ASSEMBLY INSTRUCTIONS
REPAIR PARTS CATALOG

Brillion

FOLDING TOOLBAR

USED WITH BRILLION RO CROP CULTIVATORS

MODELS: BRCF - 6402 & 6403
BRCF - 8402 & 8403
BRCF - 8302 & 8303

IMPORTANT!
Repairs cannot be purchased retail direct from factory. Order through your Brillion dealer or any established implement dealer.

FEMA

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 raise the wings independently into the upright 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 operators manual. Follow the instructions in these manuals for the proper gang and extension placements of the individual units onto the toolbar. All gangs and optional equipment are mounted to the folding toolbar in the same sequence and location as they are on the Brillion rigid toolbars.

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.

Do not park or store folding toolbar with the wings folded.

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. Do not tighten any of the hardware until the unit is completely assembled. "Right, left, front, back" refer to operators directions when he stands behind the toolbar, facing the direction of travel.

HITCH BRACKET AND MAST ASSEMBLY

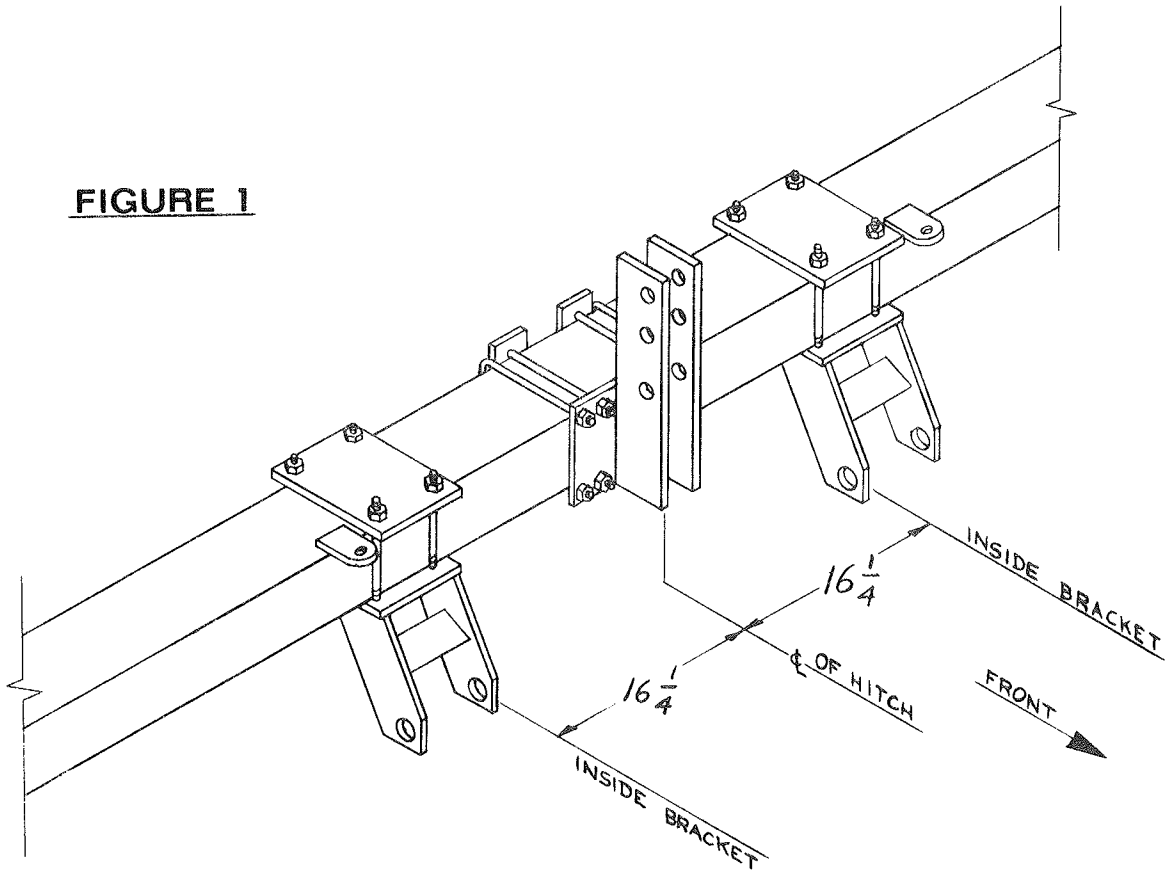
Set the center frame on blocks high enough for clearance to fasten the lower hitch brackets to the tube. Locate and mark the center of the frame tube. Place the hitch mast in front of the frame tube at the center mark with the mast plates up. Clamp the mast to the frame tube with the two straps, four 5/8" studs and two 5/8" U-bolts. Use 5/8" locknuts on the U-bolts and one end of the studs with a minimum of one thread through the nut on the studs. Use a regular hex nut and lockwasher on the other end. Make sure that the mast is centered on the frame tube and then tighten securely so it will not slip off position.

