

# ATHENS

## OPERATOR'S MANUAL

MODEL 66  
LIFT-TYPE TANDEM  
DISK HARROW



# Table of Contents

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SECTION	DESCRIPTION	PAGE NUMBER
Section 1	Safety Rules .....	1 - 3
	Safety Signs & General Information .....	1 - 3
	Safety Sign Locations .....	3
Section 2	Assembly .....	4 - 14
	Hitch .....	4,5
	Top Hitch Brace .....	6
	Gang Frames .....	6,7
	Disc Gangs .....	8 - 13
	Scrapers .....	9 - 11
	Cover Disc Parts .....	13
	Balk Buster .....	14
Section 3	Gang Wrench .....	14
	Operation .....	15 - 17
	Leveling .....	15
	Adjusting the Angle .....	16
Section 4	Hitching to the Tractor .....	17
	Lubrication & Maintenance .....	18,19
	Bolts & Cotters .....	18
	Disc Gang .....	18,19
Section 5	Threaded Parts .....	19
	Parts Listing .....	21 - 27
	Table of Contents .....	20





All farm implements are potentially hazardous. There is no substitute for a cautious, safe-minded operator who recognizes the potential hazards and follows reasonable safety practices. The manufacturer has designed this implement to be used with all its safety equipment properly installed and attached to minimize the chance of accidents during operation and transport.



**BEFORE YOU START!!** Read the safety messages on the implement and shown in this manual. Observe the rules of safety and common sense!



**THIS SYMBOL MEANS: ATTENTION! – BECOME ALERT! – YOUR SAFETY IS INVOLVED!**

**WARNING**

Observe all CAUTION, WARNING, &/or DANGER instructions and other reasonable safety practices concerning the operation of this machine. Athens Plow Co., Inc. accepts no responsibility for damages to this machine, any other property damage, &/or bodily injury due to careless or improper operation. *Read and understand your Operator's Manual!*

1. Stop tractor, disengage PTO, lock brakes, wait until all movement has stopped and support raised implement safely before starting to service, unclog, or adjust this implement.
2. Do not allow anyone to ride on the implement. Do not allow anyone on tractor except operator.
3. Make certain that everyone is clear before moving implement or activating any controls that may cause movement of implement, hydraulics, or any components.
4. Operate with increased caution when on slopes where there is a possibility that the tractor could drop into a hole or ditch and overturn.
5. Before operating or moving on highways, clean off reflectors, make certain SMV emblem is clearly visible, install mechanical transport devices, and install safety chain if required by state law. The towing vehicle *must weigh more* than the implement.
6. Maximum transport speed 20 MPH.

999205 (ALL UNITS) ATHENS PLOW CO., INC.

1. Stop tractor, disengage PTO, lock brakes, wait until all movement has stopped and support raised implement safely before starting to service, unclog, or adjust this implement.
2. Do not allow anyone to ride on the implement. Do not allow anyone on tractor except operator.
3. Make certain that everyone is clear of implement before activating any controls that may cause movement of implement, hydraulics, or any components.
4. Operate with extreme caution when on slopes where there is a possibility that the tractor could drop into a hole or ditch and overturn.
5. Before operating or moving on highways, clean off reflectors/lights, make certain that SMV emblem is clearly visible, install mechanical transport devices, and install safety chain if required by state law. The towing vehicle *must weigh more* than the implement.
6. Maximum transport speed 20 MPH.

**Read and understand your Operator's Manual !!!**



1. Make certain that Lock Pins are installed into upper and lower link pins on hitch.
2. Add front end weights as required to maintain enough weight on front wheels for safe steering.
3. Slow down in curves and in rough places to maintain safe steering weight on front wheels.
4. Never start suddenly or lift heavy implements going up steep slopes to prevent loss of safe steering control.
5. Do not lift implement heavier than recommended by tractor manufacturer.
6. Block in place securely before adjusting or working underneath lifted parts.



## CAUTION



Failure to follow safe operating practices can cause tractor to rear up which can cause equipment damage and bodily injury.

**Read operator's manual carefully and completely!**

1. Make certain that Lock Pins are installed into upper and lower link pins on hitch.	3. Slow down in curves and in rough places to maintain safe steering weight on front wheels.	5. Do not lift implement heavier than recommended by tractor manufacturer.
2. Add front end weights as required to maintain enough weight on front wheels for safe steering.	4. Never start suddenly or lift heavy implements going up steep slopes to prevent loss of safe steering control.	6. Block in place securely before adjusting or working underneath lifted parts.

999003 (ALL LIFT EQUIPMENT) ATHENS PLOW, INC.



### **WARNING:** To Prevent Serious Injury or Death:

1. Avoid unsafe operation or maintenance.
2. Do not operate or work on this machine without reading and understanding the operator's manual.
3. If manual is lost, contact your nearest dealer or the dealer in which you purchased your *ATHENS* Disk from for a new manual.



### **WARNING:** To Avoid Injury or Machine Damage:

1. When servicing machine use proper tools and equipment.
2. Refer to operations manual for instructions.

**Read and understand your Operator's Manual!!!**



In addition to the design and configuration of this "Athens" Disc Harrow, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent on the awareness, concern, and proper training of the person or persons involved in the assembly/set-up, transport, operation, storage, and maintenance of this "Athens" Implement. Refer to and become knowledgeable with the Safety Signs/Messages and the operation instructions in each of the appropriate sections of this manual. Pay extra attention to the Safety Signs attached to the "Athens" Disc Harrow.

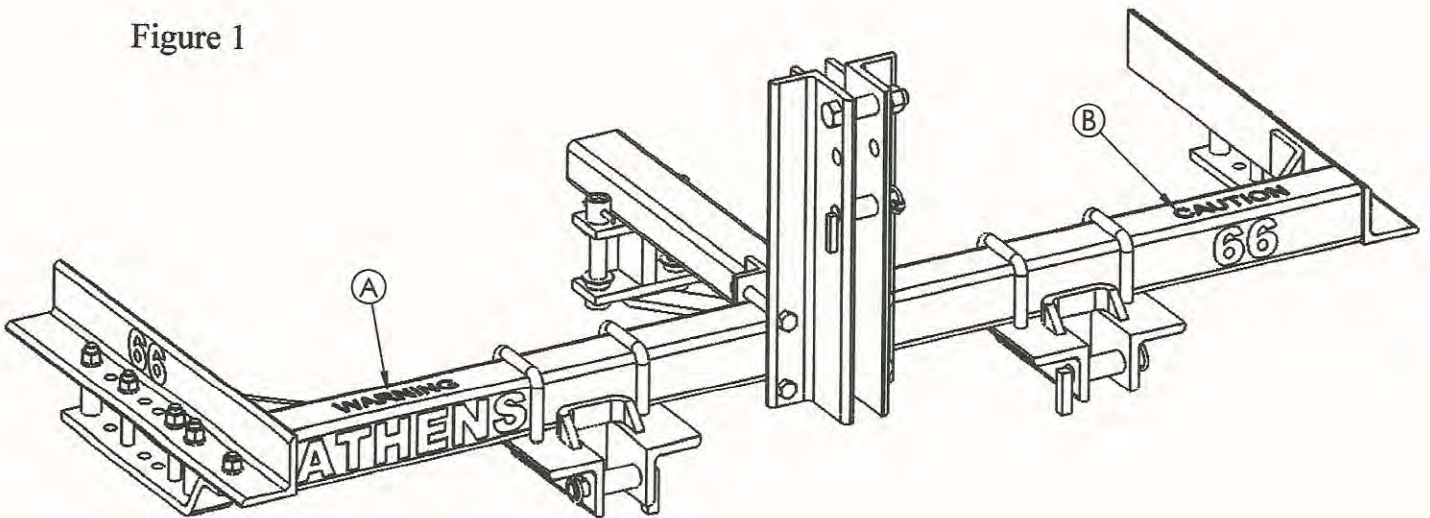
- **REMEMBER:** If any of these Safety Signs are unreadable or missing during any stage of ownership, contact your local dealer for replacements. The location of all Safety Signs/Decals is shown in Figure 1 below.



## SAFETY SIGN LOCATIONS

The types of Safety Signs and locations on the *ATHENS 66* are shown below in Figure 1. Good safety requires that you familiarize yourself with the various Safety Signs, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

Figure 1



A. Refer to Page 1 for details and the listing of rules referencing Safety Sign A.

B. Refer to Page 2 for details and the listing of rules referencing Safety Sign B.

**Read and understand your Operator's Manual !!!**

A) To Assemble the Hitch to the Main Frame (Refer to Figures 2 - 4)

## Top Hitch Assembly

- 1) Attach the Top Hitch (1) to the Hitch Brace Angles on the Main Frame with four  $\frac{3}{4}$  x 6" Hex Bolts (2) and  $\frac{3}{4}$ " Lockwashers and  $\frac{3}{4}$ " Hex Nuts. Tighten all four Hex Nuts to secure Top Hitch. Make sure that the two Lower Hitch Pins (3) and Upper Hitch Pin (4) are installed as shown and secured with the Klik Pins provided.
- 2) **Refer to Section 3, Page 17 for a detailed description on hitching the disk harrow to the tractor.** See Torque Chart (Table 2) located in the Maintenance Section (Section 4) on Page 18.

