

ASSEMBLY/OPERATOR'S/PARTS **INSTRUCTIONS**

WIL-RICH



Printed in USA (74215) 3/05

Wahpeton, ND 58074 PH (701) 642-2621

Fax (701) 642-3372

PERSONAL SAFETY IS IMPORTANT!

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

ADDRESS INQUIRIES TO:

WIL-RICH

PO BOX 1030

WAHPETON, ND 58074

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

Remove all wires and arrange the parts conveniently.

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

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

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

Loosely install all bolts connecting mating parts before final tightening.

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

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

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

A CAUTION

TO AVOID INJURY AND/OR MACHINE DAMAGE:

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

23325

ASSEMBLY INFORMATION

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

Bolts with no markings are grade 2

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

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

All U-bolts are grade 5.



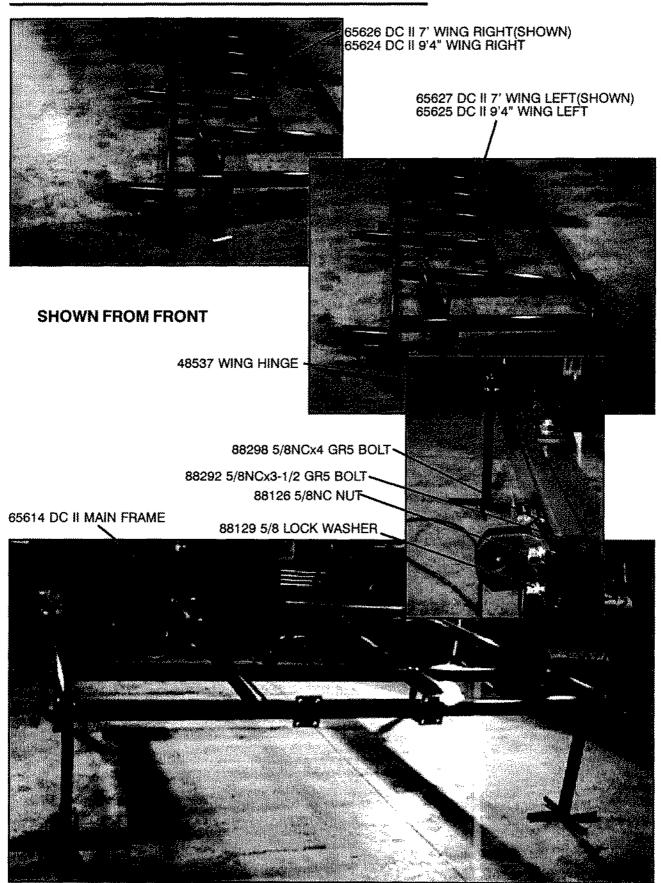
THIS SYMBOL USED TO CALL YOUR ATTENTION TO INSTRUCTIONS CON-CERNING YOUR PERSONAL SAFETY. BE SURE TO OBSERVE AND FOLLOW THESE INSTRUCTIONS

A CAUTION

Failure to follow these instructions may result in personal injury and/or equipment damage.

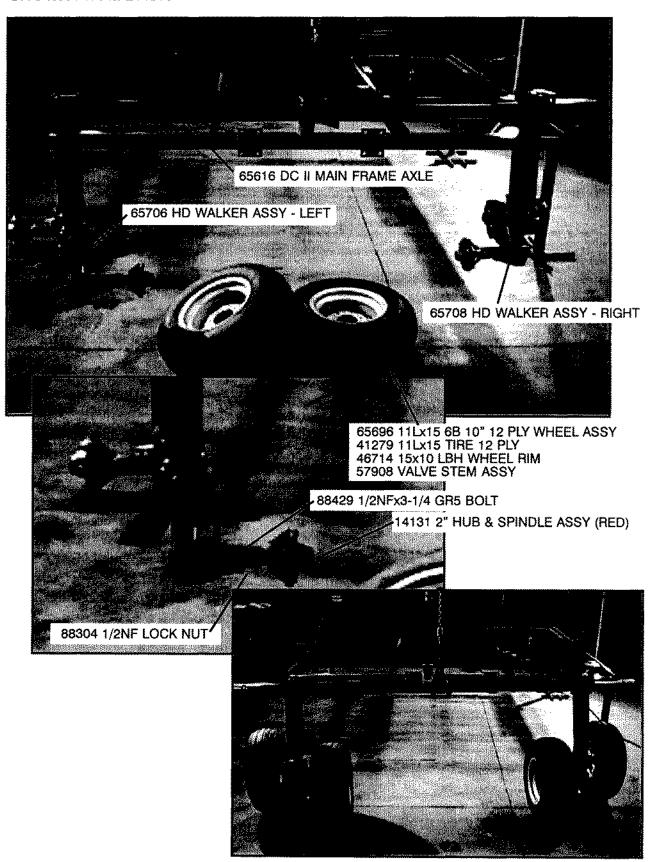
- Just before and during operation be sure no one is on or around the implement.
- Before activating the hydraulic system, check hoses for proper connections.
- Before lowering the wings for the first time, make sure the entire system has been charged with oil.
- With wings down always install hydraulic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

MAIN FRAME AND WING ASSEMBLY

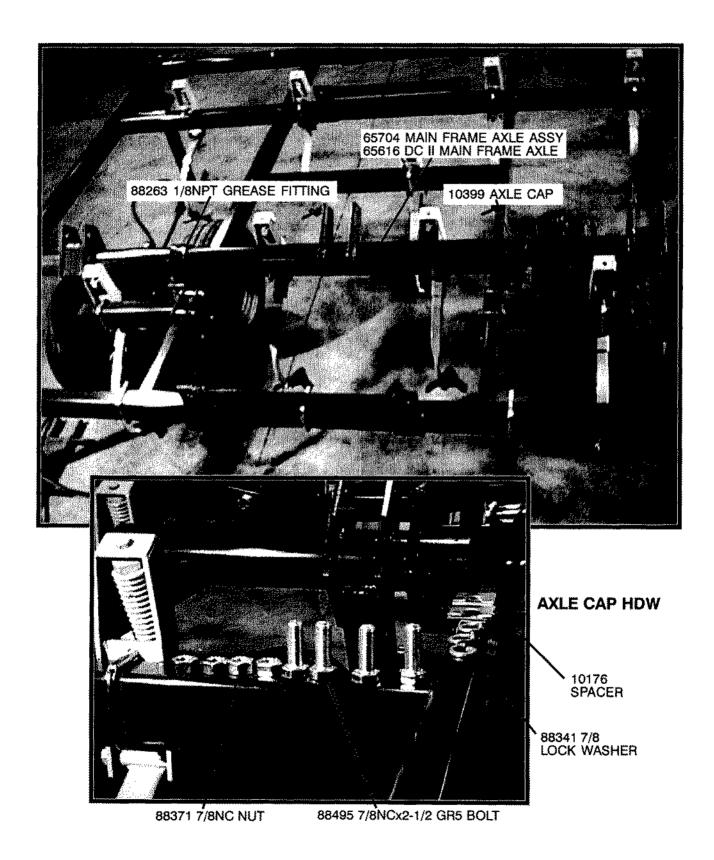


MAIN AXLE AND WALKER ASSEMBLY

SHOWN FROM BACK



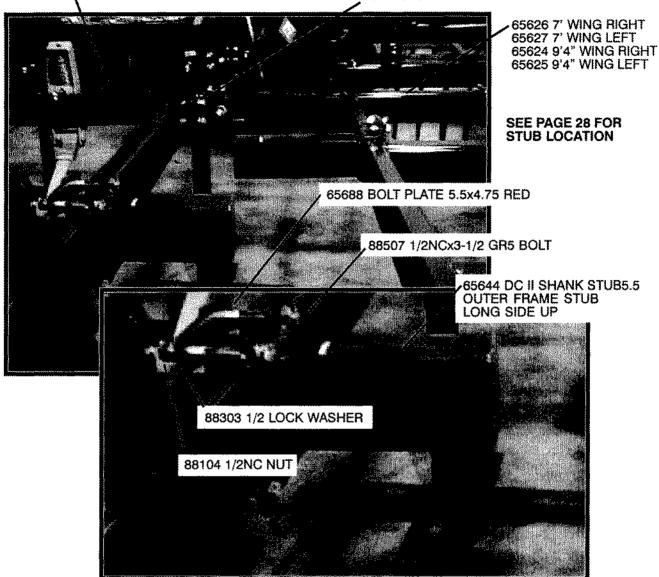
MAIN AXLE AND WALKER ASSEMBLY

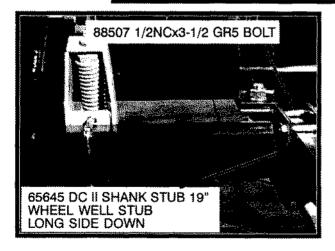


MAIN FRAME STUB

65614 MAIN FRAME

48537 WING HINGE

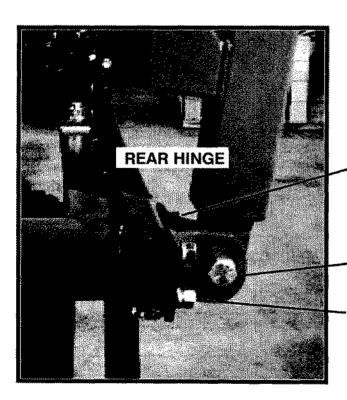






WING REST AND REAR HINGE



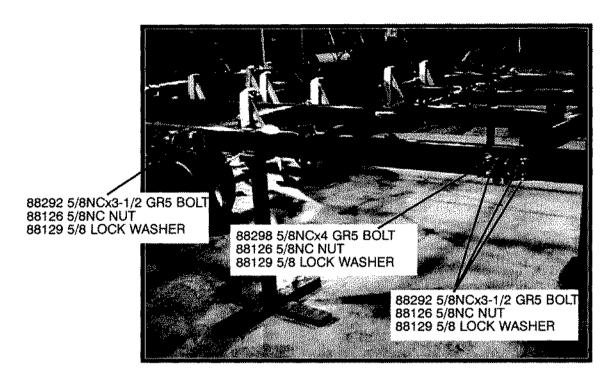


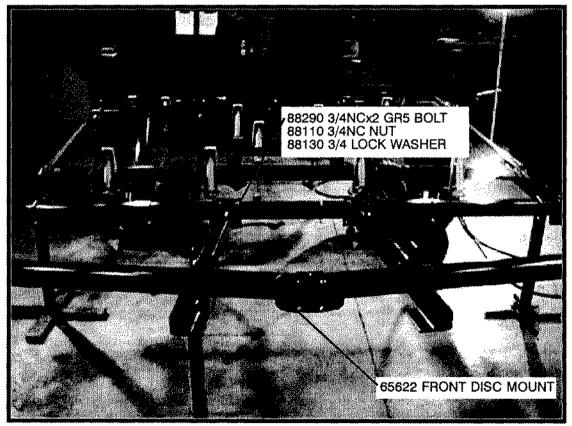
88298 5/8NCx4 GR5 BOLT 88126 5/8NC NUT 88129 5/8 LOCK WASHER