Locate the lower hitch brackets under the frame tube and the clamp plates above the frame tube. Attach these brackets using 5/8" studs. Again use a locknut on one end and a regular hex nut and lockwasher on the opposite end. See Figure 1.

WING ASSEMBLY

Set center section on sawhorses or other substantial supports about 30 inches tall. Position one of the wing assemblies over the hinge tube on the center toolbar. Slide the hinge pin (1-1/2 dia.) through the holes in the wing hinge and the center hinge tube. Use machinery bushings as needed to take up any space between the hole in the hinge pin and the wing frame. Secure with a 1/2 x 2 roll pin. Repeat for the second wing.

FIGURE 1



WING BRACE ASSEMBLY

Bolt the wing braces to the mating plates on the center frame cylinder mounting lugs. Fasten with the 1/2" x 1-1/2" long capscrews, lockwashers and nuts.

The 1/2" diameter x 4" long safety clevis pin and hair pin cotter are used to lock the wing into transport position against the wing brace. When not in use, store the safety pin and hair pin cotter in the additional hole provided in the wing brace straps.

CYLINDER INSTALLATION

Before mounting the hydraulic cylinders to the mating cylinder lugs, insert a flow restrictor into each port of the cylinder body. This restrictor is necessary to control the speed of travel in which the wings will raise and lower hydraulically. Mount the cylinders to the mating cylinder lugs with the clevis pins provided. Position the cylinders so the rod end is connected to the wing.

Fasten the hose holders to the lugs next to the lower hitch brackets with the 5/8" x 1-3/4" long capscrews, flat washers, and locknuts provided. Four hydraulic hose assemblies (not included) are needed to operate the double acting cylinders. After assembling the hoses to the cylinders, pass the ends through the loop in the hose holder to keep them free of the tractor tire.

HYDRAULICS

Clean the hydraulic hose fittings before connecting to the tractor hydraulic system. If this is the first time machine has been connected to tractor, it may be necessary to bleed air from the system. Refer to your tractor operator manual for proper procedure to bleed air from the system. Check hydraulic fluid level with all cylinders extended.

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

TRANSPORTING FOLDING TOOLBAR

Raise the cultivator before folding wings. Remove lock pins from bottom holes in hinge plate. Fold wings over.

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

Always lock wings in folded position with safety pins provided before transporting.