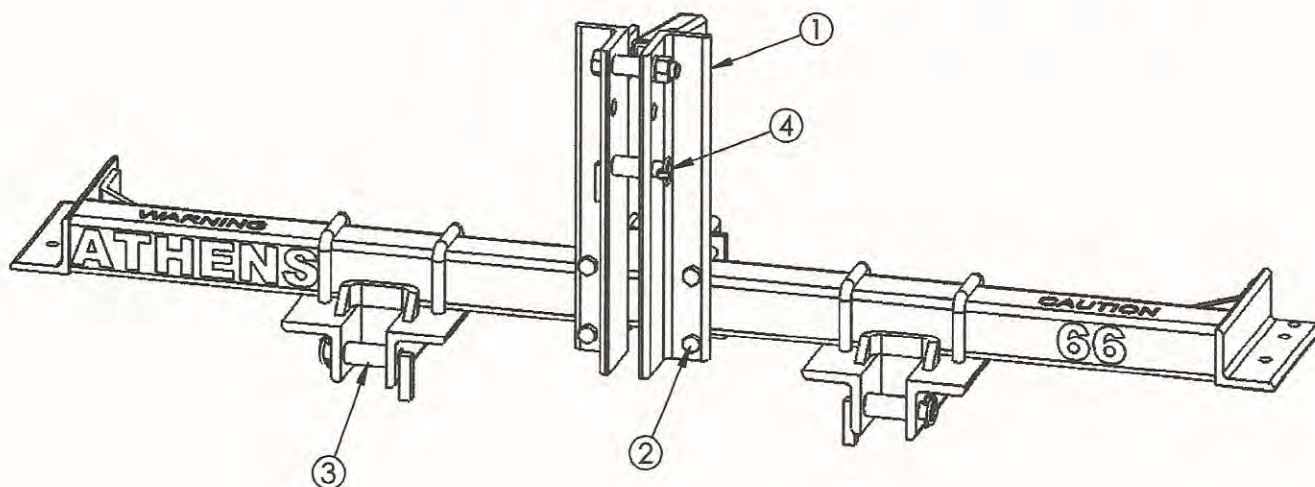


Figure 2

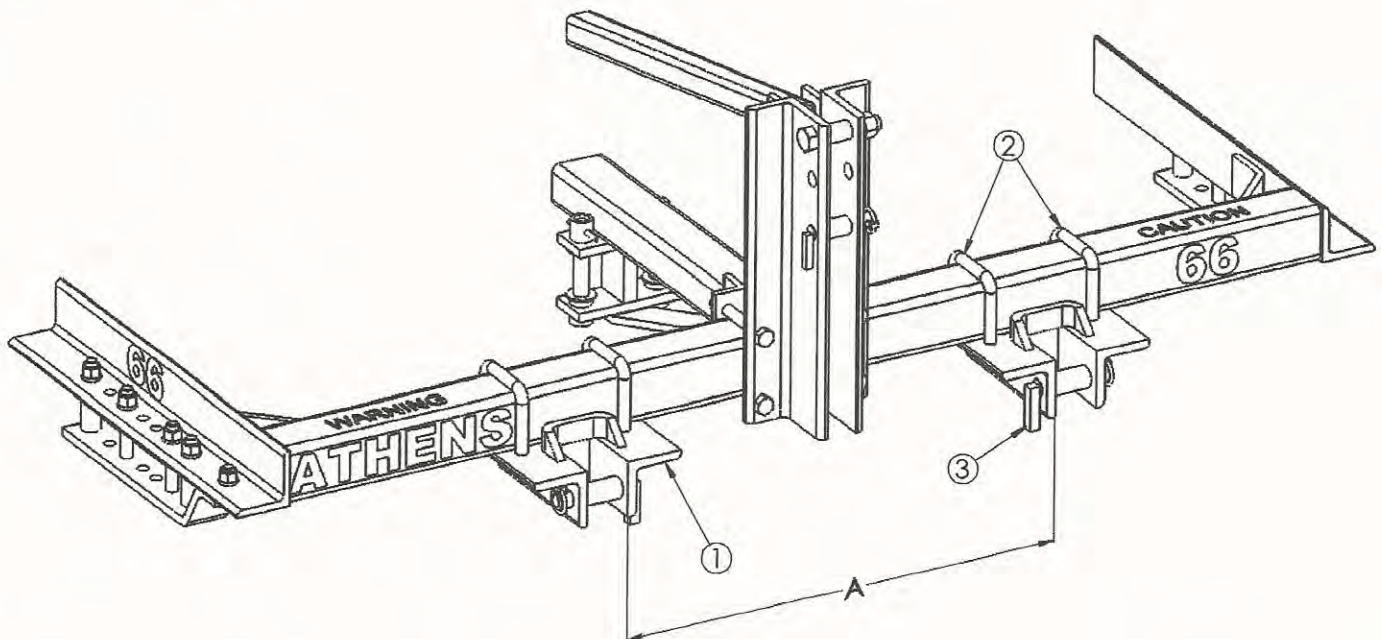


A) To Assemble the Hitch to the Main Frame continued... (Refer to Figure 3)

## Lower Hitch Assembly

- 1) First, attach each Lower Hitch Member (1) to the front of the Main Frame with  $\frac{3}{4}$ " U-Bolts (2) and secure **loosely** with  $\frac{3}{4}$ " Lockwashers and  $\frac{3}{4}$ " Hex Nuts. These parts should be the same distance from the center of the upper hitch and spaced according to the hitch category of the tractor that the unit will be attached to. For Category II and IIIN the Lower Hitch Assemblies are to be spaced 32.44 inches apart. For Category III they are to be 38 inches apart. Dimension A in Figure 3 below illustrates this. Once the desired distance is reached, secure Lower Hitch Members by tightening the  $\frac{3}{4}$ " Lockwashers and  $\frac{3}{4}$ " Hex Nuts. Next, insert the Lower Hitch Pins (3) with Quick Hitch Bushings into the Lower Hitch Members and secure with the Klik Pins provided.

Figure 3

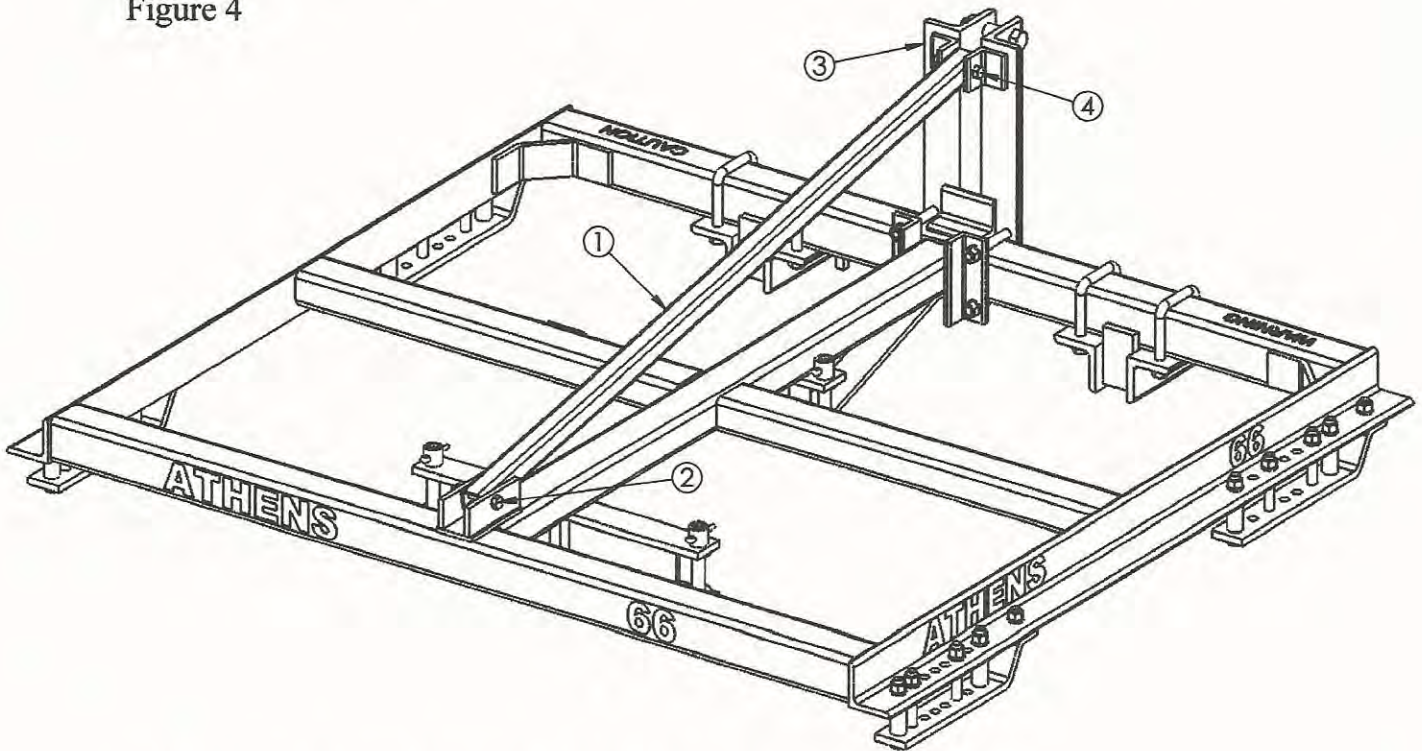




## B) To Assemble the Top Hitch Brace (Refer to Figure 4)

- 1) Attach the Top Hitch Brace Assembly (1) to the Main Frame by placing it between each Rear Anchor Plate and inserting a  $\frac{5}{8}$  x 4" Hex Bolt (2). Secure the bolt with a  $\frac{5}{8}$ " Lockwasher and a  $\frac{5}{8}$ " Hex Nut. Next, connect the Top Hitch Brace to the Top Hitch (3) with a 1 x 5" Hex Bolt (4) and secure it with a 1" Lockwasher and a 1" Hex Nut.

Figure 4



## C) To Attach Gang Frames (Refer to Figure 5)



**WARNING:** Be careful when handling, working on or around, or adjusting this and other machinery. Block the Frames and other parts securely and safely in place. Always have jacks or blocks underneath any raised component(s) and never use any type of hoist by itself!

- **NOTE:** Since the Hitch and Top Hitch Brace are now attached, the Tractor Hydraulics can be used to raise and lower the unit for further assembly.

- 1) Loosen Gang Attaching Bolts (1) enough to slide Gang Frames (2) between the Gang Attaching Plates (3) and the Main Frame. Next, insert the Gang



## C) To Attach Gang Frames continued... (Refer to Figure 5)

### 1) continued...

Anchor Pins (4) in each Gang Frame with a 1" Flatwasher (5) on top of the Gang Frame and a Spacer Bushing (6) with a second 1" Flatwasher underneath. Secure Pins with  $\frac{3}{8}$  x 2" Cotter. Tighten the  $\frac{3}{4}$  x 2  $\frac{1}{4}$ " Hex Bolt on each Gang Attaching Plate and all the  $\frac{3}{4}$  x 5  $\frac{1}{2}$ " Hex Bolts. Be certain to keep Spacer Bushings on Hex Bolts for proper support. Gang Frames are as follows:

WIDTH OF CUT	NUMBER OF DISCS	GANG FRAMES
--------------	-----------------	-------------

10' 6"	30 or 32	55.50"
10' 9"	28	55.50"
12' 2"	32	65.38"
12' 11"	36 or 40	70.38"
13' 6"	36	77.88"
14' 1"	40 or 44	77.88"
15' 0"	40	85.38"
15' 3"	44 or 48	85.38"

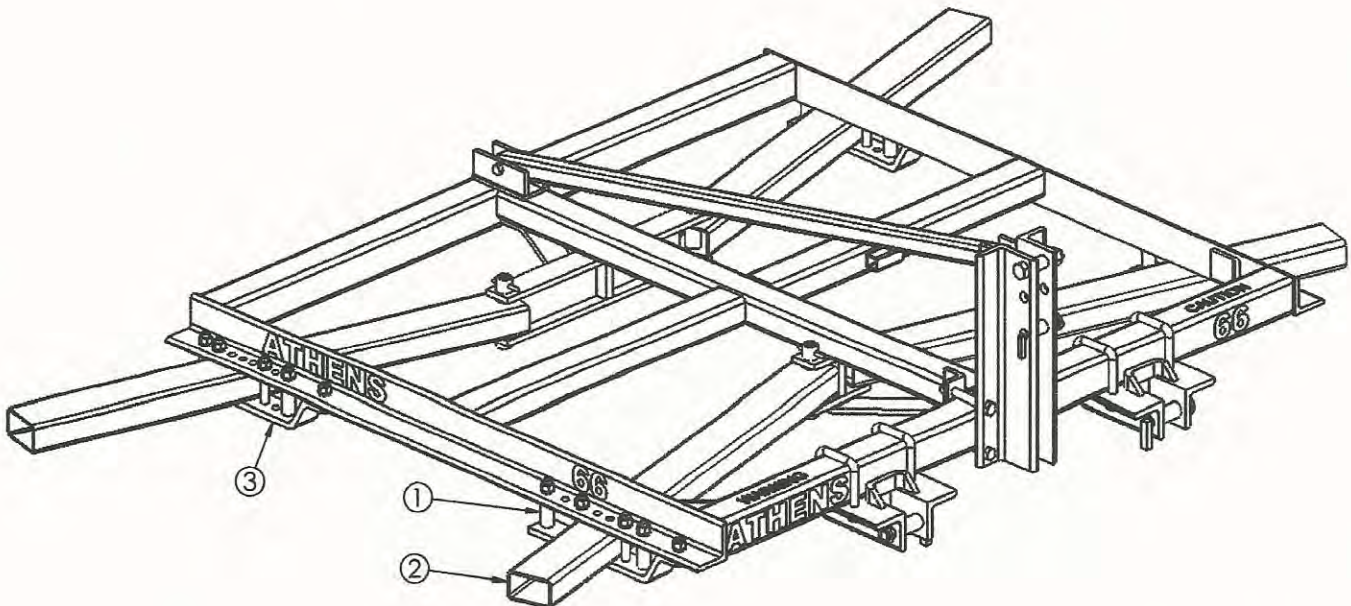
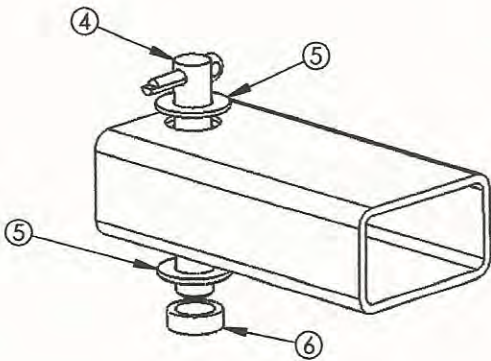


