



FIELDMASTER

Hydraulic

'94

ACTIVE HARROW PACKER BAR

Assembly-Operator Parts Manual

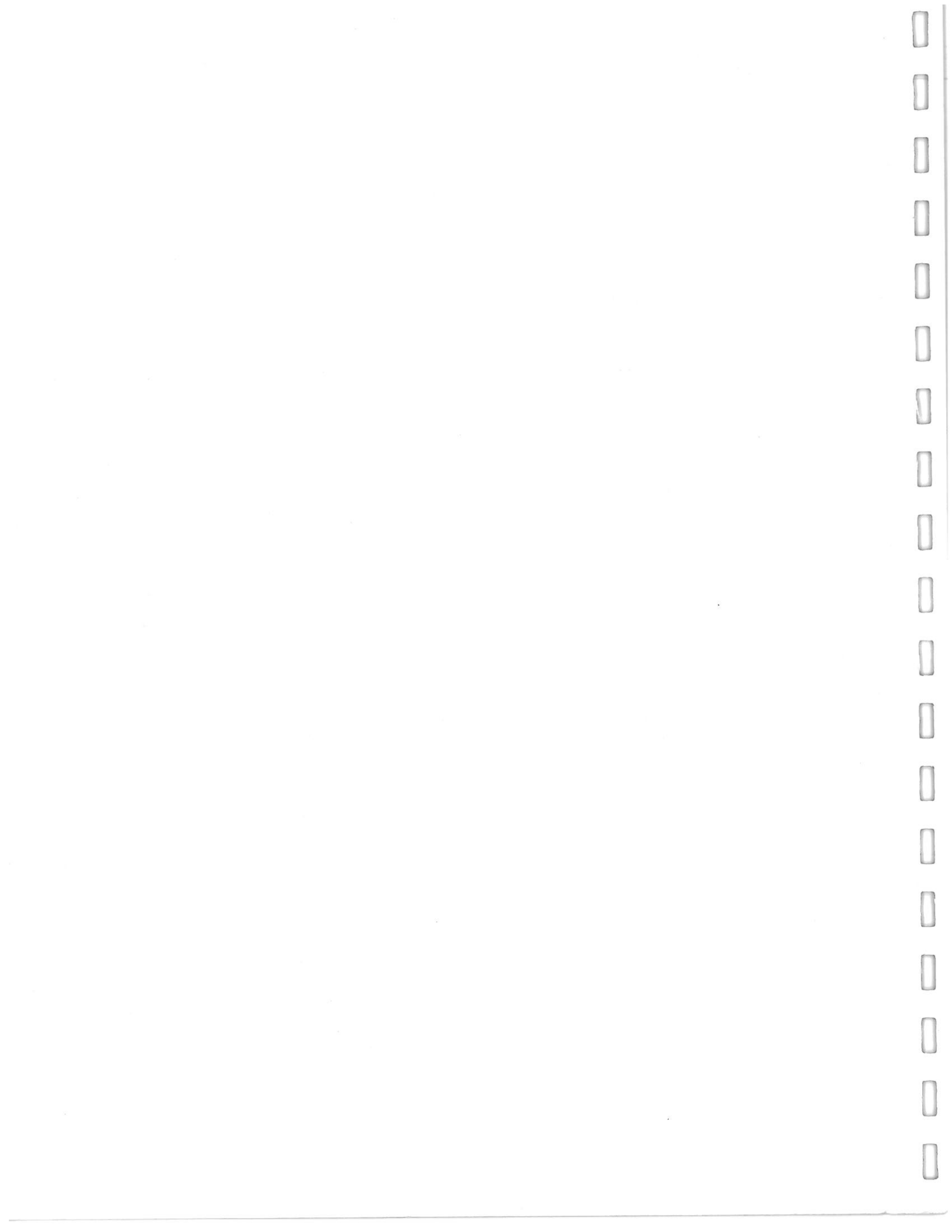


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Warranty Claim

High-Line Mfg. Inc. warrants its products to the original owner for a period of two years from date of purchase, subject to the following.

- 1st year Parts & Labour
- 2nd year Parts Only
- All matters related with the warranty of products must be handled through an authorized High-Line Manufacturing dealer.
- Any labour subject to warranty must be authorized by a High-Line Mfg. Inc. representative before work is started.
- Machines used for rental, custom work, industrial or construction use will be warranted for a period of 30 days from date of purchase. (Parts and Labour)
- Warranty will be void if any component of this machine is altered or modified in any way, unless written permission is given by High-Line Mfg. Inc.
- High-Line Mfg. Inc. will not assume any responsibility for whatever damage may occur to equipment to which this machine may be attached.
- Warranty terms and conditions are subject to provincial and state legislation.

IMPORTANT

Please read entire manual before you operating your Wing Up Active Harrow Packer Bar

Presidents Message

To the new owner:

Congratulations on your purchase of the new Wing Up Active Harrow Packer Bar.

High-Line Mfg. Inc. is proud to offer this piece of quality equipment. The Wing Up Active Harrow Packer Bar is designed and engineered to provide years of exceptional, trouble free service under normal operating conditions. The features incorporated into this machine will allow the operator to increase field efficiency as less time will be spent adjusting the machine.

Please be sure to read the instruction manual for proper operation and adjustment procedures. A little time invested now could save precious time in the field and protect your machinery investment. If in time you should need replacement parts, please consult the parts list in this manual and contact your High-Line dealer.



Ray Bussiere, President

1. Notice

Although this manual was compiled with great care, there may be some items which may cause confusion. If this is the case, please do not hesitate to contact High-Line Mfg. Inc at the following address.

High-Line Manufacturing Inc.
P.O. Box 307
Vonda, Saskatchewan
S0K 4N0
Tel: 1-800-665-2010 or (306) 258-2233
Fax: 306-258-2010

1.1 Specification

Model Number	3436	4043
Working Width	34'-36'	40'-43'
Transport Width	16 1/2'	16 1/2'
Transport Length	26	26
Minimum Transport Height	18'	18'
Hydraulic Outlet Required	2	2

Serial Number: _____

The owner should fill in the serial number for his/her records.

2. Safety

CAREFUL OPERATION IS THE BEST INSURANCE AGAINST AN ACCIDENT
--

Care should be exercised when operating this machine as with any machine. Observe local regulations concerning the transport of machinery on public roads.

- Keep children and adults away from machine while putting machine in field or transport position.
- Transport height of this machine is 18 feet. Avoid overhead lines.
- Relieve pressure in hydraulic lines before disconnecting lines or performing other work on the hydraulic system.
- When transporting always set transport locks.

3. Description of Wing Up Active Harrow Packer Bar

The Field-Master Wing Up Active Harrow Packer Bar is designed to handle all your packing and harrowing requirements behind your air seeder or behind your tractor. In addition to the hitch telescoping from 15' to 20' the hitch also has a height adjustment of 18" to 40". This allows you to tow the packer behind your air seeder, tractor, cultivator and other tillage implements.

The heavy duty, floating packer mount allows each packer coil to follow the contours of your fields for more uniform packing and germination. To match your soil type 1 1/2" and 1 3/4" packer coils are available. They are mounted in heavy duty 1 1/4" ductile pillow block bearings for extra long life.

The Active Harrow's rotating spikes deposit straw and weeds on the surface shielding your topsoil from wind erosion, moisture loss and ensuring that straw and weeds don't compete with your crop for valuable nitrogen. The design does not create furrows but a smooth field surface. This method not only reduces run-off but causes less topsoil to be exposed to the elements.

The main frame is manufactured with reinforced heavy walled tubing for long term durability and value. Only one hydraulic outlet is required and a special automatic hydraulic interlock allows you to lift the packer coils without lifting the wings when turning.

3.1 Active Harrow Parts Identification

3.1.1 Left & Right Active Harrow

Ordering parts for the Wing Up Active Harrow Packer can be confusing if the right and left harrows are not clearly identified. To recognize which are the left and right harrow, a person must look at the leading edge of the harrow. The leading edge is the side of the harrow which penetrates the soil first. This side has small triangular gussets on the first two rows of teeth and the teeth are angled greater than 90 degrees. Figures 1 and 2 show the leading edge of an Active Harrow.

Please read section 5.11 in conjunction with this section.
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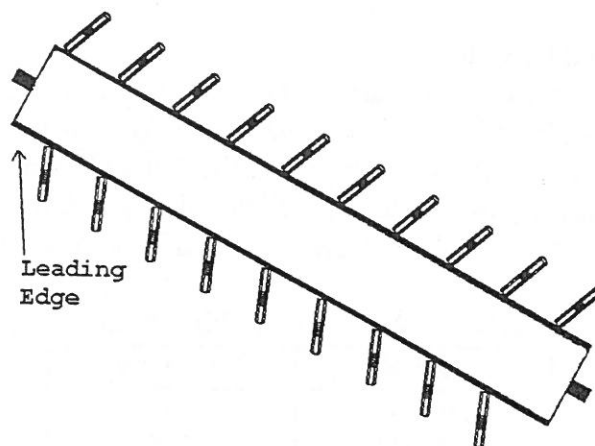


Figure 1. Active Harrow Leading Edge

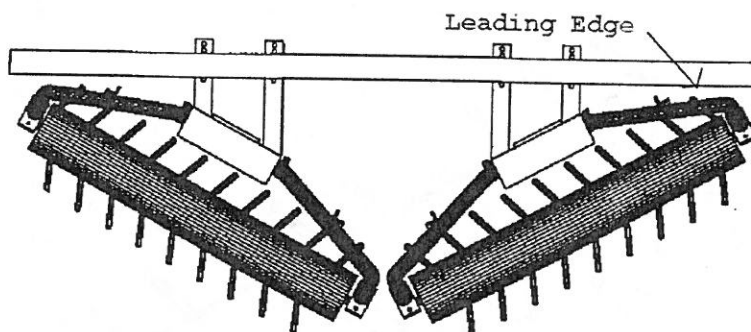


Figure 2. Active Harrow Leading Edge from Cultivator View

When looking directly into the leading edge, you will be able to identify the left and right active harrow by the direction of teeth on the top (Figure 3). When the teeth are slanted left, it is a left harrow and when slanted right, a right harrow.

