



SUMMERS®

Operator's Manual

MOUNTED HARROW M94, M104 AND M106 ROLLING CHOPPERS

IMPORTANT

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



CAUTION

READ & UNDERSTAND OPERATOR'S MANUAL BEFORE USING MACHINE.

SUMMERS MANUFACTURING CO., INC.
WEB SITE: www.summersmfg.com

MADDOCK, NORTH DAKOTA 58348 (701) 438-2855
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 12 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 Maddock, ND or Devils Lake, ND and return and also excluding all transportation costs from Summers' dealer to the dealer's customer and all other costs such as removal and installation expense.

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

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

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

This express warranty is the sole warranty of Summers. There are no warranties, which extend beyond the warranty 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.
MADDOCK, NORTH DAKOTA 58348
DEVILS LAKE, NORTH DAKOTA 58301

INTRODUCTION

This manual provides the following information about your Mounted Harrow.

ITEMS OF IMPORTANCE

- A. 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.**
- B. It is the policy of this company in improve its products whenever possible and practical to do so. We reserve the right to make changes or improvements in the design or construction of parts at any time without incurring obligations to install such changes on products previously delivered.**
- C. Reference to "right" and "left" in this manual is determined from a seated position in the drivers seat.**
- D. Parts are referenced in each drawing with the Summers Manufacturing Part Number. Use this Part Number when ordering replacement parts from your Summers dealer.**

<u>OWNER REGISTER</u>	
Name _____	Size _____
Address _____	
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 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.

SECTION 1 -  SAFETY

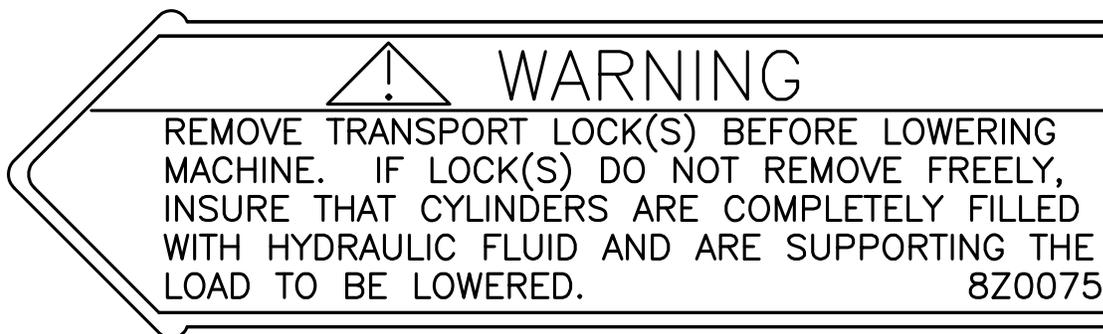
SAFETY DURING TRANSPORT

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.

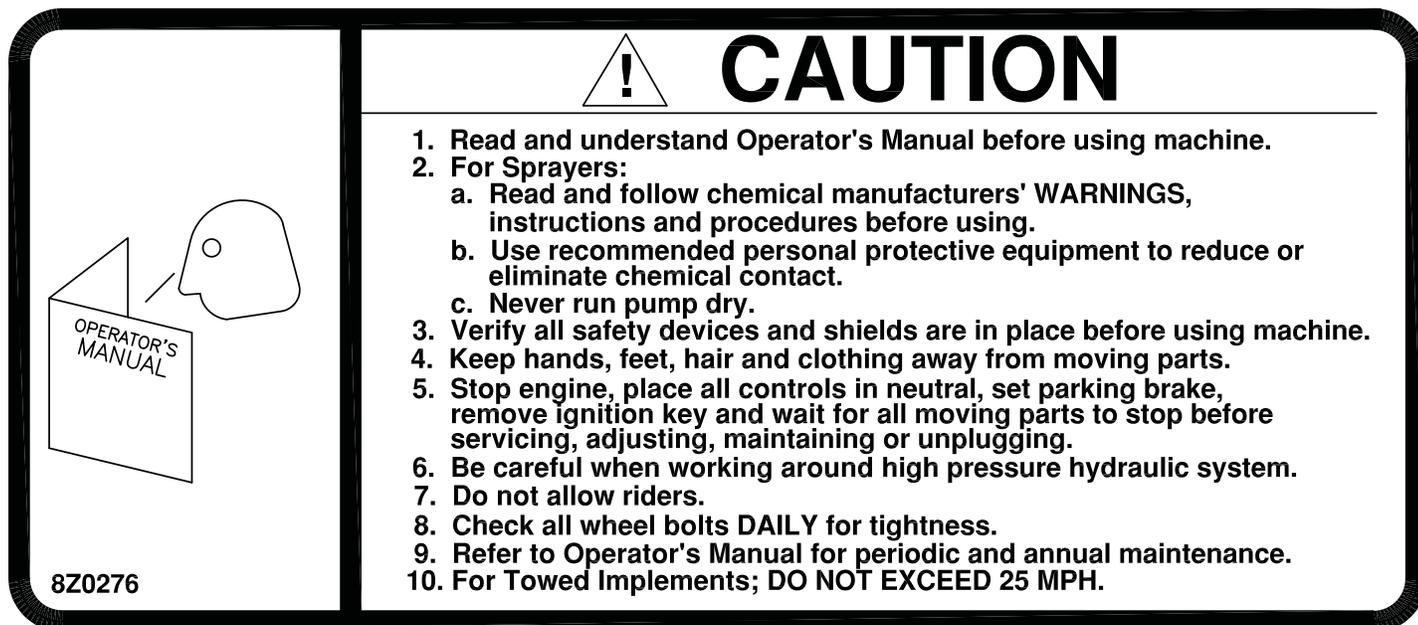
SAFETY DECALS

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. **GENERAL CAUTION DECAL (PN 8Z0276)**



3. WING DANGER DECAL (PN 8Z0344)

	<p style="text-align: center;"> DANGER</p> <p>TO AVOID INJURY OR DEATH STAND CLEAR OF MACHINE WHEN WINGS ARE BEING RAISED AND LOWERED. MECHANICAL OR HYDRAULIC FAILURE CAN ALLOW WINGS TO FALL RAPIDLY.</p> <p style="text-align: right;">8Z0344</p>
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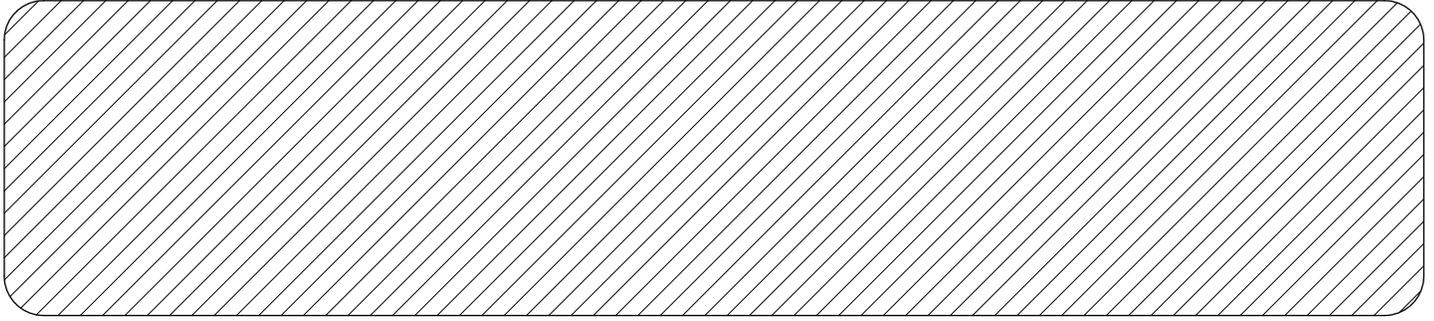
4. ELECTROCUTION DANGER DECAL (PN 8Z0346)

	<p style="text-align: center;"> DANGER</p> <p>TO AVOID INJURY OR DEATH DO NOT CONTACT ELECTRICAL LINES.</p> <p style="text-align: right;">8Z0346</p>
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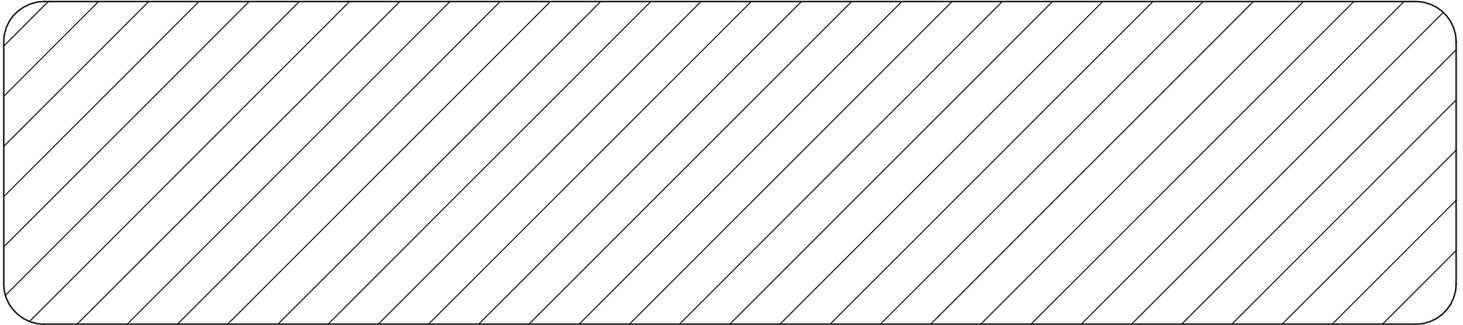
5. PINCH POINT DECAL (PN 8Z0087)

		<p style="text-align: center;"> DANGER</p> <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>
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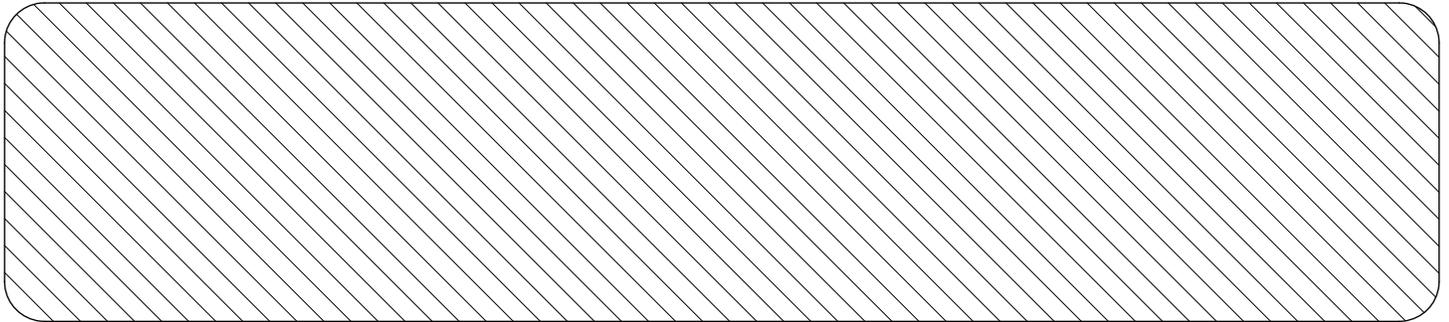
6. AMBER REFLECTOR (PN 8Z0800)



7. RED-ORANGE REFLECTOR (PN 8Z0805)



8. RED REFLECTOR (PN 8Z0810)



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 servicing or adjusting.



