment while working on it.

Refer to illustrations and parts listings on pages 6-2 through 6-20 and follow these steps when assembling.

HITCH – Axles, Wheels and Jack

Attach hitch axle assemblies as shown on page 6-2. Position center of axles 19” ahead of the rear of the hitch 8” X 4” tube. Mount hitch wheels and tires and install hitch jack.

If machine is equipped with optional Hydraulic Depth Adjustment, attach hitch Hydraulic Depth Adjustment and axle assemblies as shown on page 6-3. Mount hitch wheels and tires and install hitch jack.

DRAWBAR – Center, Hydraulic Lift Cylinders, Wings, Axles and Wheels.

Attach center drawbar to hitch using two 1-1/4” X 6” pins and secure with flat washers and 5/16” X 2-1/2” cotter pins. Mount main lift cylinders and transport locks. Route hoses as shown on page 6-14. Fully charge main lift cylinders with hydraulic fluid by extending and retracting until all air is purged from system.

Knuckles are marked left and right. Before attaching wings, check that knuckles are on correct side of machine. Attach wings to knuckles using 1-1/2” X 11” pins. Secure with 1/2” X 2-1/2” bolt, washer and locknut. Install 1-1/2” jam nuts, center punch or spot weld to secure. Attach jack mounting swivels on top of wing near knuckle in field position. Secure with 7/8” u-bolt, lockwashers and nuts.

Mount wing axle plates with spindle down as shown on page 6-5 or wing Hydraulic Depth Adjustment Option assemblies (page 6-3). Mount wing wheels and tires. Do not mount transport wheel assemblies until lift arms are positioned.

LIFT ARMS: 4-RANK SUPERWEEDER

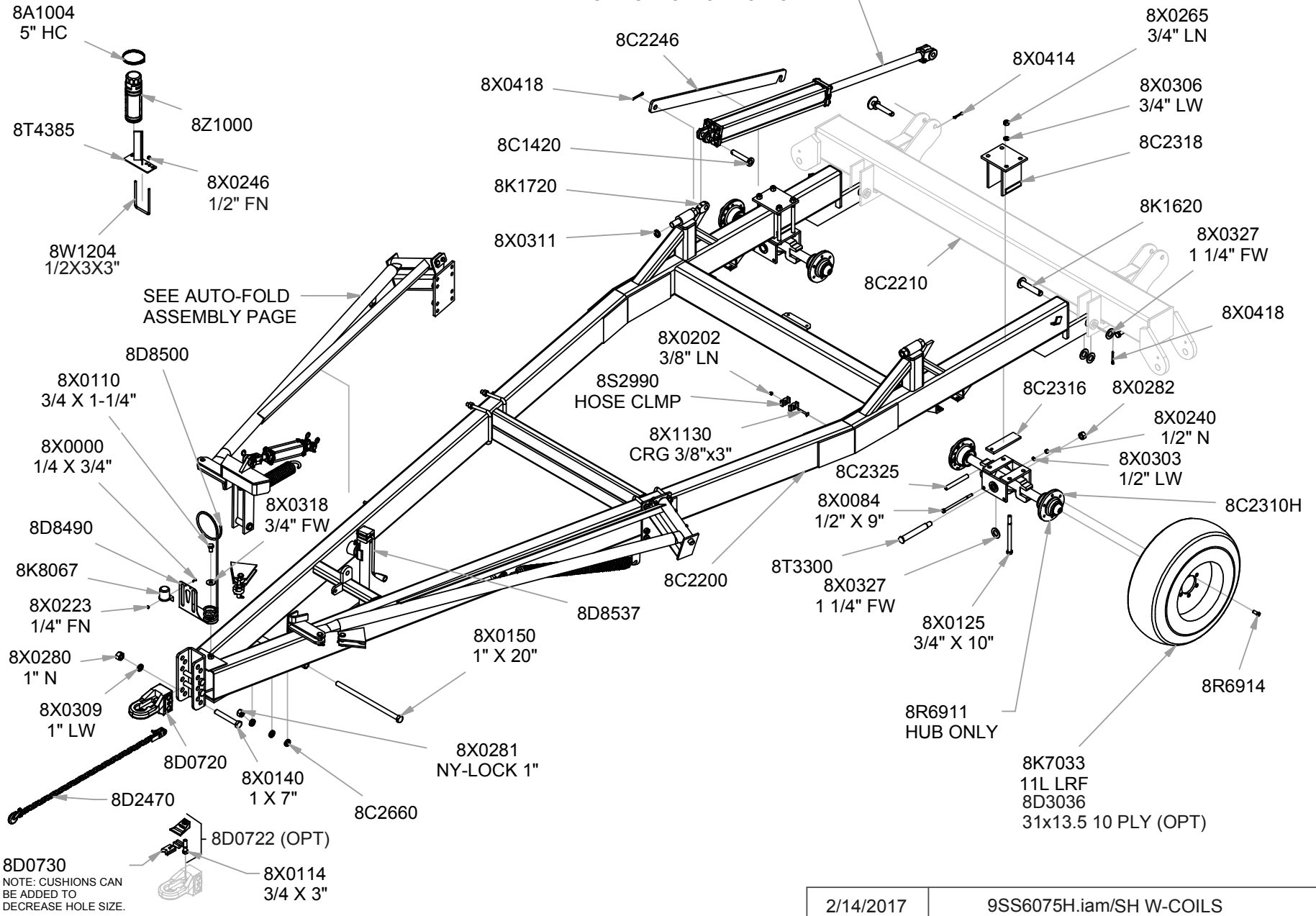
Refer to Figures 3 and 4 and parts pages 6-8 thru 6-11. All lift arms are spaced 30” center to center. Attach lift arms to drawbar using 7/8” u-bolts and hardware provided. See chart below for lift arm settings.

NOTE: Special lift arms are used where hydraulic cylinders are located.

| Max. Tillage Depth | Lift Arm Setting Hole | Tube Bushing Setting Hole |
|---------------------------|------------------------------|----------------------------------|
| 2” | Upper | Upper |
| 3-1/2” | Upper | Lower |
| 5” | Lower | Lower |

22' MACHINE HITCH (NO HDA)

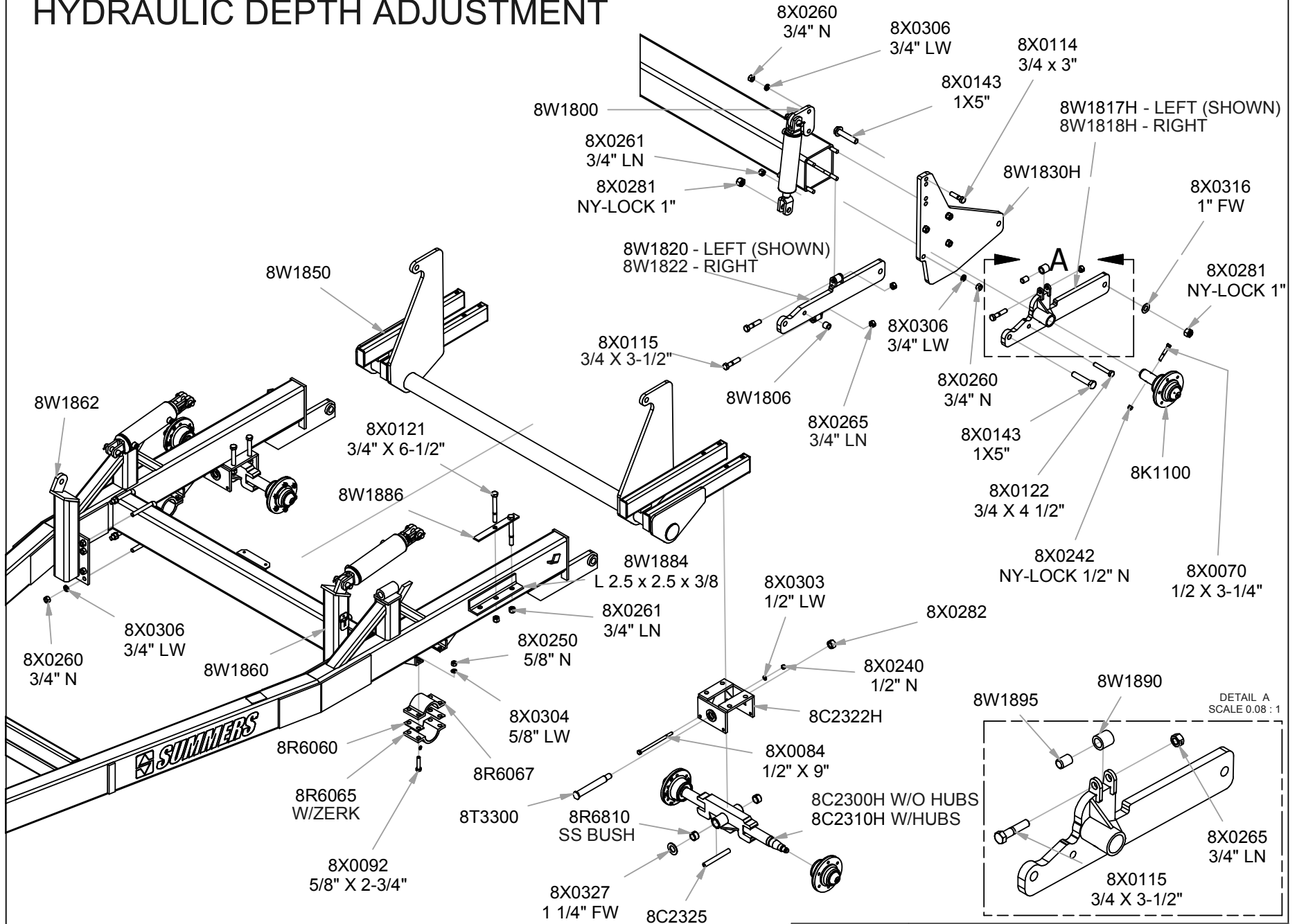
(3/8" TOOTH HARROW PACKER & SUPERWEEDER)



6-2

HYDRAULIC DEPTH ADJUSTMENT

6-3

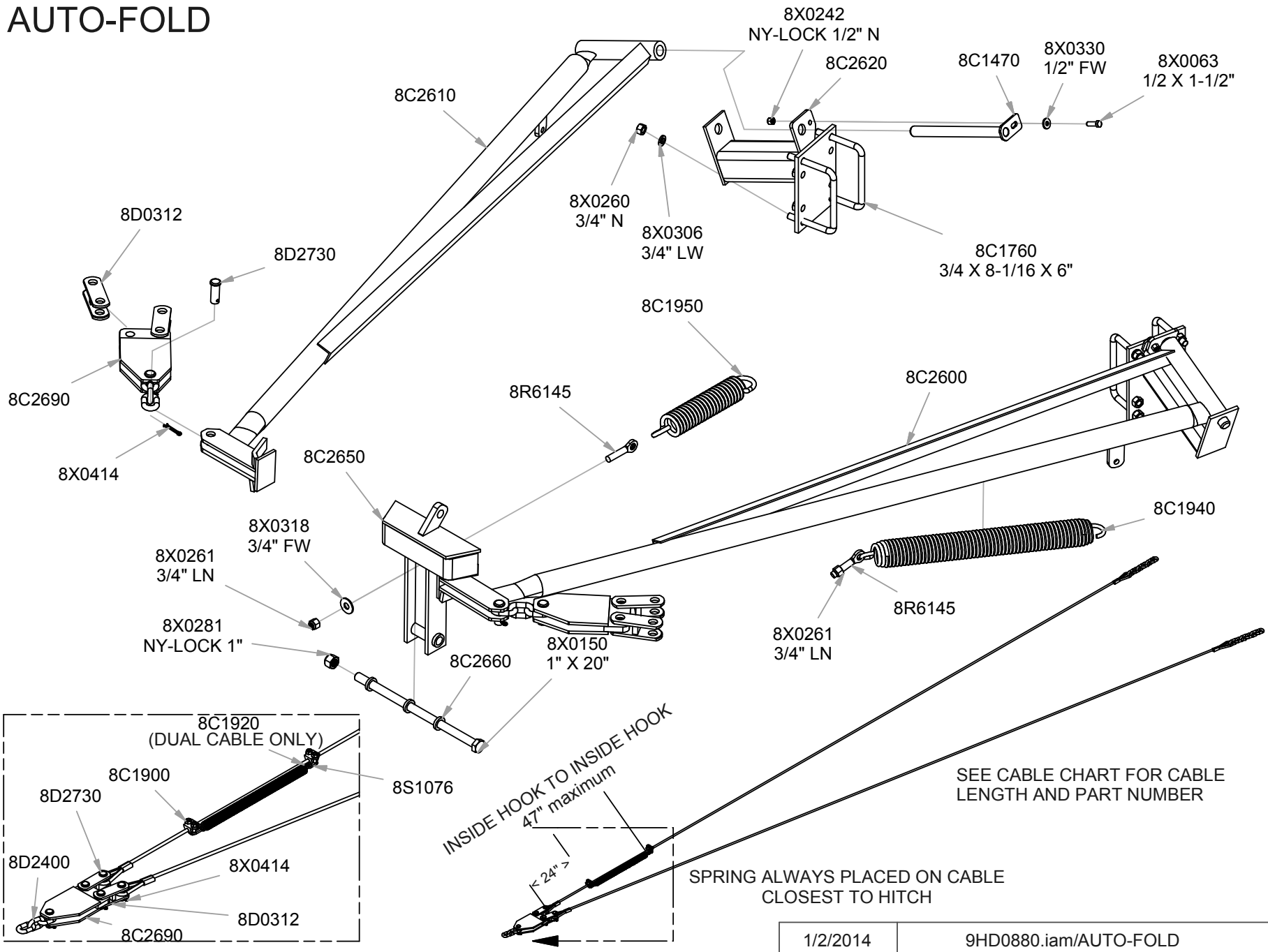


1/13/2014

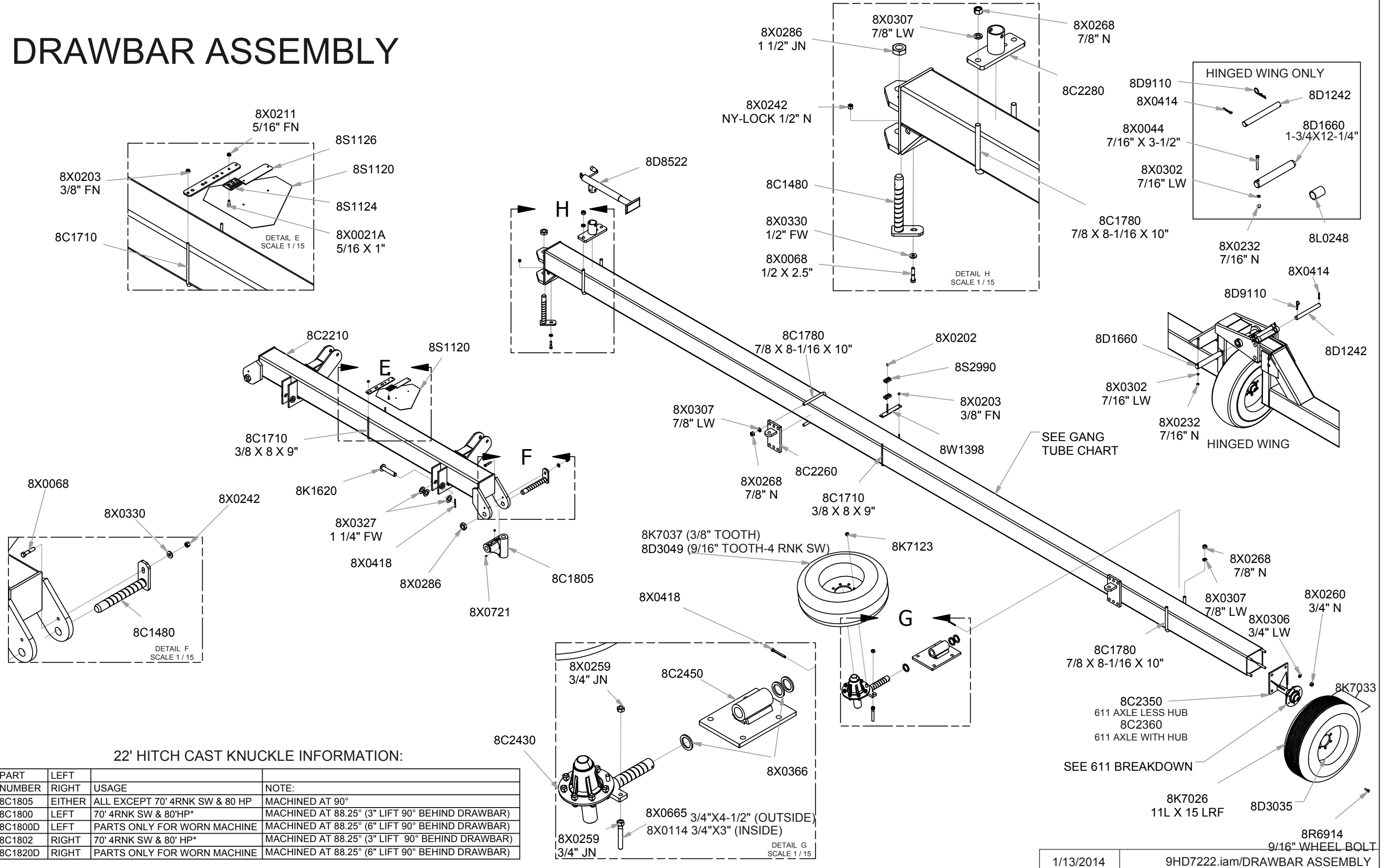
9HD0880.iam/HYD DEPTH CONTROL

AUTO-FOLD

6-4



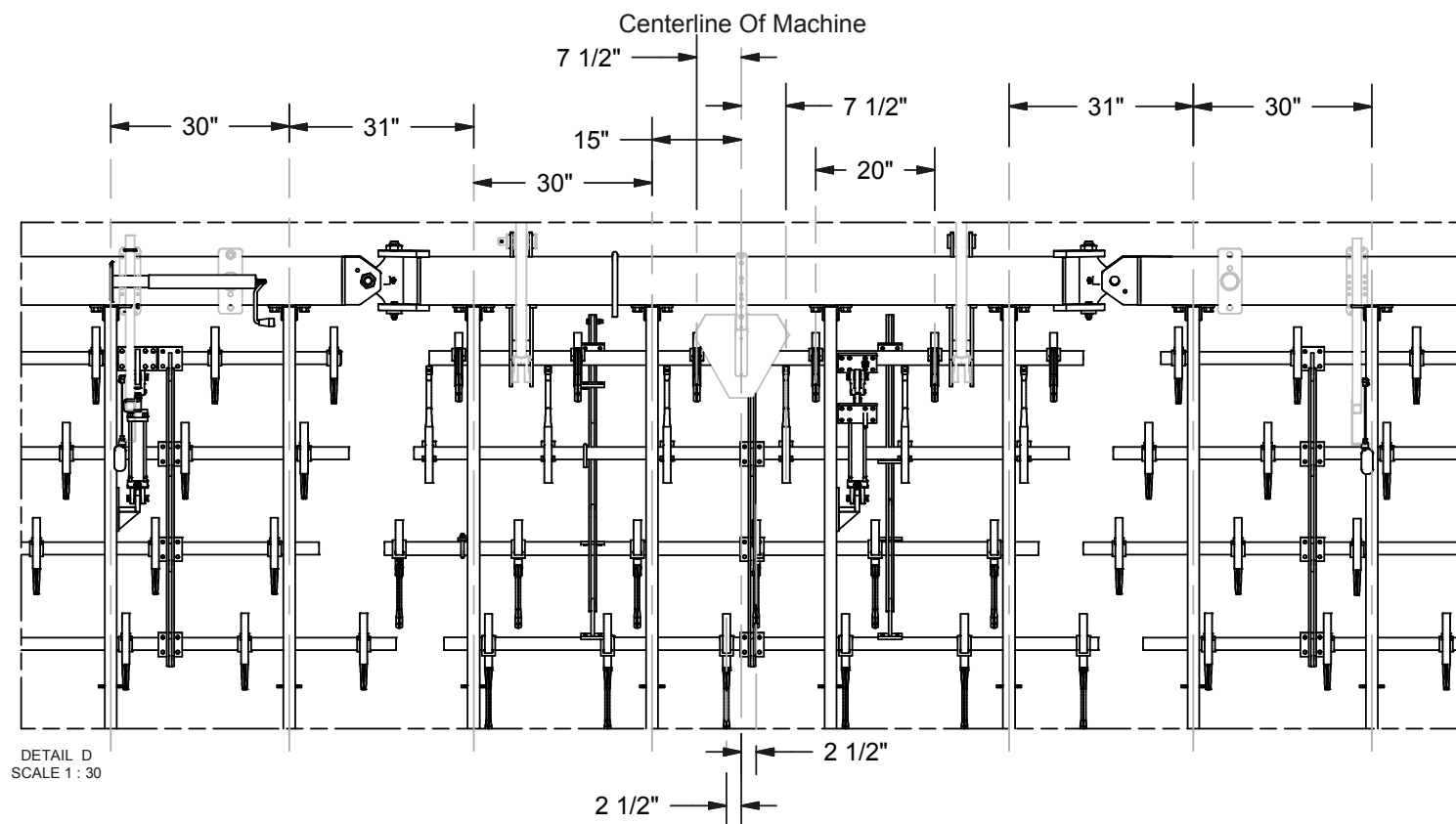
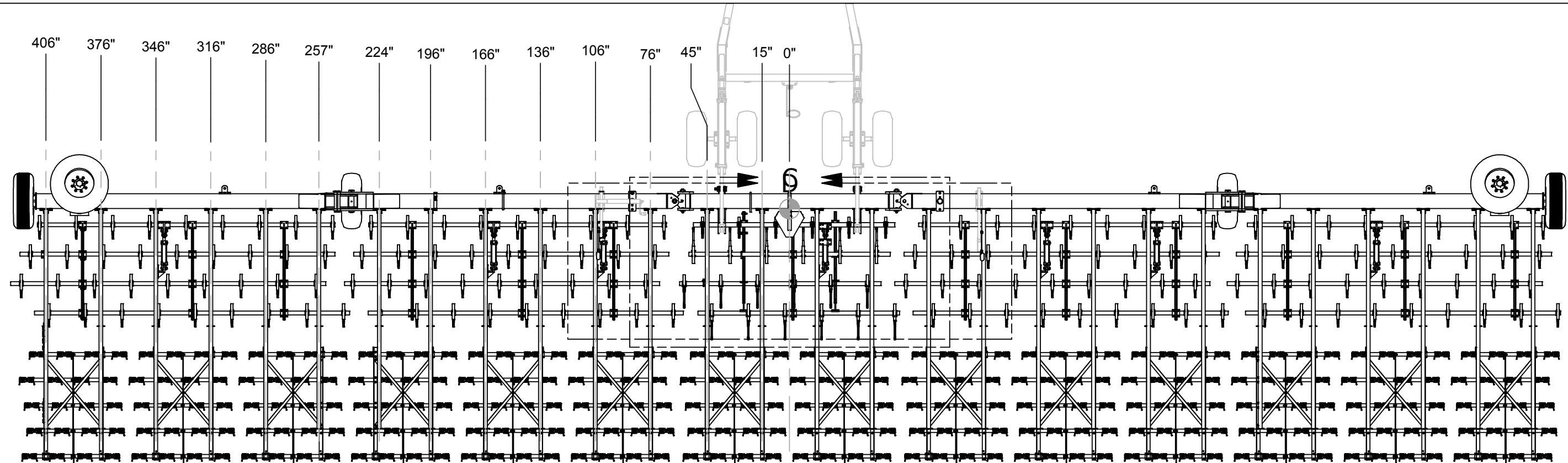
DRAWBAR ASSEMBLY



