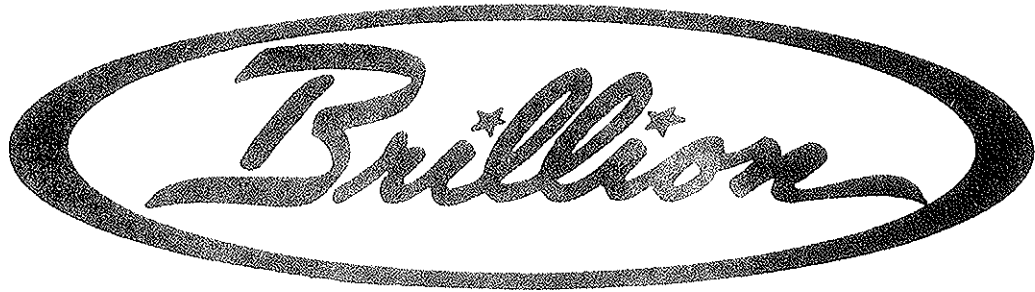


ASSEMBLY INSTRUCTIONS

REPAIR PARTS CATALOG



FOLDING TOOLBAR

USED WITH BRILLION

RO-CROP CULTIVATORS

MODELS

BCFF-640	BPFF-830
BCFF-840	BPFF-840
BCFF-830	BPFF-1222
BCFF-1230	BPFF-1228

IMPORTANT!

Repairs cannot be purchased
retail direct from factory.
Order through your Brillion
dealer.



BRILLION IRON WORKS
BRILLION, WISCONSIN 54110

INTRODUCTION

Your Brillion folding toolbar is built with the best materials and workmanship available. It has been designed to give years of trouble-free operation, and proper care and operation will insure the service and long life built into it.

Study this manual carefully before attempting to assemble or operate the unit.

The folding toolbar is designed primarily for the Brillion row crop cultivator gangs. It can also be used on other row crop tools that can be raised upside down for transportation. The folding toolbar attaches directly to the tractor 3-point lift. The tractor requires dual hydraulic systems to operate the two hydraulic cylinders which fold the wings independently into the flat position for transportation.

When application of the folding toolbar is with the Brillion row crop cultivators, refer to the 9D-62 Repair Parts Catalog and the 9D-63 Operator's Manual. Follow the instructions in these manuals for the proper gang and extension placements of the individual units onto the toolbar. See the setting up part of this manual for location of the special gangs and location of gauge wheels and guide coulters.

SAFETY PRECAUTIONS

Investigation of farm accidents shows that nearly 1/3 of all farm accidents are caused by careless use of farm machinery. You can do your part in making your farm and community safer by following all safety instructions. Insist that all people working with you or for you follow these instructions. To avoid personal injury, be sure to explain in detail to the operator the operation, maintenance, adjustments, and safe operation instructions contained in these manuals.



This safety alert symbol is used to call your attention to instructions concerning your personal safety. Be sure to observe and follow these instructions.

SAFETY INSTRUCTIONS



Do not stand between tractor and implement when attaching or detaching implement unless both tractor and implement are not moving.



Do not make adjustments or lubricate machine while it is in motion.



Do not allow anyone to ride on tractor or machine.



When not in use, lower machine to ground.



Block machine up securely when working under it.



Relieve pressure in hydraulic lines before you attempt to work with, connect or disconnect hydraulic hoses under pressure.



Do not allow anyone to be under or near wings while folding or unfolding toolbar.



To prevent damage and avoid possible injury, bleed the air from the hydraulic cylinders before folding the wings. See operating instructions.



Do not transport at speeds in excess of 20 MPH.



Use slow moving vehicle sign.

SETTING UP INSTRUCTIONS

Study the illustrations in this manual and identify the individual parts before attempting to assemble the toolbar. "Right, Left, Front and Rear" refer to the operators directions when he stands behind the toolbar, facing in the direction of travel.

To assemble set the center section on sawhorses or other sturdy supports about 30" high. Position one of the wings between the hinge plates on the center section and slide in the 1-3/4 dia. hinge pin. Put a machinery bushing over each end of the hinge pin and drive in a 1/2 x 3" roll pin. Repeat for second wing.

Mount the links between the wing hinge plates with a 1-1/4 dia. pin; note that the links have a 1" hole on one end and a 1-1/4" hole on the other end. Put a machinery bushing on each end of the pin and drive in a 5/16 x 2 roll pin.

Fasten the clevis end of the cylinders, port side up to the lug on the center section with the pins furnished with the cylinder. Now fully extend the cylinder rods and secure to the other end of the links. Use the 1" x 6-3/4" long pins. Put the pin through one link and then a 1" flat washer. Next put the rod through the cylinder clevis with the 3" dia. roller held between the lugs of the clevis. Now add another flat washer and then through the other link. Add two flat washers on each end and secure with the 1/4 x 2 roll pins.

Mount the wing stops on top of the 3-1/2" square tube with U-bolts, nuts and lock washers. The exact location will vary slightly with row spacing, but the idea is to get it as close as possible to the end of the wing without hitting the gang mounting bolts.

The mast and hitch lugs are a part of the center section and the only assembly needed is to put the hitch pins in their proper place.

FOR CATEGORY II HITCHES

Assemble the 1" x 4-1/2" capscrew, the 1" pipe spacer 2-1/8" long and 1" lock nut into the bottom holes of the mast and tighten securely. Install the 1" clevis pin in the middle hole of the mast and secure with a klik pin. The 1-1/4 O.D. x 1-15/16" long spacer is not used with Category II hitches.

Install the lower hitch pins into the lower hitch brackets. The cast spacers are to be installed on the hitch pins between the side members of the lower hitch brackets. The tractor hitch arms are closer to the center of the cultivator and the spacers are farther from the machine center. Secure the hitch pins with klik pins. The 1-7/16 O.D. sleeves are not used with Category II hitches.

FOR CATEGORY III HITCHES

For the QUICK COUPLER: Install the 1" x 4-1/2" capscrew, 1" x 2-1/8" long pipe spacer and 1" lock nut into middle holes of the mast and tighten securely.

For the THREE-POINT FREE LINK HITCH: Put the 1" clevis pin and 1-1/4" O.D. x 1-15/16" long sleeve in the top hole of the mast and secure with a klik pin.



CAUTION: When the three-point free link hitch is used, store the capscrew, pipe spacer and lock nut in the lower mast holes to avoid possible interference with the upper link.