GENERAL ASSEMBLY INSTRUCTIONS

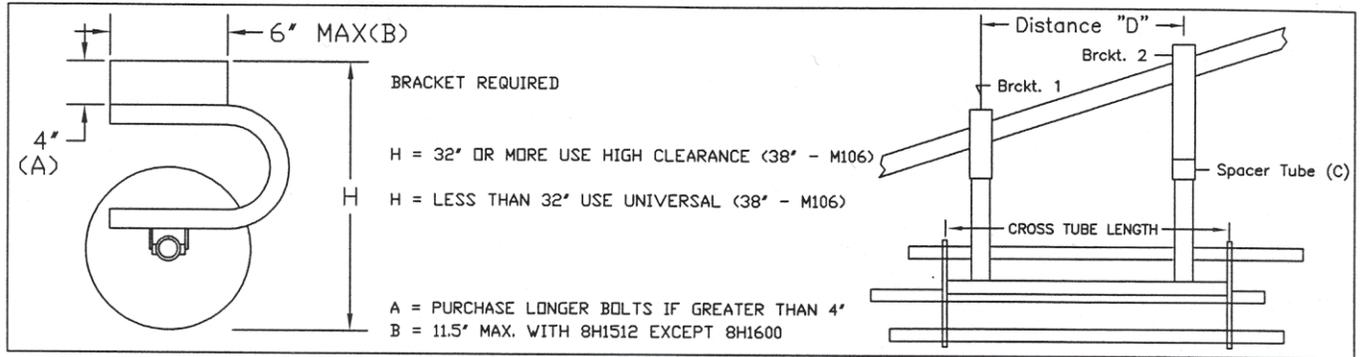
1. READ AND UNDERSTAND Operator's Manual before assembly of machine.
2. Reference to "RIGHT" and "LEFT" is determined when machine IS VIEWED FROM THE REAR.
3. Reference to "FORWARD" means TOWARDS THE TRACTOR.
4. Reference to "REAR" means AWAY FROM THE TRACTOR.

DISK MOUNTED HARROW INSTALLATION GUIDE

Disk brackets and Spacer Tubes for M94, M104 and M106 Mounted Harrow

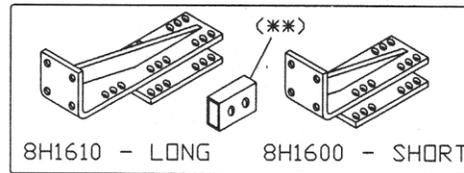
See Pages 2.05 – 2.07 of Whole Goods Catalog for Sections Required

Use one short disk bracket with sections supported by one mounting arm. Use two short disk brackets to mount a single harrow section across disk center. At locations other than disk center, a combination of brackets and spacers (listed below) are required to attach mounted harrows to an angled implement frame.



UNIVERSAL DISK BRACKETS

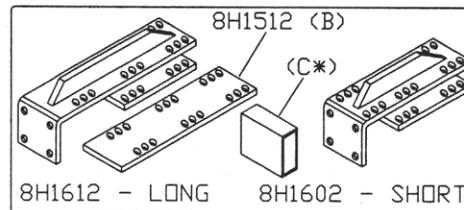
**8H1502 – SPACER TUBE, LATERAL



Model	Section		First Choice			Second Choice		
	Width	Cross Tube Length	Brckt. 1	Brckt. 2 (C)	Distance (D)	Brckt. 1	Brckt. 2 (C)	Distance (D)
M94	4 1/2'	16"	Short	Short +3"	8-9"	Short	Short +2"	7 - 7 1/2"
M94	6'	34"	Short	Short +6"	17-20"	Short	Short +4"	11 - 14"
M94	7 1/2'	52"	Short	Long +3"	44 1/2 -45"	Short	Long +2"	41 1/2-44 1/2"
M104/M106	6'	23 1/2"	Short	Short +4"	11-14"	Short	Short +3"	8 - 10 3/4"
M104/M106	8'	47 1/2"	Short	Long	35 1/2-38 1/2"	Short	Short +6"	17 - 20"
M104/M106	10'	71 1/2"	Short	Long +4"	47 3/4 -50 3/4"	Short	Long +3"	44 1/2-47 1/2"

HIGH CLEARANCE DISK BRACKETS

**8H – SPACER TUBE

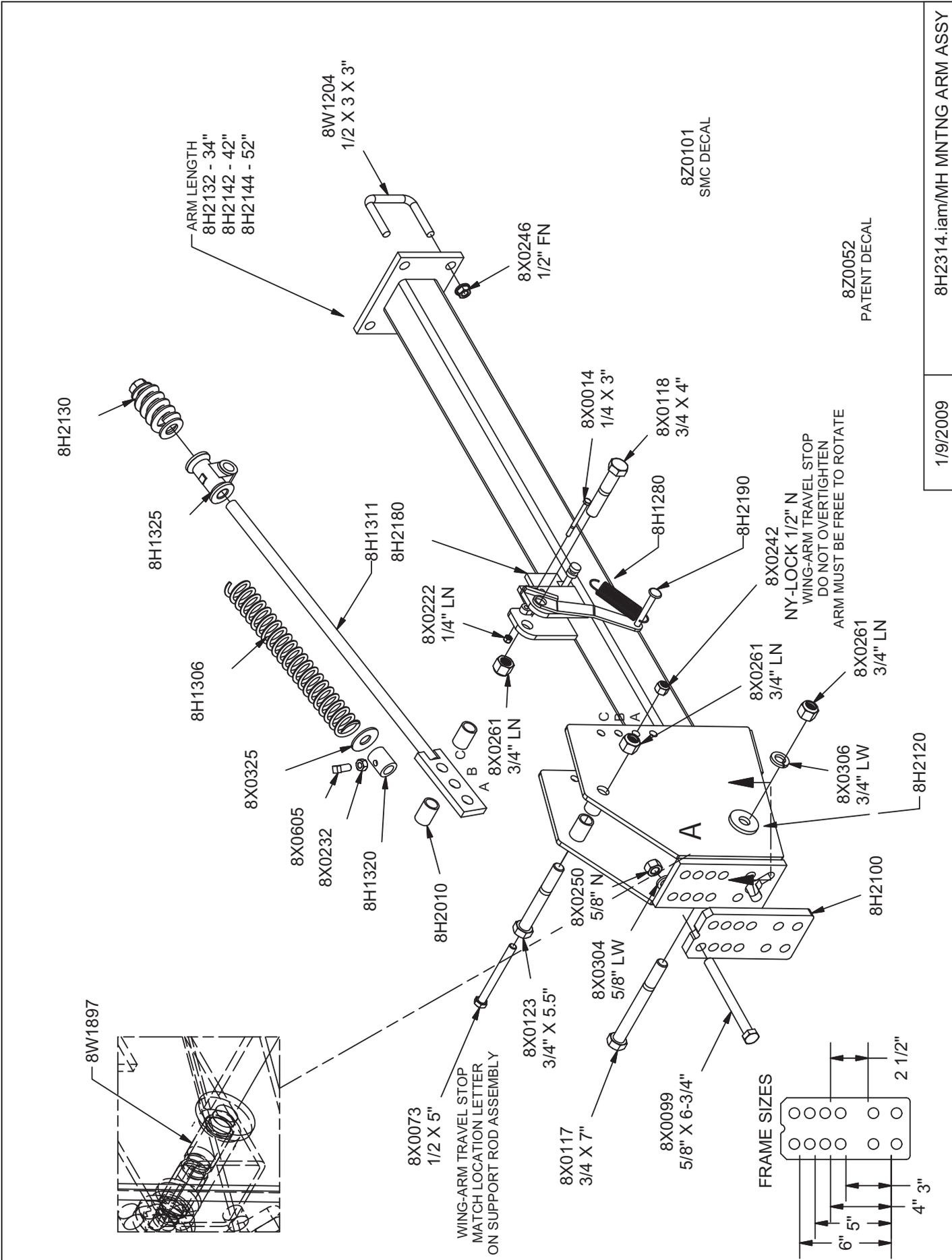


Model	Section		First Choice			Second Choice		
	Width	Cross Tube Length	Brckt. 1	Brckt. 2 (C)	Distance (D)	Brckt. 1	Brckt. 2. (C)	Distance (D)
M94	4 1/2'	16"	Short	Short +3"	8-9"	Short	Short +2"	7 - 7 1/2"
M94	6'	34"	Short	Long	26 1/4 -27"	Short	Short +6"	17 - 20"
M94	7 1/2'	52"	Short	Long +4"	38 1/2-41 1/2"	Short	Long +3"	35 1/2 -38 1/2"
M104/M106	6'	23 1/2"	Short	Short +4"	11 - 14"	Short	Short +3"	8 - 10 3/4"
M104/M106	8'	47 1/2"	Short	Long +4"	38 1/2-40 1/2"	Short	Long +3"	35 1/2-38 1/2"
M104/M106	10'	71 1/2"	Short	Long +6"	44 3/4 -47 3/4"	Short	Long +4"	38 1/2-41 1/2"