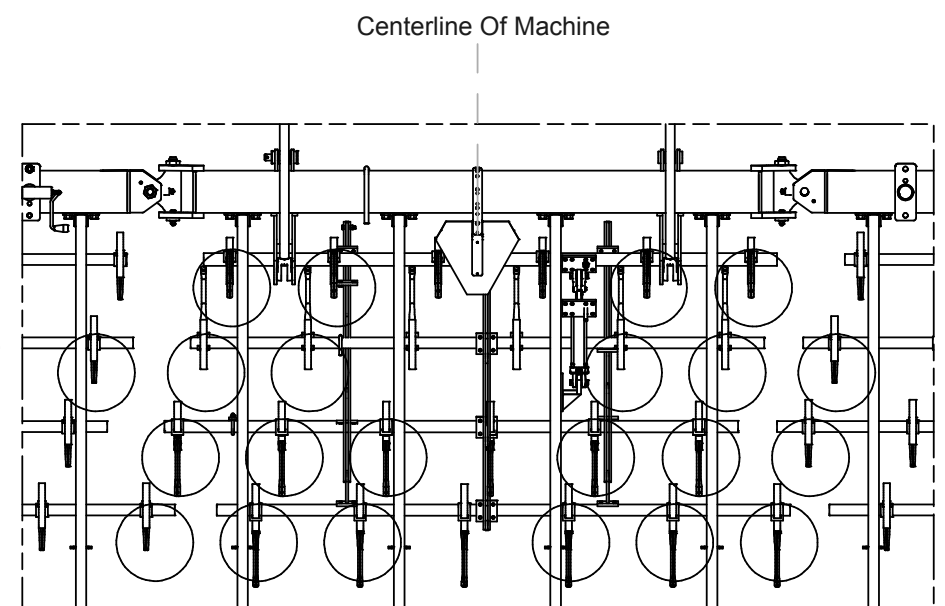
22' HITCH CAST KNUCKLE INFORMATION:

| PART NUMBER | LEFT | RIGHT | USAGE | NOTE: |
|-------------|--------|-------|--------------------------------|---|
| 8C1805 | EITHER | | ALL EXCEPT 70' 4Rnk SW & 80 HP | MACHINED AT 90° |
| 8C1800 | LEFT | | 70' 4Rnk SW & 80HP* | MACHINED AT 88.25° (3" LIFT 90° BEHIND DRAWBAR) |
| 8C1800D | LEFT | | PARTS ONLY FOR WORN MACHINE | MACHINED AT 88.25° (6" LIFT 90° BEHIND DRAWBAR) |
| 8C1802 | RIGHT | | 70' 4Rnk SW & 80' HP* | MACHINED AT 88.25° (3" LIFT 90° BEHIND DRAWBAR) |
| 8C1820D | RIGHT | | PARTS ONLY FOR WORN MACHINE | MACHINED AT 88.25° (6" LIFT 90° BEHIND DRAWBAR) |

SECTION 6 - 4-RANK SUPERWEEDER

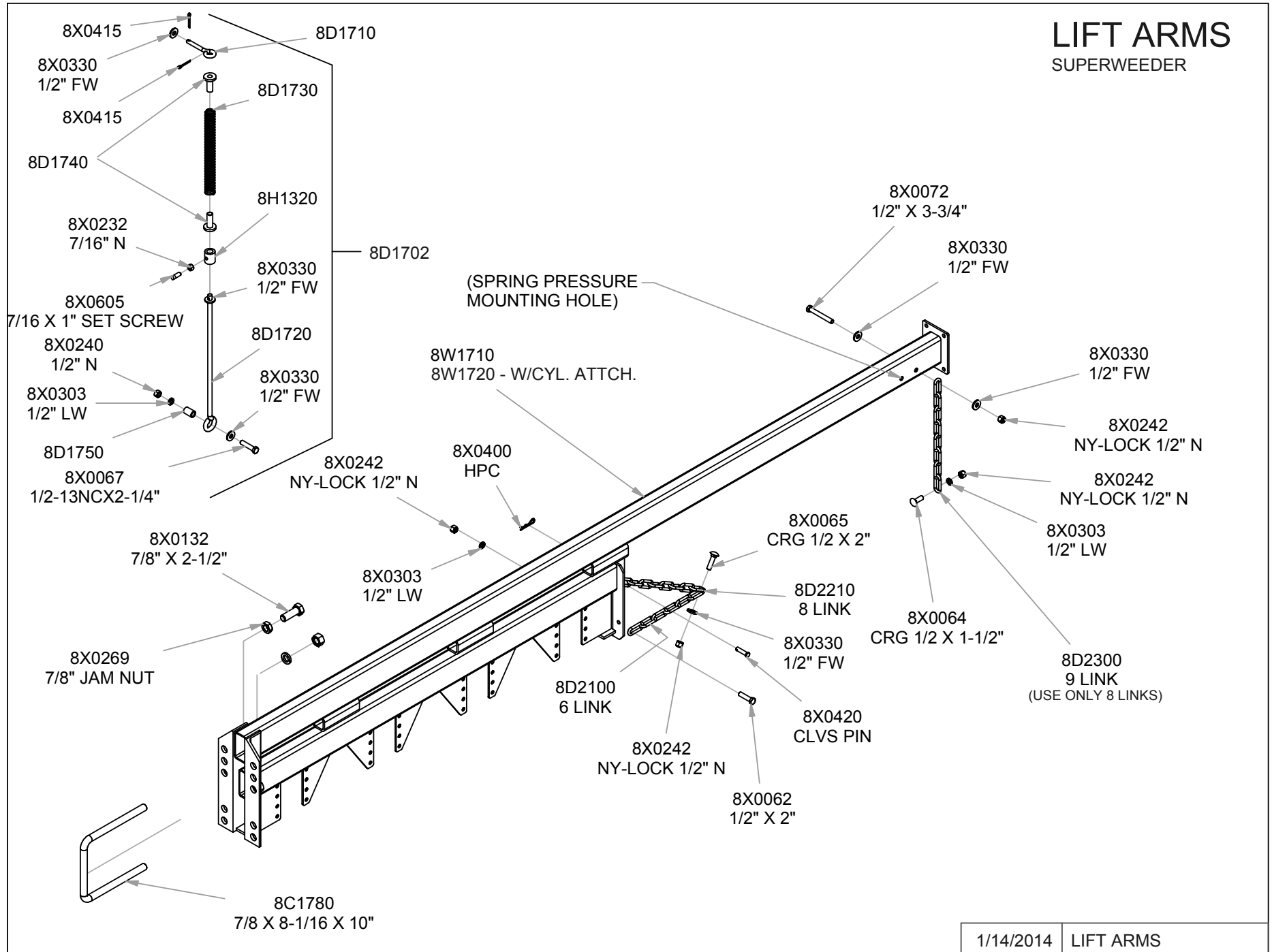


TYPICAL
EXTENDED
S-TINE
LOCATIONS



LIFT ARMS SUPERWEEDER

6-7



SECTION 6 - 4-RANK SUPERWEEDER

TINE TUBES AND TINES

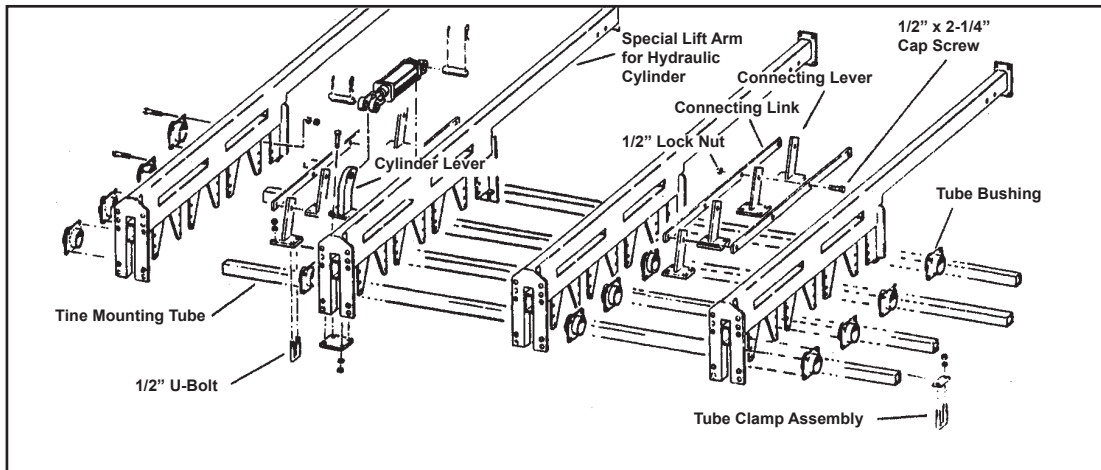


Fig. 3: Lift arms and tine tube assembly – 4-Rank

Assemble tine tube and S-tines to lift arms as shown in Figure 3. Secure tube bushings in place with four 7/16" X 1" bolts, lock washers and nuts. See Figure 5 for section sizes and Depth Chart (page 6-1) for vertical adjustment.

NOTE: There are two lengths of S-tine mounting tubes (except where noted). The long tubes (170") are used only on 15' sections along with six lift arms. The short tubes (110") are used only on 10' sections with four lift arms.

Beginning at centerline of machine, space tines as shown in Figure 5. All measurements shown in Figure 5 are to centerline of lift arms and tines. Tine tubes will have to be slid one way or the other to get correct spacing. All S-tines are spaced 20" on center.

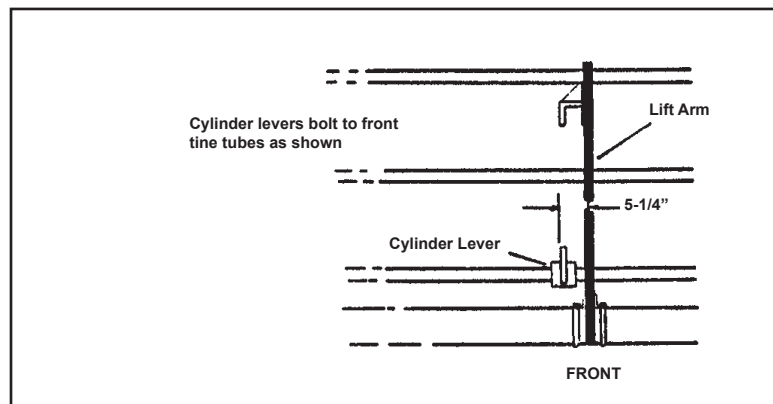


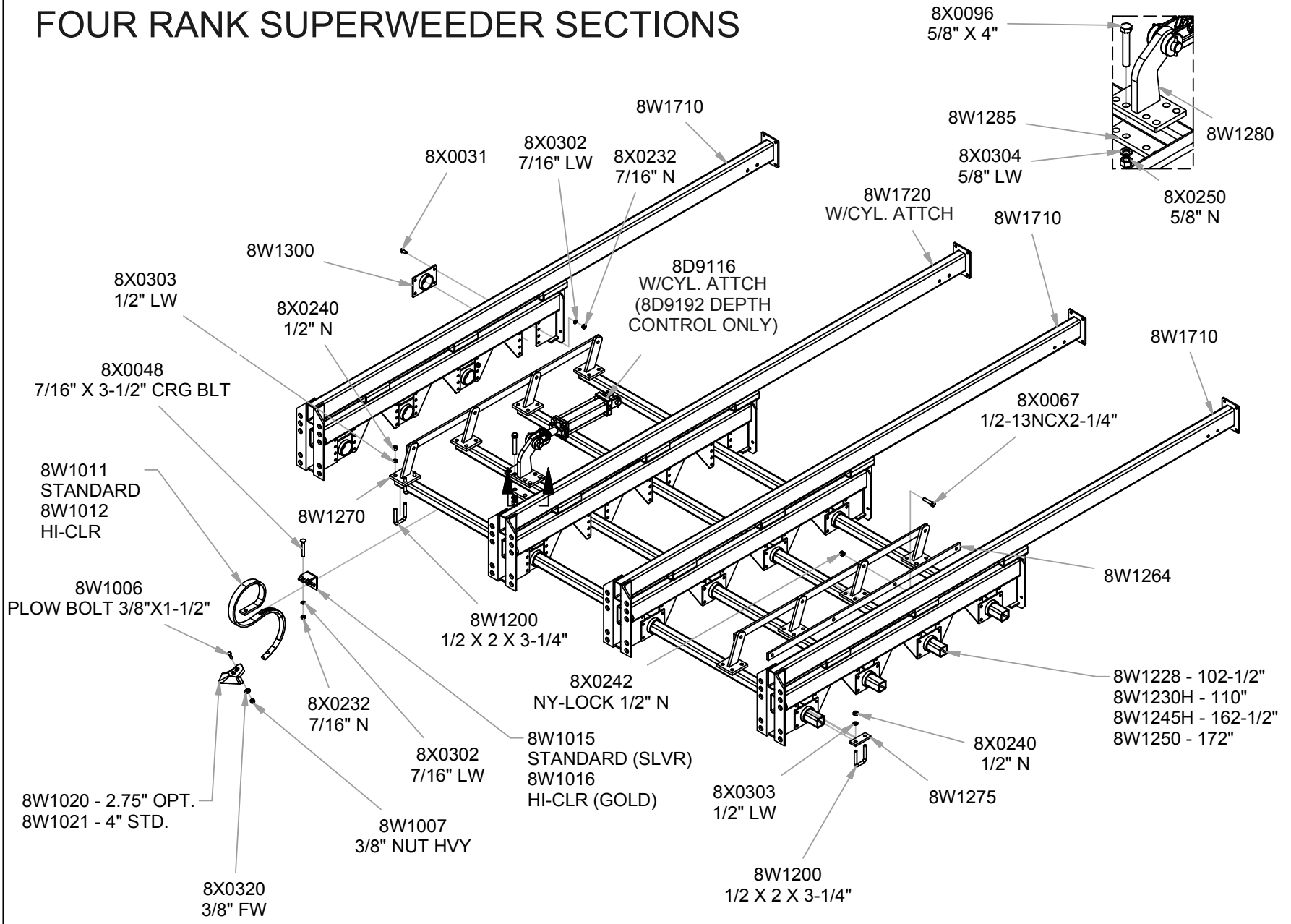
Fig. 4: Hydraulic cylinder lever location

When section tines are spaced and secured, install tube clamps to prevent tubes from moving side to side. Install and secure connecting levers and links. Secure connecting levers with 1/2" u-bolts. Secure connecting links with 1/2" X 2-1/2" bolts and lock nuts.

Refer to Figures 4 and 5 (pages 6-10 - 11) and position hydraulic cylinder levers and plates, secure with four 5/8" X 4" bolts, lock washers and nuts.

IMPORTANT: S-tine mounting tubes and S-tines must not contact tires. To check clearance, raise hinged wing support tires slowly to determine if tire contact will occur before travel limit is reached. S-tine spacing may have to be adjusted to prevent interference.

FOUR RANK SUPERWEEDER SECTIONS



6-9

SECTION 6 - 4-RANK SUPERWEEDER

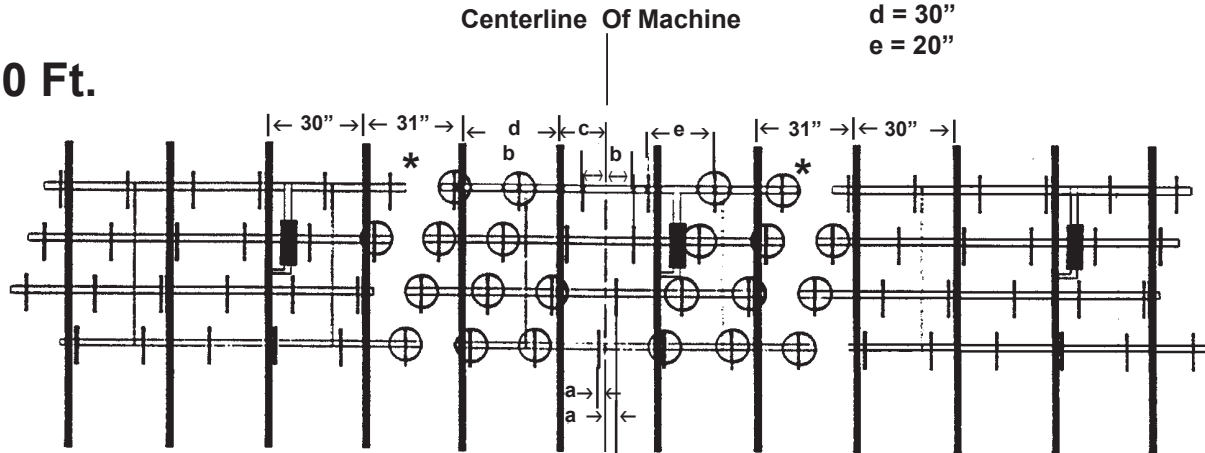
SECTION 6 - 4-RANK SUPERWEEDER

Spacing measurements shown begin at centerline and apply to all machines.

Spacing Legend

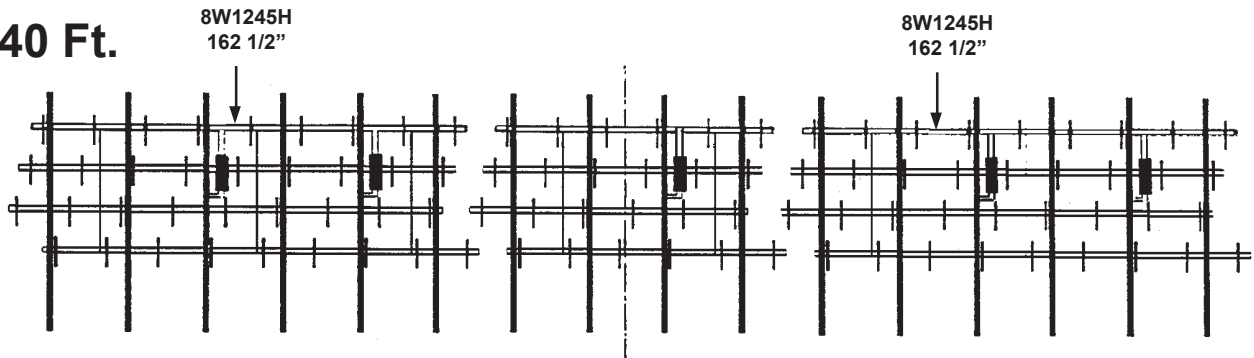
- a = 2-1/2"
- b = 7-1/2"
- c = 15"
- d = 30"
- e = 20"

30 Ft.

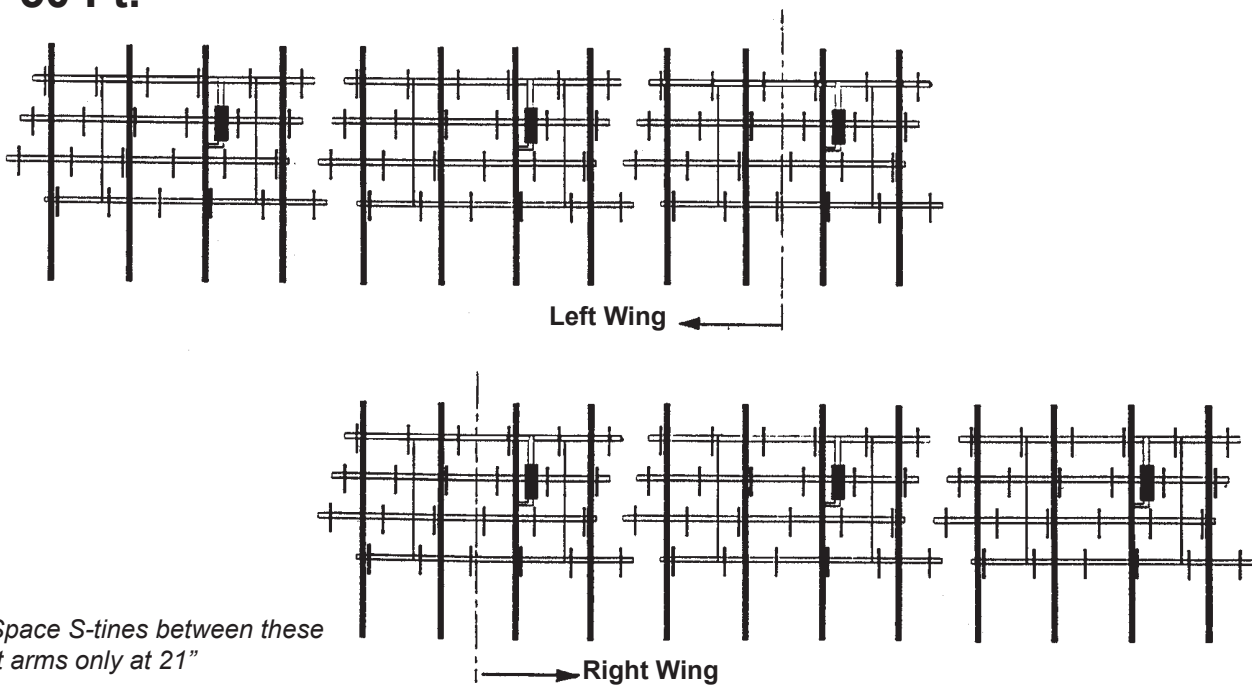


○ - Typical Extended S-tine Locations.

40 Ft.



50 Ft.



*Space S-tines between these lift arms only at 21"

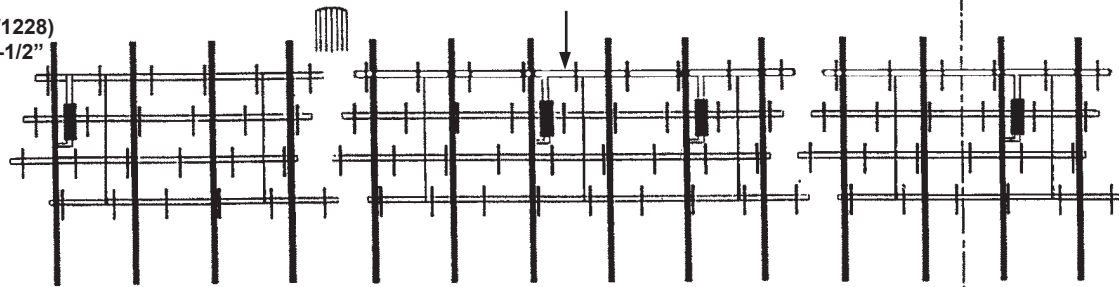
Fig. 5: Lift arm, Tine Tube and S-Tine Location Schematic

SECTION 6 - 4-RANK SUPERWEEDER

60 Ft.

(8W1228)
102-1/2"

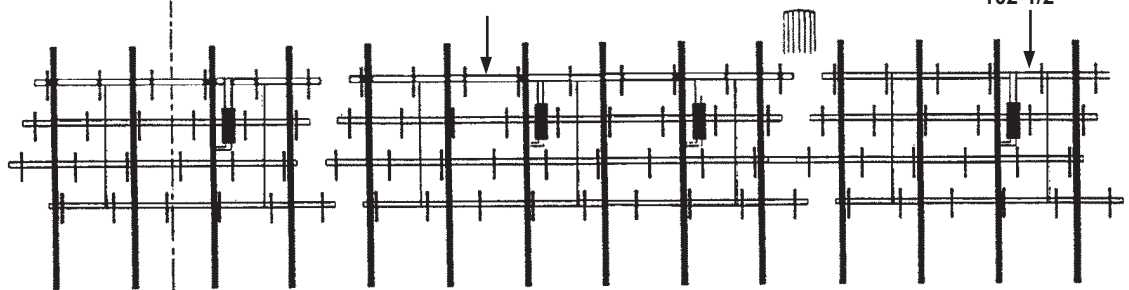
8W1245H
162 1/2"



Left Wing ←

8W1245H
162 1/2"

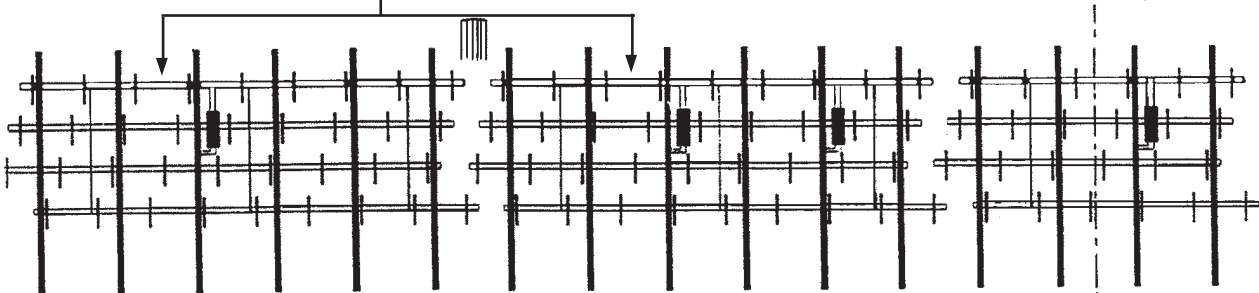
(8W1228)
102-1/2"



→ Right Wing

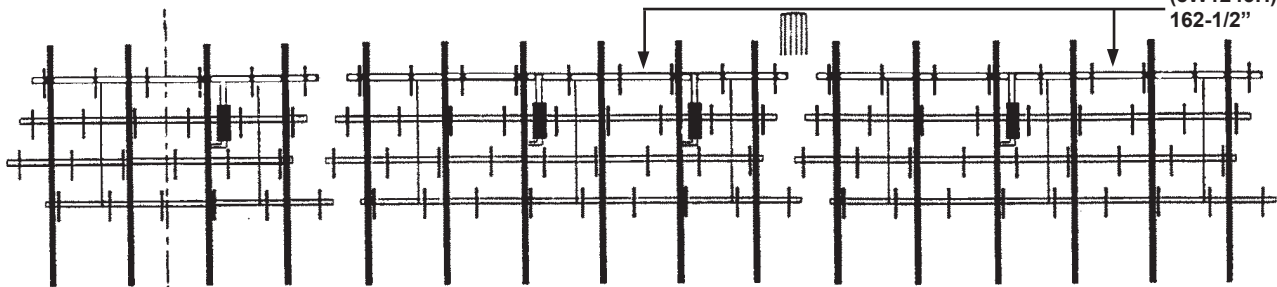
70 Ft.