88447 1NCx3-1/2 GR5 BOLT 88348 1NC LOCK NUT

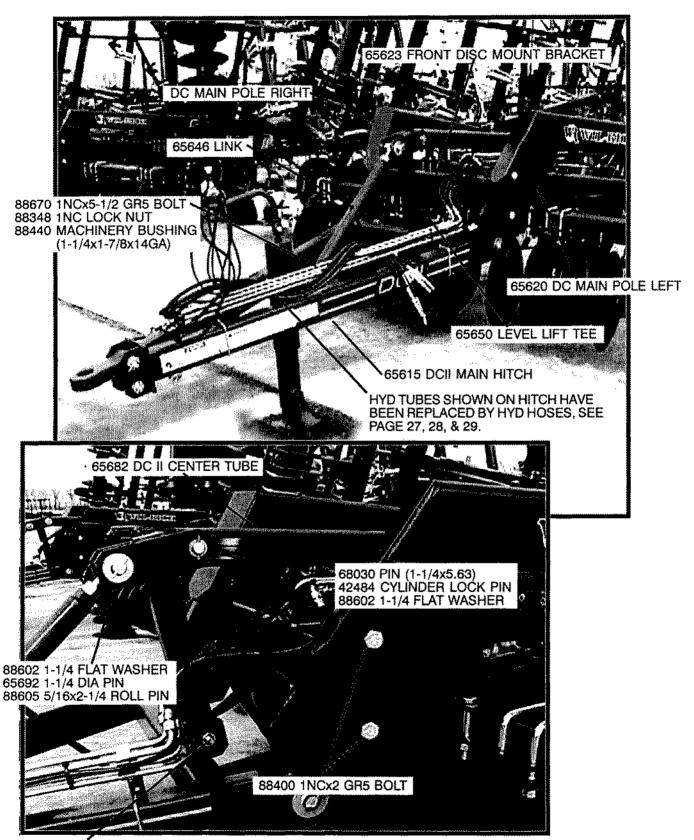
88292 5/8NCx3-1/2 GR5 BOLT 88126 5/8NC NUT 88129 5/8 LOCK WASHER

WING HINGES AND FRONT DISC MOUNT

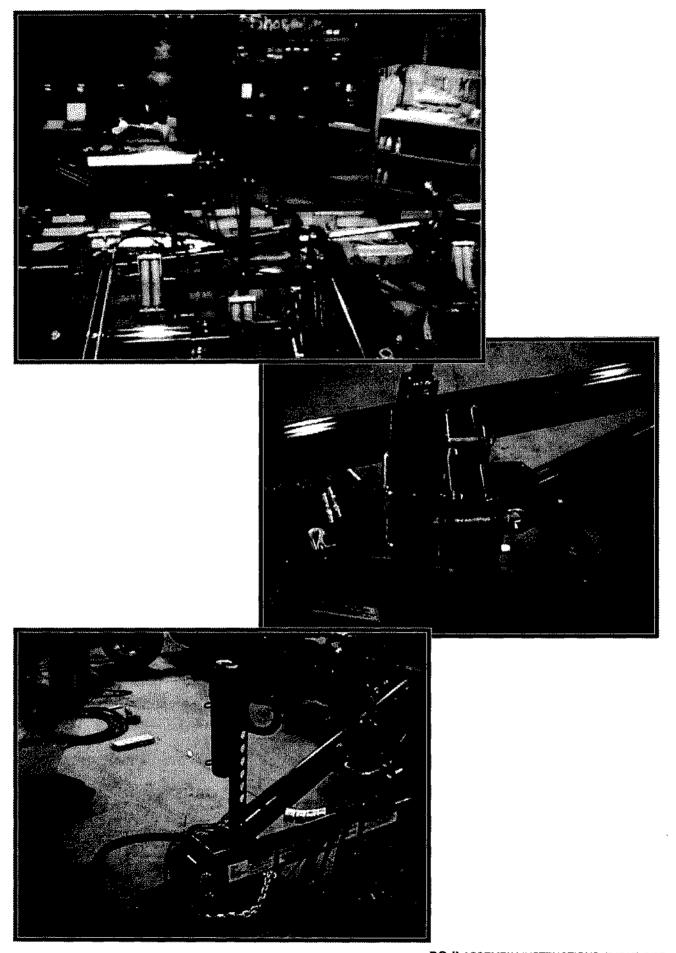




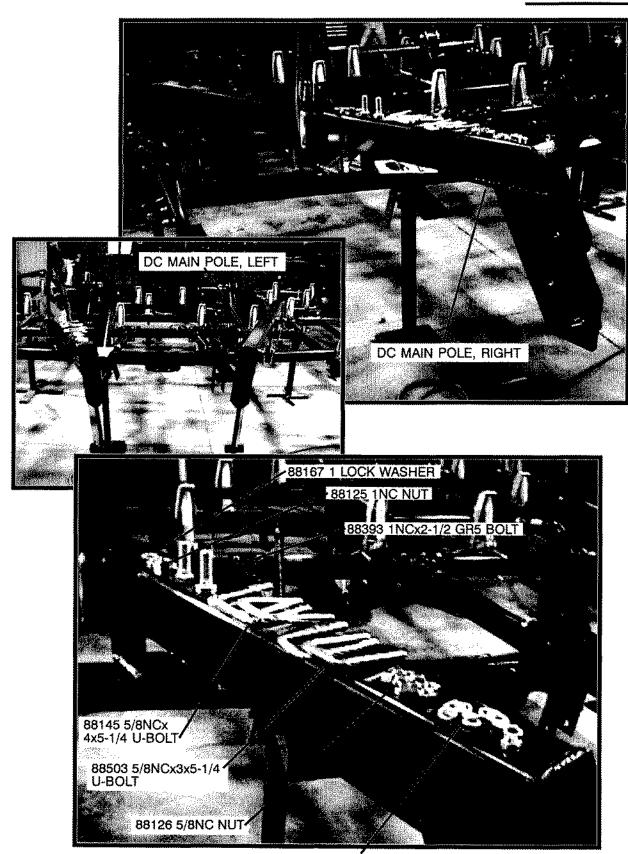
HITCH ASSEMBLY



88666 1NCx6-1/2 GR5 BOLT 88348 1NC LOCK NUT

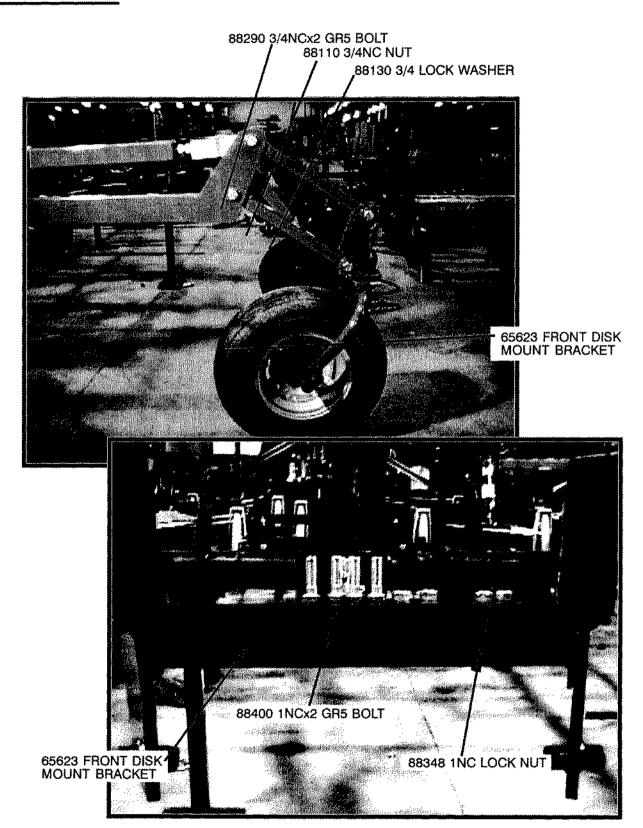


MAIN POLE



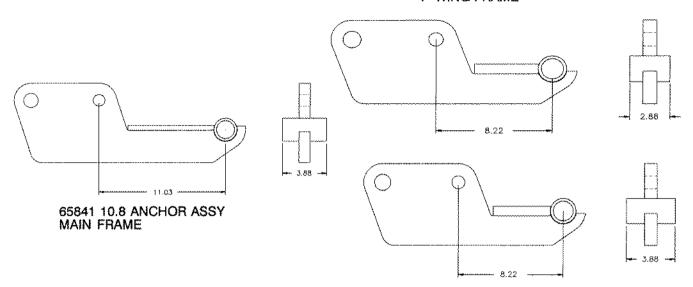
88129 5/8 LOCK WASHER

MAIN POLE

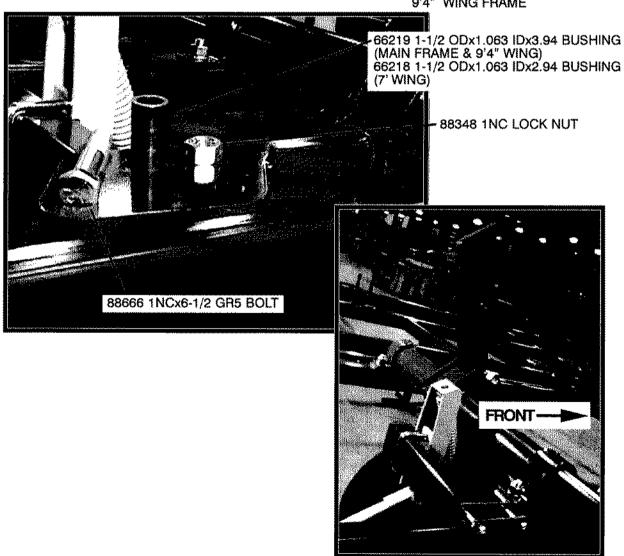


MAIN AXLE

65482 9.3 ANCHOR ASSY 7' WING FRAME



65483 9.3 ANCHOR ASSY 9'4" WING FRAME



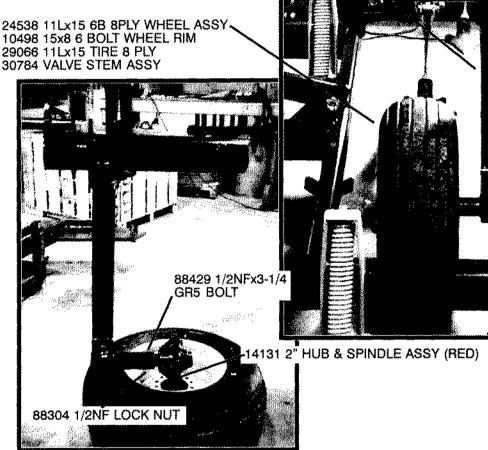
WING AXLE

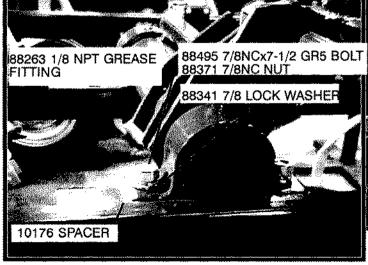
65636 DC II 7' WING AXLE LEFT (SHOWN) 65637 DC II 7' WING AXLE RIGHT 65634 DC II 9'4" WING AXLE LEFT 65635 DC II 9'4" WING AXLE RIGHT