C) **Spacer Tubes W/Hardware** 2" = 8H1500 4" = 8H1505

3" = 8H1503 6" = 8H1507

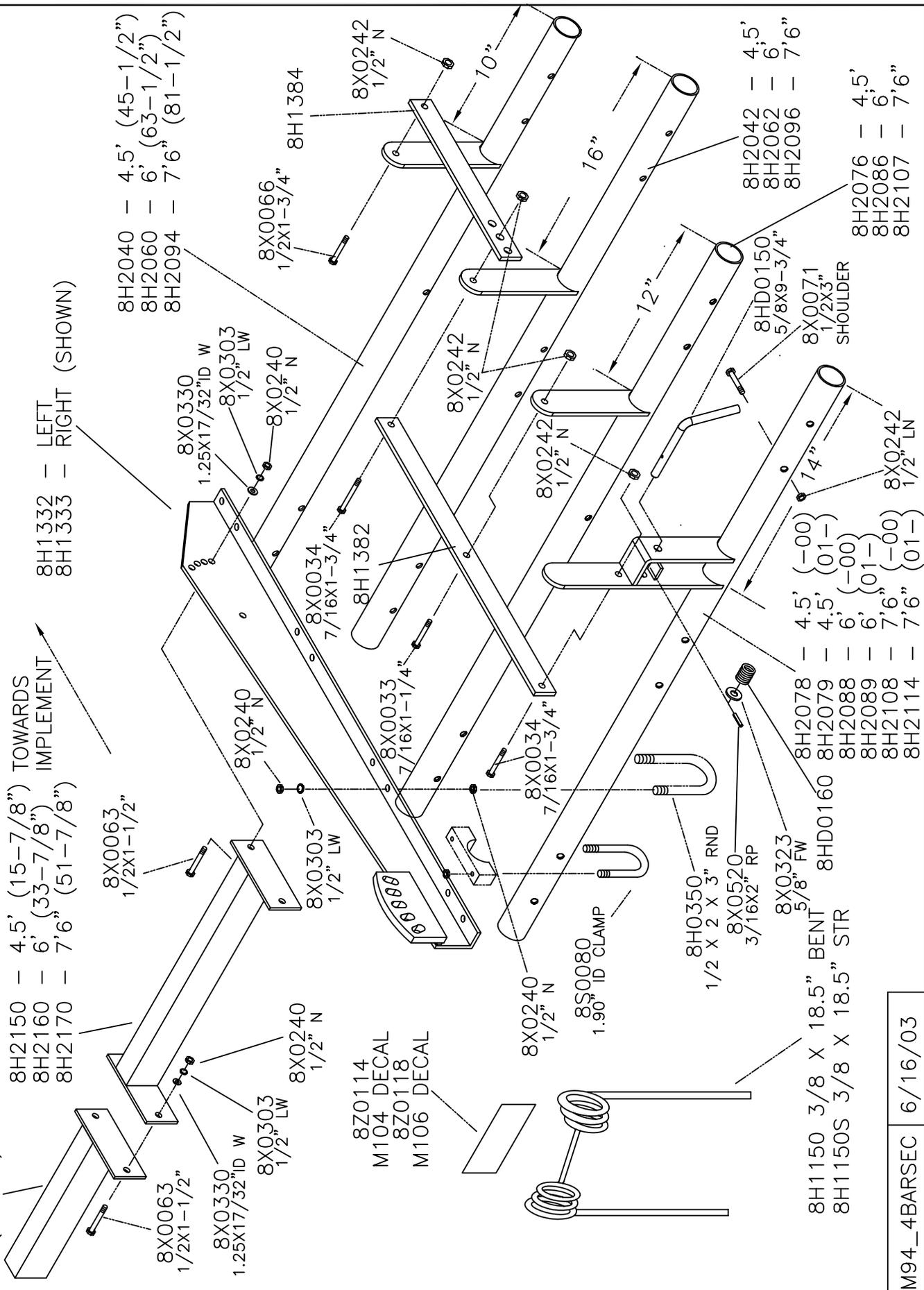
D) Approximate centerline to centerline of Mounting Arms (8H2310) based on 18 degree rear gang angle



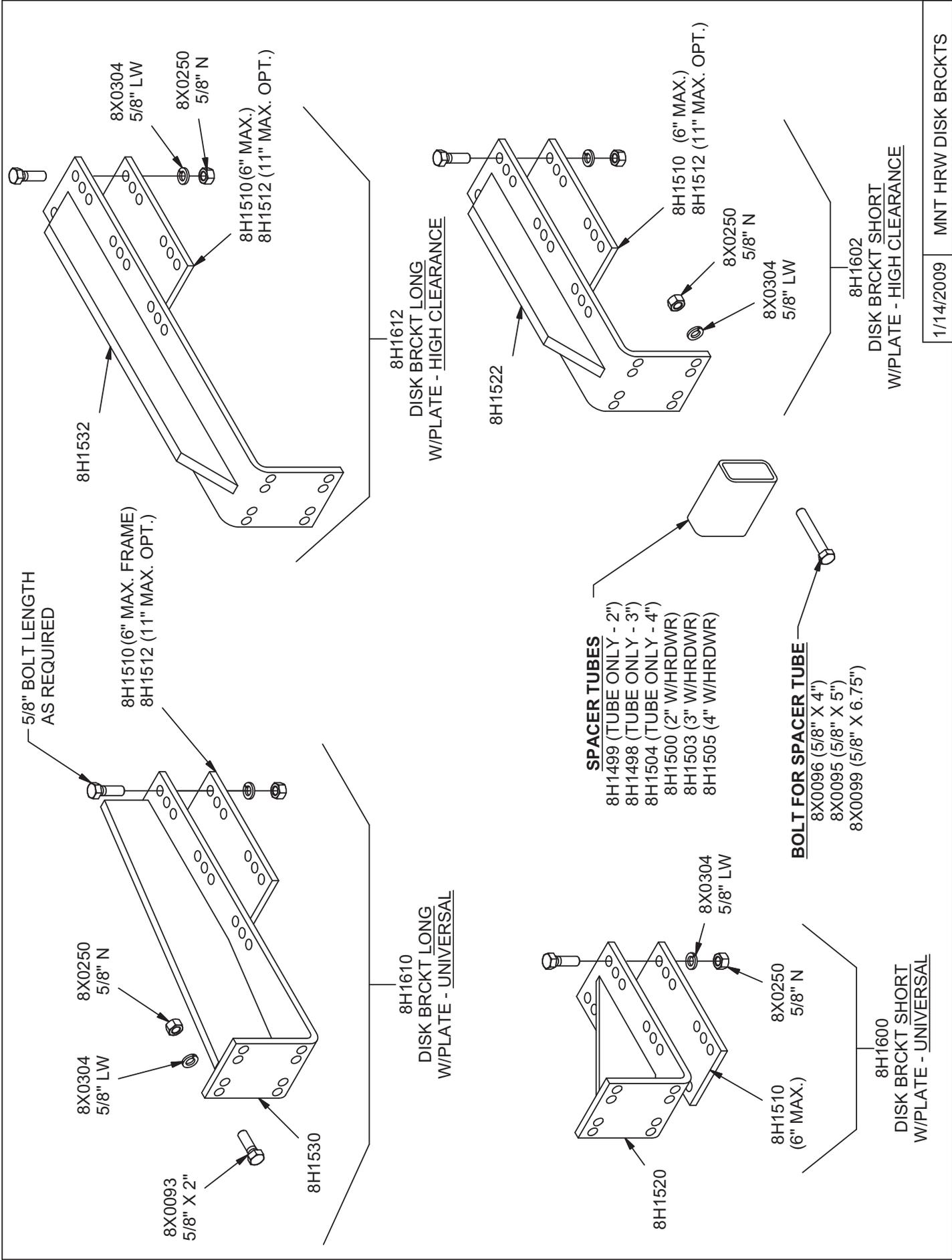
1/9/2009

8H2314.iam/MH MNTNG ARM ASSY

4 1/2', 6' & 7 1/2' 4 BAR SECTION ASSEMBLY MODEL 94



M94_4BARSEC	6/16/03
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JD 510/512 DISK RIPPER WITH SUMMERS HARROWS

WIDTH	SECTIONS REQRD		8H2310	8HD5250	8H1600	8H1505	M104	M106
	CNTR SECT	WING	ARM	MNTNG PKG	DISK BRCKT	SPACER, 4"		
5 Shank / 12 1/2' Width	2: 8'	—	4	1	—	—	2 - 8HD5381 4 - 8H2310 1 - 8HD5250	2 - 8HD5387 4 - 8H2310 1 - 8HD5250
7 Shank / 17 1/2' Width	2: 10'	—	4	1	—	—	2 - 8HD5401 4 - 8H2310 1 - 8HD5250	2 - 8HD5407 4 - 8H2310 1 - 8HD5250
9 Shank / 22 1/2' Width	1: 6' and 1: 8'	6' (EA)	8	1	4 (WING)	2 (WING)	3 - 8HD5361 1 - 8HD5381 8 - 8H2310 1 - 8HD5250 4 - 8H1600 2 - 8H1505	3 - 8HD5367 1 - 8HD5387 3 - 8H2310 1 - 8HD5250 4 - 8H1600 2 - 8H1505

1. Bolt extensions to 510 main frame as shown (flush side down).
2. U-bolt 4X4 to extensions (center on machine).
3. Bolt arms to 4X4 tube.
4. U-bolt sections to arms. (Leave 12" gap in the center, between tines.)

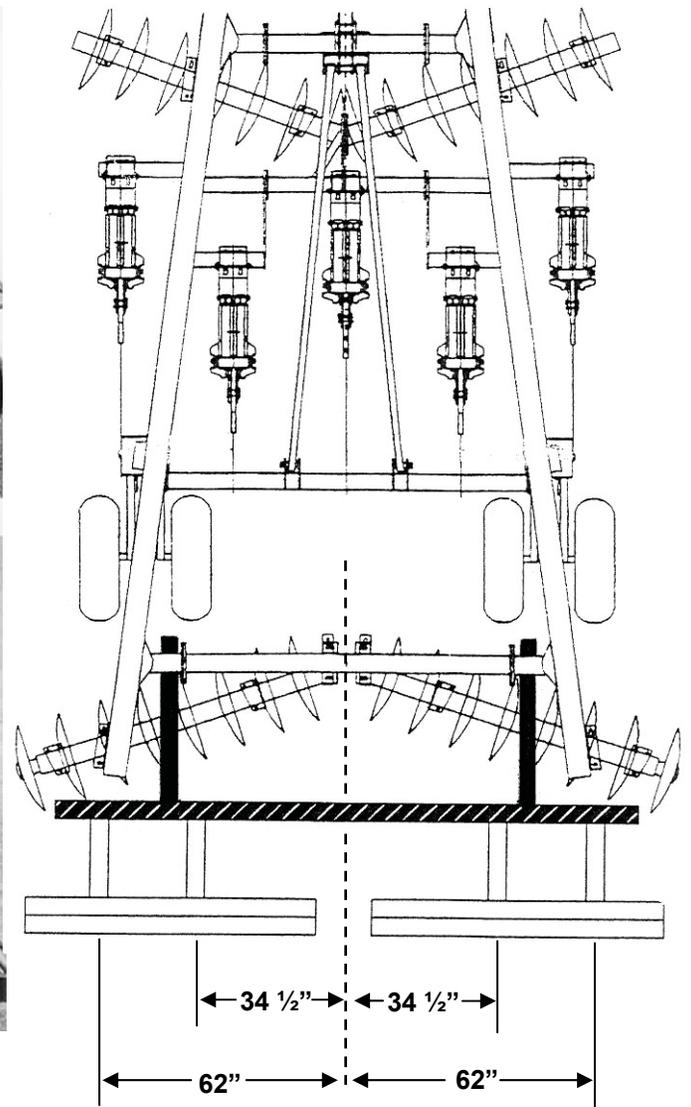
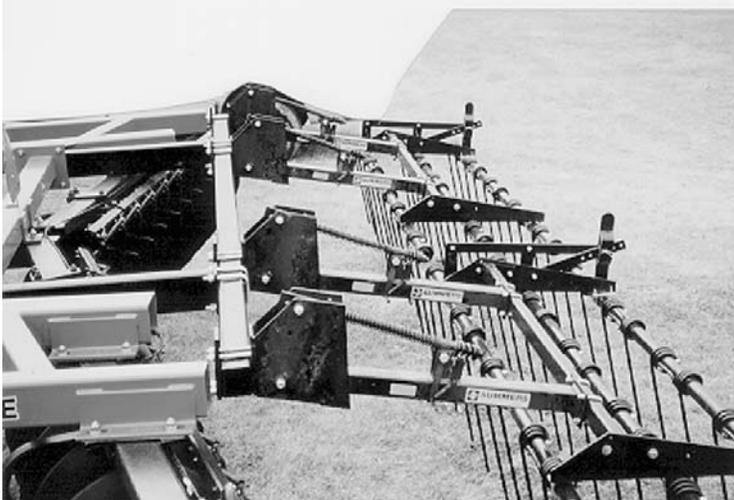
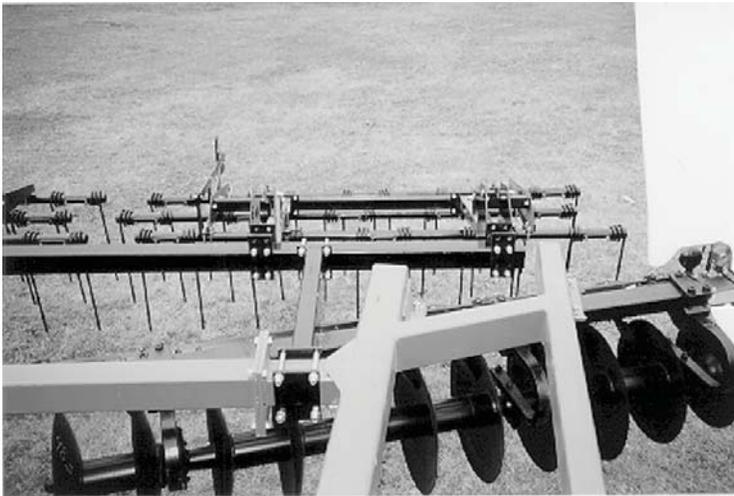