(8W1245H)
162-1/2"



Left Wing ←

(8W1245H)
162-1/2"



→ Right Wing

Fig. 5 continued

SECTION 6 - 4-RANK SUPERWEEDER

HYDRAULIC S-TINE DEPTH CONTROL

Mount 2-1/2" X 8" cylinders on lift arms as shown in Figure 3. Connect hose lines to cylinders and manifold block mounted on hitch (See Figures 6 & 7). Assemble tractor hose lines and route with lift cylinder lines along hitch. Secure 1/4" hydraulic hose to lift arms with clamps (8W1390) and u-bolts provided. Leave slack in lines at knuckles between center and wing sections.

IMPORTANT: Allow enough hydraulic hose at hinge points to avoid pinching or stretching. Adjust routing if pinching or stretching occurs.

HYDRAULIC SYSTEMS

Mount auto-fold lock, cylinder and hoses as shown on page 6-14.

NOTE: The tractor hydraulic control valve operating auto-fold lock cylinder must hold pressure. If auto-fold lock cylinder extends during field operation, damage will occur.

Hydraulic Depth Adjustment Option – 30' to 50' Machines Only:

Mount cylinders and route hoses as shown on page 6-15. Allow enough hose at hinge points to avoid pinching or stretching. Clamps (8W1390) are provided to secure hydraulic hoses to lift arms.

HARROW SECTIONS

Assemble sections as shown in parts breakdown on page 6-16. Attach sections to lift arms with chains and hardware provided. Drop one link of the 9-link chain provided. This, now, 8-link lift chain must be attached to the back hole in both lift arm and section. Mount **optional spring pressure** in front hole in both lift arms and section.

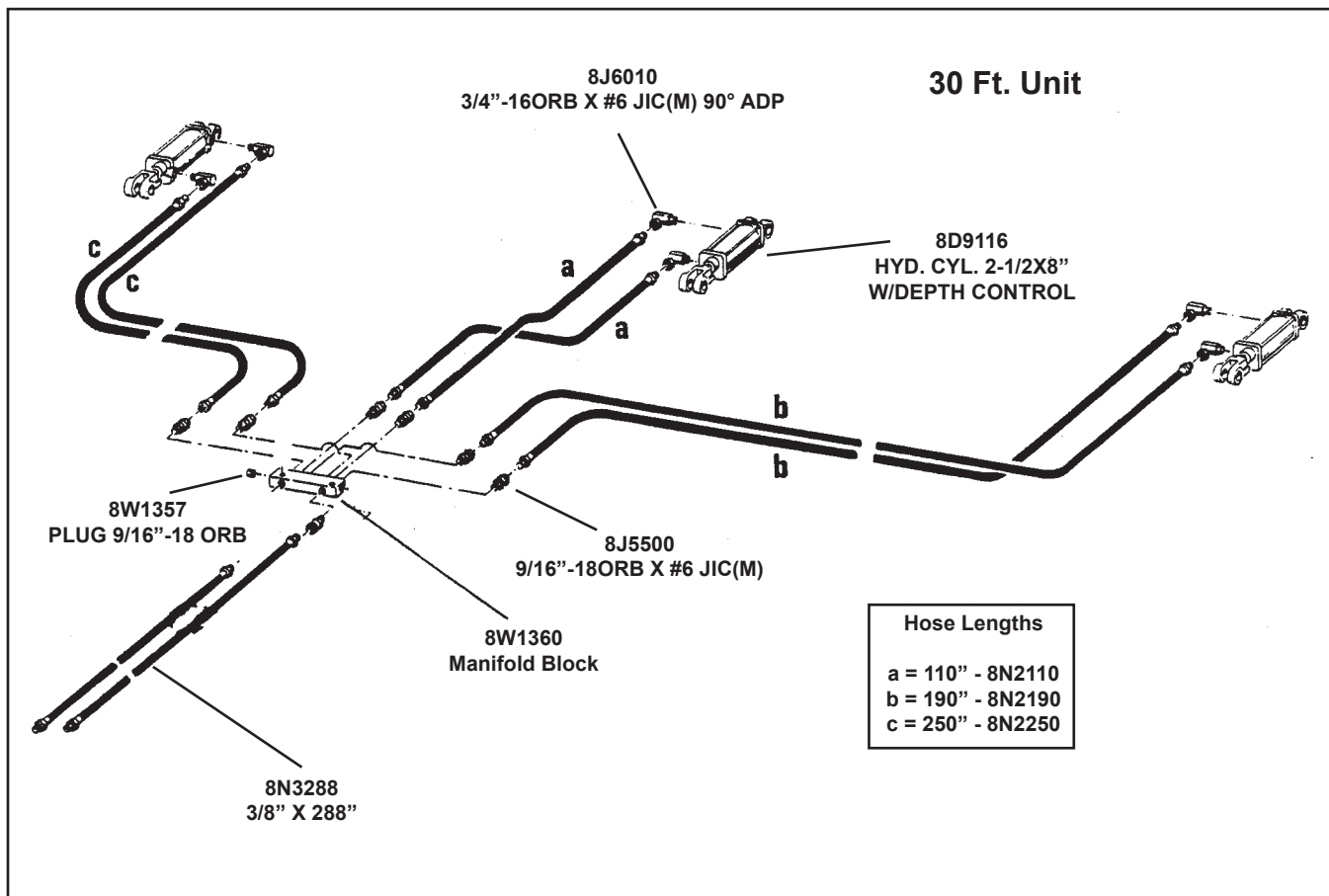
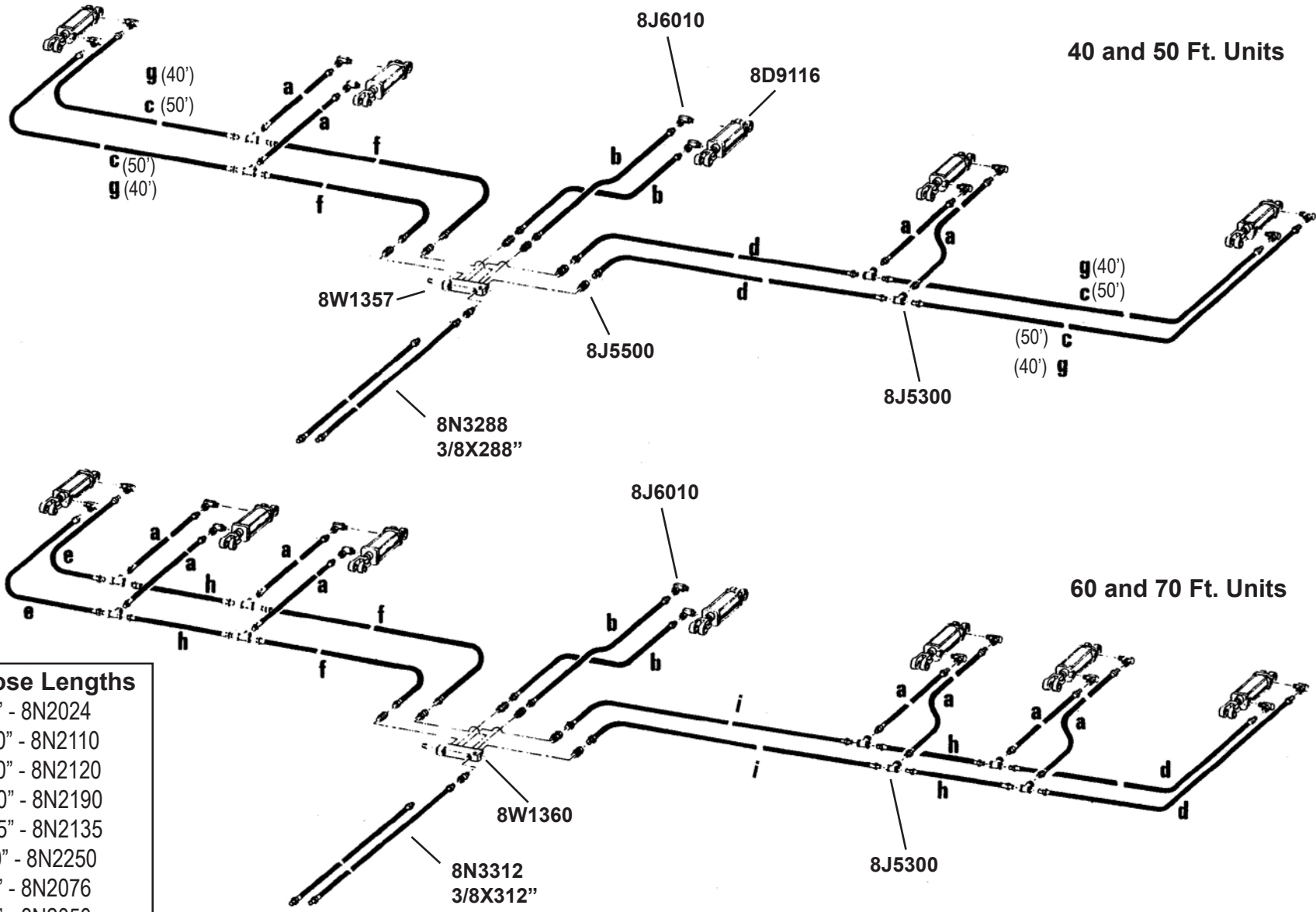


Fig. 6: Hydraulic System, S-Tine Rotation – 4-Rank Superweeder

Fig. 7: Hydraulic System, S-Tine Rotation - 4-Rank Superweeder

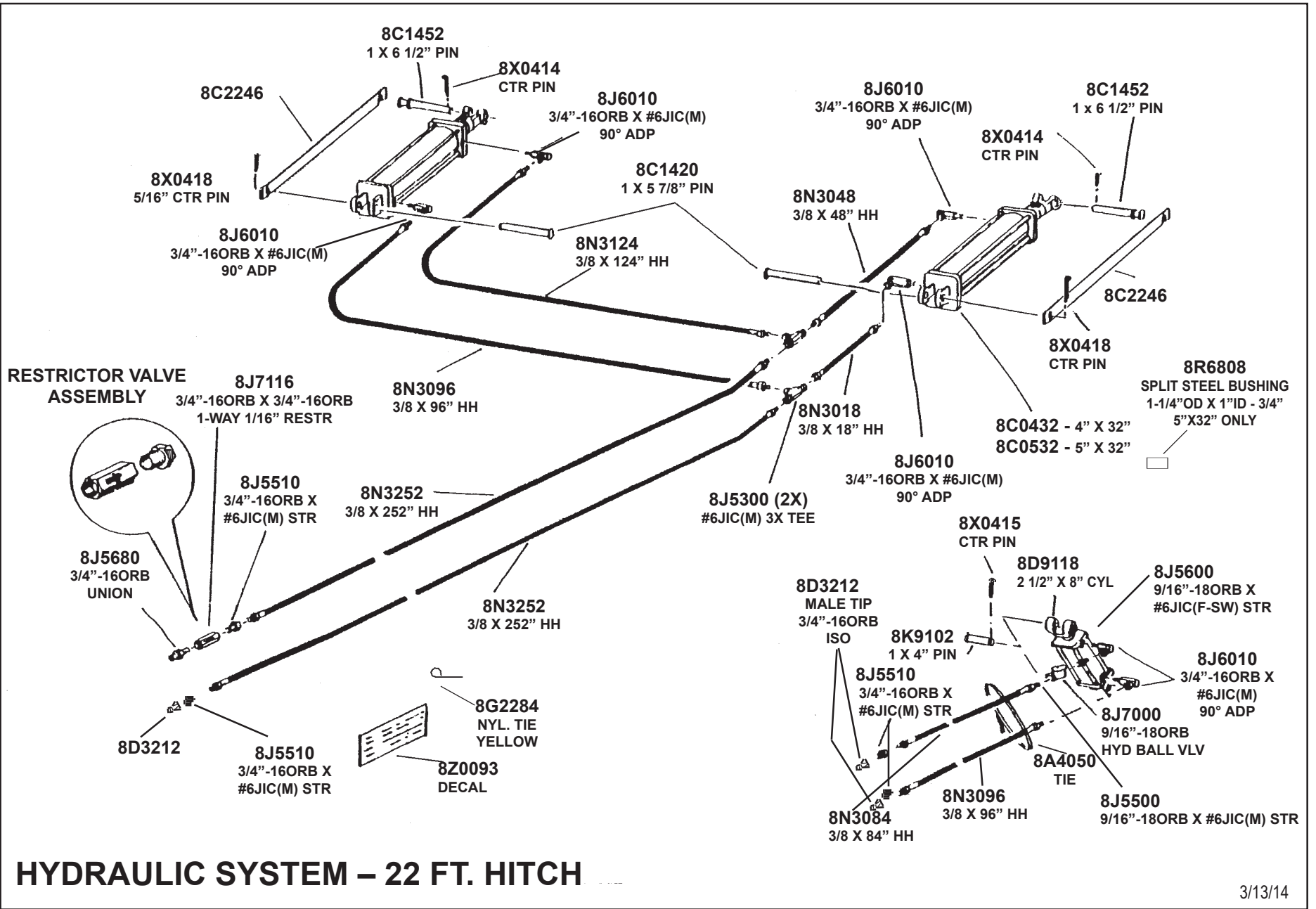


40 and 50 Ft. Units

60 and 70 Ft. Units

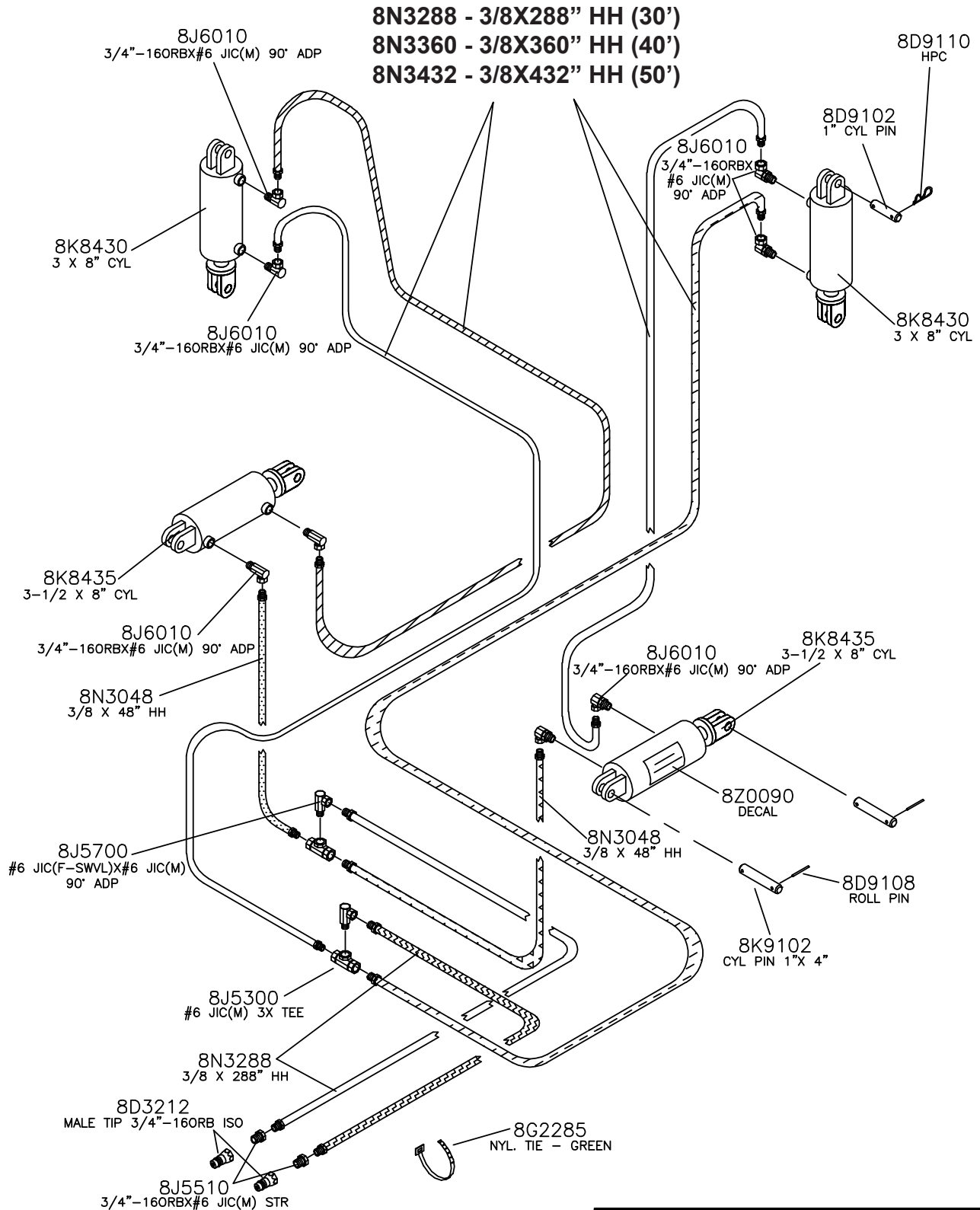
| Hose Lengths | |
|--------------|-----------------|
| a | = 24" - 8N2024 |
| b | = 110" - 8N2110 |
| c | = 120" - 8N2120 |
| d | = 190" - 8N2190 |
| e | = 135" - 8N2135 |
| f | = 250" - 8N2250 |
| g | = 76" - 8N2076 |
| h | = 50" - 8N2050 |
| i | = 210" - 8N2210 |

6-14



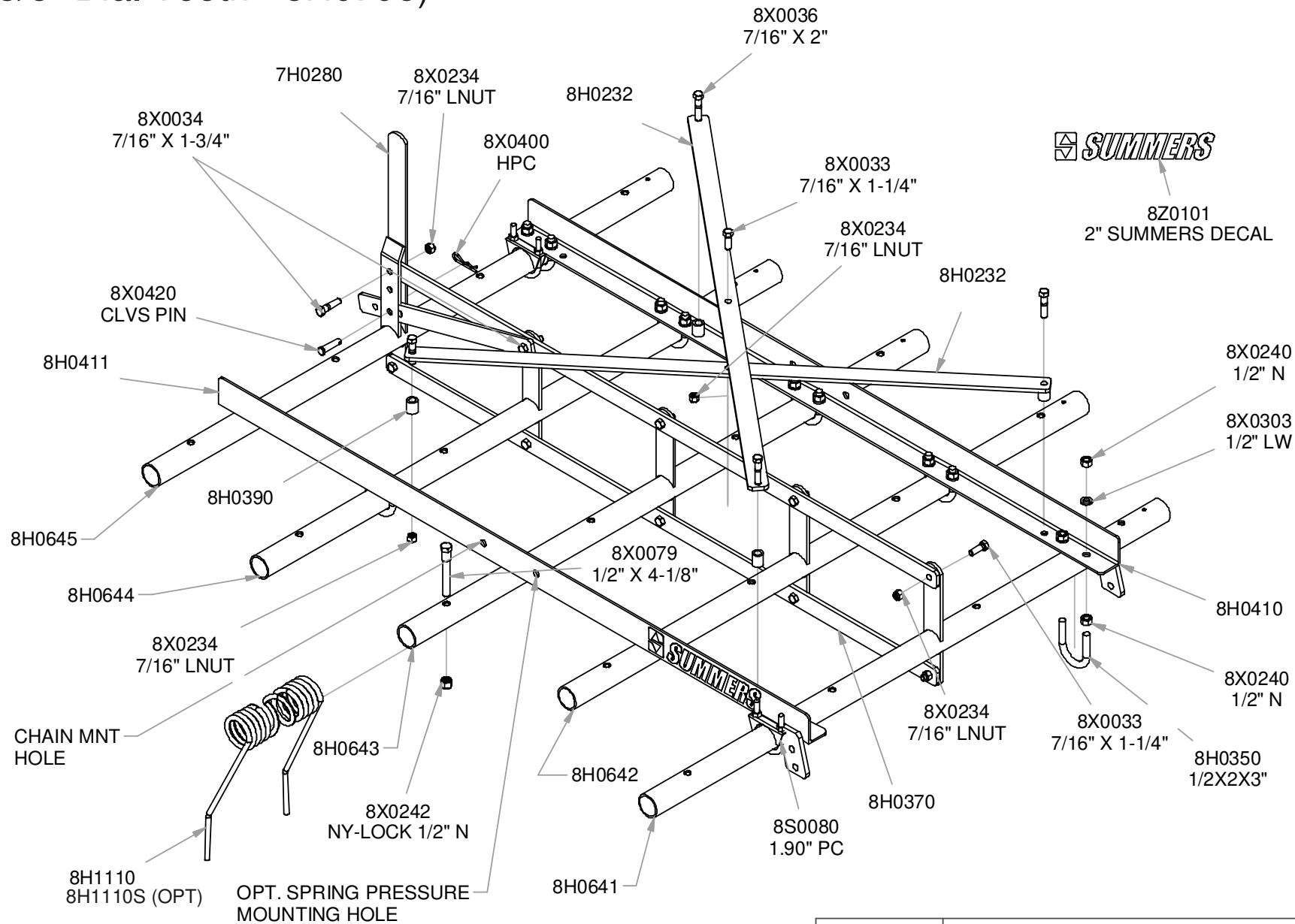
SECTION 6 - 4-RANK SUPERWEEDER

HYDRAULIC DEPTH ADJUSTMENT



5 FT. HARROW SECTION - 5 BAR (3/8" Dia. Tooth - 8H0795)

6-16



SECTION 6 - 4-RANK SUPERWEEDER

TRANSPORT WHEELS

Locate transport wheel assemblies as shown in chart below.

| TRANSPORT WHEEL ASSEMBLIES | | |
|----------------------------|---|---------------------|
| Machine Size | Location on Wing | Pivot Tube Position |
| 30' & 40' | Over End Section | Up |
| 50' & 60' | Between end and Second Section from End of Wing | Up |
| 70' | Over Second Section from End of Wing | Down |

Secure with 7/8" u-bolts and hardware.