Figure 5

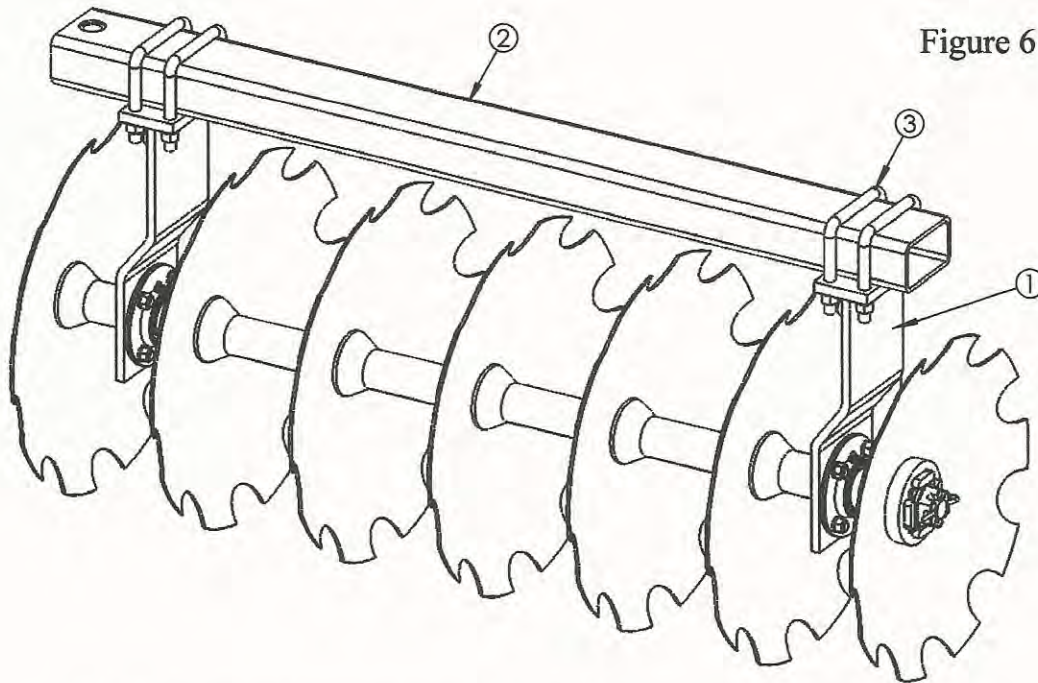


## D) To Attach Disc Gangs (Refer to Figure 6)



**WARNING:** Use gloves when handling Disc Gangs. Disc Gangs are very heavy and sharp, **HANDLE WITH CARE!**

- 1) Disc Gangs are assembled from the factory. Attach Rigid Bearing Hangers (1) to Gang Frame (2) with  $\frac{5}{8}$ " U-Bolts (3), and  $\frac{5}{8}$ " Lockwashers and Hex Nuts. **Make sure the longer leg of the U-Bolt goes toward the rear for Scrapers.** Set the Bearing Hanger Top Plate flush with the bottom side of the Gang Frame. Tighten each U-Bolt equally until both are securely fastened.



The following information is to be used in reassembly if the Disc Gangs are disassembled. Remove all parts from the Disc Axle and line up parts in the order of removal. Put a Disc on the Axle, then a Convex Half Spacer, a Bearing Hanger, a Concave Half Spacer, and a Disc. Next, put a Full Spacer on followed by another Disc. Repeat this process until the next Bearing Hanger location. Then, put another Convex Half Spacer, a Bearing Hanger, and a Concave Half Spacer followed by a Disc. When the last Disc is put on, install an End Washer, End Washer Spacer(s), and the Axle Nut. Secure with a Cotter Pin. Tighten Discs Gangs to 1200 to 1500 ft. lbs. (A 200 lb. Man on a 7 ft. handle equals 1400 ft. lbs.)

- **NOTE:** Page 10 shows the layout of the Bearing Hanger and Scraper locations for the 10' 9" (28 disc) unit.



## E) To Attach Scrapers (Refer to Figure 7)

- 1) Attach Scraper Bar Hangers (1) to the rear side of the Bearing Hanger (2) and under the bearing hanger top plate as shown. **NOTE: Long leg of U-Bolt (3) must be to the rear.** Replace  $\frac{1}{2}$ " Lockwasher and  $\frac{1}{2}$ " Hex Nut on Bearing Hanger U-Bolts and tighten securely. Next, attach Scraper Bar (4) loosely below Scraper Bar Hanger by placing a Scraper Clamp (5) underneath the Scraper Bar and inserting a  $\frac{1}{2} \times 2 \frac{1}{4}$ " Hex Bolt (6) up through the Scraper Bar and the Scraper Bar Hanger. Secure loosely with a  $\frac{1}{2}$ " Lockwasher and  $\frac{1}{2}$ " Hex Nut. Mount Scraper (7) just inside the end of the Scraper Bar (on butt end of disk gang) with two  $\frac{1}{2} \times 2 \frac{1}{4}$ " Carriage Bolts (8) and secure these with two Scraper Clamps (5),  $\frac{1}{2}$ " Lockwashers and  $\frac{1}{2}$ " Hex Nuts. Adjust Scraper close to but not touching the disc blade and tighten securely. Making sure the end of the Scraper Bar is close to the first Scraper tighten both Hex Bolts to secure the Scraper Bar. Install, adjust and tighten remaining Scrapers and Hardware. **NOTE: Do Not Scrape Outside Front or Inside Rear Discs.**

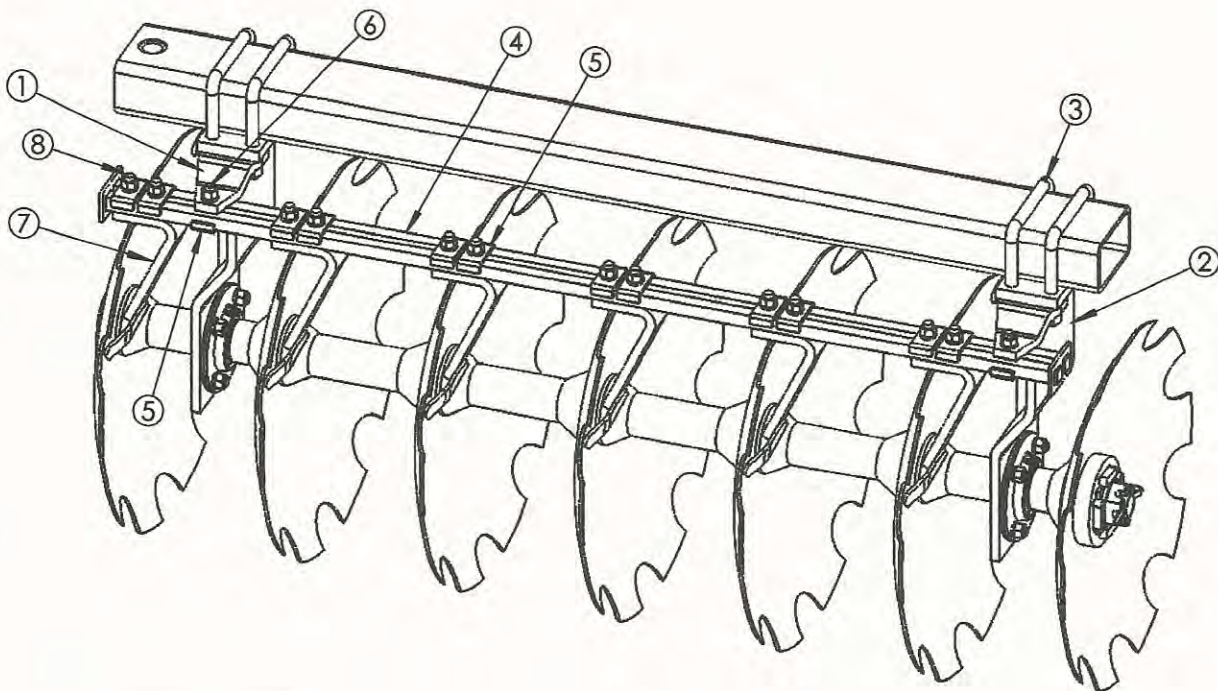


Figure 7



D & E) To Attach Disc Gangs and Scrapers continued... (Refer to Figure 8)

➤ **MODEL 66: 10' 9" 28 Blades with Scrapers and Cover Discs**

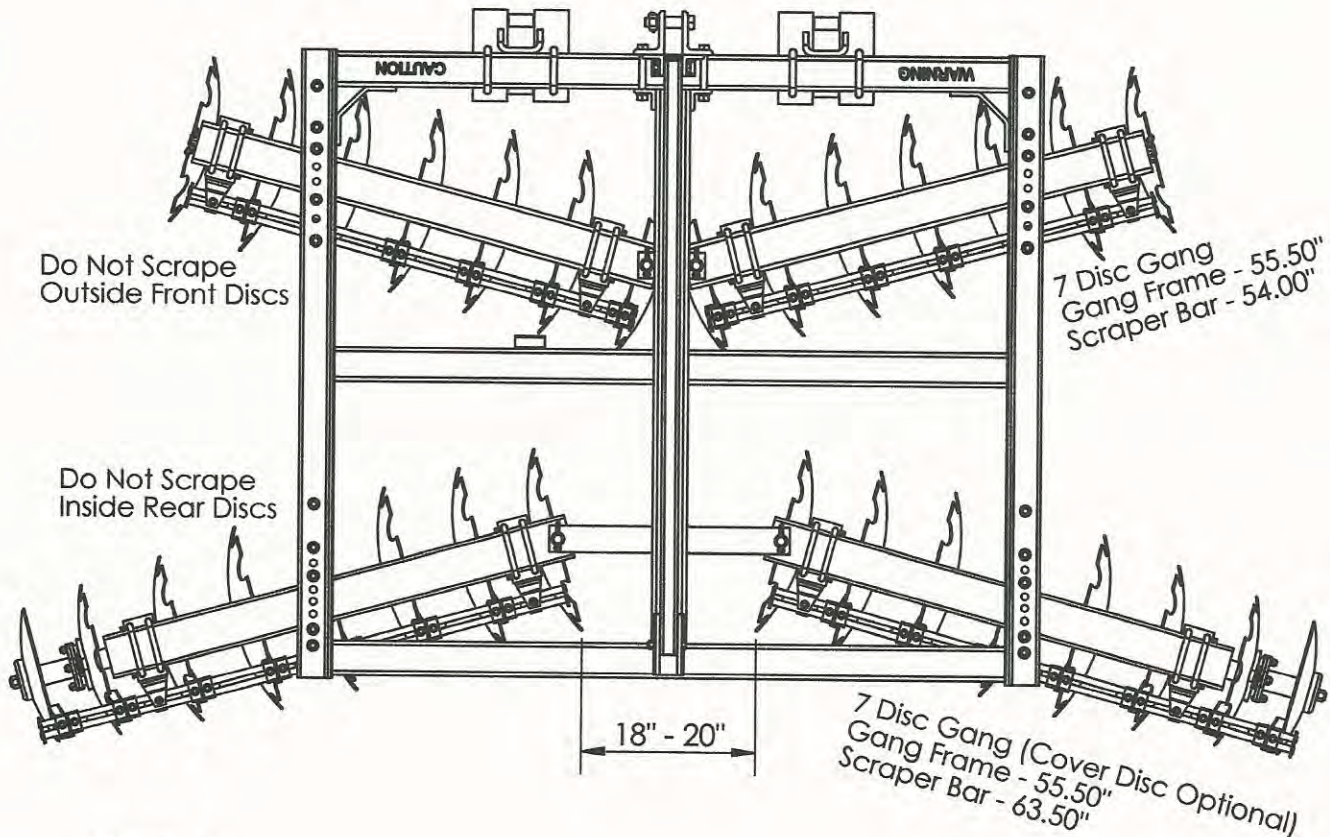


Figure 8

- 1) The *Model 66* is configured in eight different widths of cut with 7 ½" Disc Spacing, 9" Spacing, or a combination of 9" Spacing on the front disc gangs and 7 ½" Spacing on the rear. **Refer to Table 1 for Disc Gang information.** After attaching the Right Front and Left Front Disc Gangs slide the inside two (2) Blades close to but not touching one another as shown in Figure 8 above. Next, attach the Right Rear and Left Rear Disc Gangs and slide the inside two (2) Blades approximately 18 to 20 inches apart as shown in Figure 8. For further information on the positioning of the Disc Gangs refer to the Operation Section of this manual (Section 3).



D & E) To Attach Disc Gangs and Scrapers continued... (Refer to Table 1)

1) continued...

Table 1 below lists the disc gang layouts for all of the configurations of the *Model 66*. One can also find similar information in the Parts Section (Section 5) of this Operators Manual.

