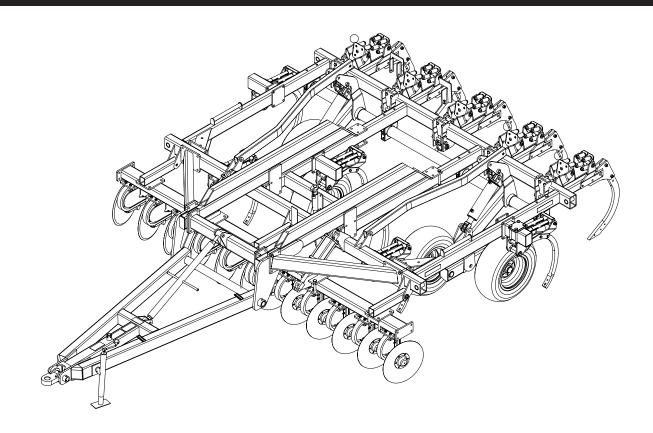
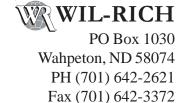


# **ASSEMBLY MANUAL**



657 DISC CHISEL



Printed in USA (74260) 1/12

WWW.WIL-RICH.COM

#### PERSONAL SAFETY IS IMPORTANT!

ALL PERSONNEL INVOLVED WITH THE ASSEMBLY AND/OR OPERATION OF THIS EQUIPMENT MUST BE INFORMED OF PROPER SAFETY PROCEDURES. OPERATOR'S AND ASSEMBLY MANUALS PROVIDE THE NECESSARY INFORMATION. IF THE MANUAL IS LOST FOR A PARTICULAR IMPLEMENT, ORDER A REPLACEMENT AT ONCE. OPERATOR'S AND ASSEMBLY MANUALS ARE AVAILABLE AT NO CHARGE UPON REQUEST.

**ADDRESS INQUIRIES TO:** 

**WIL-RICH** 

**PO BOX 1030** 

WAHPETON, ND 58074

PH (701)642-2621 FAX (701)642-3372

Remove all wires and arrange the parts conveniently.

NOTE: Always wear safety glasses or goggles and be careful when cutting wires and steel bands as they are under tension and will spring back when cut.

Wherever the terms "left" and "right" are used, it must be understood to mean from a position behind and facing the machine.

Lubricate all bearings and moving parts as you proceed and make sure they work freely.

Loosely install all bolts connecting mating parts before final tightening.

When tightening bolts, they must be torqued to the proper number of foot-pounds as indicated in the table unless specified. It is important that all bolts be kept tight.

On new machines, all nuts and bolts must be rechecked after a few hours of operation.

GRADE 2	GRADE 5			GRADE 8		
TORQUE IN FOOT POUNDS						
BOLT DIA	3/8	1/2	5/8	3/4	7/8	1
HEX HEAD	9/16	3/4	15/16	1-1/8	1-5/1	1-1/2
UNC GR2	18	45	89	160	252	320
UNC GR5	30	68	140	240	360	544
UNC GR8	40	100	196	340	528	792
UNF GR2	21	51	102	178	272	368
UNF GR5	32	70	168	264	392	572
UNF GR8	48	112	216	368	792	840

#### **ASSEMBLY INFORMATION**

When replacing a bolt, use only a bolt of the same grade or higher. Except in shear bolt applications, where you must use the same grade bolt.

Bolts with no markings are grade 2

Grade 5 bolts furnished with the machine are identified by three radial lines on the head.

Grade 8 bolts furnished with the machine are identified by six radial lines on the head.

All U-bolts are grade 5.



THIS SYMBOL USED TO CALL YOUR ATTENTION TO INSTRUCTIONS CONCERNING YOUR PERSONAL SAFETY.

BE SURE TO OBSERVE AND FOLLOW THESE INSTRUCTIONS

### **A** CAUTION

TO AVOID INJURY AND/OR MACHINE DAMAGE:

- Refer to Operator's Manual for safety instructions.
- Do not stand or climb on machine when operating.
- Use clean hazard flashers and SMV sign when transporting.
- Observe highway traffic regulations.

23325

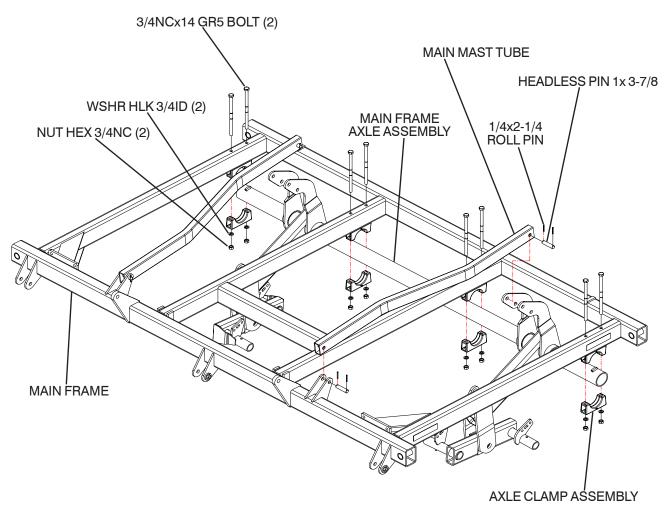
#### **A** CAUTION

FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY AND/OR EQUIPMENT DAMAGE. • Just before and during operation be sure no one is on or around the implement.  Before activating the hydraulic system, check hoses for proper connections.  Before lowering the wings for the first time, make sure the entire system has been charged with oil.  With wings down always install hydraulic cylinder channel lock(s) for transporting.

### **MAIN FRAME**

Note: Adequately support frame during assembly, (allow sufficient ground clearance for shank installation).

Note: See shank placement pages for correct locations of all add-on stubs.



700050

# **A** CAUTION

TO AVOID INJURY AND/OR MACHINE DAMAGE:

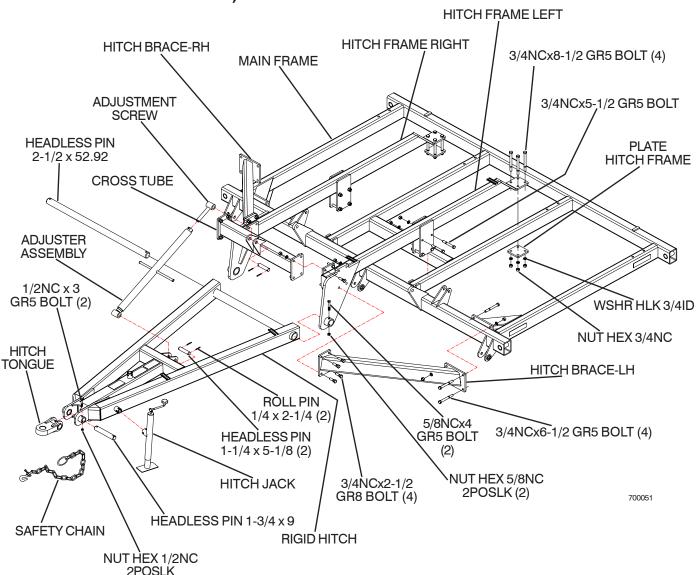
- Refer to Operator's Manual for safety instructions.
- Do not stand or climb on machine when operating.
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- Observe highway traffic regulations.

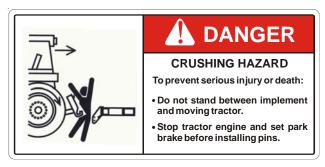
23325

# **PULL HITCH ASSEMBLY**

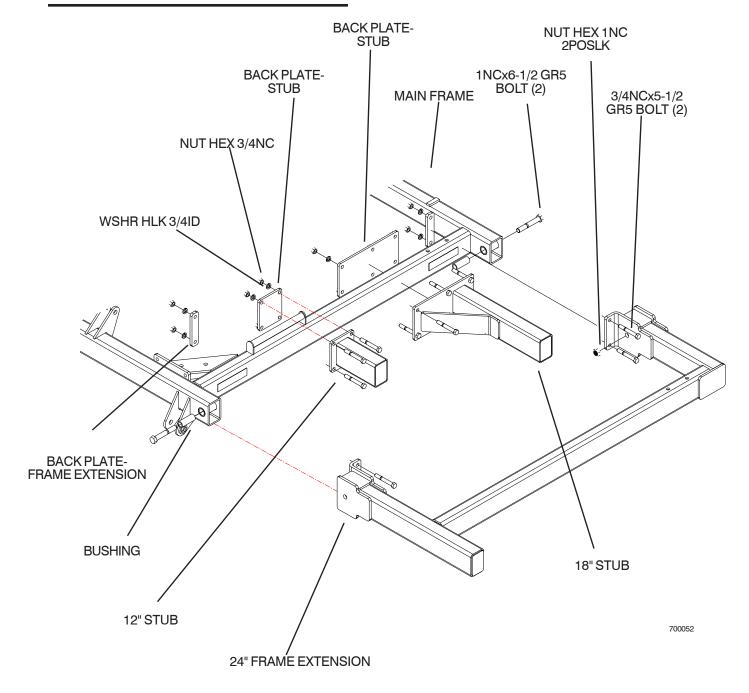
Note: Adequately support frame during assembly, (allow sufficient ground clearance for shank installation).

Note: See shank placement pages for correct locations of all add-on stubs.