SUMMERS MANUFACTURING CO., INC.

5-Shank JD 510/512 Disk Ripper with Summers Harrows

2 - 8' Sections (4 teeth per pipe)	8HD5381 (Model 104 - 1/2" x 20" teeth) 8HD5387 (Model 106 - 9/16" x 26" teeth)
4 - Mounting Arms	8H2310
1 - Mounting Kit	8HD5250

1. Bolt extensions to frame as shown. Extensions must contact gang mount tubes. Use bolt plates on 510 (shown), use U-bolts on 512.
2. U-bolt 4x4 tube to extensions (center on machine).
3. Bolt mounting arms to 4x4 tube.
4. U-bolt sections to arms. (Leave 12" gap in the center, between tines).

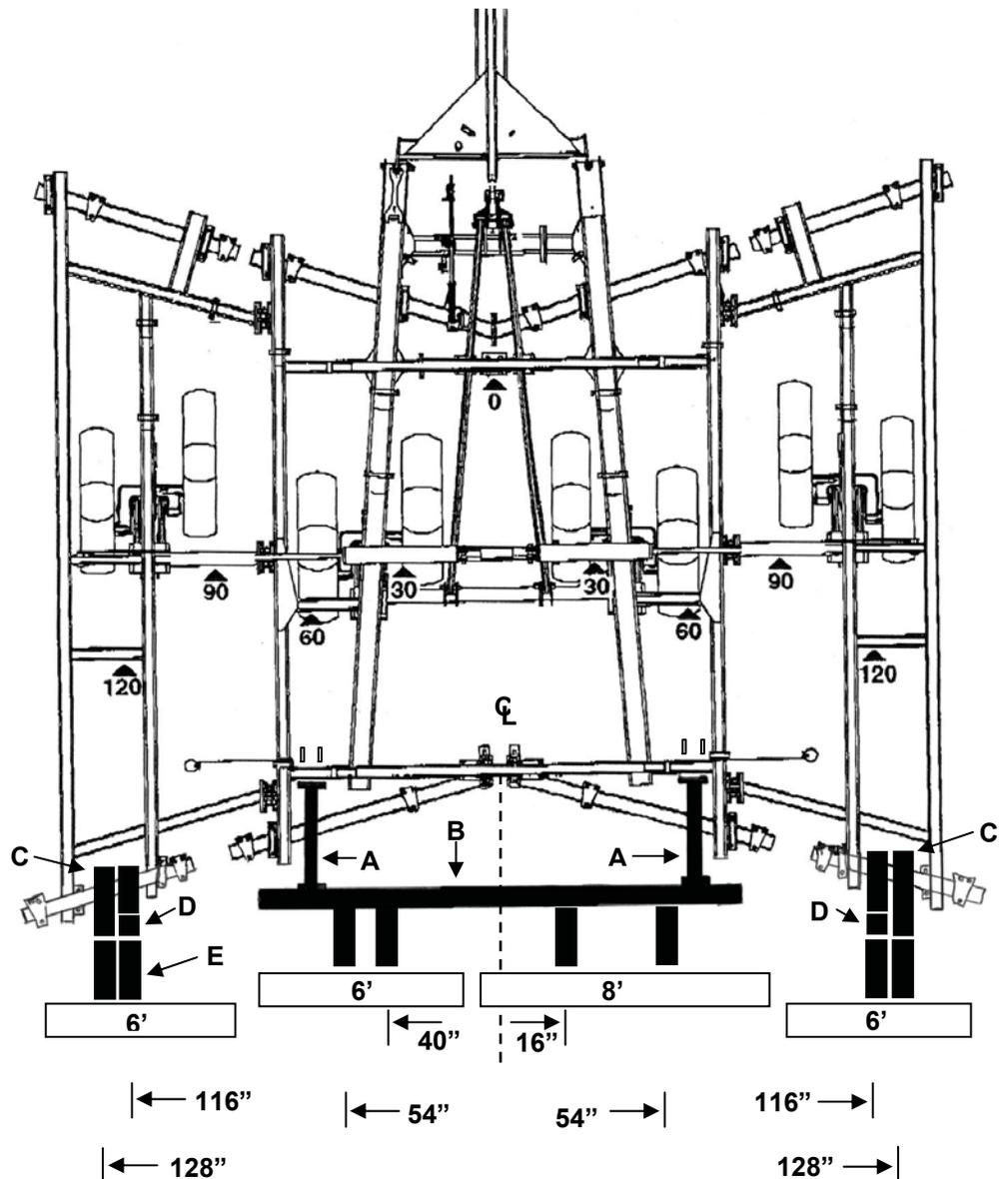


SUMMERS MANUFACTURING CO., INC.

9-Shank JD 512 Disk Ripper with Summers Harrows

<u>Qty</u>	<u>PN</u>	<u>Description</u>
3	8HD5361 (Model 104 – 1/2" x 20" teeth)	6' Section (3 teeth per pipe)
Choice	8HD5367 (Model 106 – 9/16" x 26" teeth)	
1	8HD5381 (Model 104 – 1/2" x 26" teeth)	8' Section (4 teeth per pipe)
Choice	8HD5387 (Model 106 – 9/16" x 26" teeth)	
8	8H2310	Mounting Arms
1	8HD5252	Mounting Kit

1. U-bolt extensions (A) to 512 frame as shown. Extensions must contact gang mount tube.
2. U-bolt 4x4 tube (B) to extensions. Center on machine.
3. Install four 8H1600 disk brackets (C) on wings. 8H1505 spacer tubes (D) are used on inside disk brackets.
4. Bolt mounting arms (E) to 4x4 tube.
5. U-bolt sections to arms. (Leave 12" gap between tines, between sections).



MOUNTING INSTRUCTIONS FOR SUMMERS

Mounted Harrows on Cultivators, Chisel Plows and Disk

Some tillage implements have close to 180 degrees of wing travel into transport position. Machines like this include short wing machines with low transport height and 5 section machines (outside wings only). This type of fold can cause interference problems with SMC Mounted Harrows. The following are steps to prevent problems:

MODEL 74:

1. If mounting brackets/arms hit in transport position, one of the 2 interfering brackets/arms must be moved.
2. If sections hit in transport position, limit travel of top section by:
 - a. Slide and secure lock collar down support rod a maximum of 3".
or
 - b. Replace standard 8H1308 pressure spring with 8H1306.
or
 - c. Add third mounting arm assembly.

MODEL 94 through 106:

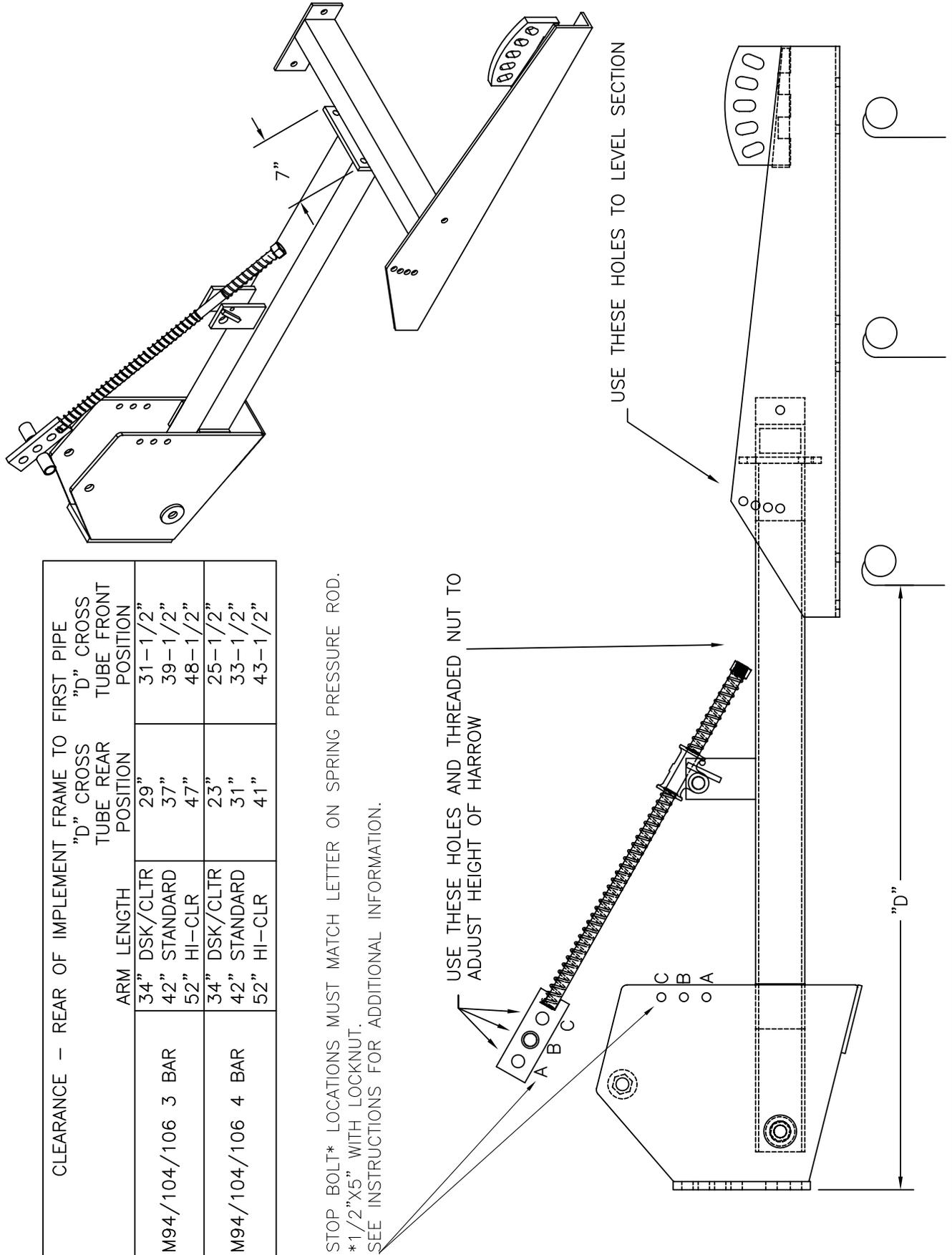
1. If mounting brackets/arms hit in transport position, one of the 2 interfering brackets/arms must be moved.
2. If sections hit in transport position, limit travel of top section by:
 - a. Slide and secure lock collar down support rod a maximum of 2.5".
or
 - b. Add second mounting arm assembly.
or
 - c. Install travel limit 1/2" x 5" stop bolts* (8X0073) in mounting brackets (8H2120). Secure stop bolt with 1/2" lock nuts (8X0242), do not over tighten, mounting arm MUST be free to rotate on pivot bolt.