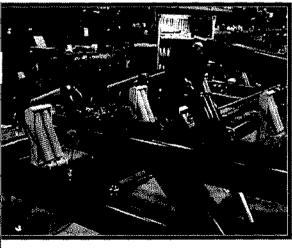
10399 AXLE CAP

NOTE: REFERENCE SHANK PLACE-MENT PAGES TO ORIENTATE WING **AXLE IN WING FRAMES.**

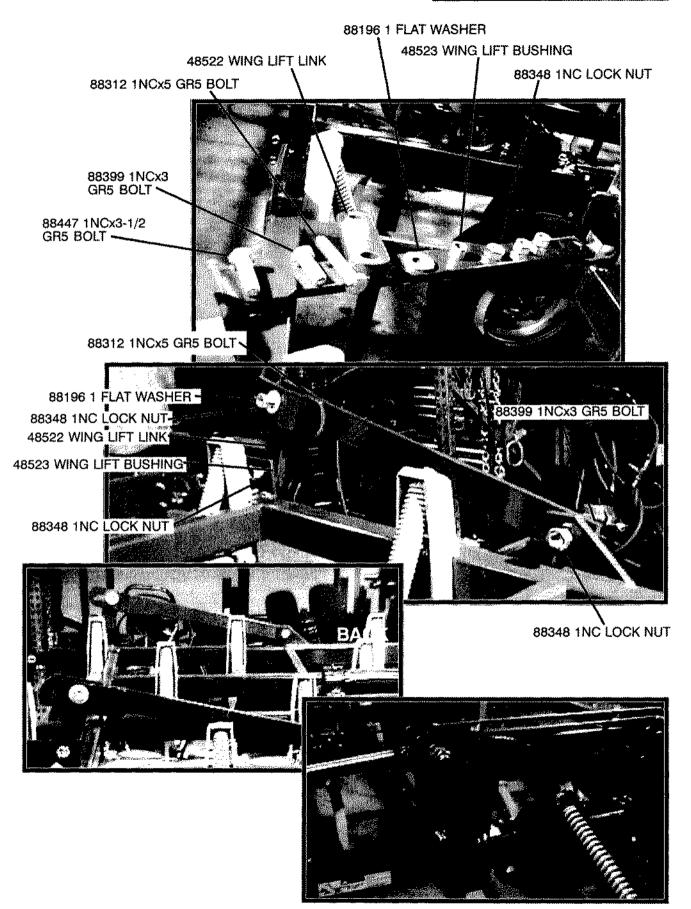
10498 15x8 6 BOLT WHEEL RIM 29066 11Lx15 TIRE 8 PLY 30784 VALVE STEM ASSY





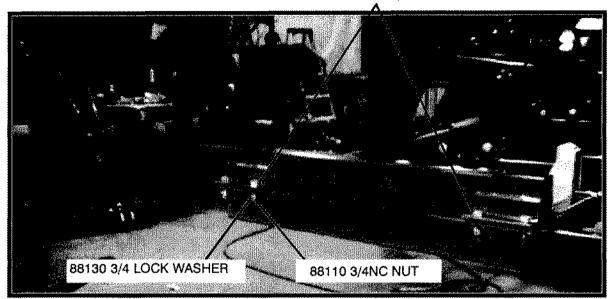


WING LIFT LINKAGE



PAR LINK

88604 3/4NCx2 GR5 BOLT

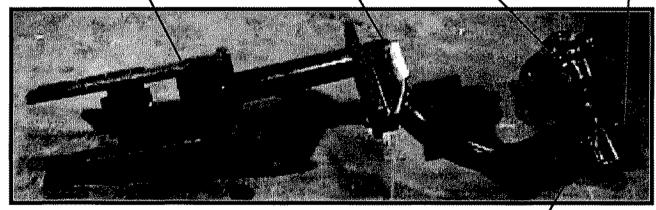


16312 CASTER WHEEL, LEG

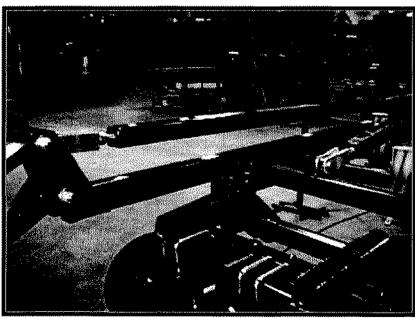
88304 1/2NF LOCK NUT

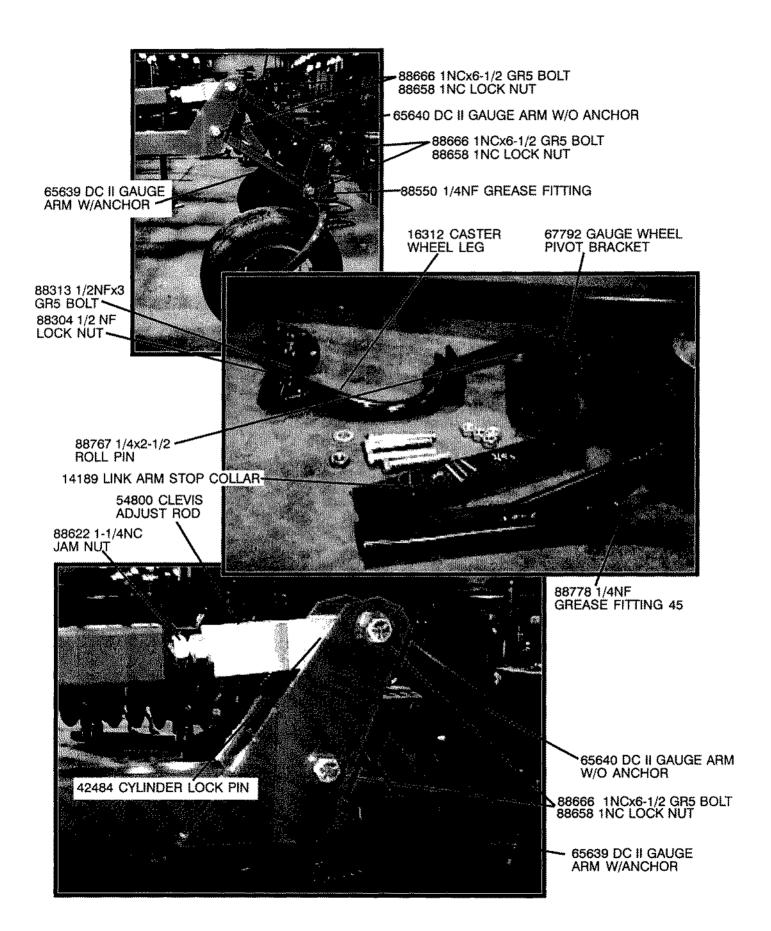
67792 GAUGE WHEEL PIVOT BRACKET

41233 1-3/4 HUB & SPINDLE



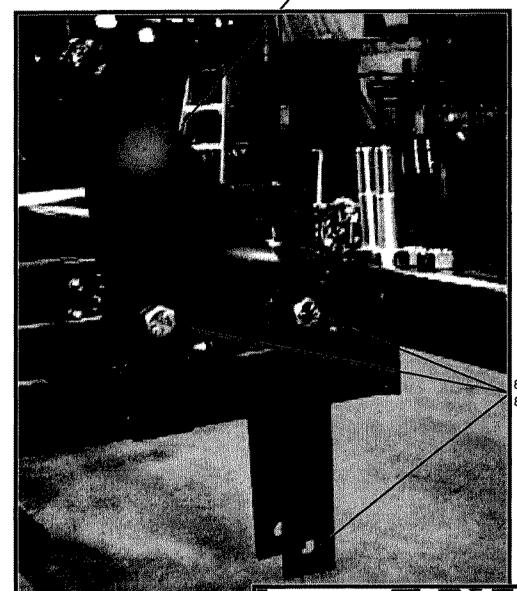
88313 1/2NFx3 GR5 BOLT



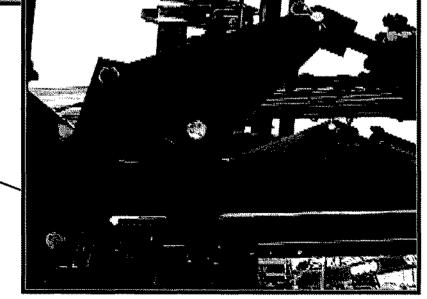


DISK ARM

65652 DISK AXLE ARM



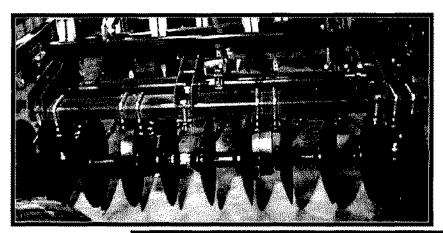
88670 1NCx5-1/2 GR5 BOLT 88348 1NC LOCK NUT

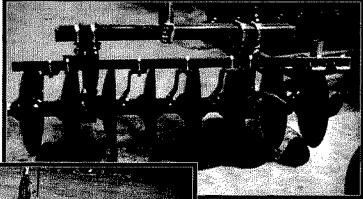


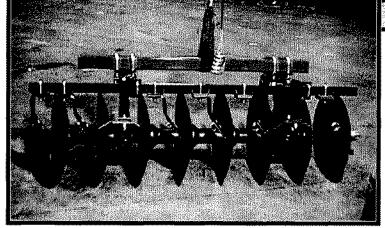
DC II ASSEMBLY INSTRUCTIONS (74215) 3/05