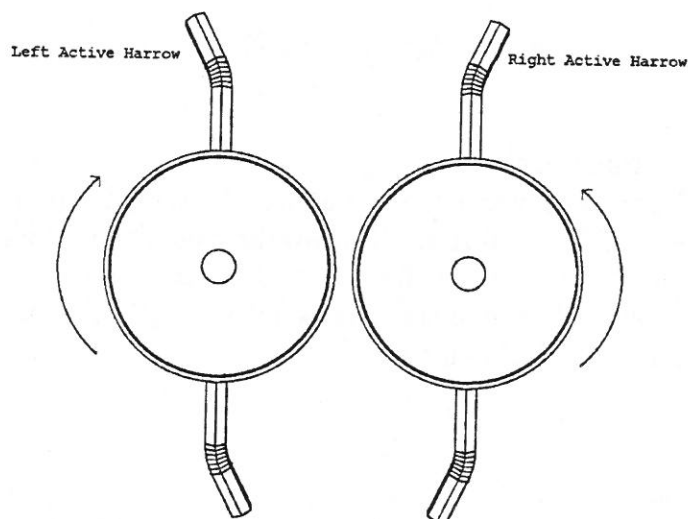


Figure 3. Left & Right Active Harrow

3.1.2 Working Length

This manual refers to Active Harrows being available in three lengths, 4ft, 5ft and 6ft. When measured from end plate to end plate the lengths will be longer however the referenced length refers to working width. Since the Active Harrow works at an angle, it covers less distance than its overall length. Figure 4 shows the difference between the actual and working widths. Table 1 shows the actual width compared to the working width.

Table 1. Actual & Working Widths

Actual	Working
59-3/4"	48"
83-3/4"	72"
71-3/4"	60"

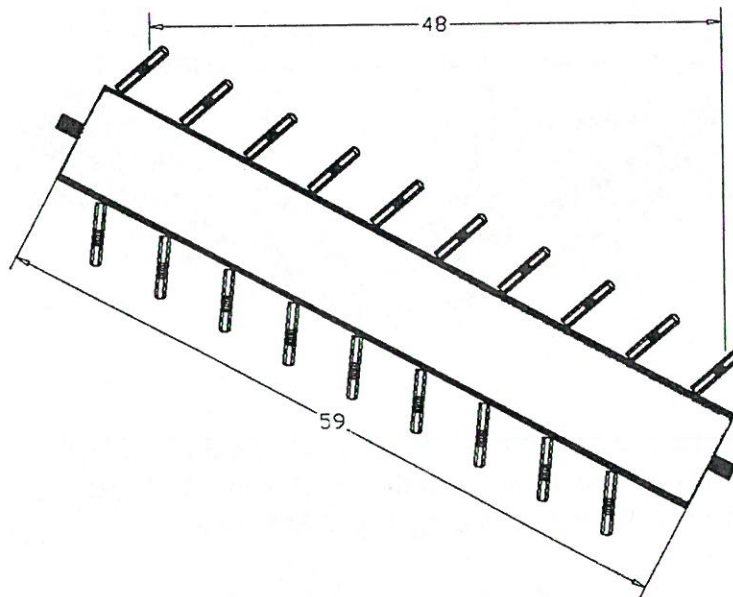


Figure 4. Actual & Working Widths

3.1.3 Mounting Brackets

Mounting brackets connect the overbraces to the Wing Up Active Harrow Packer Bar frame. For the 4ft, 5ft and 6ft Active Harrow the mounting brackets are the same except there are rights and lefts to match the Active Harrows. Figure 5 shows the left and right mounting brackets. The centre bracket is similar to the left mounting bracket except the mounting arms are three inches longer.

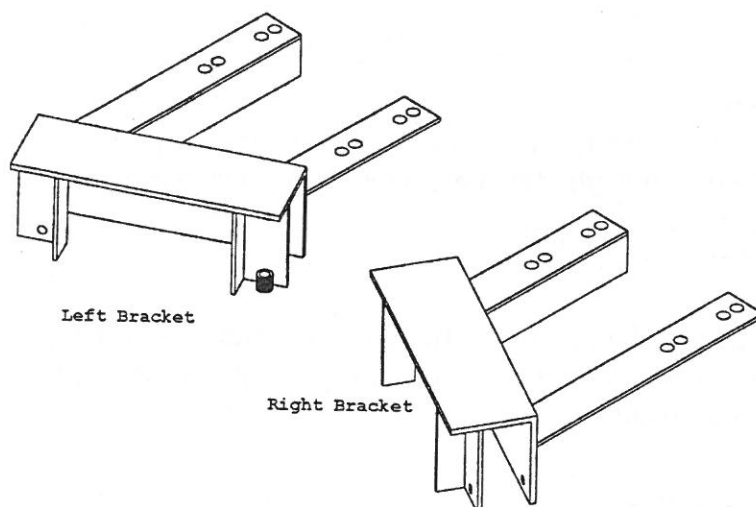


Figure 5. Left & Right Mounting Brackets

3.2 Packer Parts

To identifying the left and right packer look at the ends of the packers. If the end comes up on the left side or is turning clock-wise it a left packer, and if the end goes down on the left side or is turning counter clock-wise it is a right packer. Packers are available in 1-1/2" or 1-3/4" steel and three lengths; 5ft, 5-1/2ft and 6 ft.

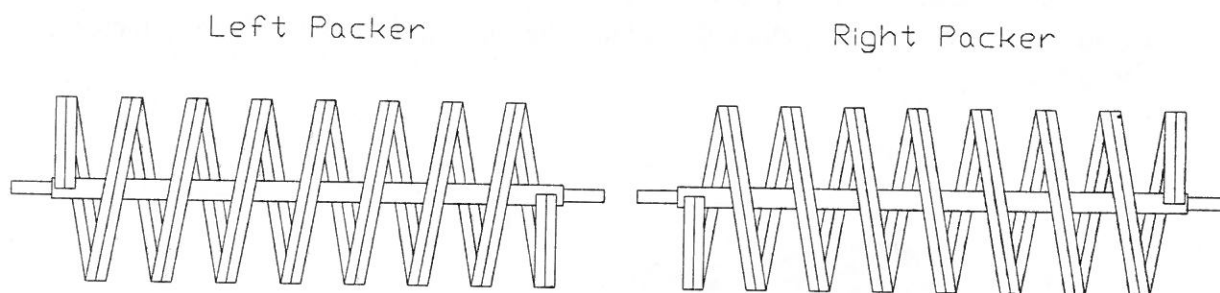


Figure 6. Left and Right Packer

4. Operation

4.1 Transport

To put the Wing Up Active Harrow Packer Bar into transport position:

- a. Retract lift cylinder to place wings in the up position.
- b. Set transport locks.
- c. Drive ahead.

Care should be exercised when transporting this equipment, as with any equipment. Avoid low overhead power lines and obey all regulations concerning the transport of equipment on public roads.

4.2 Field Operation

To put the Wing Up Active Harrow Packer bar into field position.

- a. Remove transport locks.
- b. Lower hydraulic cylinders to place wings in the field position.
- c. Drive ahead.

4.2.1 Setting of Active Harrows

Operation of the Active Harrow is simple and straightforward. The Active Harrows can be made more aggressive by bolting the mounting bracket at an angle as shown in Figure 7. By off setting the U bolts the angle of the Active Harrows increase by five degrees.

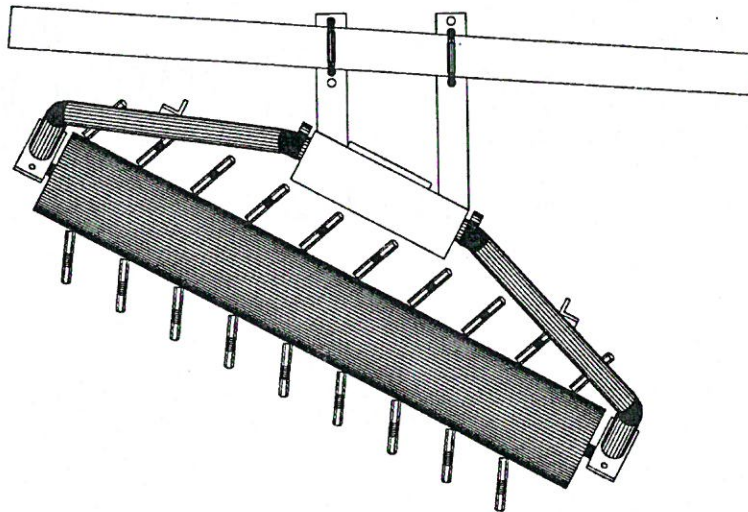


Figure 7. Active Harrow in Aggressive Position

The eye-bolt chain link on the lagging end of the Active Harrow is used to center the mounting bracket in the working position. The chain should be tightened in the field after the Active Harrows have been pulled. If the overbrace rubs against the mounting bracket then tighten the nut on the eye-bolt.

One adjustment available is the stop bracket shown on Figure 12, item #2. Because the leading edge has a tendency to dig in, it may be necessary to raise the leading edge of the Active Harrow using the lifting bolts, item #1 of Figure 12.

4.3 Maintenance

Maintenance of the Wing Up Active Harrow Packer Bar is simple and straight forward. The four areas that need to be maintained are:

Tires
Wheel Pivot Assembly
Packer Pivot Assembly
Bearing on Active Harrows & Packers

The table below describes location, frequency and type of maintenance required at each area.