HYDRAULICS

Clean the hydraulic hose fittings before connecting to the tractor hydraulic system. If this is the first time toolbar has been connected to a tractor, it will be necessary to bleed the air from the hydraulic cylinders. This can be done by partially folding and unfolding the wings 7 or 8 times, taking care not to fold either wing up to 90° before this has been done. Check hydraulic fluid level after cylinders have been bled.



Relieve pressure in hydraulic lines before you attempt to work with, connect or disconnect hydraulic hoses under pressure.

TRANSPORTING FOLDING TOOLBAR

Raise the implement clear of the ground before folding or unfolding wings.



Do not allow anyone to stand under or near the wings when folding or unfolding them.

FIELD OPERATION OF FOLDING TOOLBAR

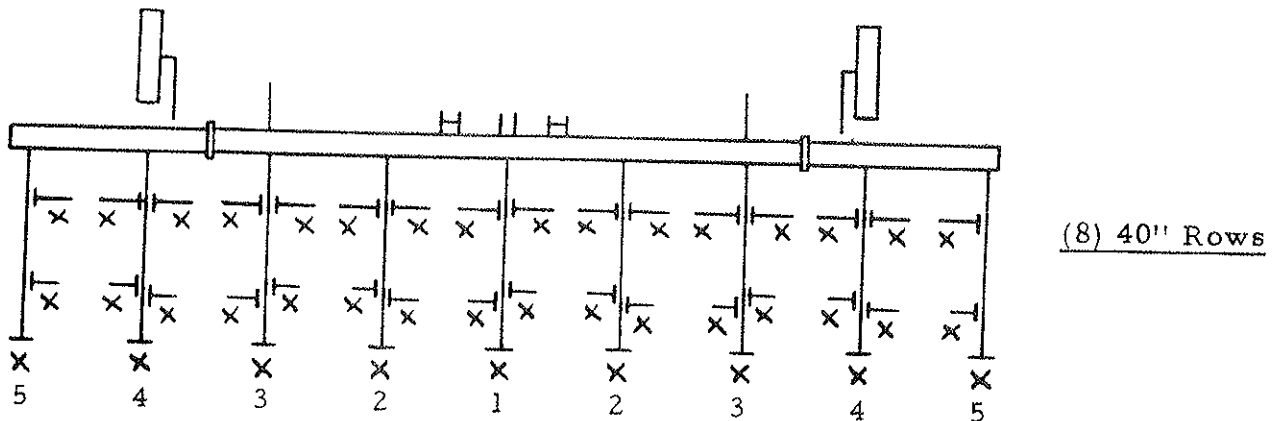
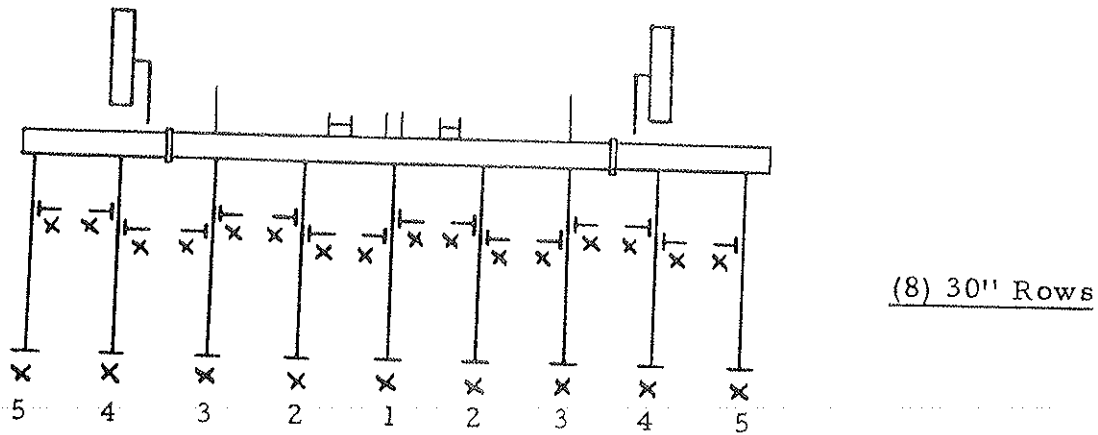
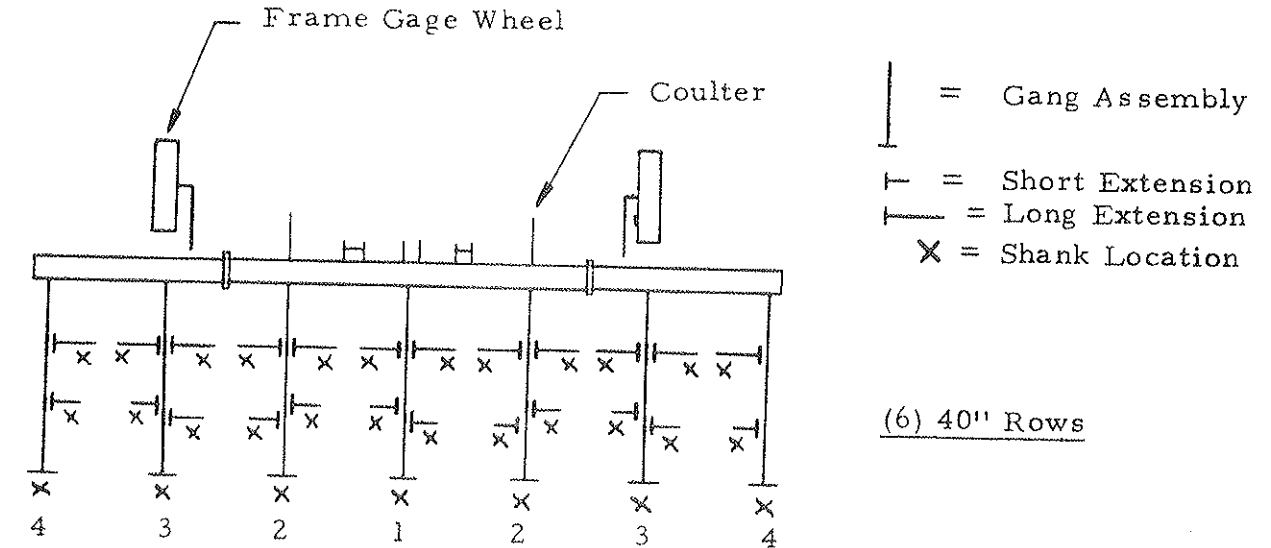
The folding toolbar is designed to allow the wings to droop by 5° to better follow the contour of the ground. Adjusting screws at each hinge allow the user to eliminate all or part of this droop. Loosen the locknut and screw the bolts out until the wing is level then retighten the locknuts. By backing the rear bolt out slightly farther than the front one some of the spring-back in the wings can be overcome.