*Stop bolts should be used as a last resort. Extensive frame damage could occur if stop bolts are incorrectly installed or if field obstruction causes mounted harrow section to exceed travel limit.

ALWAYS raise machine slowly into transport position the first time after installing Mounted Harrows, watch for interference and make adjustments as required.

CLEARANCE - REAR OF IMPLEMENT FRAME TO FIRST PIPE		"D" CROSS TUBE REAR POSITION	"D" CROSS TUBE FRONT POSITION
ARM LENGTH			
M94/104/106 3 BAR	34" DSK/CLTR	29"	31-1/2"
	42" STANDARD	37"	39-1/2"
	52" HI-CLR	47"	48-1/2"
M94/104/106 4 BAR	34" DSK/CLTR	23"	25-1/2"
	42" STANDARD	31"	33-1/2"
	52" HI-CLR	41"	43-1/2"

STOP BOLT* LOCATIONS MUST MATCH LETTER ON SPRING PRESSURE ROD.
 *1/2"x5" WITH LOCKNUT.
 SEE INSTRUCTIONS FOR ADDITIONAL INFORMATION.



SUMMERS MFG. CO., INC.	DESIGNED BY	ORIGINAL DRAWING DATE	TOLERANCE	SCALE	PART NUMBER	PART NAME
	BKB	4/24/03	LINEAR ±1/32" ANGULAR ±1/2°	1 = 8	MNTDHRADJ	MOUNTED HARROW ADJUSTMENTS

SECTION 1 BASIC LAYOUT AND ASSEMBLY; MODEL 74

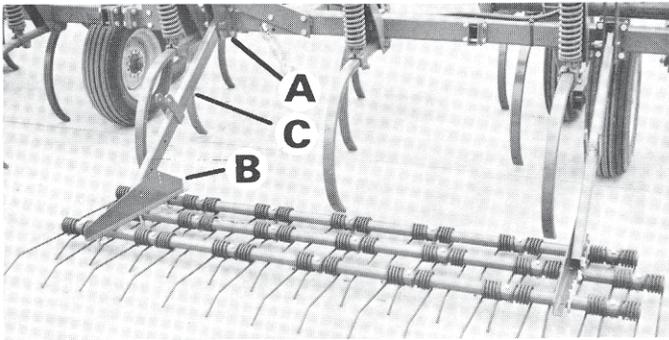


Fig. 1

- 1a. Lay out all bars behind implements to determine approximate mounting locations on the frame. Position mounting brackets (A) on the implement frame so that they line up with spaces between teeth on a bar. Brackets may be positioned one, two or three teeth in from the end of a bar and may be different on both ends. Mounting brackets (A) should be spaced as close as possible to the number of teeth between them multiplied by 14". (Example: mounting brackets should be spread at 70" for a section with 5 teeth between brackets). A variation of 3" either way is allowable if interference prevents exact positioning.

Secure mounting brackets (A) to frame using a mounting plate and four 5/8" x 6" bolts per bracket.

- 1b. Attach carrier arms (C) to mounting brackets using 3/4" x 3-1/2" bolts and locknuts. Tighten locknut so arm can still pivot freely.

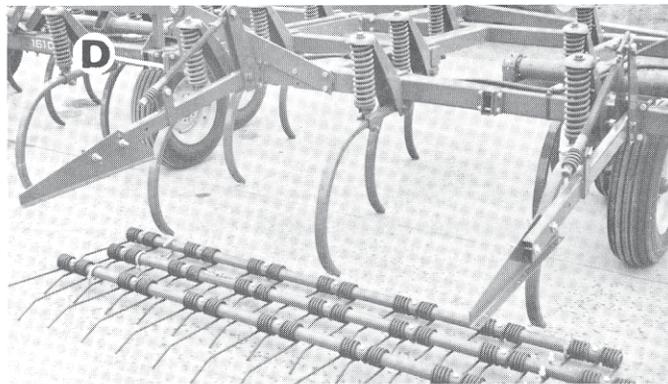


Fig. 2.

- 2a. Attach support rod assemblies (D) to mounting bracket and carrier arms. Install cast swivel with long tube on top and attach to carrier arm using a 3/4 x 3-1/2" bolt and locknut. **IMPORTANT:** Do not overtighten locknut on 3/4" x 3-1/2" pivot bolt. Tighten locknut so cast swivel can still pivot freely.
- 2b. Attach other end of support rod to mounting bracket using a 3/4" x 3-1/2" bolt and locknut. Install in middle height adjustment hole for average implement. At this time, also install 7/16" x 1" set screw with 7/16" hex nut into lock collars.

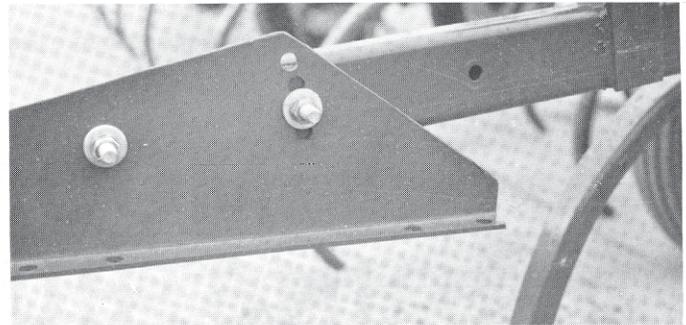


Fig. 3.

- 3a. Attach side plates to carrier arms using two 1/2 x 3" bolts per arm (use a heavy flat washer on each side). Mount in front, middle or rear set of holes depending on desired clearance between front harrow bar and implement. Place in second hole up from bottom for initial level adjustment.

If mounting brackets are spaced at the calculated distance, mount side plates on the same side of lift arms. If spaced more than the calculated distance, mount both side plates on the inside lift arms and if mounted brackets are spaced less than the calculated distance, mount both side plates on the outside of the lift arms. Spacer tubes 1-1/2" thick are available if needed. Order PN 8H1502.

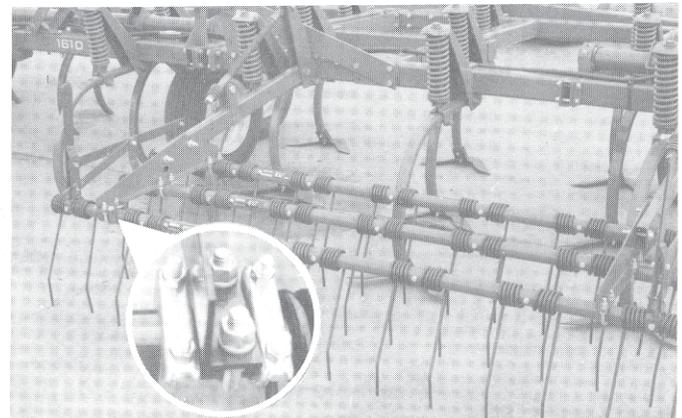


Fig. 4.

- 4a. Attach bars to underside of side plates using round U-bolts. Install nuts on underside of flange as well as on top so U-bolts are solid but pipe is free to turn.
- 4b. All sections require two sets of lever linkages (second set optional on 3'6" and 4'8" sections). Mount levers as close as possible to side plates and on the outside if possible to prevent excessive torsion of the bars. For proper alignment of levers, each bar must have the same number of teeth extending past the side plates. See the following figures for correct lever linkage assembly of 2, 3 & 4 bar units.
- 4c. Attach pipe clamps on one end of rear bar. Attach one of each side of side plate (see inset Fig. 4).

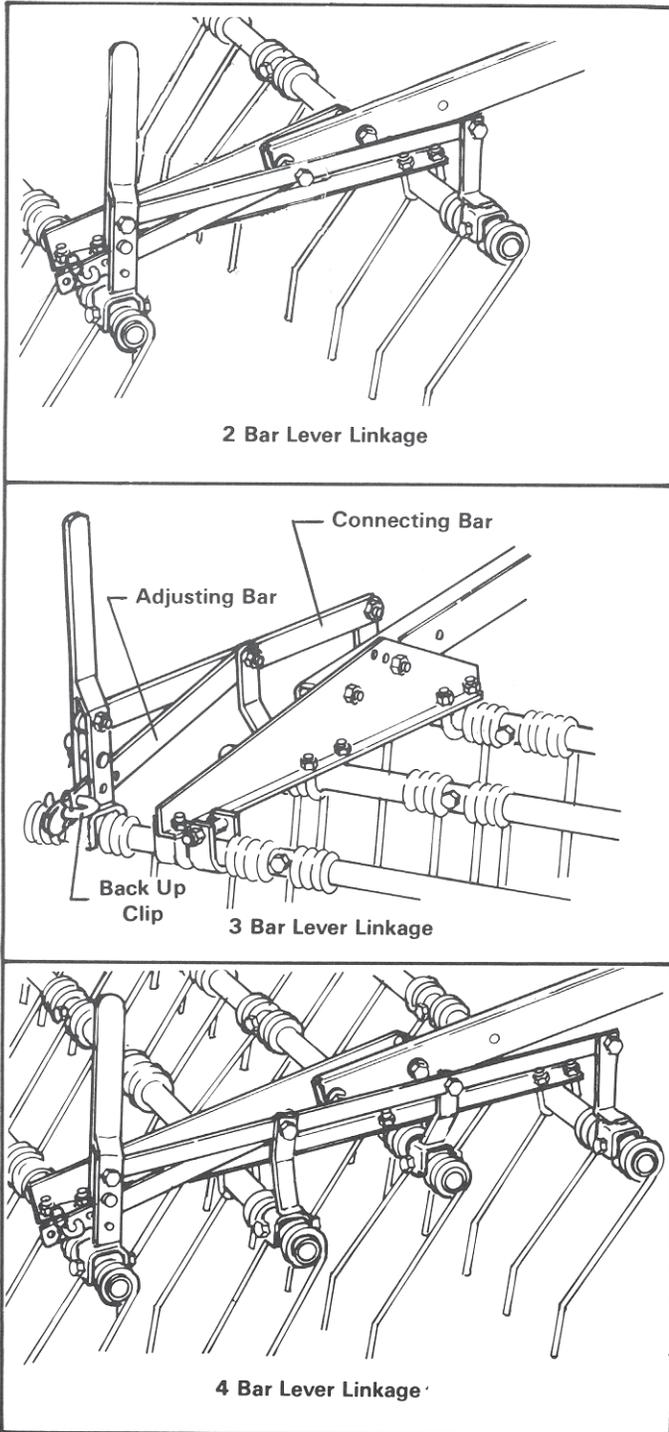


Fig. 5.

