

# ATHENS

## OPERATOR'S MANUAL

MODEL 65  
LIFT-TYPE TANDEM  
DISK HARROW

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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.

## BEFORE YOU START!!

Read the safety messages on the implement and shown in your manual. Observe the rules of safety and common sense!

**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 before moving implement or activating any controls that may cause movement of implement, hydraulics, or any components.
4. Operate with extreme cation 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 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.

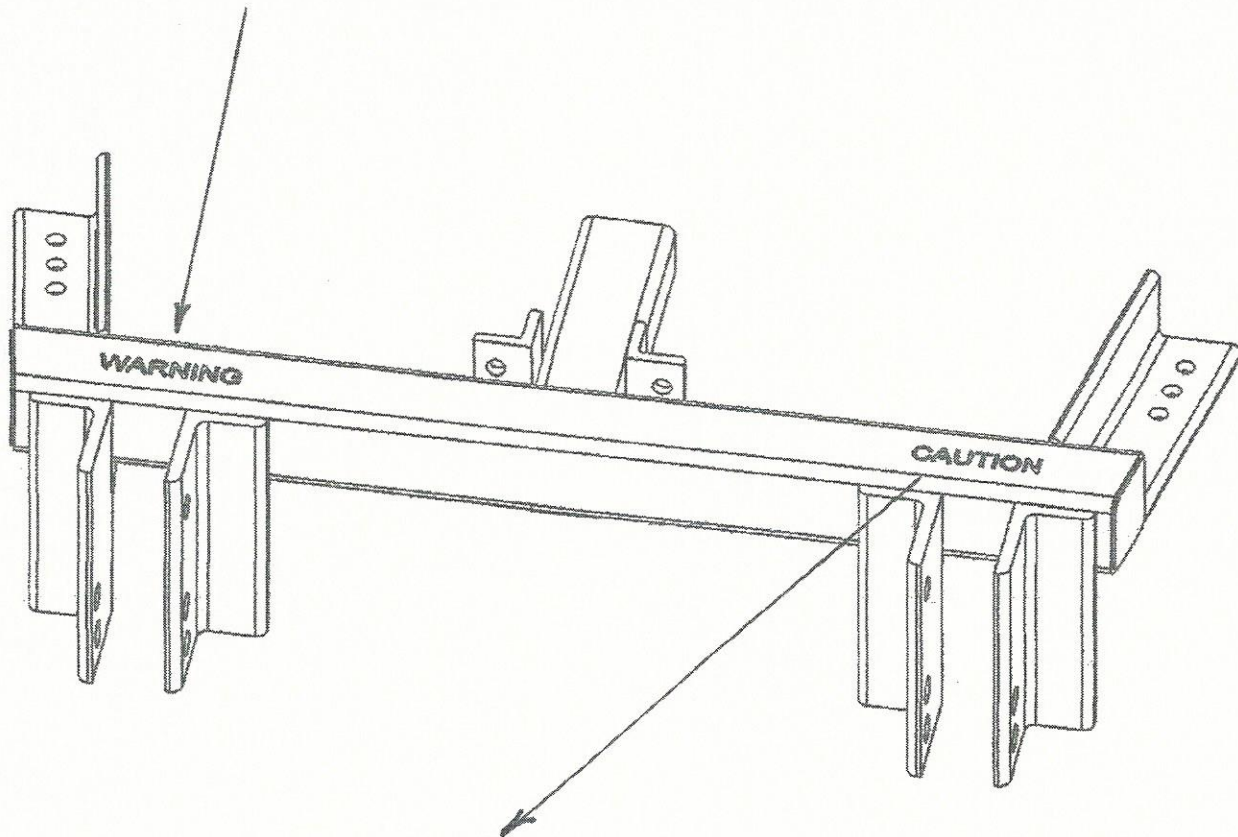
**Read and understand your Operator's Manual!!!**

## ⚠ 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, unclose 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.

890203 (ALL UNITS) ATHENS PLOW CO., INC.



## ⚠ CAUTION

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

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

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.

890203 (ALL LIFT EQUIPMENT) ATHENS PLOW, INC.

➤ If WARNING or CAUTION Decal is missing or damaged contact your nearest dealer for a replacement immediately!

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

In addition to the design and configuration of this *ATHENS* Lift-Type Tandem Disc Harrow, including Safety Signs, 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/Decals and the operation instructions in each of the appropriate sections of this manual. Pay extra attention to the Safety Signs attached to your *ATHENS* Model 65. If any of these Safety Signs/Decals are lost or damaged during any stage of ownership or before, contact your local dealer for replacements. The locations and verbiage of these Safety Decals are detailed on pages 2, 3, and 4 of Section 1.

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

## A) To Assemble the Hitch to the Main Frame (Refer to Figure 1)

- 1) Attach the Top Hitch (1) to the Hitch Brace Angles (2) on the Main Frame with four  $\frac{3}{4}$  x 6" Hex Bolts (3) 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 (4) and Upper Hitch Pin (5) are installed as shown and secured with the Klik Pins provided. **Refer to Section 3, Page 19 for a detailed description on hitching the disk harrow to the tractor.** See Torque Chart (Table 1) located in the Maintenance Section (Section 4) on Page 20.

SHOWN: CAT. II  
QUICK HITCH

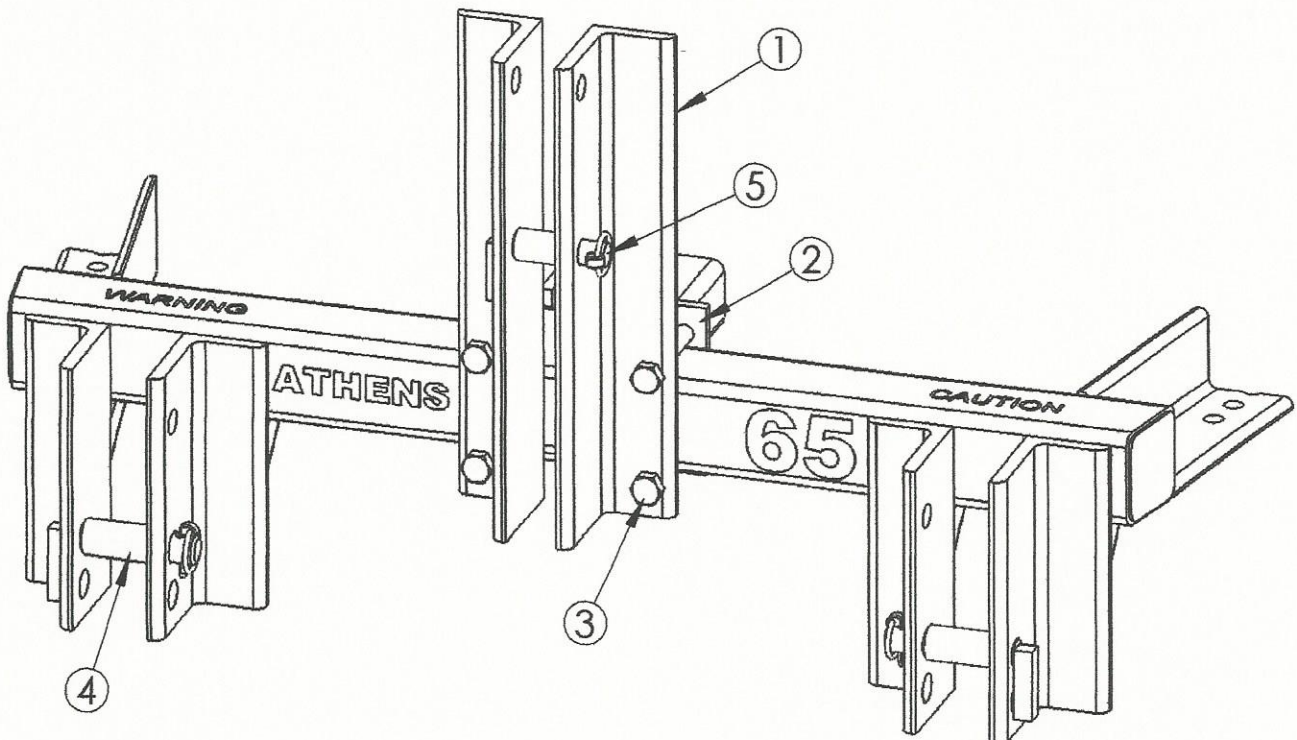


Figure 1

## B) To Assemble the Top Hitch Brace (Refer to Figure 2)

- 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.

- Notice that the Gang Wrench is stored on top of the Hitch Brace and a Lock Clip is used to secure it.