**The Model 66 is configured in eight (8) different widths of cut:**

TABLE 1

Width of Cut	Number of Discs	Disc Spacing		Gang Frames	Scraper Bars			
		Front	Rear		Front		Rear	
10' 6"	30	9"	7 ½"	55.50"	54.00"		63.50"	
	32	7 ½"	7 ½"	55.50"	54.00"		63.50"	
10' 9"	28	9"	9"	55.50"	54.00"		63.50"	
12' 2"	32	9"	9"	65.38"	63.50"		73.00"	
12' 11"	36	9"	7 ½"	70.38"	63.50"		73.00"	
	40	7 ½"	7 ½"	70.38"	68.38"		82.50"	
13' 6"	36	9"	9"	77.88"	73.00"		82.50"	
14' 1"	40	9"	7 ½"	77.88"	73.00"		82.50"	
	44	7 ½"	7 ½"	77.88"	82.50"		92.00"	
15' 0"	40	9"	9"	85.38"	Inside	Outside	Inside	Outside
					48.00"	38.63"	48.00"	48.00"
15' 3"	44	9"	7 ½"	85.38"	42.50"	38.63"	48.00"	42.50"
					48	7 ½"	7 ½"	85.38"

➤ **DISC GANG INFORMATION CONTINUED...**

The Front Disc Gang has a single tapered disc on the outside (nut end).

For example: If the *Model 66* is ordered with 22" diameter discs, the outside front discs will be 20" in diameter.

The Rear Gang is equipped with a double taper on the end (cover disc end).

For example: If the *Model 66* is ordered with 22" diameter discs, the last two discs will be 20" and 18" in diameter.

➤ **BEARING LOCATIONS ARE LISTED ON PAGE 12.**



## F) Bearing Locations for the Model 66

### 9" Spacing Front & Rear

A) 28 Disc (10' 9" Harrow)

( x ( ( ( ( ( x ( Front  
7 disc gang  
) x ) ) ) ) x ) Rear  
7 disc gang

C) 36 Disc (13' 6" Harrow)

( x ( ( ( x ( ( ( ( x ( Front  
9 disc gang  
) x ) ) ) ) x ) ) ) x ) Rear  
9 disc gang

### 9" Spacing Front & 7 ½" Rear

A) 30 Disc (10' 6" Harrow)

( x ( ( ( ( ( x ( Front  
7 disc gang  
) x ) ) ) ) ) x ) Rear  
8 disc gang

C) 40 Disc (14' 1" Harrow)

( x ( ( ( x ( ( ( ( x ( Front  
9 disc gang  
) x ) ) ) ) ) x ) ) ) x ) Rear  
11 disc gang

### 7 ½" Spacing Front & Rear

A) 32 Disc (10' 6" Harrow)

( x ( ( ( ( ( ( x ( Front  
8 disc gang  
) x ) ) ) ) ) x ) Rear  
8 disc gang

C) 44 Disc (14' 1" Harrow)

( x ( ( ( ( x ( ( ( ( ( x ( Front  
11 disc gang  
) x ) ) ) ) ) x ) ) ) ) x ) Rear  
11 disc gang

B) 32 Disc (12' 2" Harrow)

( x ( ( ( x ( ( ( x ( Front  
8 disc gang  
) x ) ) ) ) x ) ) x ) Rear  
8 disc gang

D) 40 Disc (15' 0" Harrow)

( x ( ( ( x ( ( x ( ( ( x ( Front  
5 disc gang 5 disc gang  
) x ) ) ) ) x ) ) x ) ) x ) Rear  
6 disc gang 4 disc gang

B) 36 Disc (12' 11" Harrow)

( x ( ( ( x ( ( ( x ( Front  
8 disc gang  
) x ) ) ) ) ) x ) ) x ) Rear  
10 disc gang

D) 44 Disc (15' 3" Harrow)

( x ( ( ( x ( ( x ( ( ( x ( Front  
5 disc gang 5 disc gang  
) x ) ) ) ) ) x ) ) x ) ) x ) Rear  
7 disc gang 5 disc gang

B) 40 Disc (12' 11" Harrow)

( x ( ( ( ( x ( ( ( ( x ( Front  
10 disc gang  
) x ) ) ) ) ) x ) ) ) x ) Rear  
10 disc gang

D) 48 Disc (15' 3" Harrow)

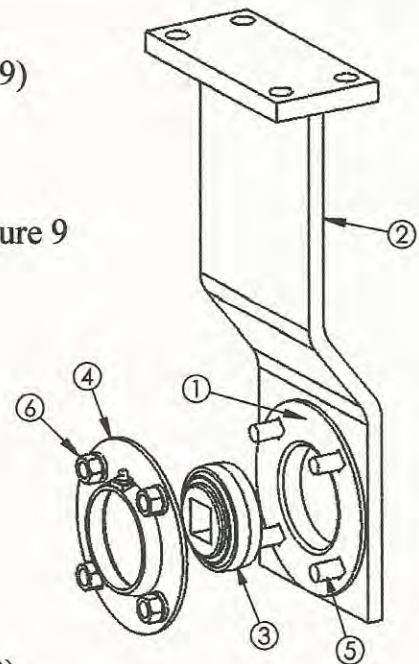
( x ( ( ( ( x ( ( x ( ( ( ( x ( Front  
6 disc gang 6 disc gang  
) x ) ) ) ) ) x ) ) x ) ) ) x ) Rear  
7 disc gang 5 disc gang



## G) To Assemble Flangette Ball Bearings (Refer to Figure 9)

- 1) First, place the Flangette without the Grease Fitting (1) on the Bearing Hanger (2). Next, insert the Ball Bearing (3) into the Flangette and then place the Flangette with the Grease Fitting (4) over the Bearing and flush with the first Flangette. Finally, insert the  $\frac{1}{2} \times 2 \frac{1}{2}$ " Carriage Bolts (5) through the Bearing Hanger, Flangettes, and Ball Bearing and secure with  $\frac{1}{2}$ " Lockwashers and  $\frac{1}{2}$ " Hex Nuts (6). Tighten all Hex Nuts equally until assembly is secured.

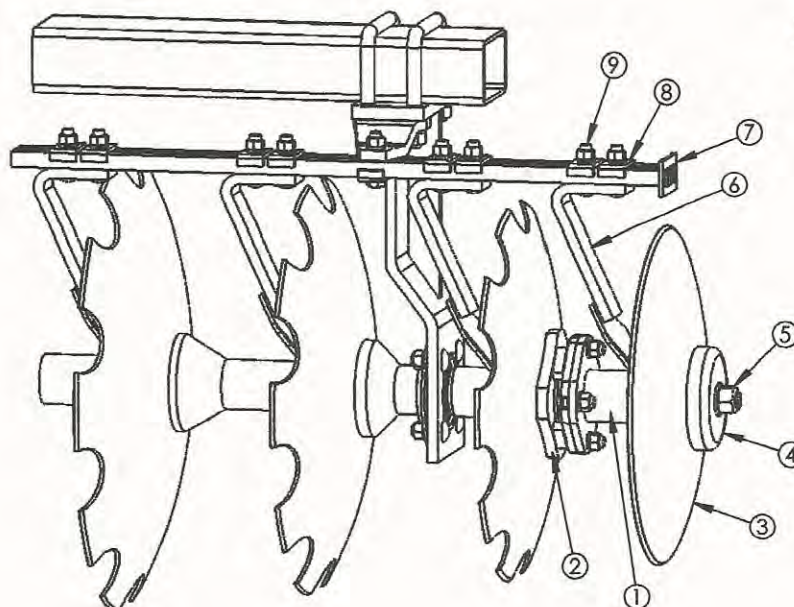
Figure 9



## H) To Attach Cover Disc with Scraper (Refer to Figure 10)

- 1) Attach Cover Disc Mounting Assembly (1) to Cover Disc Mounting Plate (2) (which is welded to the axle butt plate) with four  $\frac{1}{2} \times 1 \frac{3}{4}$ " Carriage Bolts, and  $\frac{1}{2}$ " Hex Nuts and  $\frac{1}{2}$ " Lockwashers. Next, attach the Cover Disc (3) then a Cover Disc End Washer (4) and secure with a  $\frac{3}{4}$ " Flatwasher and a  $\frac{3}{4}$ " Locknut (5). Tighten securely. Bolt the Cover Disc Scraper (6) to the Scraper Bar (7) with two Scraper Clamps (8) and two  $\frac{1}{2} \times 2 \frac{1}{4}$ " Carriage Bolts (9), and secure with  $\frac{1}{2}$ " Lockwashers and  $\frac{1}{2}$ " Hex Nuts.

Figure 10





## I) To Attach Balk Buster (Refer to Figure 11)

- 1) Attach Balk Buster Assembly (1) to Main Frame with four  $\frac{1}{2}$  x  $5\frac{1}{2}$ " Hex Bolts, and  $\frac{1}{2}$ " Hex Nuts and  $\frac{1}{2}$ " Lockwashers (2). Position the Balk Buster Assembly behind where the Front Disc Gangs attach to the Main Frame.

**Note:** The Balk Buster Assembly has two sets of holes for depth adjustment. Next, insert the Tine (3) into the Balk Buster Assembly and secure the Tine with a  $\frac{5}{8}$  x 2" Hex Bolt and a  $\frac{5}{8}$ " Locknut (4). Tighten securely. Finally, bolt a 6" Sweep or a 2" Cultivator Point (not furnished) to the Tine with  $\frac{1}{2}$  x 2  $\frac{1}{2}$ " Plow Bolts,  $\frac{1}{2}$ " Flatwashers,  $\frac{1}{2}$ " Lockwashers and  $\frac{1}{2}$ " Locknuts.

- **NOTE:** Position the Sweep or the Point on top of the Tine, then insert both of the Plow Bolts. Finally, place a Flatwasher, a Lockwasher, and a Locknut (in that order) on each Plow Bolt and tighten securely.

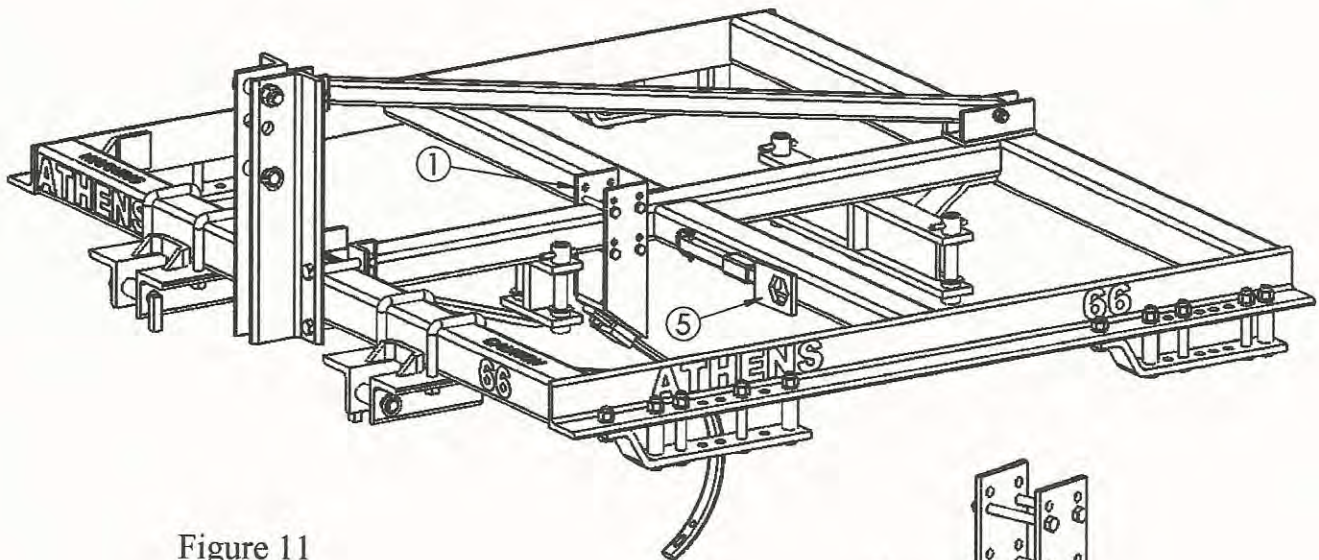
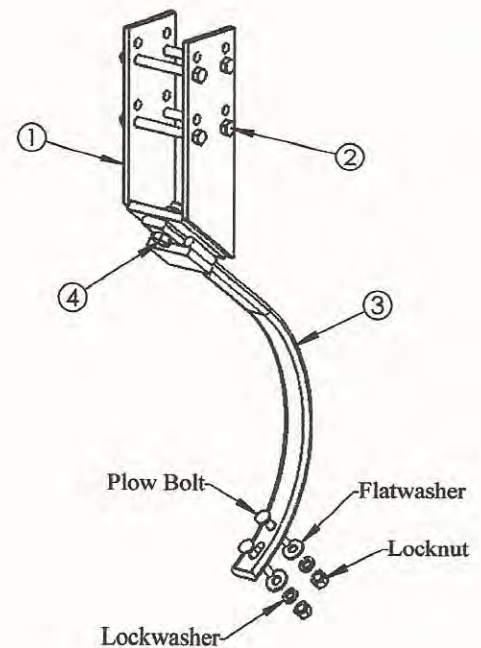


Figure 11

## J) To Attach Gang Wrench (Refer to Figure 11)

- 1) Insert Disc Gang Wrench (5) into Gang Wrench Holder welded on the Main Frame, as shown above. Use a Lock Clip to secure the Gang Wrench.