Table 2. Maintenance Schedule

Area	Position	Type of Maintenance	Frequency	Number of Sites
Wheel Pivot	Sec. 5.3 Item #10	Grease	MONTHLY	4
Tires	Sec 5.12 Item #2	Grease	WEEKLY	2
	Sec 5.14 Item #2	Grease	WEEKLY	2
	Sec 5.12&5.14 Item #4	Check Air	MONTHLY	4
Packer Pivot	Sec 5.4 Item #3	Grease	DAILY	2/packer
	Sec 5.4 Item #4	Grease	DAILY	1/packer
A.H. Bearings	Sec 5.6 Item #4	Grease	*	2/unit
Packer Bearings	Sec 5.4 Item #8	Grease	*	2/unit

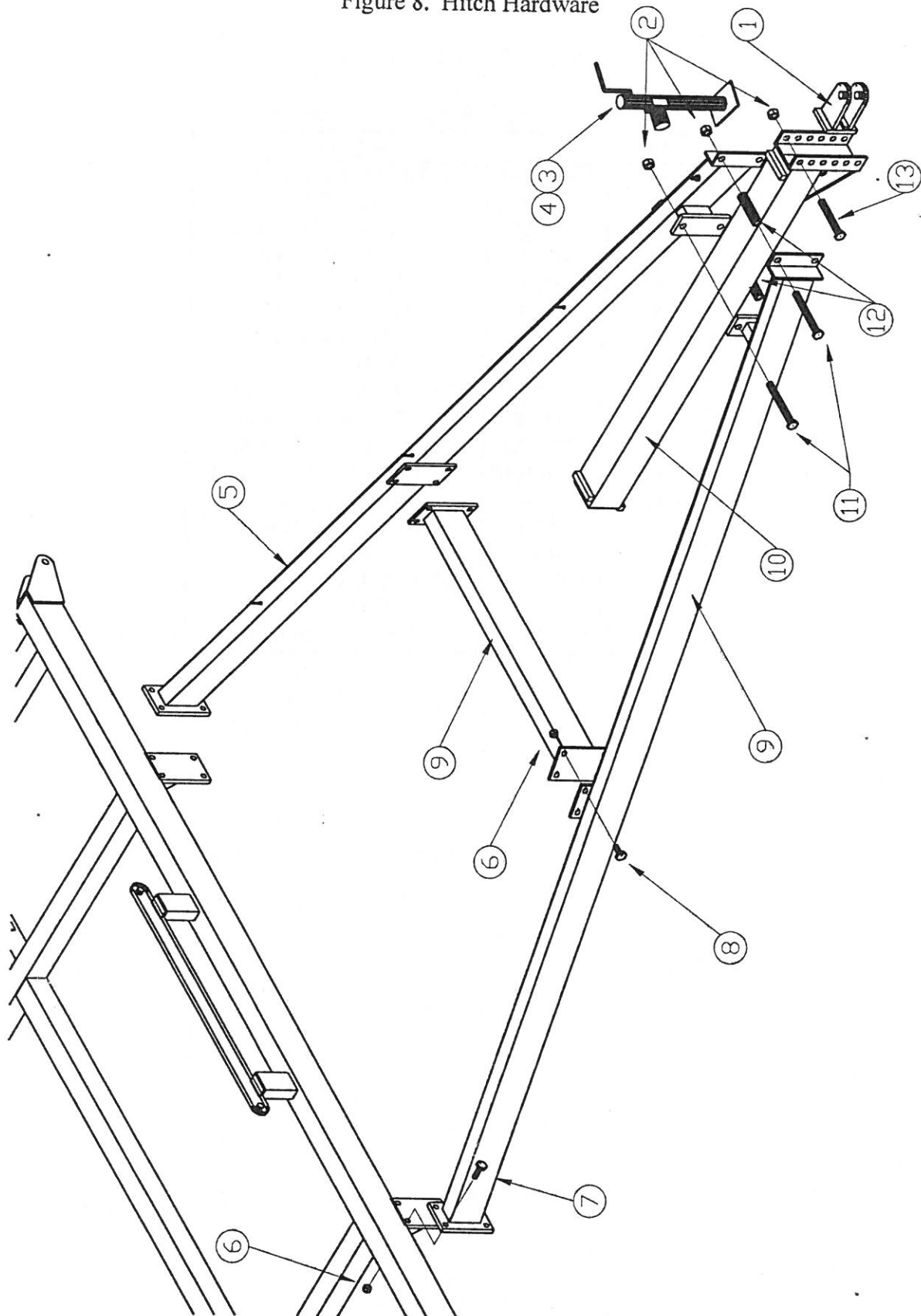
* Bearings are sealed and do not need to be greased. Zerks are supplied to allow use of non-sealed bearings.

5 Parts**5.1 Hitch Hardware**

Table 3. Hitch Component List

Item No.	Part No.	Description
1	45060	Double Tongue Hitch
2	LNC16	1" UNC Lock Nut
3	92095	5000 LB. x 15" S.W.
5	65004	Left Hitch Frame
6	LNC12	3/4" UNC Lock Nut
7	B5C1240P	3/4" x 2 1/2" UNC GR. 5 Bolt
8	B5C1232P	3/4" x 2" UNC GR. 5 Bolt
9	65022	Right Hitch Frame
10	65005	Sliding Hitch
11	B5C12144	1" x 9" UNC GR. 5 Bolt
12	65001	Hitch Roller
13	B5C16120	1" x 7 1/2" UNC GR. 5 Bolt

Figure 8. Hitch Hardware

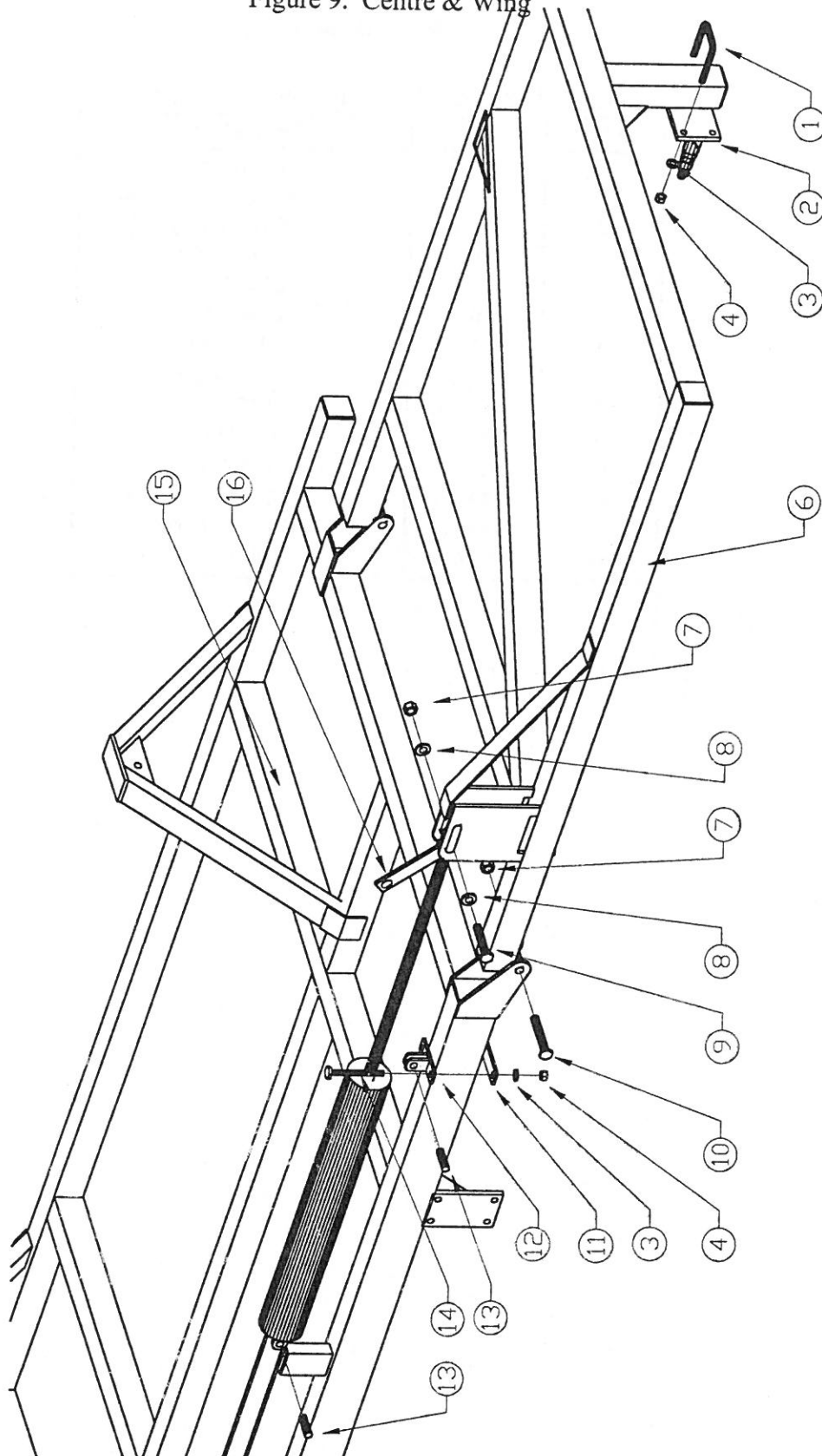


5.2 Centre & Wing

Table 4. Centre & Wing Component List

Item No.	Part No.	Description
1	UB126496	3/4" x 4" x 6" U-Bolt
2	65014	Wing Axle Plate
3	LW12P	3/4" Lock Washer Plated
4	NC12P	3/4" UNC Nut Plated
6	65038	Right Wing 34'-36'
6	65039	Left Wing 34'-36'
6	65002	Right Wing 40'-43'
6	65025	Left Wing 40'-43'
7	LNC16P	1" UNC Lock Nut Plated
8	FW16P	1" FLAT Washer Plated
9	B5C1688P	1" x 5 1/2" UNC GR. 5 Bolt PL
10	B5C16104P	1" x 6 1/2" UNC GR. 5 Bolt PL
11	65056	4" Mounting Plate
12	65055	Wing Transport Lock
13	91603	1" x 3 3/8" PIN
14	B5C12120P	3/4"x7 1/2" UNC GR. 5 Bolt PL
15	65000	Centre Frame
16	65013	Wing Transport Lock