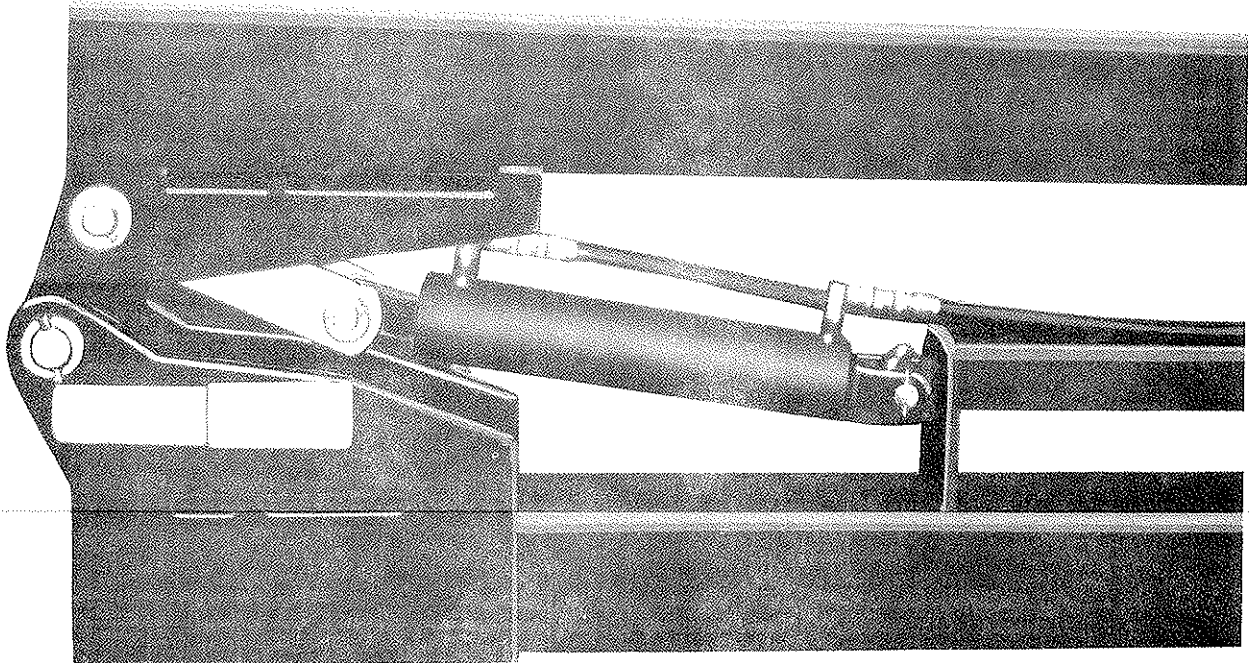
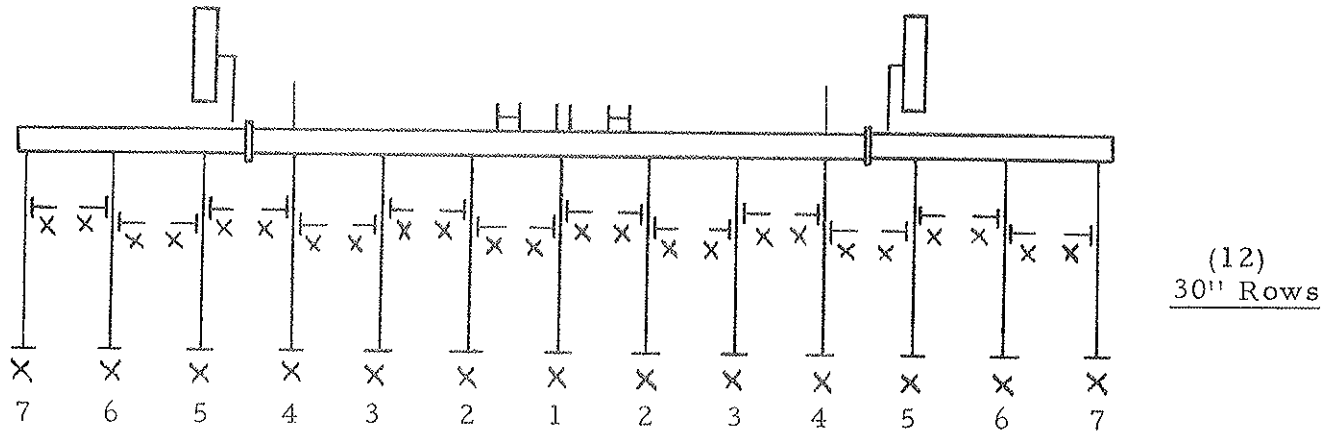
When using a Brillion Ro-Crop with the folding toolbar it is necessary to use the special gangs at the hinge areas. These gangs are the same as the others except that the locator lugs on the gang hanger castings have been removed to avoid interference at the hinge plates.