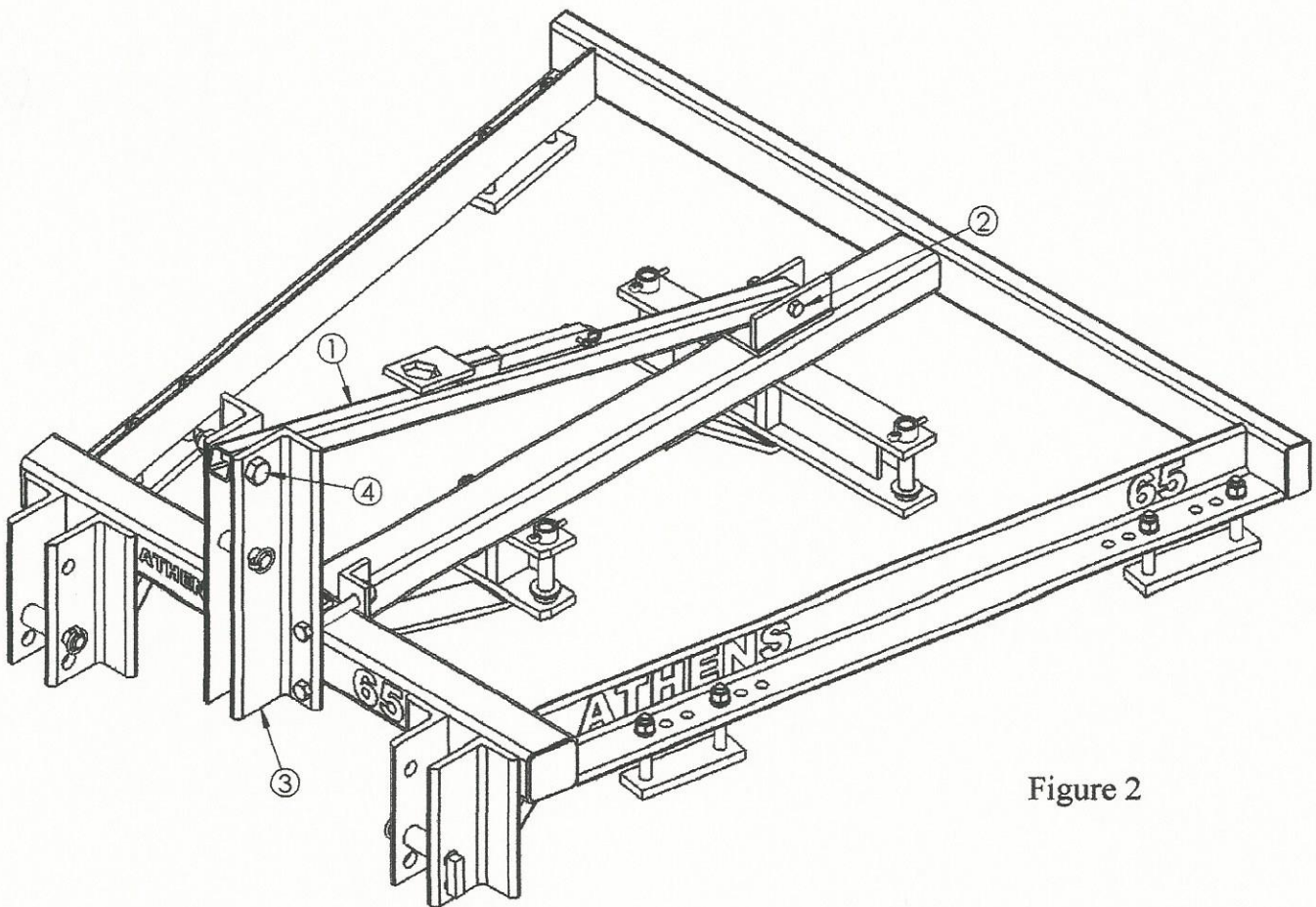


Figure 2



### C) To Attach Gang Frames (Refer to Figure 3)

- **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) Connect the Gang Attaching Plates (1) to the Main Frame with  $\frac{3}{4}$  x 5  $\frac{1}{2}$ " Hex Bolts (2) and secure them loosely with  $\frac{3}{4}$ " Lockwashers and  $\frac{3}{4}$ " Hex Nuts. Then, slide each Gang Frame (3) through the Gang Attaching Plates as shown. Next, insert the Gang Anchor Pin (4) 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 all  $\frac{3}{4}$  x 5  $\frac{1}{2}$ " Hex Bolts. Gang Frames are as follows:

WIDTH OF CUT	NUMBER OF DISCS	GANG FRAMES	
		Front	Rear
8' 0"	20	37"	47"
8' 4"	22	37"	47"
9' 6"	24 or 26	47"	55 $\frac{1}{2}$ "

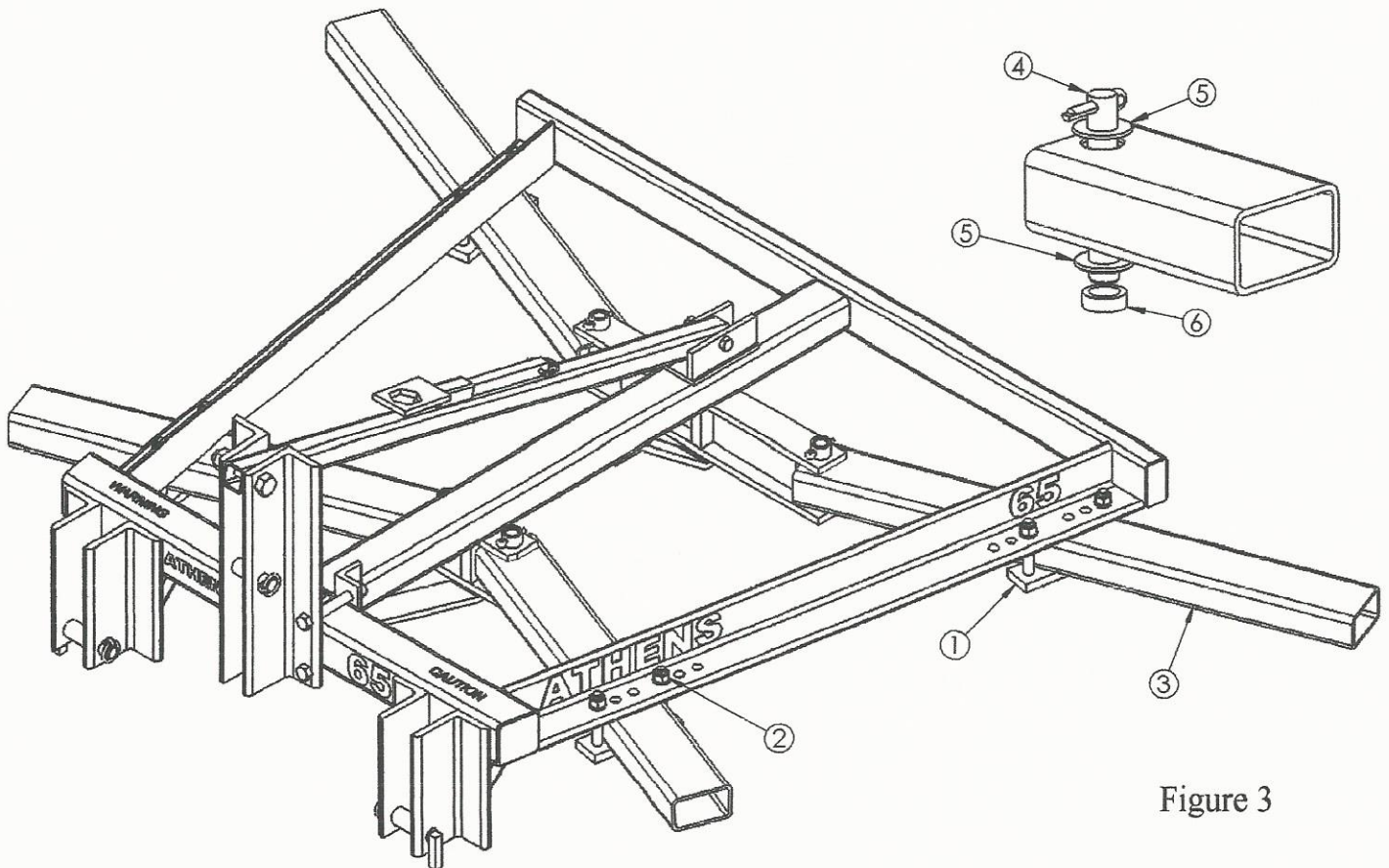


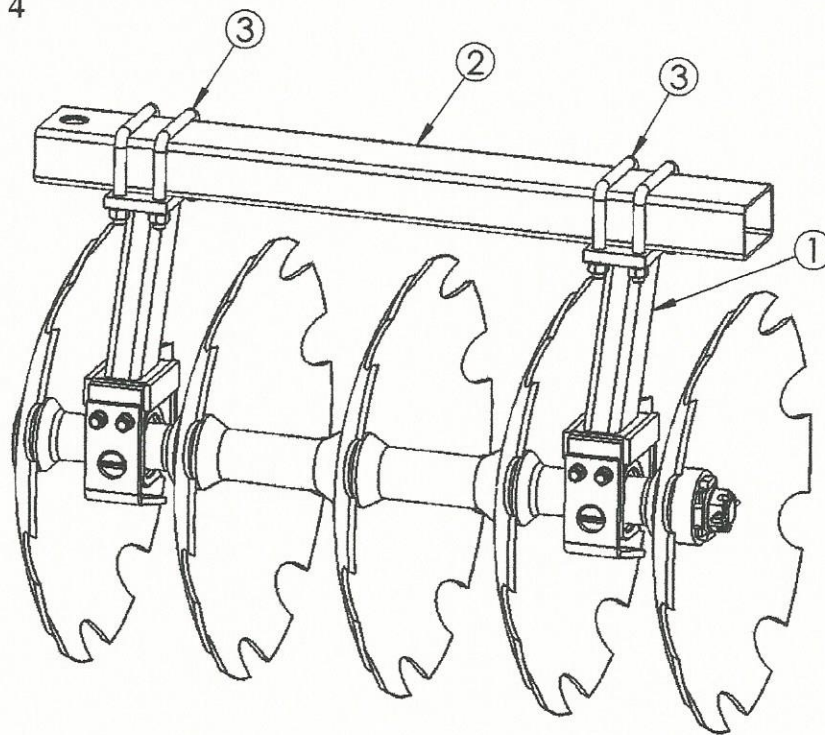
Figure 3

## D) To Attach Disc Gangs with Rigid Bearing Hangers (Refer to Figure 4)

➤ **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 certain Bearing Hanger Top Plate sets flush with bottom side of the Gang Frame. Tighten each U-Bolt equally until both are securely fastened.

Figure 4



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 11 shows the layout of the Bearing Hanger and Scraper locations for the 20 disc unit with Rigid Hangers.

## E) To Attach Scrapers with Rigid Bearing Hangers (Refer to Figure 5)

- **NOTE:** Do Not Scrape the Outside Front Discs or the Inside Rear Discs.
- Place the Scrapers close to but not touching the discs.
- The Rear Scraper Bars are longer to accommodate a Cover Disc Scraper.

- 1) Remove one of the Bearing Hanger U-Bolts in each Bearing Hanger and position the Scraper Bar Hangers (1) on top of the Gang Frame (2) as shown in Figure 5. Next, insert the  $\frac{5}{8}$  x 5  $\frac{1}{2}$ " Hex Bolts (3) into each of the Scraper Bar Hangers and each Bearing Hanger Top Plate (4). Secure with  $\frac{5}{8}$ " Lockwashers and  $\frac{5}{8}$ " Hex Nuts.

To attach the Scraper Bar (5) to the Scraper Bar Hangers place the Scraper Bar **underneath** the Scraper Bar Hangers and insert the  $\frac{5}{8}$ " U-Bolts (6) (threaded end up) through the holes in the Scraper Bar Hangers. Secure U-Bolts to Scraper Bar Hanger with  $\frac{5}{8}$ " Lockwashers and  $\frac{5}{8}$ " Locknuts. Attach each Scraper to the Scraper Bar with a Scraper Top Plate (7) and four  $\frac{1}{2}$  x 3  $\frac{1}{2}$ " Carriage Bolts (8), and secure with  $\frac{1}{2}$ " Lockwashers and Hex Nuts.

