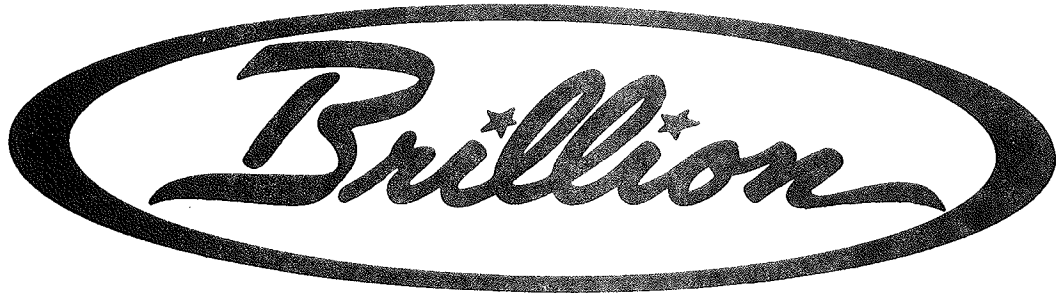


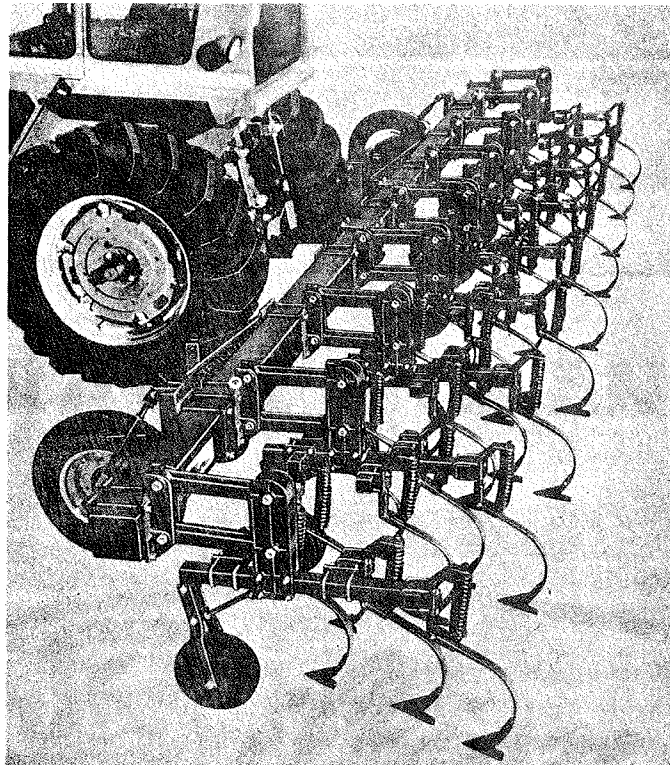
OPERATOR'S MANUAL



RO-CROP CULTIVATORS

BRC-4301, BRC-4401, BRC-6301,
BRC-6401, BRC-8301, BRC-8401,
BRC-12301

BRC-430, BRC-440, BRC-630,
BRC-640, BRC-830, BRC-840.
BRC-1230



490

980

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BRILLION IRON WORKS

Brillion, Wisconsin, U. S. A.

9D-63

FOREWARD

Your Brillion RO-CROP Cultivator 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.

Read the manual carefully before assembling or operating this equipment. This manual contains general information, specifications, safety suggestions, maintenance and set-up information.

LOCATION REFERENCE

"Right , left, front, back" refer to operators directions when he stands behind the machine, facing direction of travel.

GENERAL SPECIFICATIONS

<u>Model</u>	<u>Toolbar Size</u>	<u>Rows</u>	<u>No. of Shanks</u>
BRC-430	5" x 5" x 130"	4-30"	13
BRC-440	5" x 7" x 170"	4-40"	21
BRC-630	5" x 7" x 190"	6-30"	19
BRC-640	5" x 7" x 250"	6-40"	31
BRC-830	5" x 7" x 250"	8-30"	25
BRC-840	7" x 7" x 330"	8-40"	41
BRC-1230	7" x 7" x 380"	12-30"	37