BCFF MODELS
LOCATION OF COULTERS AND FRAME GAUGE WHEELS

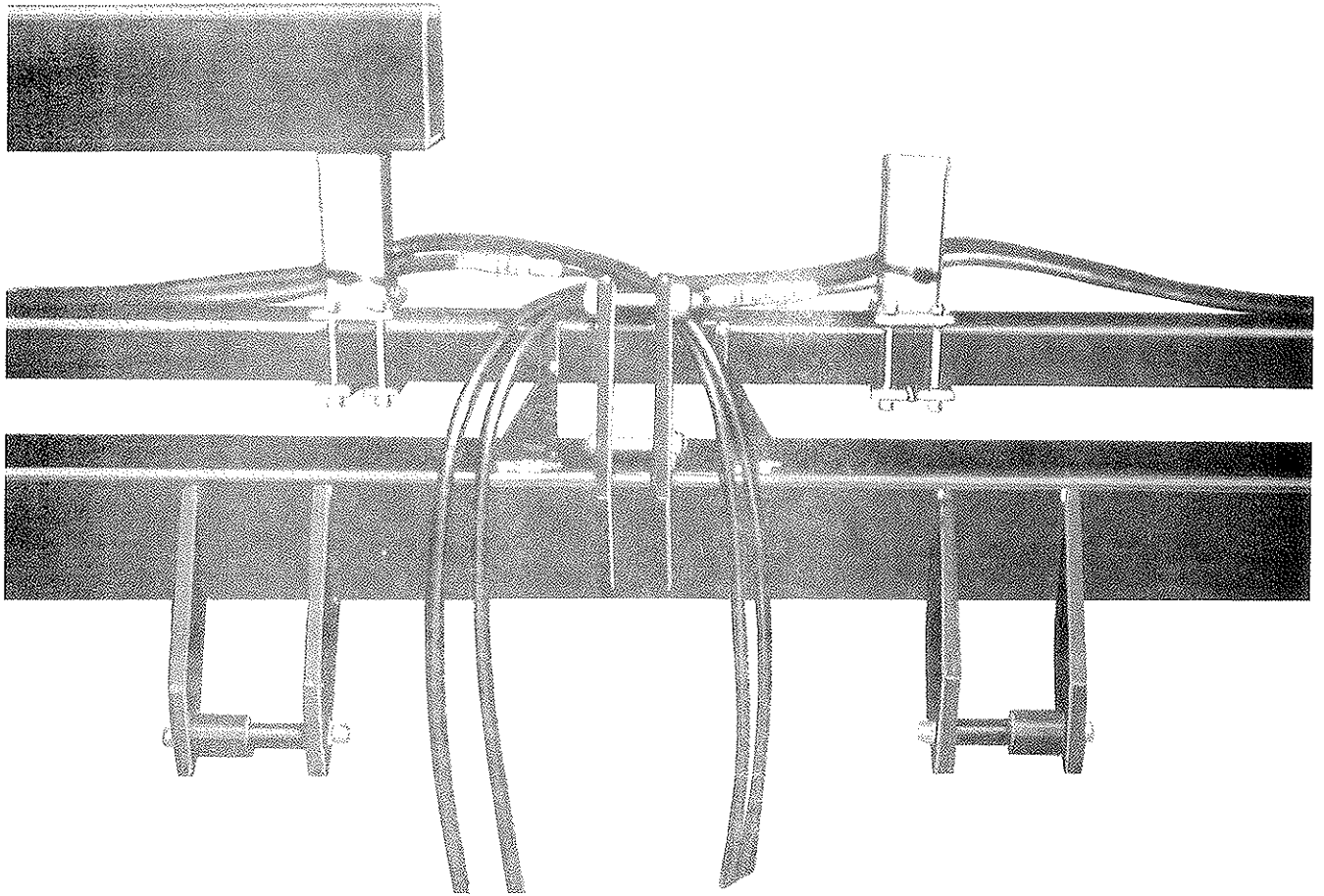
When using the Brillion Ro-Crop cultivators on the folding toolbar, the coulters are mounted on the center section and the gauge wheels on the wings as shown below.

⚠ WARNING: Placing the gauge wheel beyond the first gang on the wing will cause it to strike the tractor when wings are folded.





HINGE AREA (FOLDED POSITION)



FRAME (ONE WING FOLDED)

WING "LOCK-DOWN" BOLTS

With current wing model Row Crop Cultivators eye bolts are provided to lock the wings rigid in field operation. Figure 1, below, illustrates the wings in this locked, field working position. Figure 2 shows the eye bolt hanging in its lugs as it should appear with the unit in transport position. Note that the eye bolts are assembled in position with 1" locknuts, clevis pins, and hairpin cotters.

A. If the following procedure is used, the lock can be put in and out without the use of tools. Raise the tool bar off the ground with the wings unfolded. Adjust the leveling screws until there is only a slight droop in the wings. Install the lock as shown in Figure 1. Draw the nut up until just snug then back off 1/8 to 1/4 turn. It should now be possible to remove and install the lock by removing a hairpin cotter and sliding the 1" pin out or in as needed.