Shown: Left Front Gang – 20 Disc Unit

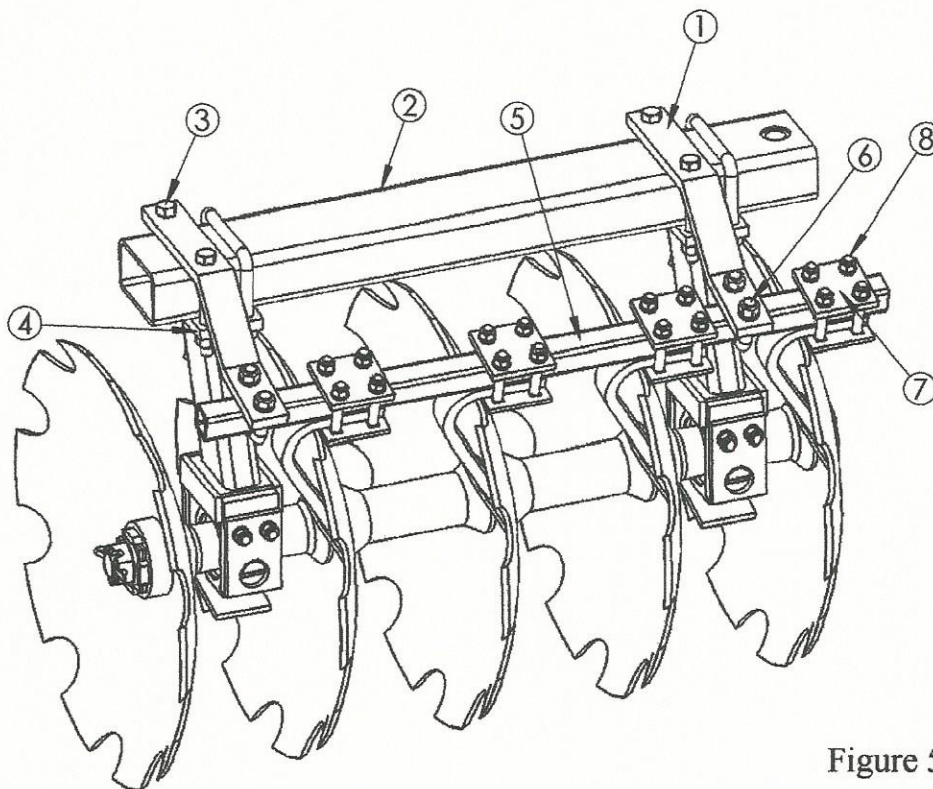
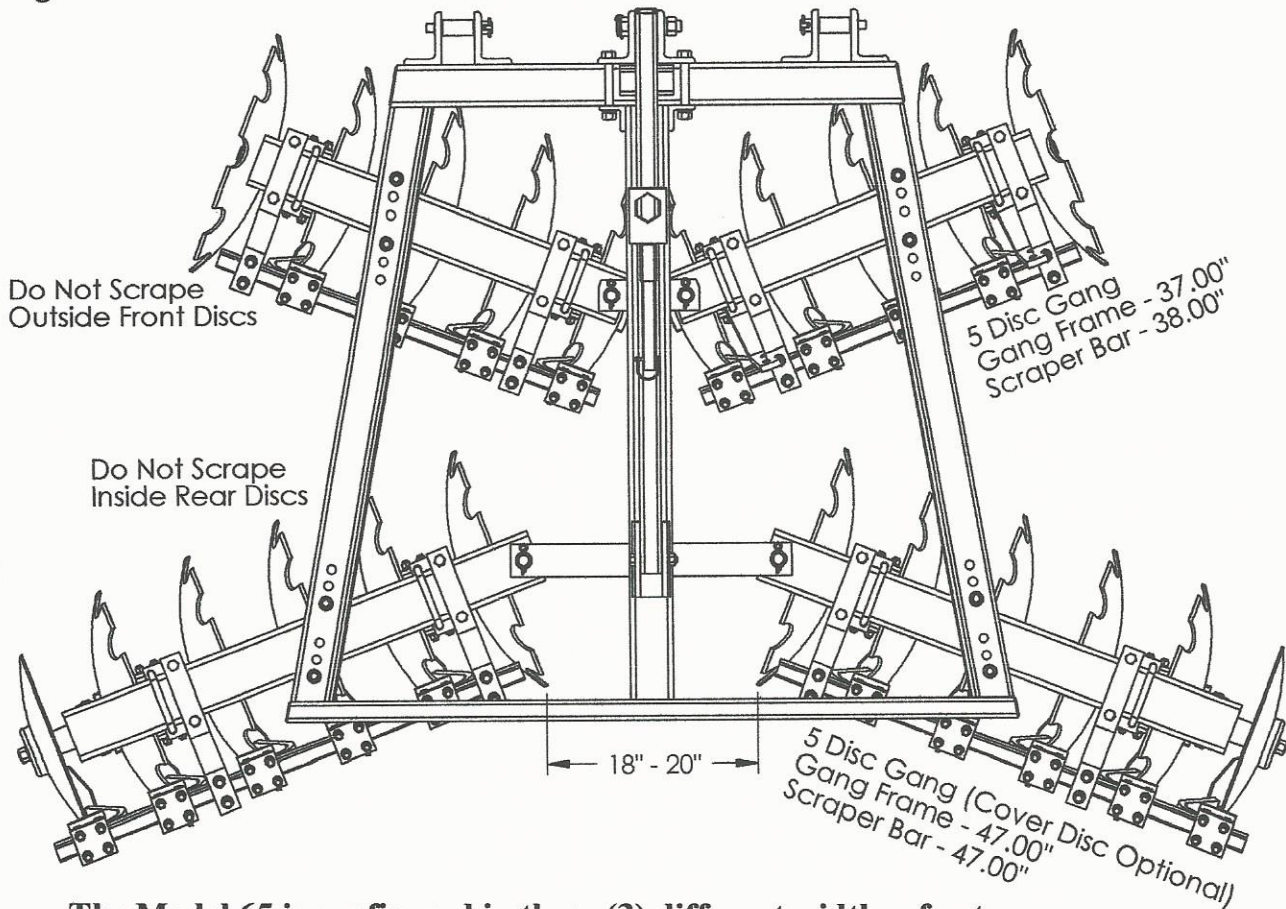


Figure 5

D & E) To Attach Disc Gangs with Rigid Bearing Hangers and Scrapers (continued...)

➤ **MODEL 65: 8' 0" 20 Blades with Rigid Bearing Hangers and Scrapers**

Figure 6



**The Model 65 is configured in three (3) different widths of cut:**

Width of Cut	Number of Discs	Disc Spacing		Gang Frames		Scraper Bars	
		Front	Rear	Front	Rear	Front	Rear
8' 0"	20	9"	9"	37"	47"	38"	47"
8' 4"	22	9"	7 ½"	37"	47"	38"	47"
9' 6"	24	9"	9"	47"	55 ½"	47"	54 ½"
	26	9"	7 ½"				

Each configuration has eight (8) Bearings: therefore each configuration is set up in the same manner. 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 6 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 6. **For further information on the positioning of the Disc Gangs refer to Section 3.**

## F) To Attach Disc Gangs with Spring Bearing Hangers (Refer to Figure 7)

➤ **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 Spring Bearing Hangers (1) to Gang Frame (2) as shown in Figure 7 below. The Spring Bearing Hanger Attaching Bundle consists of a Top Plate (3), Bottom Plate (4), one  $\frac{5}{8}$  x 6" Hex Bolt (5), and one  $\frac{5}{8}$ " U-Bolt (6), with  $\frac{5}{8}$ " Lockwashers and Hex Nuts.

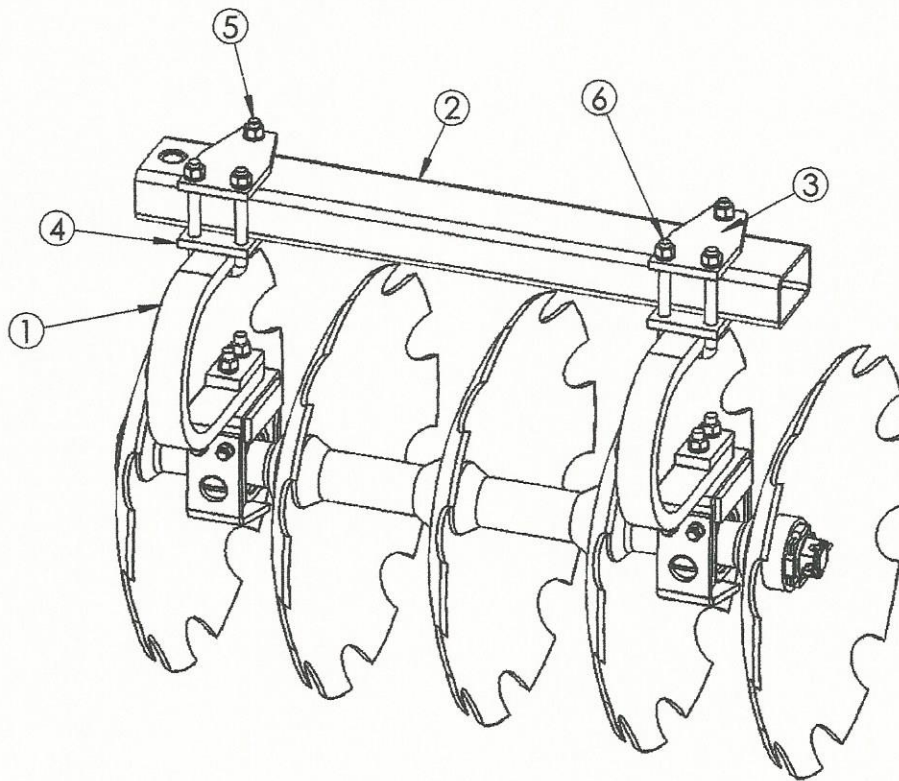


Figure 7

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 750 ft. lbs. (A 150 lb. man on a five-foot wrench equals 750 ft. lbs.).

➤ **NOTE:** Page 14 shows the layout of the Bearing Hanger locations and the Scrapers for the 20 disc unit with Spring Hangers.

## G) To Attach Scrapers with Spring Bearing Hangers (Refer to Figure 8)

- **NOTE:** Do Not Scrape the Outside Front Discs or the Inside Rear Discs.
- Place the Scrapers close to but not touching the discs.
- The Rear Scraper Bars are longer to accommodate a Cover Disc Scraper.

- 1) First, remove the Bolt Plate (1) from each Spring Bearing Hanger (2) and replace it with a Right or Left Scraper Bar Hanger (3). The Right Scraper Bar Hanger goes on the right front gang and the left rear gang. The Left Scraper Bar Hanger (shown) goes on the left front gang and the right rear gang. Then, retighten the  $\frac{5}{8}$  x  $3 \frac{1}{2}$ " Carriage Bolts with  $\frac{5}{8}$ " Lockwashers and Locknuts.

To attach the Scraper Bar (4) to the Scraper Bar Hangers place the Scraper Bar **underneath** the Scraper Bar Hangers and insert the  $\frac{5}{8}$ " U-Bolts (5) (threaded end up) through the holes in the Scraper Bar Hangers. Secure the U-Bolts to the Scraper Bar Hanger with  $\frac{5}{8}$ " Lockwashers and Locknuts. Attach each Scraper to the Scraper Bar with a Scraper Top Plate (6) and four  $\frac{1}{2}$  x  $3 \frac{1}{2}$ " Carriage Bolts (7), and secure with  $\frac{1}{2}$ " Lockwashers and Hex Nuts.