Figure 9. Centre & Wing

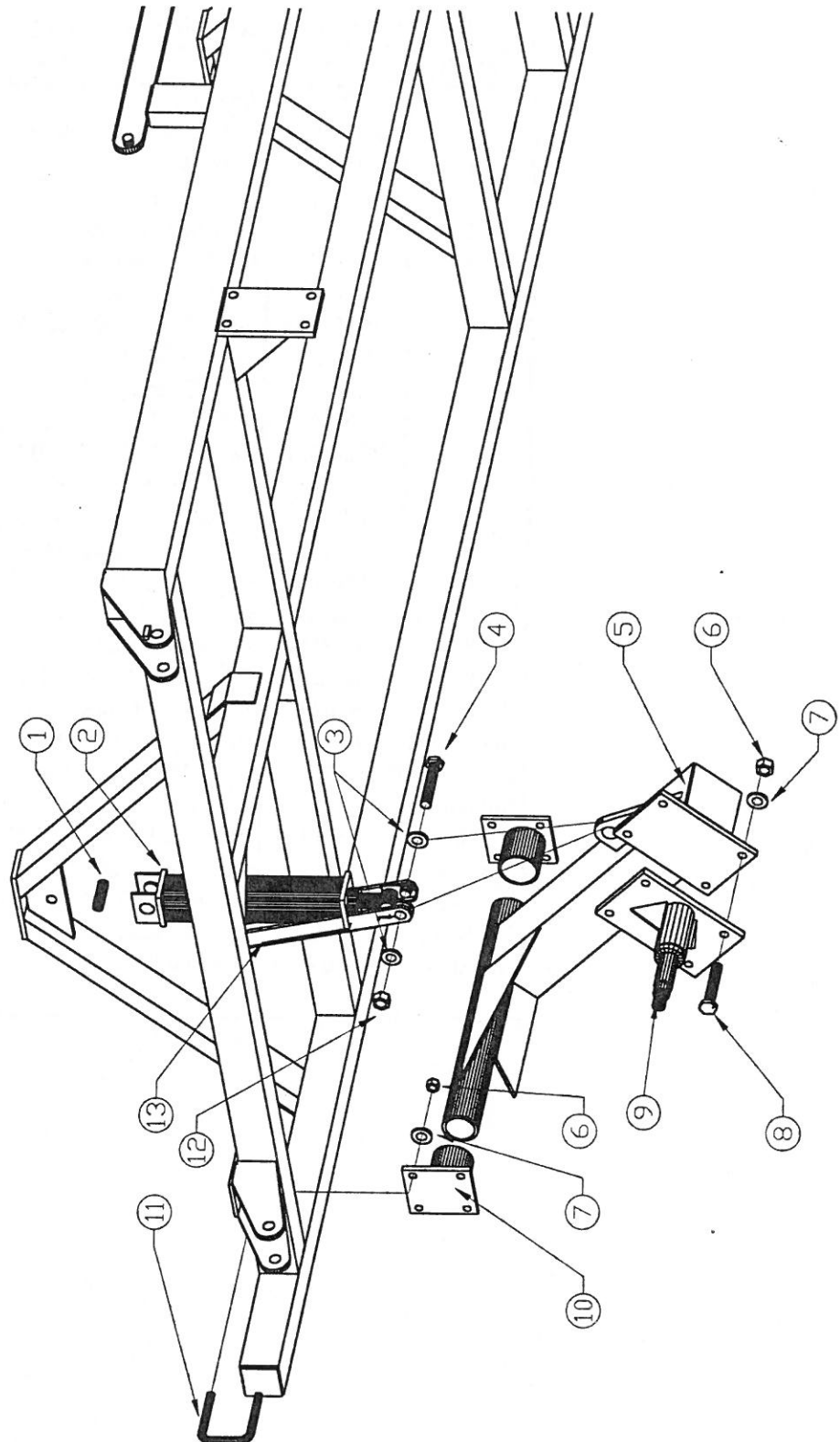


5.3 Main Wheel Lift

Table 5. Main Wheel Lift Component List

Item No.	Part No.	Description
1	91603	1" x 3 3/8" PIN
2	90115	3-1/2"x16" Bypass Cylinder
2	90116	3-1/4"x16" Bypass Cylinder
3	LW16	1" Lock Washer
4	B5C1696P	1" x 6" UNC GR. 5 Bolt
5	65007	Main Lift
6	NC12	3/4" UNC Nut
7	LW12	3/4" Lock Washer
8	B5C1240	3/4" x 2 1/2" UNC GR. 5 Bolt
9	65054	Spindle & Axle Plate
10	65006	Main Frame Wheel Mounts
11	UB126496	3/4" x 12" x 96" U-Bolt
12	LNC16	1" UNC Lock Nut
13	65051	Wheel Transport Lock

Figure 10. Main Wheel Lift

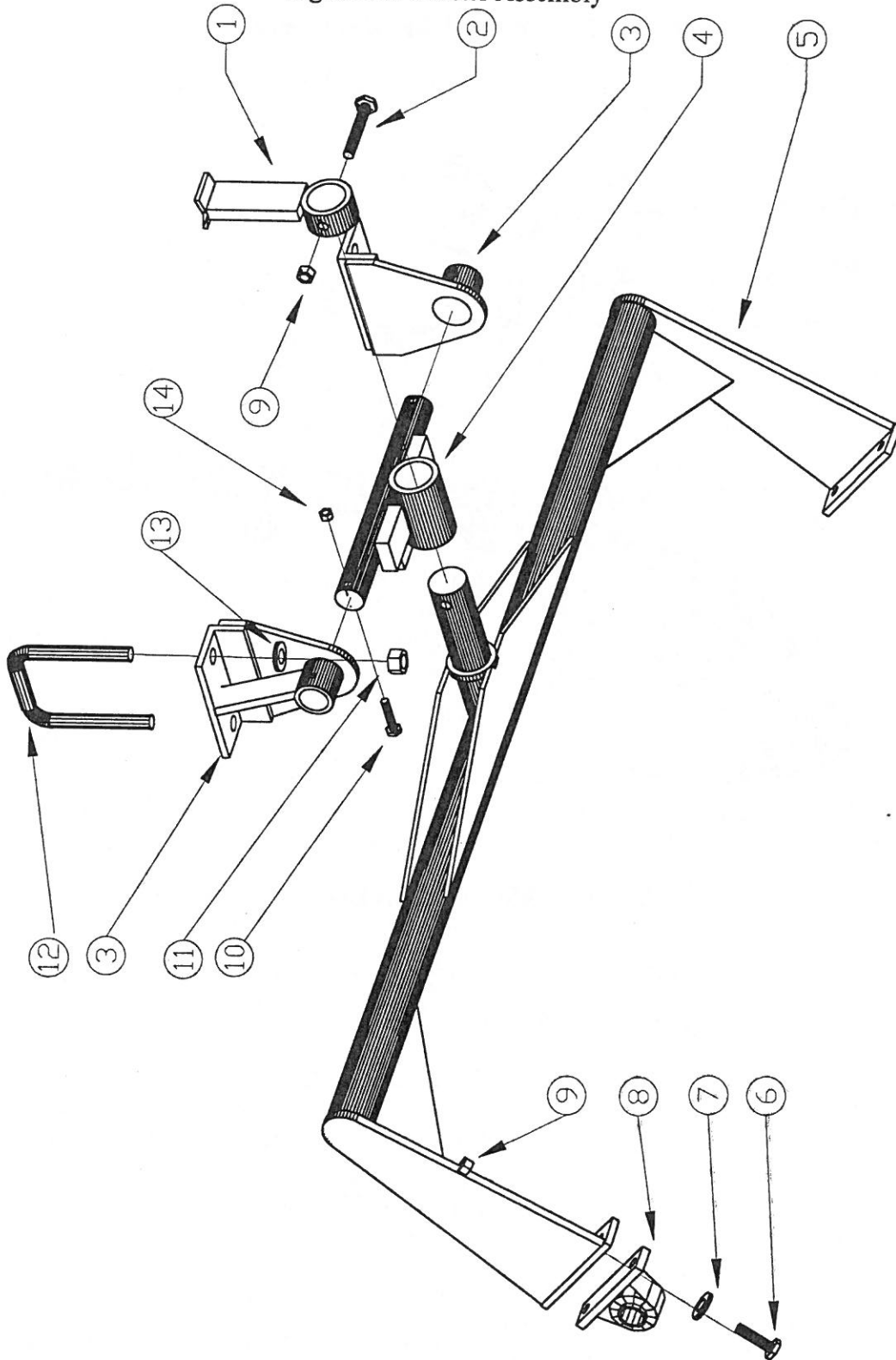


5.4 Packer Assembly

Table 6. Packer Assemble Hardware List

Item No.	Part No.	Description
1	65011	Ring Stop
2	B5C0856P	1/2 x 3 1/2" UNC GR. 5 Bolt PL.
3	65010	Packer Mount
4	65012	Pivot Brace
5	65009	5ft Packer Overbrace
5	65023	5 1/2ft Packer Overbrace
5	65024	6 ft Packer Overbrace
6	B5C0836P	1/2" x 2 1/4" UNC GR. 5 Bolt PL
7	FW08P	1/2" Flat Washer Plated
8	92083	1 1/4" Bearing & Lock Collar
9	LNC08	1/2" UNC Lock Nut
10	B5C0632P	3/8" x 2" UNC GR. 5 Bolt PL
11	NC12P	3/4" UNC Nut Plated
12	UB126496	3/4" x 4" x 6" U-Bolt
13	LW12P	3/4" Lock Washer Plated
14	LNC06	3/8" UNC Lock Nut
Not Shown	65026	5ft Left Packer x 1-1/2"
Not Shown	65027	5ft Right Packer x 1-1/2"
Not Shown	65028	5 1/2ft Left Packer x 1-1/2"
Not Shown	65029	5 1/2ft Right Packer x 1-1/2"
Not Shown	65030	6ft Left Packer x 1-1/2"
Not Shown	65031	6ft Right Packer x 1-1/2"
Not Shown	65032	5ft Left Packer x 1-3/4"
Not Shown	65033	5ft Right Packer x 1-3/4"
Not Shown	65034	5 1/2ft Left Packer x 1-3/4"
Not Shown	65035	5 1/2ft Right Packer x 1-3/4"
Not Shown	65036	6ft Left Packer x 1-3/4"
Not Shown	65037	6ft Right Packer x 1-3/4"