Transport axle "toe-in" can be adjusted with outside stop set bolt (8X0665, page 6-5). Adjust inside stop bolt 3/8" away from pivot plate when resting on outside stop bolt. This adjustment will allow transport wheel to pivot inward while unfolding. Double lock stop bolts with 3/4" jam nuts provided.

AUTO-CABLE FOLD

Mount auto-fold pivot brackets ahead of welded stop on hitch frame. Do not fully tighten u-bolts. Attach left and right cable fold arms to pivot brackets with 1-1/4" X 14" pins and hardware.

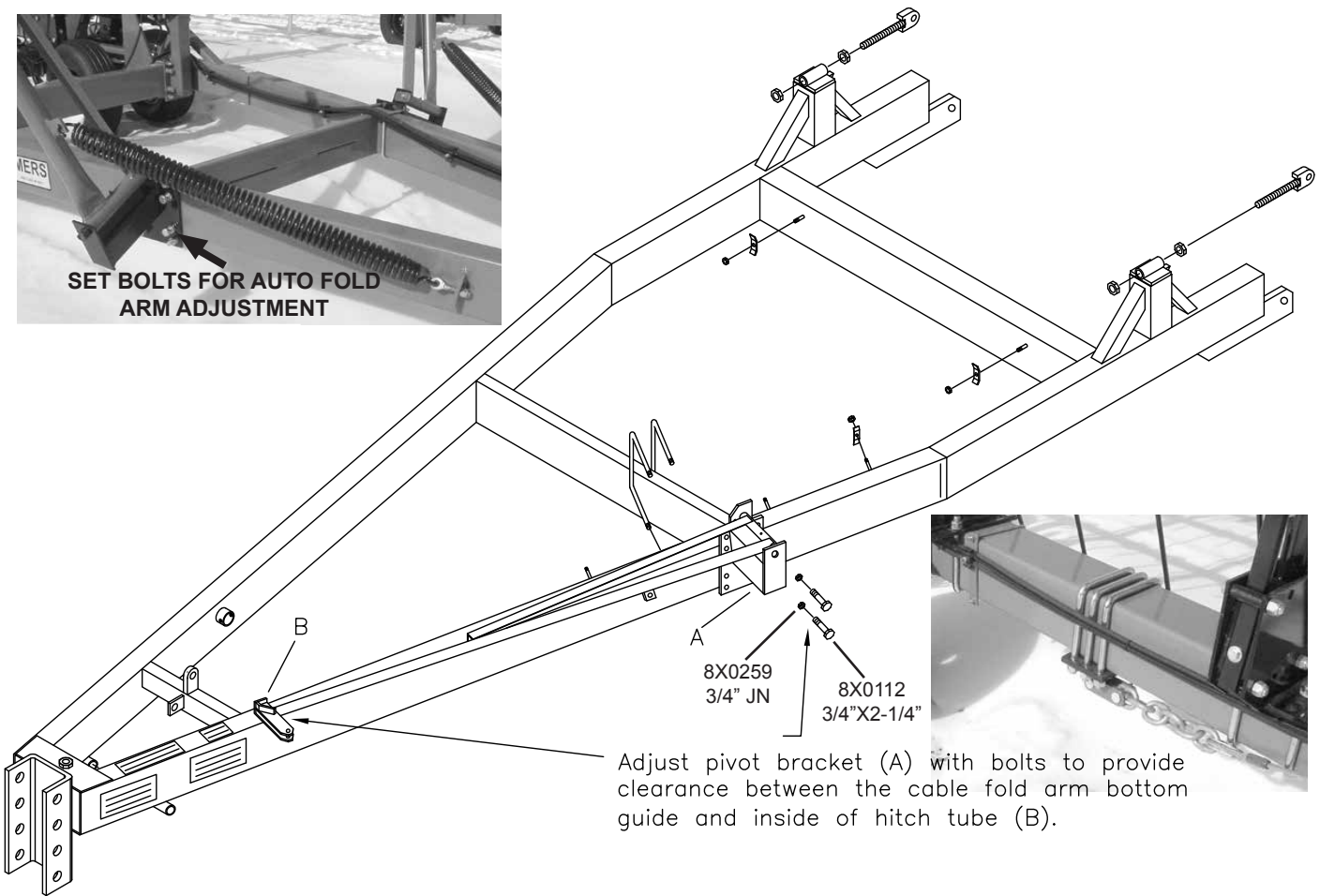
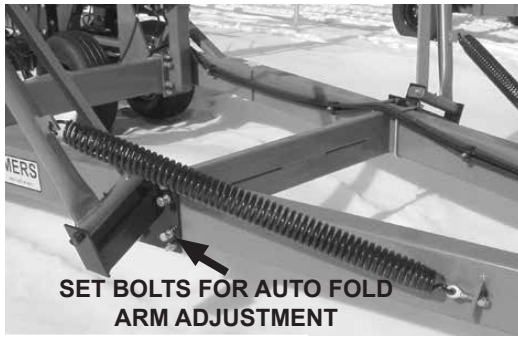
Adjust pivot brackets to provide clearance between cable fold arm bottom guide and hitch tube. This adjustment is made with 3/4" X 2-1/4" bolts (8X0112, page 6-18). This adjustment will allow cable fold arms to pivot freely into transport position. Fully tighten mounting u-bolts after adjustment is made.

Attach tension springs with 3/4" eye bolts and lock nuts. Tighten eye bolts until spring coils begin to separate.

CABLES

Install cable brackets and cable assemblies. Adjust cables so wings slightly lead the center. Tighten attachment u-bolts, recheck tightness after first hour of field use.

SECTION 6 - 4-RANK SUPERWEEDER



22' HITCH — 8" SQUARE DRAWBAR Specification Chart

| Machine Size | Cable Length | PN-Cable | PN-Wing (Hngd Wing - Left Part 1) | PN-Hinged Wing - Right Part 1 | PN-Hinged Wing - End | PN-Lift Cylinder |
|--------------|--------------|----------|---|-------------------------------------|-------------------------|---------------------|
|--------------|--------------|----------|---|-------------------------------------|-------------------------|---------------------|

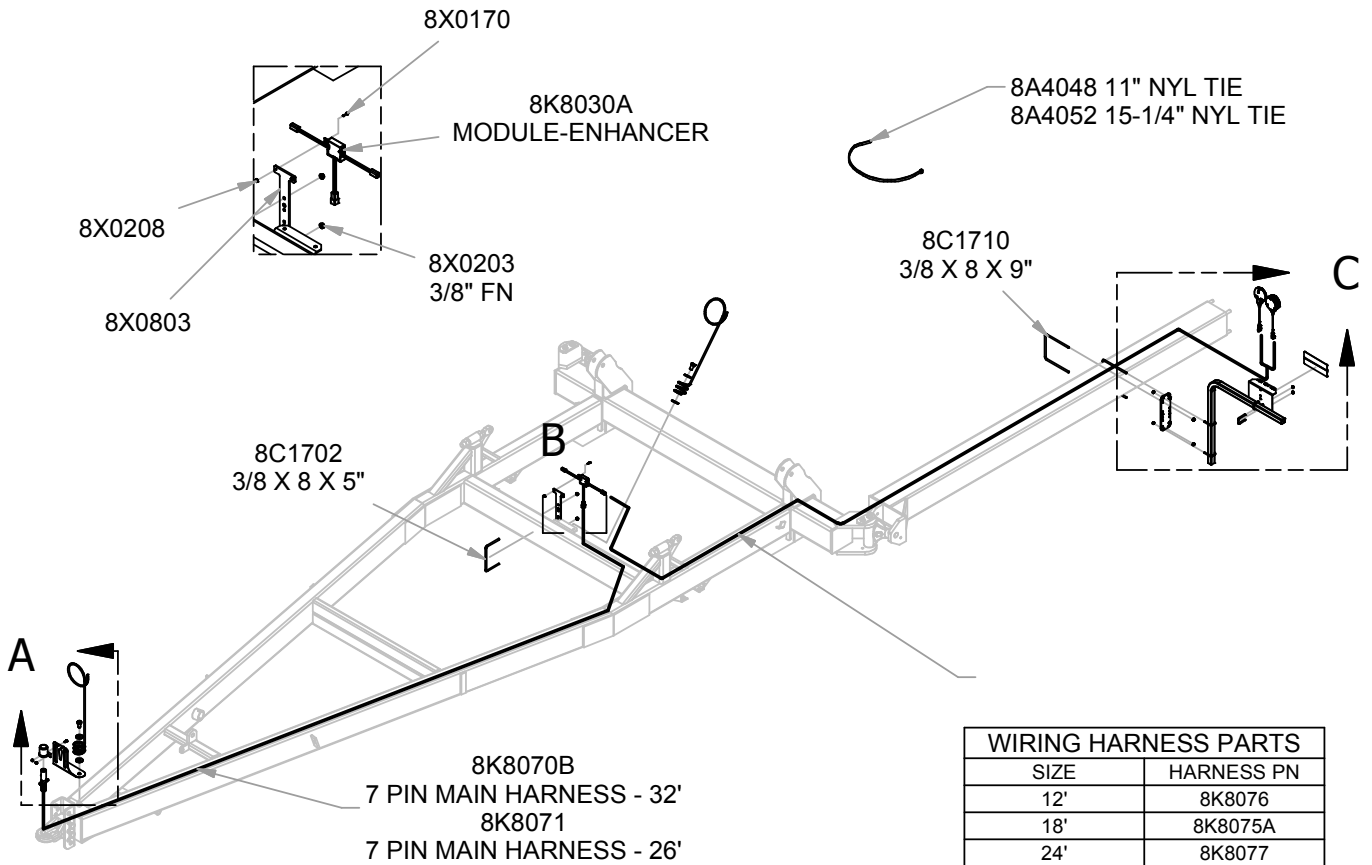
4-RANK SUPERWEEDER

| | | | | | | | |
|-----|---------|------|--------|--------|--------|--------|---------|
| 30' | | 227" | 8D1850 | 8C3100 | | | 8C0432 |
| 40' | | 262" | 8D1870 | 8C3150 | | | 8C0432 |
| 50' | Inside | 246" | 8D1860 | 8C3200 | | | 8C0532 |
| | Outside | 281" | 8D1880 | | | | |
| 60' | Inside | 262" | 8D1870 | 8C3500 | 8C3510 | 8C3550 | 8C0532* |
| | Outside | 324" | 8D1900 | | | | |
| 70' | Inside | 262" | 8D1870 | 8C3500 | 8C3510 | 8C3600 | 8C0532* |
| | Outside | 341" | 8D1910 | | | | |

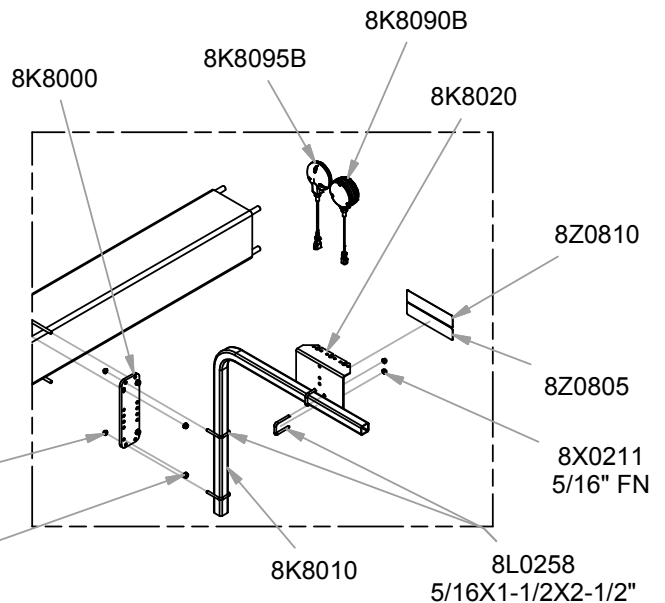
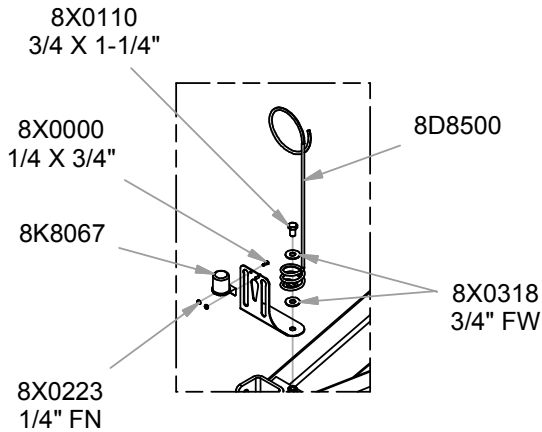
* Install 8R6808 Split Steel Bushings before assembly.

SECTION 6 - 4-RANK SUPERWEEDER

LIGHT KIT, 8"SQ DRAWBAR



| WIRING HARNESS PARTS | |
|----------------------|------------|
| SIZE | HARNESS PN |
| 12' | 8K8076 |
| 18' | 8K8075A |
| 24' | 8K8077 |
| 30' | 8K8078 |
| 36' | 8K8079 |
| 42' | 8K8081 |
| 48' | 8K8082 |
| 50' | 8K8080A |



WIRING IS SYMMETRICAL BEHIND 8K8070B/8K8071.

LEFT HAND LAYOUT SHOWN.

AVOID SHARP EDGES AND PINCH POINTS WHEN ROUTING CABLES.

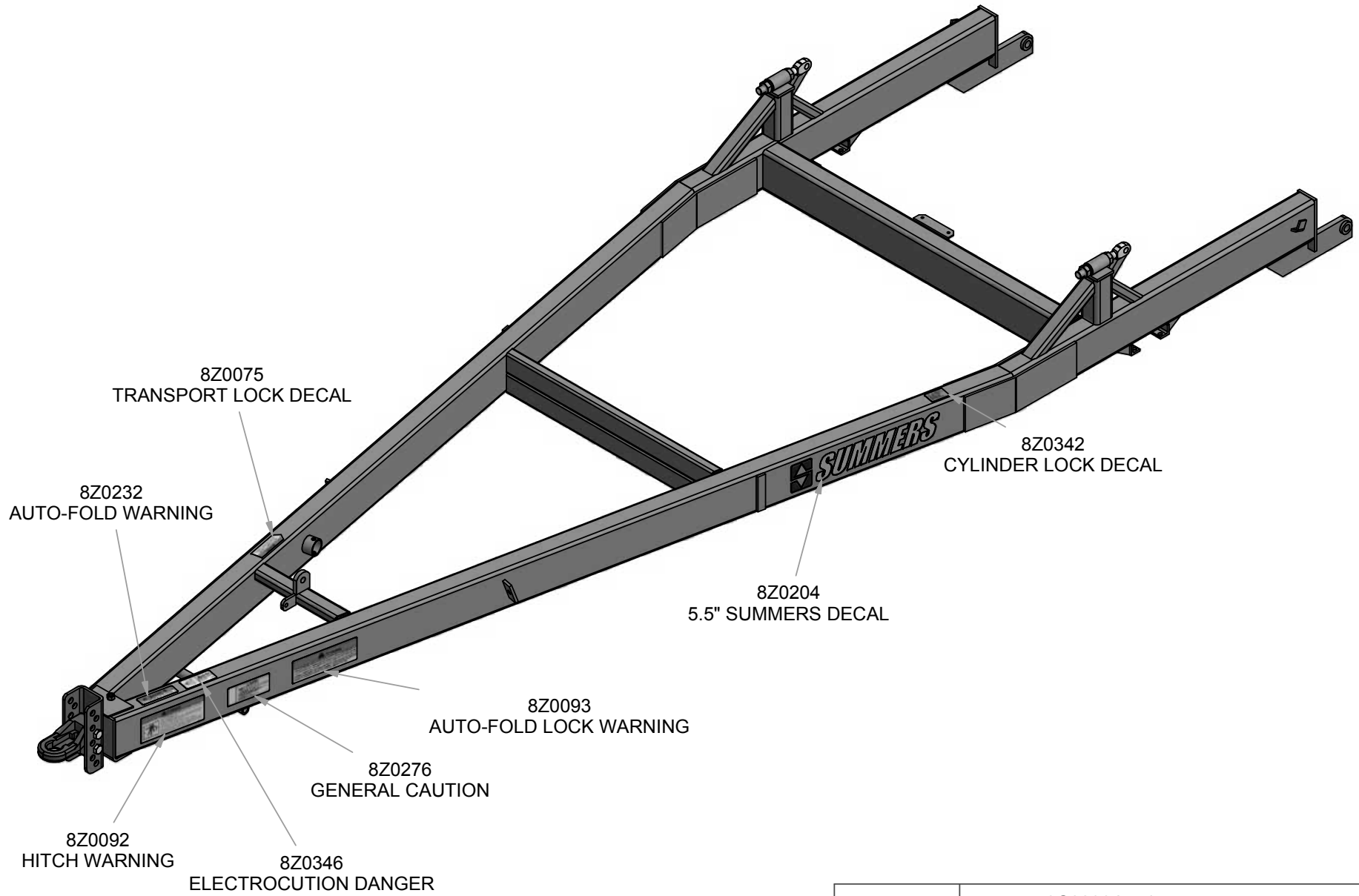
LEAVE SLACK AT HINGES AND KNUCKLES. SECURE WITH NYLON TIES.

10/3/2016

LIGHT KITS, 8"SQ DRWBR

DECALS

6-20



12/17/2013

8C2200.iam/SH DECALS

SECTION 6 - 4-RANK SUPERWEEDER

OPERATING INSTRUCTIONS

TRANSPORT TO FIELD POSITION

1. Hitch machine to tractor drawbar using a locking hitch pin and safety chain. Connect hydraulic hoses and wiring. Retract jacks and rotate into storage position.
2. Select a level area to lower machine into field position.
3. **IMPORTANT:** Remove transport locks. Store locks in storage guide shown in Figure 8.

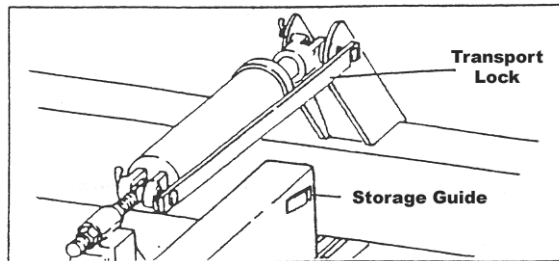
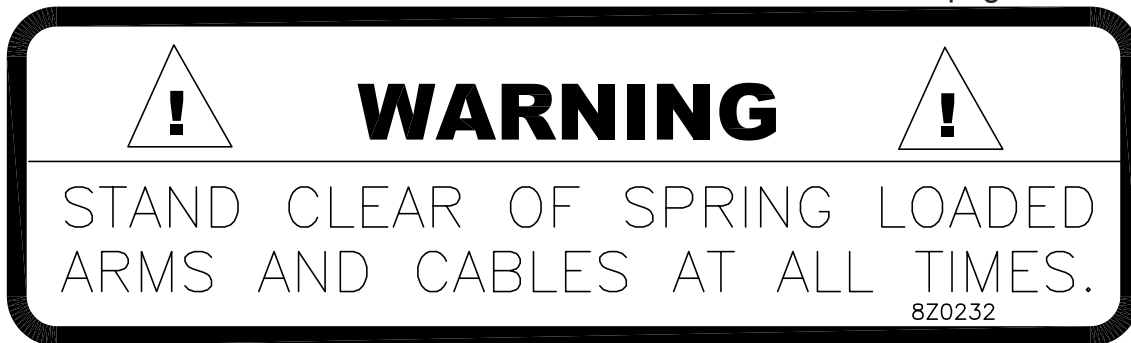


Fig. 8: Transport Lock in Locked Position

4. Back up machine slowly, maneuvering so wings open evenly. If wings do not open evenly, pull ahead and repeat procedure. Cables must not catch on machine while backing up. If cable becomes caught on machine, drive forward until wings are in transport position and carefully unhook cable from obstruction. See WARNING 8Z0232 below and 8Z0276 on page 1-4.



Open wings until auto-fold arms rest on hitch and cables become slack. Fully retract auto-fold lock cylinder (See Warning in Figure 9).

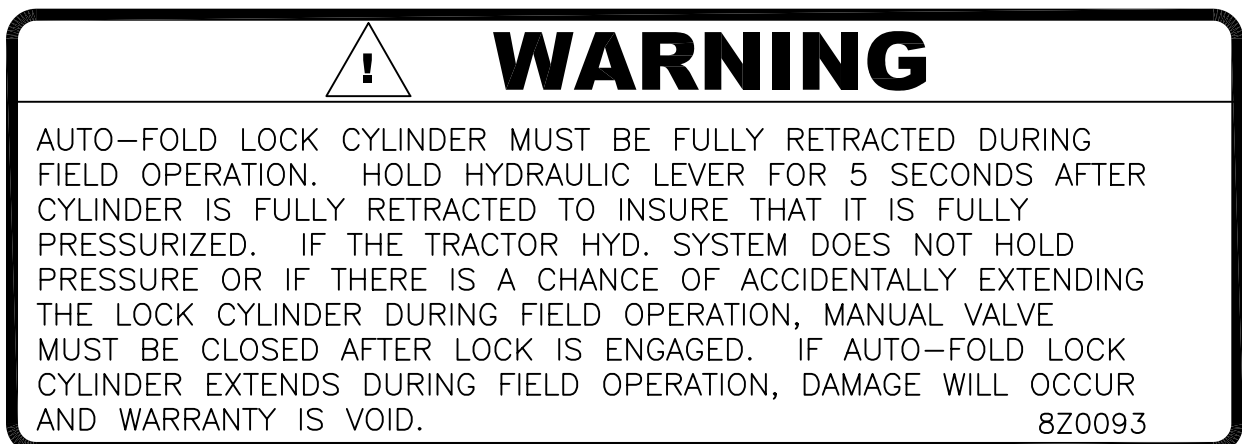


Fig. 9: Auto-Fold Warning

SECTION 6 - 4-RANK SUPERWEEDER

5. Extend main lift cylinders to lower machine into field position. If pull cables become tight before transport wheel is off the ground, back up to provide slack in cable.
6. **Hinged wing machines only:** Remove 1-1/4" hinge lock pins and store in holes provided.

LIFT ARM ADJUSTMENT

To level individual lift arms in field position, loosen top nut of lift arm attach u-bolt and adjustment bolt jam nut. Turn adjustment bolt until lift arm is correctly positioned. Retighten nuts.

Machine must not be adjusted to exceed a maximum S-tine tillage depth of 5" in loose soil conditions. In hard soil conditions, S-tines must not exceed 3" tillage depth.

HYDRAULIC DEPTH ADJUSTMENT (HDA) OPTION

To set depth, install stroke control collars (purchase locally) on 3-1/2" X 8" stroke (HDA) cylinders located on hitch. Collars of identical thickness must be installed on both cylinders. Rephasing cylinders are used for hydraulic depth adjustment. Do not operate HDA cylinders fully extended. Immediately after fully raising hydraulic depth adjustment cylinders, quickly lower 1/2". If hydraulic depth adjustment cylinders are left in fully raised position, they will settle. If machine has settled unevenly, fully extend hydraulic depth adjustment cylinders and hold hydraulic lever until machine levels. After it levels, quickly lower 1/2".

CABLE PULL BRACKETS

Under severe conditions (heavy machine draft due to deep penetration or high field speed) cable pull brackets may slide on drawbar wing tube resulting in improper cable adjustment. The solution to this problem is to relocate cable pull brackets at desired position and then weld a stop on drawbar next to cable pull brackets.

Never rotate S-tines forward or backward with machine in transport position.