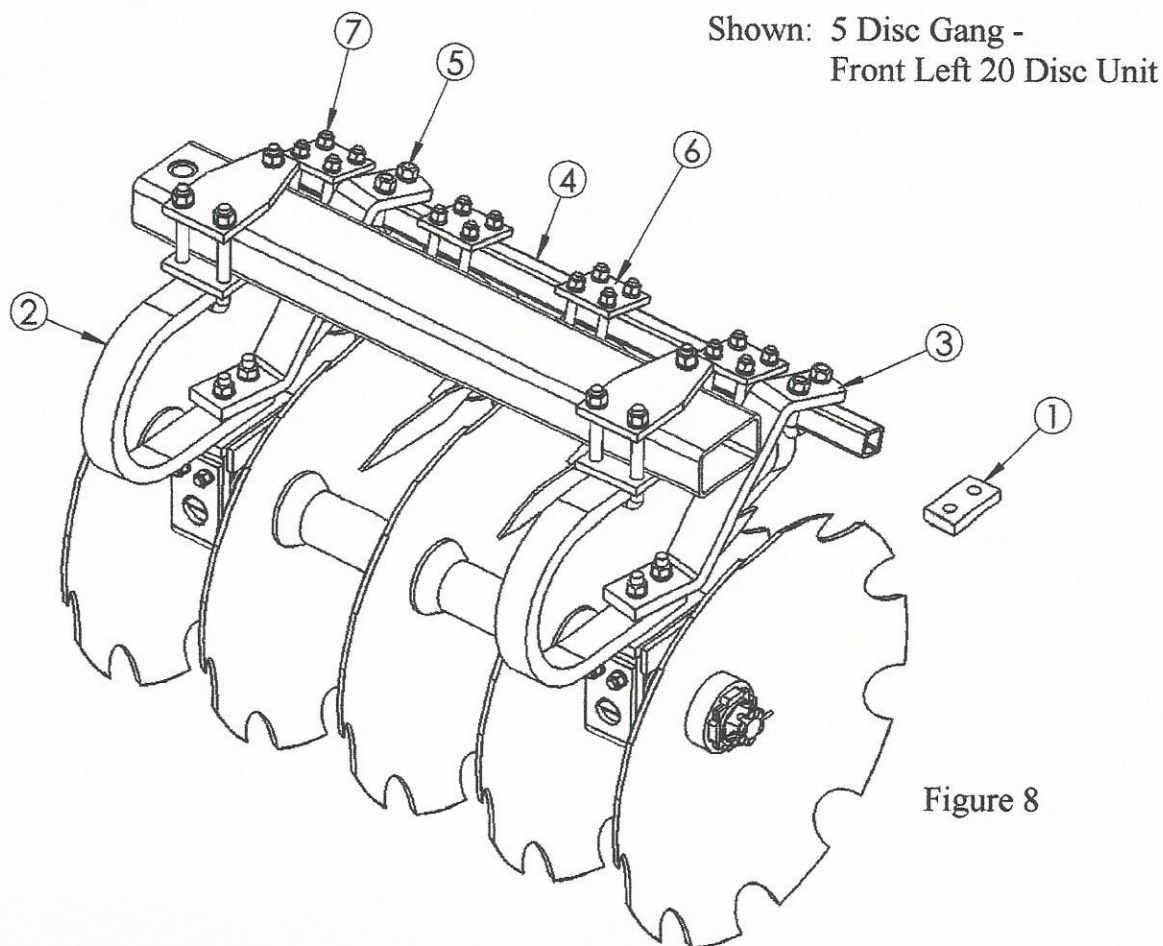
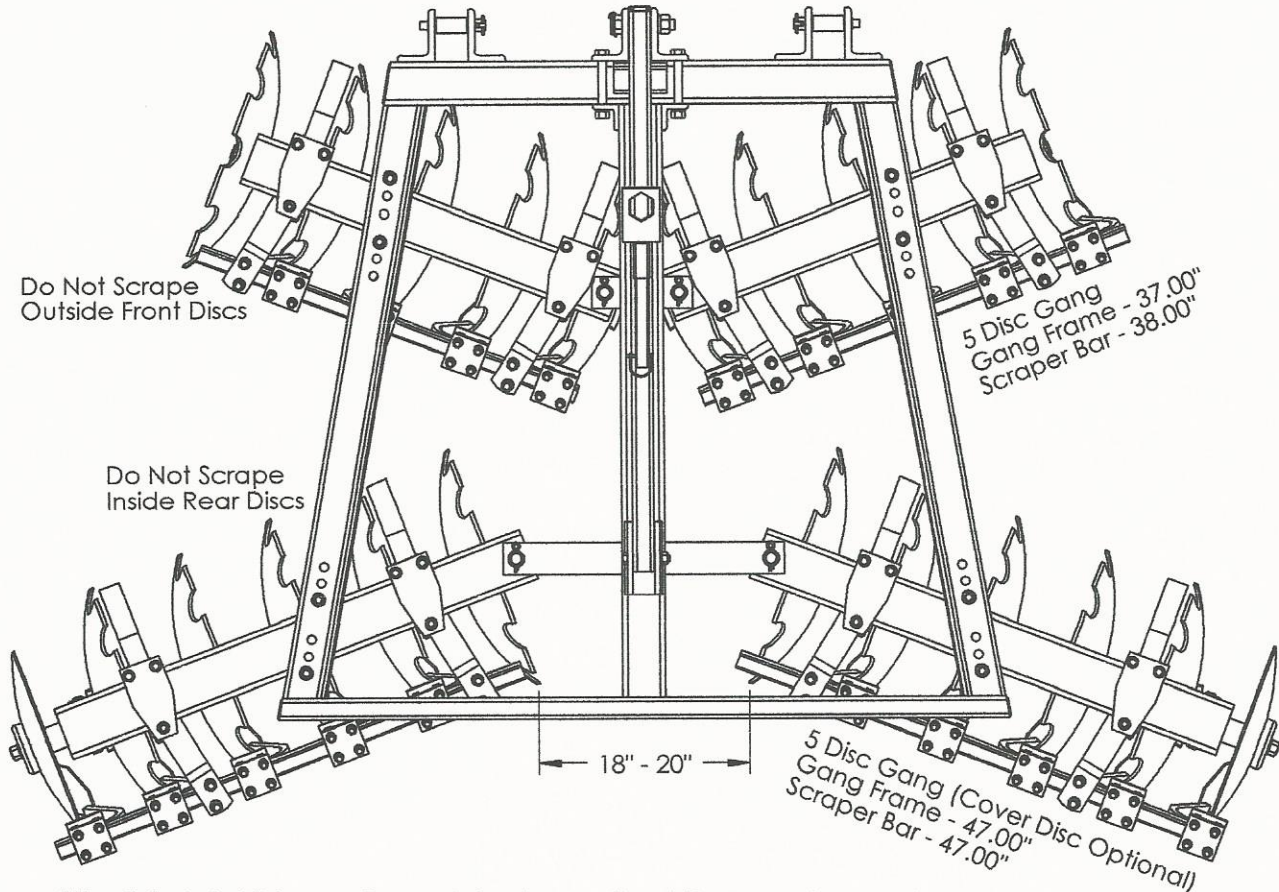


Figure 8

F & G) To Attach Disc Gangs with Rigid Bearing Hangers and Scrapers (continued...)

➤ **MODEL 65: 8' 0" 20 Blades with Spring Bearing Hangers and Scrapers**

Figure 9



**The Model 65 is configured in three (3) different widths of cut:**

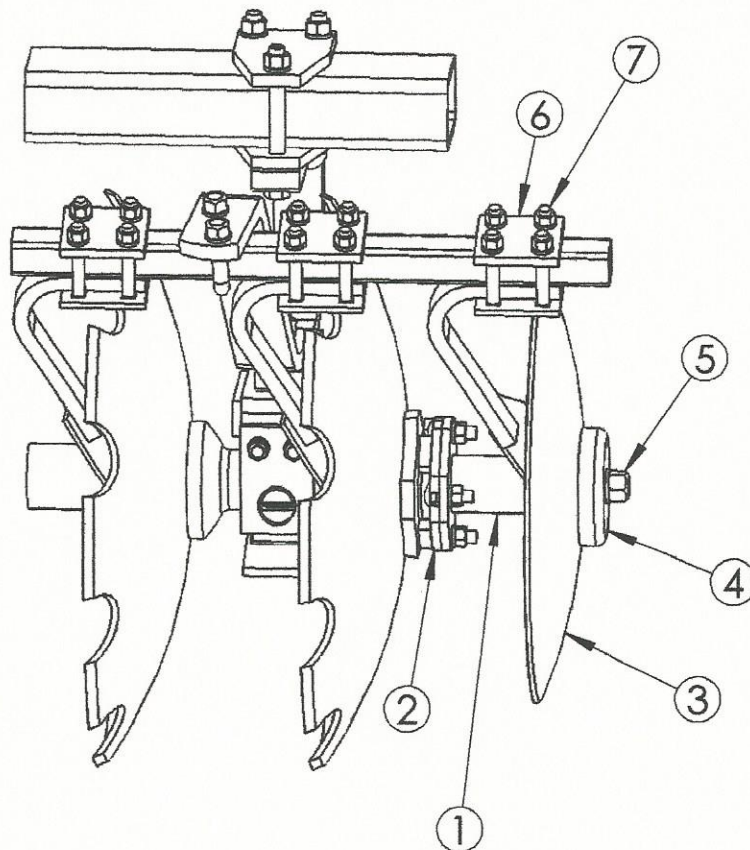
Width of Cut	Number of Discs	Disc Spacing		Gang Frames		Scraper Bars	
		Front	Rear	Front	Rear	Front	Rear
8' 0"	20	9"	9"	37"	47"	38"	47"
8' 4"	22	9"	7 ½"	37"	47"	38"	47"
9' 6"	24	9"	9"	47"	55 ½"	47"	54 ½"
	26	9"	7 ½"				

Each configuration has eight (8) Bearings: therefore each configuration is set up in the same manner. 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 6 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 6. **For further information on the positioning of the Disc Gangs refer to Section 3.**

## H) To Attach Cover Disc with Scraper (Refer to Figure 9)

- 1) Attach Cover Disc Mounting Assembly (1) to Cover Disc Mounting Plate (2) (which is welded to the axle butt plate) with four  $\frac{1}{2}$  x  $1 \frac{3}{4}$ " 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. Finally, bolt the Cover Disc Scraper to the Scraper Bar with a Scraper Top Plate (6) and four  $\frac{1}{2}$  x  $3 \frac{1}{2}$ " Carriage Bolts (7), and secure with  $\frac{1}{2}$ " Lockwashers and Hex Nuts.
- NOTE: The Cover Disc Scraper is welded so that the outside rear edge is flush with the scraper arm so that the point of this scraper is closer to the center than the other scrapers.