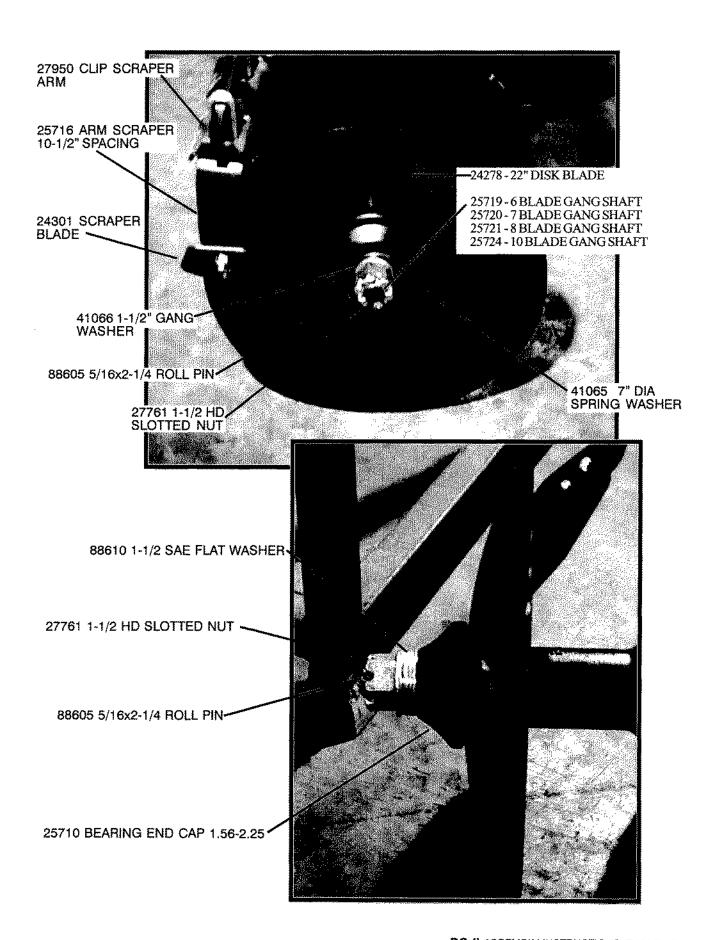
65600 FLAT-

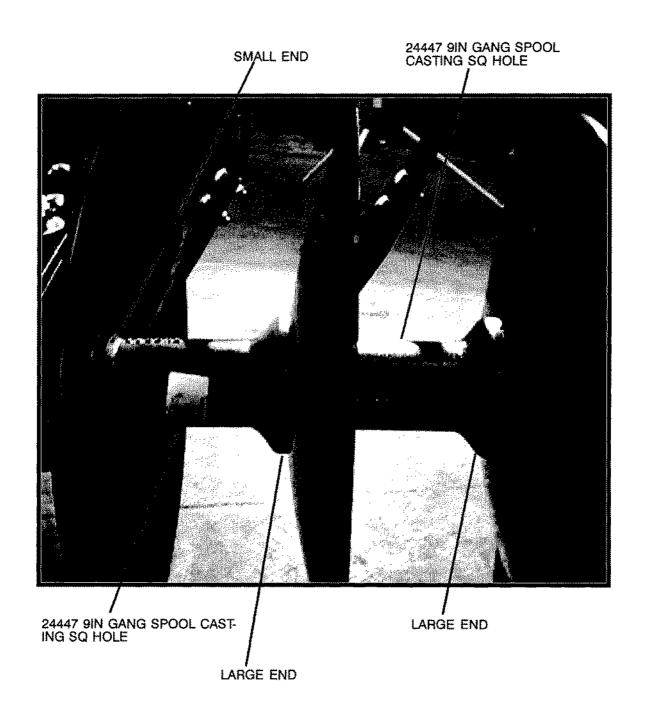
DISK ASSEMBLY

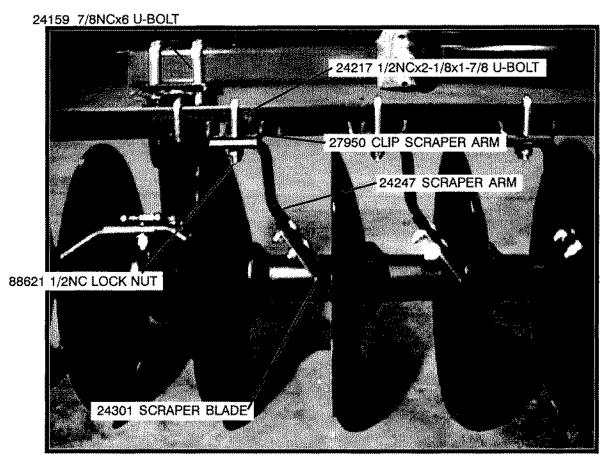


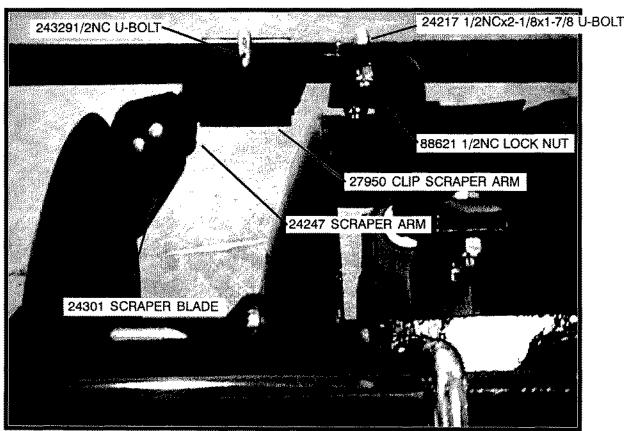


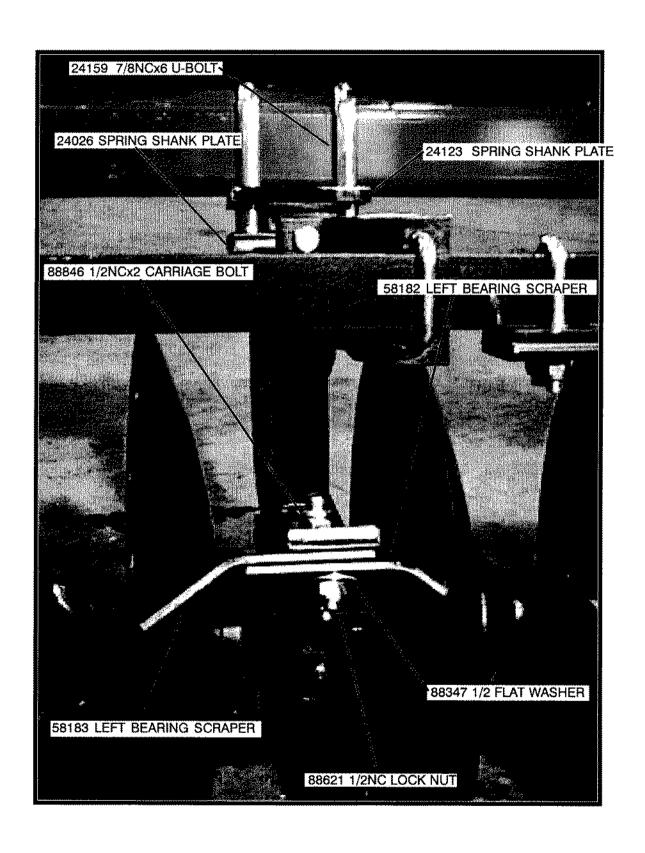


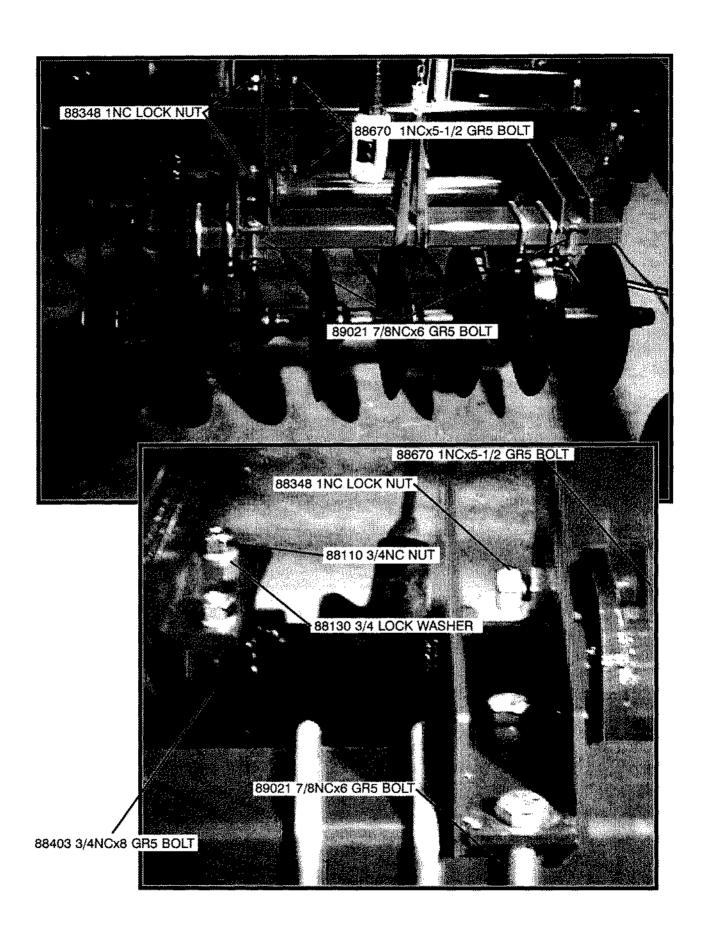


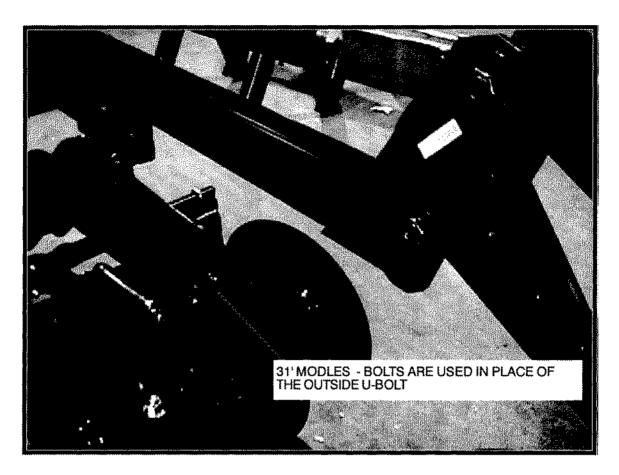


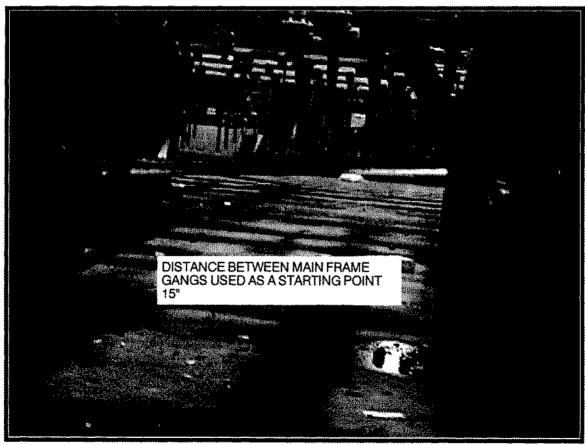




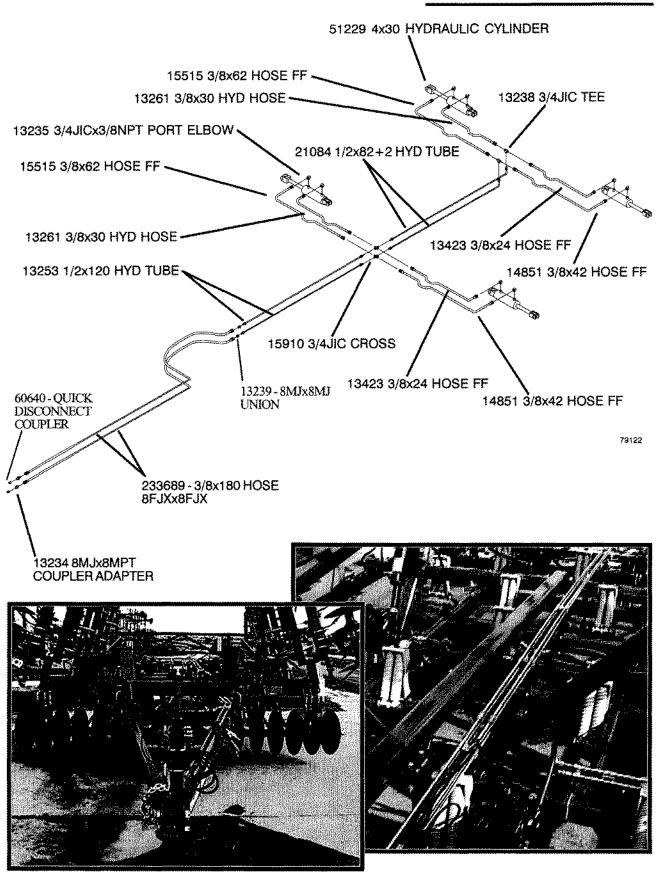




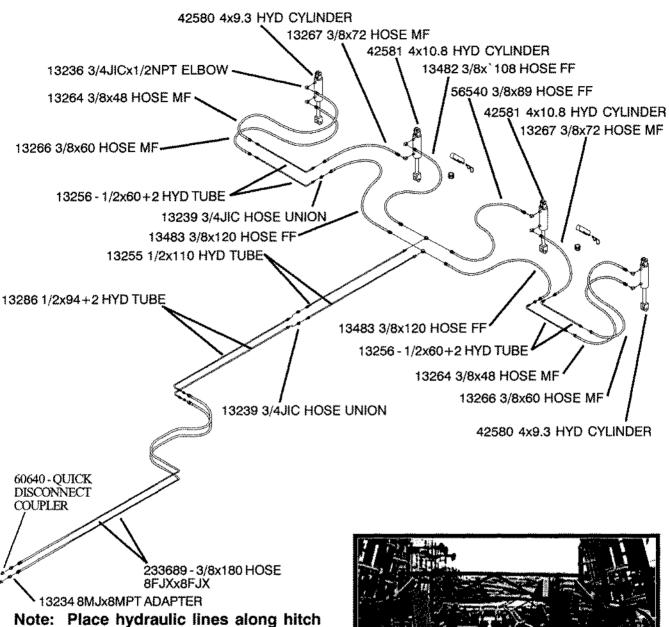




FOLD HYDRAULICS



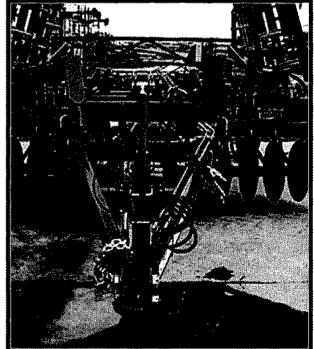
MAIN FRAME LIFT HYDRAULICS



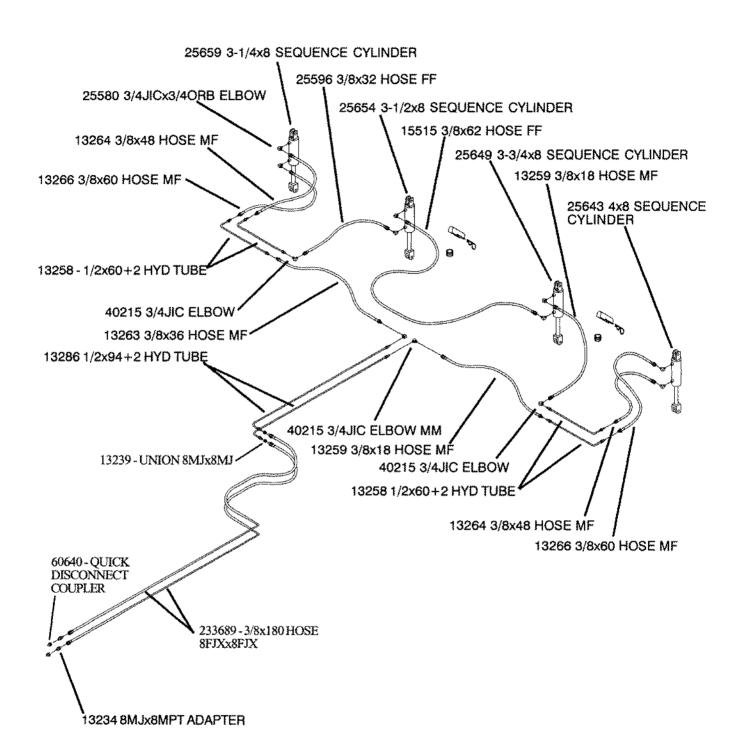
Note: Place hydraulic lines along hitch and down center of main frame as seen in pictures on page 10, 27 &, 28.



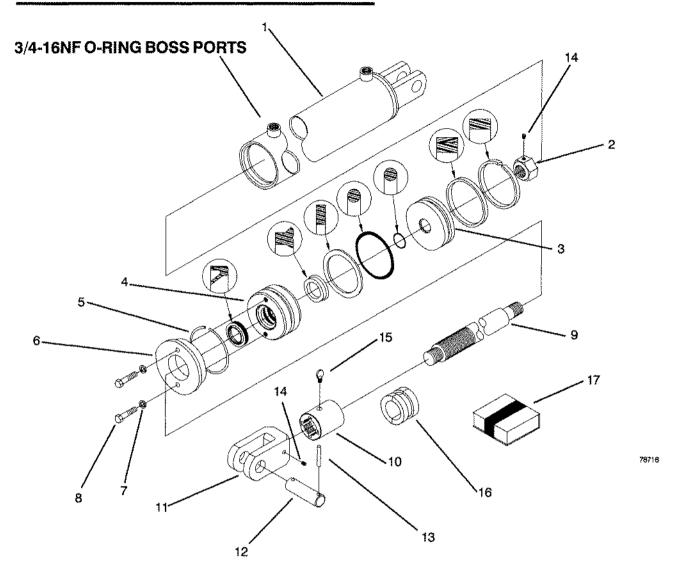