FIELD TO TRANSPORT POSITION

1. Stop in a level area and back tractor up to provide slack in pull cables.
2. Open manual lock valve on auto-fold lock cylinder. Fully extend auto-fold lock cylinder.
3. Fully retract hydraulic depth adjustment cylinders (if so equipped).
4. Hinged wing machines only: Install 1-1/4" hinge lock pins.
5. Fully retract lift cylinders to raise sections.
6. While machine is resting on its transport wheels, drive tractor forward. Wings should fold to transport position. NOTE: Transport wheels must rotate against "toe-in" adjustment bolts and follow directly behind knuckles. Transport wheel "toe-in" can be adjusted by moving outside 3/4" adjustment set screws (8X0665, page 6-5). "Toe-in" and proper lubrication of pivot will make it easier to unfold machine into field position.
7. **IMPORTANT:** Install transport locks.

Always be sure transport locks are engaged when making adjustments on machine in raised or transport position.

SECTION 6 - 4-RANK SUPERWEEDER

UNHITCHING MACHINE

1. Park machine on a level area. Block wheels to prevent machine from rolling.
2. Follow steps outlined in **WARNING – NEGATIVE HITCH WEIGHT** on page 1-2.

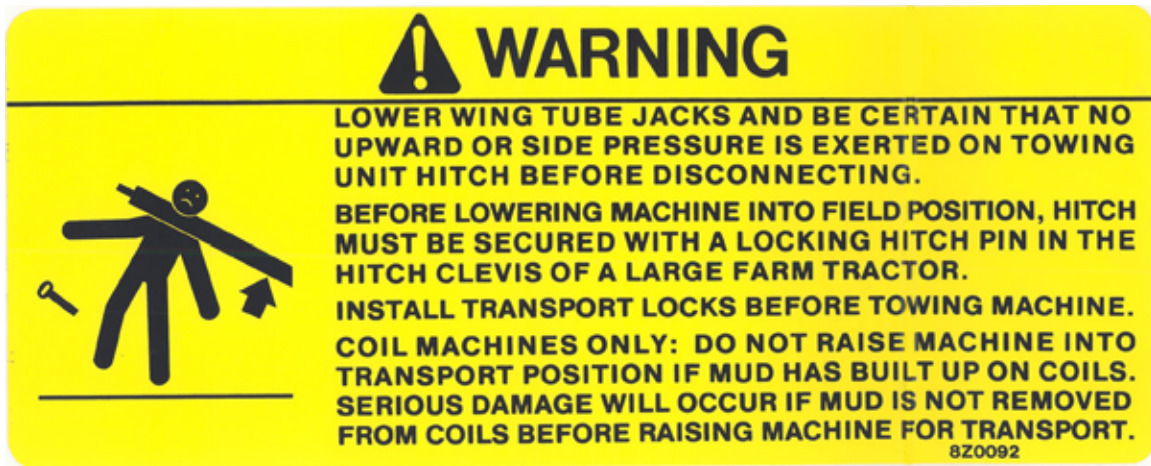


Fig. 9: Hitch Warning

This hitch **WARNING** Decal (PN 8Z0092) must be installed at location indicated by arrow (Fig. 10).

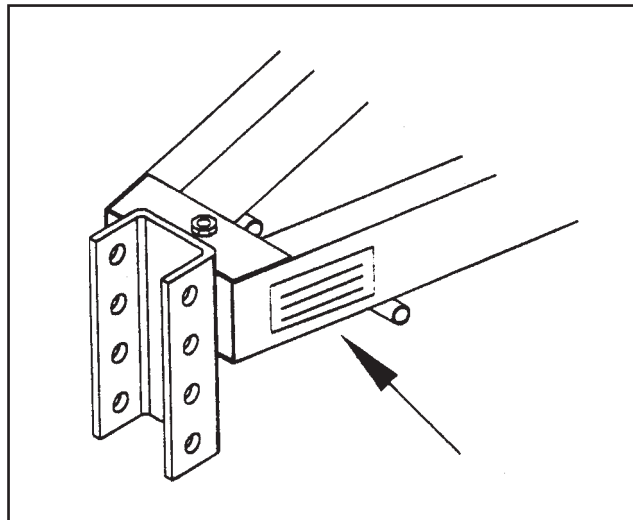


Fig. 10: Hitch Warning Decal Location

If decal is missing from machine, contact your Summers Dealer for replacement.

As stated in Hitch Warning Decal, machine must be secured to a large farm tractor before lowering machine to field position.

Never unhitch a 4-Rank Superweeder that has been opened up into field position but has not been completely lowered to the ground.

Always park machine in a very level area, block hitch and transport tires so machine cannot roll.

SECTION 6 - 4-RANK SUPERWEEDER

MAINTENANCE & SERVICE

Daily Maintenance:

Check all wheel bolts for tightness.

Daily Greasing:

Two zerks on each knuckle.
 Two zerks on each cable fold arm.
 One zerk on each transport axle pivot.
 60 & 70 Ft. machines only: One zerk on each Hinged Wing Pivot.

| | |
|---|--|
|  | <p style="text-align: center; margin: 0;">WARNING</p> <p style="margin: 0;">HIGH-PRESSURE FLUID HAZARD</p> <p style="margin: 0;">To prevent serious injury or death:</p> <ul style="list-style-type: none"> •Relieve pressure on system before repairing or adjusting or disconnecting. •Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands. •Keep all components in good repair. <p style="text-align: right; margin: 0;"><small>SW700</small></p> |
|---|--|

Weekly Maintenance:

Inspect wheel bearings for tightness.

Seasonal Maintenance:

Disassemble, clean and repack wheel bearings.
 Lubricate all zerks with a good grade of general purpose grease.
 Inspect entire machine for loose or worn fasteners. Tighten or replace as required.

Over Winter:

Coat extended hydraulic cylinder rods with grease to prevent corrosion. Remove this grease before retracting cylinders.

**TIRE INFLATION:
 rated at**

| | |
|---------------------|-------------------------|
| Hitch Tires: | 11L X 15 LRF – 80 PSI |
| | Opt. 31 X 13.5 – 35 PSI |
| Wing Support Tires: | 11L X 15 LRF – 38 PSI |
| Transport Tires: | LT RADIAL X 16 – 80 PSI |

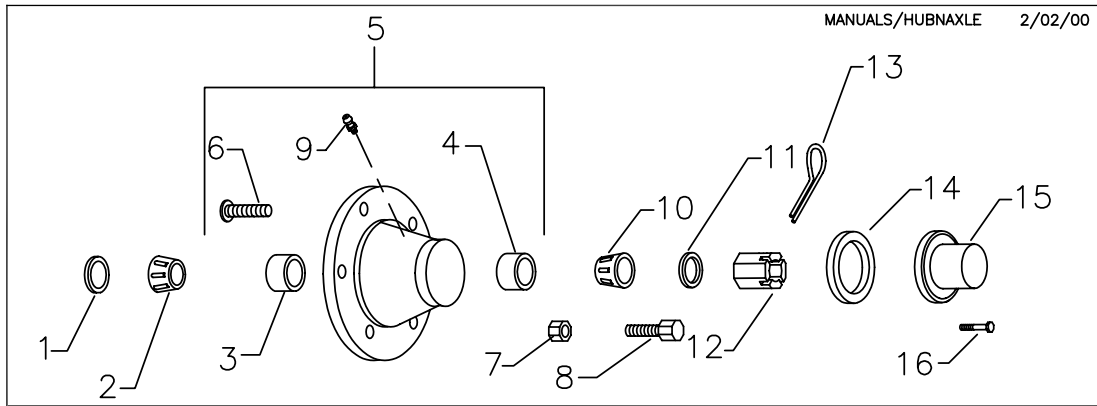
IMPORTANT:

Implement tires are

20 MPH maximum. Exceeding this speed voids warranty.

TROUBLESHOOTING

| PROBLEM | CAUSE | CORRECTION |
|--|---|--|
| 1. Wings trail too far apart in transport. | Insufficient transport wheel toe-in. | Adjust transport wheel toe-in. |
| 2. Wings are not pulling evenly in field position. | Cable pull brackets are improperly located. | Relocate cable pull brackets so wings slightly lead center. |
| 3. Auto-Fold arms do not rotate into transport position. | Improper pivot bracket adjustment. | Adjust pivot bracket with bolts to provide clearance between the cable fold arm bottom guide and hitch tube. (6-4) |
| 4. Wings of machine bounce. | Improper wing support tire inflation. | Inflate tires to proper pressure. |
| 5. Harrow sections not riding level. | Top pull chains are improperly adjusted. | Adjust top pull chain by placing pin in different adjustment hole on lift arm. |
| 6. S-tines tend to rotate out of the ground | Hydraulic cylinder leaking. | Repair or replace hydraulic cylinder. |
| | Tractor hydraulic circuit not holding pressure. | Repair tractor valve. |



MANUALS/HUBNAXLE 2/02/00

HUB AND AXLE COMPONENTS

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 60 degrees (one flat of hex), install cotter pin and bend to retain.

Legend:

| | |
|----------|---------------------|
| SMC | Part Number |
| INDUSTRY | Part Number or Size |

7-1

22' HITCH IMP.

| 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 | 8G8217 | 8G8230 | 8G8230 | 8G8211 | N/A | N/A | 8D5114 | 8X0708 | 8G8217 | 8D5119 | 8D5112 | 8X0410 | N/A | 8G8213 | N/A | | |
| | SE10 | L44643 | 8L44610 | L44610 | HDA211 | | | WB10 | 1/4-28NF | L44643 | 3/4" I.D. | 3/4"-16 | 3/16X1" | | DC11 | | | |
| H517 | 8D5234 | 8D5217 | 8D5332 | 8D5336 | 8D5210 | 8D5215 | 8D5214 | N/A | 8X0708 | 8D5117 | 8D5219 | 8D5212 | 8X0415 | N/A | 8D5213 | N/A | | |
| | 8D5236 | LM48548 | LM48510 | LM67010 | H517 | WB16 | 1/2-20UNF | | 1/4-28NF | LM67048 | 7/8" I.D. | 7/8"-14 | 3/16X1-1/2" | | DC13 | | | |
| H611 | 8D5221 | 8D5317 | 8D5334 | 8D5336 | 8D5311 -09 | N/A | N/A | 8D5114 | 8X0708 | 8D5117 | 8D5319 | 8D5312 | 8X0415 | N/A | 8D5213 | N/A | | |
| | SE13 | LM29749 | LM29710 | LM67010 | 8D5316 10- | | | 8R6914 | | 1/4-28NF | LM67048 | 1" I.D. | 1"-14 | | 3/16X1-1/2" | | DC13 | |
| H614 | 8R6922** | 8R6917 | 8R6925 | 8D5332 | 8R6911 | N/A | N/A | 8R6914 | 8X0708 | 8D5217 | 8D5319 | 8D5312 | 8X0415 | N/A | 8R6913 | N/A | | |
| | SEE GBGI INSTRUCTIONS | LM603049 | LM603011 | LM48510 | H614 | | | WB12 | 1/4-28NF | LM48548 | 1" I.D. | 1"-14 | 3/16X1-1/2" | | DC15 | | | |
| HD812 | 8K7127*** | 8K7117 | 8K7130 | 8K7132 | 8K7111 | 8K7115-9/16** | 8K7116-9/16** | N/A | 8X0708 | 8K7118 | 8D5319 | 8D5312 | 8X0415 | N/A | 8K7113 | N/A | | |
| | SEAL SE77 | | | | | 8K7122-5/8" | 8K7123-5/8" | | WB41 | WB40 | 1/4-28NF | LM2790 | 1" I.D. | | 1"-14 | | 3/16X1-1/2" | DC17 |
| | 8K7128*** | LM3780 | LM3720 | LM2720 | HD812 | WB46 | WB118 | | | | | | | | | | | |
| HD817 | 8K7344 | 8K7342 | 8K7346 | 8K7347 | 8K7340 | 8K7122-5/8" | 8K7123-5/8" | N/A | 8X0708 | 8K7343 | 8X0328 | 8D5314 | 8X0414 | N/A | 8K7341 | N/A | | |
| | SE42 | LM387AS | 382A | LM501310 | HD817 | WB46 | WB118 | | 1/4-28NF | LM501349 | 1.312 I.D. | 1-1/4"-12 | 1/4X2" | | DC26 | | | |
| H1010 LT | 8K7220 | 8K7217 | 8K7230 | 8K7232 | 8K7211 | 8K7215 | 8K7216 | N/A | 8X0708 | 8K7218 | 8X0328 | 8D5314 | 8X0414 | 8K7212 | 8K7213 | 8K7214 | | |
| | SE48 | 39585 | 39520 | 453A | H1010-9 | WB51 | WB52 | | 1/4-28NF | 460 | 1.312 I.D. | 1-1/4"-12 | 1/4X2" | SE49 | DC27 | WB53 | | |
| H1010 HVY | 8K7221 | 8K7219 | 8K7231 | 8K7232 | 8K7210 | 8K7215 | 8K7216 | N/A | 8X0708 | 8K7218 | 8X0328 | 8D5314 | 8X0414 | 8K7212 | 8K7213 | 8K7214 | | |
| | SE67 | 33275 | 33462 | 453A | H1010-11 | WB51 | WB52 | | 1/4-28NF | 460 | 1.312 I.D. | 1-1/4"-12 | 1/4X2" | SE49 | DC27 | WB53 | | |
| H1020 | 8K7320 | 8K7317 | 8K7330 | 8K7332 | 8K7209 | 8K7215 | 8K7216 | N/A | 8X0708 | 8K7318 | 8X0366 | N/A | 8X0418 | 8K7312 | 8K7313 | 8K7214 | | |
| | SE55 | HM218248 | HM218210 | HM212010 | HDA1020 | WB51 | WB52 | | 1/4-28NF | HM212049 | 2.03" ID | 2" - 160 | 5/16 X 2-1/2" | SE59 | DC28 | WB53 | | |

* Pre 2000

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

*** Pre 2006 8K7120 (SE17)

SUMMERS MFG CO., INC. HYDRAULIC CYLINDER SEAL KITS

MANUFACTURER

| CYLINDER PN | BORE X STROKE | PRINCE | RAM | CTD | RUGBY/SANBORN | MONARCH / RED LION |
|---|----------------------|--|----------------------------|-------------------------------|---------------------|--------------------------------|
| | | * = 3000PSI MAX. | SEAL KIT PART NUMBER | | | |
| 8C0432 | 4 X 32 | 8D9418 (-93) 8D9418A (94-) * | | | | |
| 8C0532 | 5 X 32 | | 8C0535 (-06) | 8K8660 (06-) | | |
| 8D9090 (ULT+TRA) BREAKAWAY | 2 1/2 X 14 | 8D9092 (00-) (1-1/4" ROD) | | | | |
| 8D9093 (ULTRA) PART 2 FOLD | 3 X 14 | 8D9094 (06-) (1-3/8" ROD) | | | | |
| 8D9109 (ULTRA) TIP LIFT | 4 X 6 | 8D9107 (06-) (2" ROD) | | | | |
| 8D9112 (ULT) TIP LIFT | 3 X 6 | 8D9111 (00-) (1-1/2" ROD) | 8D9217 (99-99) | | | |
| 8D9113-8D9118 | 2 1/2 X 8 | 8D9119 (-93) 8D9119A (94-) * | | | 8D9140 | 8D9130 (95-) (8D9118 ONLY) |
| 8D9120 (2PNT) MAIN LIFT | 2 1/2 X 30 | 8D9119A * (1-1/4"ROD) | | | | |
| 8D9121(ULT+TRA) MAIN LIFT | 2 1/2 X 30 | 8D9122 (00-) (1-1/2" ROD) | | | | |
| 8D9214(1500ULT-02) PART ONE FOLD | 3 X 15-1/4 | 8D9211(-02) | | | | |
| 8D9215(ULT+TRA) PART ONE FOLD | 3 X 16 | 8D9213 (00-) | 8D9217 (99-99) | | | |
| 8D9216 | 3 X 16 | 8D9218 (-93) 8D9218A (94-96) * | | | | 8D9250 (95-) |
| 8D9316 | 3 1/2 X 16 | | | | | 8D9350 (95-) |
| 8D9416 | 4 X 16 | 8D9418 (-93) 8D9418A (94-) * 1-3/4" ROD) | | | | |
| 8D9466 (CP-#2WNG) | 4 1/2 x 16 | | 8D9468 (98-) | | | |
| 8D9516 | 5 X 16 | 8D9518 (-93) 8D9525(94-) * (2" ROD) | | | | |
| 8" STROKE REPHASING CYLINDER PART NUMBER VARIES WITH SUPPLIER (_) YEARS | 3 X 8 | | | 8K8600 (89-) | | |
| | 3 1/2 X 8 | | | 8K8610 (90-) (1-3/4" ROD) | | |
| | 3 3/4 X 8 (1.37"ROD) | | 8T1137/8K9375-CYL | | | |
| | 4 X 8 | 8K8520 (93-04) * | 8T1140B/8K9400-CYL | 8K8620 (89-) | 8K8730 / 8K8732 EDC | |
| | 4 1/4 X 8 (1.37"ROD) | | 8K8942 / 8K9425 CYLINDR PN | | | |
| | 4 1/2 X 8 | 8K8530 (93-04) * | 8K8945 / 8K9450 CYLINDR PN | 8K8630 (89-) | 8K8734 PROP | |
| | 4 3/4 X 8 (1.5"ROD) | | 8K8947 / 8K9475 CYLINDR PN | | | |
| 5 X 8 (1.5"OR2" ROD) | | 8K8950 / 8K9500 CYLINDR PN | 8K8642 (89-92) | | | |
| 5 X 8 (2 1/8" ROD) | 8K8540 (93-03) * | | 8K8642 (92-) | | | |
| 8K9640 | 4 X 36 | | | 8K8650 (90-) | | |
| 8K9650 | 5 X 36 | | | 8K8660 (89-) | | |
| 8R6870 (700 RP) | 3 X 31 | | | 8R6874 (85-) 1 PC SPANR GLND | | |
| 8T1035 (2" ROD) | 3 1/2 X 10 | | 8T1135 | | | |
| 8T1037 (1-3/8"ROD) | 3 3/4 X 10 | | 8T1137 | | | |
| 8T1040 (2" ROD) | 4 X 10 | 8K8520 (96-97) * | 8T1140 | | | |
| 8T1040B (1-3/8"RD) | 4 X 10 | | 8T1140B | | | |
| 8T1045 (2" ROD) | 4 1/2 X 10 | 8K8530 (96-97) * | 8T1145 | | | |
| 8T1050 (2-1/8"ROD) | 5 X 10 | 8K8540 (96-97) * | 8T1150 | | | |
| 8T1055 (2-1/4" ROD) | 5 1/2 X 10 | | 8T1155 | | | |
| 8T1060 (2-3/8" ROD) | 6 X 10 | | 8T1160 | | | |

CYLINDERS: 8K9375 - 8K9500 ARE REPLACEMENT CYLINDERS FOR HYDROLINE (ROCKFORD) OR SANBORN (MAGNUM)

SECTION 8 - PART NUMBERS

| Stock Code | Description | Stock Code | Description |
|------------|--------------------------------|------------|----------------------------------|
| 8A1155 | U-BOLT 3/8 X 6-1/16 X 5" SQ | 8C2300 | OSCILLATING AXLE 614 HFCP 90- |
| 8A1156 | U-BOLT 3/8 X 4-1/16 X 5" SQ | 8C2300H | OSCILLATING AXLE 614HD 22HTCH00- |
| 8A1157 | U-BOLT 3/8 X 4-1/16 X 7" SQ | 8C2310 | OSC AXLE W/614 HUBS HFCP 91- |
| 8A4048 | NYLON TIE .18 X 11" | 8C2310H | OSC AXLE W/614HUBS 22HTCH 00- |
| 8A4050 | NYLON TIE .30 X 8-7/8" | 8C2316 | SPACER FLAT1/2X2.5- 8-7/8" 01- |
| 8A4052 | NYLON TIE .30 X 15.25" | 8C2318 | SPACER BRCKT HTCH AXL ATTCH 01- |
| 8A4054 | NYLON TIE .30 X 24" BLK | 8C2320 | MNT BRCKT 614 OSC AXL HFCP 91- |
| 8C0150 | SNAP RING .05" FOR 1-3/16"DIA | 8C2322H | MNT BRCKT OSCAXL HD22HTCH 00- |
| 8C0216 | BEARING PLWBLCK 1-3/16" HD 11- | 8C2325 | PIPE SPACER 1/2"SCH80- 7"00- |
| 8C0220 | BEARING PLWBLCK1-3/16"SEALMSTR | 8C2350 | AXLE W/FLAT 611 8SQ WING 90- |
| 8C0250 | NEOPRENE 1-3/8X 1/2ID- 2" 96- | 8C2360 | AXLE W/611HUB 8SQ WING 90- |
| 8C0270 | SPLITSTEELBUSH 1.375X 1"ID- 1" | 8C2420 | TRANSPORT AXLE W/O 812HUB 90- |
| 8C0432 | HYD CYL 4 X 32" 3000PSI | 8C2430 | TRANSPORT AXLE W/812 HUB 90- |
| 8C0532 | HYD CYL 5 X 32" 3500PSI | 8C2450 | PIVOT W/PLATE 812TRNSPRT 90- |
| 8C0535 | SEAL KIT 5 X32"RAM3000&3500PSI | 8C2500 | CABLE ATTCH 22'HTCH U-BLT96- |
| 8C0650 | MANIFOLD BLOCK ALUMINUM 5PORT | 8C2600 | ARM A-FLD LEFT 20&22'HTCH 90- |
| 8C1420 | PIN 1 X 5-7/8" 22'HTCH 90- | 8C2610 | ARM A-FLD RGHT 20&22'HTCH 90- |
| 8C1452 | PIN 1 X 6-1/2" CYL DBLWSHR 90- | 8C2620 | PIVOT BRCKT A-FLD 22'HTCH 90- |
| 8C1470 | PIN 1-1/4 X 14" PIVOT 90- | 8C2640 | LOCKASSY AUTOFLD 20HTCH 93-07 |
| 8C1480 | PIN 1-1/2 X 11-1/2" KNCKL 90- | 8C2650 | LOCK ASSY AUTOFLD 22'HTCH 90- |
| 8C1700 | U-BOLT 3/8 X 2 X 4-7/8" SQ | 8C2660 | BUSHING A-FOLD LOCK- 5/16" 90- |
| 8C1710 | U-BOLT 3/8 X 8 X 9" SQ | 8C2680 | FRONT ATTCH SNGL LONG CABL 90- |
| 8C1718 | U-BOLT 1/2 X 2-5/8 X 2-5/8" SQ | 8C2690 | FRONT ATTCH DUAL CABLE 93- |
| 8C1720 | U-BOLT 1/2 X 2-5/8 X 3-3/4" SQ | 8C3100 | WINGTUBE10' X 8SQ 30'HP+4RNKSW |
| 8C1736 | U-BOLT 1/2 X 4-1/4 X 5-1/4"RND | 8C3150 | WINGTUBE15' X 8SQ 40'HP+4RNKSW |
| 8C1740 | U-BOLT 1/2 X 4-1/4 X 7-1/4"RND | 8C3200 | WINGTUBE20' X 8SQ 50'HP+4RNKSW |
| 8C1751 | U-BOLT 3/4 X 3-1/16 X 6" SQ | 8C3250 | WINGTUBE 25' X 8SQ 60' HP 90- |
| 8C1752 | U-BOLT 3/4 X 3-1/16 X 7-1/2"SQ | 8C3300 | WINGTUBE28' 11" 8SQ 70HP&72"SH+ |
| 8C1755 | U-BOLT 3/4 X 6-1/16 X 6" SQ | 8C3350 | WINGTUBE 35' X 8"SQ 80' HP 90- |
| 8C1760 | U-BOLT 3/4 X 8-1/16 X 6" SQ | 8C3500 | WINGTUBE15' #1LEFT60&70'4RNKSW |
| 8C1780 | U-BOLT 7/8 X 8-1/16 X 10" SQ | 8C3510 | WINGTUBE15' #1RGHT60&70'4RNKSW |
| 8C1800 | KNUCKLE 88-1/4 DEG.OFFSET LEFT | 8C3550 | WINGTUBE 10' PRT2 (60')4RNKSW |
| 8C1800D | KNUCKLE 86-1/2 DEG.OFFSET LEFT | 8C3600 | WINGTUBE 15' PRT2 (70')4RNKSW |
| 8C1802 | KNUCKLE 88-1/4 DEG.OFFSET RGHT | 8C4000 | LIFT ARM SHRT HRRW PCKR 91- |
| 8C1802D | KNUCKLE 86-1/2 DEG.OFFSET RGHT | 8C4010 | LIFT ARM LONG HRRW PCKR 91- |
| 8C1805 | KNUCKLE 90 DEG.OFFSET MACHIND | 8C4020 | PIVOT ARM SHRT 3/8" TINE HP 90- |
| 8C1805P | KNUCKLE 90 DEG.OFFSET PAINTED | 8C4040 | PIVOT ARM LONG 3/8" TINE HP 90- |
| 8C1900 | CLAMP 1/2" WIRE ROPE | 8C4070 | PULLFRAME ADJSTBL(3"SQ)HP 90- |
| 8C1920 | SPRING AFLDCABL 1.56"OD GLVNZD | 8C4082 | ARM ADJST COIL FRMD&PNTD 92- |
| 8C1940 | SPRING AFLD ARM 3.25"OD BLACK | 8C4090 | COUNTER BALANCE SH+/COIL 98- |
| 8C1950 | SPRING AFOLD LOCK 3"OD BLACK | 8C4100 | BRACE ANGLE 2 X 2- 33-1/4" 91- |
| 8C1970 | SPRING ROCK 2.2"OD-10.25" PNTD | 8C4120 | BRACE ANGLE 2 X 2- 63-1/4" 91- |
| 8C2002 | FLAT 5/8X6-6.94"BNT1.25SHNK12- | 8C4410 | COIL 4' X 1-3/4" W/SHAFT LEFT |
| 8C2200 | HITCH 22' (8SQ DRWBR) 90- | 8C4415 | COIL 4' X 1-3/4" W/SHAFT RIGHT |
| 8C2210 | CENTER 22' HTCH 8"SQ-10' 90- | 8C4510 | COIL 5' X 1-3/4" W/SHAFT LEFT |
| 8C2246 | TRNSPRT LOCK 1/2X3X32"CYL 90- | 8C4515 | COIL 5' X 1-3/4" W/SHAFT RIGHT |
| 8C2260 | BRCKT CABLE PULL 8"SQ WNG 90- | 8C4560 | COIL 5.5' X 1-3/4"W/SHAFT LEFT |
| 8C2270 | CABLE GUIDE BRCKT SH+ 02- | 8C4565 | COIL 5.5' X 1-3/4"W/SHAFT RIGHT |
| 8C2280 | JACK ATTCH BRCKT- WING 97- | 8C4610 | COIL 6' X 1-3/4" W/SHAFT LEFT |