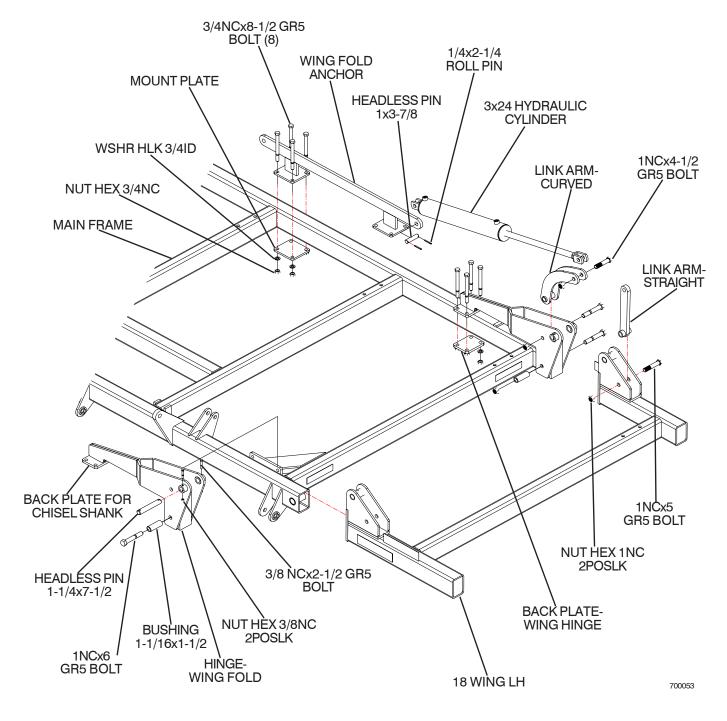




# MAIN FRAME EXTENSION

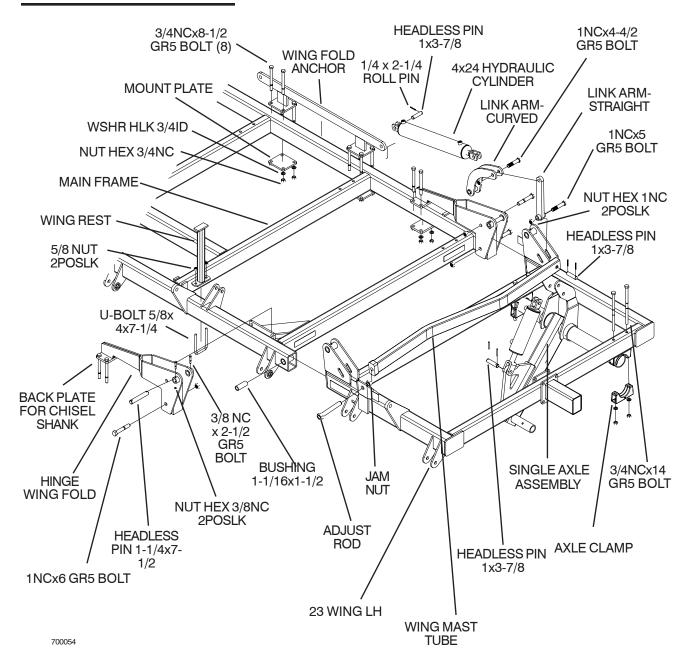


### **18 FOLDING WING**



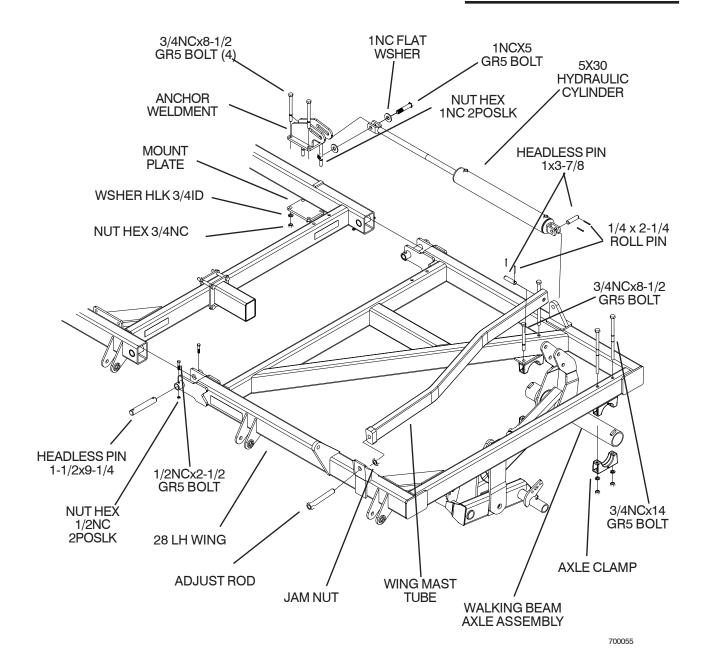


### 23 FOLDING WING



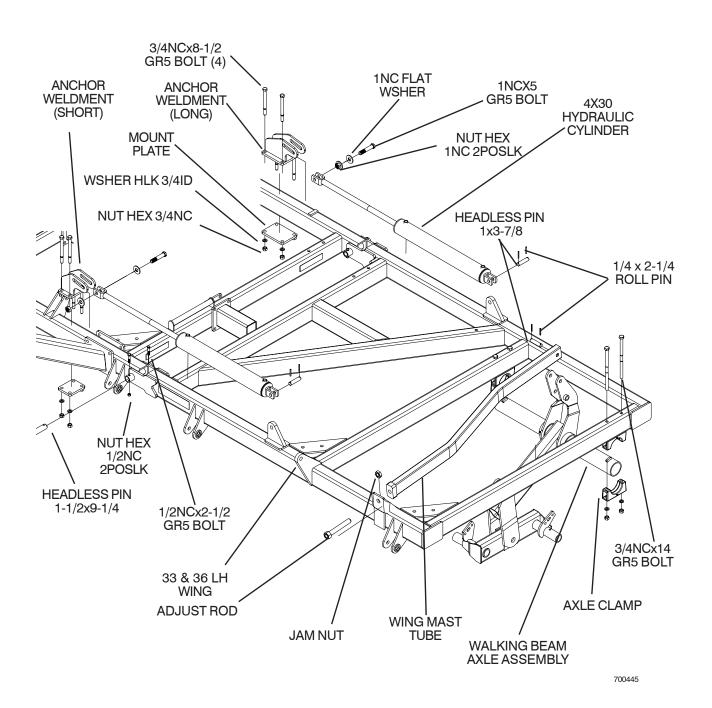


### **28 FOLDING WING**



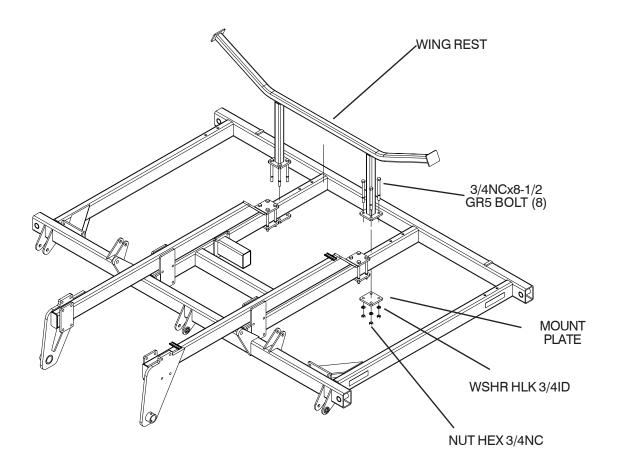


# 33 & 36 FOLDING WING



10

# 28, 33 & 36 WING REST

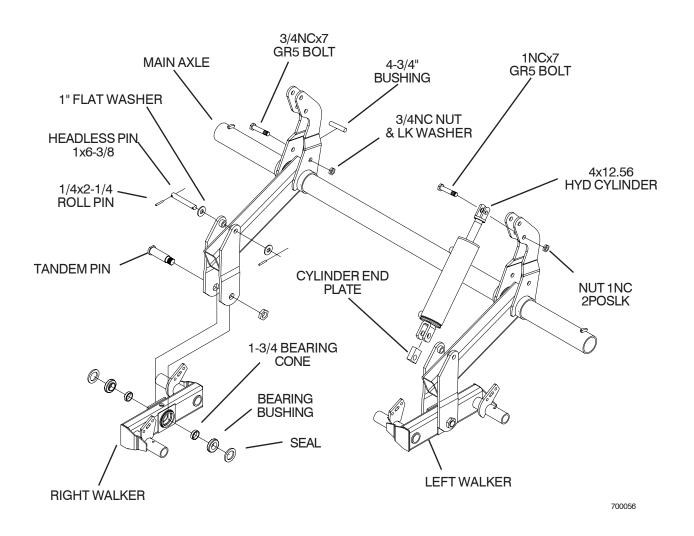


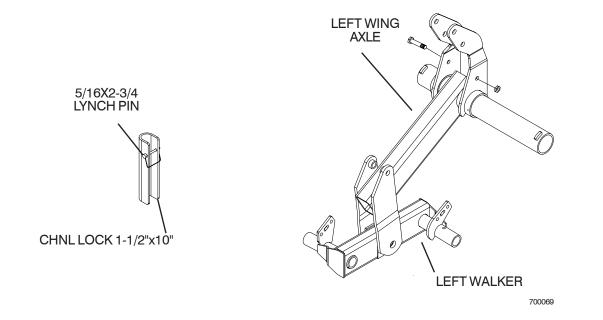
700068



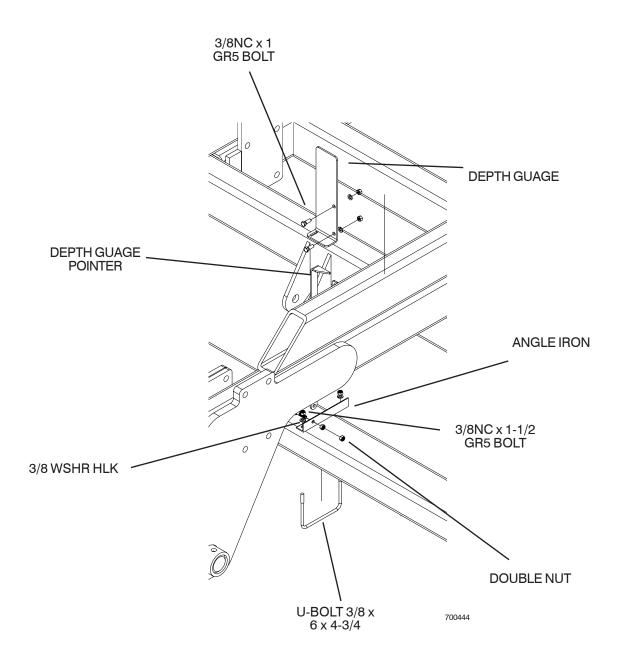
- Never walk or stand in the path of the wings.
- Completely lower the wings before performing service or adjustments.
   Failure to do so will result in serious injury or death.