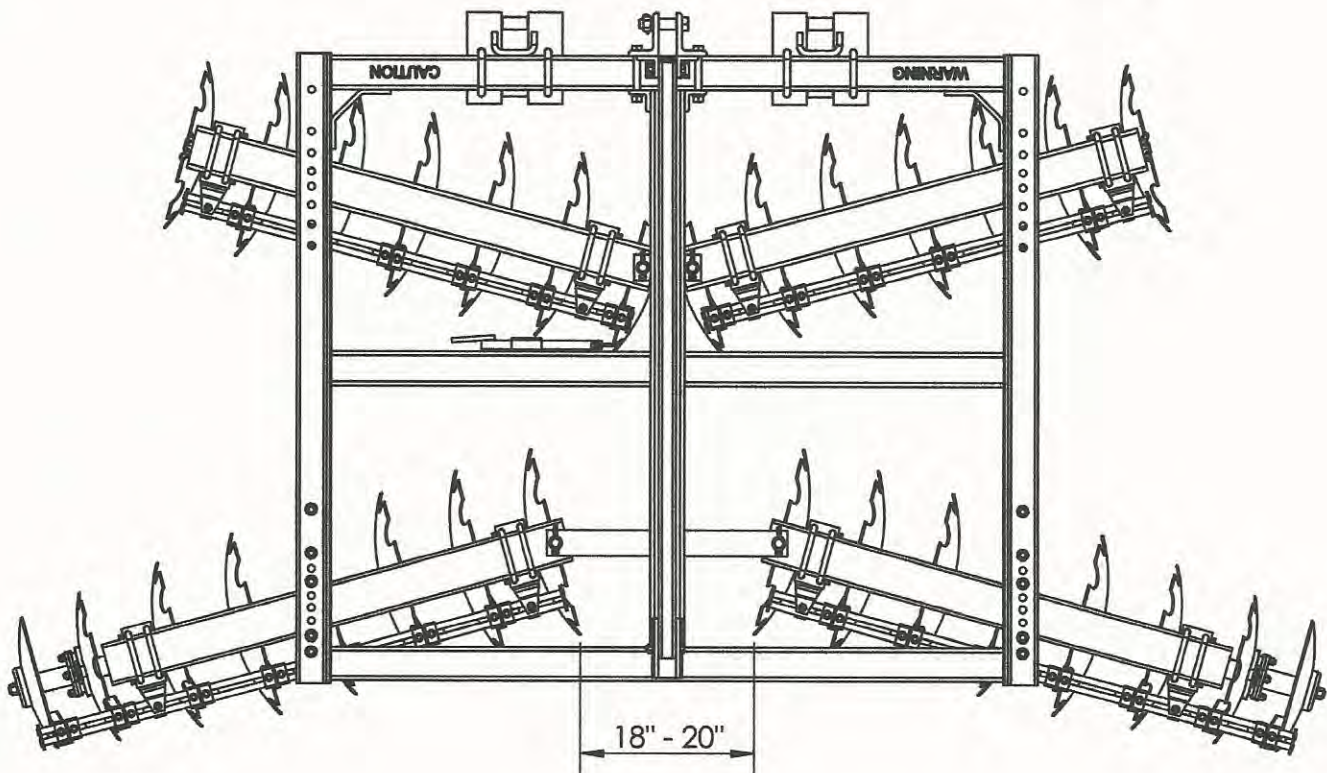
BEFORE OPERATING THE HARROW BE CERTAIN THAT:

- All Bolts are tight, Cotters are spread, and all Klik Pins are inserted.
- Disc Gang Axles are tight and Gangs turn freely.
- Disc Gang Bearings are lubricated (use a good quality Lithium-base grease).
- Threaded Adjusting Rods are coated and all other Grease Fittings are lubricated.

A) Leveling the Disk Harrow (Refer to Figure 12)

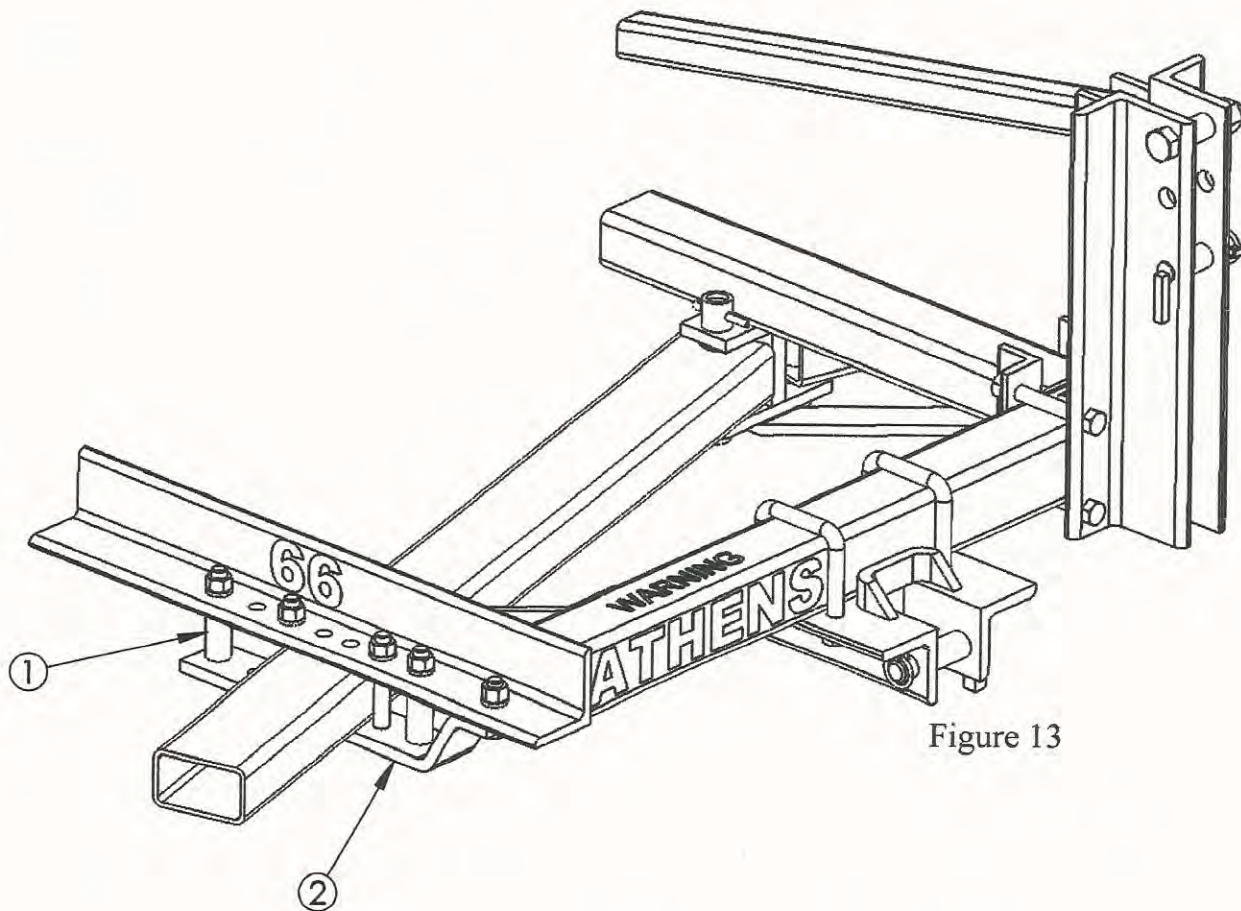
- 1) Leveling of the implement is set by adjusting the tractor's top link and lift links. The disk harrow should be set to run level side-to-side to prevent side draft and uneven disking. Front to rear level is set by adjusting tractor top link.
- 2) To avoid leaving a furrow or a ridge adjust the front and rear gangs as shown in Figure 12 below. Slide the inside discs of the Front Disc Gangs close to but not touching one another. Next, position the inside rear discs approximately **18 to 20 inches** apart from one another as shown below.

Figure 12



## B) Adjusting the Angle (Refer to Figure 13)

- 1) Loosen the  $\frac{3}{4}$  x  $5\frac{1}{2}$ " Gang Attaching Bolts (1) on the Main Frame. Then, remove the Bolts and the Gang Attaching Plate (2) and slide the Disc Gang into the preferred angle and replace the Gang Attaching Plates,  $\frac{3}{4}$  x  $5\frac{1}{2}$ " Gang Attaching Bolts, and the  $\frac{3}{4}$ " Lockwashers and Hex Nuts. Keep the Gang Attaching Bushings in place as shown. Tighten all bolts securely.

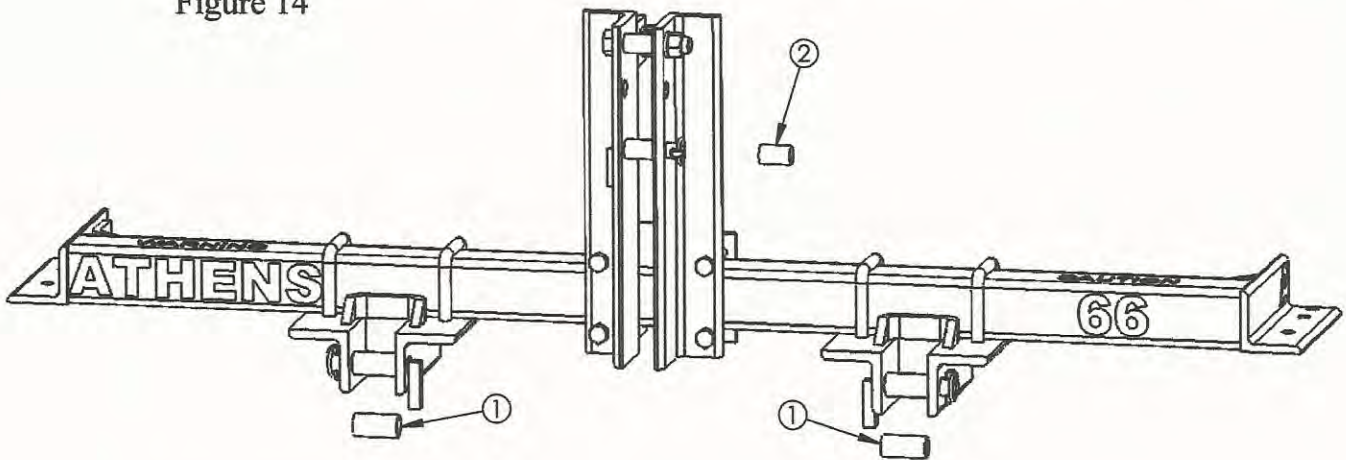




## C) Hitching to the Tractor with Category II Free Link (Refer to Figure 14)

- 1) **Category II Free Link:** Remove Cat. II Quick Hitch Bushing (1) (1.44 O.D. x 2.94") from Lower Hitch Pins. Attach each Lower Link Arm and secure Lower Hitch Pins with Lock Pins. The lower set of holes are meant for lower profile tractors and the upper set of holes are for higher profile tractors. Finally, remove Cat. II Quick Hitch Bushing (2) (1.25 O.D. x 2.03") from the Top Link Pin and attach Top Link to the hole in the Top Hitch. Install Lock Pin securely.