DISK FRAME LIFT HYDRAULICS

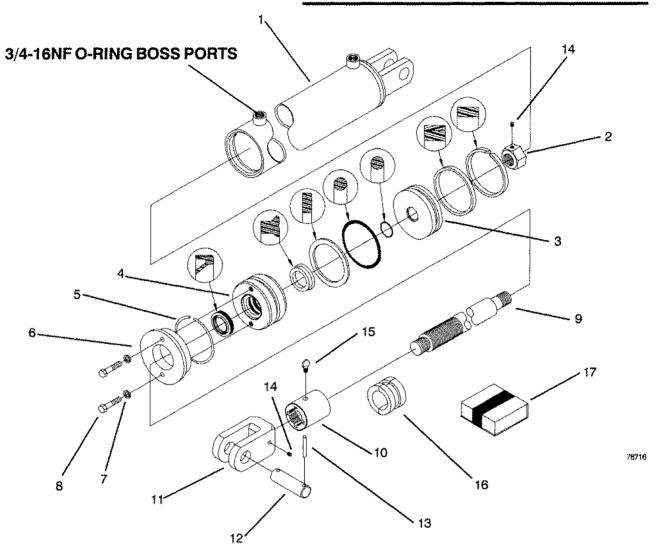


4x10.8 TOP BYPASS CYLINDER



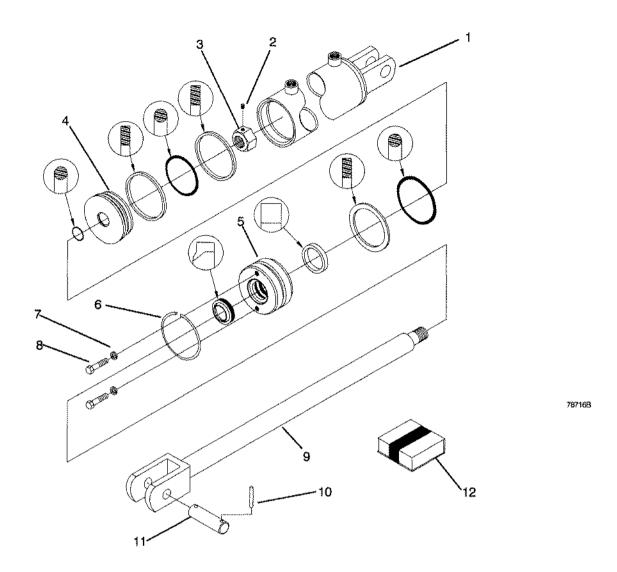
ITEM	PART NO	DESCRIPTION	ITEM	PART NO	DESCRIPTION
	67688	4x10.8 TOP BYPASS CYLINDER	10	55665	1-1/2x2.42SCREW STOP COLLAR
1	67686	4x10.8 CYLINDER TUBE ASSY TBP	11	67658	ADJ.CYLINDER YOKE - SMALL
2	14824	PISTON LOCK NUT	12	42473	CYLINDER PIN (H)
3	67684	4" TOP BYPASS PISTON	13	42484	1/4X2-1/4 SPIROL PIN
4	42576	END GLAND	14	88706	5/16NCx5/16 SET SCREW
5	12286	4" CYLINDER SNAP RING	15	88387	3/8NCx3/4THUMB SCREW
6	13851	STOP PLATE 4x8	16	15113	1-1/2 STOP COLLAR
7	88362	LOCK WASHER 3/8	17	220749	SEALKIT
8	88553	3/8NCx1-1/2 GR5 BOLT			
9	16225	4x10.8 TBP CYLINDER ROD		42505	CYLINDER PIN KIT(H) (INCLUDES ITEMS 12, 13)