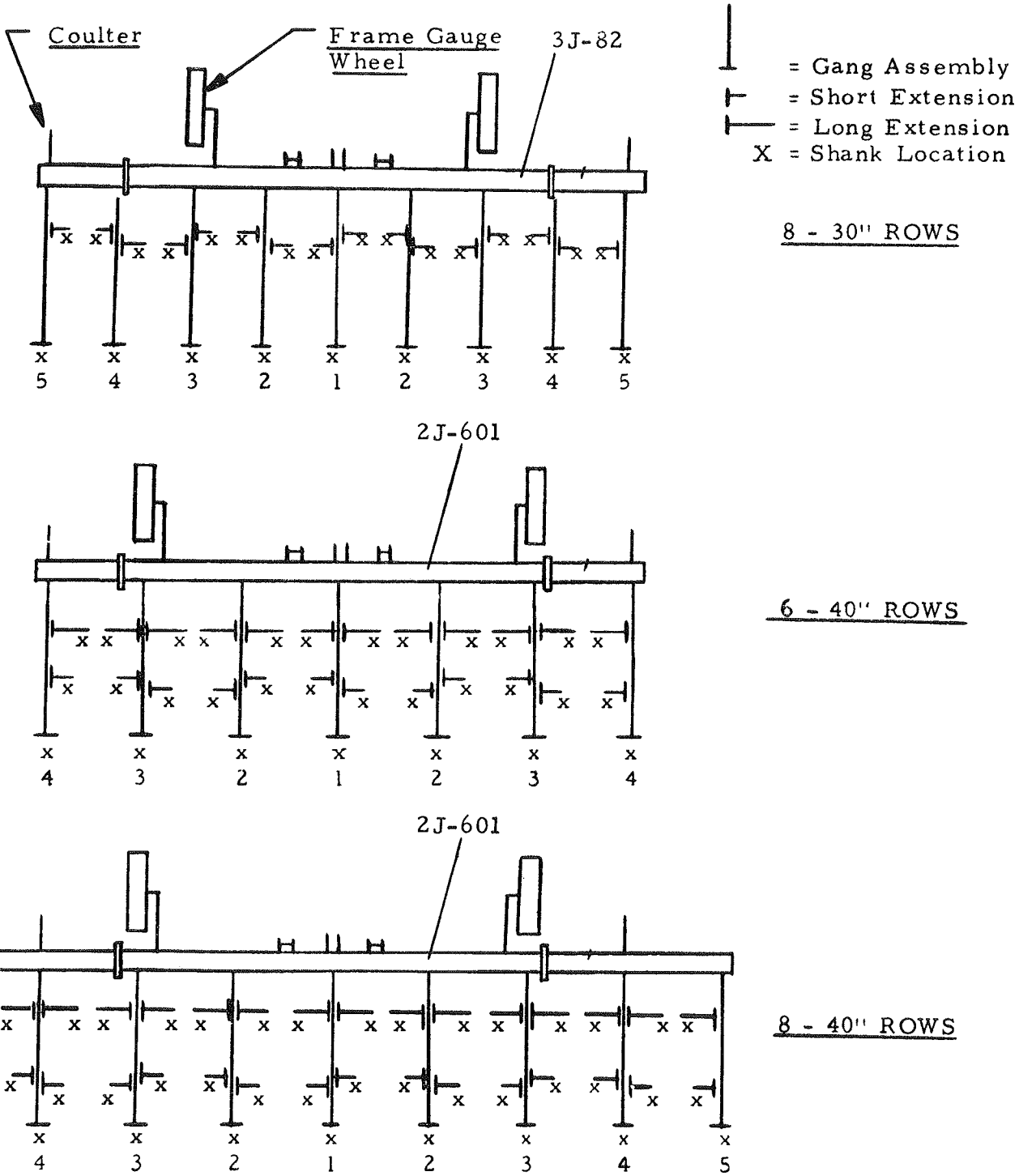
FIELD OPERATION OF FOLDING TOOLBAR

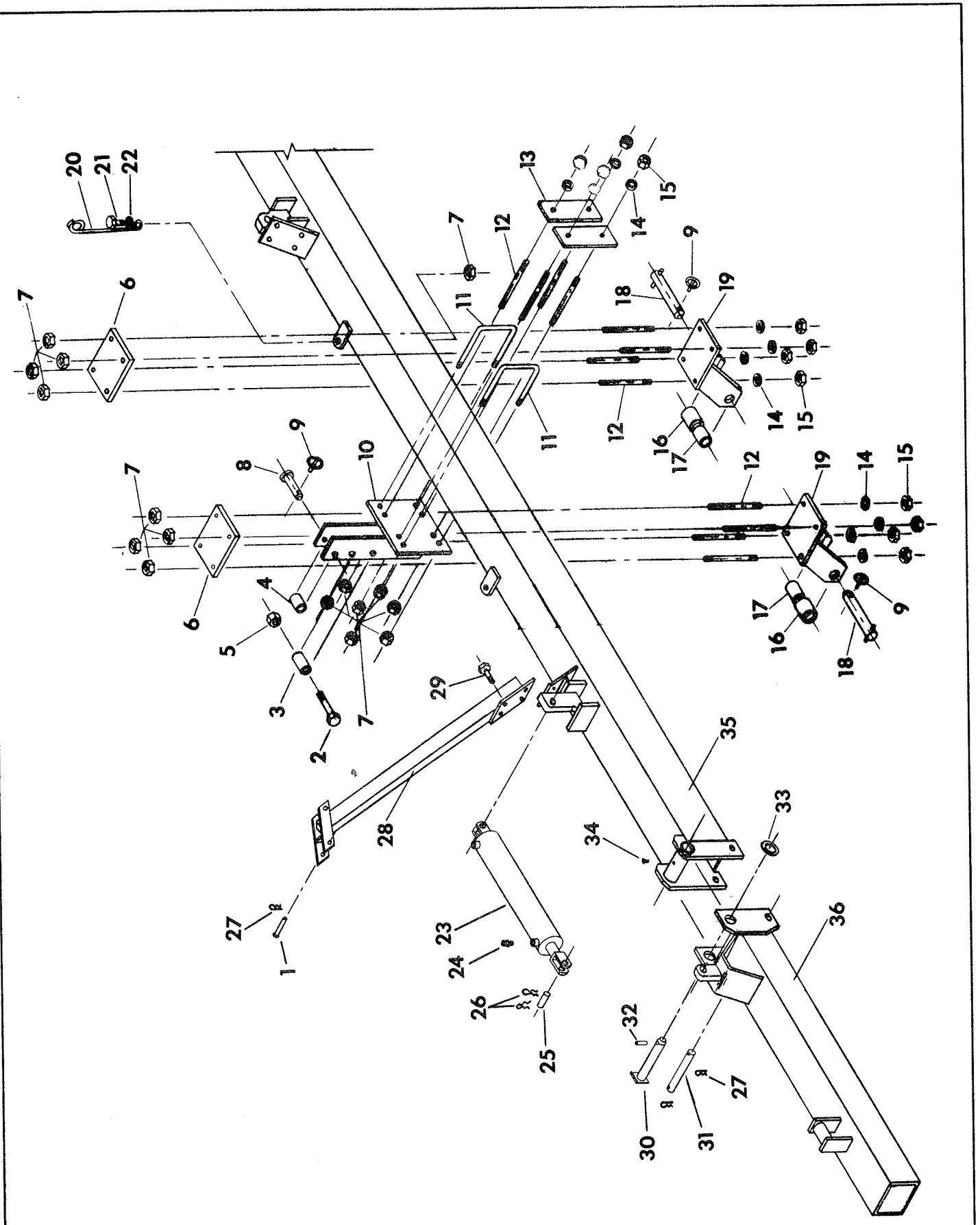
Do not allow the wings to float when cultivating. Lock wings into rigid position by installing the lock pins into the bottom hole of the hinge plates. Failure to pin hinges rigid can cause problems cultivating and may damage coulters or gauge wheels when operating in rough ground. Remove lock pins before folding wings.