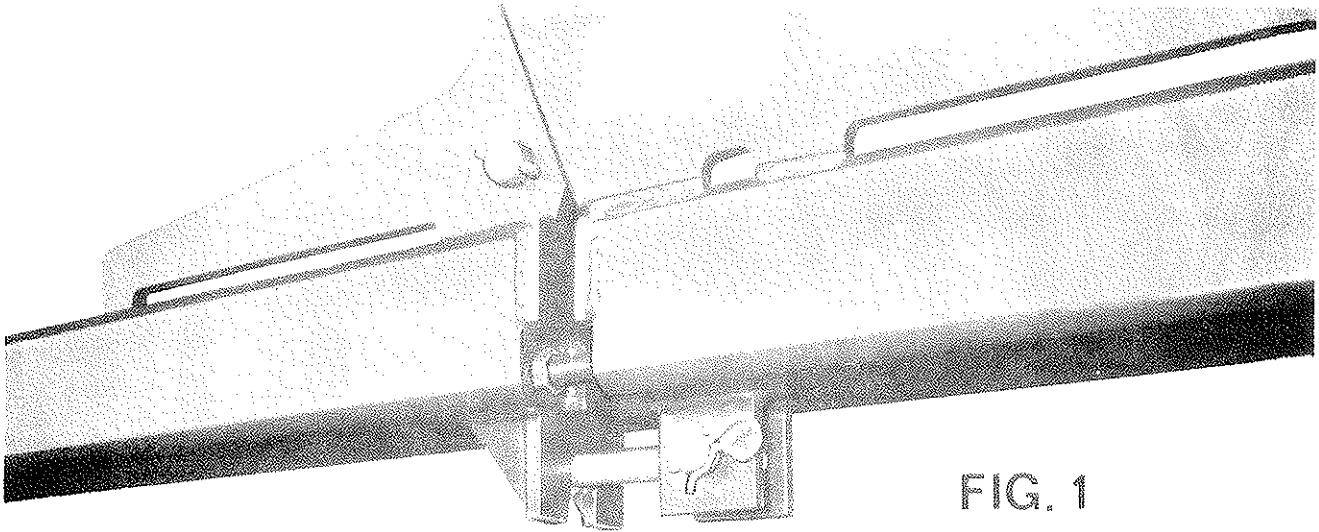


FIG. 1

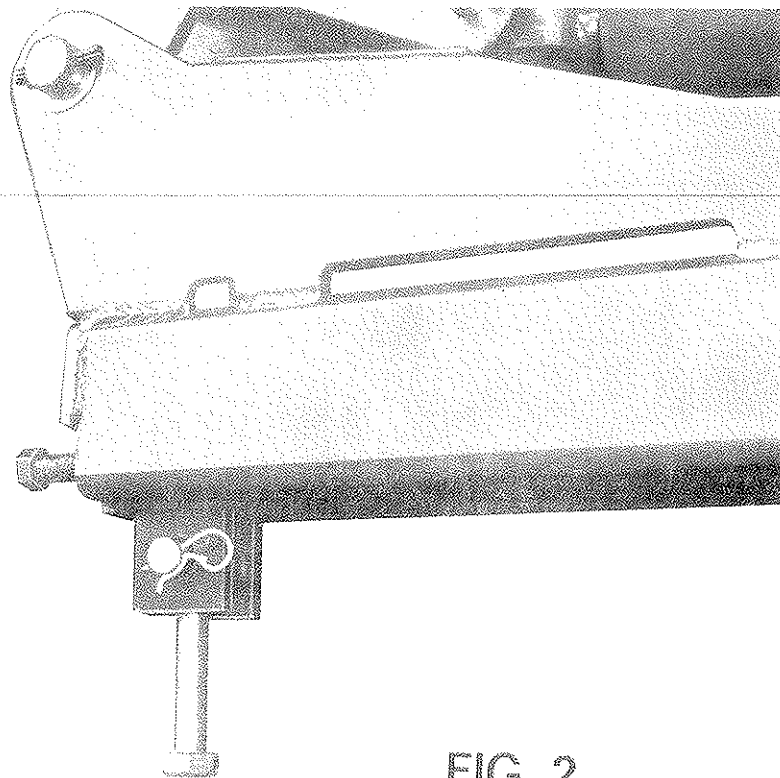
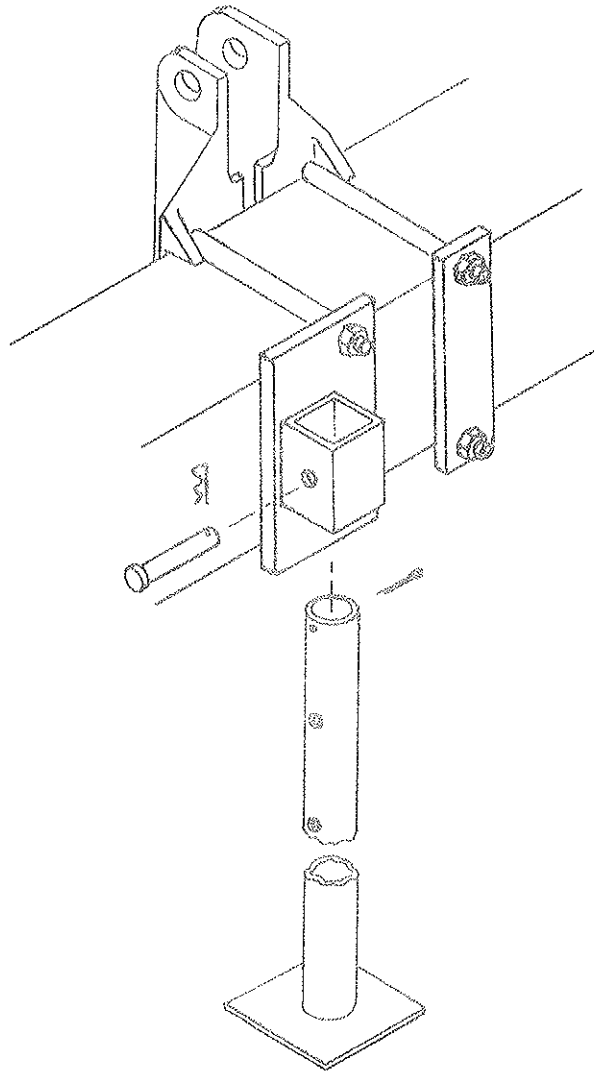
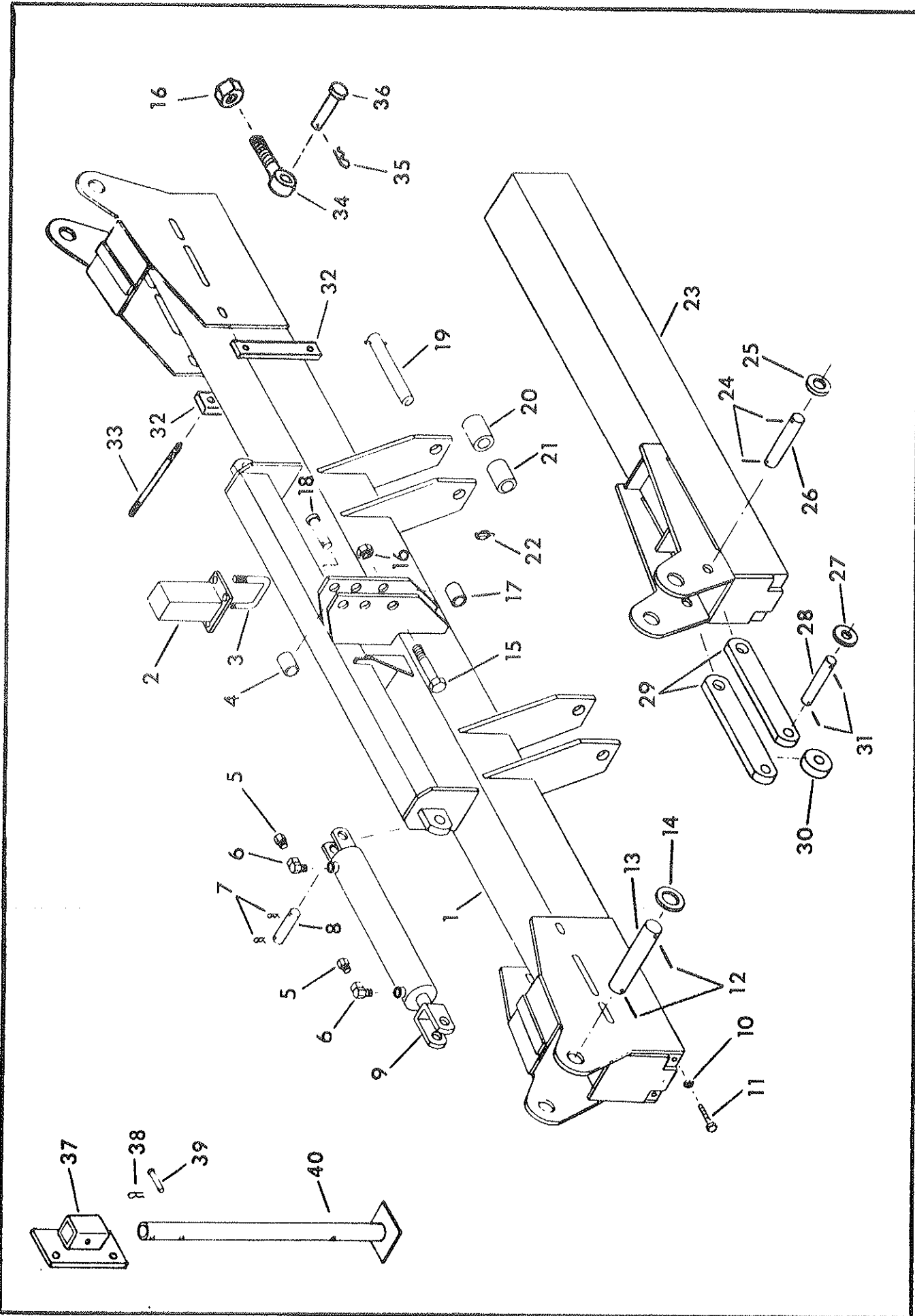