- 5a. Attach levers to bars by removing the existing bolts and using 1/2 x 3-3/4" bolts supplied. Discard harrow tooth washer. Secure using original locknut. Attach connecting bar and adjusting bar on sides of levers as shown in figures. Use a 7/16 x 1-1/4" bolt on the front levers and 7/16 x 1-3/4" bolt on the rear levers. Repeat exact same procedure for lever linkage system on the other end of section.
- 5b. 2 bar levers for 2 bar attachments have a 3" offset and must be ordered separately. Order PN 8H0200 for one pair. 3 bar levers have a 1-3/4" offset and are supplied with all brackets. 4 bar attachments use 2 bar levers on the front bar and 3 bar levers on the 2nd and 3rd bars.

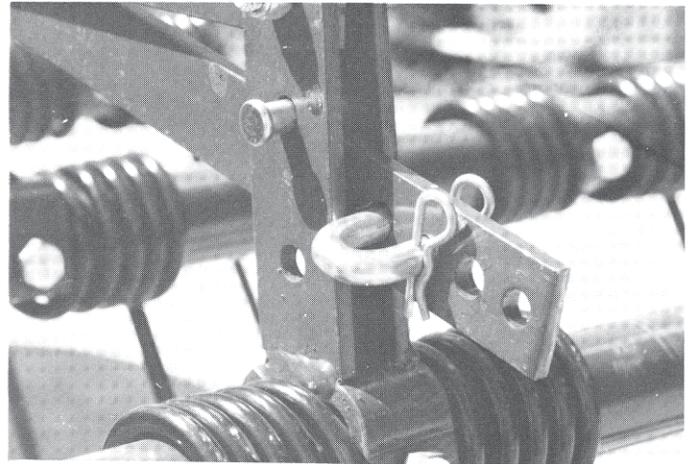


Fig. 6.

- 6a. Install 7/16 x 1-3/4" clevis pin in top hole and back-up clip in adjusting bar as shown. Back-up clip allows implement to be backed up without damage to harrow teeth if they do not clear the ground.

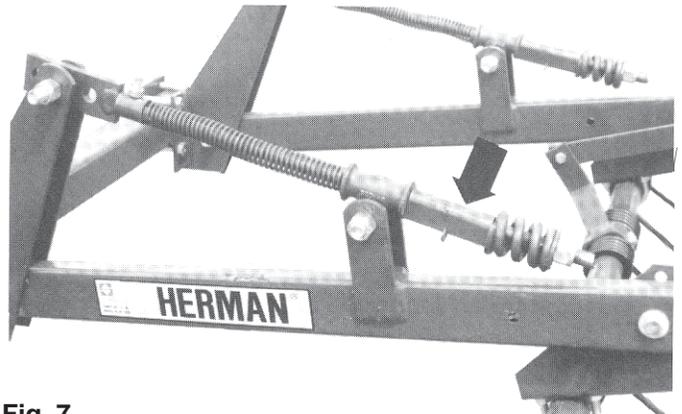


Fig. 7.

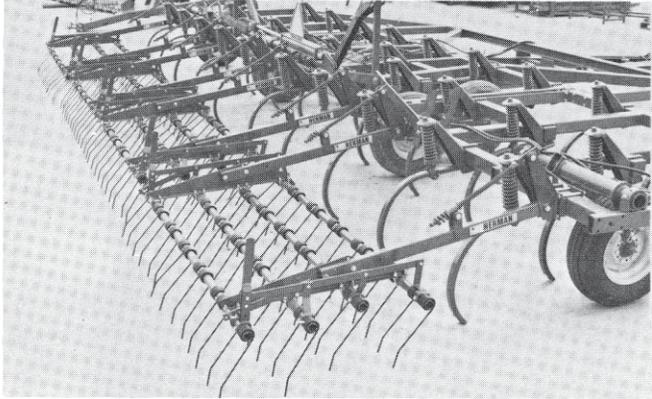
- 7a. Lock-up clip shown installed (see arrow) to hold harrow up in a raised position.

CAUTION: After harrows are securely mounted, slowly fold implement wings. Watch for interference between folding parts and correct if there are any problems.

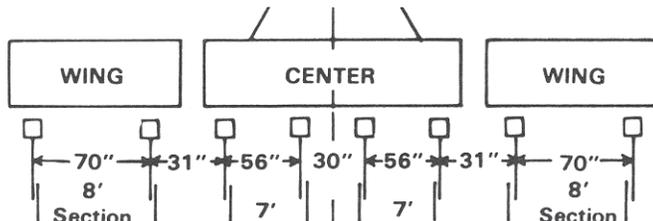
STAND CLEAR WHENEVER RAISING OR LOWERING IMPLEMENT WINGS.

SECTION 2

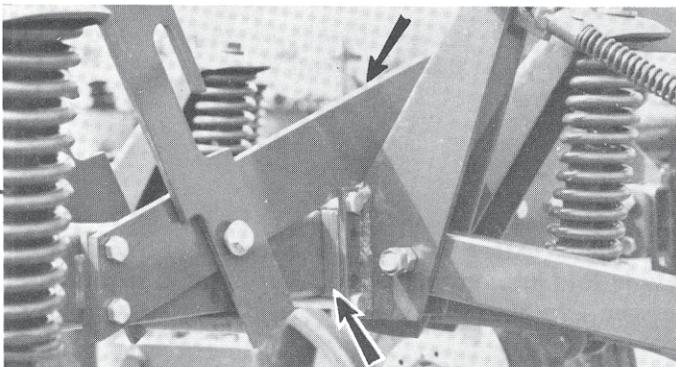
SPECIAL BRACKETS FOR JD1610 CHISEL PLOWS



- 1a. The above 29' JD1610 chisel plow is shown with a 4 bar mounted harrow using M74 carrier arms. Two 7' sections were used in the center and one 8' section was used on each wing. An optional method is to use one 14' section in the center with 3 carrier arms. Wing section sizes will vary with the width of the chisel plow.



- 2a. Position frame mounting brackets on the frame as shown above. All measurements are from bracket center to bracket center. Again spacing on wing sections will vary with the width of the chisel plow.

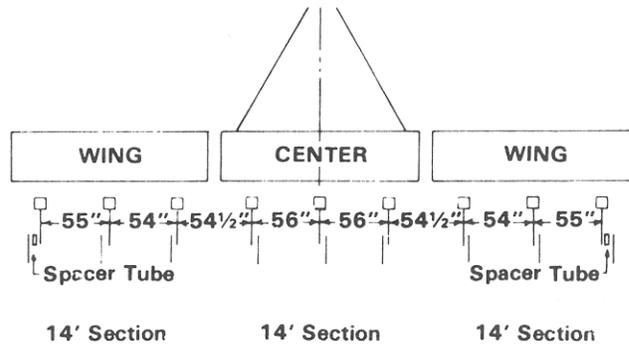


- 3a. The first mounting bracket on each wing is located under a brace and needs special spacers (see arrow) and longer bolts for mounting. Summers JD1510 Chisel Plow mounting package (PN 8H1590) includes 8 spacer plates and 16 - 5/8 x 7" bolts. Spacer plates are also supplied for use on the outer mounting bracket on each wing so sections run perfectly square.

MOUNTING INSTRUCTIONS FOR SUMMERS MOUNTED HAR- ROWS

Shown below is the layout of mounted harrows on a 41' JD610 Chisel Plow (over center fold with 12" shank spacing). Three 14' sections are used with three model 74 carrier arms per section. Two spacer tubes for lateral positioning are recommended (order Summers PN 8H1502 for one spacer tube).

An optional method is to use two 7' sections in place of one 14' section. Also, wing section sizes will vary with the width of the chisel plow.



SPECIAL NOTES REGARDING JD610 MOUNTING:

1. Frame mounting brackets on the center frame cannot be more than 56" from the machine center-line or they will interfere with the shank standards when wings fold over center.
2. On the above layout, all lever linkage assemblies mount two teeth in from the end of a section. Again, this may vary with different size machines and sections.
3. When the wings of the chisel plow are folded to transport position, they go over center and the top ends touch each other (41' model).

To limit the travel of the mounted harrow sections as they fold over center with the chisel plow wings, the lock collars located on the 3/4" dia. support rods should be slid down 3" on the rod and locked in place with a 7/16 x 1" set screw and nut. This should be done on all three support rods per wing (41' model). This adjustment is necessary on all size models where top ends of wings touch each other.

4. With the above adjustment, mounted harrow sections may still touch each other; however, the contact should be reduced to a point where no parts bend or get permanently tangled.

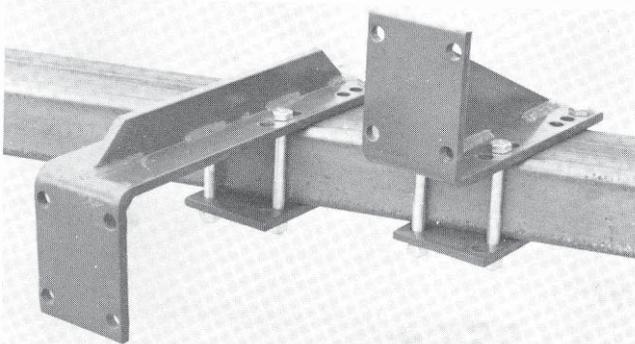
SECTION 3

DISK MOUNTING BRACKETS

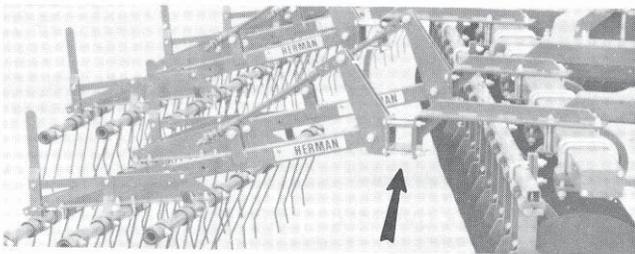
- PN 8H1600** Universal Disk Mounting Bracket,
(13") Short (w/mounting plate & hardware)
- PN 8H1610** Universal Disk Mounting Bracket,
(25") Long (w/mounting plate & hardware)
- PN 8H1602** High-Clearance Disk Mounting Bracket,
(20") Short (w/mounting plate & hardware)
- PN 8H1612** High-Clearance Disk Mounting Bracket,
(29") Long (w/mounting plate & hardware)

All of the above brackets are designed to be used with Summers M74, M94, M104 or M106 mounting arms.