SECTION 8 - PART NUMBERS

| Stock Code | Description | Stock Code | Description |
|------------|--------------------------------|------------|--------------------------------|
| 8C4615 | COIL 6' X 1-3/4" W/SHAFT RGHT | 8D1890 | CABLE 1/2 X 295"E-E PLUS CHAIN |
| 8C4710 | COIL 7' X 1-3/4" W/SHAFT LEFT | 8D1900 | CABLE 1/2 X 324"E-E PLUS CHAIN |
| 8C4715 | COIL 7' X 1-3/4" W/SHAFT RGHT | 8D1910 | CABLE 1/2 X 341"E-E PLUS CHAIN |
| 8C5050 | STL HITCH CHANL PNTD GRN 91- | 8D1920 | CABLE 1/2 X 370"E-E PLUS CHAIN |
| 8C5840 | PULL FRAME 4' COIL (59") 06- | 8D1930 | CABLE 1/2 X 383"E-E PLUS CHAIN |
| 8C5850 | PULL FRAME 5' COIL (71") 06- | 8D1940 | CABLE 1/2 X 401"E-E PLUS CHAIN |
| 8C5860 | PULL FRAME 6' COIL (83") 06- | 8D1950 | CABLE 1/2 X 450"E-E PLUS CHAIN |
| 8C5870 | PULL FRAME 7' COIL (95") 06- | 8D1960 | CABLE 1/2 X 485"E-E PLUS CHAIN |
| 8C6010 | WASHER 1.03"ID X 3-1/16"ODX1/4 | 8D1970 | CABLE 1/2 X 521"E-E PLUS CHAIN |
| 8C6015 | WASHER 1.53"ID X 3-1/16"ODX1/4 | 8D1980 | CABLE 1/2 X 581"E-E PLUS CHAIN |
| 8C9010 | BRACE MNTNG ARM RLNGATCH 09- | 8D1990 | CABLE 1/2 X 611"E-E PLUS CHAIN |
| 8C9017 | BLADE 3/8X3- 16-3/8" PNTD 06- | 8D2000 | CABLE 1/2 X 661"E-E PLUS CHAIN |
| 8C9030 | FRAME 3"SQ 4' 2" ROLNGCHPR 06- | 8D2100 | CHAIN 6 LINK CASE HARDND-12.5" |
| 8C9035 | FRAME 3"SQ 5' 3" ROLNGCHPR 06- | 8D2210 | CHAIN 8 LINK CASE HARDEND-17" |
| 8C9040 | FRAME 3"SQ 7' ROLLNGCHPPR 07- | 8D2300 | CHAIN 9 LINK SECTION LIFT-19" |
| 8C9050 | REEL ONLY 4' 2" ROLNG CHPR 06- | 8D2400 | CHAIN 3 LINK .625"DIA. ALLOY Z |
| 8C9055 | REEL ONLY 5' 3" ROLNG CHPR 06- | 8D2410 | CHAIN 9 LINK .625"DIA. ALLOY Z |
| 8C9060 | REEL ONLY 7' ROLLING CHPPR 07- | 8D2440 | SAFETY CHAIN 11000# 1/4" X 84" |
| 8D0312 | CLEVIS FOR EYE-EYE CABLE 99- | 8D2460 | SAFETY CHAIN 20200# 3/8" X 4' |
| 8D0330 | U-BOLT 5/8 X 6-1/16 X 5-5/8"SQ | 8D2470 | SAFETY CHAIN 30400# 7/16" X 5' |
| 8D0340 | U-BOLT 3/4 X 4-1/16 X 7-3/4"SQ | 8D2730 | PIN 1 X 2-3/4" CABLE PLATED |
| 8D0350 | U-BOLT 3/4 X 4-1/16 X 10" SQ | 8D3035 | WHEEL 15 X 8" 6 BOLT-VLV GRD |
| 8D0720 | HITCH PIECE CAST CAT.3CTD PNTD | 8D3036 | WHEEL 15 X 10" 6 BOLT |
| 8D0722 | PERFECT HTCH BACKSTOP W/HDWE | 8D3045 | TIRE 31X13.5-15" 10PLYTUBELESS |
| 8D0724 | CLEVIS OPT.HITCH CAT.3CTD99- | 8D3046 | IF280/70R 15 128 ON 15X10X6 W |
| 8D0730 | URETHANE CUSHION PERFCTHTCH | 8D3047 | WHEEL 16 X 8" 8 BOLT |
| 8D0745B | HITCH PC WELDD W/BSH CAT.5 14- | 8D3048 | TIRE LT265/75R16 TRANSFORCE HT |
| 8D1160 | AXLE H611 STR 1-7/8 X 9-1/4" | 8D3049 | LT265/75R16 RAD ON 16X8X8 WHL |
| 8D1236 | PIN 1-1/4 X 9-1/2" HWNG&LR 01- | 8D3150 | U-BOLT 1/2 X 3 X 7-1/4" SQ |
| 8D1242 | PIN 1-1/4 X 11-1/2" HWNG 01- | 8D3152 | U-BOLT 1/2 X 3-3/8 X 7-1/4" SQ |
| 8D1660 | PIN 1-3/4 X 12-1/4" HARDND 99- | 8D3212 | MALE TIP 3/4"-16 ORB ISO |
| 8D1700 | SPRING PRESSURE ASSY-CULTHRRW | 8D5112 | NUT 3/4"-16UNF HEXSLOT GR2 PLN |
| 8D1702 | SPRING PRESSURE ASSY-ADJUSTABL | 8D5114 | BOLT WHEEL 1/2-20 UNF |
| 8D1710 | EYE BOLT SHORT 7/16" DIA | 8D5117 | BEARING413 511 517&611 LM67048 |
| 8D1720 | EYE BOLT LONG 1/2" DIA | 8D5119 | WASHER 3/4" AXLE PLAIN |
| 8D1730 | SPRING PRESS 3/8" C-HRRW OPT | 8D5120 | SEAL 1-1/2" ID H413&H511 SE11 |
| 8D1740 | PIPE 1/2"SCH80- 2-1/8" W/WSHR | 8D5212 | NUT 7/8"-14NF HEX SLOT GR2 PLN |
| 8D1750 | PIPE 1/2" SCH80- 1-1/4" | 8D5213 | HUB CAP H517 & H611 |
| 8D1751 | PIPE 1/2" SCH80- 2-1/8" | 8D5214 | NUT 1/2"-20UNF WHEEL |
| 8D1760 | CABLE 3/8 X 312 E-E SH+ REAR | 8D5215 | STUD WHEEL 1/2-20 UNF X 1-7/8 |
| 8D1800 | CABLE 1/2 X 149"E-E PLUS CHAIN | 8D5217 | BEARING IN517 OUT517HD 614&618 |
| 8D1810 | CABLE 1/2 X 161"E-E PLUS CHAIN | 8D5219 | WASHER 7/8" AXLE |
| 8D1820 | CABLE 1/2 X 178"E-E PLUS CHAIN | 8D5220 | SEAL 1.70" ID OLD H517&H611 |
| 8D1830 | CABLE 1/2 X 193"E-E PLUS CHAIN | 8D5221 | SEAL 1.75" ID H611 SE13 |
| 8D1840 | CABLE 1/2 X 214"E-E PLUS CHAIN | 8D5234 | SEAL RETAINER GBGI HA517-7 |
| 8D1850 | CABLE 1/2 X 227"E-E PLUS CHAIN | 8D5236 | SEAL COUNTERFACE GBGI HA517-7 |
| 8D1860 | CABLE 1/2 X 246"E-E PLUS CHAIN | 8D5238 | SEAL GBGI FOR CTD HA517-7 HUB |
| 8D1870 | CABLE 1/2 X 262"E-E PLUS CHAIN | 8D5312 | NUT 1"-14TPI HEX SLOT GR2 PLN |
| 8D1880 | CABLE 1/2 X 281"E-E PLUS CHAIN | 8D5314 | NUT 1-1/4"-12 HEX SLOT GR2 PLN |

SECTION 8 - PART NUMBERS

| Stock Code | Description | Stock Code | Description |
|------------|--------------------------------|------------|---------------------------------|
| 8D5316 | HUB H611 W/CUPS&ZRK 6(9/16)BLT | 8H1140 | HARROW TOOTH 3/8X 16" M64&74 |
| 8D5317 | BEARING INNER 611 LM29749 | 8H1140S | HARROW TOOTH 3/8X 16" M64&74STR |
| 8D5319 | WASHER 1" AXLE X .2" THICKNESS | 8H1180S | HARROW TOOTH 1/2 X 20" M104/SH |
| 8D5320 | WASHER 2" AXLE X .25" THICKNES | 8H1184S | HARROW TOOTH 1/2X 26" M105/SH26 |
| 8D5332 | RACE H517 & H614 LM48510 | 8H1190S | HARROW TOOTH 9/16X 26" M106/SH+ |
| 8D5334 | RACE INNER H611 LM29710 | 8H1195S | HARROW TOOTH 5/8 X 28" M108 |
| 8D5336 | RACE H511 H517 & H611 LM67010 | 8H1280 | SPRING EXTENSION 1"OD X 4" YZ |
| 8D5340 | HUB H618 W/CUPS&ZRK 5 BLT GBGI | 8H1304 | SPRING HVY 1.19"ID- 2.88" PNTD |
| 8D5355 | BEARING INNER H618 | 8H1307 | SPRING PRESS 1.63OD- 15" 91#/" |
| 8D8490 | PIONEER/ISO TIP HLDR BNT 97- | 8H1309 | SPRING COMP 15.5"X1.65"OD PNTD |
| 8D8500 | HYD HOSE HOLDER PNTD BLK 91- | 8H1311 | SUPPORT ROD WLDDASSY 3/4 79-09 |
| 8D8521 | JACK SPOOL 3 X 2.56- 1-29/32" | 8H1315 | SUPPORT ROD WLDD ASSY 7/8 09- |
| 8D8521L | JACK SPOOL 3 X 2.56- 4-1/4"99- | 8H1320 | COLLAR ADJSTMNT DOWN PRES 79- |
| 8D8521U | JACK SPOOL 3 X 2.56- 2-1/2"00- | 8H1327 | CAST SWIVEL 3/4X7/8 MNTD ATTCH |
| 8D8523 | JACK 8000# DROPLEG 5/8X4.25PIN | 8H1328 | CAST SWVL 8H1327 PNTD 10- |
| 8D8537 | JACK 7000# SIDE CRANK 15" LIFT | 8H1330 | SIDE PLATE 3BR M74-94 LEFT79- |
| 8D9108 | ROLL PIN 1/4 X 2" ZINC | 8H1331 | SIDE PLATE 3BAR RGHT M94 02- |
| 8D9110 | HAIRPIN CLIP LARGE (1"CYL PIN) | 8H1332 | SIDE PLATE 4BR M74-94 LEFT85- |
| 8D9113 | HYD CYL 2.5 X8"W/3.75"STOPTUBE | 8H1333 | SIDE PLATE 4BR RGHT M94 02- |
| 8D9116 | HYD CYL 2.5 X8"SP W/DPTH CNTRL | 8H1380 | CONN BAR 5/16X1.5-25.5"4BR 82- |
| 8D9118 | HYD CYL 2.5 X8" W/O DPTH CNTRL | 8H1384 | ADJ BAR 5/16X 1.5- 16" M94 02- |
| 8D9119 | SEAL KIT2.5X8PRINCE2500PSI -93 | 8H1394 | SUPPORT ROD ASSY 7/8" MNTD 09- |
| 8D9119A | SEAL KIT2.5X8&30PRNC3000PSI94- | 8H1396 | ROD ASSY 7/8" DBL SWVL 10- |
| 8D9130 | SEAL KIT 2.5 X 8" LION/MONARCH | 8H1498 | SPACER TUBE 4X3X5T- 5" SQ 96- |
| 8D9180 | CLEVIS 2.5 X 8" PRINCE 9108 | 8H1499 | SPACER TUBE 4X2X4T- 5" SQ 94- |
| 8D9192 | DEPTH CONTROL ASSY PRINCE ALL | 8H1504 | SPACER TUBE 4X4X4T- 5" SQ 92- |
| 8G2281 | NYLON TIE .187 X 7-1/2" BROWN | 8H1506 | SPACER TUBE 6X4X4T- 5" SQ 10- |
| 8G2282 | NYLON TIE .187 X 7-1/2" RED | 8H1510 | MNT PLATE(FLAT5/8X5-10")6"MAX |
| 8G2283 | NYLON TIE .187 X 7-1/2" ORANGE | 8H1512 | MNT PLATE(FLAT5/8X5-16")11"MAX |
| 8G2284 | NYLON TIE .187 X 7-1/2" YELLOW | 8H1520 | MNT BRACKET SHORT (13") UNIV |
| 8G2285 | NYLON TIE .187 X 7-1/2" GREEN | 8H1522 | MNT BRACKET SHORT (20") HI-CLR |
| 8G2286 | NYLON TIE .187 X 7-1/2" BLUE | 8H1530 | MNT BRACKET LONG (25") UNIV |
| 8G8010 | U-BOLT 3/8 X 1-5/16 X 2-1/4"SQ | 8H1532 | MNT BRACKET LONG (29") HI-CLR |
| 8G8020 | U-BOLT 3/8 X 2-9/16 X 3-1/2"SQ | 8H2015 | PIPE SPACER 1/2 X 3-7/8" 10- |
| 8H0232 | FLAT 5/16 X 1.5 - 47.5" (5") | 8H2040 | 1ST PIPE W/LVR 4.5'3OR4BAR M94 |
| 8H0260 | FLAT 5/16 X1.5 -18.5"CULTI 79- | 8H2042 | 2ND PIPE W/LVR 4.5'3OR4BAR M94 |
| 8H0350 | U-BOLT 1/2 X 2 X 3" RND | 8H2044 | 3RD PIPE W/LVR3BR4.5'M94 88-00 |
| 8H0370 | FLAT 5/16X1.5- 57" (5 BR) 79- | 8H2045 | 3RDPIPE W/L3BR4.5'M94QADJ02- |
| 8H0390 | PIPE 1/2" SCH 80- 1" (5 BR)79- | 8H2060 | 1ST PIPE W/LVR 6' 3OR4BAR M94 |
| 8H0410 | SIDE ANGLE LEFT 5 BAR 79- | 8H2062 | 2ND PIPE W/LVR 6' 3OR4BAR M94 |
| 8H0411 | SIDE ANGLE RGHT 5 BAR 79- | 8H2064 | 3RD PIPE W/LVR3BR 6' M94 88-00 |
| 8H0641 | 1ST PIPE W/LEVER 5' 5 BAR | 8H2065 | 3RDPIPE W/L3BR 6' M94QADJ02- |
| 8H0642 | 2ND PIPE W/LEVER 5' 5 BAR | 8H2076 | 3RD PIPE W/LEVR 4.5' 4BAR M94 |
| 8H0643 | 3RD PIPE W/LEVER 5' 5 BAR | 8H2078 | 4TH PIPE W/LVR4BR4.5'M94 88-00 |
| 8H0644 | 4TH PIPE W/LEVER 5' 5 BAR | 8H2079 | 4THPIPE W/L4BR4.5'M94QADJ02- |
| 8H0645 | REAR PIPE W/LEVER 5' 5 BAR | 8H2086 | 3RD PIPE W/LEVER 6' 4BR M94 |
| 8H0650 | REAR PIPE W/LVR5' 5 BAR/EXTD | 8H2088 | 4TH PIPE W/LVR4BR 6' M94 88-00 |
| 8H1110 | HARROW TOOTH 3/8X 14"CULTIHRW | 8H2089 | 4THPIPE W/L4BR 6' M94QADJ02- |
| 8H1110S | HARROW TOOTH 3/8X 14"CULTI STR | 8H2094 | 1ST PIPE W/LVR 7.5'3OR4BAR M94 |

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| Stock Code | Description | Stock Code | Description |
|------------|--------------------------------|------------|--------------------------------|
| 8H2096 | 2ND PIPE W/LVR 7.5'3OR4BAR M94 | 8HD0593L | 3RD PIPE W/LEFT LVR-HYD 96- |
| 8H2098 | 3RD PIPE W/LVR3BR7.5'M94 91-00 | 8HD0594A | 4TH PIPE W/LVR 6'SPRING 95- |
| 8H2099 | 3RDPIPE W/L3BR7.5'M94QADJ02- | 8HD0594L | 4TH PIPE W/LEFT LVR-HYD 96- |
| 8H2100 | STL 5/8 X 4- 8-3/8" PNTD 88- | 8HD0595A | REAR PIPE W/LVR 6'SPRING 95- |
| 8H2107 | 3RD PIPE W/LEVR 7.5' 4BAR M94 | 8HD0595L | REAR PIPE W/LEFT LVR-HYD 96- |
| 8H2108 | 4TH PIPE W/LVR4BR7.5'M94 91-00 | 8HD5052 | 1ST PIPE W/LVR 6'104/6 3OR4BR |
| 8H2114 | 4THPIPE W/L4BR7.5'M94QADJ02- | 8HD5054 | 2ND PIPE W/LVR 6'104/6 3OR4BR |
| 8H2118 | MOUNTNG BRCKT QUICKBSKT | 8HD5056 | 3RD PIPEW/LVR 6'104/6 3BR93-00 |
| 8H2120 | MOUNTING BRCKT M94-M108 85- | 8HD5056Q | 3RD PIPE/LVR6' 3BR104/6QADJ00- |
| 8H2131A | SPRING W/7/8-9NC NUT 12- | 8HD5057 | 3RD PIPEW/LVR 6' 104/6 4BR 98- |
| 8H2132 | CARRIER ARM 34" M94-M108 | 8HD5058 | 4TH PIPEW/LVR 6'104/6 4BR98-00 |
| 8H2142 | CARRIER ARM 42" M94-M108 | 8HD5058Q | 4TH PIP/LVR6' 4BR104/6 QADJ02- |
| 8H2144 | CARRIER ARM 52" M94-M108 | 8HD5072 | 1ST PIPE W/LVR 8' 104/6 3OR4BR |
| 8H2150 | CROSS TUBE W/FLAT 4.5' M94 | 8HD5074 | 2ND PIPE W/LVR 8' 104/6 3OR4BR |
| 8H2160 | CROSS TUBE W/FLAT 6' M94 | 8HD5076 | 3RD PIPEW/LVR 8'104/6 3BR93-00 |
| 8H2170 | CROSS TUBE W/FLAT 7.5' M94 | 8HD5076Q | 3RD PIP/LVR8' 3BR104/6 QADJ00- |
| 8H2184 | AUTOLCKUP 7/8" DRLD&PNTD 09- | 8HD5077 | 3RD PIPEW/LVR 8' 104/6 4BR 98- |
| 8H2190 | HANDLE W/PIN AUTOLCKUP 94-108 | 8HD5078 | 4TH PIPEW/LVR 8'104/6 4BR98-00 |
| 8H2315 | EXTENSION MNT ARM 6" M94-M108 | 8HD5078Q | 4TH PIP/LVR8' 4BR104/6 QADJ02- |
| 8H2601 | ENDPLATE RLNGBSKT 4SCRPR 12- | 8HD5082 | 1ST PIPE W/LVR10' 104/6 3OR4BR |
| 8H2610 | MNTG BRKT HRRW/BSKT 10- | 8HD5084 | 2ND PIPE W/LVR10' 104/6 3OR4BR |
| 8H2618 | MNTG ARM RLLNG BSKT QUICK10- | 8HD5086 | 3RD PIPEW/LVR10'104/6 3BR93-00 |
| 8H2620 | MNTG ARM RLLNG BSKT 10-11 | 8HD5086Q | 3RDPIP/LVR10' 3BR104/6 QADJ00- |
| 8H2634 | RLLNG BSKT 4' REEL ONLY 10- | 8HD5087 | 3RD PIPEW/LVR10' 104/6 4BR 98- |
| 8H2636 | RLLNG BSKT 6' REEL ONLY 10- | 8HD5088 | 4TH PIPEW/LVR10'104/6 4BR98-00 |
| 8H2660 | RLLING BSKT SCRAPR MNT 12- | 8HD5088Q | 4THPIP/LVR10' 4BR104/6 QADJ02- |
| 8H2664 | 4' BSKT SCRAPR (40.5") GRN 12- | 8HD5094 | EXT PIPE2.375"ODX.148- 12" 01- |
| 8H2666 | 6' BSKT SCRAPR (63.5") GRN 12- | 8HD5096 | EXT TUBE1.5SQ11GA-23.75" 01- |
| 8H2702 | BEARING 1-1/4" SQ FLNG4BLT | 8HD5101 | SIDE PLT 1/4"3BR 104/6 LEFT00- |
| 8H2706 | TUBE SQ 3 X 4T- 70" BSKT MNT | 8HD5102 | SIDE PLT 1/4"3BR 104/6 RGHT00- |
| 8H2708 | TUBE SQ 3 X 4T- 94" BSKT MNT | 8HD5105 | SIDE PLT5/16"4BR 104/6 LEFT00- |
| 8H2710 | TUBE SQ 3 X 4T- 118" BSKT MNT | 8HD5106 | SIDE PLT5/16"4BR 104/6 RGHT00- |
| 8HD0064 | SPRING FLAT 3/4X1-3/4- 60"PNTD | 8HD5115 | CONNCTNG BAR (3/8X2-17.5) 00- |
| 8HD0080 | PIPE CLAMP 2-1/2" ID PLATED YZ | 8HD5120 | CONNCTNG BAR (3/8X2X30.5) 93- |
| 8HD0150 | PIN ADJSTMNT 5/8X9.75" YZ 95- | 8HD6110 | CROSS TUBE U-BLT ON 24"C-C 94- |
| 8HD0152 | PIN ADJSTMNT .68X9.75"SLVR06- | 8HD6120 | CROSSTUBE U-BLTATTCH 48"C-C |
| 8HD0160 | SPRING TINE ADJ.COMP.ZINC95- | 8HD6140 | MNT BRCKT SH+ SECTION 94- |
| 8HD0200 | U-BOLT 1/2 X 2-3/8X 3-9/16"RND | 8HD6150 | L TINE STOP1.75X1.75-6.25" 91- |
| 8HD0510 | PIPE SPACER 3/4 X 2-3/4" 93- | 8HD6160 | EXT SHRT COIL MNT FOR 8SQ 96- |
| 8HD0520 | TUBE 1-1/4X .76ID- 2-3/4" 95- | 8HD6170 | EXT LONG COIL MNT FOR 8SQ 96- |
| 8HD0522 | TUBE 1-7/8X 1.313ID- 2-3/4"95- | 8HD6174 | PIVOT ARM SHRT SH+/COIL 96- |
| 8HD0532 | ADJUSTMNT BAR3/8X2X19"FRNT93- | 8HD6176 | PIVOT ARM LONG SH+/COIL 96- |
| 8HD0540 | CONNECTNG BAR 3/8X2X49-1/2"93- | 8HD6180 | LIFT ARM SH+ W/O TINEADJFC 95- |
| 8HD0550 | STOP/MNT BRCKT SPRING FLAT 93- | 8HD6182 | LIFT ARM SH+ W/TINE ADJ FC 95- |
| 8HD0591 | 1ST PIPE W/LVR 6'5BAR SH93- | 8HD6460 | CABLEATCH 3/8X2- 4.63" REAR03- |
| 8HD0591L | 1ST PIPE W/LEFT LVR-HYD 96- | 8HD6464 | CABL GUIDE 7HD0100 PNTD 03- |
| 8HD0592 | 2ND PIPE W/LVR 6'5BAR SH93- | 8HD6620 | WINGTUBE 11'0" (36'SH+) 8"SQ |
| 8HD0592L | 2ND PIPE W/LEFT LVR-HYD 96- | 8HD6640 | WINGTUBE 17'2" (48'SH+) 8"SQ |
| 8HD0593 | 3RD PIPE W/LVR 6'5BAR SH93- | 8HD6650 | WINGTUBE20'11"(56'SH2650)8SQ4T |