Figure 11. Packer Assembly



5.5 Overbrace & Mounting Bracket

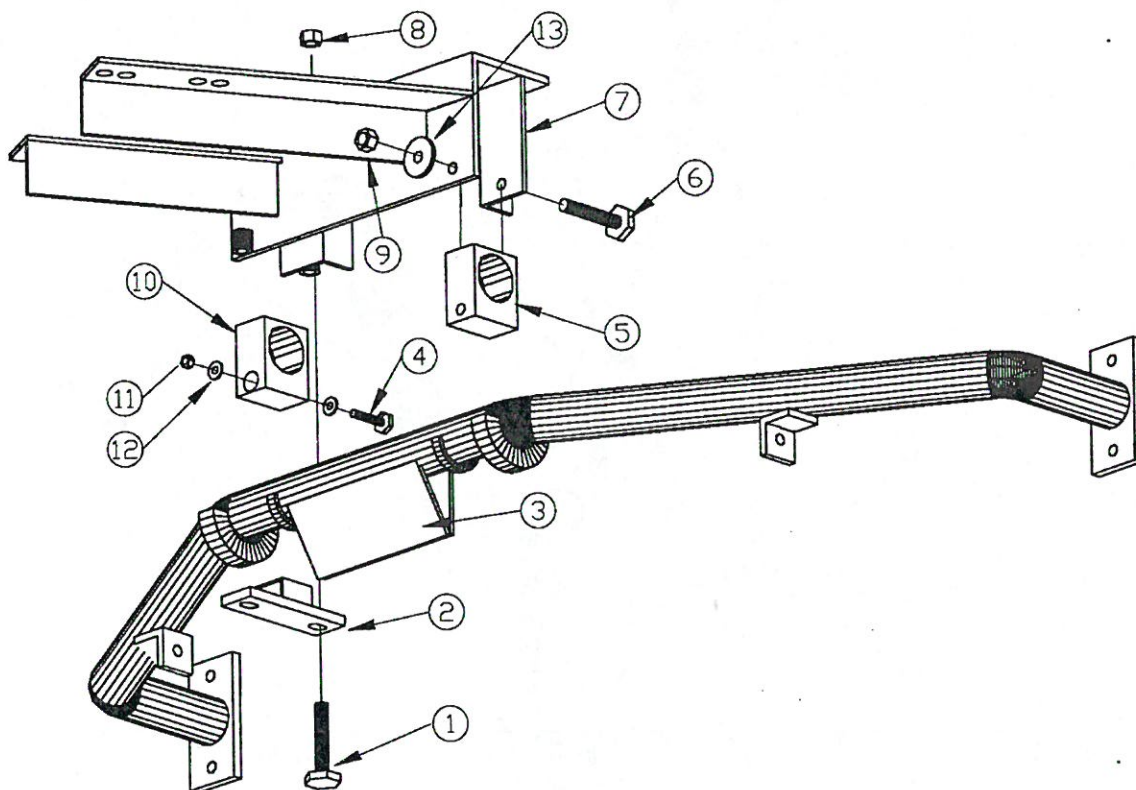


Figure 12. Mounting Bracket & Overbrace

Figure 9 shows how the overbrace and mounting bracket are assembled. The overbrace (Item #3) needs to be oriented downward to hit the mounting bracket when in transport position. Items #5 and #10 need to be placed correctly. Item #5 mounts on the long arm side of the mounting bracket and item #10 mounts on the short arm side of the mounting bracket.

Table 7. Mounting Bracket & Overbrace Parts List

Item No.	Part No.	Description
1	B5C1056P	5/8" x 3-1/2" UNC Gr. 5 Bolt
2	60032	Block Stop Bracket
3	65063	4ft Overbrace
	65064	5ft Overbrace
	65065	6ft Overbrace
4	B5C0632P	3/8" x 2" UNC Gr. 5 Bolt
5	60030	Rub Wear Block
6	B5C0880P	1/2" x 5" UNC Gr. 5 Bolt
7	60224	Left A.H. Mounting Bracket
	60225	Right A.H. Mounting Bracket
	65057	Centre Left Extended Mounting Bracket
8	LNC10	5/8" UNC Lock Nut
9	LNC08	1/2" UNC Lock Nut
10	60033	Rub Moving Block
11	LNC06	3/8" UNC Lock Nut
12	FW06P	3/8" Flat Washer
13	92081	2" O.D. x 9/16" I.D. Flat Washer
Not Shown	60230	Eyebolt & Link Chain
Not Shown	LNC08	1/2" UNC Lock Nut

5.6 Overbrace & Active Harrow Drum

Assembly of the drum and overbrace is straight forward as shown in Figure 13. Note the difference between the left and right bearings. The difference is the location of the grease zerk. Both zerks should be pointing behind the Active Harrow for easier lubrication.

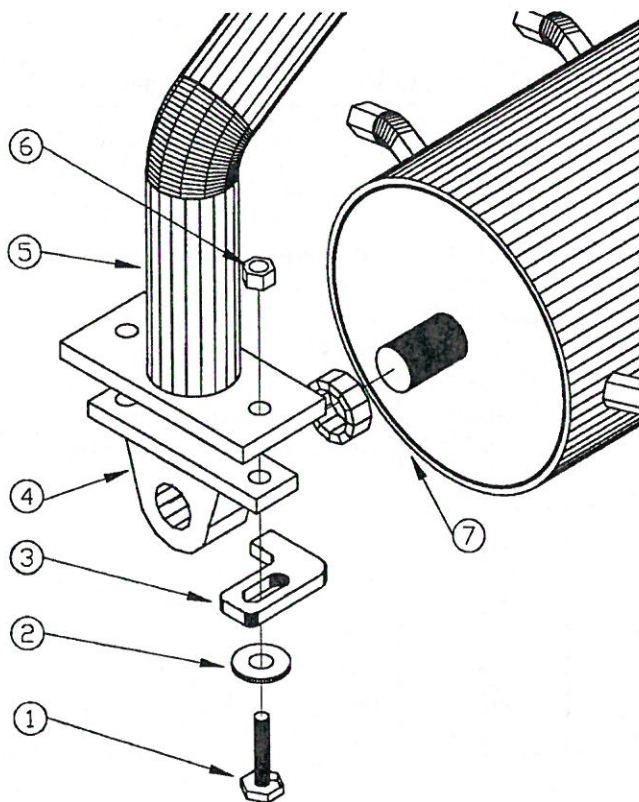


Figure 13. Active Harrow Drum & Overbrace Assembly

Table 8. Active Harrow Drum & Overbrace Assembly Parts List

Item No.	Part No.	Description
1	B5C0840	1/2"x2-1/2" UNC Gr. 5 Bolt
2	FW08P	1/2" Flat Washer
3	60034	Harrow Scraper
4	92083	1-1/4" Bearing
		1-1/4" Lock Collar
5		Active Harrow Overbrace
6	LNC08	1/2" UNC Lock Nut
7	60037	Right 4 ft Active Harrow Drum
	60018	Right 5ft Active Harrow Drum
	60229	Right 6ft Active Harrow Drum
	60036	Left 4 ft Active Harrow Drum
	60017	Left 5ft Active Harrow Drum
	60028	Left 6ft Active Harrow Drum

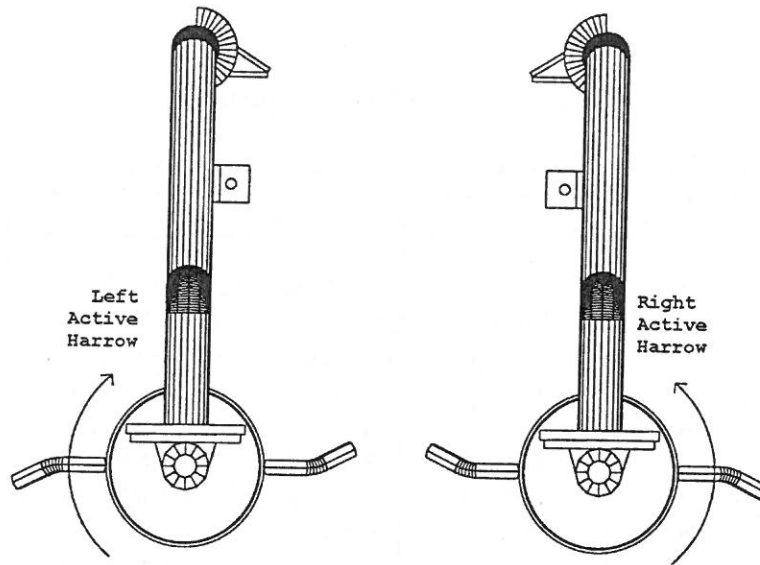


Figure 14. Overbrace & Active Harrow View From Leading Edge

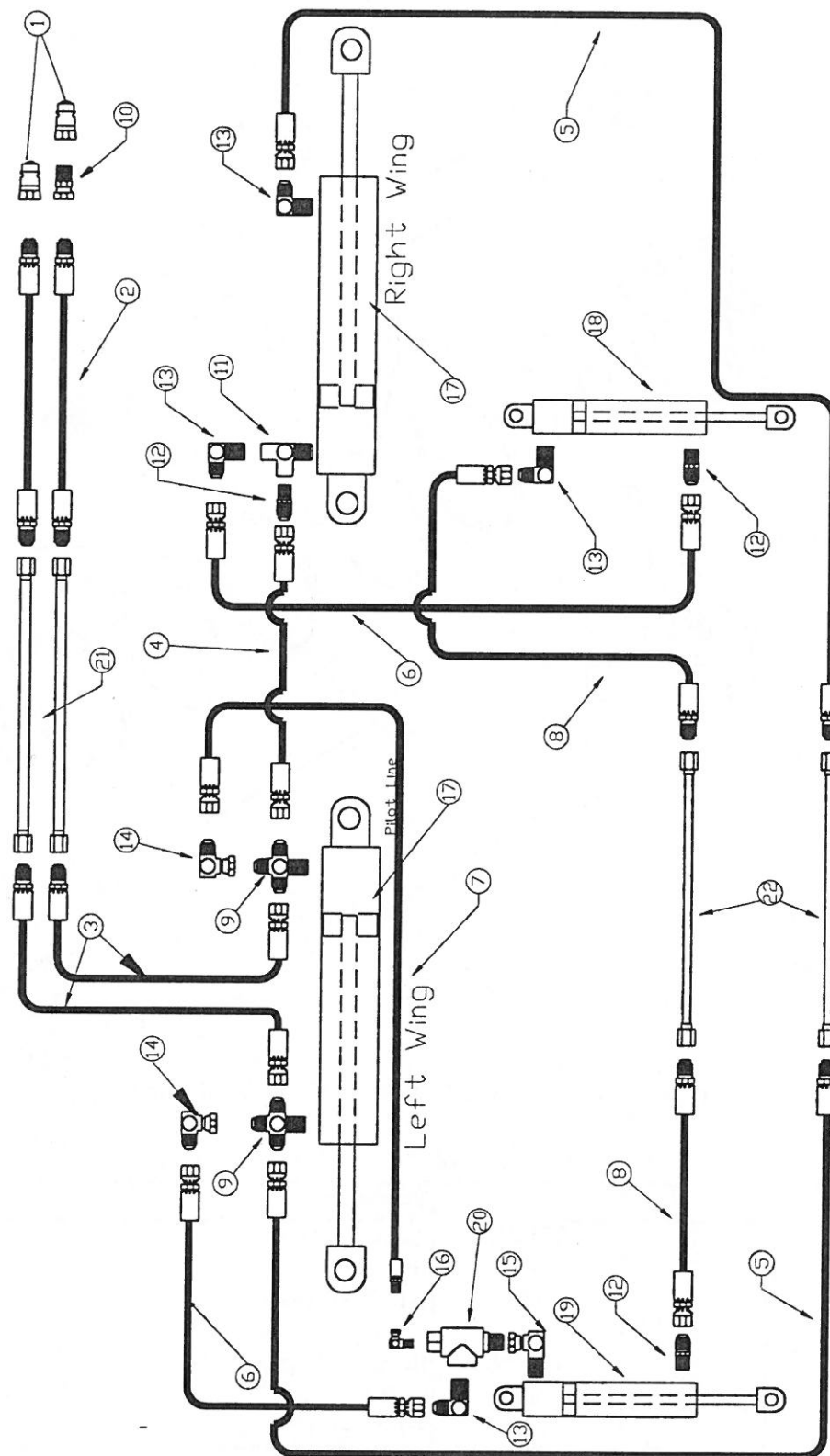
The scraper, item #3, is used to scrape the side of the Active harrow drum free of dirt and plant material. It may be positioned closer or further away from the drum depending on field conditions.