4x9.3 TOP BYPASS CYLINDER



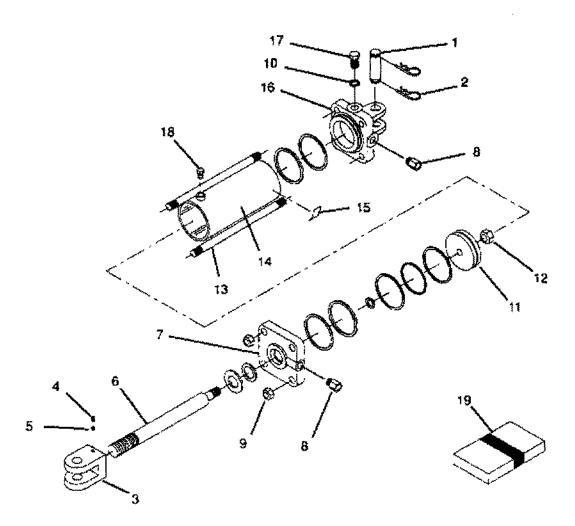
ITEM	PART NO	DESCRIPTION	ITEM	PART NO	DESCRIPTION
	67687	4x9.3 TOP BYPASS CYLINDER	10	55665	STOP COLLAR SCREW STOP
1	67685	4x9.3 CYLINDER TUBE ASSY TBP	11	67657	CYLINDER YOKE
2	14824	PISTON LOCK NUT	12	42473	CYLINDER PIN (H)
3	67684	PISTON	13	42484	CYLINDER LOCK PIN
4	42576	END GLAND	14	88706	5/16NCx5/16 SET SCREW
5	12286	4" CYLINDER SNAP RING	15	88387	3/8NCx3/4 THUMB SCREW
6	13851	STOP PLATE 4x8	16	15113	1-1/2 STOP COLLAR
7	88362	LOCK WASHER 3/8	17	220906	SEAL KIT
8	88553	3/8NCx1-1/2 GR5 BOLT			
9	16221	4x9.3 CYLINDER ROD		42505	CYLINDER PIN KIT(H)

4x30 HYDRAULIC CYLINDER



ITEM	PART NO	DESCRIPTION	ITEM	PART NO	DESCRIPTION
	51229	4x30 HYDRAULIC CYLINDER	7	88278	5/16 FLAT WASHER
1	55704	4x30 CYLINDER TUBE ASSEMBLY	8	88566	3/8NCx3/4 GR5 BOLT
2	88706	5/16NCx5/16 SET SCREW	9	55723	CYLINDER ROD ASSEMBLY
3	14824	PISTON LOCK NUT	10	42484	CYLINDER LOCK PIN
4	12282	PISTON	11	42472	CYLINDER PIN
5	42576	End Gland	12	51212	4" SEAL KIT
6	12286	4" CYLINDER SNAP RING			
				42504	CYLINDER PIN PACKAGE
					(INCLUDES ITEMS 10, & 11)

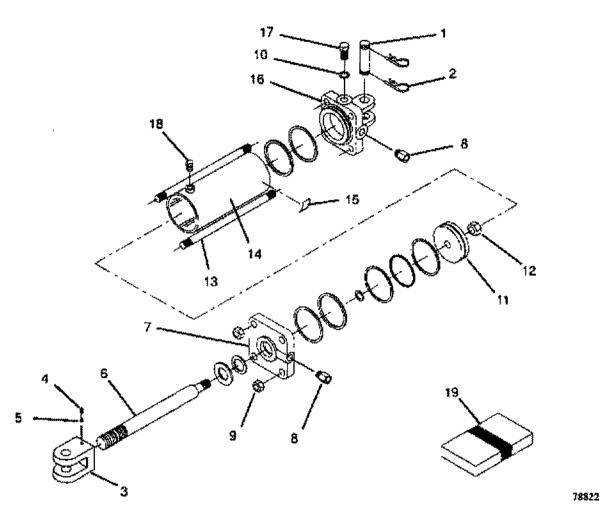
3-1/4 x 8 SEQUENCE HYDRAULIC CYLINDER WITH ADAPTER ASSEMBLY



ITEM	PART No. 25659	DESCRIPTION Hyd Cyl 3-1/4x8Seq w/adptr	1TEM 11.	PART No. 40805	DESCRIPTION 3-1/4 Seq Piston
1.	33161	Clevis Pin	12.	88749	7/8-9NC (Cad) Top Lock Nut
2.	33202	Hairpin Cotter	13.	33167	Tie Rod
3.	33152	Clevis	14,	25661	3-1/4x8 Case
4.	88709	3/8-16NCx3/8cup-pt Set Screw	15 ,	33212	Decal-Letter Identification-D
5.	33163	Nylon Plug	16.	25660	3-1/4x8 Rear Head
6.	33164	Shaft	17.	33170	Steel Plug w/O-Ring Assy
7.	25662	3-1/4x8 Front Head	18.	25647	Plug Assembly
8.	33171	Adapter w/O-Ring Assy	19.	40806	3-1/4x8 Seq Seal Kit
8.	86104	1/2-13NC Plain Nut			•
4.0	09446	ODine			

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3-1/2 x 8 SEQUENCE HYDRAULIC CYLINDER WITH ADAPTER ASSEMBLY

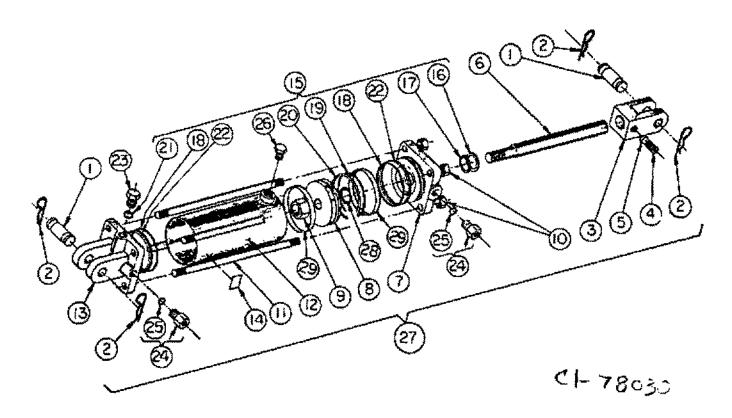


ITEM	<u>PART No.</u> -25654	DESCRIPTION Hyd Cyl 3-1/2x6Seq w/adptr	<u>ITEM</u> 11.	PART No. 40811	DESCRIPTION 3-1/2 Seq Piston
1.	33161	Clevis Pin	12.	88749	7/8-9NC (Cad) Top Lock Nut
2.	33202	Hairpin Cotter	13.	33167	Tie Rod
3.	33162	Clovis	14.	25656	3-1/2x8 Case
4.	88709	3/8-16NCx3/8cup-pt Set Screw	15.	33213	Decal-Letter Identification-C
5.	33163	Nylon Plug	16.	25655	3-1/2x8 Rear Head
6.	33164	Shaft	17.	33170	Steel Plug w/O-Ring Assy
7.	25857	3-1/2x8 Front Head	18.	25647	Plug Assembly
8.	33171	Adapter w/O-Ring Assy	19.	40812	3-1/2x8 Seq Seal Kit
9.	86104	1/2-13NC Plain Nut			•
10.	33119	O-Ring			

-SERVICE PARTS -

3-3/4 in x 8 in HYDRAULIC CYLINDER (IHC) (DENTIFICATION NO. 85030C91

The Identification Number is located on the side of the Head opposite the port.

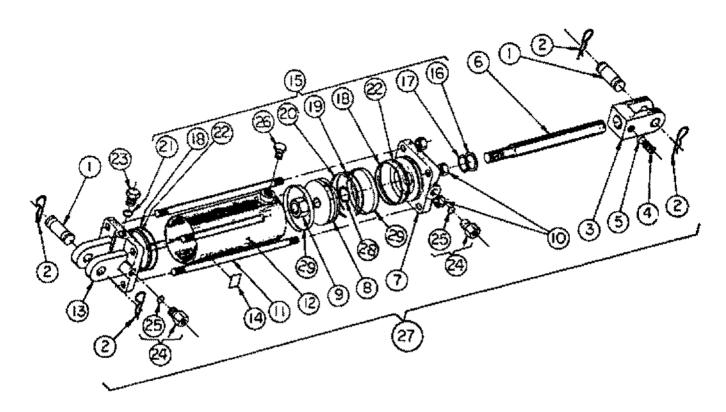


ITEM	PART NO.	DESCRIPTION	ITEM	PARTNO.	DESCRIPTION
ŧ	33161	CLEVIS PIN	16	33180	* WIPER
2	33202	HAIR PIN COTTER	17	33182	* U-CUP
3	33191	CLEVIS	18	33178	* O-RING
4	88709	SET SCREW 3/8X3/8 UNC	19	40820	* SEAL
5	33153	NYLON PLUG	20	40818	*O-RING
6	33192	SHAFT	21	33119	O-RING
7	25652	HEAD	22	25653	* BACK-UP WASHER
8	40816	PISTON	23	33170	STEEL PLUG WITH O-RING
9	88749	LOCK NUT 7/8 HEX UNF	24	33171	ADAPTER WITH O-RING
10	86126	NUT 5/8 UNC			(INCLUDES ITEM 25)
11	33195	TIE ROD	25	33119	O-RING
12	25651	CASE	26	25647	PLUG ASSEMBLY
13	25650	BOTTOM	27	25649	CYLINDER ASSY 3-3/4 X 8
14	33214	DECAL "B"	28	40810	O-RING
15	40817	SEAL REPAIR KIT (INCLUDES ITEMS WITH *)	29	40819	WEAR RING

-SERVICE PARTS-

4 in x 8 in HYDRAULIC CYLINDER (IHC) IDENTIFICATION NO. 85031C91

The Identification Number is located on the side of the Head opposite the port.