Figure 9





## I) To Attach Balk Buster (Refer to Figure 10)

- 1) Attach Balk Buster Assembly (1) to Main Frame (2) with four  $\frac{1}{2}$  x  $5\frac{1}{2}$ " Hex Bolts, and  $\frac{1}{2}$ " Hex Nuts and  $\frac{1}{2}$ " Lockwashers (3). 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 (4) into the Balk Buster Assembly and secure the Tine with a  $\frac{5}{8}$  x 2" Hex Bolt and a  $\frac{5}{8}$ " Locknut (5). 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.

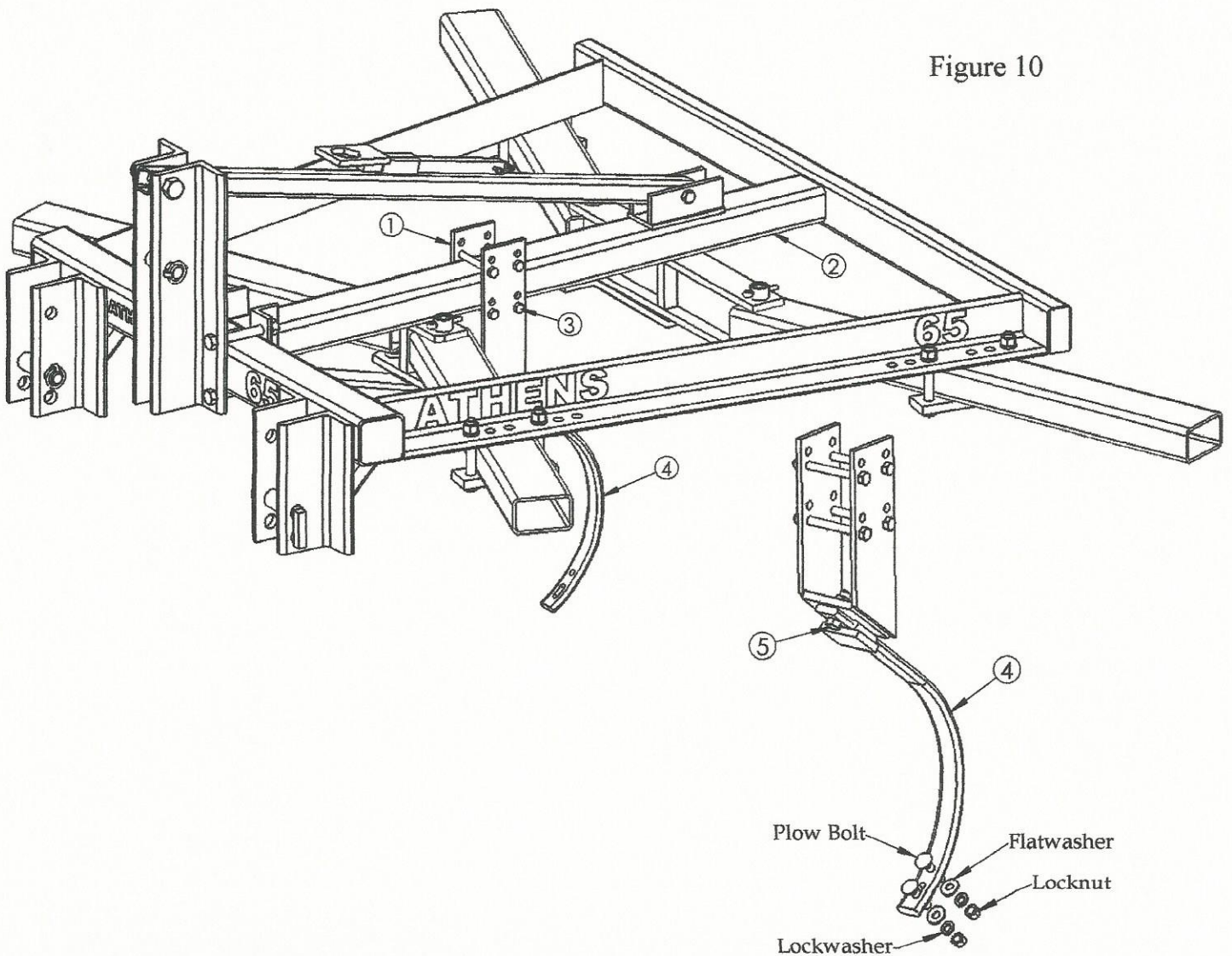


Figure 10

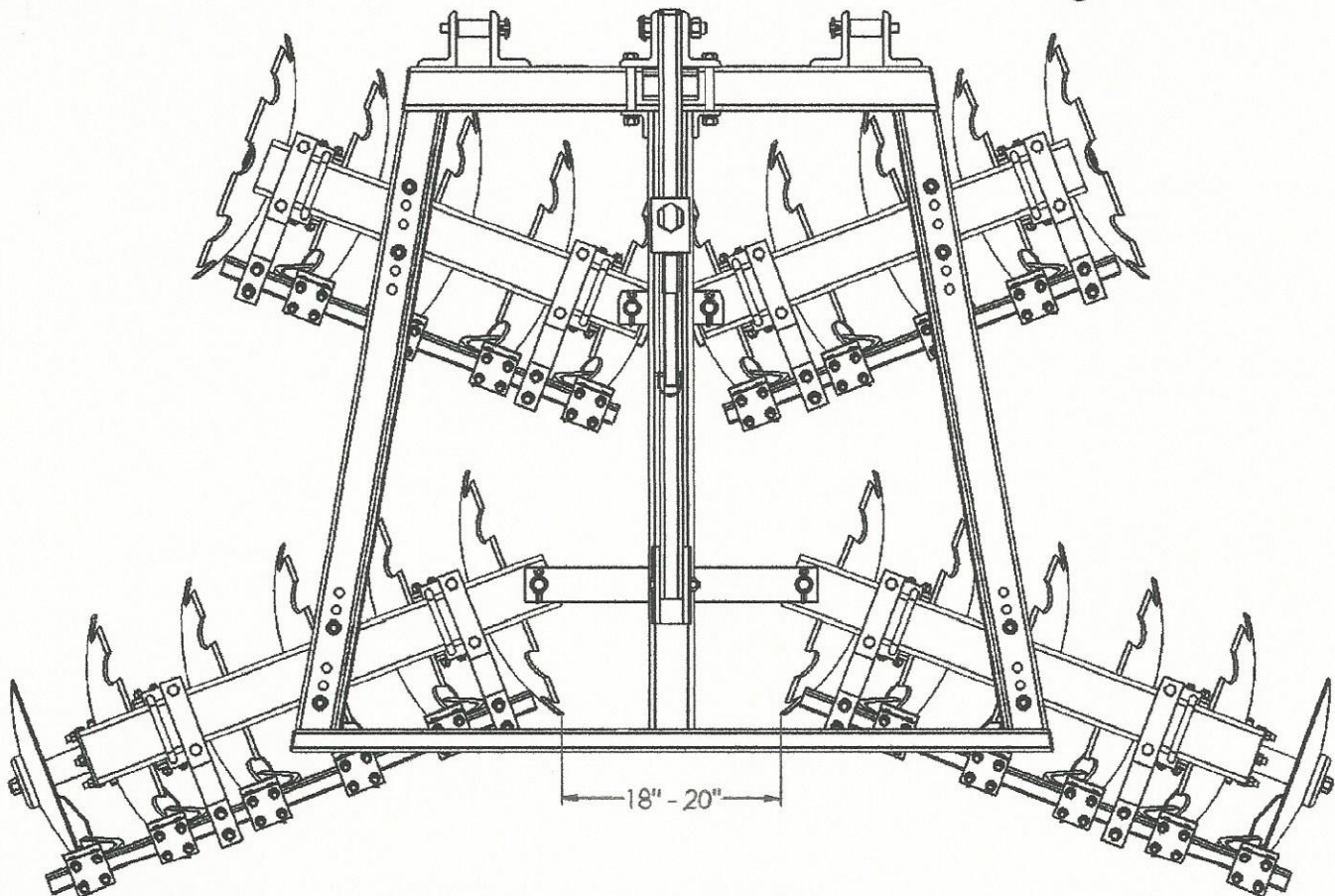
**BEFORE OPERATING THE HARROW BE CERTAIN THAT:**

- 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 11)**

- 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 11 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 in Figure 11 below.

Figure 11

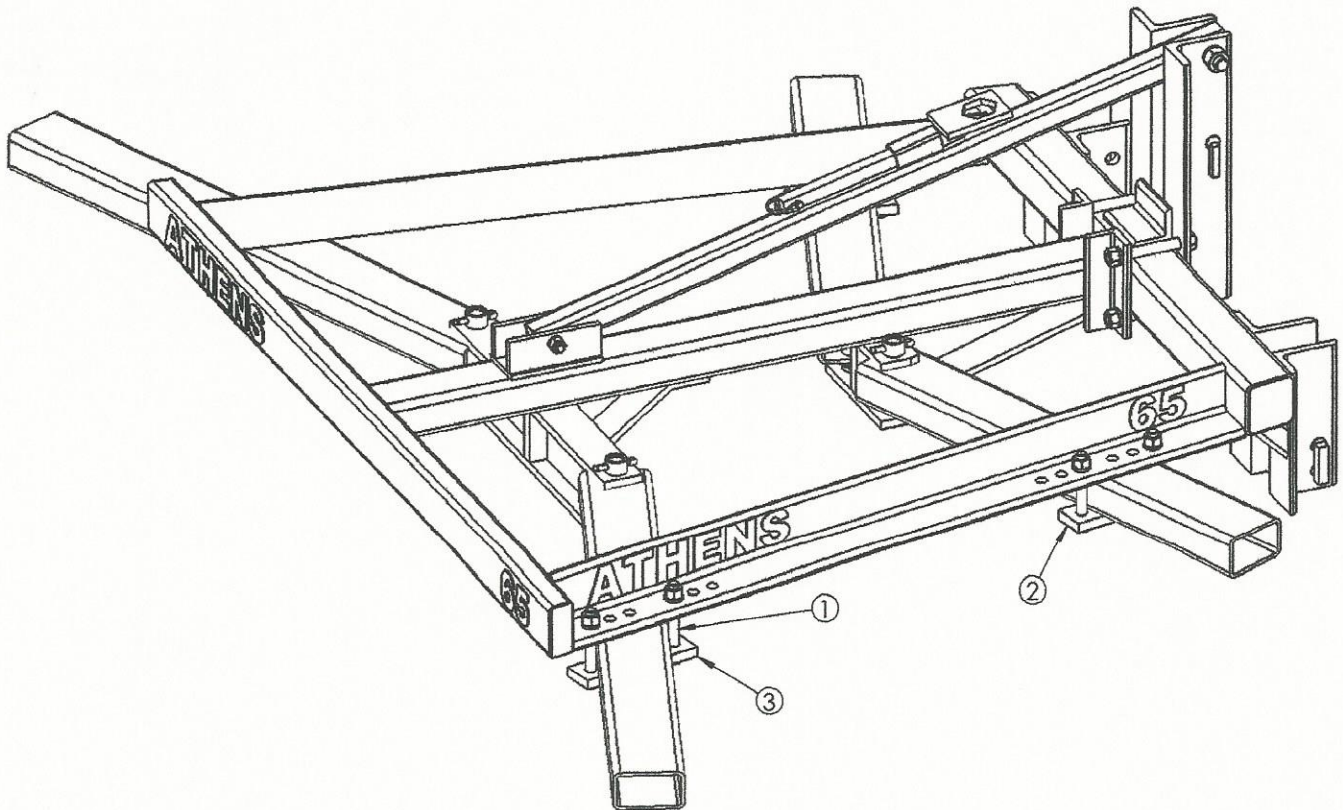


## B) Adjusting the Angle (Refer to Figure 12)

- 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) or (3) 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. Tighten all bolts securely. The angles of cut are  $15^\circ$ ,  $18^\circ$ , and  $21^\circ$ .