BRILLION RO-CROP CULTIVATOR WITH FOLDING TOOLBAR

LOCATION OF COULTERS AND FRAME GAUGE WHEELS

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




20
21
22
13
15
7
12
14
9
6
7
11
18
19
12
16
17
14
15
9
10
8
7
12
19
14
15
6
4
5
3
7
29
2
17
16
18
9
35
28
34
33
27
23
36
1
24
26
25
32
30
31
27

FOLDING TOOLBAR COMPONENTS

MODELS: BRCF-6402, BRCF-8302, BRCF-8402

Index No.	Part No.	Description	No. Req'd.	Weight
1	8D-382	Clevis Pin 1/2 Dia. x 4 Lg.	2	.5
2	8D-922	Capscrew (1" - 8 NC x 4-1/2" Lg., Grade 5)	1	1.3
3	6D-988	Spacer	1	.2
4	5D-157	Sleeve	1	.2
5	6D-306	Stover Nut (1" - 8 NC Hex)	1	.1
6	8D-919	Plate	2	11.7
7	5C-461	Stover Nut (5/8" - 11 NC Hex)	24	.1
8	6D-529	Clevis Pin (1" Dia.)	1	1.1
9	5D-110	Klik Pin	3	.1
10	9D-3	Mast	1	31.0
11	9D-112	U-Bolt (5/8" - 11 NC Thread)	2	1.5
12	8D-900	Stud - 9-3/4" Long	12	.9
13	8D-985	Strap	2	5.0
14	1B-166	Lockwasher (5/8" Std.)	12	
15	1C-392	Nut (5/8" - 11 NC Hex)	12	
16	8D-425	Spacer	2	1.6
17	5D-158	Sleeve	2	.5
18	8D-424	Pin Assembly	2	2.5
19	9D-8	Hitch Bracket	2	24.9
20	6D-333	Hose Support	2	1.8
21	6C-421	Capscrew (5/8-11 NC x 1-3/4 Long, Grade 5)	8	.13
22	1C-122	Flat Washer (5/8 Std.)	2	.09
23	9D-137	Hydraulic Cylinder, 3" Dia. x 16" Stroke	2	29.0
24	6D-716	Hydraulic Flow Restrictor	4	.9
25	6D-412	Cylinder Pin	2	.9
26	6D-413	Hair Pin Clip	4	.04
27	4C-856	Hair Pin Cotter	6	.04
28	2J-603	Wing Brace	2	40.0
29	8C-527	Capscrew (1/2-13 NC x 1-1/2 Long, Grade 5)	8	.09
*	1C-109	Lockwasher (1/2 Std.)	8	.05
*	1C-390	Nut (1/2-13 NC Hex)	8	.07
30	1J-880	Hinge Pin	2	5.0
31	2J-153	Pin, 1" Dia. x 9" Long	2	2.0
32	6D-854	Roll Pin, 1/2" x 2"	2	.1
33	6D-966	Machinery Bushing	6	.05
34	9D-923	Lube Fitting	2	.01
35	2J-601	Center Toolbar (169" Lg. Tube) used on BRCF-6402 & BRCF-8402	1	386.0
	3J-82	Center Toolbar (139" Lg. Tube) used on BRCF-8302	1	330.0
36	1J-859	Wing Weldment (BRCF-6402 & BRCF-8302)	2	115.0
	1J-860	Wing Weldment (BRCF-8402)	2	156.0
	5J-104	Wing Weldment (BRCF-6403 & 8303) (7 x 7 tube)	2	135.0
	5J-106	Wing Weldment (BRCF-8403) (7 x 7 tube)	2	183.0
		*Parts Not Shown		

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.

Code Letter	Manufacturer
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 "*")	

NSS - Not Serviced Separately