5.7 Hydraulic Layout

Table 9. Hydraulic Layout Component List

Item No.	Part No.	Description
1	601217	Pioneer Tips
2	601003	3/8x96 08MNPT x 08MJIC Hose
3	601026	3/8x55 08MJIC x 08FJIC Hose
4	601014	3/8x52 08MJIC x 08FJIC Hose
5	601027	3/8x60 08FJIC x 08FJIC Hose
6	90285	3/8x90 08FJIC x 08FJIC Hose
7	901286	3/8x88 08MJIC x 08MNPT Hose
8	601006	3/8x40 08FJIC x 08MJIC Hose
9	90563	1/2 MPT x 3(1/2 MJIC) Cross
10	61SA0808	1/2 M-NPTF to F-NPSM Orifice
11	25VK08	1/2 MNPT x 2(1/2 FNPT)
12	848FS0808	1/2 MNPT - 1/2MJIC Adapter
13	849FS0808	NPTF Male - 90° MJIC Adapter
14	879FS08	1/2 MJIC -1/2 FJIC Elbow
15	60UA080	M-NPTF to 90° F-NPSM Swivel
16	60US040	M-NPTF to 90° F-NPSM Swivel
17	204225	4-1/2"x42"x1-1/2" Cylinder
18	90116	3-1/4"x16" Bypass Cylinder
19	90115	3-1/2"x16" Bypass Cylinder
20	90691	PC50 Check Valve
21	90416	1/2"x132" Steel Line
22	90407	1/2"x96" Steel Line

Figure 15. Hydraulic Layout



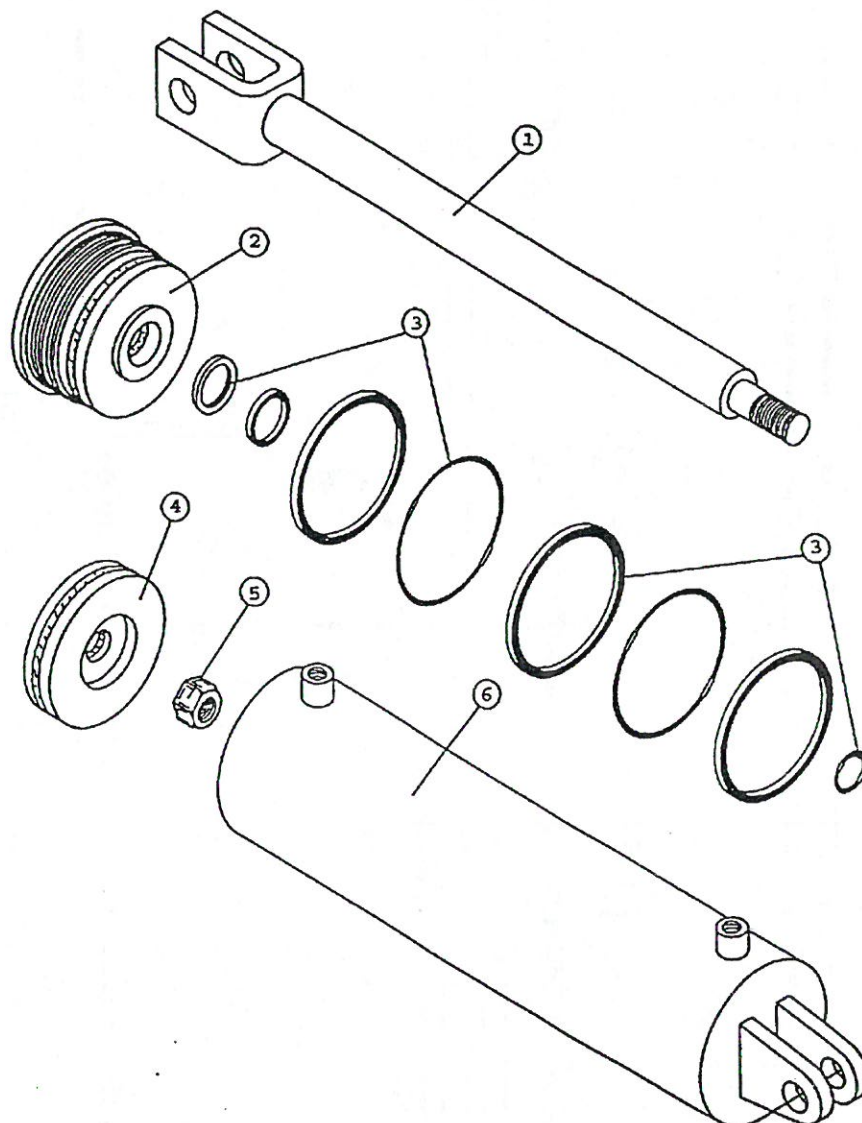
5.8 4-1/2"x42" Cylinder

Figure 16. 4-1/2"x42" Cylinder Component Breakdown

Table 10. 4-1/2"x42" Cylinder Component List

Item No.	Part No.	Description
1	204228	Piston Rod Assembly
2	204226	Head Plate
3	204230	4-1/2"x42" Seal Kit
4	204227	Piston
5	204224	Hexagon Locknut
6	204229	Cylinder Tube
	204225	4-1/2"x42" Cylinder

5.9 3-1/4"x16" Bypass Cylinder

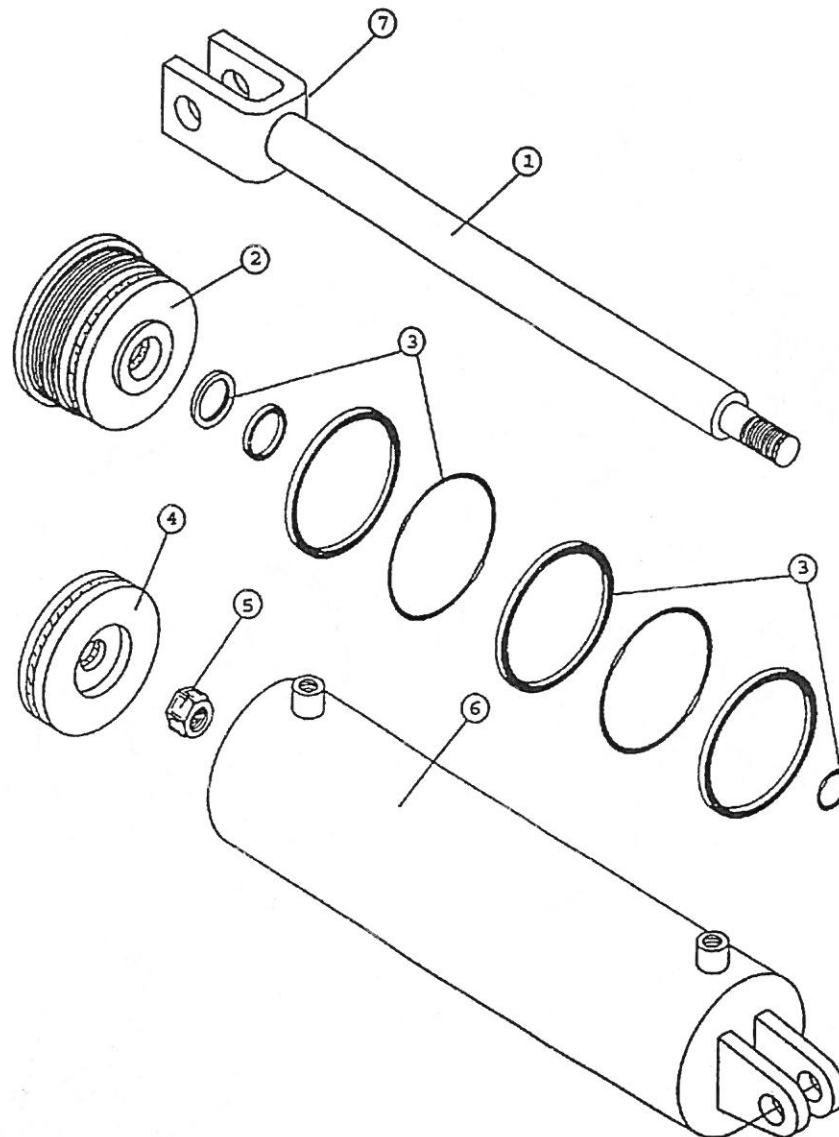


Figure 17. 3-1/4"x16" Cylinder Bypass Component Breakdown

Table 11. 3-1/4"x16" Cylinder Bypass Component List

Item No.	Part No.	Description
1	90651	Piston Rod Assembly 3-1/4"x16" BP
2	90770	Head Plate 3-1/4"x16" BP
3	90675	Seal Kit 3-1/4"x16" BP
4	90707	Piston 3-1/4"x16" BP
5	90723	Hexagon Locknut 3-1/4"x16" BP
6	90751	Cylinder Tube 3-1/4"x16" BP
7	90769	Cylinder Clevis 3-1/4"x16" BP
	90116	3-1/4"x16" BP Cylinder