- **Note:** The Front Gang Attaching Plates are  $8 \frac{1}{4}$ " long.  
The Rear Gang Attaching Plates are  $9 \frac{1}{4}$ " long.

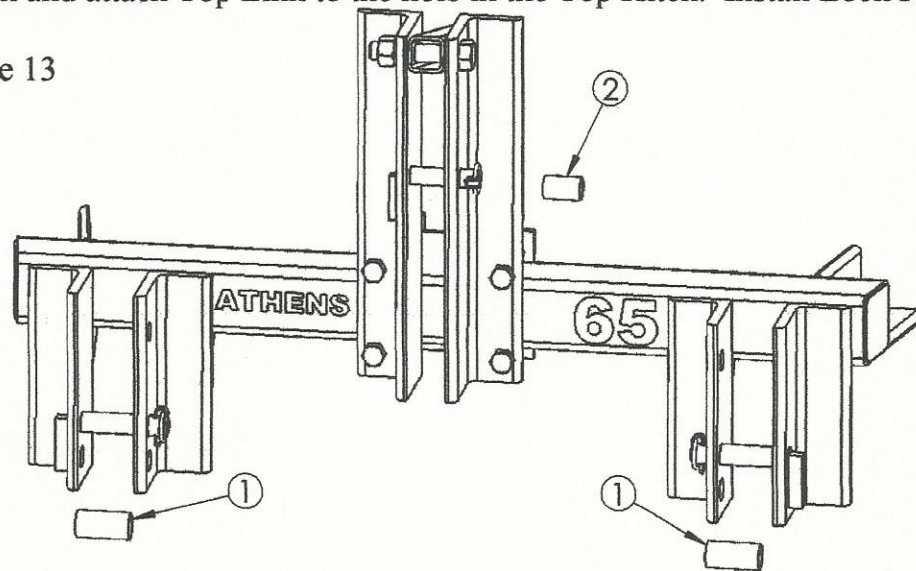
Figure 12



## C) Hitching to the Tractor with Category II Free Link (Refer to Figure 13)

- 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.

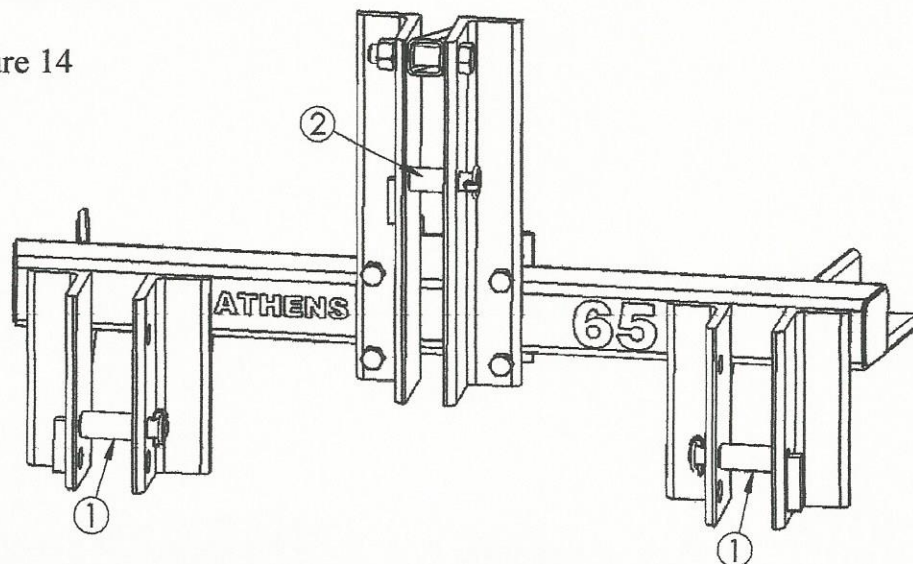
Figure 13



## D) Hitching to the Tractor with Category II Quick Hitch (Refer to Figure 14)

- 2) **Category II Quick Hitch** (Figure 14): 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 14



## A) Bolts, Cotters, Lock Pins, and Klik Pins (Refer to Table 1)

- 1) Tighten all Bolts securely before entering the field. Check Bolt tightness at regular intervals. Replace any damaged Bolt, Cotter, Lock Pin, or Klik Pin 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 below, to tighten Hardware. Failure to maintain hardware is not covered by the manufacturer's warranty.

Table 1

RECOMMENDED TORQUE IN FT-LBS (Nm) COARSE AND FINE THREADS			
2  5  8 			
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)

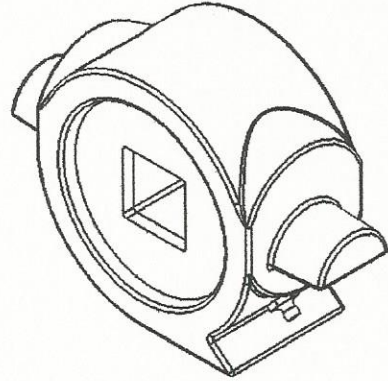
## B) Disc Gang

- 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 tightening, make sure that Disc Gang turns freely after re-tightening Bearing Hangers.
- **WARNING:** A loose Axle/Axle Nut can cause failure to the Axle and Spacers, and destroy or lead to complete Bearing failure.  
**STOP IMMEDIATELY AND TIGHTEN PROPERLY!**

## B) Disc Gang (continued...)

- 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 Washers and Bearing Housing before operating. Over-lubrication will not damage Seals. Grease will force dirt out, which increases the life of the Bearing. Clean Grease Gun and Fitting before lubrication begins.



## C) Threaded Parts

- 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.

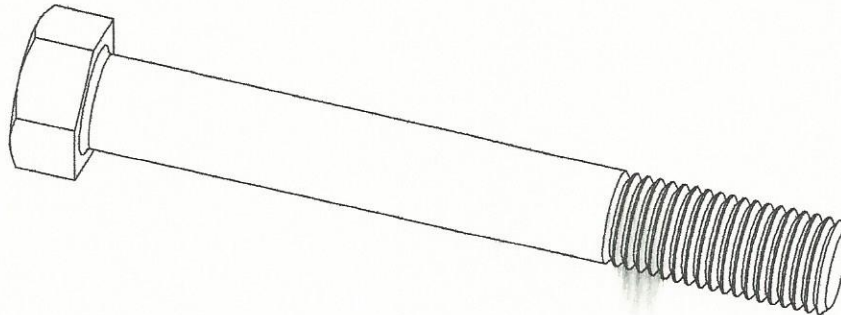
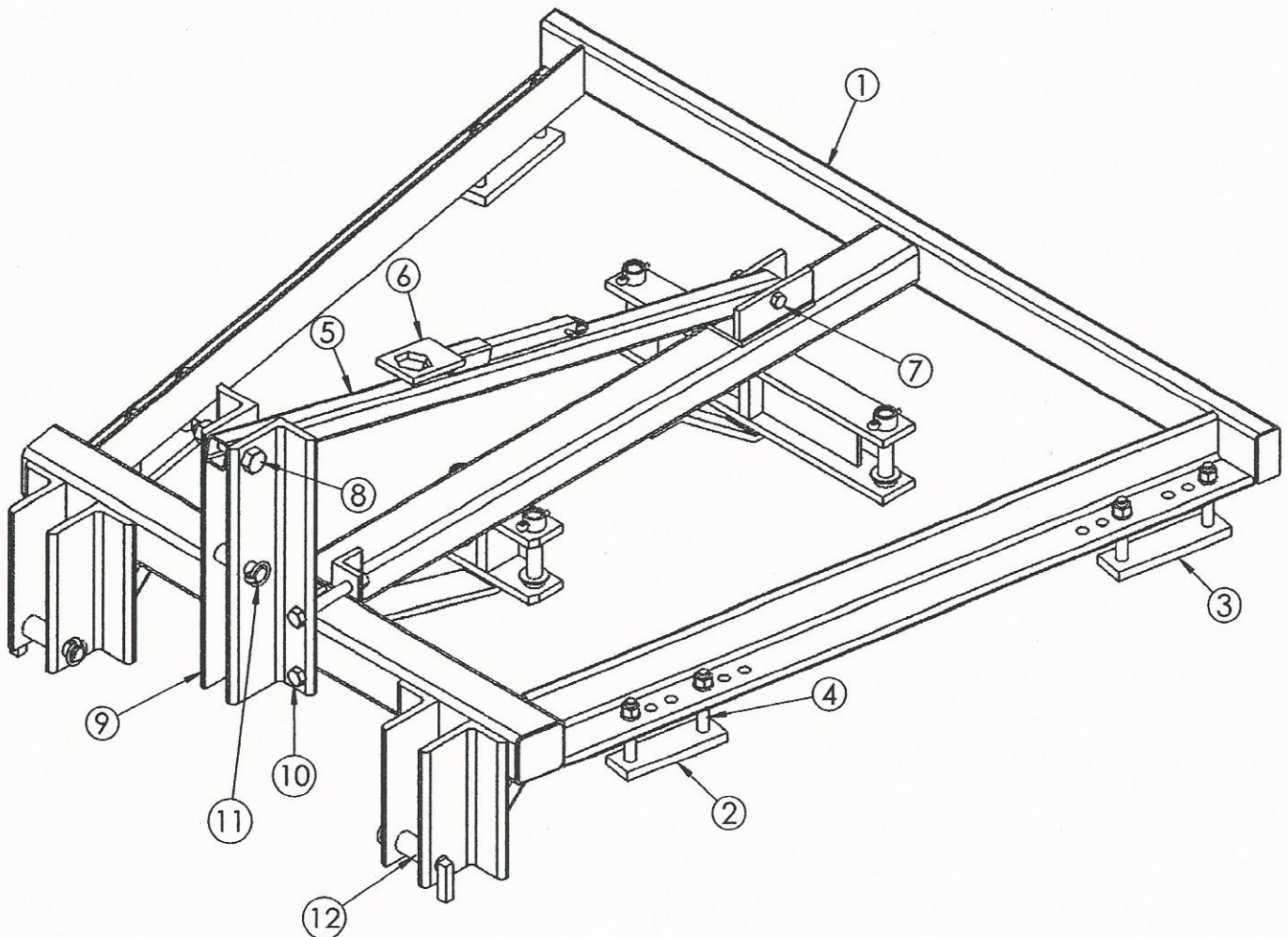