# **MAIN FRAME & 28 WING TANDEM AXLE**

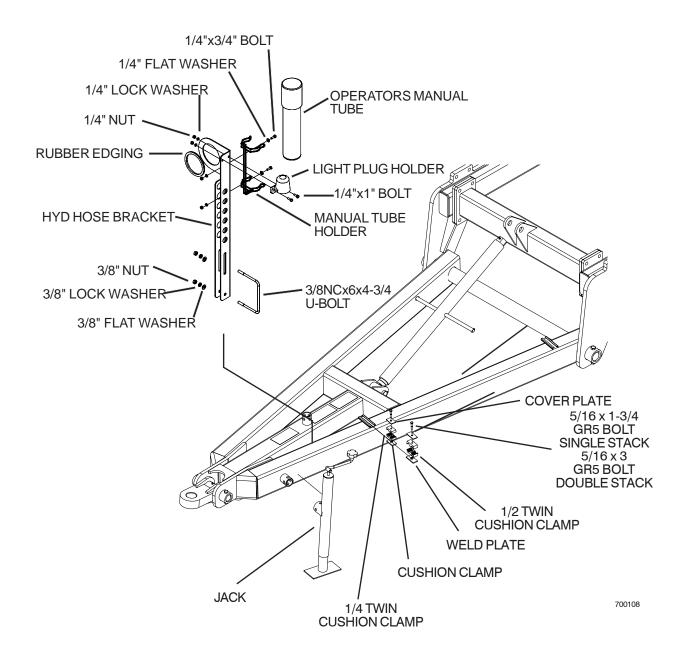




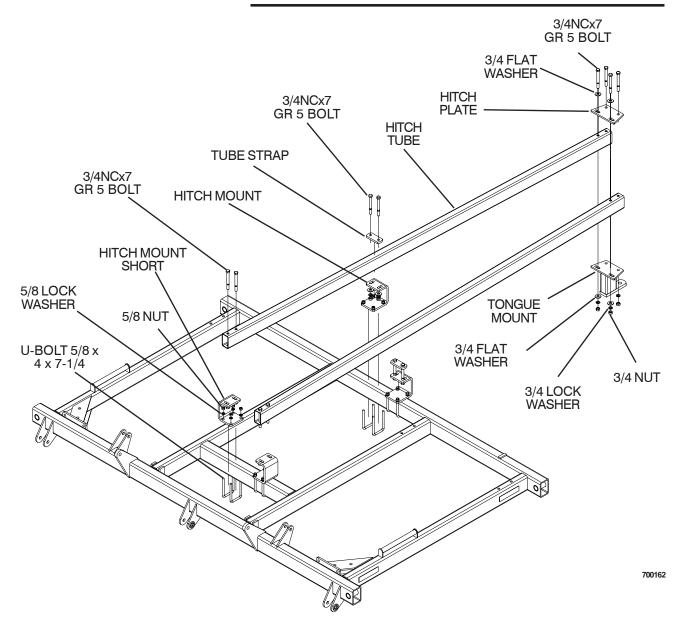
# **DISC GANG DEPTH GUAGE ASSEMBLY**



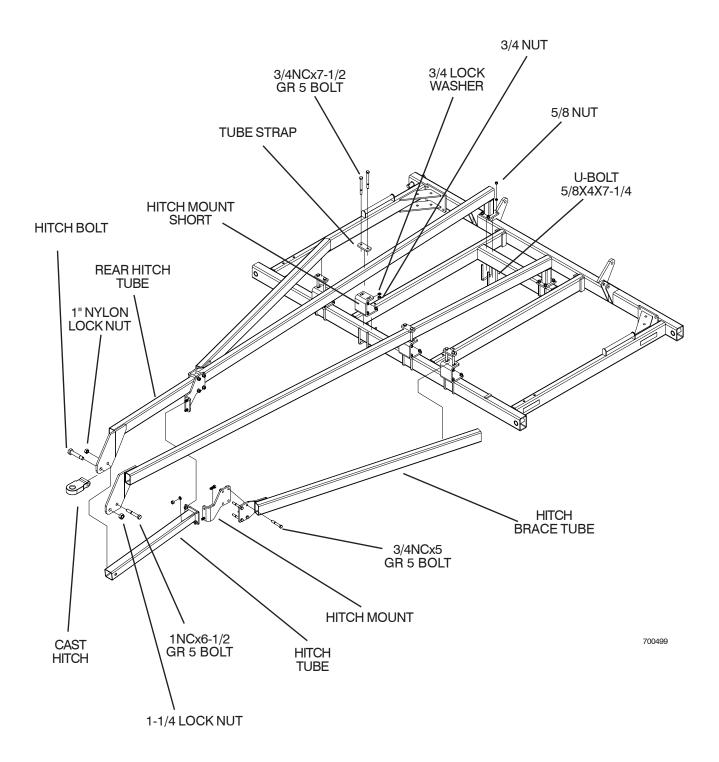
# **HITCH ACCESSORIES**



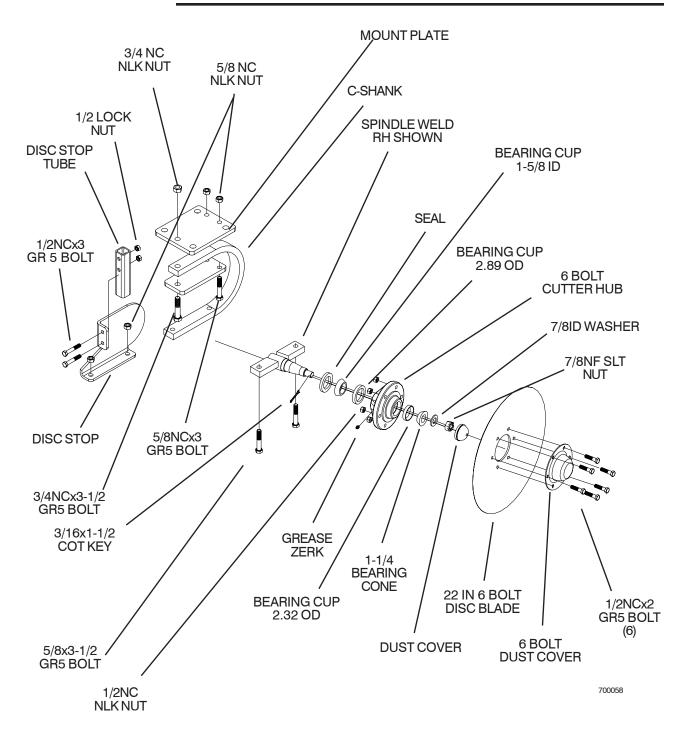
# **OPTIONAL REAR HITCH ASSEMBLY**



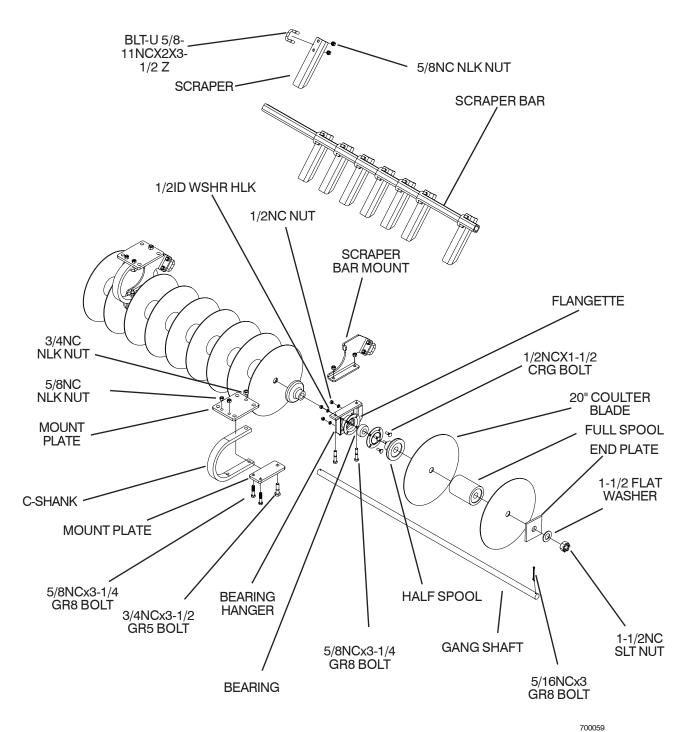
# **OPTIONAL HD REAR HITCH ASSEMBLY**



# **C-SHANK W/CONCAVE BLADE ASSEMBLY**

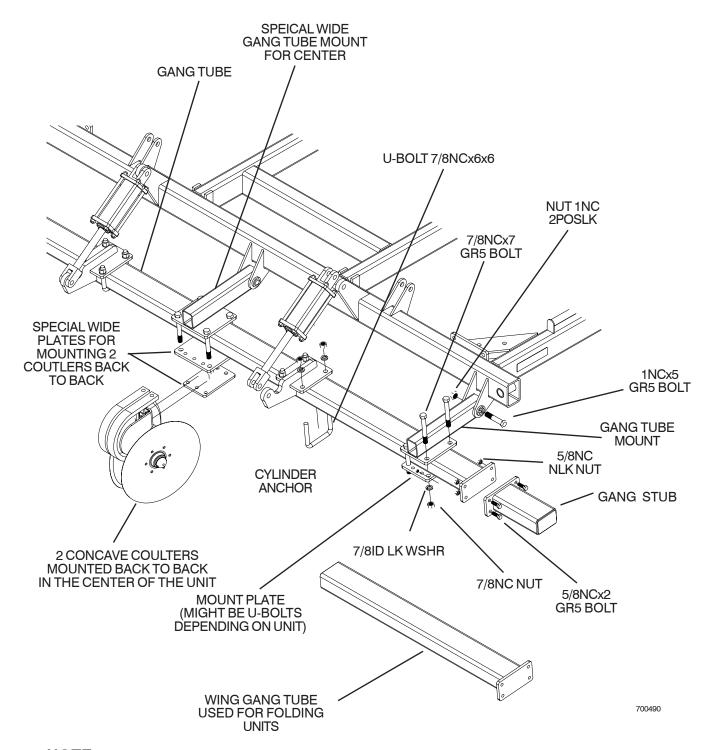


# STRAIGHT CUTTER GANG



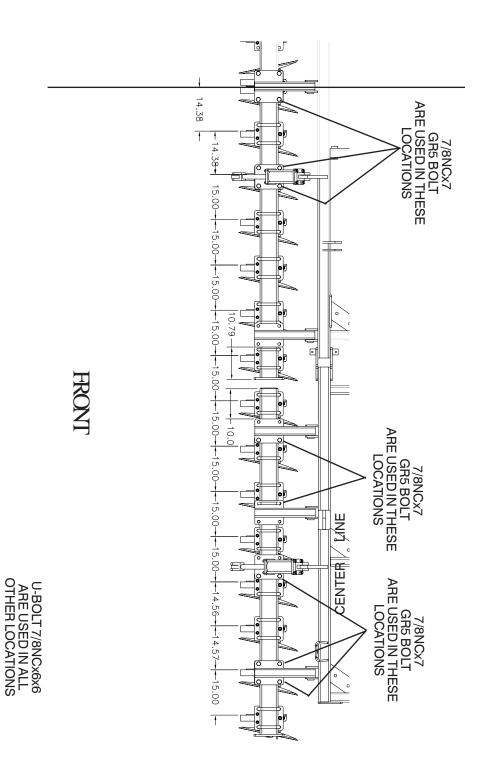
700058

# **DISC GANG MOUNT TUBES**

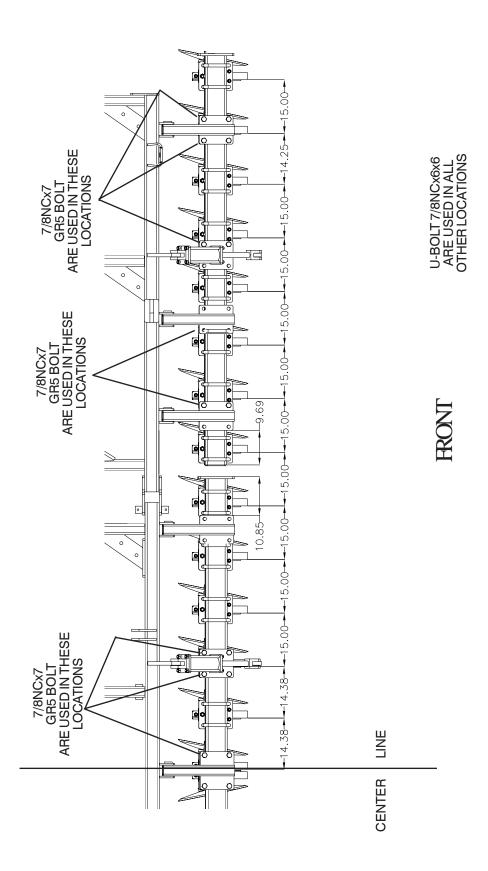


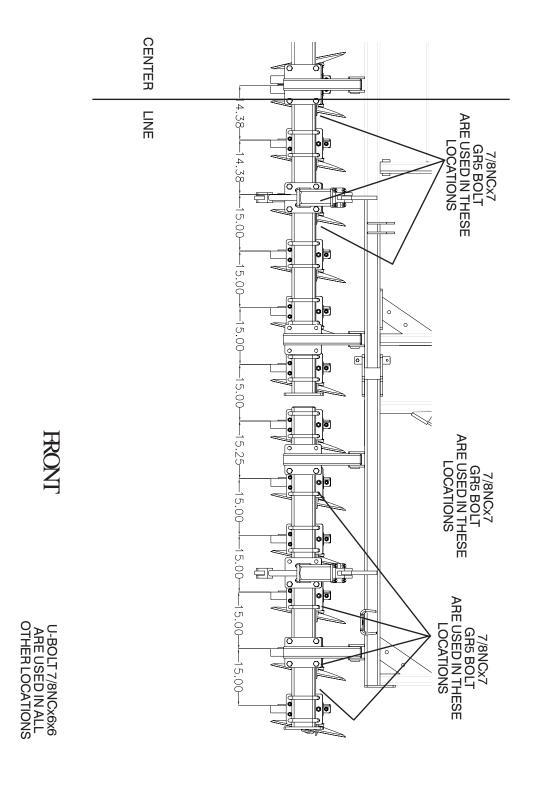
#### **NOTE:**

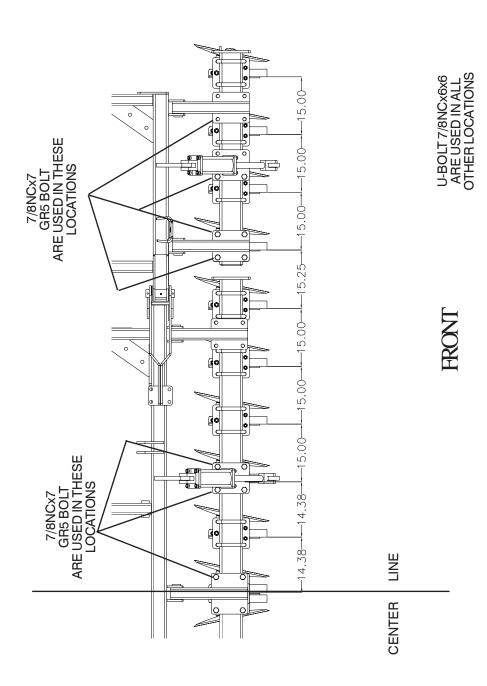
This illustration is a general overview of the gang tube mounts and hardware. Various combinations of U-bolts and mount plates will be used based on the size and configuration of the unit. See coulter layouts.