FIG. 2



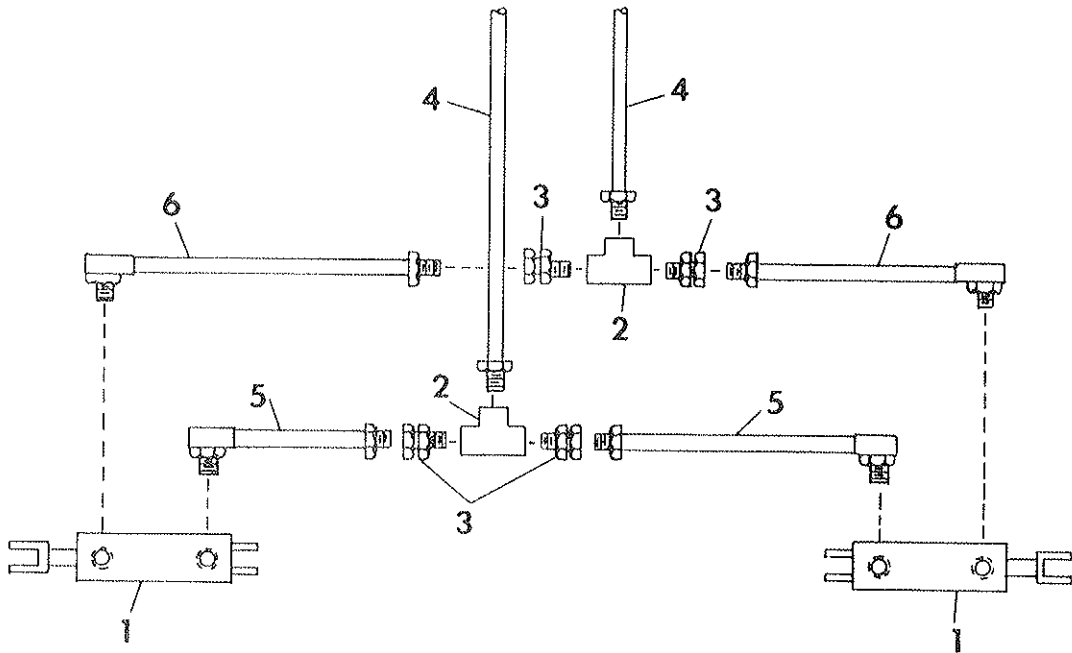
SUPPORT STANDS

Assemble the support stand brackets to the center toolbar section, as shown in illustration, ahead of the gang hangers nearest the hinge areas. Assemble the support stands through the square tubes and insert the 2-1/2" long cotter pins in the top hole of the stands to prevent them from falling out when machine is raised. When the cultivator is idle and not mounted to tractor, insert clevis pin in middle hole to prevent unit from tipping. Then when you raise the unit for working or transport, raise the support stands all the way up and insert clevis pins in the lowest hole. This keeps support stands up and out of the way while the machine is in use.



BCFF AND BFFF FOLDING TOOLBAR COMPONENTS

Index No.	Part No.	Description	Qty.	Weight
1	6J-416	Center Toolbar 128" (BCFF-640)	1	646.0
	6J-417	Center Toolbar 152" (BCFF-830) (BFFF-830 & 1222)	1	712.0
	6J-418	Center Toolbar 176" (BCFF-840) (BFFF-840)	1	778.0
	6J-419	Center Toolbar 200" (BCFF-1230) (BFFF-1228)	1	844.0
2	6J-273	Stop	1	8.0
3	6J-276	U-Bolt, 1/2"	4	.6
	1C-109	Lockwasher, 1/2"	8	
	1C-390	Nut, 1/2"	8	
4	5D-157	Sleeve	1	.3
5	6D-716	Flow Restrictor	4	.1
6	2J-170	Elbow	4	.3
7	6D-413	Hairpin Clip	4	
8	6D-412	Cylinder Pin	2	.6
9	9D-524	Hydraulic Cylinder (BCFF-1230 & BFFF-1228)	2	39.0
	9D-137	Hydraulic Cylinder (All other models)	2	29.0
10	6C-114	Jam Nut	4	
11	6J-280	Capscrew, 3/4 x 2-3/4"	4	.4
12	5D-979	Roll Pin, 1/2"	4	.1
13	6J-421	Hinge Pin	2	7.5
14	6J-278	Machinery Bushing - 1/3/4"	4	.1
15	8D-922	Bolt, 1 x 4-1/2"	1	1.1
16	6D-306	Stover Nut	1	.1
17	6D-988	Spacer	1	.3
18	6D-529	Clevis Pin, 1" x 4-1/2"	1	1.1
19	8D-424	Pin Assembly	2	2.5
20	8D-425	Spacer	2	1.6
21	5D-158	Sleeve	2	.5
22	5D-110	Klik Pin	3	.1
23	6J-364	Wing 60" (BCFF-640)	2	161.0
	6J-365	Wing 70" (BCFF-830) (BFFF-830 & 1222)	2	179.0
	6J-366	Wing 81" (BCFF-840) (BFFF-840)	2	200.0
	6J-367	Wing 88" (BCFF-1230) (BFFF-1228)	2	212.0
24	5D-955	Roll Pin, 5/16"	4	.1
25	4J-548	Machinery Bushing - 1-1/4"	4	
26	3J-496	Pin	2	6.0
27	1C-871	Flat Washer	4	.1
28	2J-97	Pin	2	3.0
29	6J-422	Link	4	14.8
30	5J-535	Roller	2	1.8
31	2D-894	Roll Pin, 1/4"	4	
32	6J-439	Strap (Used on 8 Row, 28" Spacing)	4	4.0
33	6J-425	Stud (5/8 Dia. x 11-1/4" Long)	8	.8
34	4J-440	Eye Bolt	2	1.8
35	4C-856	Hairpin Clip	2	
36	2D-799	Clevis Pin, 1" x 3" Long	2	.7
37	7J-375	Stand Bracket	2	8.2
38	6C-400	Hairpin Cotter	2	
39	3C-335	Clevis Pin	2	.2
40	9D-47	Stand Weldment	2	9.4