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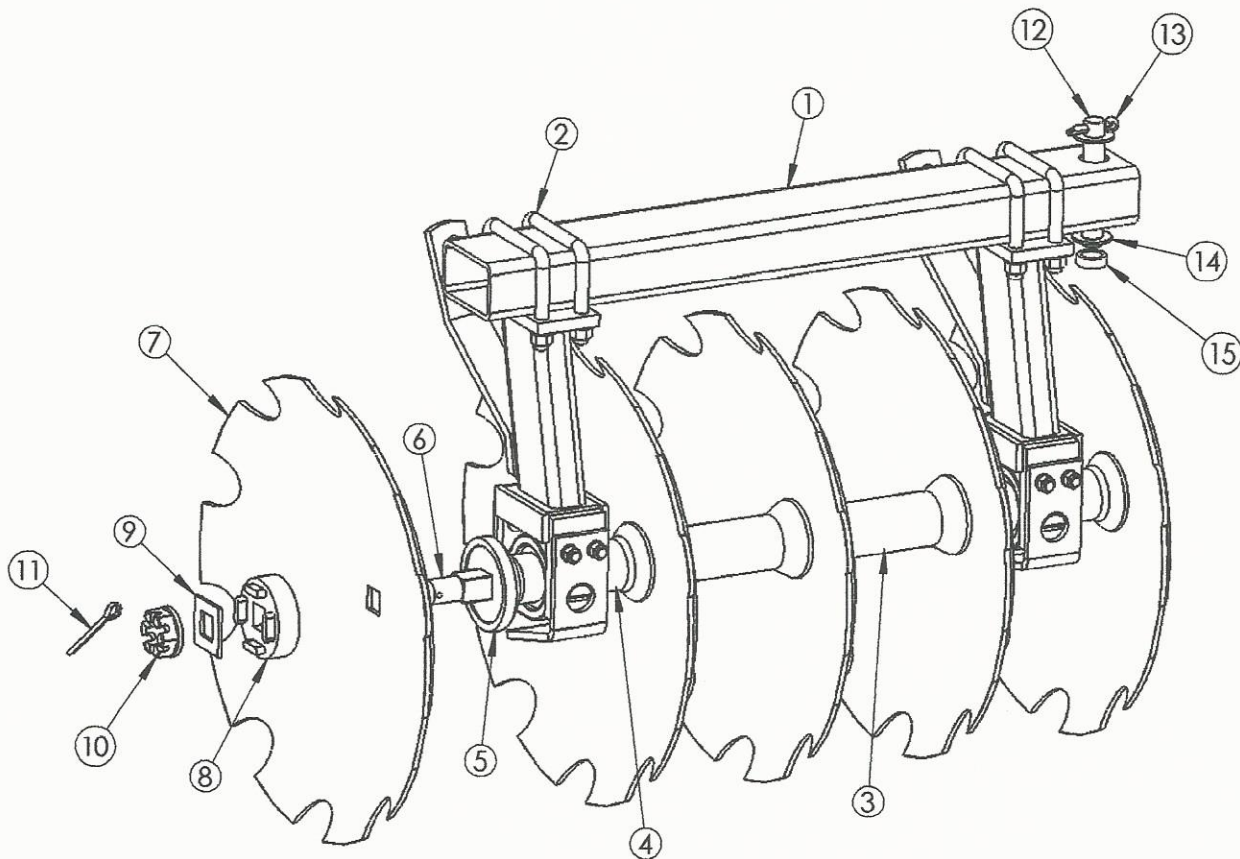
DESCRIPTION	PAGE NUMBER
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## MAIN FRAME AND HITCH

Ref.	Part No.	Description	Ref.	Part No.	Description
1	23498	Main Frame	8	80210	Hex Bolt 1 x 5"
2	23508	Front Gang Attaching Plate		81705	1" Lockwasher
3	23509	Rear Gang Attaching Plate		80686	1" Hex Nut
4	80239	Hex Bolt $\frac{3}{4}$ x 5 $\frac{1}{2}$ "	9	23517	Top Hitch
	81025	$\frac{3}{4}$ " Lockwasher	10	80182	Hex Bolt $\frac{3}{4}$ x 6"
	80625	$\frac{3}{4}$ " Hex Nut		81025	$\frac{3}{4}$ " Lockwasher
5	23507	Top Hitch Brace		80625	$\frac{3}{4}$ " Hex Nut
6	18445	Gang Wrench	11	20507	Upper Hitch Pin
	12058	Lock Clip		20284	Lock Pin
7	80240	Hex Bolt $\frac{5}{8}$ x 4"		17491	Cat. II Quick Hitch Bushing
	81015	$\frac{5}{8}$ " Lockwasher	12	20780	Lower Hitch Pin
	80610	$\frac{5}{8}$ " Hex Nut		20284	Lock Pin
				17511	Cat. II Quick Hitch Bushing







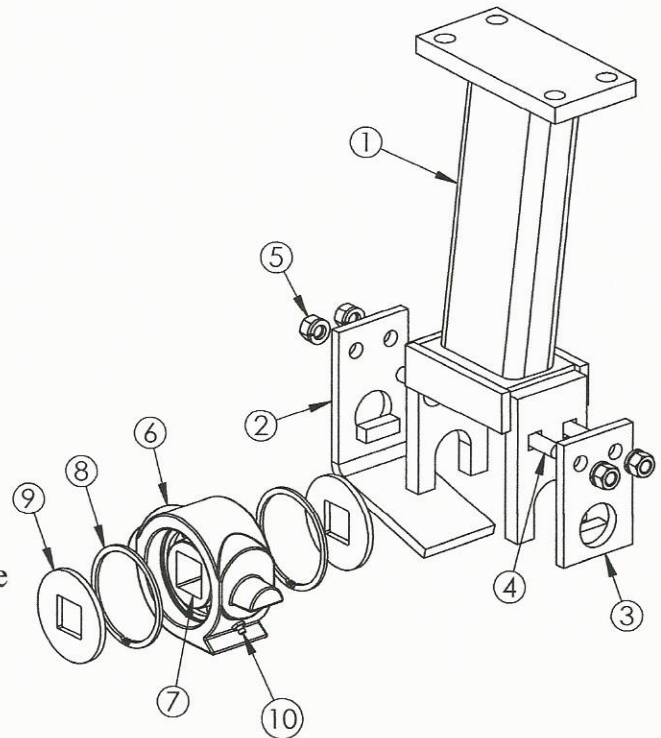
65 DISC GANG REPAIR PARTS

Ref.	Part No.	Description	Ref.	Part No.	Description
1	23514	Gang Frame 3 x 5 x .25w x 37"	7	19917	Disc 22" x 1.25 C/O
	20876	Gang Frame 3 x 5 x .25w x 47"		19916	Disc 22" x 1.25 SM
	19085	Gang Frame 3 x 5 x .25w x 55 1/2"		21158	Disc 24" x 1.25 C/O
2	21115	Bearing Hanger U-Bolt		21159	Disc 24" x 1.25 SM
	81015	5/8" Lockwasher	8	19933	End Washer
	80610	5/8" Hex Nut	9	16437	End Washer Spacer
3	19934	Full Spacer 1.25 x 9"	10	19948	Axle Nut, 1.25"
	19935	Full Spacer 1.25 x 7 1/2"	11	81395	Cotter, 1/4 x 2 1/2"
4	19931	Convex Half Spacer	12	19101	Angling Anchor Pin
5	21093	Concave Half Spacer (9" Spacing)	13	81415	Cotter, 3/8 x 2"
	19932	Concave Half Spacer (7 1/2" Spacing)	14	81230	1" Flatwasher
6	19962	Axle, 1.25 x 40.00" (5 Disc / 9" Spacing)	15	19151	Leveling Bushing
	19963	Axle, 1.25 x 49.00" (6 Disc / 9" Spacing)			
	19973	CD Axle, 1.25 x 40" (5 Disc / 9" Spacing)			
	19974	CD Axle, 1.25 x 49" (6 Disc / 9" Spacing)			
	19979	CD Axle, 1.25 x 41 1/2" (6 Disc / 7 1/2" Spacing)			
	19974	CD Axle, 1.25 x 49" (7 Disc / 7 1/2" Spacing)			

## 65 BEARING REPAIR PARTS, RIGID

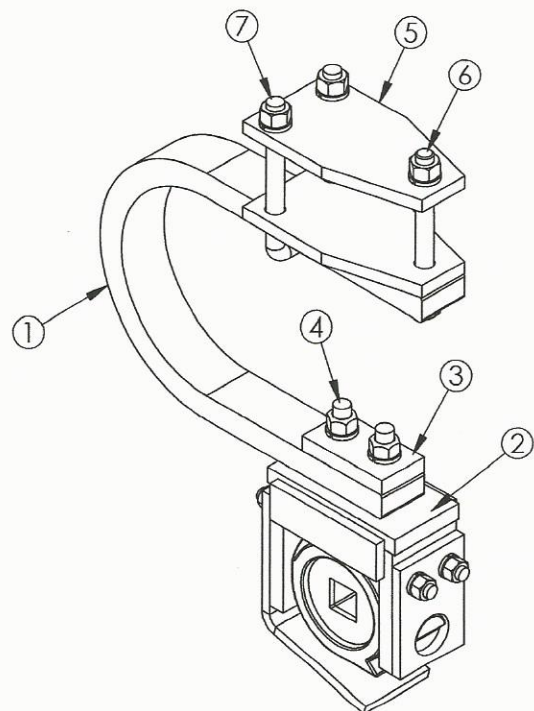
Reference	Part No.	Description
1	23214	Bearing Hanger, Right
	23213	Bearing Hanger, Left
*2	23216	Wear Plate
*3	23217	Rear Plate
*4	80324	½ x 1 ¾" Carriage Bolt
*5	81005	½" Lockwasher
	80590	½" Hex Nut
*6	20674	Bearing Housing
*7	70513	Ball Bearing, Relube
*8	21104	Retaining Ring
*9	21025	Bearing Washer
*10	11610	Grease Fitting
*11	900087	Bearing Package Complete