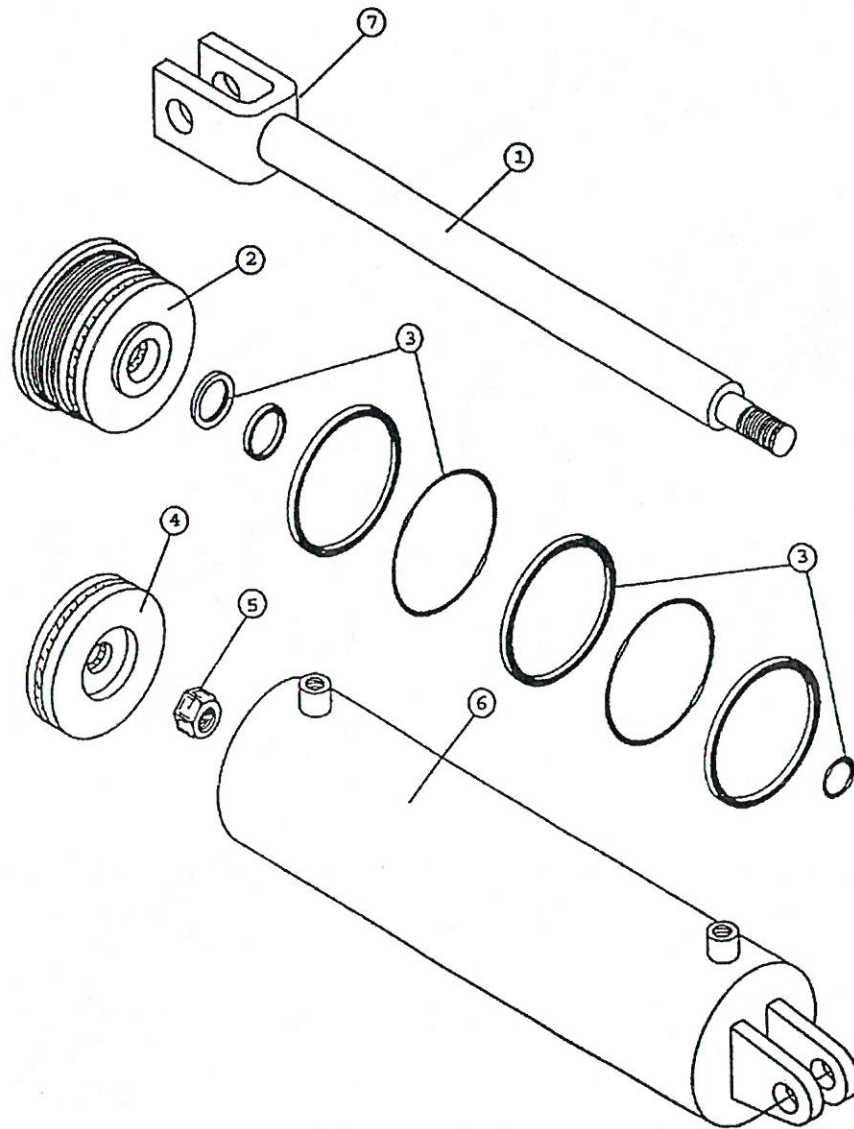
5.10 3-1/2"x16" Bypass Cylinder

Figure 18. 3-1/2"x16" Cylinder Bypass Component Breakdown

Table 12. 3-1/2"x16" Cylinder Bypass Component List

Item No.	Part No.	Description
1	90651	Piston Rod Assembly 3-1/2"x16" BP
2	90771	Head Plate 3-1/2"x16" BP
3	90697	Seal Kit 3-1/2"x16" BP
4	90708	Piston 3-1/2"x16" BP
5	90723	Hexagon Locknut 3-1/2"x16" BP
6	90752	Cylinder Tube 3-1/2"x16" BP
7	90769	Cylinder Clevis 3-1/2"x16" BP
	90115	3-1/2"x16" BP Cylinder

5.11 Active Harrow Layout

The Active Harrow layout on the Wing Up Active Harrow Packer Bar is different than mounting the Active Harrows on a cultivator. **This manual refers to Active Harrows as rights and lefts when mounted on a cultivator.** When Active Harrows are mounted on this particular machine, the right Active Harrow are mounted on the left side of the machine and the left Active Harrows mounted on the right side of the machine. When ordering parts, refer to the Active Harrows and Mounting Brackets as described in section four.

The table below shows the Active Harrow and Packer configuration for the Wing Up Active Harrow Packer Bar. Please note that machine widths are available from 25ft to 40ft although they may not be shown. Contact High-Line Manufacturing if you require more information concerning different widths.

Table 13. A.H. & Packer Requirement List

	35ft Width	40ft Width	41ft Width	43ft Width
Active Harrows				
4ft Left Hand	1			2
4ft Right Hand	1			2
4ft Centre	1	1	1	1
5ft Left Hand				
5ft Right Hand				
6ft Left Hand	2	3	3	2
6ft Right Hand	2	3	3	2
Packer				
5ft Left Hand	4	4	3	2
5ft Right Hand	3	4	3	2
5 1/2ft Left Hand			1	1
5 1/2ft Right Hand			1	1
6ft Left Hand				1
6ft Right Hand				1

5.12 Wing Axle & Wheel

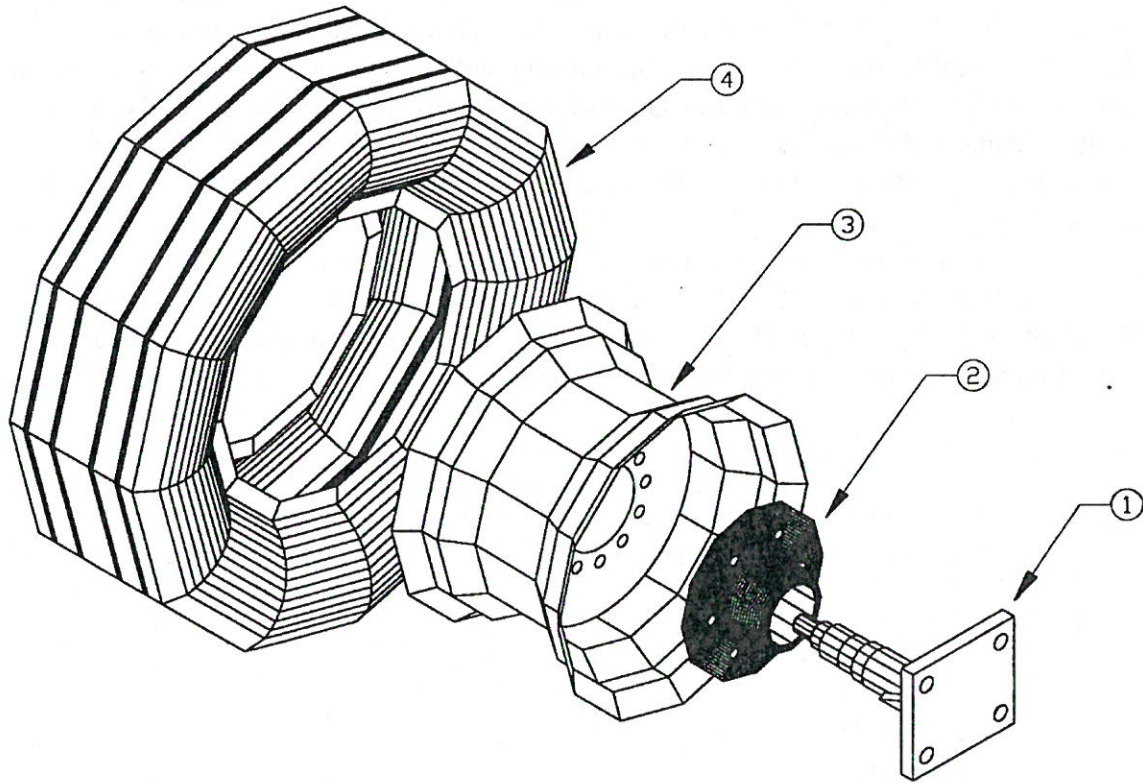


Figure 19. Wing Axle & Wheel Components

Table 14. Wing Axle & Wheel Component List

Item No.	Part No.	Description
1	65014	Wing Axle Plate
2	301012	HA614-1 Hub
3	91050	15x8x6 Wheel
4	301013	11Lx15 6 Ply
Not Shown	91048	TR415 Valve