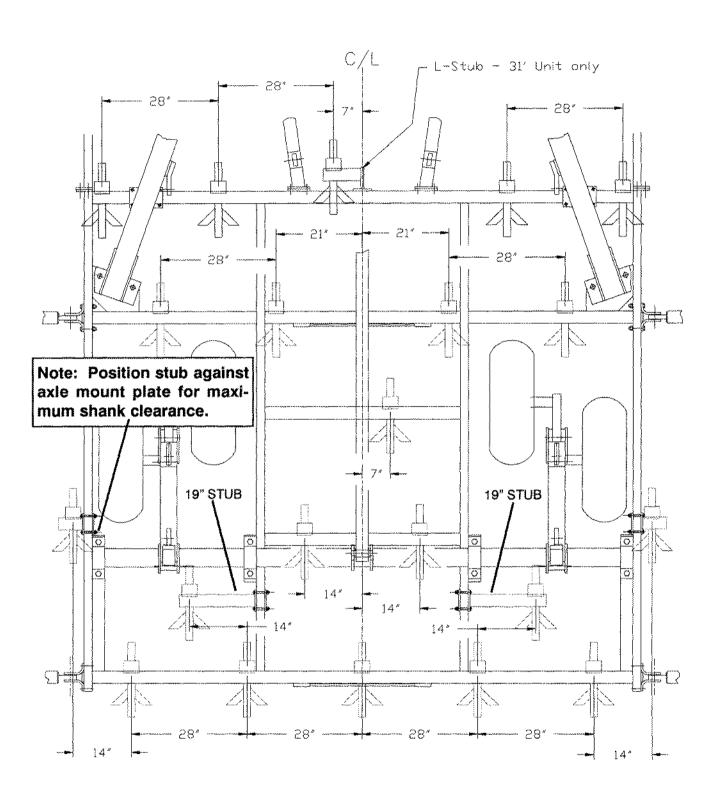


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ITEM	PARTNO.	DESCRIPTION	ITEM	ONTRAG	DESCRIPTION
1	33161	CLEVIS PIN	16	33180	· WIPER
2	33202	HAIR PIN COTTER	17	33182	* U-CUP
3	33191	CLEVIS	18	30378	* O-RING
4	88709	SET SCREW 3/8X3/8 UNC	19	40825	* SEAL
5	33163	NYLON PLUG	20	40823	* O-RING
6	33192	SHAFT	21	33119	* O-RING
7	25846	HEAD	22	25648	* BACK-UP WASHER
8	40821	PISTON	23	33170	STEEL PLUG WITH D-RING
9	88749	LOCK NUT 7/8 UNF	24	33171	ADAPTER WITH O-RING
10	8812 6	NUT 5/8 UNC			(INCLUDES ITEM 25)
11	33195	TIE ROD	25	33119	O-RING
12	25645	CASE	26	25647	PLUG ASSEMBLY
13	25644	BOTTOM	27	25843	CYLINDER ASSY 4 X 8
14	33215	DECAL "A"	28	40810	O-RING
15	40822	SEAL REPAIR KIT (INCLUDES ITEMS WITH *)	29	40824	WEAR RING

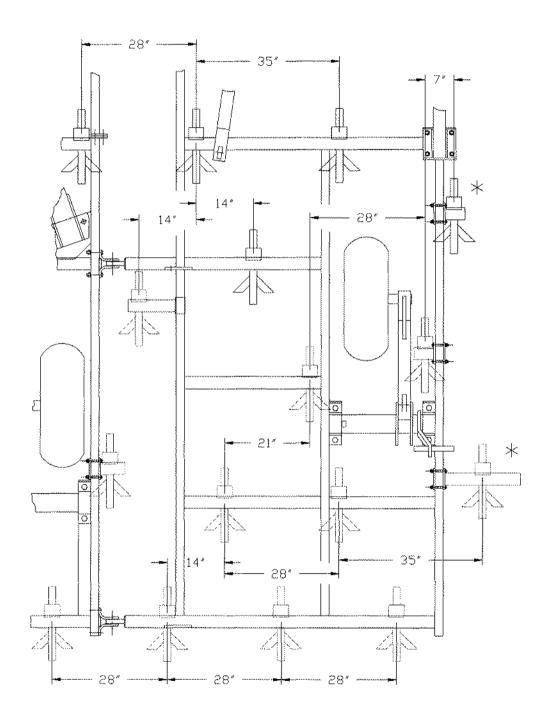
SHANK PLACEMENT

11' MAIN FRAME



SHANK PLACEMENT

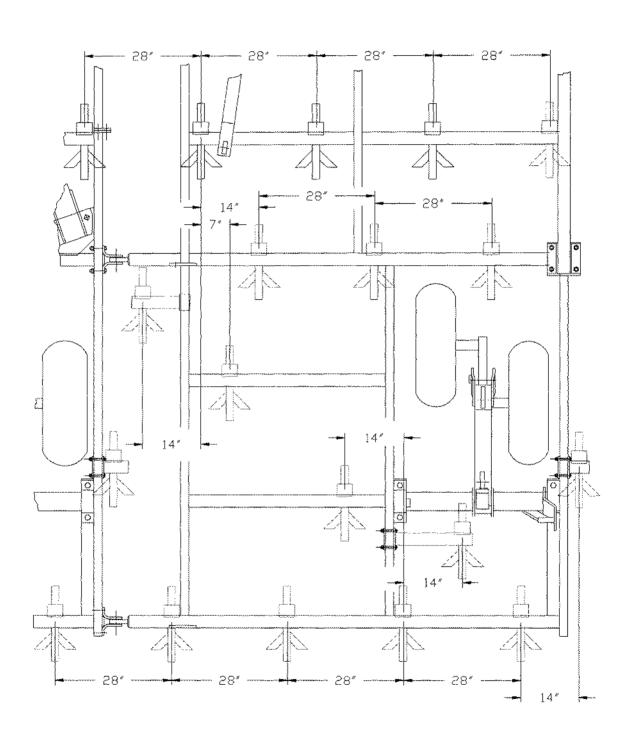
7' WING



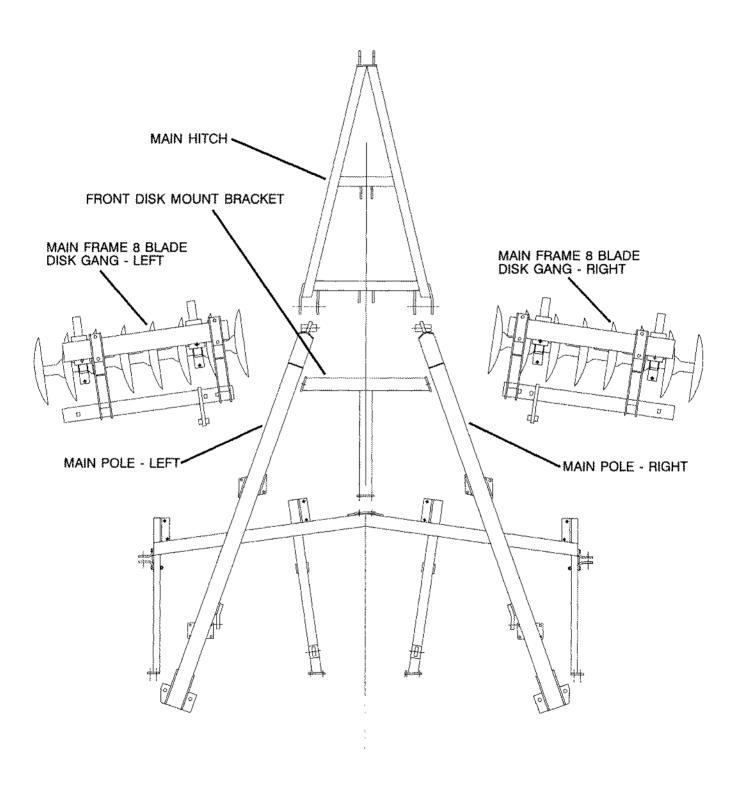
* SHANKS REQUIRED FOR 27' UNIT ONLY

SHANK PLACEMENT

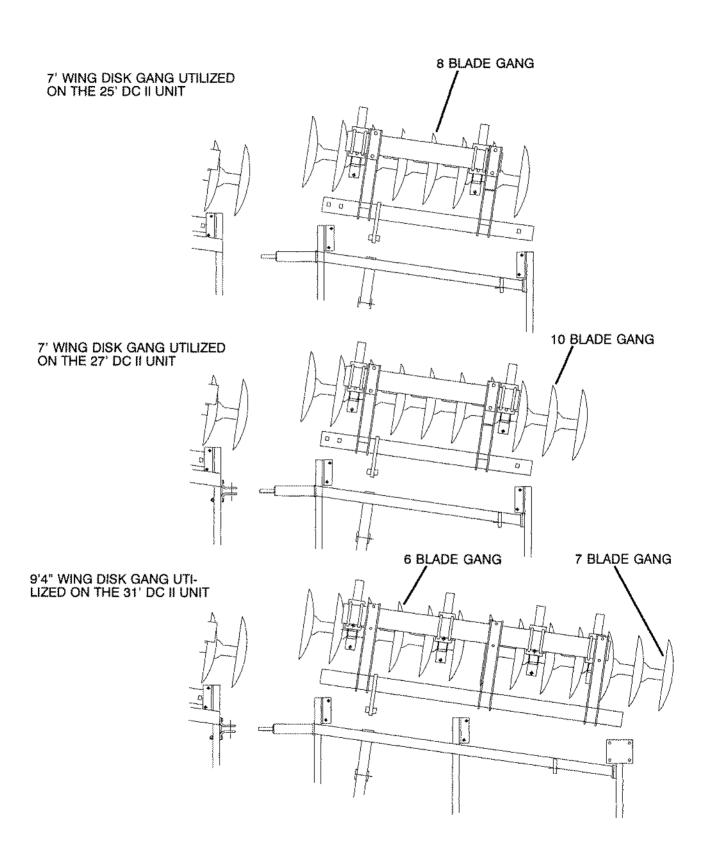
9' WING



MAIN FRAME DISK MOUNT



WING DISK MOUNTS



Operational Instructions

Initial Settings

All functional settings will need to be completed when the unit is operating in the field. However, initial settings can be completed before the unit is moved to the field. Once assembly is complete, move the unit to an open, flat area or to a flat concrete surface. Make certain no person or obstacles are in the area and unfold the wings to the working position. Remove any channel locks from the main lift cylinders and cycle the main lift a number of times to purge any air from the system.