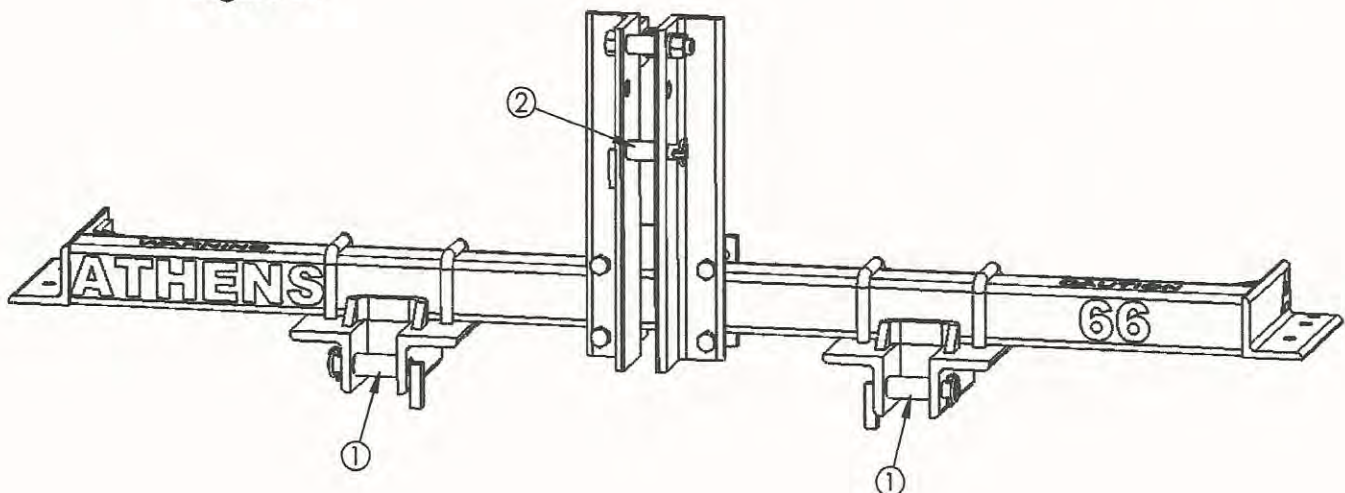
Figure 14



## D) Hitching to the Tractor with Category II Quick Hitch (Refer to Figure 15)

- 1) **Category II Quick Hitch:** Install Cat. II Quick Hitch Bushings (1) to Lower Link Arms and secure with Lock Pins. Next, install Cat. II Quick Hitch Bushing (2) (1.25 O.D. x 2.03") on the Top Link Pin and secure with Lock Pin.

Figure 15








## A) Bolts and Cotters

- 1) Tighten all Bolts securely before entering the field. Check Bolt tightness at regular intervals. Replace any damaged Bolt or Cotter immediately to prevent loss or any further damage from occurring.
- **HARDWARE:** Check Hardware tightness regularly. Loose Hardware is easily lost or bent, causes excessive wear on parts, and increases the chance of failure. Use the Torque Chart (Table 2) below, to tighten Hardware. Failure to maintain is not covered by manufacturer's warranty.

TABLE 2

RECOMMENDED TORQUE IN FT-LBS (Nm) COARSE AND FINE THREADS			
<div style="display: flex; justify-content: space-around; align-items: center;"> <span>2 </span> <span>5 </span> <span>8 </span> </div>			
Bolt Diameter	Plain Head	Three Dashes	Six Dashes
1/4	Not Used	10 (14)	14 (19)
5/16	Not Used	20 (27)	30 (41)
3/8	Not Used	35 (47)	50 (68)
7/16	35 (47)	55 (75)	80 (108)
1/2	55 (75)	85 (115)	120 (163)
9/16	75 (102)	130 (176)	175 (237)
5/8	105 (142)	170 (230)	240 (325)
3/4	185 (251)	300 (407)	425 (576)
7/8	160 (217)	445 (603)	685 (929)
1	250 (339)	670 (908)	1030 (1396)
1 1/8	330 (447)	910 (1234)	1460 (1979)
1 1/4	480 (651)	1250 (1695)	2060 (2793)

## B) Disc Gang

- 1) Make certain that Disc Gang Assembly Nut is tightened securely (750 ft. lbs.). Tighten with the gang wrench provided and a five-foot extension (a 150 lb. man on a five foot wrench equals 750 ft. lbs.).
- **Note:** Before tightening Disc Gang, loosen Bearing Hangers slightly to allow Bearing Hangers to be re-positioned while tightening. After re-tightening Bearing Hangers, make sure that Disc Gang turns freely.



**WARNING:** A loose Axle Nut can cause failure to the Axle and Spacers, and destroy or lead to complete Bearing failure.



## B) Disc Gang continued... (Refer to Figure 16)

- 2) Lubricate Disc Gang Bearings before operating the first time, every 40 hours of operation, and at the beginning and end of each season with a good quality clean Lithium-Based Bearing Grease.

➤ **NOTE:** Lubricate Disc Gang Bearings until grease shows between Bearing and Flangettes before operating. Grease will force dirt out, which increases the life of the Bearing. Clean Grease Gun and Fitting before lubrication begins.

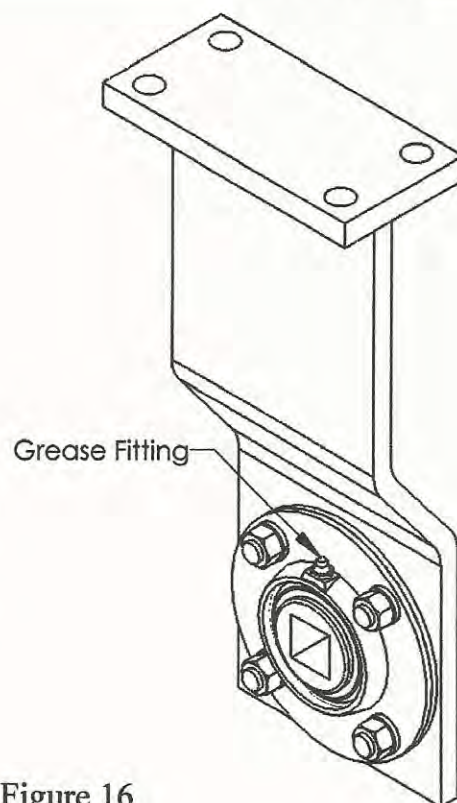


Figure 16

## C) Threaded Parts (Refer to Figure 17)

- 1) For long life, rust prevention, and ease of adjustment, coat all threaded Rods with grease every 40 hours and at the beginning and end of each season. If the Disk Harrow is stored outside, grease all threaded Rods each time the Harrow is to be parked for several days.

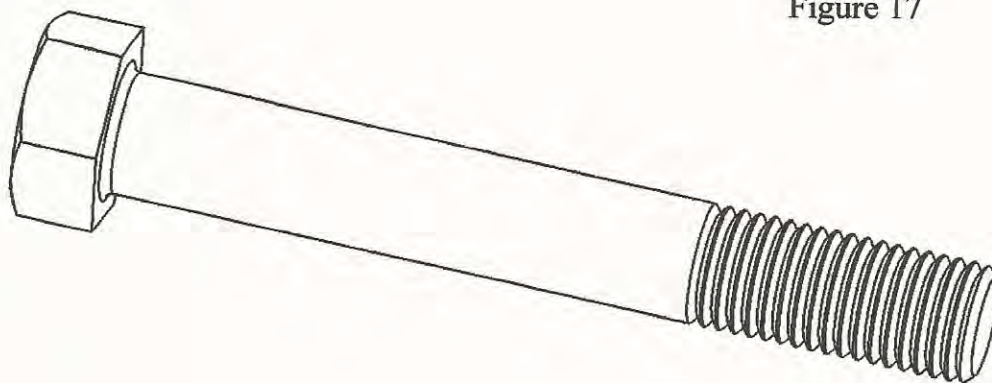


Figure 17





Table of Contents

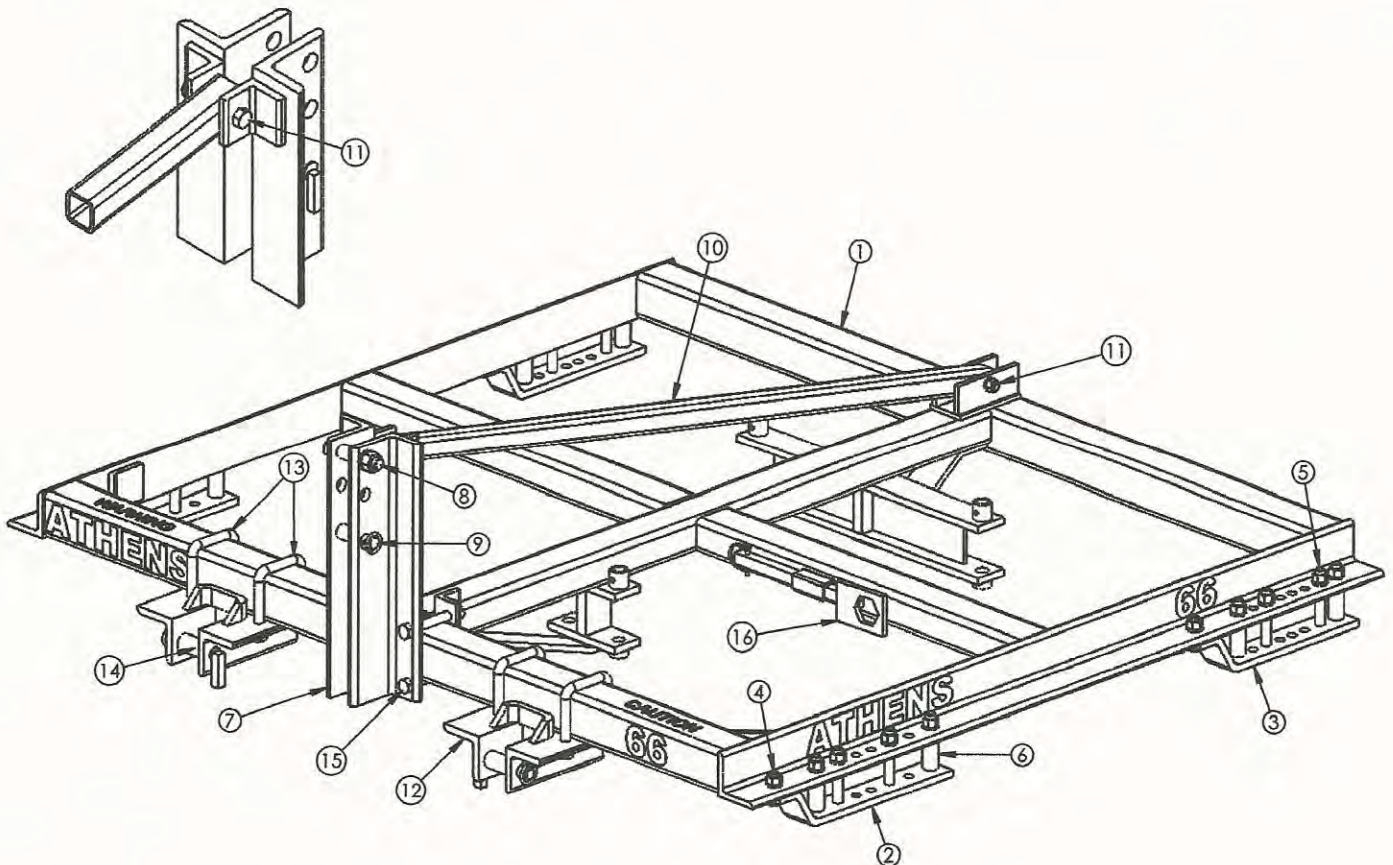
DESCRIPTION	PAGE NUMBER
Main Frame and Hitch .....	21
Disc Gangs .....	22,23
Scrapers and Scraper Bars .....	24,25
Cover Disc Parts .....	26
Balk Buster .....	27