When mounting disk brackets directly on disk gangs which run at an angle, a short and a long bracket are used so harrow sections run square. When mounting disk brackets on a disk that has a rectangular center frame, two short brackets are used.



- 1a. The above figure shows two (short) disk mounting brackets. The universal model on the right is designed to be mounted on top of the frame with the mounting plate extending up. The high clearance model on the left is designed to be mounted on top of the frame with the mounting plate extending down. The high clearance model is also longer to provide clearance for disk scraper assemblies.



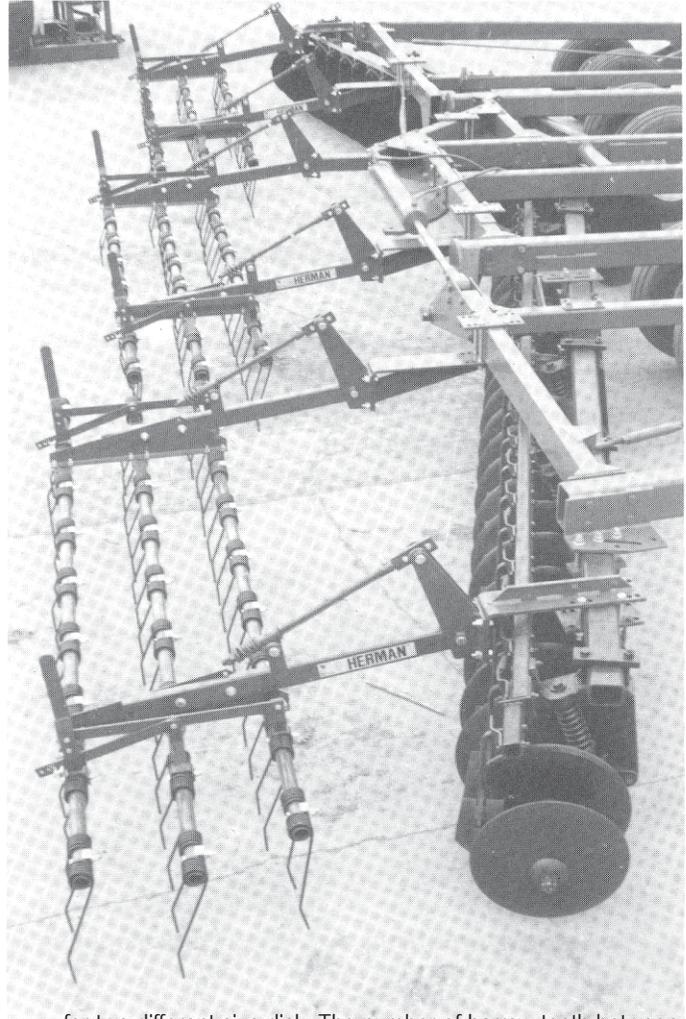
- 2a. The above figure shows a short and a long high clearance disk bracket used to mount a 7' section. When carrier arms are spaced 2 teeth apart on high clearance brackets or 3 teeth apart on universal brackets, the carrier arm bolts directly to the disk mounting bracket using the four 5/8 x 2" bolts supplied with the disk brackets.

When carrier arms are spaced three teeth apart on high clearance brackets or four teeth apart on universal brackets, a spacer tube (see arrow) is used between the carrier arm and the long disk bracket to keep section square. Order PN 8H1505 for one spacer tube w/hardware.

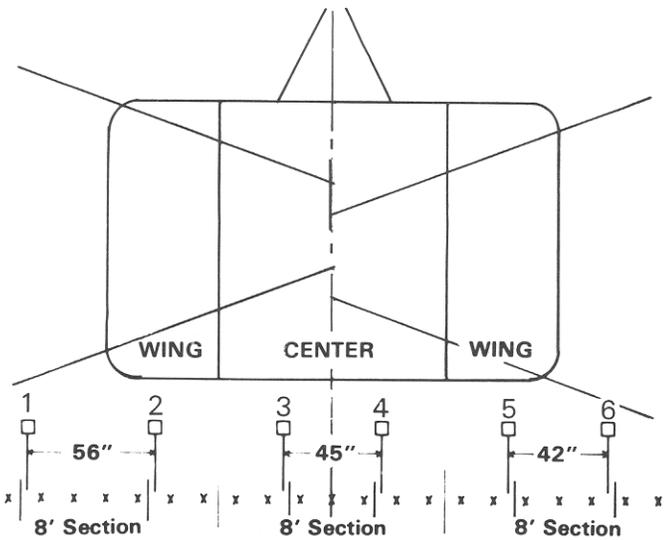
SECTION 4 SPECIAL BRACKETS FOR JD235 DISKS

Order mounting package
 PN 8H1580 for 19-26 ft. models
 Order mounting package
 PN 8H1582 for 27-31 ft. models

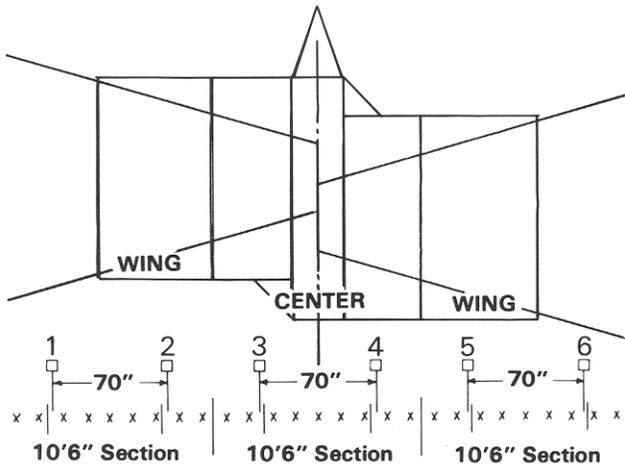
1a. The photo to the right shows a 30'-1" JD235 disk with a 3 bar M74 Mounted Harrow. See the figures and sizing chart below for harrow layout on all size models.



for two different size disk. The number of harrow teeth between carrier arms are represented by an "X". Frame mounting brackets are numbered 1 thru 6 and are described on the next page. See the mounted harrow sizing chart below for the other size disks.



2. Bracket layout for 19-26' models. 22'9" model shown in above figure.



2b. Bracket layout for 27-31' models. 30'1" model shown in above figure.

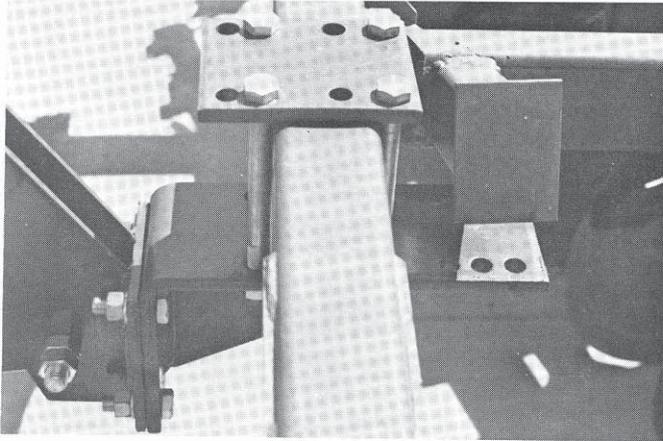
2c. The above two figures show the carrier arm and section layout

JD235 DISK MOUNTED HARROW SIZING CHART

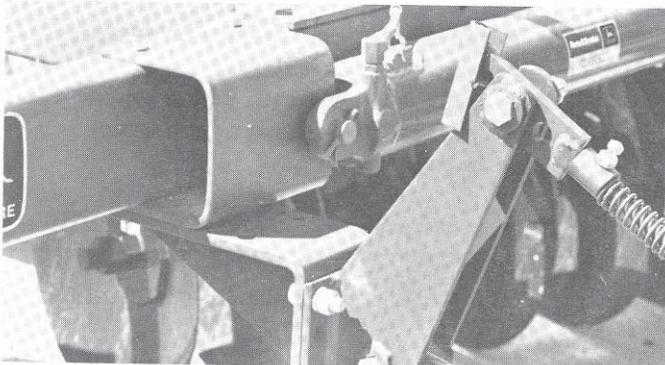
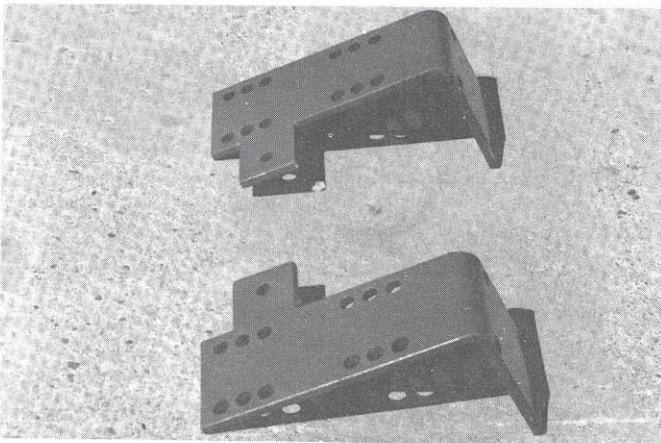
Order Mounting Package PN 8H1580			
DISK SIZE	DISK OVERALL WIDTH	CENTER HAR. WIDTH	WING HAR. WIDTH
19'11"	21'0"	8'	7'
20'8"	21'6"	8'	7'
21'4"	21'11"	8'	7'
22'9"	23'4"	8'	8'
23'0"	23'8"	8'	8'
25'3"	25'10"	8'	9'4"
25'7"	26'2"	8'	9'4"
Order Mounting Package PN 8H1582			
27'1"	27'9"	10'6"	9'4"
27'3"	27'10"	10'6"	9'4"
29'6"	31'0"	10'6"	10'6"
30'1"	31'0"	10'6"	10'6"

JD235 DISK FRAME MOUNTING BRACKET SELECTION CHART

Bracket No.	19-26 Ft. Models Bracket Description	27-31 Ft. Models Bracket Description
1	Long Hi-Clearance	Short Hi-Clearance
2	Modified Short Univ. (See Fig. 3a)	Long Universal
3	Modified Short Univ. (See Fig. 4a)	Long Univ. & Extension Tube
4	Modified Short Univ. (See Fig. 4a)	Long Universal
5	235 Bracket & Spacer Tube (Fig. 5a)	Long Universal
6	Short Hi-Clearance	Short Hi-Clearance

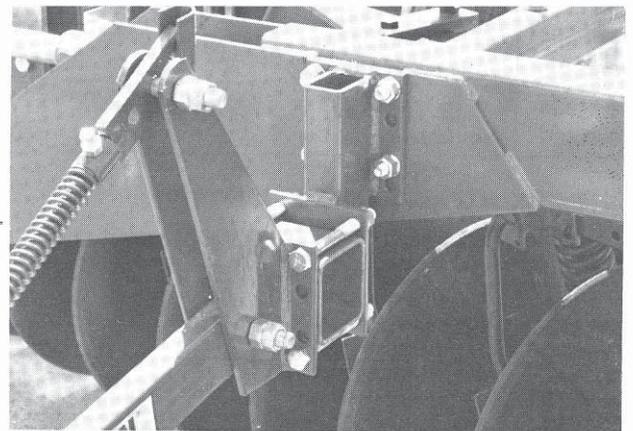


3a. Bracket #2 is a modified short universal disk bracket (PN 8H1546) that mounts to the disk main frame as shown above. Secure using a 1/2 x 5 x 6-1/8" mounting plate (PN 8H1340) and four 5/8 x 8" bolts.