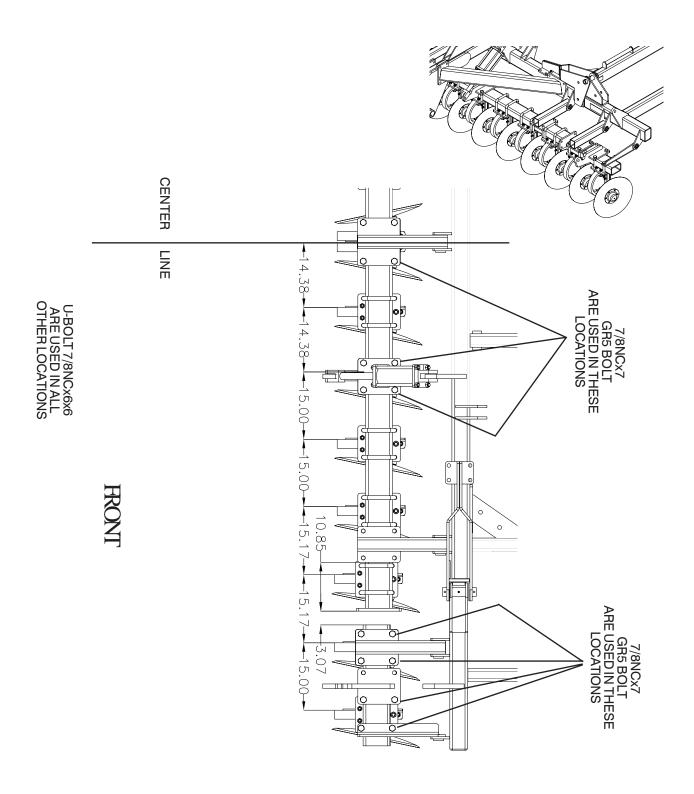


20





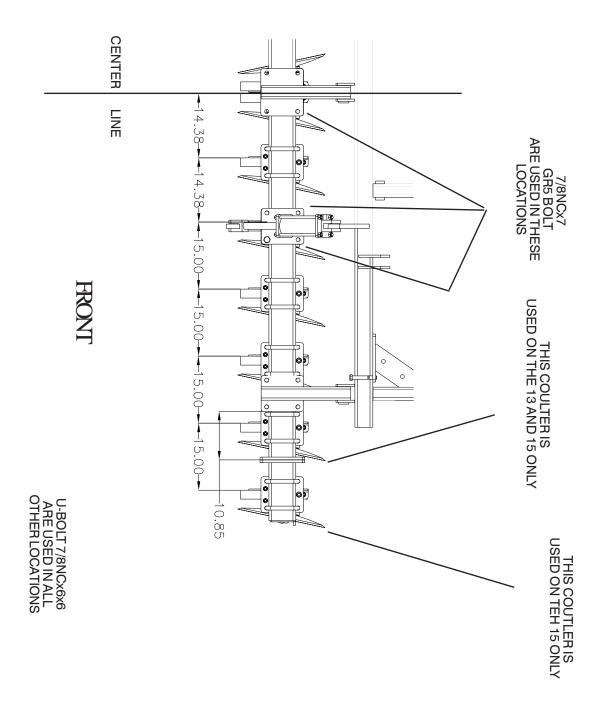


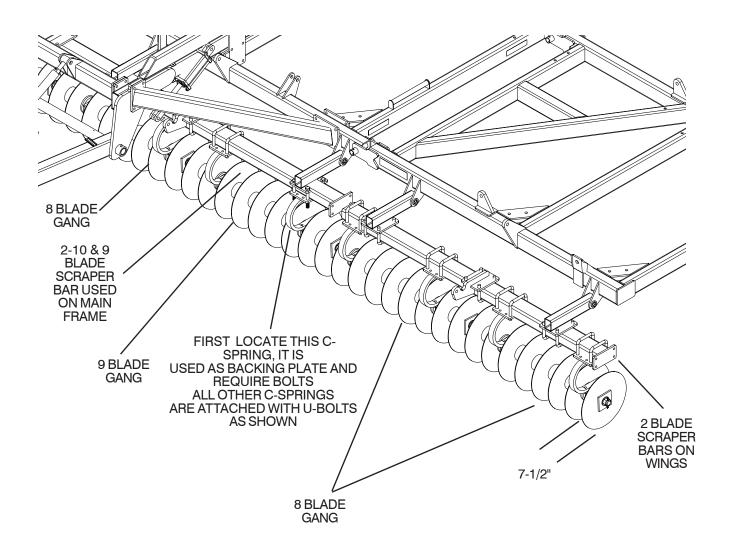


# 18 RIGID CONCAVE COULTER PLACEMENT

39.82 --15.00 7/8NCx7 GR5 BOLT ARE USED IN THESE LOCATIONS LINE CENTER U-BOLT 7/8NCx6x6 ARE USED IN ALL OTHER LOCATIONS

# 11, 13 & 15 CONCAVE COULTER PLACEMENT

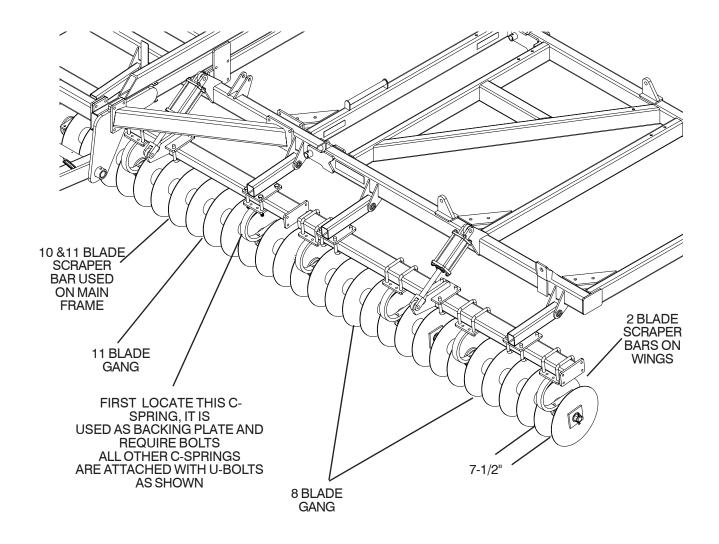




700441

SEE PAGE 18 FOR HARDWARE DISCRIPTIONS

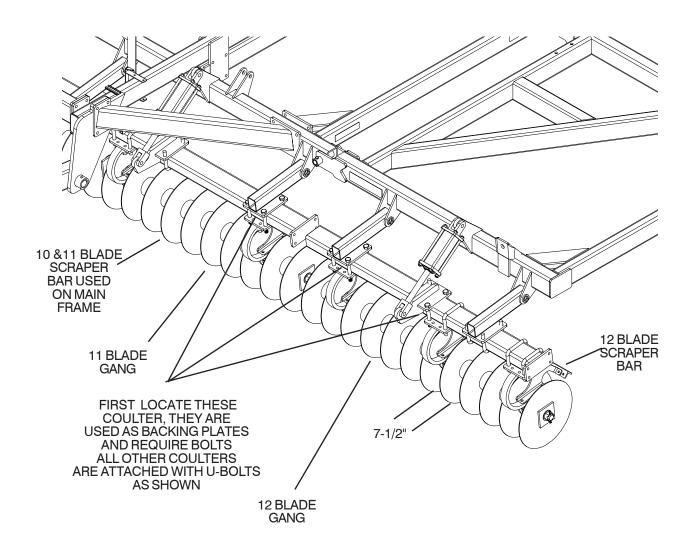
#### **NOTE:**



700441

SEE PAGE 18 FOR HARDWARE DISCRIPTIONS

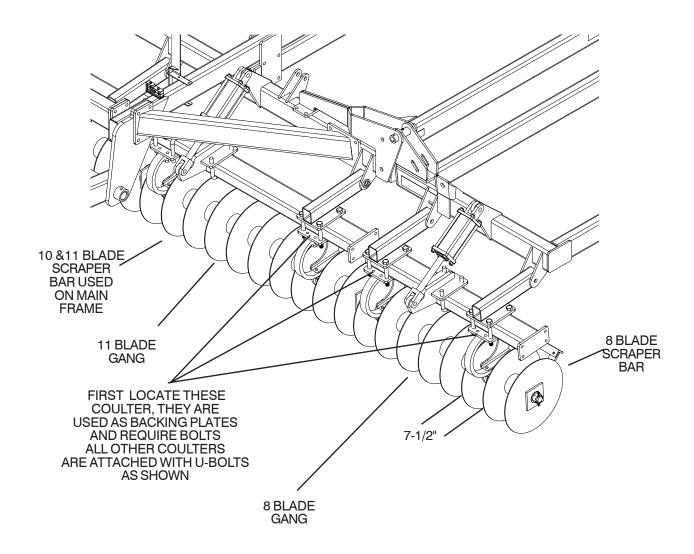
#### **NOTE:**



700074

SEE PAGE 18 FOR HARDWARE DISCRIPTIONS

#### **NOTE:**

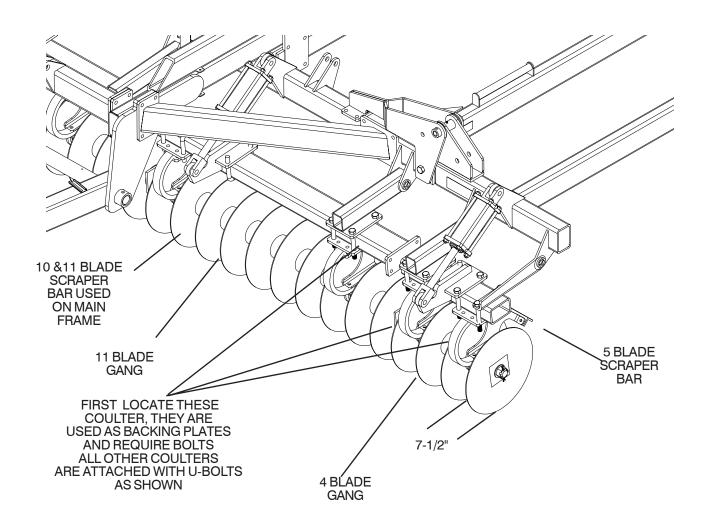


700075

SEE PAGE 18 FOR HARDWARE DISCRIPTIONS

#### **NOTE:**

# **18 FOLDING STRAIGHT COULTER PLACEMENT**

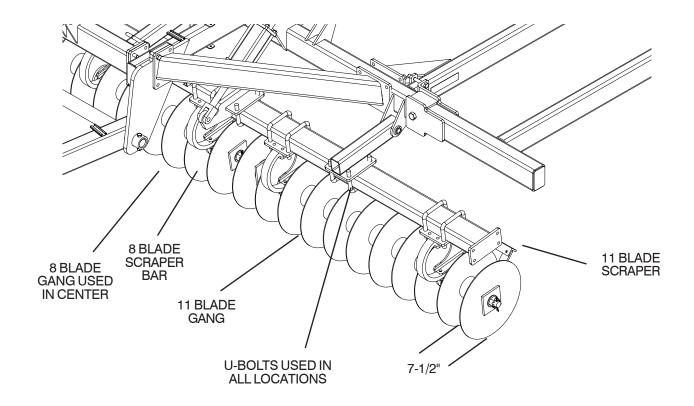


700076

SEE PAGE 18 FOR HARDWARE DISCRIPTIONS

#### **NOTE:**

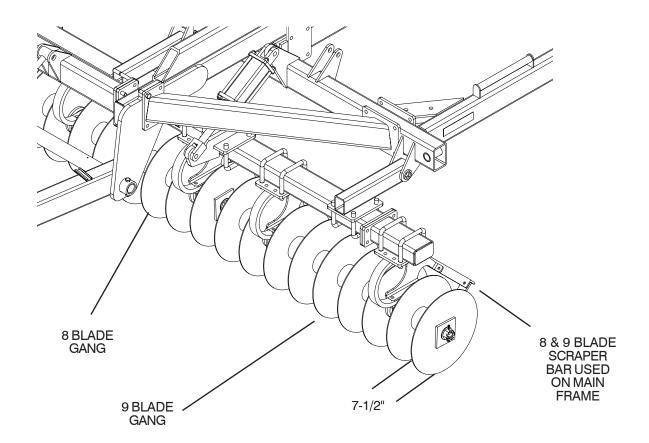
# **18 RIGID STRAIGHT COULTER PLACEMENT**



700077

SEE PAGE 18 FOR HARDWARE DISCRIPTIONS

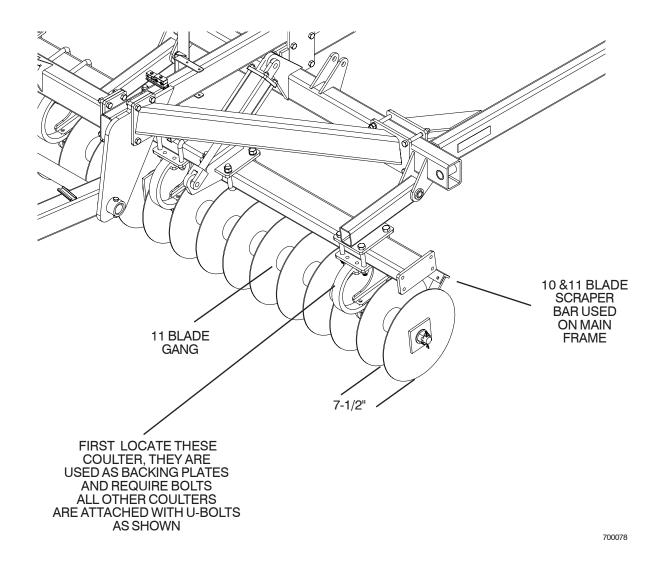
#### **NOTE:**



700455

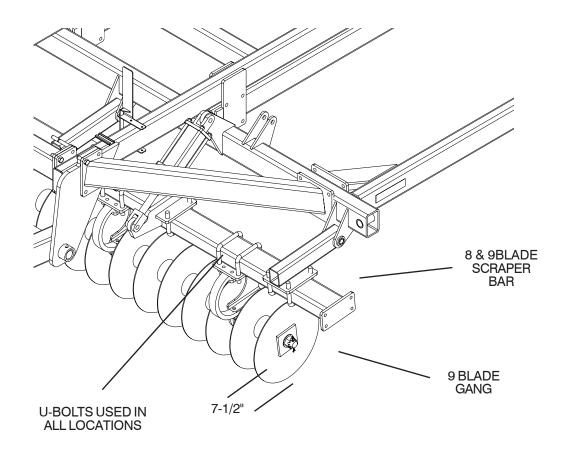
SEE PAGE 18 FOR HARDWARE DISCRIPTIONS

#### **NOTE:**



SEE PAGE 18 FOR HARDWARE DISCRIPTIONS

#### **NOTE:**

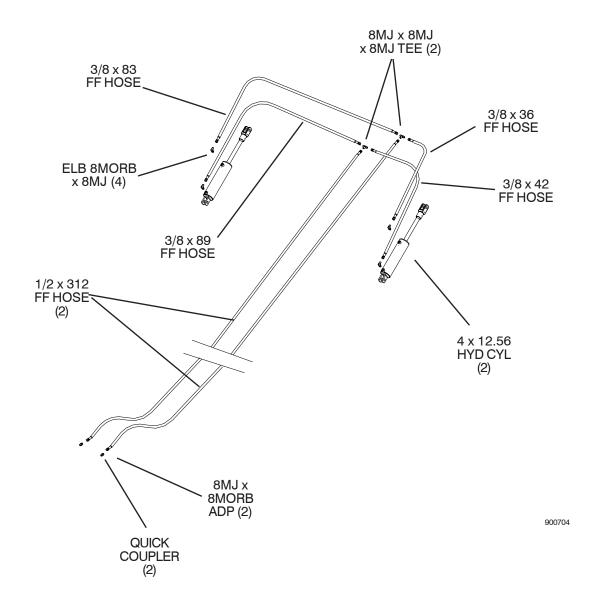


700079

SEE PAGE 18 FOR HARDWARE DISCRIPTIONS

#### **NOTE:**

# 11, 13, AND 18 HYDRAULIC LIFT PLACMENT



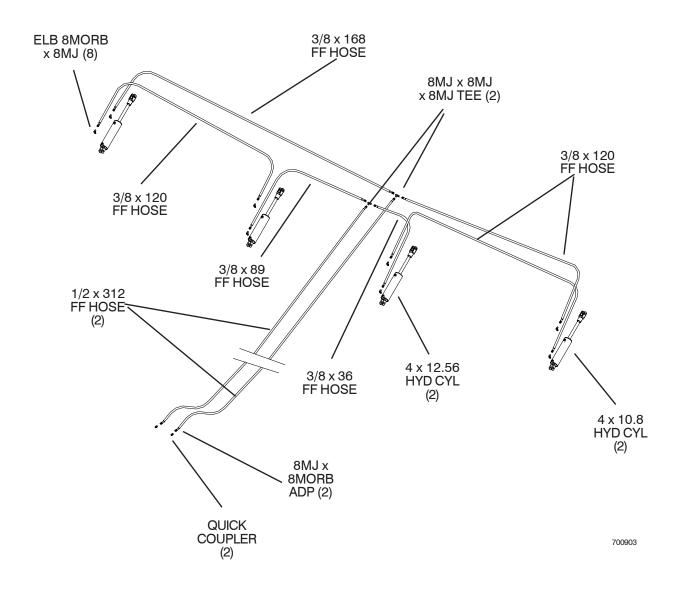
#### **NOTE:**

Use Cable Ties to Fasten Hydraulic Hoses to Chisel Frame Where Clamps Are Not Used.



- Just before and during operation be sure no one is on or around the implement.
- Before activating the hydraulic system, check hoses for proper connections.
- Before lowering the wings for the first time, make sure the entire system has been charged with oil.
- With wings down always install hydraulic cylinder channel lock(s) for transporting.





#### NOTE:

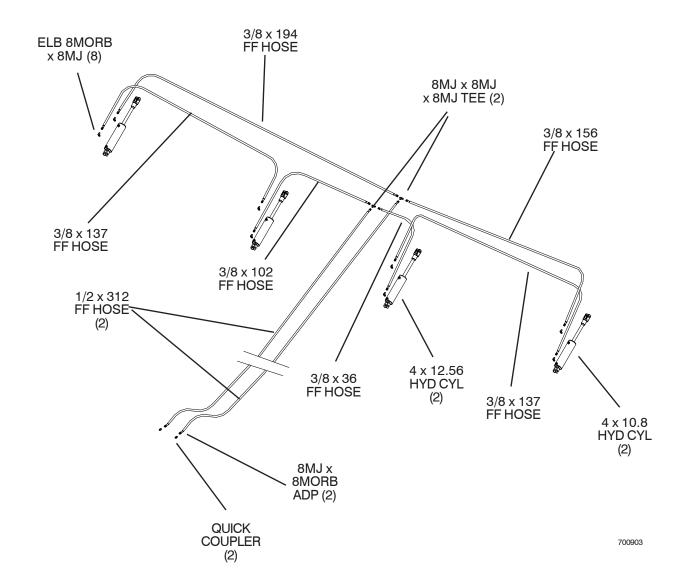
Use Cable Ties to Fasten Hydraulic Hoses to Chisel Frame Where Clamps Are Not Used.



FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY AND/OR EQUIPMENT DAMAGE.