## MAIN FRAME AND HITCH

Ref.	Part No.	Description	Ref.	Part No.	Description
1	20806	Main Frame	10	20807	Top Hitch Brace
2	20809	Front Gang Attaching Plate	11	80240	Hex Bolt $\frac{5}{8}$ x 4"
3	20810	Rear Gang Attaching Plate		81015	$\frac{5}{8}$ " Lockwasher
4	80158	Hex Bolt $\frac{3}{4}$ x 2 $\frac{1}{4}$ "		80610	$\frac{5}{8}$ " Hex Bolt
	81025	$\frac{3}{4}$ " Lockwasher	12	20778	Lower Hitch Assembly
	80625	$\frac{3}{4}$ " Hex Nut	13	17499	U-Bolt
5	80239	Hex Bolt $\frac{3}{4}$ x 5 $\frac{1}{2}$ "		81025	$\frac{3}{4}$ " Lockwasher
6	20808	Gang Attaching Bushing		80625	$\frac{3}{4}$ " Hex Nut
7	20772	Top Hitch	14	20780	Lower Hitch Pin
8	80210	Hex Bolt 1 x 5"		20284	Lock Pin
	81705	1" Lockwasher		17511	Cat. II Quick Hitch Bushing
	80686	1" Hex Nut	15	80182	Hex Bolt $\frac{3}{4}$ x 6"
9	20507	Upper Hitch Pin		81025	$\frac{3}{4}$ " Lockwasher
	20284	Lock Pin		80625	$\frac{3}{4}$ " Hex Nut
	17464	Cat. II Quick Hitch Bushing	16	18445	Gang Wrench
				12058	Lock Clip

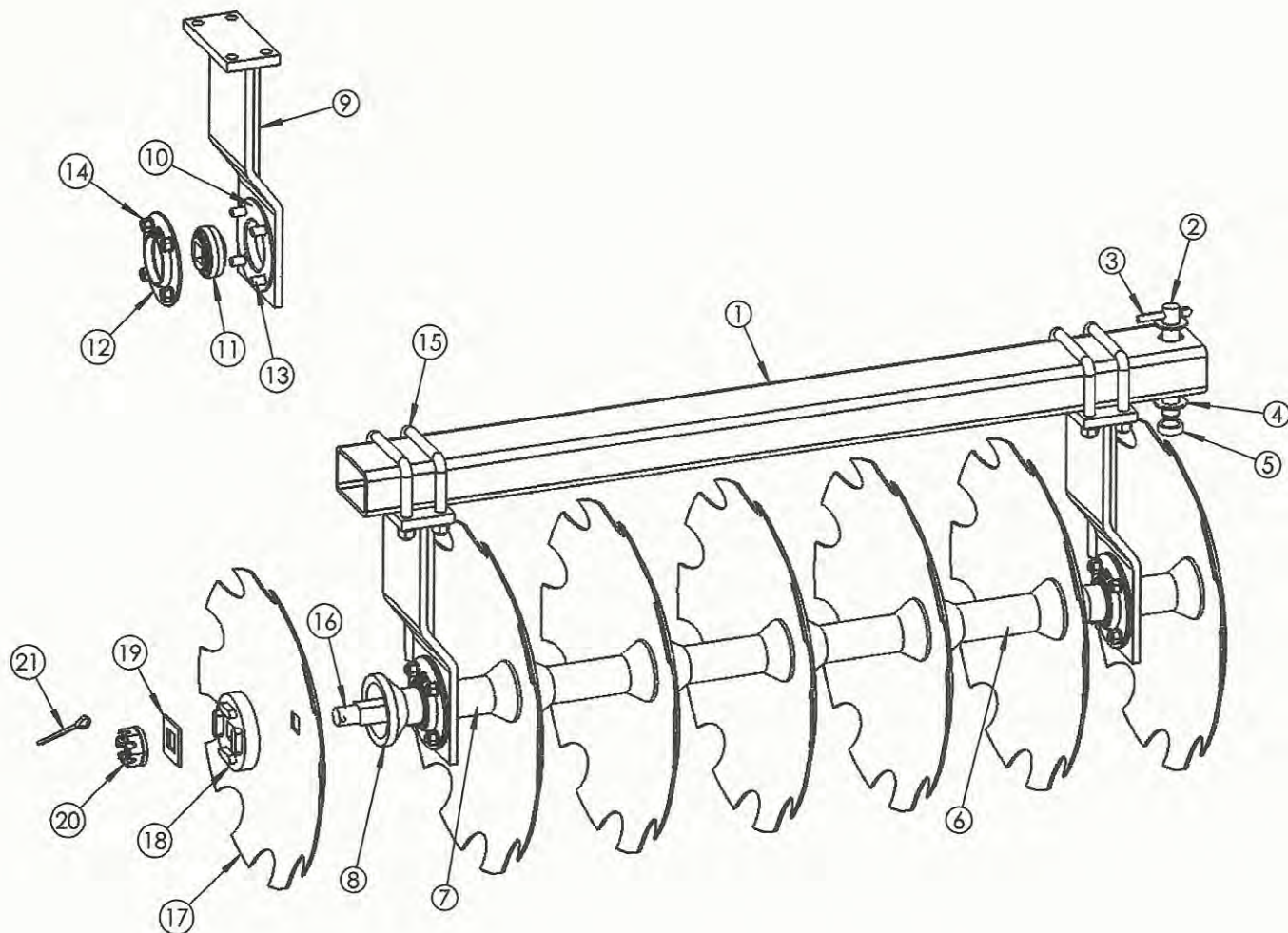




## 66 DISC GANG REPAIR PARTS

Ref. No.	Part No.	Quantity				Quantity				Quantity				Description
		7 1/2" Spacing				9" Spacing				9" Front & 7 1/2" Rear				
		32	40	44	48	28	32	36	40	30	36	40	44	
1	19085	4				4				4				Gang Frame, 55 1/2"
	20790		4								4			Gang Frame, 70 3/8"
	20786						4							Gang Frame, 65 3/8"
	20787			4				4				4		Gang Frame, 77 7/8"
	20788				4				4				4	Gang Frame, 85 3/8"
2	18048	4	4	4	4	4	4	4	4	4	4	4	4	Gang Anchor Pin
3	81415	4	4	4	4	4	4	4	4	4	4	4	4	Cotter, 3/8 x 2"
4	81230	8	8	8	8	8	8	8	8	8	8	8	8	Flat Washer, 1" SAE ZP
5	19151	4	4	4	4	4	4	4	4	4	4	4	4	Gang Leveling Bushing
6	17527					16	20	20	24	8	10	10	12	Full Spacer, 9"
	17784	20	28	28	24					10	14	14	16	Full Spacer, 7 1/2"
7	17526					8	12	12	12	4	6	6	6	Convex Half Spacer, 9"
	17783	8	12	12	16					4	6	6	6	Convex Half Spacer, 7 1/2"
8	17525	8	8	12	16	8	12	12	12	8	12	12	12	Concave Half Spacer
9	18775	8	12	12	16	8	12	12	16	8	12	12	16	Bearing Hanger
10	17993	8	12	12	16	8	12	12	16	8	12	12	16	Flangette w/o Fitting
11	70504	8	12	12	16	8	12	12	16	8	12	12	16	Relube Ball Bearing
12	17992	8	12	12	16	8	12	12	16	8	12	12	16	Relube Flangette
	11610	8	12	12	16	8	12	12	16	8	12	12	16	Grease Fitting, 1/8"
13	80321	32	48	48	64	32	48	48	64	32	48	48	64	Carriage Bolt, 1/2 x 1 1/2"
14	81005	32	48	48	64	32	48	48	64	32	48	48	64	Lock Washer, 1/2" ZP
	80590	32	48	48	64	32	48	48	64	32	48	48	64	Hex Nut, 1/2" ZP
15	18776	16	24	24	32	16	24	24	32	16	24	24	32	Bearing Hanger U-Bolt
	81015	32	48	48	64	32	48	48	64	32	48	48	64	Lock Washer, 5/8"
	80610	32	48	48	64	32	48	48	64	32	48	48	64	Hex Nut, 5/8"
16	15550				4									6 x 7 1/2" Axle
	17576				2								2	7 x 7 1/2" Axle
	17585	2												8 x 7 1/2" Axle
	18757		2											10 x 7 1/2" Axle
	18759			2										11 x 7 1/2" Axle
	17792				2								2	5 x 7 1/2" Axle, Cover Disc
	17793	2								2				8 x 7 1/2" Axle, Cover Disc
	18762		2								2			10 x 7 1/2" Axle, Cover Disc
	18763			2								2		11 x 7 1/2" Axle, Cover Disc
	17574								4				4	5 x 9" Axle
	17576								2					6 x 9" Axle
	17578					2				2				7 x 9" Axle
	18753						2				2			8 x 9" Axle
	18755							2				2		9 x 9" Axle
	17789								2					4 x 9 Axle, Cover Disc
	17791					2								7 x 9 Axle, Cover Disc
	18760						2							8 x 9 Axle, Cover Disc
	18761							2						9 x 9 Axle, Cover Disc

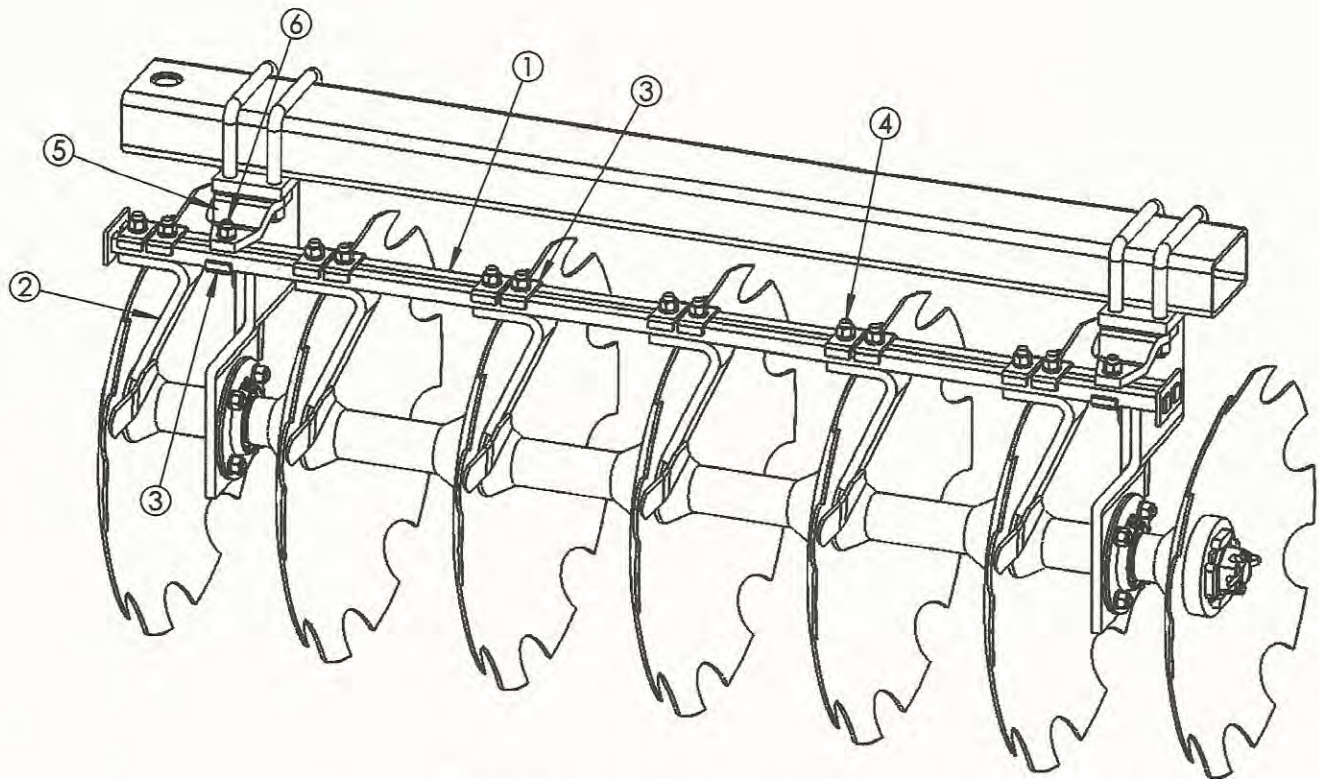




66 DISC GANG REPAIR PARTS

Item No	Part No	Quantity				Quantity				Quantity				Description
		7 1/2" Spacing				9" Spacing				9" Front & 7 1/2" Rear				
		32	40	44	48	28	32	36	40	30	36	40	44	
17	15620	As Required												Disc, 22" C/O x .157 x 1.13
	15866													Disc, 20" C/O x .138 x 1.13
	15986													Disc, 18" C/O x .134 x 1.13
	15664													Disc, 22" SM x .157 x 1.13
	15966													Disc, 20" SM x .138 x 1.13
	15985													Disc, 18" SM x .134 x 1.13
18	16436	4	4	4	8	4	4	4	4	4	4	4	4	End Washer
19	16437	As Required												End Washer Spacer
20	17099	4	4	4	8	4	4	4	4	4	4	4	4	Disc Assembly Nut
21	81395	4	4	4	8	4	4	4	4	4	4	4	4	Cotter, 1/4 x 2 1/2"