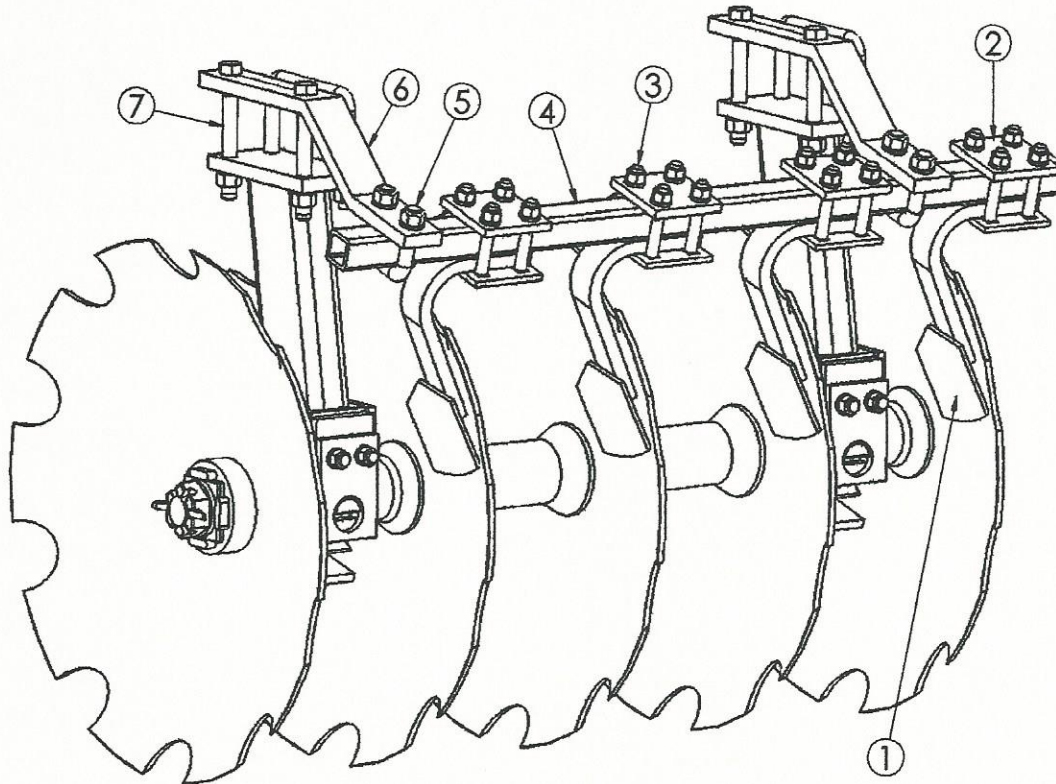
➤ **NOTE:** Items \*2 – 11 are identical on both the Rigid and Spring Bearing Hangers.



## 65 BEARING REPAIR PARTS, SPRING

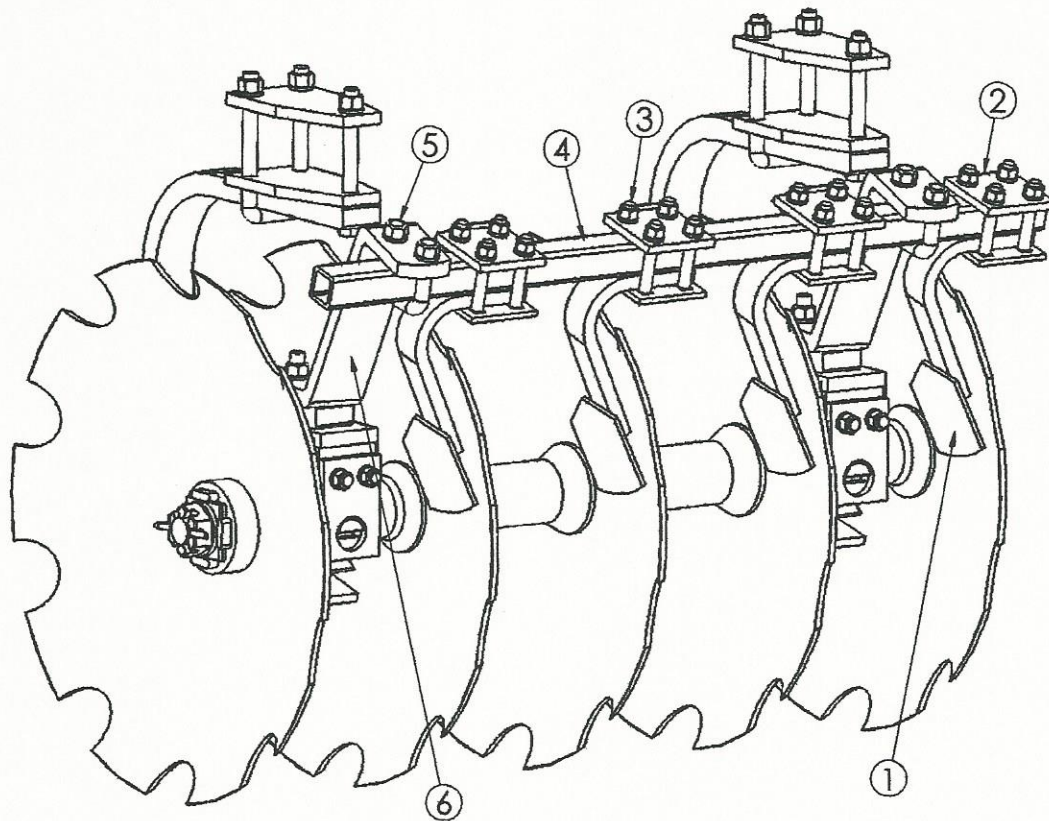
Reference	Part No.	Description
1	19527	Spring Bearing Hanger
2	23462	Spring Bearing Hanger Cuff
3	23490	Bolt Plate
4	80333	Carriage Bolt, ⅝ x 3 ½"
	81015	⅝" Lockwasher
	80865	⅝" Locknut
5	19525	Bearing Hanger Clamp Plate
6	80149	Hex Bolt ⅝ x 6"
7	19526	Bearing Hanger U-Bolt, ⅝"
	81015	⅝" Lockwasher
	80610	⅝" Hex Nut





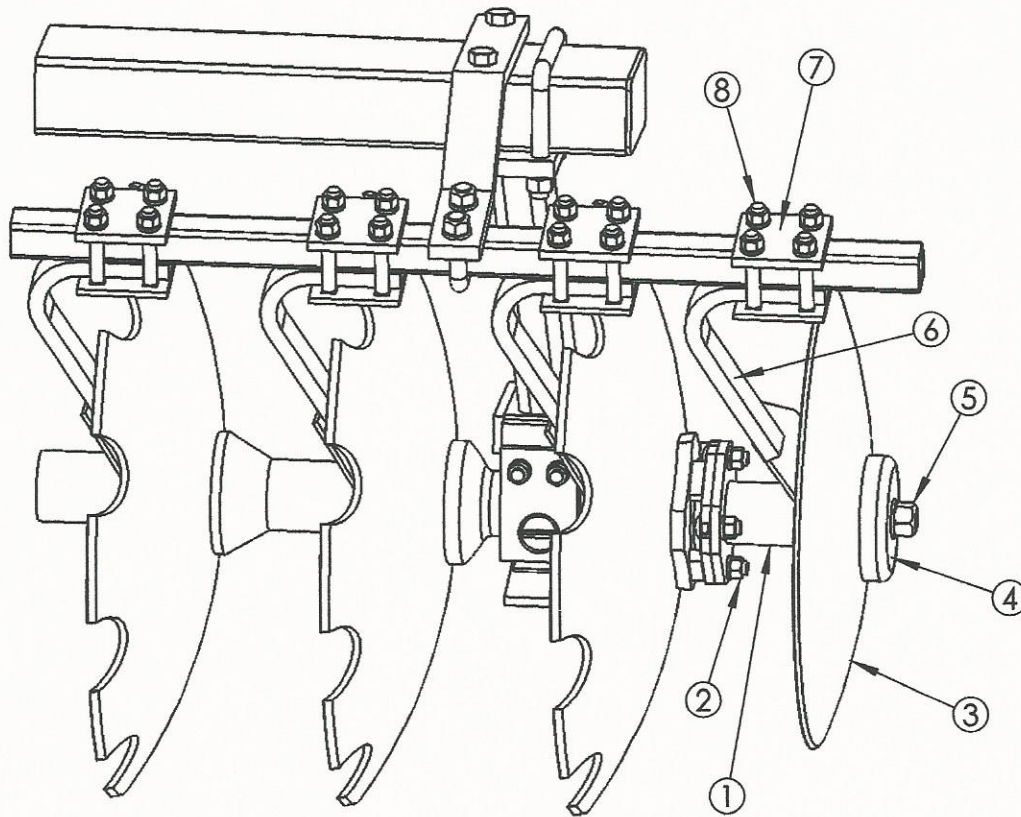
SCRAPERS AND SCRAPER BARS, RIGID

Reference	Part No.	Description
1	20689	Right Scraper (Right Front / Left Rear)
	20690	Left Scraper (Left Front / Right Rear)
2	21844	Top Plate
3	80335	1/2 x 3 1/2" Carriage Bolt
	81005	1/2" Lockwasher
	80590	1/2" Hex Nut
4	20685	Scraper Bar, 1.50 Sq x 38.00"
	20729	Scraper Bar, 1.50 Sq x 47.00"
	20730	Scraper Bar, 1.50 Sq x 54.50"
5	20676	Scraper Bar Hanger U-Bolt, 5/8"
	81015	5/8" Lockwasher
	80865	5/8" Locknut
6	20741	Scraper Bar Hanger
7	80148	Hex Bolt, 5/8" x 5 1/2"
	81015	5/8" Lockwasher
	80610	5/8" Hex Nut



SCRAPERS AND SCRAPER BARS, SPRING

Reference	Part No.	Description
1	20689	Right Scraper (Right Front / Left Rear)
	20690	Left Scraper (Left Front / Right Rear)
2	21844	Top Plate
3	80335	½ x 3 ½" Carriage Bolt
	81005	½" Lockwasher
	80590	½" Hex Nut
4	20685	Scraper Bar, 1.50 Sq x 38.00"
	20729	Scraper Bar, 1.50 Sq x 47.00"
	20730	Scraper Bar, 1.50 Sq x 54.50"
5	20676	Scraper Bar Hanger U-Bolt, ⅝"
	81015	⅝" Lockwasher
	80865	⅝" Locknut
6	20691	Scraper Bar Hanger, Right
	20692	Scraper Bar Hanger, Left (SHOWN)



COVER DISC PARTS

Reference	Part No.	Description
1	17126	Cover Disc Mounting Assy.
2	80322	1/2 x 1 1/2" Carriage Bolt
	81005	1/2" Lockwasher
	80590	1/2" Hex Nut
3	15985	Cover Disc, 18 x .38 x 1.12 SM
4	17117	End Washer
5	80870	3/4" Locknut
	81200	3/4" Flat Washer
6	20700	Cover Disc Scraper, Right
	20699	Cover Disc Scraper, Left
7	21844	Top Plate
8	80335	1/2 x 3 1/2" Carriage Bolt
	81005	1/2" Lockwasher
	80590	1/2" Hex Nut

## BALK BUSTER

Reference	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