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| Stock Code | Description | Stock Code | Description |
|------------|--------------------------------|------------|--------------------------------|
| 8HD6660 | WINGTUBE 23'0" (60'SH+) 8"SQ | 8J6030 | 7/8"-14 ORB X #10 JIC(M)90*ADP |
| 8HD6663 | WINGTUBE PRT1 LEFT60&72SH+96- | 8J6060 | 3/4"-16ORB X #6JIC(F-SW)90*ADP |
| 8HD6664 | WINGTUBE PRT1 RGHT60&72SH+96- | 8J7000 | BALL VALVE HYD 9/16"-18ORB(2X) |
| 8HD6665 | WINGTUBE END(8"SQ)60'HW SH+96- | 8J7040 | THERMAL RELIEF MANIFLD 4000PSI |
| 8HD6680 | WINGTUBE 34'10" (84'SH+)8SQ5T | 8J7116 | 3/4"-16 ORB(2X)1WAY 1/16"RESTR |
| 8HD6682 | WINGTUBE36'11"(88'SH2650)8SQ6T | 8J7216 | #6JIC(M)X6JIC(F)1/16"RSTR BLKZ |
| 8HD6684 | WINGTUBE PRT1 LEFT HW 84'SH+ | 8J7250 | RELIEF VLV 2250PSI 9/16"-18ORB |
| 8HD6685 | WINGTUBE PRT1 RGHT HW 84'SH+ | 8J7260 | DUAL OUTLET FEMALE HYD COUPLER |
| 8HD6698 | WINGTUBE END HW 72&84'SH+ | 8K0050 | MNT BRKT ADJ DPRSS MANFLD 12- |
| 8HD6800 | 6'SH+SECTION 8BAR RGHT LVR 16- | 8K1720 | EYEBOLT 1.25DIAX1"EYE YZ 12- |
| 8HD7000 | BUSHING ROCKSHFT HYD.TINE95- | 8K1750 | EYEBOLT 1.5"DIAX1"EYE YZ 12- |
| 8HD7020 | CYL ATTCH BASE HYD TINE 95- | 8K1755 | EYEBOLT 1.5"DIAX1.26EYE YZ 12- |
| 8HD7040 | CYL ATTCH ROD HYDTINEADJ 95- | 8K5350 | SPLITSTEELBUSH 2" X 1.5"ID- 2" |
| 8HD7060 | LEVER(U-BLT ON)HYDTINEADJ 95- | 8K5400 | SPLITSTEELBUSH 4 X 3.5ID- 1.5" |
| 8HD7080 | CONNECTNG TUBE HYD TINE 95- | 8K5505 | U-BOLT 3/4 X 2-1/8 X 4-1/4" SQ |
| 8HD7100 | STIFFNR FLAT3/8X2HYD TINE95- | 8K5515 | U-BOLT 3/4 X 4-1/16 X 6" SQ |
| 8HD7110 | CLAMP ROCK SHFT HYD TINE 95- | 8K5520 | U-BOLT 3/4 X 6-1/8 X 7-1/2" SQ |
| 8HD7120 | PIPE CAP ROUND SH+ 98- | 8K7016 | WHEEL 15 X 8" 8 BOLT-VLV GRD |
| 8HD7130 | ROCKSHAFT 4SQX6T- 54"HYD TINE | 8K7020 | WHEEL 15 X 10" 8 BOLT-VLV GRD |
| 8HD7136 | ROCKSHAFT 4SQX6T- 84"HYD TINE | 8K7022 | WHEEL 16 X 10" 8 BLT PRTS ONLY |
| 8HD7148 | ROCKSHAFT 4SQX6T- 156"HYDTINE | 8K7026 | TIRE 11L X 15" LRF TBLS HWYSRV |
| 8HD7160 | ROCKSHAFT 4SQX6T- 228"HYDTINE | 8K7028 | TIRE 12.5L X 15" LRF TL HWYSRV |
| 8HD7172 | ROCKSHAFT 4SQX6T- 300"HYDTINE | 8K7033 | 11L X 15 LRF ON 15X8X6 WHEEL |
| 8HD7184 | ROCKSHAFT 4SQX6T- 372"HYDTINE | 8K7037 | 11L X 15 LRF ON 15X8X8 WHEEL |
| 8HD8200 | LIFT ARM ASSY SH 2650 09- | 8K7042 | 12.5L X 15 LRF ON 15X10X8 WHL |
| 8J5100 | #6 JIC(M) X #6 JIC(M) UNION | 8K7111 | HUB HD812 W/CUPS&ZRK 8BLT3LIP |
| 8J5102 | #6 ORB TO 3/8"FPT ADAPTR SWVL | 8K7113 | HUB CAP HD812 DC17 |
| 8J5110 | #10 JIC(M) X #10 JIC(M) UNION | 8K7117 | BEARING INNER HD812 LM3780 |
| 8J5152 | #8 JIC(F) X #6 JIC(M) RDCR | 8K7118 | BEARING OUTER HD812 LM2790 |
| 8J5200 | #10 JIC(F) X #6 JIC(M)HEX BUSH | 8K7122 | STUD WHEEL 5/8-18UNFX2.5"97- |
| 8J5298 | TEE #6 SWIVELNUTRUN(M+M+F-SW) | 8K7123 | NUT 5/8"-18UNF WHEEL BOLT 97- |
| 8J5300 | TEE #6 JIC (MALE) 3X | 8K7127 | SEAL TRPL LIP EXTRNL HD812 06- |
| 8J5312 | TEE #10JIC(M2X)X3/4-16ORBBRNCH | 8K7128 | SEAL SLEEVE FOR 3X LIP 812 06- |
| 8J5500 | 9/16"-18 ORB X #6 JIC(M) STR | 8K7130 | RACE INNER HD812 LM3720 |
| 8J5510 | 3/4"-16 ORB X #6 JIC(M) STR | 8K7132 | RACE OUTER HD812 LM2720 |
| 8J5520 | 3/4"-16 ORB X #10 JIC(M) STR | 8K7150 | AXLE HD812 X 11.5 (2.5 DIA.) |
| 8J5540 | 7/8"-14 ORB X #10 JIC(M) STR | 8K7150S | AXLE HD812X 11.5 (2 DIA.RCVR) |
| 8J5600 | 9/16"-18 ORB X #6 JIC(F-SW)STR | 8K7340 | HUB HD817 W/CUPS&ZRK 8BLT3LIP |
| 8J5620 | 3/4"-16 ORB X #6 JIC(F-SW)STR | 8K7341 | HUB CAP HD817 DC26 |
| 8J5680 | 3/4"-16 ORB X 3/4"-16ORB UNION | 8K7342 | BEARING INNER HD817 LM387AS |
| 8J5682 | 3/4"-16ORB(2X)ADJUSTABLE UNION | 8K7343 | BEARING OUTER HD817 LM501349 |
| 8J5690 | 3/4-16X3/4-16 ORB M-SW90*UNION | 8K7344 | SEAL 3" ID HD817 SE42 |
| 8J5700 | #6 JIC(F-SW) X #6 JIC(M)90*ADP | 8K7346 | RACE INNER HD817 382A |
| 8J5710 | #10 JIC(F-SW)X#10 JIC(M)90*ADP | 8K7347 | RACE OUTER HD817 LM501310 |
| 8J6000 | 9/16"-18 ORB X #6 JIC(M)90*ADP | 8K7349 | AXLE HD817X15.25 (2.5DIA.RCVR) |
| 8J6002 | 9/16"-18ORB X #6 JIC(M)BRNCH T | 8K7405 | WHEEL 19.5X8.25"8BOLT -1"OFFST |
| 8J6004 | 9/16"-18ORB X #6 JIC(M)RUN TEE | 8K7420 | TIRE 340/65R18 148A8 FS24 TL |
| 8J6010 | 3/4"-16 ORB X #6 JIC(M)90*ADP | 8K8000 | STL 7K2045 3/8X3.5 PNTDLGHT09- |
| 8J6020 | 3/4"-16 ORB X #10 JIC(M)90*ADP | 8K8005 | TUBE LGHT BRKT SHRT 1.5SQ PNTD |

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| Stock Code | Description | Stock Code | Description |
|------------|--------------------------------|------------|--------------------------------|
| 8K8010 | TUBE LGHT BRCKT 1.5SQ PNTD 00- | 8L0251 | WASHER 3/4"ID X 3-1/16"ODX 1/4 |
| 8K8015 | TUBE LGHTBRKT 1.5SQ STR PTD11- | 8L0252 | WASHER 1.28"IDX4.5ODX 1/4" YZ |
| 8K8020 | STL 12GA MNTNG BRCKT LIGHT 00- | 8L0258 | U-BOLT 5/16 X 1-1/2 X 2-1/2"SQ |
| 8K8030A | MDULE AG ENHNCDW/BRAKE6PIN08- | 8L0260 | U-BOLT 3/8 X 1-3/4 X 3" SQ |
| 8K8060B | EXT HRNSS 12'6PIN DEUTSCH09- | 8L0262 | U-BOLT 5/16 X 1 X 2" SQ |
| 8K8067 | DUST CAP FOR 7PIN CONNECT00- | 8L0266 | U-BOLT 1/2 X 3-1/2 X 5" SQ |
| 8K8070B | MAIN HRNSS 7PNLNG W/BRAKE 09- | 8L0268 | U-BOLT 5/16 X 3 X 4" SQ |
| 8K8074 | 2ND IMP JUMP HARNESS 09- | 8L0270 | SLIDE BOLT LATCH ZNC PLTD 96- |
| 8K8075A | EXT HRNSS NONDRAWBR DTSCH 07- | 8L0272 | U-BOLT 5/16 X 3 X 7" SQ |
| 8K8076 | EXT HRNSS 12' DEUTSCH 16- | 8L1060 | QUICKLINK 3/8" YEL ZINC |
| 8K8077 | EXT HRNSS 24' DEUTSCH 16- | 8N2012 | 1/4X 12"HYD HOSE #6FJX3000PSI |
| 8K8078 | EXT HRNSS 30' DEUTSCH 16- | 8N2024 | 1/4X 24"HYD HOSE #6FJX3000PSI |
| 8K8079 | EXT HRNSS 36' DEUTSCH 16- | 8N2036 | 1/4X 36"HYD HOSE #6FJX3000PSI |
| 8K8080A | EXT HRNSS DRAWBAR DEUTSCH 07- | 8N2050 | 1/4X 50"HYD HOSE #6FJX3000PSI |
| 8K8081 | EXT HRNSS 42' DEUTSCH 16- | 8N2054 | 1/4X 54"HYD HOSE #6FJX3000PSI |
| 8K8082 | EXT HRNSS 48' DEUTSCH 16- | 8N2060 | 1/4X 60"HYD HOSE #6FJX3000PSI |
| 8K8088 | LENS ONLY AMBER GROTE LGHT 00- | 8N2072 | 1/4X 72"HYD HOSE #6FJX3000PSI |
| 8K8090B | LIGHT LED AMBER 2WR DTSCH 12- | 8N2076 | 1/4X 76"HYD HOSE #6FJX3000PSI |
| 8K8095B | LIGHT LED RED 3WIRE DTSCH 12- | 8N2088 | 1/4X 88"HYD HOSE #6FJX3000PSI |
| 8K8105A | EXT HRNSS T 26'2WIRE DTSCH 07- | 8N2096 | 1/4X 96"HYD HOSE #6FJX3000PSI |
| 8K8200 | BRCKT SMV ATTCH 4-8"FRAME98- | 8N2110 | 1/4X 110"HYD HOSE #6FJX3000PSI |
| 8K8210 | BRCKT W/SCKT SMV ATCH4-8"98- | 8N2120 | 1/4X 120"HYD HOSE #6FJX3000PSI |
| 8K8220 | BRCKT LGHT.25X1.75-18.4" 04- | 8N2135 | 1/4X 135"HYD HOSE #6FJX3000PSI |
| 8K8430 | HYD CYL 3 X 8" RPHS 1.5 ROD | 8N2160 | 1/4X 160"HYD HOSE #6FJX3000PSI |
| 8K8435 | HYD CYL 3.5 X 8" RPHS 1.75"ROD | 8N2190 | 1/4X 190"HYD HOSE #6FJX3000PSI |
| 8K8440C | HYD CYL 4 X 8" RPHS 2"ROD | 8N2210 | 1/4X 210"HYD HOSE #6FJX3000PSI |
| 8K8445C | HYD CYL 4.5 X 8" RPHS 2"ROD | 8N2248 | 1/4X 248"HYD HOSE #6FJX3000PSI |
| 8K8452C | HYD CYL 5 X 8" RPHS 2.12"RD | 8N2250 | 1/4X 250"HYD HOSE #6FJX3000PSI |
| 8K8455 | HYD CYL 5.5 X 8" RPHS 2.25RD | 8N2360 | 1/4X 360"HYD HOSE #6FJX3000PSI |
| 8K8460 | HYD CYL 6 X 8" RPHS 2.38RD | 8N2400 | 1/4X 400"HYD HOSE #6FJX3000PSI |
| 8K8520 | SEAL KIT 4 X8"&10"PRINCE 93-04 | 8N2410 | 1/4X 410"HYD HOSE #6FJX3000PSI |
| 8K8530 | SEAL KIT4.5X8"&10"PRINCE 93-04 | 8N3018 | 3/8X 18"HYD HOSE #6FJX3000PSI |
| 8K8540 | SEAL KIT 5 X8"&10"PRINCE 93-03 | 8N3028 | 3/8X 28"HYD HOSE #6FJX3000PSI |
| 8K8600 | SEAL KIT 3 X 8" CTD 89- | 8N3035 | 3/8X 35"HYD HOSE #6FJX3000PSI |
| 8K8610 | SEAL KIT3.5X8"CTD1.75"ROD 90- | 8N3048 | 3/8X 48"HYD HOSE #6FJX3000PSI |
| 8K8620 | SEAL KIT 4 X 4 & 8" CTD 89- | 8N3060 | 3/8X 60"HYD HOSE #6FJX3000PSI |
| 8K8630 | SEAL KIT 4.5 X 8" CTD 89- | 8N3070 | 3/8X 70"HYD HOSE #6FJX3000PSI |
| 8K8642 | SEAL KIT 5 X 8"CTD 2&2.125"ROD | 8N3084 | 3/8X 84"HYD HOSE #6FJX3000PSI |
| 8K8644 | SEAL KIT 5.5 X 8"CTD 2.25" ROD | 8N3096 | 3/8X 96"HYD HOSE #6FJX3000PSI |
| 8K8646 | SEAL KIT 6 X 8"CTD 2.38" ROD | 8N3108 | 3/8X 108"HYD HOSE #6FJX3000PSI |
| 8K8660 | SEAL KIT 5 X 32 & 36" CTD 89- | 8N3124 | 3/8X 124"HYD HOSE #6FJX3000PSI |
| 8K9102 | PIN 1 X 4" CYL-FOR1/4"ROLL PIN | 8N3136 | 3/8X 136"HYD HOSE #6FJX3000PSI |
| 8K9106 | PIN 1-1/4 X 4-3/8" HRDND 1/4HL | 8N3150 | 3/8X 150"HYD HOSE #6FJX3000PSI |
| 8K9108 | PIN 1-1/4 X 5-1/8" HRDND 3/8HL | 8N3156 | 3/8X 156"HYD HOSE #6FJX3000PSI |
| 8K9174 | STROKE CNTRL 1/2" 2"ROD 96- | 8N3160 | 3/8X 160"HYD HOSE #6FJX3000PSI |
| 8K9176 | STROKE CNTRL 3/4" 2"ROD 96- | 8N3180 | 3/8X 180"HYD HOSE #6FJX3000PSI |
| 8K9178 | STROKE CNTRL 1" 2"ROD 96- | 8N3204 | 3/8X 204"HYD HOSE #6FJX3000PSI |
| 8K9180 | STROKE CNTRL 1-1/4" 2"RD 96- | 8N3216 | 3/8X 216"HYD HOSE #6FJX3000PSI |
| 8K9200 | TRNS LCK FRMD 7.5"(2-3/8RD)10- | 8N3228 | 3/8X 228"HYD HOSE #6FJX3000PSI |

SECTION 8 - PART NUMBERS

| Stock Code | Description | Stock Code | Description |
|------------|--------------------------------|------------|--------------------------------|
| 8N3252 | 3/8X 252"HYD HOSE #6FJX3000PSI | 8S0340 | U-BOLT 1/2 X 4 X 5-1/4" SQ |
| 8N3276 | 3/8X 276"HYD HOSE #6FJX3000PSI | 8S0345 | U-BOLT 1/2 X 5 X 6-1/4" SQ |
| 8N3288 | 3/8X 288"HYD HOSE #6FJX3000PSI | 8S0358 | U-BOLT 5/8X3.06X 4.5" SQ1.25"T |
| 8N3312 | 3/8X 312"HYD HOSE #6FJX3000PSI | 8S0360 | U-BOLT 5/8 X 6-1/16 X 4-1/2"SQ |
| 8N3330 | 3/8X 330"HYD HOSE #6FJX3000PSI | 8S1076 | QUICKLINK 1/4" YELLOW ZINC |
| 8N3348 | 3/8X 348"HYD HOSE #6FJX3000PSI | 8S1120 | SIGN SLOW MOVING VEHICLE(SMV) |
| 8N3360 | 3/8X 360"HYD HOSE #6FJX3000PSI | 8S1124 | MOUNTING SOCKET SMV SIGN |
| 8N3390 | 3/8X 390"HYD HOSE #6FJX3000PSI | 8S1126 | MNT SPADE W/HRDWR SMV SIGN |
| 8N3408 | 3/8X 408"HYD HOSE #6FJX3000PSI | 8S2980 | HYD HOSE CLAMP-SMALL-NYLON |
| 8N3432 | 3/8X 432"HYD HOSE #6FJX3000PSI | 8S2990 | HYD HOSE CLAMP-LARGE-NYLON |
| 8N3462 | 3/8X 462"HYD HOSE #6FJX3000PSI | 8T2986 | CLAMP 1/2"(-8)WRNG RUBBERBACK |
| 8N3534 | 3/8X 534"HYD HOSE #6FJX3000PSI | 8T2988 | CLAMP 3/8"(-6)WRNG RUBBERBACK |
| 8N3570 | 3/8X 570"HYD HOSE #6FJX3000PSI | 8T2990 | HYD HOSE CLAMP MTL/RUB BACK |
| 8N3606 | 3/8X 606"HYD HOSE #6FJX3000PSI | 8W1006 | PLOWBOLT 3/8-16 X 1.5" GR5 PLN |
| 8N4016 | 1/2X 16"HYD HOSE#10FJX3000PSI | 8W1007 | NUT 3/8"-16NC HVY HEX GR2 PLN |
| 8N4060 | 1/2X 60"HYD HOSE#10FJX3000PSI | 8W1011 | S-TINE STANDARD |
| 8N4114 | 1/2X 114"HYD HOSE#10FJX3000PSI | 8W1012 | S-TINE HIGH CLEARANCE |
| 8N4120 | 1/2X 120"HYD HOSE#10FJX3000PSI | 8W1015 | CLAMP STANDARD S-TINE SLVR |
| 8N4138 | 1/2X 138"HYD HOSE#10FJX3000PSI | 8W1016 | CLAMP HI CLRNC S-TINE GOLD |
| 8N4160 | 1/2X 160"HYD HOSE#10FJX3000PSI | 8W1020 | SHOVEL 1/4 X 2.75" S-TINE |
| 8N4198 | 1/2X 198"HYD HOSE#10FJX3000PSI | 8W1021 | SHOVEL 1/4 X 4" STINE V-STYLE |
| 8N4216 | 1/2X 216"HYD HOSE#10FJX3000PSI | 8W1200 | U-BOLT 1/2 X 2 X 3-1/4" SQ |
| 8N4228 | 1/2X 228"HYD HOSE#10FJX3000PSI | 8W1204 | U-BOLT 1/2 X 3 X 3" SQ |
| 8N4546 | 1/2X 546"HYD HOSE#10FJX3000PSI | 8W1228 | TUBE SQ 2 X4T- 102.5" SQ 81- |
| 8N4624 | 1/2X 624"HYD HOSE#10FJX3000PSI | 8W1230H | TUBE SQ 2 X4T- 110" SQ 91- |
| 8N7000 | ADJ DOWN PRESSURE MANIFLD 12- | 8W1245H | TUBE SQ 2 X4T- 162.5" SQ 83- |
| 8R6060 | FLAT SPACER FOR PILLOW BLOCK | 8W1250 | TUBE SQ 2 X4T- 172" SQ 91- |
| 8R6065 | PILLOWBLCK CAP W/ZRK CASTPNTD | 8W1264 | FLAT 3/8X1.5- 50" 4RNK SW 91- |
| 8R6067 | PILLOWBLOCK CAP CAST PNTD 82- | 8W1270 | LEVER FOR 2"SQ TUBE/STINE 81- |
| 8R6805 | SPLITSTEELBUSH 1" X .75"ID- 1" | 8W1275 | BAR CLAMP FLAT 3/8X1.5- 4" 81- |
| 8R6808 | SPLITSTEELBUSH 1.25X 1"ID-.75" | 8W1280 | CYL ATTCH LEVER ROD SW 81- |
| 8R6810 | SPLITSTEELBUSH 1.62X1.25"ID-1" | 8W1285 | BOTTOM FLAT 1/2X4- 6.5"SW 81- |
| 8R6815 | SPLITSTEELBUSH 1.50X1.25"ID-1" | 8W1300 | BUSHING 2" SQ TUBE/S-TINE 81- |
| 8R6820 | SPLITSTEELBUSH 2.5X2.00"ID-2" | 8W1357 | HEX HEAD PLUG 9/16"-18 ORB |
| 8R6901 | AXLE H614 STR 2"CR X 10" | 8W1360 | MANIFLD BLOCK ALUMINUM 10PORT |
| 8R6902 | AXLE H614 STR 2"HR X 11-1/2" | 8W1380 | HOLDDOWN HOSE 4&6" WDTN 81- |
| 8R6911 | HUB H614 W/CUPS&ZRK 6 BLT GBGI | 8W1390 | HOLDDOWN HOSE 2" WDTN 91- |
| 8R6913 | HUB CAP 517HD H614 & H618 | 8W1398 | HOLDDOWN HOSE 8" WDTN 91- |
| 8R6914 | BOLT WHEEL 9/16"-18 UNF- 1.25" | 8W1710 | LIFT ARM STII+4RNK SPRWDR 91- |
| 8R6915 | BOLT WHEEL 9/16"-18 UNF- 1.75" | 8W1720 | LIFT ARM W/CYL STII+4RNKSW 91- |
| 8R6917 | BEARING INNER 614 | 8W1800 | CYL ATTCH WNG 7W1610 W/HLS 94- |
| 8R6921 | SEAL HD 2" ID (TRPL LIP) H614 | 8W1806 | SPACER TUBE 1.25X.76- 1-1/16" |
| 8R6922 | SEAL ASSY GBGI H614 HUB 00- | 8W1817H | PIVOT W/SPNDL HLDR WNG HD LFT |
| 8R6923 | SEAL ONLY GBGI H614 HUB 00- | 8W1818H | PIVOT W/SPNDL HLDR WNG HD RGT |
| 8R6924 | COUNTRFACE GBGI H614 HUB 00- | 8W1820 | PVT INNER WING W/ROLLRS LEFT |
| 8R6925 | RACE INNER H614 LM603011 | 8W1822 | PVT INNER WING W/ROLLRS RGHT |
| 8R6927 | SEAL SUPPORT GBGI H614 AXLE | 8W1830H | PVT PLATE WNG-1" 7W1650H PNTD |
| 8S0080 | PIPE CLAMP 1.90" ID PLATED YZ | 8W1850 | HITCH PIVOT ASSY 22' HDA 94- |
| 8S0330 | U-BOLT 1/2 X 3 X 4-1/4" SQ | 8W1860 | CYL ATTCH HTCH UBLT LEFT 94- |