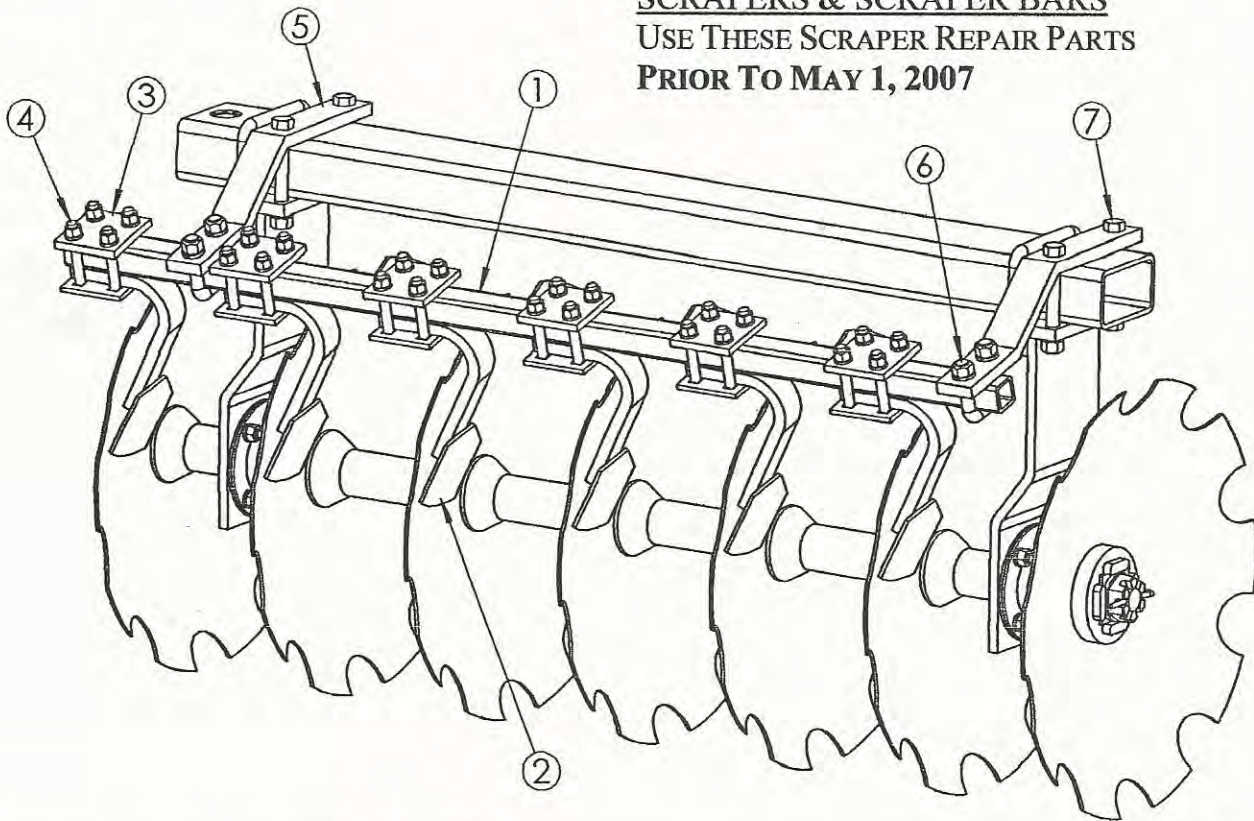


SCRAPER & SCRAPER BARS

Item No	Part No	Quantity				Quantity				Quantity				Description
		7 1/2" Spacing				9" Spacing				9" Front & 7 1/2" Rear				
		32	40	44	48	28	32	36	40	30	36	40	44	
1	15958								2				2	Scraper Bar, 38.63"
	15517				4								4	Scraper Bar, 42.50"
	15961				4				6				2	Scraper Bar, 48.00"
	13590	2				2				2				Scraper Bar, 54.00"
	16391	2				2	2			2	2			Scraper Bar, 63.50"
	16674		2											Scraper Bar, 68.38"
	16393						2	2			2	2		Scraper Bar, 73.00"
	16395		2	2				2				2		Scraper Bar, 82.50"
	16336			2										Scraper Bar, 92.00"
2	16530	14	18	20	22	12	14	16	18	13	16	18	20	Right Scraper
	16531	14	18	20	22	12	14	16	18	13	16	18	20	Left Scraper
3	16527	64	84	92	104	56	68	76	88	60	76	84	96	Scraper Clamp
4	80327	56	72	80	88	48	56	64	72	52	64	72	80	Carriage Bolt, 1/2 x 2 1/4"
	80590	64	84	92	104	56	68	76	88	60	76	84	96	Hex Nut, 1/2" ZP
	81005	64	84	92	104	56	68	76	88	60	76	84	96	Lockwasher, 1/2" ZP
5	19136	8	12	12	16	8	12	12	16	8	12	12	16	Scraper Bar Mounting Plate
6	80218	8	12	12	16	8	12	12	16	8	12	12	16	Hex Bolt, 1/2 x 1 1/4"

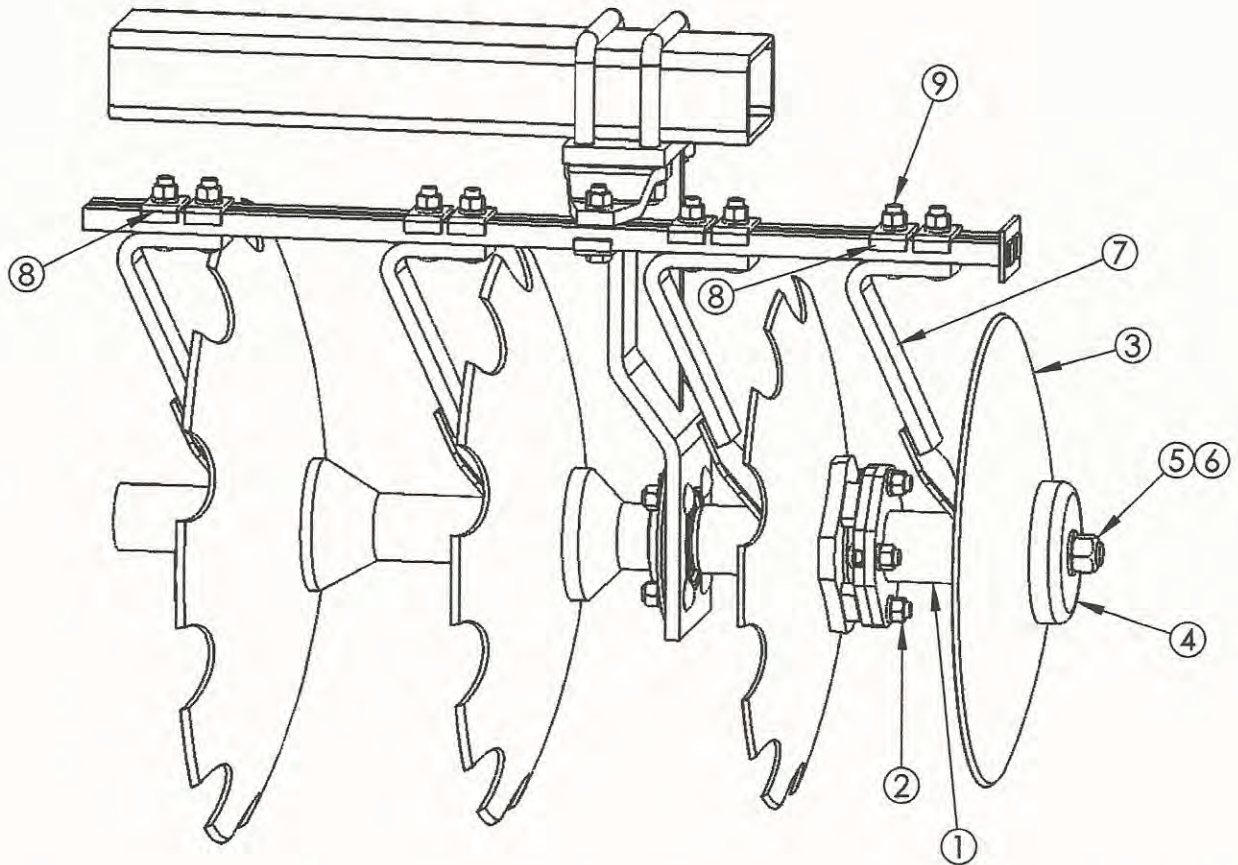


**SCRAPERS & SCRAPER BARS**  
**USE THESE SCRAPER REPAIR PARTS**  
**PRIOR TO MAY 1, 2007**



Item No	Part No	Quantity 7 1/2" Spacing				Quantity 9" Spacing				Quantity 9" Front & 7 1/2" Rear				Description
		32	40	44	48	28	32	36	40	30	36	40	44	
1	20730	2				2				2				Scraper Bar, 54.50"
	21703	2				2				2				Scraper Bar, 64.00"
	20732		2				2				2			Scraper Bar, 69.50"
	20733							2				2		Scraper Bar, 74.00"
	20734			2			2							Scraper Bar, 79.00"
	20735		2						2		2		2	Scraper Bar, 83.00"
	20736				2			2						Scraper Bar, 88.00"
	20737			2					2			2		Scraper Bar, 91.00"
	20738				2								2	Scraper Bar, 100.00"
2	20689	14	18	20	22	12	14	16	18	13	16	18	20	Right Scraper
	20690	14	18	20	22	12	14	16	18	13	16	18	20	Left Scraper
3	21844	28	36	40	44	24	28	32	36	26	32	36	40	Scraper Top Plate
4	80335	112	144	160	176	96	112	128	144	104	128	144	160	Carriage Bolt, 1/2 x 3 1/2"
	80590	112	144	160	176	96	112	128	144	104	128	144	160	Hex Nut, 1/2"
	81005	112	144	160	176	96	112	128	144	104	128	144	160	Lockwasher, 1/2"
5	20741	8	8	12	12	8	8	12	12	8	12	12	12	Scraper Bar Hanger
6	20676	8	8	12	16	8	8	12	12	8	8	12	16	Scraper Bar U-Bolt
	80865	16	16	24	32	16	16	24	24	16	16	24	32	Lock Nut, 5/8"
7	80154	16	16	24	32	16	16	24	24	16	16	24	32	Hex Bolt, 5/8 x 5"
	80610	16	16	24	32	16	16	24	24	16	16	24	32	Hex Nut, 5/8"
	81015	32	32	48	64	32	32	48	48	32	32	48	64	Lockwasher, 5/8"





COVER DISC PARTS

Reference	Part No.	Description
1	17126	Cover Disc Mounting Assy.
2	80322	½ x 1 ½" Carriage Bolt
	81005	½" Lockwasher
	80590	½" Hex Nut
3	18693	Cover Disc, 16 x 1.12 SM
4	17117	End Washer
5	81205	Flat Washer, ¾" SAE ZP
6	80870	Lock Nut, ¾" ZP
7	16530	Cover Disc Scraper, Left Rear
	16531	Cover Disc Scraper, Right Rear
8	16527	Scraper Clamp
9	80327	½ x 2 ¼" Carriage Bolt
	81005	½" Lockwasher
	80590	½" Hex Nut



## BALK BUSTER

Item No.	Part No.	Description
1	20767	Balk Buster
2	80123	Hex Bolt $\frac{1}{2}$ x $5\frac{1}{2}$ "
	81005	$\frac{1}{2}$ " Lockwasher
	80590	$\frac{1}{2}$ " Hex Nut
3	20281	Tine
4	80130	Hex Bolt $\frac{5}{8}$ x 2"
	80865	$\frac{5}{8}$ " Locknut
5	80451	$\frac{1}{2}$ x $2\frac{1}{2}$ " Plow Bolt
6	81170	$\frac{1}{2}$ " Flatwasher
7	81005	$\frac{1}{2}$ " Lockwasher
8	80864	$\frac{1}{2}$ " Locknut