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- Just before and during operation be sure no one is on or around the implement.
   Before activating the hydraulic system, check hoses for proper connections.
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   With wings down always
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#### NOTE:

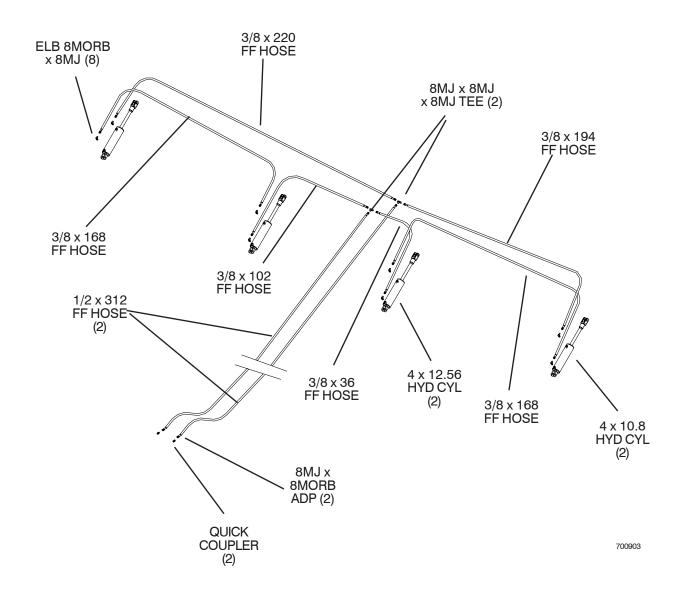
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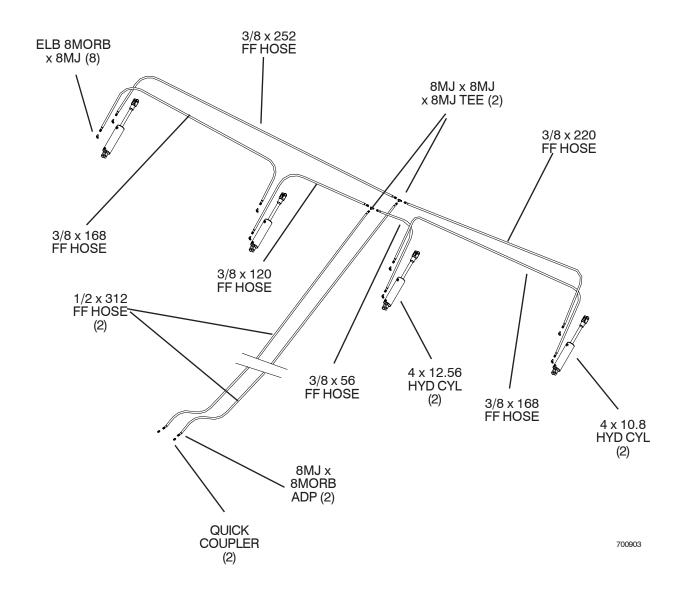


**Use Cable Ties to Fasten Hydraulic Hoses** to Chisel Frame Where Clamps Are Not Used.



- Just before and during
- Just before and during operation be sure no one is on or around the implement.
   Before activating the hydraulic system, check hoses for proper connections.
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- install hydraulic cylinder channel lock(s) for transporting.





### NOTE:

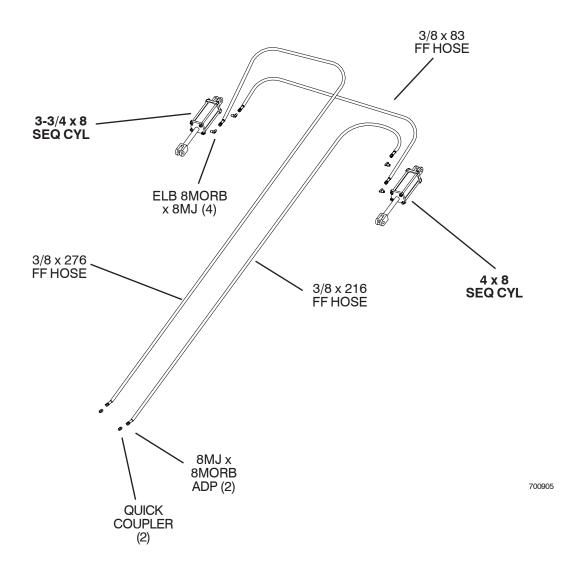
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   With wings down always install hydraulic cylinder channel lock(s) for transporting. transporting.



# 11, 13 AND 18 RIGID HYDRAULIC DISK LIFT **PLACEMENT**



#### **NOTE:**

**Use Cable Ties to Fasten Hydraulic Hoses** to Chisel Frame Where Clamps Are Not Used.



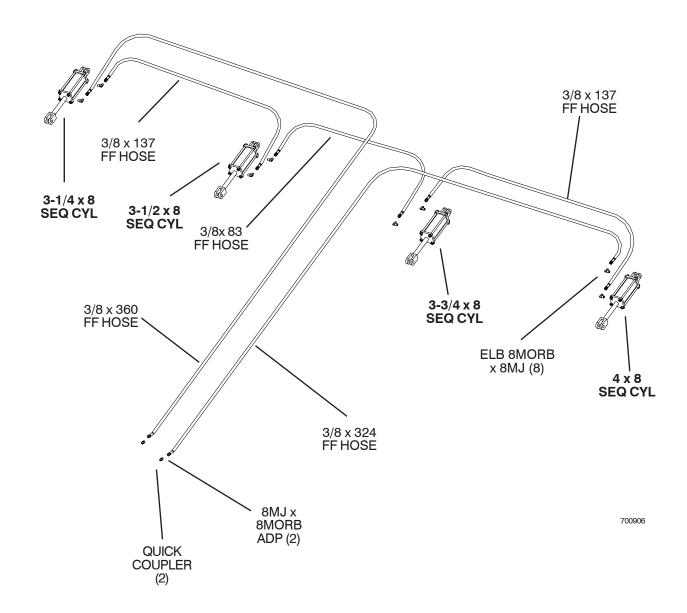
IN PERSONAL INJURY AND/OR EQUIPMENT DAMAGE.

- Just before and during operation be sure no one is on or around the implement.

  Before activating the hydraulic system, check hoses for proper
  - connections.
- Before lowering the wings for the first time, make sure the entire system has been charged with oil.
   With wings down always
- install hydraulic cylinder channel lock(s) for transporting.



### **18 FOLDING & 23 HYDRAULIC DISK LIFT PLACEMENT**



#### NOTE:

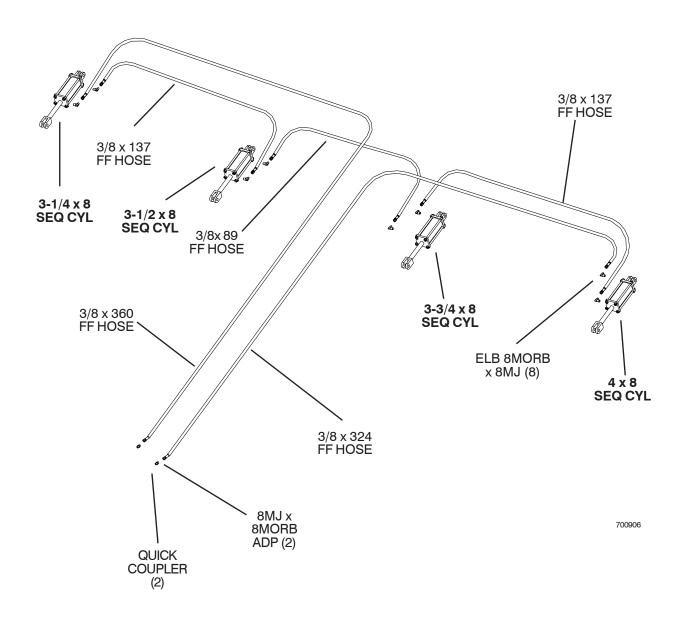
Use Cable Ties to Fasten Hydraulic Hoses to Chisel Frame Where Clamps Are Not Used.



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- With wings down always install hydraulic cylinder channel lock(s) for transporting.



### 28 HYDRAULIC DISK LIFT PLACEMENT



#### **NOTE:**

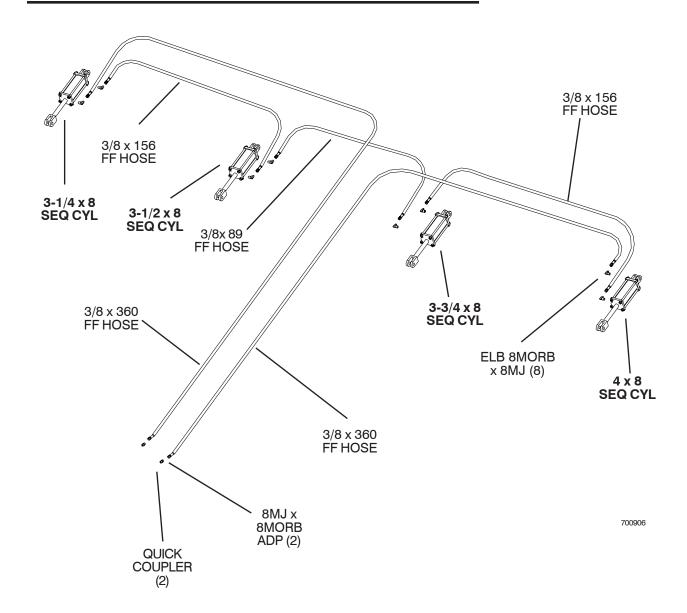
**Use Cable Ties to Fasten Hydraulic Hoses** to Chisel Frame Where Clamps Are Not Used.



- IN PERSONAL INJURY AND/OR EQUIPMENT DAMAGE.
- Just before and during
- Just before and during operation be sure no one is on or around the implement.
   Before activating the hydraulic system, check hoses for proper connections.
- Before lowering the wings for the first time, make sure the entire system has been charged with oil.
   With wings down always
- install hydraulic cylinder channel lock(s) for transporting.



### 33 HYDRAULIC DISK LIFT PLACEMENT



### NOTE:

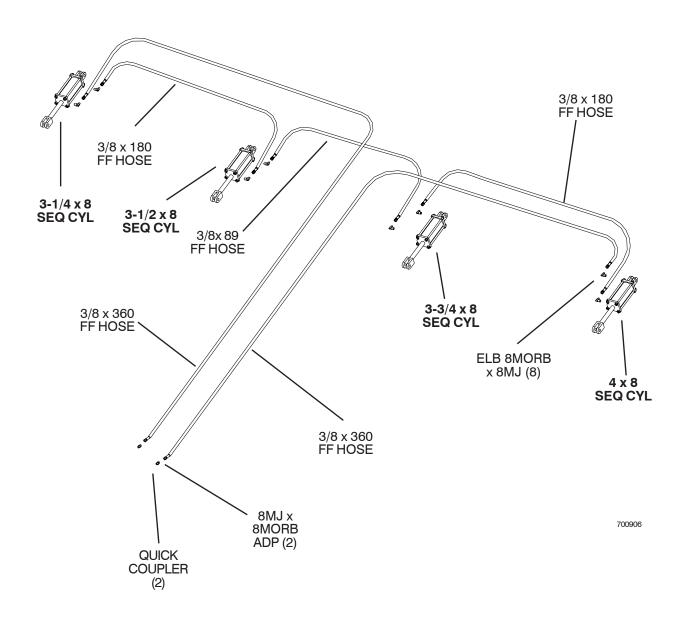
Use Cable Ties to Fasten Hydraulic Hoses to Chisel Frame Where Clamps Are Not Used.



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- Before lowering the wings for the first time, make sure the entire system has been charged with oil.
- With wings down always install hydraulic cylinder channel lock(s) for transporting.



### **36 HYDRAULIC DISK LIFT PLACEMENT**



#### **NOTE:**

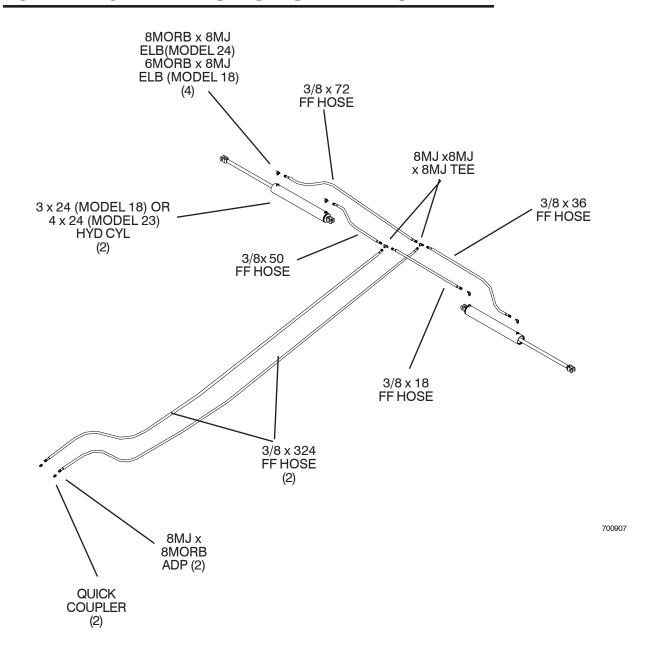
**Use Cable Ties to Fasten Hydraulic Hoses** to Chisel Frame Where Clamps Are Not Used.



- Just before and during
- Just before and during operation be sure no one is on or around the implement.
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   With wings down always
- install hydraulic cylinder channel lock(s) for transporting.



### **18 AND 23 HYDRAULIC FOLD PLACEMENT**



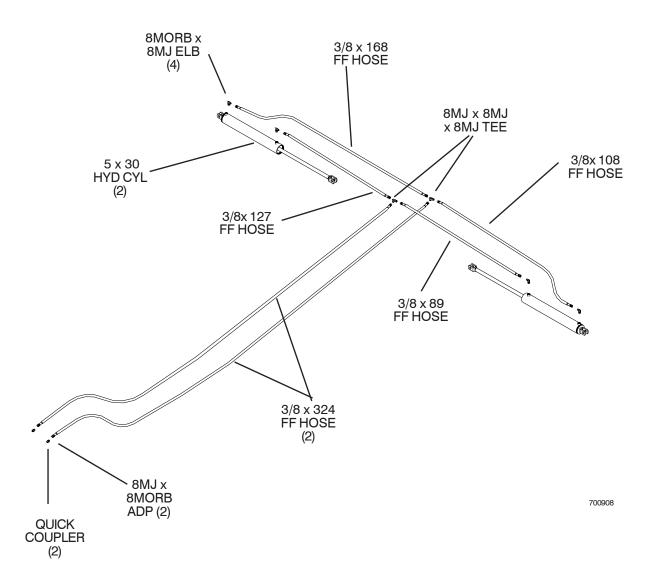
### NOTE: Use Cable Ties to Fasten Hydraulic Hoses to Chisel Frame Where Clamps Are Not Used.