SECTION 8 - PART NUMBERS

| Stock Code | Description | Stock Code | Description |
|------------|--------------------------------|------------|--------------------------------|
| 8W1862 | CYL ATTCH HTCH UBLT RGHT 94- | 8X0067 | BOLT 1/2-13NC X 2-1/4" GR5 YZ |
| 8W1884 | L UHMW 2.5X2.5X3/8- 13" W/HLS | 8X0068 | BOLT 1/2-13NC X 2-1/2" GR5 YZ |
| 8W1886 | FLAT 5/16 X 1.5- 11-3/8" 94- | 8X0069 | BOLT 1/2-13NC X 3" GR5 YZ |
| 8W1890 | ROLLERTUBE1.5 X 1"ID- 1.5" 94- | 8X0070 | BOLT 1/2-13NC X 3-1/4" GR5 YZ |
| 8W1895 | NYLATRON 1"ODX .76"ID- 1-1/2" | 8X0071 | BOLT 1/2-13X 3"SHOULDR GR2 YZ |
| 8W1897 | NYLATRON 1"ODX .76"ID- 1-3/4" | 8X0072 | BOLT 1/2-13NC X 3-3/4" GR5 YZ |
| 8X0000 | BOLT 1/4-20X3/4" FLLTHD GR5 YZ | 8X0073 | BOLT 1/2-13NC X 5" GR5 YZ |
| 8X0000B | BOLT 1/4-20NC X 1" GR5 YZ | 8X0074 | BOLT 1/2-13NC X 4-1/2" GR5 YZ |
| 8X0001 | BOLT 3/8-16NC X 3/4" GR5 YZ | 8X0075 | BOLT 1/2-13NC X 6" GR5 YZ |
| 8X0002 | BOLT 3/8-16NC X 1" GR5 YZ | 8X0077 | BOLT 1/2-13NC X 7-1/2" GR5 YZ |
| 8X0004 | BOLT 3/8-16NC X 1-1/4" GR5 YZ | 8X0078 | BOLT 1/2-13X3.62" SHLDR GR2 YZ |
| 8X0005 | BOLT 1/4-20NC X 3-3/4" GR5 YZ | 8X0080 | BOLT 1/2-13NC X 11" GR5 YZ |
| 8X0006 | BOLT 3/8-16NC X 2-1/2" GR5 YZ | 8X0082 | BOLT 1/2-13NC X 6-1/2" GR5 YZ |
| 8X0007 | BOLT 3/8-16NC X 1-1/2" GR5 YZ | 8X0083 | BOLT 1/2-13NC X 8" GR5 YZ |
| 8X0008 | BOLT 3/8-16NC X 2" GR5 YZ | 8X0084 | BOLT 1/2-13NC X 9" GR5 YZ |
| 8X0009 | BOLT 1/4-20NC X 2" GR5 YZ | 8X0087 | BOLT 5/8-11NC X 1-1/2" GR5 YZ |
| 8X0010 | BOLT 1/4-20NC X 1-1/4" GR5 YZ | 8X0090 | BOLT 5/8-11NC X 2-1/4" GR5 YZ |
| 8X0013 | BOLT 1/4-20NC X 2-1/2" GR5 YZ | 8X0091 | BOLT 5/8-11NC X 1-3/4" GR5 YZ |
| 8X0014 | BOLT 1/4-20 X 3" GR5 ZNCOAT | 8X0092 | BOLT 5/8-11NC X 2-3/4" GR5 YZ |
| 8X0015 | BOLT 3/8-16NC X 3-3/4" GR5 YZ | 8X0093 | BOLT 5/8-11NC X 2" GR5 YZ |
| 8X0016 | BOLT 3/8-16NC X 3" GR5 YZ | 8X0095 | BOLT 5/8-11NC X 5" GR5 YZ |
| 8X0017 | BOLT 3/8-16NC X 5" GR5 YZ | 8X0096 | BOLT 5/8-11NC X 4" GR5 YZ |
| 8X0019 | BOLT 3/8-16NC X 4-1/2" GR5 YZ | 8X0098 | BOLT 5/8-11X 3.5"FULLTHDGR5 YZ |
| 8X0020 | BOLT 3/8-16X3.5"FULLTHDGR5 YZ | 8X0099 | BOLT 5/8-11X6.75"W/3.5THDGR5YZ |
| 8X0021 | BOLT 5/16-18NC X 3/4" GR5 YZ | 8X0100 | BOLT 5/8-11NC X 8" GR8 YZ |
| 8X0021A | BOLT 5/16-18NC X 1" GR5 YZ | 8X0101 | BOLT 5/8-11NC X 8" GR5 YZ |
| 8X0021B | BOLT 5/16-18NC X 1-1/4"GR5 YZ | 8X0102 | BOLT 5/8-11NC X 9" GR5 YZ |
| 8X0022 | SCKT CAP 5/16-18 X 1" GR5 YZ | 8X0106 | BOLT 3/4X2.75"W/1.38THD GR8 YZ |
| 8X0023 | BOLT 5/16-18NC X 2" GR5 YZ | 8X0107 | BOLT 3/4-10NC X 2" GR5 YZ |
| 8X0030 | BOLT 5/16-18NC X 5" GR5 YZ | 8X0110 | BOLT 3/4-10NC X 1-1/4" GR5 YZ |
| 8X0031 | BOLT 7/16-14NC X 1" GR5 YZ | 8X0111 | BOLT 3/4-10NC X 2-1/2" GR5 YZ |
| 8X0033 | BOLT 7/16X1.25 5/8"THD GR5 YZ | 8X0112 | BOLT 3/4-10NC X 2-1/4" GR5 YZ |
| 8X0034 | BOLT 7/16-14NC X 1.75" GR5 YZ | 8X0113 | BOLT 3/4-10NC X 5" GR5 YZ |
| 8X0036 | BOLT 7/16-14NC X 2" GR5 YZ | 8X0114 | BOLT 3/4-10NC X 3" GR5 YZ |
| 8X0038 | BOLT 7/16-14NC X 2-1/2"GR5 YZ | 8X0115 | BOLT 3/4-10NC X 3-1/2" GR5 YZ |
| 8X0041 | BOLT 7/16-14NC X 3" GR5 YZ | 8X0115A | BOLT 3/4NCX 3.5"FULLTHD GR5 YZ |
| 8X0044 | BOLT 7/16-14NC X 3-1/2"GR5 YZ | 8X0115B | BOLT 3/4-10NC X 3-1/2" GR8 YZ |
| 8X0045 | BOLT 7/16-14NC X 4-1/2"GR5 YZ | 8X0116 | BOLT 3/4-10NC X 6" GR5 YZ |
| 8X0046 | BOLT 7/16-14NC X 7-1/4" GR5 YZ | 8X0117 | BOLT 3/4-10NC X 7" GR5 YZ |
| 8X0047 | BOLT 7/16-14NC X 6" GR5 YZ | 8X0118 | BOLT 3/4-10NC X 4" GR5 YZ |
| 8X0048 | CRG 7/16-14NC X 3-1/2" GR5 YZ | 8X0118A | BOLT 3/4-10NC X 4-1/4" GR5 YZ |
| 8X0061 | BOLT 1/2-13NC X 1-1/4" GR5 YZ | 8X0119 | BOLT 3/4-10NC X 7-1/2" GR5 YZ |
| 8X0062 | BOLT 1/2-13NC X 2" GR5 YZ | 8X0120 | BOLT 3/4-10NC X 9" GR5 YZ |
| 8X0063 | BOLT 1/2-13NC X 1-1/2" GR5 YZ | 8X0121 | BOLT 3/4-10NC X 6-1/2" GR5 YZ |
| 8X0064 | CRG 1/2-13NC X 1-1/2" GR5 YZ | 8X0122 | BOLT 3/4-10NC X 4-1/2" GR5 YZ |
| 8X0065 | CRG 1/2-13NC X 2" GR5 YZ | 8X0123 | BOLT 3/4-10NC X 5-1/2" GR5 YZ |
| 8X0065L | CRG 1/2-13NC X 3" GR5 ZINC | 8X0125 | BOLT 3/4-10NC X 10" GR5 YZ |
| 8X0065S | SCKT CAP 1/2-13 X 1.62"GR8 PLN | 8X0126 | BOLT 3/4-10NC X 7-1/2" GR8 YZ |
| 8X0066 | BOLT 1/2-13NC X 1-3/4" GR5 YZ | 8X0128 | BOLT 3/4-10NC X 8-1/2" GR8 YZ |

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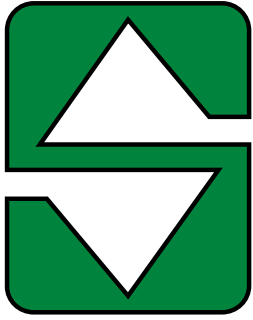
| Stock Code | Description | Stock Code | Description |
|------------|--------------------------------|------------|--------------------------------|
| 8X0130 | BOLT 7/8-9NC X 2" GR5 YZ | 8X0283 | NUT 1-1/4"-7NC JAM GR2 YZ |
| 8X0132 | BOLT 7/8-9NC X 2-1/2" GR5 YZ | 8X0284 | NUT 1-1/4"-7NC HEX GR2 YZ |
| 8X0133 | BOLT 7/8-9NC X 3" GR5 YZ | 8X0285 | NUT 1-1/2"-6NC HEX GR2 YZ |
| 8X0138 | BOLT 1-8NC X 5-1/2" GR5 YZ | 8X0286 | NUT 1-1/2"-6NC JAM GR2 YZ |
| 8X0139 | BOLT 1-8NC X 3" GR5 YZ | 8X0290 | NUT 1-1/4"-7NC HEXSLOT GR2 YZ |
| 8X0140 | BOLT 1-8NCX7" W/1.5"THDGR5 YZ | 8X0292 | NUT 2"-4.5 HVY HEXSLOT GR2 PLN |
| 8X0141 | BOLT 1-8NC X 7.5" GR5 YZ | 8X0292S | NUT 2"NC HEXSLOT MACHIND 1.75" |
| 8X0142 | BOLT 1-8NC X 3.5" GR5 YZ | 8X0299 | LOCKWASHER 1/4" EXT TOOTH SS |
| 8X0143 | BOLT 1-8NC X 5" GR5 YZ | 8X0300 | LOCKWASHER 5/16" YLW ZNC |
| 8X0145 | BOLT 1-8NC X 10-1/2" GR5 YZ | 8X0301 | LOCKWASHER 3/8" YLW ZNC |
| 8X0146 | BOLT 1-8NC X 8-1/2" GR5 YZ | 8X0302 | LOCKWASHER 7/16" YLW ZNC |
| 8X0149 | BOLT 1-8NC X 18" GR5 YZ | 8X0303 | LOCKWASHER 1/2" YLW ZNC |
| 8X0150 | BOLT 1-8NC X 20" GR5 YZ | 8X0304 | LOCKWASHER 5/8" YLW ZNC |
| 8X0201 | NUT 3/8"-16NC HEX GR2 YZ | 8X0306 | LOCKWASHER 3/4" YLW ZNC |
| 8X0202 | NUT 3/8"-16NC NY-LOCK GR2 YZ | 8X0307 | LOCKWASHER 7/8" YLW ZNC |
| 8X0203 | NUT 3/8"-16NC SERFLANG GR2 YZ | 8X0308 | LOCKWASHER 1/4" YLW ZNC |
| 8X0205 | NUT 10-24 HEX YZ | 8X0309 | LOCKWASHER 1" YLW ZNC |
| 8X0210 | NUT 5/16"-18NC HEX GR2 YZ | 8X0311 | LOCKWASHER 1-1/4" YLW ZNC |
| 8X0211 | NUT 5/16"-18NC SERFLANG GR2 YZ | 8X0315 | LOCKWASHER 1-1/2" YLW ZNC |
| 8X0212 | NUT 5/16"-18NC NY-LOCK GR2 YZ | 8X0316 | WASHER 1" SAE FLAT YZ |
| 8X0218 | NUT 1/4"-20NC SQ GR2 SS | 8X0317 | WASHER 3/4" SAE FLAT YZ |
| 8X0220 | NUT 1/4"-20NC HEX GR2 YZ | 8X0318 | WASHER 3/4"(13/16"ID)FLAT YZ |
| 8X0222 | NUT 1/4"-20NC NY-LOCK GR2 YZ | 8X0319 | WASHER 17/32"IDX7/8ODX16GA YZ |
| 8X0223 | NUT 1/4"-20NC SERFLANG GR2 YZ | 8X0320 | WASHER 3/8"(7/16" ID)FLAT YZ |
| 8X0232 | NUT 7/16"-14NC HEX GR2 YZ | 8X0323 | WASHER 5/8" SAE FLAT YZ |
| 8X0234 | NUT 7/16"-14NC NY-LOCK GR2 YZ | 8X0325 | WASHER 3/4"(13/16"ID)FLAT PLN |
| 8X0240 | NUT 1/2"-13NC HEX GR2 YZ | 8X0326 | WASHER 1.257"IDX2.75"OD PLN |
| 8X0242 | NUT 1/2"-13NC NY-LOCK GR2 YZ | 8X0327 | WASHER 1-1/4" SAE FLAT YZ |
| 8X0244 | NUT 1/2"-13NC FLANG TOP LOCK Z | 8X0328 | WASHER 1.312"IDX2.5 OD-1/4" BL |
| 8X0246 | NUT 1/2"-13NC SERFLANG GR2 YZ | 8X0329 | WASHER 5/16"(3/8" ID)FLAT YZ |
| 8X0250 | NUT 5/8"-11NC HEX GR2 YZ | 8X0330 | WASHER 17/32"ID X 1.25"OD YZ |
| 8X0251 | NUT 5/8"-11NC JAM GR2 YZ | 8X0331 | WASHER 15/32"ID X 1.25"OD YZ |
| 8X0253 | NUT 5/8"-11NC NY-LOCK GR2 YZ | 8X0332 | WASHER 1/4"(5/16" ID) FLAT YZ |
| 8X0256 | NUT 5/8"-11NC SERFLANG GR2 YZ | 8X0333 | WASHER HARROW TOOTH YZ |
| 8X0259 | NUT 3/4"-10NC JAM GR2 YZ | 8X0354 | WASHER 1-1/2"IDX2.25"X14GA YZ |
| 8X0260 | NUT 3/4"-10NC HEX GR2 YZ | 8X0355 | WASHER 1-1/2"IDX2.25"X10GA PLN |
| 8X0261 | NUT 3/4"-10NC NY-LOCK GR2 YZ | 8X0362 | WASHER 2.03IDX2-7/8ODX 9GA PLN |
| 8X0264 | NUT 3/4"-10NC BEVL CNTRLCK YZ | 8X0364 | WASHER 2.5 IDX3.5 ODX 14GA YZ |
| 8X0265 | NUT 3/4"-10NC CNTRLOCK GR2 YZ | 8X0366 | WASHER 2.03IDX2-7/8ODX 1/4"PLN |
| 8X0266 | NUT 3/4"-10NC SERFLANG GR2 YZ | 8X0367 | WASHER 1-3/4"IDX3.25"X14GA PLN |
| 8X0268 | NUT 7/8"-9NC HEX GR2 YZ | 8X0368 | WASHER 1-1/2" SAE FLAT PLN |
| 8X0269 | NUT 7/8"-9NC JAM GR2 YZ | 8X0370 | WASHER 3.016"IDX 3.93"ODX 14GA |
| 8X0270 | NUT 7/8"-9NC CNTRLOCK GR2 YZ | 8X0380 | WASHER 3.06"IDX4.25" X 3/16" |
| 8X0274 | NUT 7/8"-9NC FLNG GRF YZ | 8X0400 | HAIRPIN CLIP 1/8 X 1-15/16" |
| 8X0277 | NUT 1"-8NC JAM GR2 YZ | 8X0402 | HAIRPIN CLIP 1/8 X 2-9/16" |
| 8X0278 | NUT 1"-8NC JAM TOPLOCK GR2 YZ | 8X0410 | COTTER PIN 3/16 X 1" YZ |
| 8X0280 | NUT 1"-8NC HEX GR2 YZ | 8X0414 | COTTER PIN 1/4 X 2" YZ |
| 8X0281 | NUT 1"-8NC NY-LOCK GR2 YZ | 8X0415 | COTTER PIN 3/16 X 1-1/2" |
| 8X0282 | NUT 1"-14TPI TOPLOCK GR B Z | 8X0418 | COTTER PIN 5/16 X 2-1/2" YZ |

SECTION 8 - PART NUMBERS

| Stock Code | Description | Stock Code | Description |
|------------|--------------------------------|------------|---------------------------------|
| 8X0420 | CLEVIS PIN 7/16 X 1-3/4" YZ | 8Z0087 | DECAL"WARNING"PINCH POINT03- |
| 8X0422 | CLEVIS PIN 1/2 X 2-1/4" YZ | 8Z0089 | DECAL"DANGER" CONFINED SPACE |
| 8X0425 | CLEVIS PIN 1/2 X 3" YZ | 8Z0090 | DECAL IMPORTANT HYD DEPTH ADJ |
| 8X0428 | CLEVIS PIN 1/2 X 5-1/4" YZ | 8Z0092 | DECAL"WARNING"HITCH 5 X12.5" |
| 8X0432 | CLEVIS PIN 1/2 X 6" YZ | 8Z0093 | DECAL"WARNING"AUTOFLD4.5X12.75 |
| 8X0440 | CLEVIS PIN 5/8 X 3-7/8" YZ | 8Z0126 | DECAL ID SUPERHARROW PLUS 01- |
| 8X0462 | CLEVIS PIN 3/8 X 3" W/HL YZ | 8Z0127 | DECAL ID SUPERHARROW 2650 09- |
| 8X0480 | HITCH PIN W/LYNCH 5/8X4"YZ | 8Z0232 | DECAL AUTO FOLD WARNING 2X7" |
| 8X0492 | LYNCH PIN 3/16 X 1-1/4" YZ | 8Z0276 | DECAL GENERAL CAUTION 91- |
| 8X0505 | S-HOOK .125 X 1-3/8" ZINC | 8Z0340 | DECAL REPHASING CYLINDERS |
| 8X0520 | ROLL PIN 3/16 X 2" ZINC CLEAR | 8Z0342 | DECAL INSTALL CYLINDER LOCKS |
| 8X0523 | ROLL PIN 5/16 X 2-1/2" PLN | 8Z0344 | DECAL WING DANGER |
| 8X0528 | ROLL PIN 3/8 X 2-1/2" ZINC | 8Z0346 | DECAL ELECTROCUTION-TILLAGE |
| 8X0605 | SET SCRW SQ HD 7/16-14X 1" YZ | 8Z0650 | DECAL WIDTH 50' |
| 8X0632 | SET SCRW SCKT 7/16-14X 1.5"PLN | 8Z0800 | REFLECTOR AMBER ADHSVBCK98- |
| 8X0665 | SET SCRW SQ HD 3/4-10X4.5" YZ | 8Z0805 | REFLCTR REDORANGE ADHSVBK99- |
| 8X0708 | ZERK 1/4"-28 NF STR YZ | 8Z0810 | REFLECTOR RED ADHSV-BACK 98- |
| 8X0710 | ZERK 1/4"-28 NF 90 DEG YZ | 8Z1000 | MANUAL-PAK 3DIA X 11.75" 09- |
| 8X0721 | ZERK 5/16"-24 NF STR YZ | 8Z1101 | OPER/SETUP MAN22'HTCH SH+HP SW |
| 8X0725 | ZERK 1/8" MPT STR YZ | 8Z1101R | OPER MAN SUPRHRRW+ RUSSN 07- |
| 8X0727 | ZERK 1/8" MPT 90 DEG YZ | 8Z2100 | DECAL SH3960 ID 36'-84' (SH+) |
| 8X0728 | ZERK STANDOFF 1/8" NPT X 3" | 8Z2103 | DECAL SH3568 ID 36'-84' 8BAR S |
| 8X1120 | CRG 3/8-16NC X 2" GR2 ZN | 8Z2105 | DECAL SH3580 ID 56-88' (SH2650) |
| 8Z0070 | DECAL "SUMMERS" 1.25 X 6" | 8Z2110 | DECAL SH7960 ID36-60' SH+ W/CL |
| 8Z0075 | DECAL TRNSPRT LCK WARNING TILL | 8Z2115 | DECAL SH6350 ID 40-70' HRWPCKR |
| 8Z0079 | DECAL "SUMMERS" 5 X 20" | 8Z2120 | DECAL SW4350 ID 30'-70' SW |

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[®]

... Field Tested TOUGH!



Tillage



Rock Picker



Land Rollers/Packers



Cultivators/Harrows



Mounted Attachments



Sprayers



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