HYDRAULIC HOSE INSTALLATION

ITEM	BCFF-640 BSFF-640	BCFF-840 BSFF-840 BPFF-840	BCFF, BSFF, & BPFF-830. BPFF-1222	BSFF 1230	BCFF-1230 BPFF-1228
1 Hydraulic Cylinder	2 9D-137	2 9D-137	2 9D-137	2 9D-137	2 9D-524
2 4D-982 Tee Fitting 1/2" N.P.T.	2	2	2	2	2
3 6D-716 1/16" Flow Restrictor	4	4	4	4	4
4 Hydraulic Hose	2 9D-765 72"	2 9D-765 72"	2 9D-765 72"	2 9D-765 72"	2 9D-765 72"
5 Hydraulic Hose	2 3J-545 30"	2 2J-527 54"	2 3J-543 42"	2 8D-159 72"	2 8D-159 72"
6 Hydraulic Hose	2 2D-448 48"	2 8D-159 72"	2 2D-449 62"	2 4J-539 84"	2 4J-539 84"

CYLINDER IDENTIFICATION

1. Determine style of cylinder. Welded construction or tie rod construction. Tie rod construction has four long bolts running the length of the cylinder to hold the cylinder together. Welded construction has base welded to the tube.
2. Determine size of cylinder - completely retract cylinder measure distance from center of one attaching pin to other attaching pin. Measure outside diameter of tube and subtract $3/8''$ or $1/2''$ to get even dimension. The cylinder diameter is in even sizes - $3''$, $3-1/2''$, $4''$. So a tube that measures $3-7/8''$ O.D. is a $3-1/2''$ cylinder. Series cylinders are an exception, and are usually sized in $1/4''$ increments such as $5''$, $4-3/4''$, $4-1/2''$, etc.
3. Measure rod size.
4. Look in index of this book to find machine used and location of cylinder on machine. Turn to the particular cylinder and find cylinder type. Check cylinder size, retracted length and rod size. When all these items check, the cylinder is identified.

Study cylinder construction, these drawings reflect as accurately as possible the actual construction of the cylinder.

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	Folding Toolbar BRCF-6402, BRCF-8302, BRCF-8402	
	Wing Raising on Soil Builder (15 & 17 Shank)	
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	Machine Raising WM-2601 Beginning 8/1/76, WM-3002	
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<u>Code Letter</u>	<u>Manufacturer</u>
BIW	Brillion Iron Works
G	Hydraulic Gear
L	Lantex
P	Prince