5.13 H614 Hub

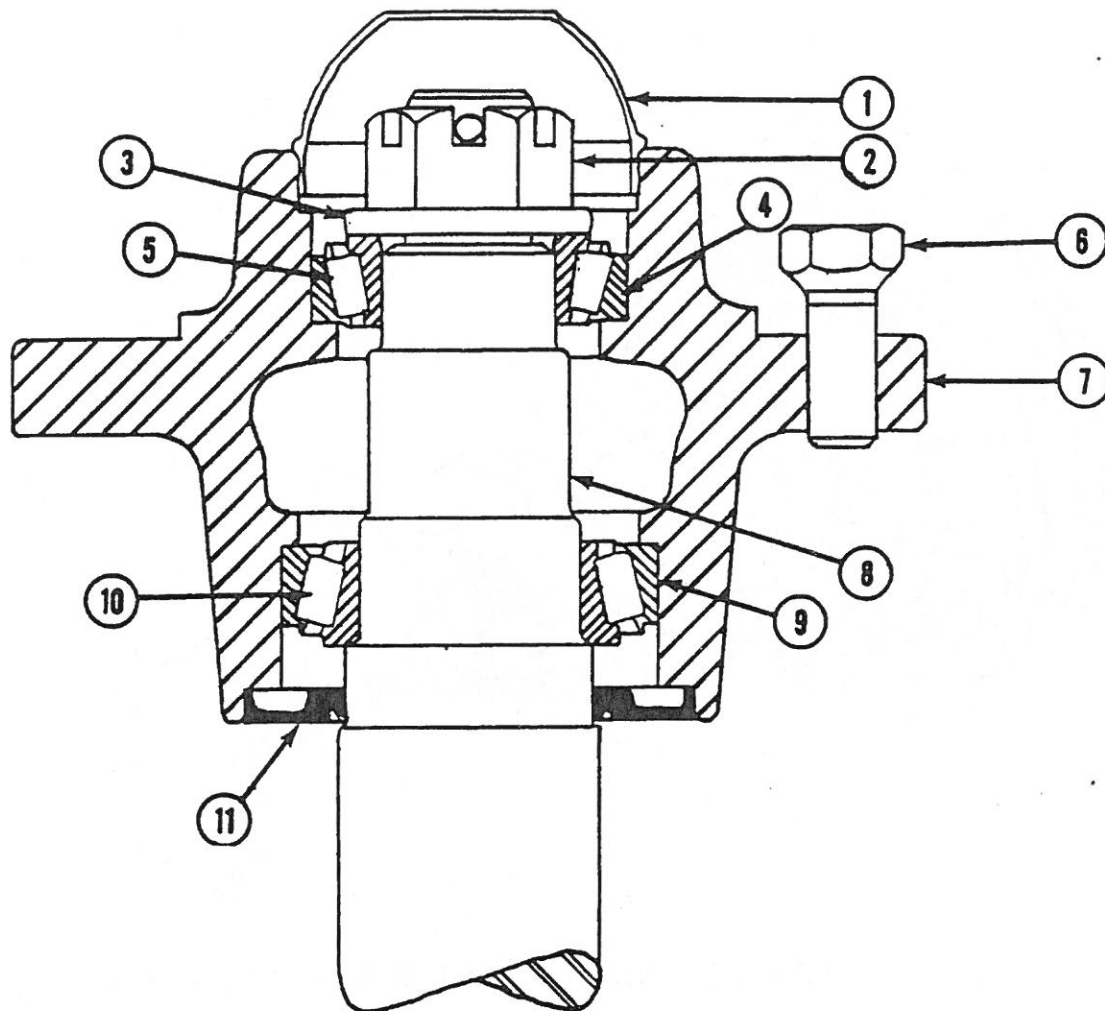


Figure 20. H614 Hub

Table 15. H614 Hub Component List

Item No.	Part No.	Description
1	301001	DC15 Dust Cap
2	301002	Castellated Nut 1"-14 UNS
3	301003	WA17 Washer 2"O.D. x 1"I.D.
4	301004	LM48510 Outer Cup
5	301005	LM48548 Outer Cone
6	301006	WB12 Wheel Bolt 9/16"-18" UNF x 1-1/4"
7	301007	H614 Hub
8	301008	SE16 Spindle Only
9	301009	LM603012 Inner Cup
10	301010	LM603049 Inner Cone
11	301011	SE16 Grease Seal

5.14 Centre Frame Axle & Wheels

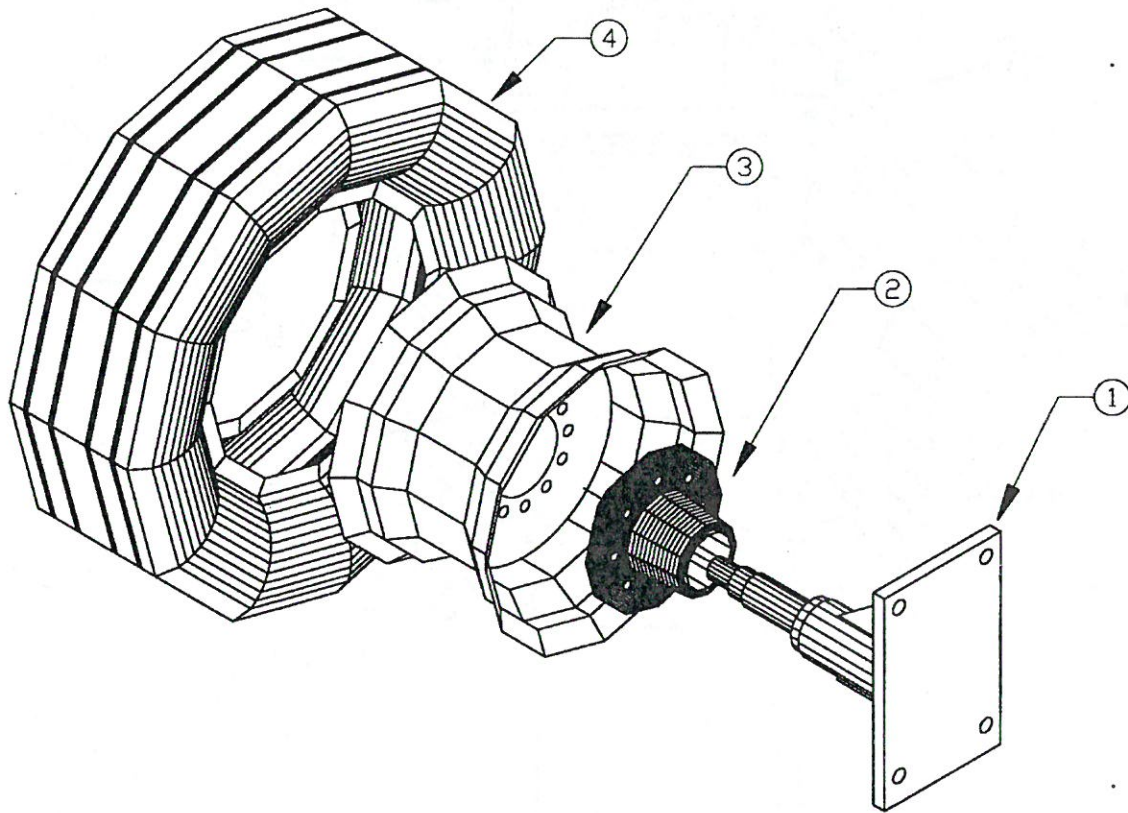


Figure 21. Centre Frame Axle & Wheel

Table 16. Centre Frame Axle & Wheel Component List

Item No.	Part No.	Description
1	65054	Centre Frame Axle Plate
2	301115	HA817-3 Hub
3	301113	W14Cx16.1 Wheel
4	301112	16.5Lx16.1 6 Ply
Not Shown	91048	TR415 Valve

5.15 H817 Hub

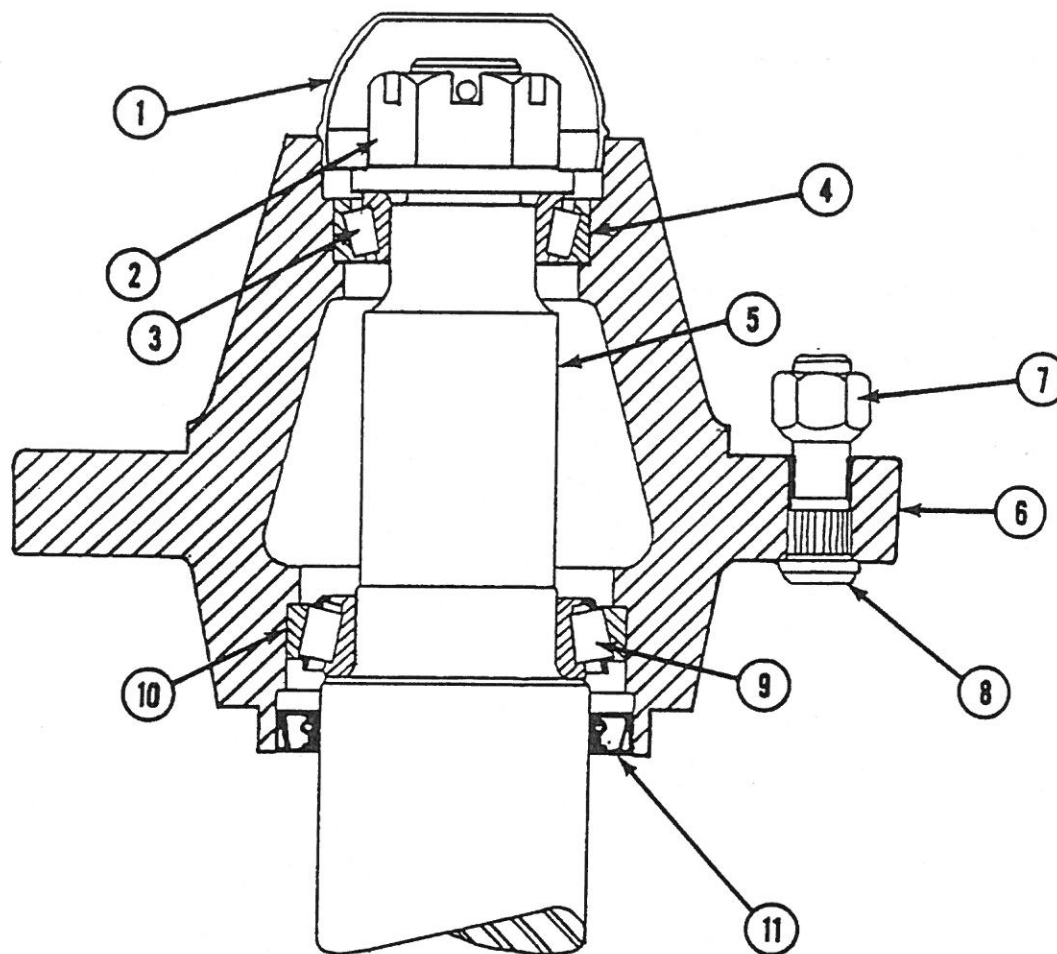


Figure 22. H817 Hub

Table 17. H817 Hub Component List

Item No.	Part No.	Description
1	301101	DC26 Dust Cap
2	301102	Castellated Nut 1-1/4" - 12 UNF
3	301103	LM501349 Outer Cone
4	301104	LM501310 Outer Cup
5	301105	S817 Spindle Only
6	301106	H817 Hub Only
7	301107	WB18 Nut 5/8" - 18 UNF
8	301108	WB46 Stud 5/8" - 18 UNF x 2-1/4"
9	301109	387AS Inner Cone
10	301110	382A Inner Cup
11	301111	SE42 Grease Seal