4a. Brackets #3 and #4 are modified short universal disk brackets (8H1540 – left, 8H1541 – right).

These brackets bolt to a disk frame using existing holes in the frame. On the left side, the two bolts securing the anchor end of the rear wing lift cylinder must be removed. Secure both brackets to the bottom of disk frame using two 5/8 x 8" bolts per bracket.



5a. Bracket #5 is a special JD235 disk bracket (PN 8H1550) and mounts to the frame as shown above. The center of the bracket should line up with the center of the 1st brace on the right wing (shown for 22'9" model, location of this bracket may vary on other size models). Mount flush on top with the outer reinforcement plate and secure by drilling holes in frame and bolting on. Use mounting bracket as template for drill holes. An optional method is to weld bracket to disk frame.

Note that a spacer tube is used between this bracket and the carrier arm.

CAUTION: After harrows are securely mounted, slowly fold implement wings. Watch for interference between folding parts and correct if there are any problems.

STAND CLEAR WHENEVER RAISING OR LOWERING IMPLEMENT WINGS.

SECTION 5 PACKING LISTS

PACKING LIST FOR ALL MODELS

For 2 bar attachments, order 3 bar brackets and 2 bar hardware package (PN 8H0200 – One required per pair)

PN	Description	Model 74	Model 74
		3 Bar 8H0374	4 Bar 8H0474
8H1330	Side Plate, 3 Bar	2	
8H1332	Side Plate, 4 Bar		2
8H1340	Mounting Plate	2	2
8H1350	Mounting Bracket	2	2
8H1362	Carrier Arm, M74	2	2
8H1368	Lever, 2 Bar		2
8H1370	Lever, 3 Bar	4	4
8H1375	Lever w/Handle	2	2
8H1380	Connecting Bar, 3 Bar	2	
8H1382	Connecting Bar, 4 Bar		2
8H1385	Adjusting Bar	2	2
8H1390	Support Rod Assembly	2	2
8H1403	Bag Hardware, 3 Bar	1	
8H1404	Bag Hardware, 4 Bar		1

PACKING LIST FOR PN 8H1580

JD235 Disk Mounting Package, 19-26'

PN	Description		Qty.
8H1340	Mt. Plate, 1/2 x 5 - 6-1/8"		1
8H1504	Spacer Tube, 4 x 4 - 5", 4T		1
8H1540	Mt. Bracket, Short L	JD235	1
8H1541	Mt. Bracket, Short R	JD235	1
8H1546	Mt. Bracket, Short	JD235	1
8H1550	Mt. Bracket, Special	JD235	1
8H1602	Disk Bracket, Short w/PI	Hi-Clr	1
8H1612	Disk Bracket, Long w/PI	Hi-Clr	1
8X0093	Bolt, 5/8 x 2"	Z Gr. 5	20
8X0101	Bolt, 5/8 x 5"	Z Gr. 5	8
8X0101	Bolt, 5/8 x 8"	Z Gr. 5	8
8X0250	Nut, Hex 5/8" NC	Z	16
8X0304	Lockwasher, 5/8"	Z	16

PACKING LIST FOR PN 8H1582

JD235 Disk Mounting Package, 27-31'

PN	Description		Qty.
8H1560	Mt. Bracket, Extension	JD236	1
8H1602	Disk Bracket, Short w/PI	Hi-Clr	2
8H1610	Disk Bracket, Long w/PI	Univ.	4
8X0093	Bolt, 5/8 x 2"	Z Gr. 5	4
8X0095	Bolt, 5/8 x 5"	Z Gr. 5	8
8X0101	Bolt, 5/8 x 8"	Z Gr. 5	16
8X0250	Nut, Hex 5/8" NC	Z	4
8X0304	Lockwasher, 5/8"	Z	4

PACKING LIST FOR PN 8H1590 JD1610 Chisel Plow Mounting Package

PN	Description		Qty.
8H1480	Spacer, 1/2 x 5 - 3-7/8"		8
8X0100	Bolt, 5/8 x 7"	Z Gr. 5	16

PACKING LIST FOR ALL BAGS OF HARDWARE

PN	Description	3 Bar	4 Bar
		8H1403	
8H1404			
8S0080	Pipe Clamp	2	2
8H0350	U-Bolt, 1/2 x 3"	6	8
8H1395	Clip, Lockup	2	2
8H1398	Clip, Backup	2	2
8X0033	Bolt, 7/16 x 1-1/4"	2	4
8X0034	Bolt, 7/16 x 1-3/4"	4	4
8X0072	Bolt, 1/2 x 3-3/4"	6	8
8X0069	Bolt, 1/2 X 3"	4	4
8X0099	Bolt, 5/8 x 6"	8	8
8X0115	Bolt, 3/4 x 3-1/2"	6	6
8X0232	Nut, Hex 7/16" NC	2	2
8X0234	Nut, Lock 7/16" NC, Nylon	6	8
8X0240	Nut, Hex 1/2" NC	28	36
8X0250	Nut, Hex 5/8" NC	8	8
8X0261	Nut, Lock 3/4" NC, Nylon	6	6
8X0303	Lockwasher, 1/2"	16	20
8X0304	Lockwasher, 5/8"	8	8
8X0400	Clip, Hair Pin	8	8
8X0420	Pin, 7/16 x 1-3/4"	2	2
8X0605	Set Screw, 7/16 x 1"	2	2



WARNING

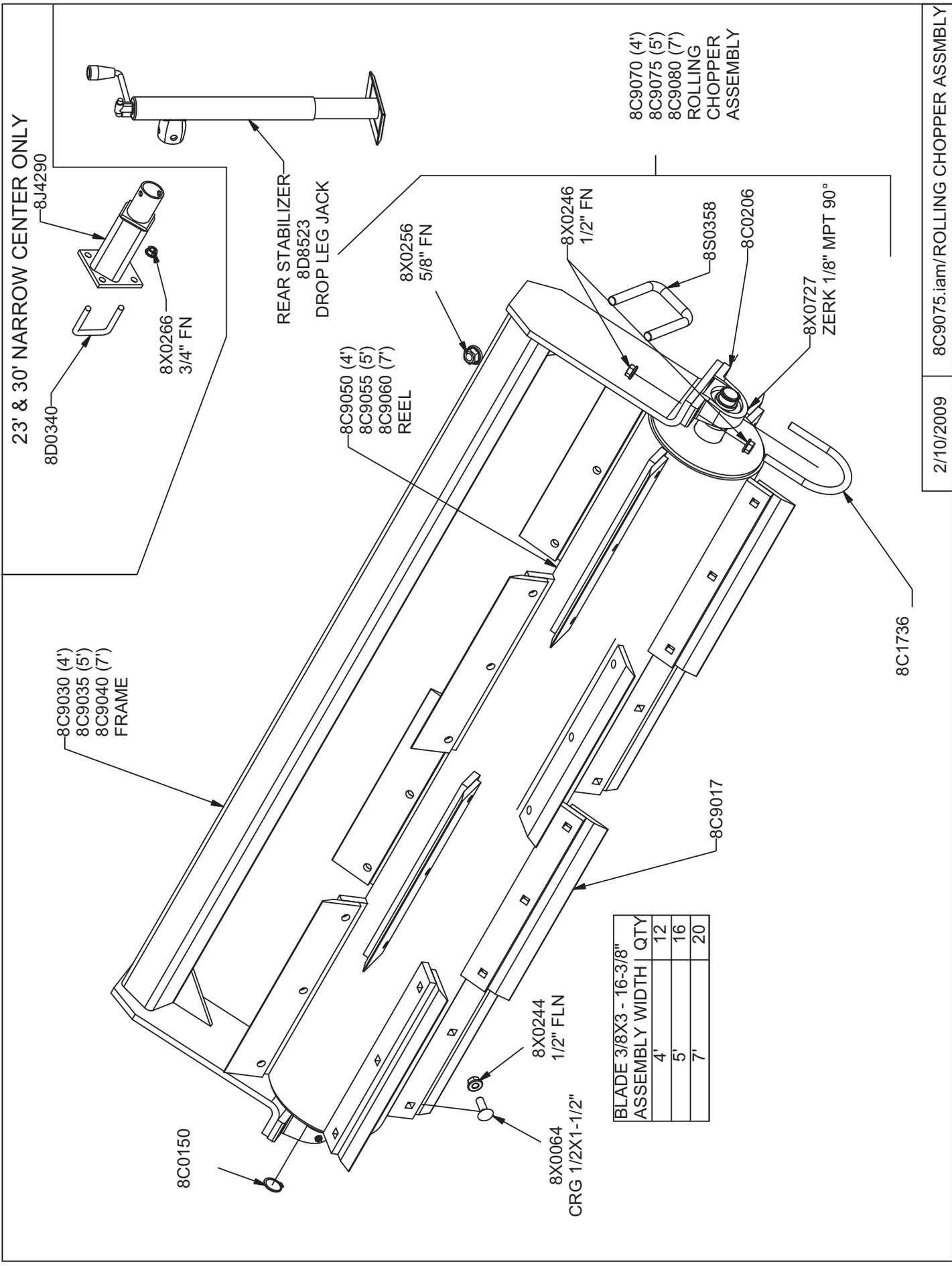


OVERHEAD WING HAZARD

To prevent serious injury or death:

Stay away from beneath wings when they are in the raised position or are being lifted or lowered.

Keep others away.



BLADE 3/8X3 - 16-3/8"	ASSEMBLY WIDTH	QTY
	4'	12
	5'	16
	7'	20