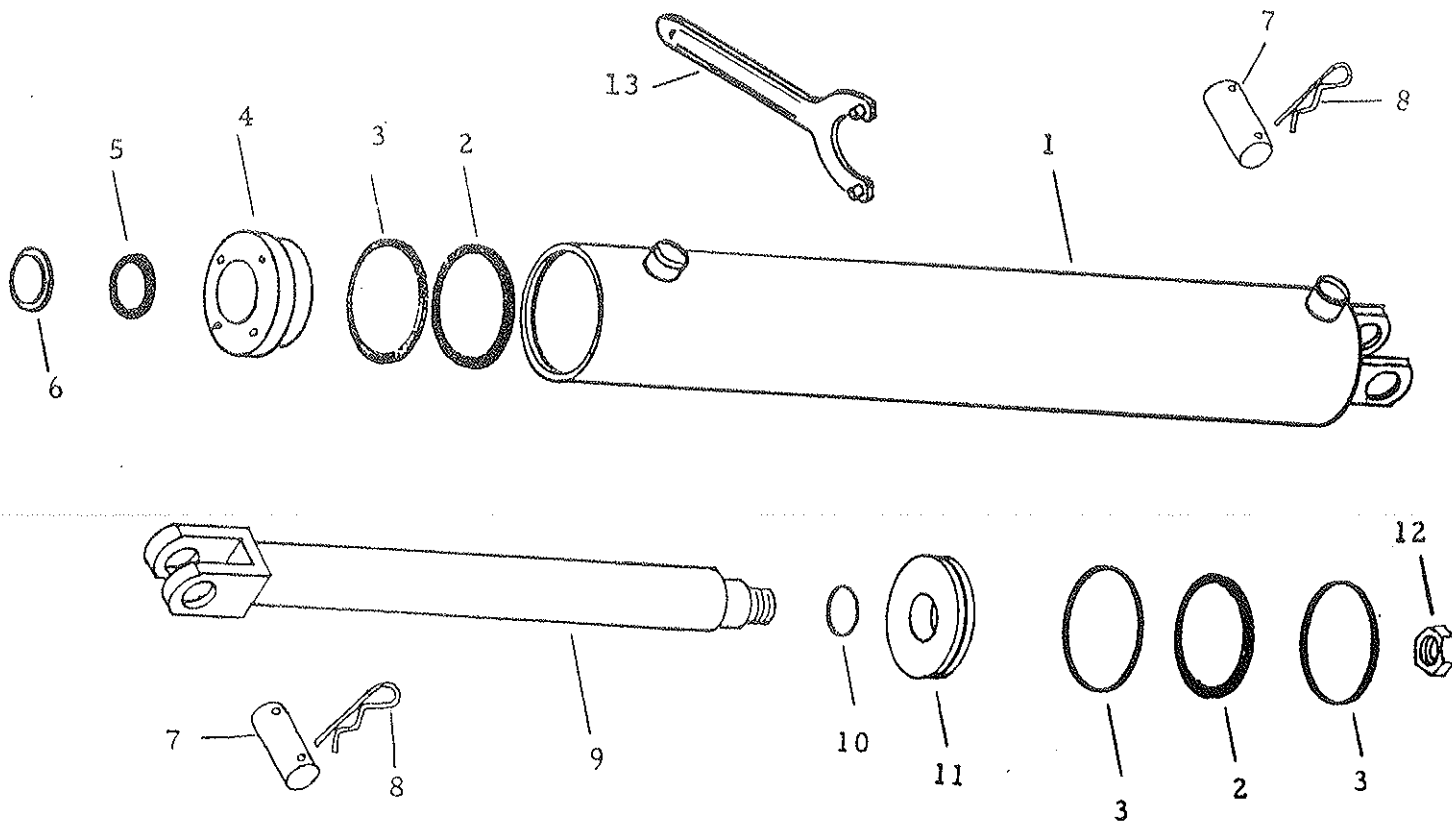
9D137 G Hydraulic Cylinder 3 x 16

Hydraulic Gear #3016-01 Painted Red

1-3/8 Dia. Rod, 26-1/4 Retracted, 42-1/4 Extended Length

Item	Part No.	Description	Qty.
1	1J-962	Tube Assembly	1
*2	NSS	O Ring	2
*3	NSS	Back-Up Ring	3
4	1J-963	Gland	1
*5	NSS	Rod Seal & Back-Up Rings	1
*6	NSS	Wiper	1
7	5J-650	Cylinder Pin	2
8	4C-856	Hairpin Cotter	4
9	1J-964	Rod Assembly	1
*10	NSS	O Ring	1
11	1J-965	Piston	1
12	6C-750	Hex Nut 7/8-14 Lock	1
*	1J-966	Seal Kit (Items Marked "*")	1
13	5J-132	Spanner Wrench (Disassembly Tool)	

NSS - Not Serviced Separately



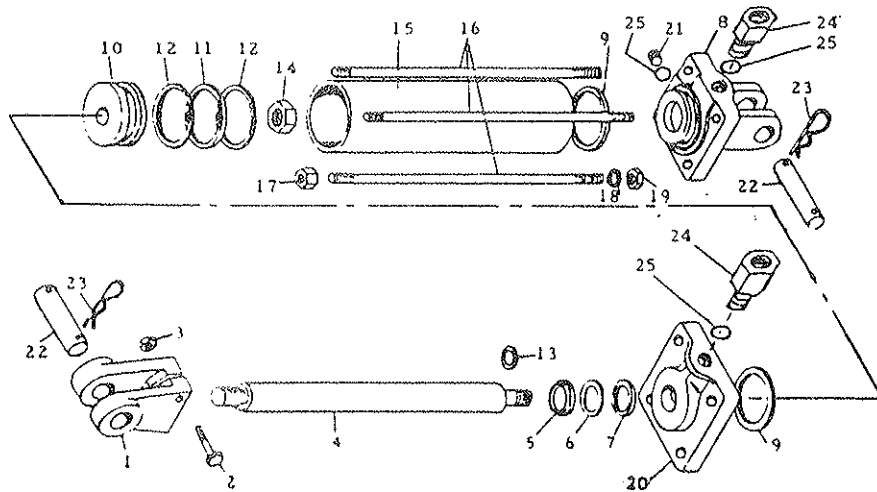
9D-524 BIW Hydraulic Cylinder 3-1/2 x 16

Painted Green

1-3/8 Rod Dia., 26-1/4 Retracted, 42-1/4 Extended Length

5J-335 - Same except assembled with side ports.

Item	Part No.	Description	Qty.
1	5J-195	Rod End Clevis	1
2	9D-797	Capscrew 5/16-18 NC x 2-1/4 Long	1
3	1C-385	Hex Nut 5/16-18 NC	1
4	5J-236	Rod	1
*5	5J-233	Rod Wiper	1
*6	5J-229	Back-Up Washer	1
*7	5J-228	"O" Ring Rod Packing	1
8	7J-29	Base (With Ports Requiring "O" Ring Fittings)	1
	5J-197	Base (Part No. on Casting With Pipe Thread) When this number is ordered you will receive (1) 7J-29, (2) 7J-24, (1) 7J-25 and (1) 7J-26	1
*9	5J-230	"O" Ring	2
10	5J-196	Piston	1
*11	5J-231	"O" Ring - Piston	1
*12	5J-232	Back-Up Washer	2
*13	5J-227	"O" Ring	1
14	6D-918	Piston Nut 3/4-16 NF Stover	1
15	5J-235	Tube	1
16	5J-226	Tie Rod	4
17	5C-392	Nut 1/2-13 NC Stover	4
18	1C-109	Lockwasher 1/2	4
19	1C-390	Hex Nut 1/2-13 NC	4
20	7J-28	Gland (With Port Requiring "O" Ring Fitting)	1
	5J-198	Gland (Part No. on Casting With Pipe Thread) When this number is ordered you will receive (1) 7J-28, (1) 7J-24 and (1) 7J-26	1
21	7J-25	Plug, "O" Ring Tupe (Without "O" Ring)	1
	5J-234	Plug, Pipe Thread (Used Prior to 8/83)	1
22	5J-650	Clevis Pin	2
23	1D-594	Hairpin Cotter	4
24	7J-26	Adaptor (Without "O" Ring)	2
25	7J-24	"O" Ring (Not a Part of 7J-25 & 7J-26)	3
*	5J-844	Seal Kit (Items Marked "**")	1



9D524 G Hydraulic Cylinder 3-1/2 x 16

Hydraulic Gear #3516-01 Painted Green

1-3/8 Dia. Rod , 26-1/4 Retracted, 42-1/4 Extended Length

<u>Item</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>
1	1J-957	Tube Assembly	1
*2	NSS	O Ring	2
*3	NSS	Back-Up Ring	3
4	1J-958	Gland	1
*5	NSS	Rod Seal & Back Up Rings	1
*6	NSS	Wiper	1
7	5J-650	Cylinder Pin	2
8	4C-856	Pin Clip	4
9	1J-960	Rod Assembly	1
*10	NSS	O Ring	1
11	1J-959	Piston	1
12	6C-750	Hex Nut 7/8-14 NF Lock	1
13	8J-918	Tension Bushing	2
*	1J-961	Seal Kit (Items marked "**")	
14	5J-133	Spanner Wrench (Disassembly Tool)	

NSS = Not Serviced Separately