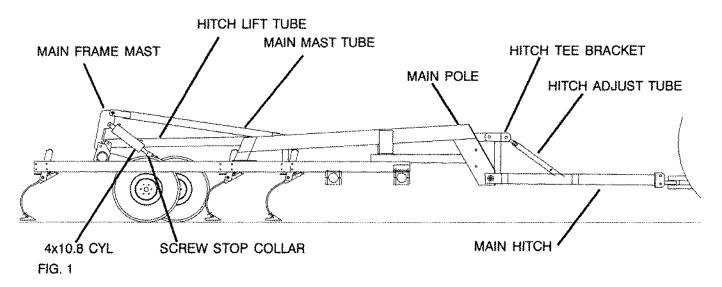
Preliminary Leveling and Adjustments

With the disc cultivator hitched to the tractor that will be used during field operation lower the main frame down to within approximately 1" of the ground. Raise the disc gangs up off the surface. As shown in Fig 1 adjust the hitch adjust tube at the front hitch to adjust the front to rear level of the main frame. Use a measuring tape to check the front to rear level of the unit. Once the main frame has been leveled, move to the wings and adjust the wing mast tube clevis assembly to adjust the side to side depth of the wing. (Fig. 2)

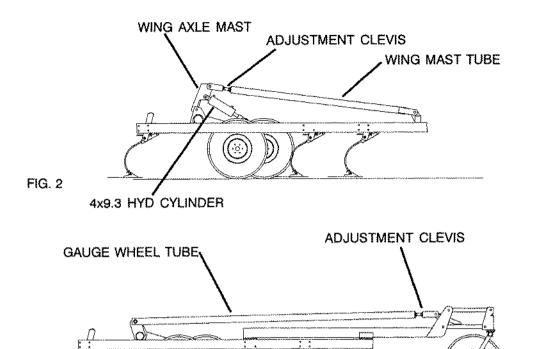
NOTE: the main wing lift cylinder and the front gage wheel control wing depth and level.

Use the clevis assembly on the wing mast tube (FIG 2) to adjust the depth of the wing and the clevis assembly on the parallel linkage tube (FIG 3) to control the front to rear level of the wing. Lenthen the wing mast tube to drop the wing and shorten to raise the wing. Once initial adjustments are made cycle the main lift system by raising the unit up and down a couple of times and rechecking the level.

There are no adjustments to be made on the hydraulic disc portion of this unit. The depth of the disc gangs is controlled by the series hydraulic system consisting of standard 8" stroke, variable diameter, by-pass cylinders. To re-sequence this lift system, fully extend the cylinders by raising the discs up and holding the tractor hydraulic lever to purge any air from the system. In operation the system will need to be purged occasionally as the loading can force the cylinders out of sequence.



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Field Operation and Settings

FIG. 3

Any adjustments made prior to actual field settings will need to be checked once the unit is operating. Move to the field, unfold the wings and remove the transport locks from the main lift cylinders. Lift the disc gangs up so they set 4"-5" above the shank points. Cycle the main lift cylinders a number of times to purge the system and drop the unit into the ground. Move through the field for a short distance, stop and check the front and rear depth of the main frame. Adjust the front hitch screw adjust tube to level the main frame as required.

NOTE: If the hitch adjust tube is difficult to turn, lower the unit to the ground to remove the weight from the adjust tube.

Once adjustments have been made lower the unit into the working position and move down the field a short distance. Re-check the main frame level, adjust and secure the lock nut on the hitch adjust tube. Measure the depth of the rear outside corners of the wings and compare to the main frame depth. If the wings are high you need to lengthen the wing mast tube by changing the adjustment clevis (FIG. 2). If the wings are low the mast tube needs to be shortened.

Once the wings are level to the main frame across the rear of the machine you can set the operational depth by adjusting the depth control collars on the main lift cylinders. The top by-pass cylinders have adjustable mechanical screw collars. These screw collars are rotated on the cylinder rod to vary the retracted length of the cylinder, providing the means to adjust the working depth of the unit.

GAUGE WHEEL

The main frame depth is mechanically set by turning the screw collar "DOWN" the cylinder rod to decrease the working depth or "UP" the cylinder rod to increase the working depth. An add-on stop collar is provided for situations where the screw stop collar does not allow a shallow enough setting.

NOTE: Proper field operation is dependent upon the screw collars of the main frame lift cylinders being first to contact the mechanical stops. If a wing cylinder screw stop collars contacts first the leveling function of the system will not operate correctly. Due to the loading on the machine it is highly recommended that the cylinder screw stops be used to control the unit depth (run on the stop collars). Operating the machine off the cylinder stop is possible for short distances but use of the cylinder screw collars to maintain machine depth is strongly recommended.

NOTE: The cylinder screw stop collars on the main frame depth control cylinders must be set equally – failure to do so can twist the main axle and cause axle failure. Measure the collar locations or count the number of turns each screw collar is rotated to ensure they are set the same.

Once the main frame is operating at the desired depth and the stop collars on the main lift cylinders are set you should cycle the main lift cylinders and drop the unit back to operating depth. Turn the screw collars on the wing lift cylinders so they just contact the cylinder end plate.

Wing Front Gage Wheel

The hydraulically controlled gage wheel serves two functions: carry the weight of the disc gangs in transport and serves as a depth control wheel. The normal torque on a cultivator will tend to rotate the frame down in front. This rotation helps to hold the disc gangs in the ground and transfers a down force to the tractor hitch. The gage wheel serves to control the operational depth of the wings and supports the wings in transport. Set the adjustment clevis on the gage wheel tube to support and maintain the desired operational depth of the front of the disc cultivator.

Note: To lower the front guage wheel (Raise front of wing) the gage wheel tube needs to be lengthened at the adjustment clevis.

To lower the front wing, the gage wheel tube will need to be shortened at the adjustment clevis.

Disc Gang Adjustments

The disc gangs are set to function at a non-adjustable cutting angle. The hydraulic lift adjustment is used to vary the depth of the disc gang to provide the desired cutting and mixing of soil. When operating in minimal trash conditions the gangs can be lifted up to decrease the amount of trash that is cut or buried. In heavy trash conditions the gangs can be lowered as required to produce the desired finish conditions. The disc gangs can carry the front of the machine if soil conditions are heavy and gangs are forced deeper than required.

NOTE: It is not good practice to attempt to force the disc gang deeper than is required to cut and mix the trash or produce the desired finish conditions. More power is required at deeper operating depth, trash cutting is not improved and machine loading is excessive.

Adjust the disc gang scrapers to maintain a minimum distance between the scraper and the inside surface of the disc blade, but allow free rotation of the disc gang

As you become familiar with the operation of the unit you can use the hydraulic depth adjustments available to tailor the finish conditions desired and minimize power requirements.

DECAL PLACEMENT

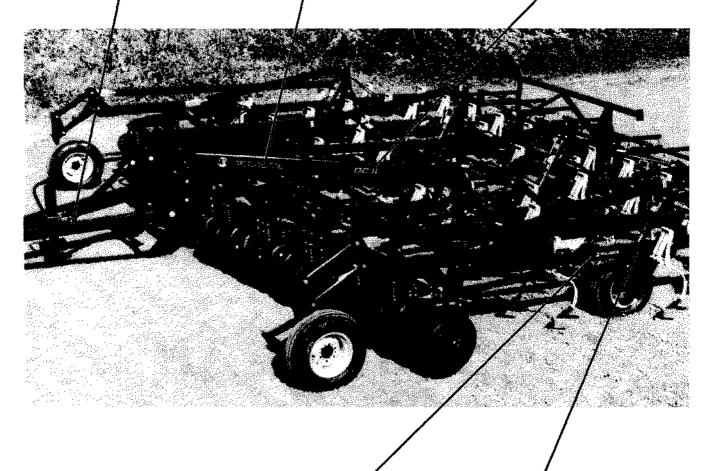
67128 SMALL DC II



65342 3.63x23.88 DECAL

67129 LARGE DC II







64404 WIL-RICH DECAL

67128 SMALL DC II

ALSO PLACE 64404 & 67128 ON BACK TUBE OF MAIN FRAME CENTERED.

WARRANTY

The only warranty Wil-Rich gives and the only warranty the dealer is authorized to give is as follows:

We warrant products sold by us to be in accordance with our published specifications or those specifications agreed to by us in writing at time of sale. Our obligation and liability under this warranty is expressly limited to repairing, or replacing, at our option, within 12 months after date of retail delivery, any product not meeting the specifications. We make no other warranty, express or implied and make no warranty of merchantability or of fitness for any particular purpose. Our obligation under the warranty shall not include any transportation charges or costs or installation or any liability for direct, indirect or consequential damage or delay. If requested by us, products or parts for which a warranty claim is made are to be returned transportation prepaid to our factory. Any improper use, operation beyond rated capacity, substitution of parts not approved by us, or any alteration or repair by others in such manner as in our judgment affects the product materially and adversely shall void this warranty. No employee or representative is authorized to change this warranty in any way or grant any other warranty.

Wil-Rich reserves the right to make improvement changes on any of our products without notice.

When warranty limited or not applicable: Warranty on hoses, cylinders, hubs, spindles, engines, valves, pumps or other trade accessories are limited to the warranties made by the respective manufactures of these components. Rubber tires and tubes are warranted directly by the respective tire manufacturer only, and not by Wil-Rich.

Warranty does not apply to any machine or part which has been repaired or altered in any way so as in the our judgment to affect its reliability, or which has been subject to misuse, negligence or accident.

A Warranty Validation and Delivery Report Form must be filled out and received by Wil-Rich to initiate the warranty coverage.

WARRANTY CLAIMS PROCEDURE

- 1. The warranty form must be returned to Wil-Rich within fifteen (15) working days from the repair date.
- 2. Parts returned to Wil-Rich without authorization will be refused. The parts must be retained at the dealership for ninety (90) days after the claim has been filed. If the Service Department would like to inspect the parts, a packing slip will be mailed to the dealer. The packing slip must be returned with the parts. The parts must be returned prepaid within thirty (30) days of receiving authorization. After the parts are inspected and warranty is verified, credit for the return freight will be issued to the dealer.
- Parts that will be scrapped at the dealership will be inspected by a Wil-Rich Sales Representative,
 District Sales Manager or Service Representative within the ninety (90) day retaining period.