- Just before and during operation be sure no one is on or around the implement.
- Before activating the hydraulic system, check hoses for proper connections.
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- With wings down always install hydraulic cylinder channel lock(s) for transporting.



### 28 HYDRAULIC FOLD PLACEMENT



#### NOTE:

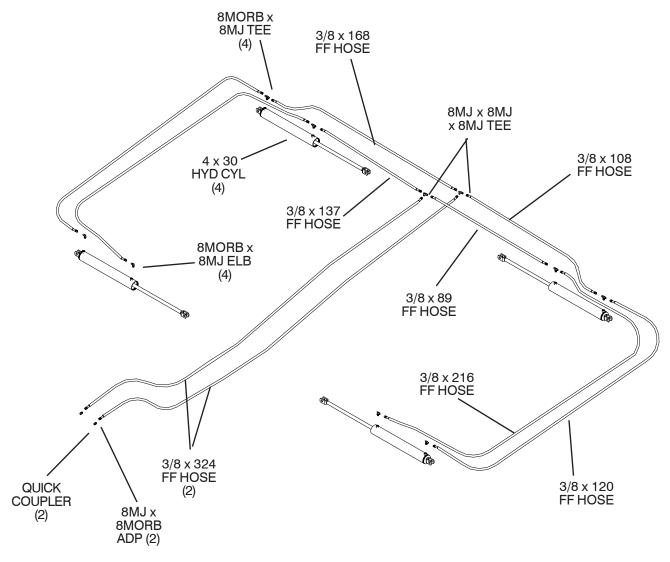
**Use Cable Ties to Fasten Hydraulic Hoses** to Chisel Frame Where Clamps Are Not Used.



- Just before and during Just before and during operation be sure no one is on or around the implement.
   Before activating the hydraulic system, check hoses for proper connections.
- Before lowering the wings for the first time, make sure the entire system has been charged with oil.
   With wings down always
- install hydraulic cylinder channel lock(s) for transporting.



### 33 HYDRAULIC FOLD PLACEMENT



700909

#### NOTE:

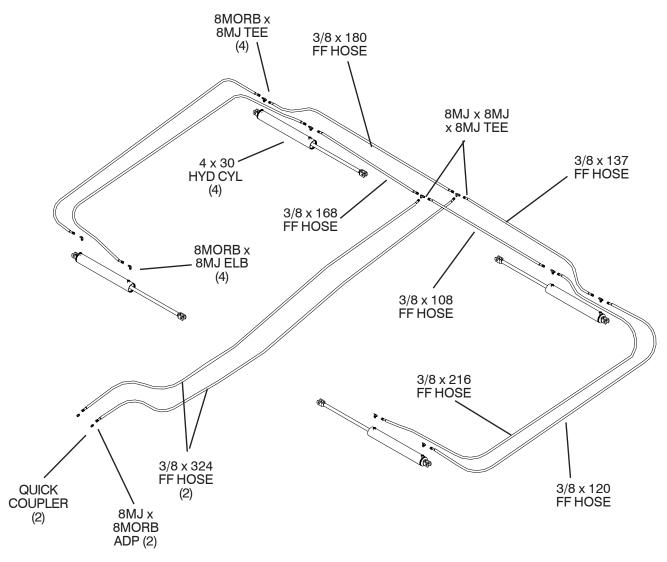
Use Cable Ties to Fasten Hydraulic Hoses to Chisel Frame Where Clamps Are Not Used.



- FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY AND/OR EQUIPMENT DAMAGE.
- Just before and during operation be sure no one is on or around the implement.
- Before activating the hydraulic system, check hoses for proper connections.
- Before lowering the wings for the first time, make sure the entire system has been charged with oil.
- With wings down always install hydraulic cylinder channel lock(s) for transporting.



### **36 HYDRAULIC FOLD PLACEMENT**



700909

**Use Cable Ties to Fasten Hydraulic Hoses** to Chisel Frame Where Clamps Are Not Used.

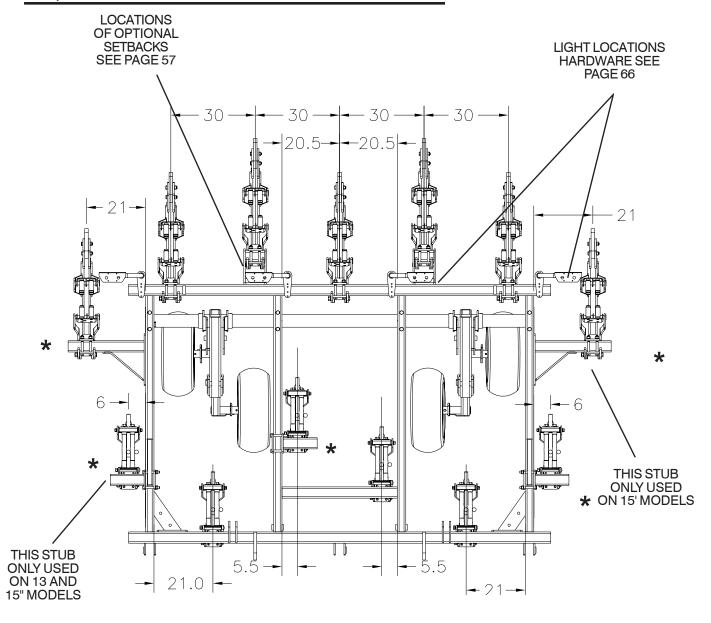


FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY AND/OR EQUIPMENT DAMAGE.

- Just before and during
- Just before and during operation be sure no one is on or around the implement.
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   With wings down always
- install hydraulic cylinder channel lock(s) for transporting.



# 11', 13' AND 15' SHANK PLACEMENT

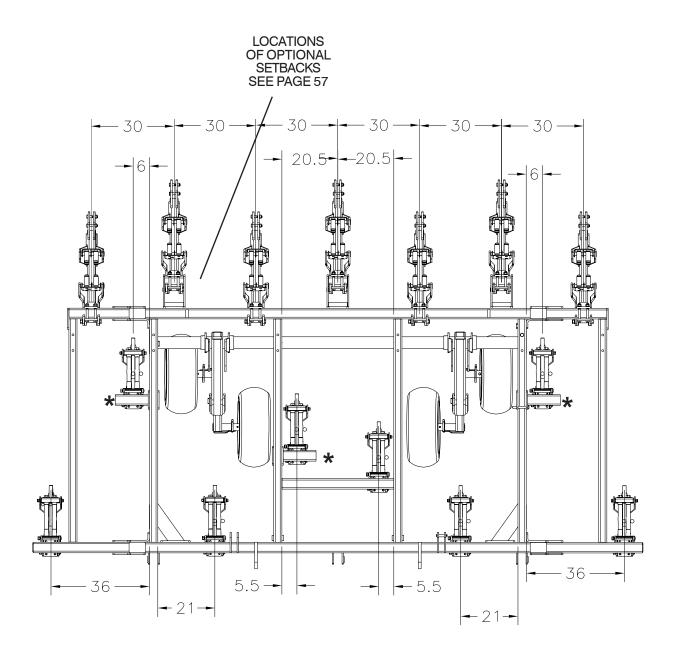


700064

\*-Stubs indicated are additions to main frame. It may be necessary to slide stubs front to rear if plugging occurs.

See page 6 for hardware.

#### **Position Note:**

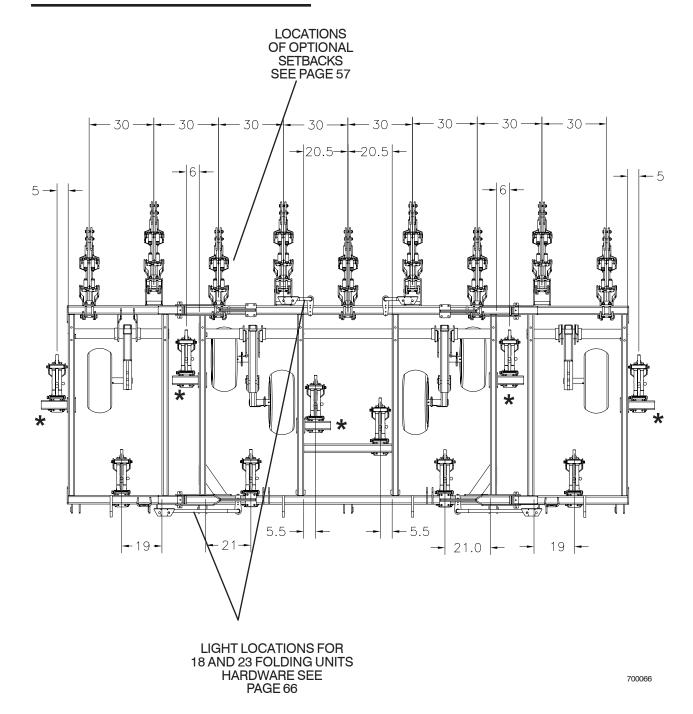


700065

\*-Stubs indicated are additions to main frame. It may be necessary to slide stube front to rear if plugging occurs.

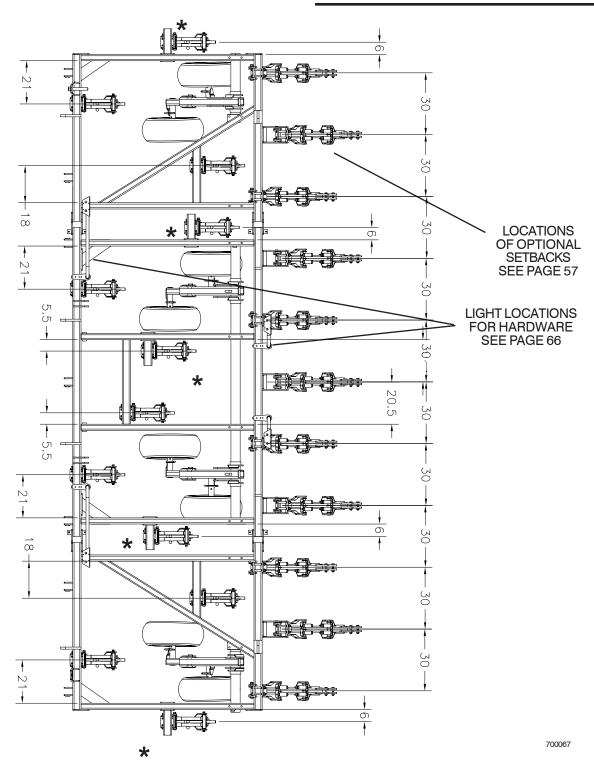
See page 6 for hardware

#### **Position Note:**



\*-Stubs indicated are additions to main frame. It may be necessary to slide stubs front to rear if plugging occurs. See page 6 for hardware.

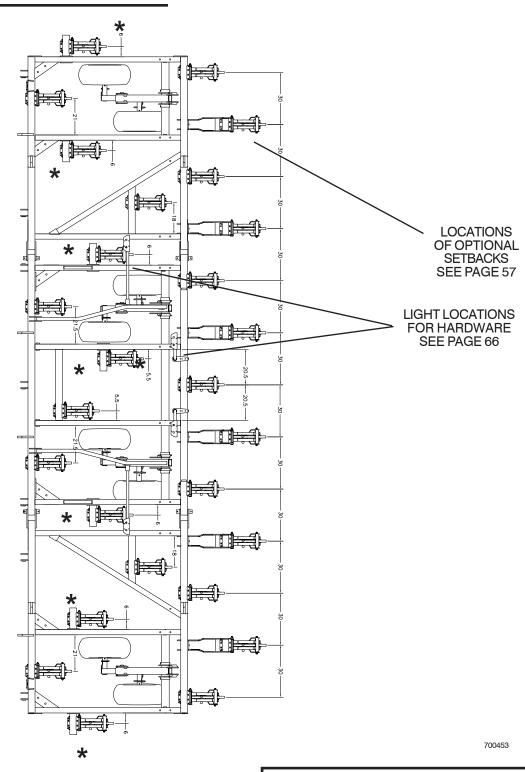
#### **Position Note:**



\*-Stubs indicated are additions to main frame. It may be necessary to slide stubs front to rear if plugging occurs.

See page 6 for hardware.

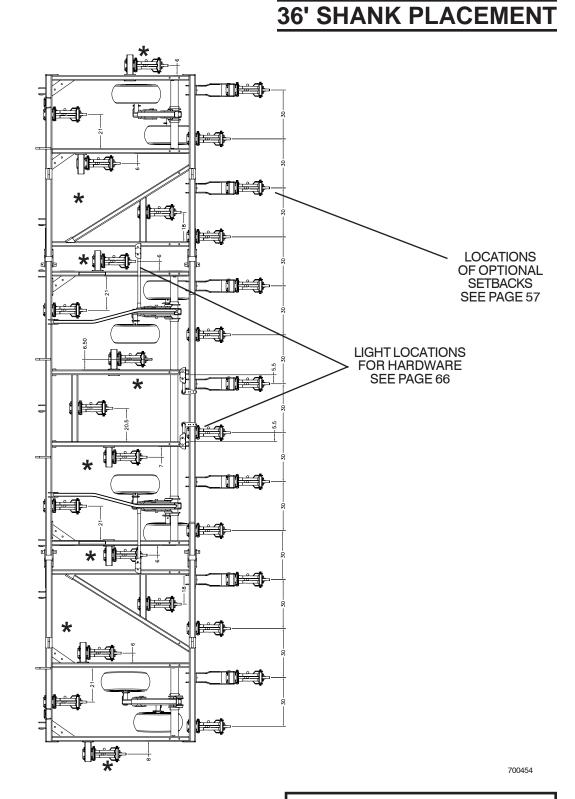
#### **Position Note:**



\*-Stubs indicated are additions to main frame. It may be necessary to slide stubs front to rear if plugging occurs.

See page 6 for hardware.

#### **Position Note:**

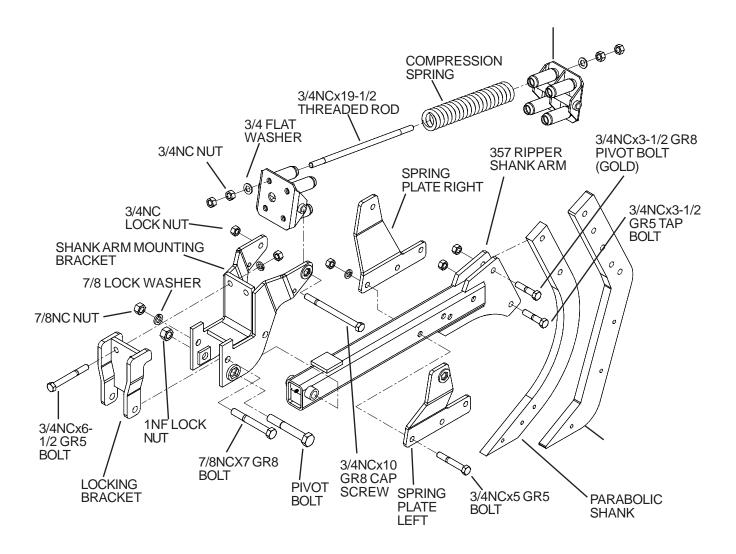


\*-Stubs indicated are additions to main frame. It may be necessary to slide stubs front to rear if plugging occurs.

See page 6 for hardware.

#### **Position Note:**

### SPRING RESET SHANK ARM ASSEMBLY



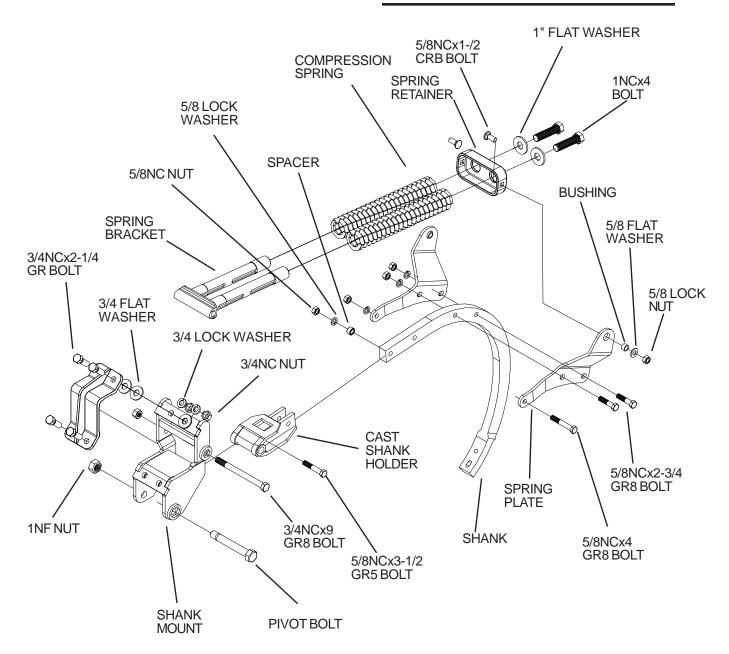
#### SHANK MOUNTING

- 1.) For ease of installation attach Locking Bracket to Shank Assembly with 7/8NCx7 Bolt first, then slide Shank Assembly on to 357 IR frame and flip the Locking Bracket over tube and insert 3/4NCx6-1/2 Bolts. (Shank should then hang by itself).
- 2.) When proper location of shank assembly is reached, tighten 3/4NCx6-1/2 Bolts securely. (Torque to 240 Foot Pounds).

NOTE: A 3/4NFx3-1/2 GR8 Fine Thread Bolt is used to attach shank to frame in the upper attaching position and a 3/4NCx3-1/2 GR5 Coarse Thread Tap Bolt is used in the lower attaching position. *DO NOT INTER-CHANGE!* The 3/4NCx3-1/2 GR5 Bolt is used as a shear bolt.

WARNING. SPRING PACK IS LOADED. CARE MUST BE TAKEN WHEN DISASSEM-BLING THE SPRING PACK OR SERIOUS INJURY OR DEATH MAY RESULT

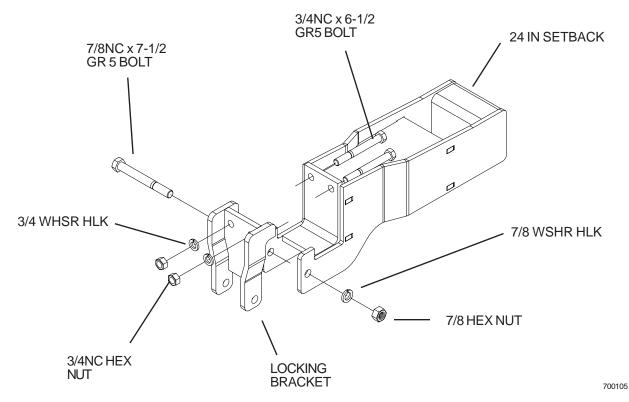
## 1400# SHANK ASSEMBLY



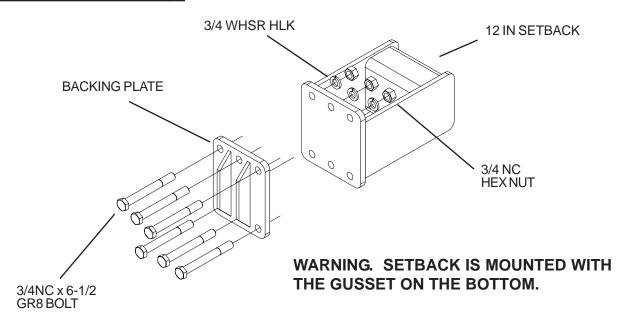
WARNING. SPRING PACK IS LOADED. CARE MUST BE TAKEN WHEN DISASSEM-BLING THE SPRING PACK OR SERIOUS INJURY OR DEATH MAY RESULT

## **OPTIONAL SETBACK ASSEMBLY**

#### FOR CHISEL PLOW SHANKS ONLY



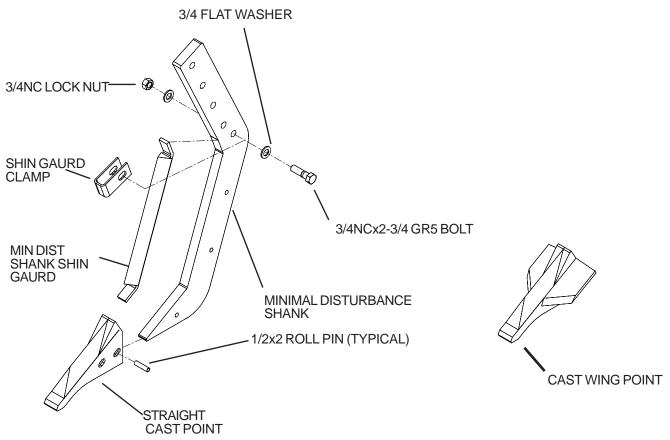
#### **FOR RIPPER SHANKS ONLY**



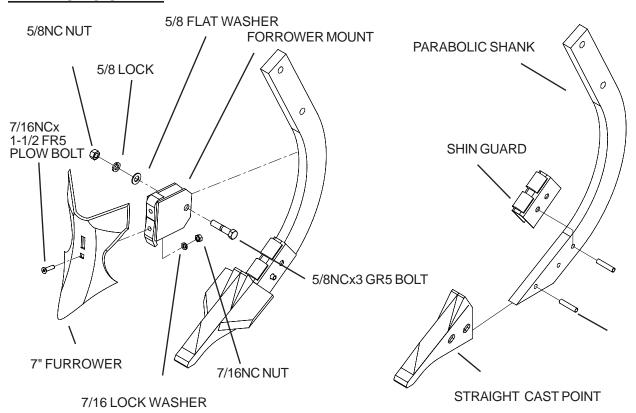
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### **RIPPER SHANK ATTACHEMENTS**

#### **MINIMAL DISTRUBANCE SHANK**

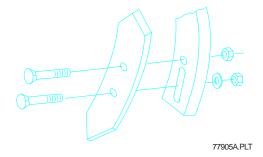


### **PARABOLIC SHANK**



# CHISEL SHANK ATTACHEMENTS

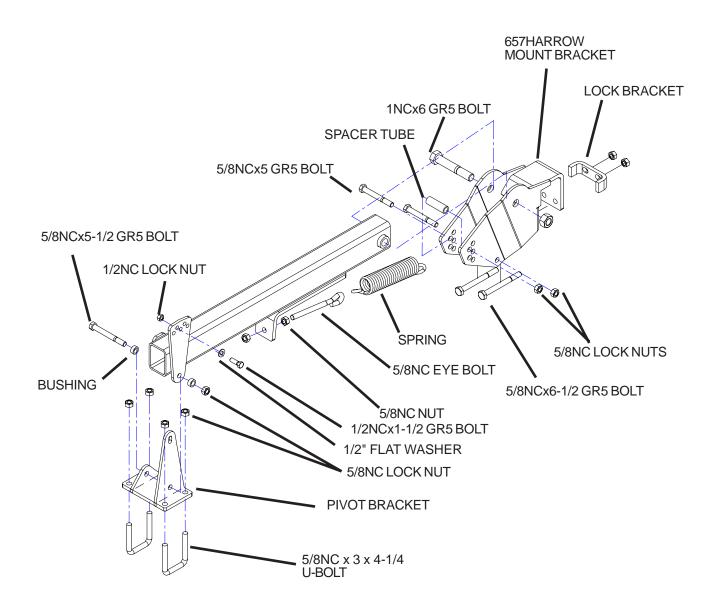
2" Reversible Spike:



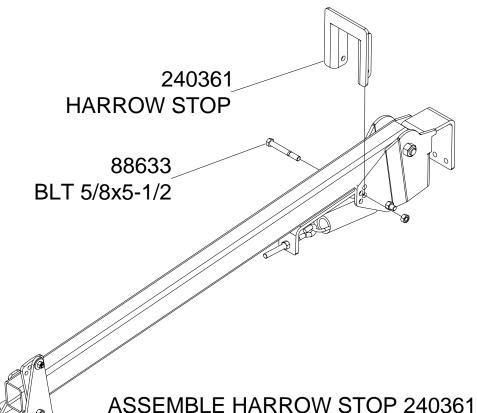
3" & 4" (RH & LH) Concave Twisted Spike:

77905A.PLT

### **HARROW ARM ASSEMBLY**

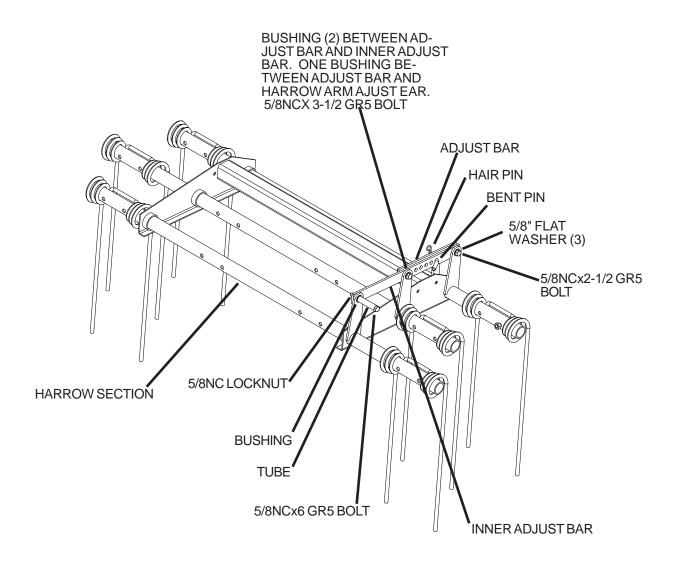


# HARROW STOP ARM ASSEMBLY

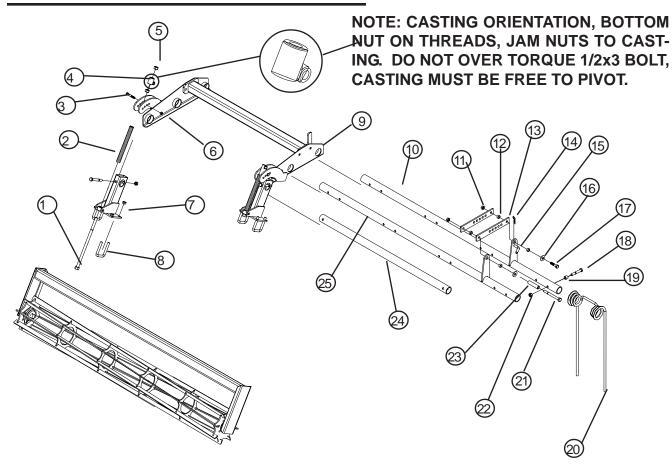


ASSEMBLE HARROW STOP 240361
AS SHOWN REPLACEING 5/8x5 BOLT
WITH BOLT SUPPLIED. THIS SHOULD BE
DONE ON OUTER WINGS TO PREVENT
HARROW DAMAGE.

### **HARROW ASSEMBLY**

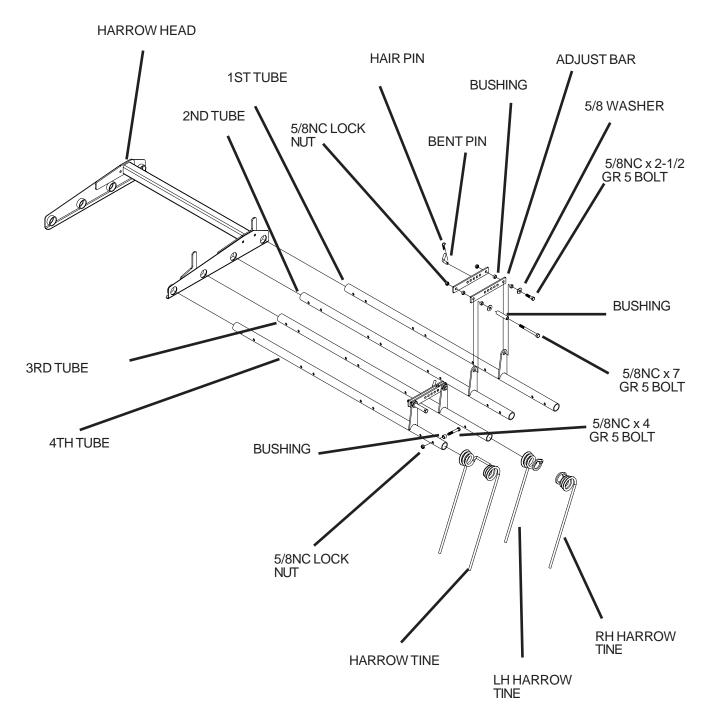


# **HARROW SECTION ASSEMBLY**



ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1	67076	3/4-10NCx16.5 SPECIAL BOLT	17	88409	5/8NCx2-1/2 GR5 BOLT
2	68581	COMPRESSION SPRING	18	88298	5/8NCx4 GR5 BOLT
3	88541	1/2-13NCx3 BOLT			QTY - 24-8FT
4	221981	MOUNT CASTING			18-6FT
5	88110	3/4NC NUT			12-4FT
6	88363	1/2NC LOCK NUT	19	200479	BUSHING
7	88627	5/8NC NLK NUT	20	236087	26" H.D. HARROW TOOTH
8	89327	5/8NCx3x4 U-BOLT			QTY - 12/8FT SEC
9	245393	8FT HARROW MOUNT WELD			9/ 6FT SEC
	245392	6FT HARROW MOUNT WELD			3/ 4FT SEC
	245391	4FT HARROW MOUNT WELD	21	88383	5/8-11NCx7 BOLT
10	244289	8FT FRONT HARROW TUBE	22	88845	5/8 TOP LOCK NUT
	244287	6FT FRONT HARROW TUBE	23	22521	SPACER TUBE
	244285	4FT FRONT HARROW TUBE	24	244295	8FT BASKET TUBE
11	88627	5/8NC NLK NUT		244294	6FT BASKET TUBE
12	200479	BUSHING		243629	4FT BASKET TUBE
13	222575	INNER ADJUST BAR	25	244290	8FT REAR HARROW TUBE
14	23039	HAIR PIN		244288	6FT REAR HARROW TUBE
15	32871	5/8x1-3/8 BENT PIN		244286	4FT REAR HARROW TUBE
16	88277	5/8 FLAT WASHER			

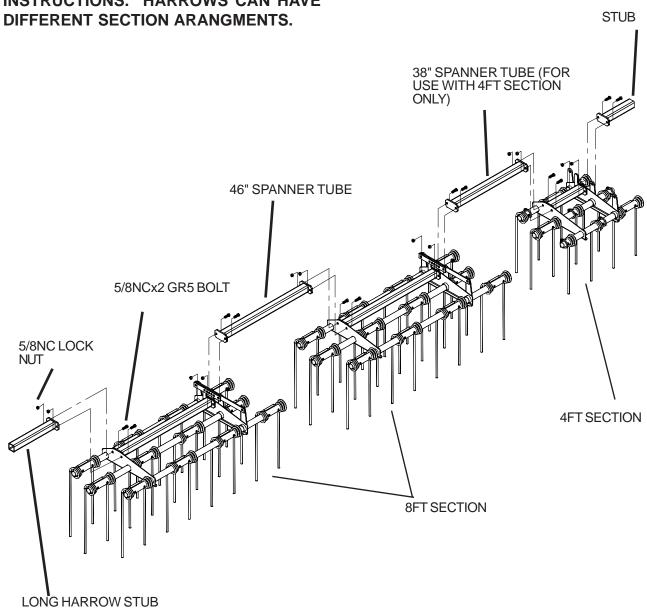
## **4-BAR HARROW ASSEMBLY**



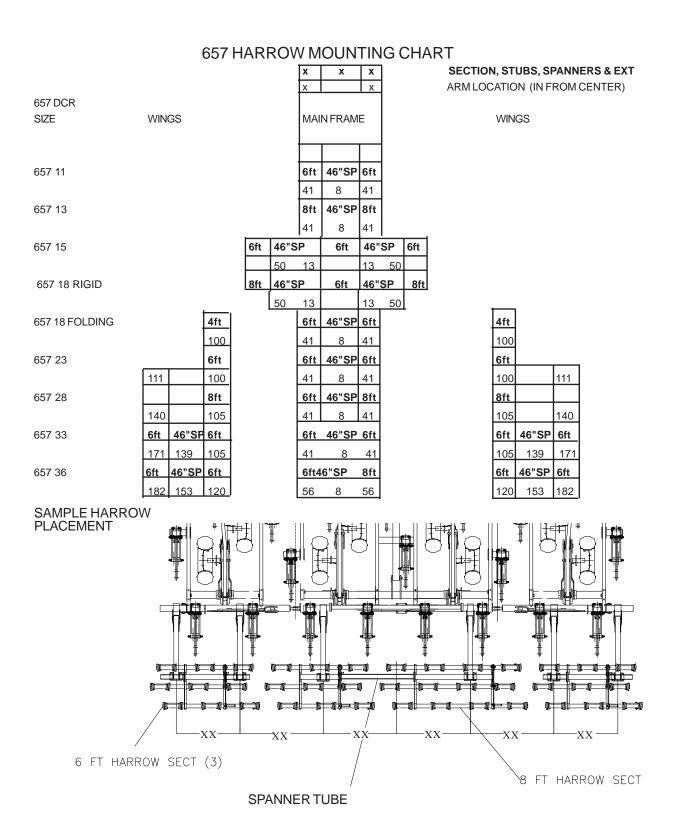
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# **SPANNER TUBE ASSEMBLY**

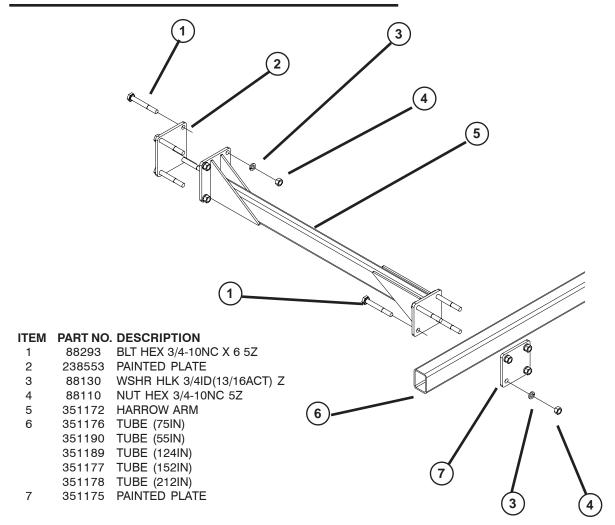
NOTE: THIS IS FOR GENERAL ASSEMBLY INSTRUCTIONS. HARROWS CAN HAVE DIFFERENT SECTION ARANGMENTS.



### **HARROW PLACEMENT**



### **SPIKE TOOTH HARROW MOUNTS**



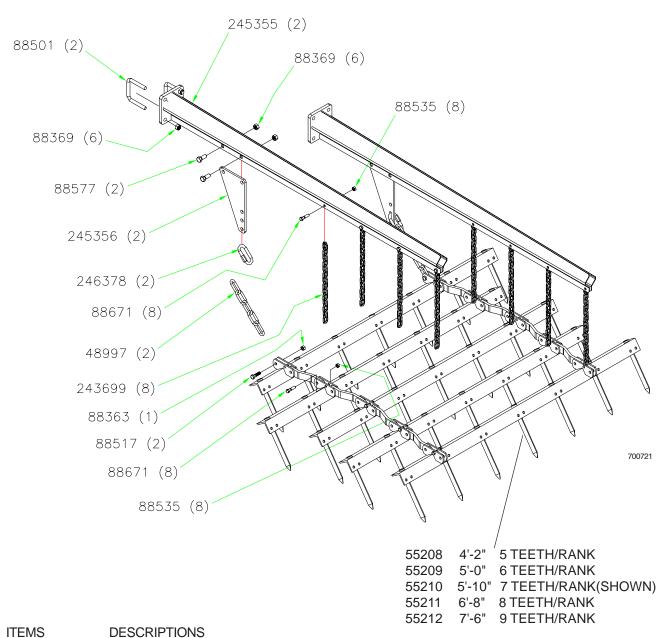
## **SPIKE TOOTH HARROW PLACEMENT**

#### **CENTER LINE**

١	124			- CROSS BAR
ı	50	2	50	- ARM LOCATION (INCH FROM CENTER LINE)
ı		5'10"	5'10"	- SECTION

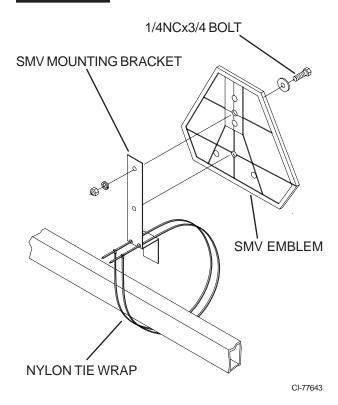
	LEFT WING	MAIN FRAME	RIGHT WING
SoilPro 513 5/30-7/24		50 5 5 50 7'6" 7'6"	
SoilPro 513 7/30-9/24		212 90 54 5 54 90 6'8" 6'8' 6'8"	
SoilPro 513 11/24	75 142 90 6'8"	152 54 5 5 54 5'10" 5'10"	75 90 142 6'8"
SoilPro 513 13/24	75 142 105 7'6"	54 5 54 6'8" 54	75 105 142 7'6"

### **SPIKE TOOTH HARROW SECTION ASSEMBLY**



TT EIVIO	BESSIA TIONS
243699	14 LINK CHAIN
245355	HARROW MOUNT
245356	PLATE (PAINTED)
246378	QUICK LINK - 1/2 INCH
48997	5 LINK CHAIN
88363	NUT 2POSLK 1/2-13NC 5Z
88369	NUT 2POSLK 5/8-11NC 5Z
88501	BLT-U 5/8-11NCX4X4-1/4 Z
88517	BLT HEX 1/2-13NCX1-3/4 5Z
88535	NUT 2POSLK 7/16-14NC 5P
88577	BLT HEX 5/8-11NCX1-1/2 5Z
88671	BLT HEX 7/16-14NCX1-3/4 5Z

# SAFETY



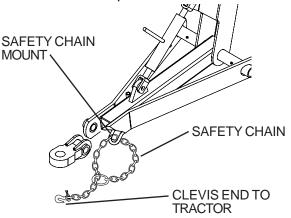
The bracket provided is designed to mount to numerous frame sizes and can be orientated in different positions to avoid interference with implement components.

The SMV emblem is to be secured as near to the rear and centered, or as near to the left of center of implement as practical.

Emblem is to be 2 to 6 feet above the ground measured from the lower edge of the emblem.

Keep safety decals clean. Replace any safety decals that are damaged, destroyed, missing, painted over or can no longer be read. Replacement safety decals are available through your dealer.

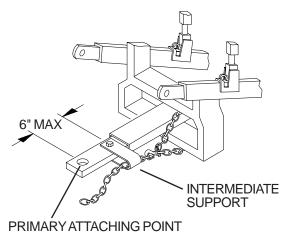
The purpose of the safety chain is to provide an auxiliary attaching system to retain the connection between towing and towed machine in the event of separation of the primary attaching system. The safety chain should be hooked long enough to permit full turns. Unnecessary slack should be taken up.



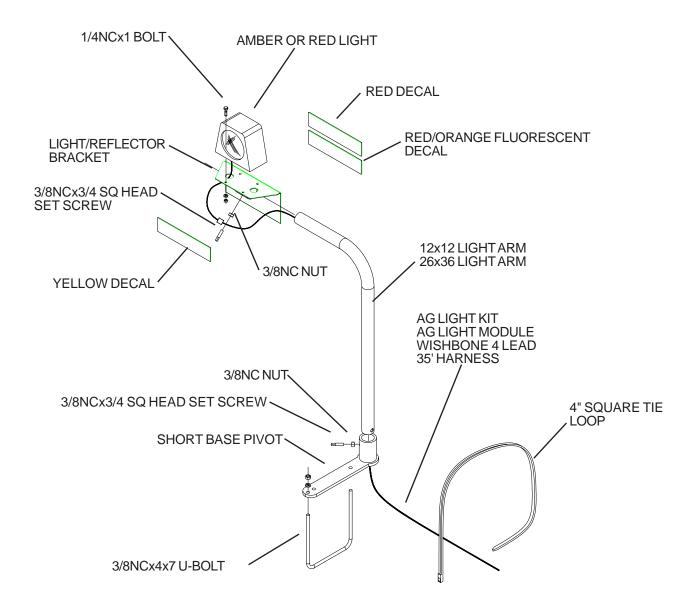
Intermediate support is to be used if there is more than 6" of unsupported chain on either side of the primary attaching point.

The intermediate support should not be mounted more than 6" from the primary attaching point. (See figure below)

The intermediate support is available from your Wil-Rich dealer.



CI-77825



See shank placements for light locations.

### SAFETY DECAL PLACEMENT