Shipping Bundle Check List

Bundle Name	Quantity Per Machine						
	<u>430</u>	<u>440</u>	<u>630</u>	<u>640</u>	<u>830</u>	<u>840</u>	<u>1230</u>
Gang Assembly	5	5	7	7	9	9	13
Short Extension, 8-1/2"	8	8	12	12	16	16	24
Long Extension, 13"	-	8	-	12	-	16	--
Cultivator Shank Assembly	13	21	19	31	25	41	37
Coulter Assembly	2	2	2	2	2	2	2
Hitch Box	1	1	1	1	1	1	1
Gang Gauge Wheel Assembly	5	5	7	7	9	9	13
Clamp Box Assembly	1	1	1	1	1	1	1
Frame Tube 5" x 5" x 130"	1	-	-	-	-	-	-
Frame Tube 5" x 7" x 170"	-	1	-	-	-	-	-
Frame Tube 5" x 7" x 190"	-	-	1	-	-	-	-
Frame Tube 5" x 7" x 250"	-	-	-	1	1	-	-
Frame Tube 7" x 7" x 330"	-	-	-	-	-	1	-
Frame Tube 7" x 7" x 380"	-	-	-	-	-	-	1
Box Assembly	1	1	1	1	1	1	1
L.H. Gauge Wheel Assembly	-	-	-	1	1	1	1
R.H. Gauge Wheel Assembly	-	-	-	1	1	1	1
15" Wheel	-	-	-	2	2	2	2
U-Bolt Box	-	-	-	1	1	1	1

SET-UP INSTRUCTIONS

Using the Shipping Bundle Check List, make sure that you have the required parts for your model cultivator.

During assembly procedure do not tighten nuts until machine is completely assembled.

MACHINE ASSEMBLY

Set frame tube on sawhorses or other substantial supports about 30 inches tall. The frame tubes for models 640, 830, 840 and 1230 have two angles welded onto one end. Locate these angles on the RIGHT HAND end of the machine. Turn the frame tube until the angles are at top and bottom of the tube. See figure 1.

Measure and locate the center of the frame tube, not including the thickness of any end plates. Make a chalk or pencil mark at the center of the frame tube. From this center, lay out the center points for the other gang assemblies. The distance between these marks will be equal to the row spacing being cultivated.

Place the hitch mast in front of the frame tube at the center mark with the mast plates up. Position a gang assembly behind the frame tube. Clamp both assemblies to the frame tube using four 5/8" studs. Use 5/8" locknuts on one end of the studs with a minimum of one thread through the nut. Use a regular hex nut and lockwasher on the other end. Make sure that the mast and gang assembly are centered on the frame tube. Then tighten securely so that these components 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 2.

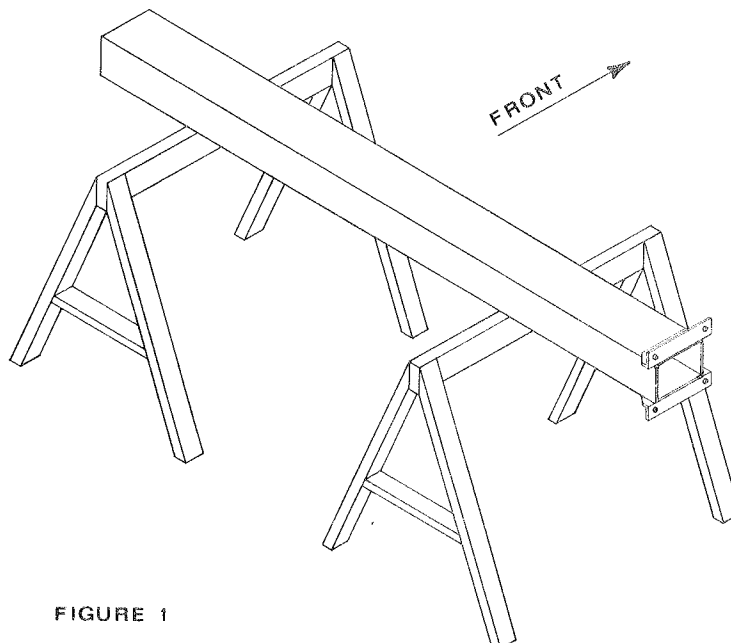


FIGURE 1

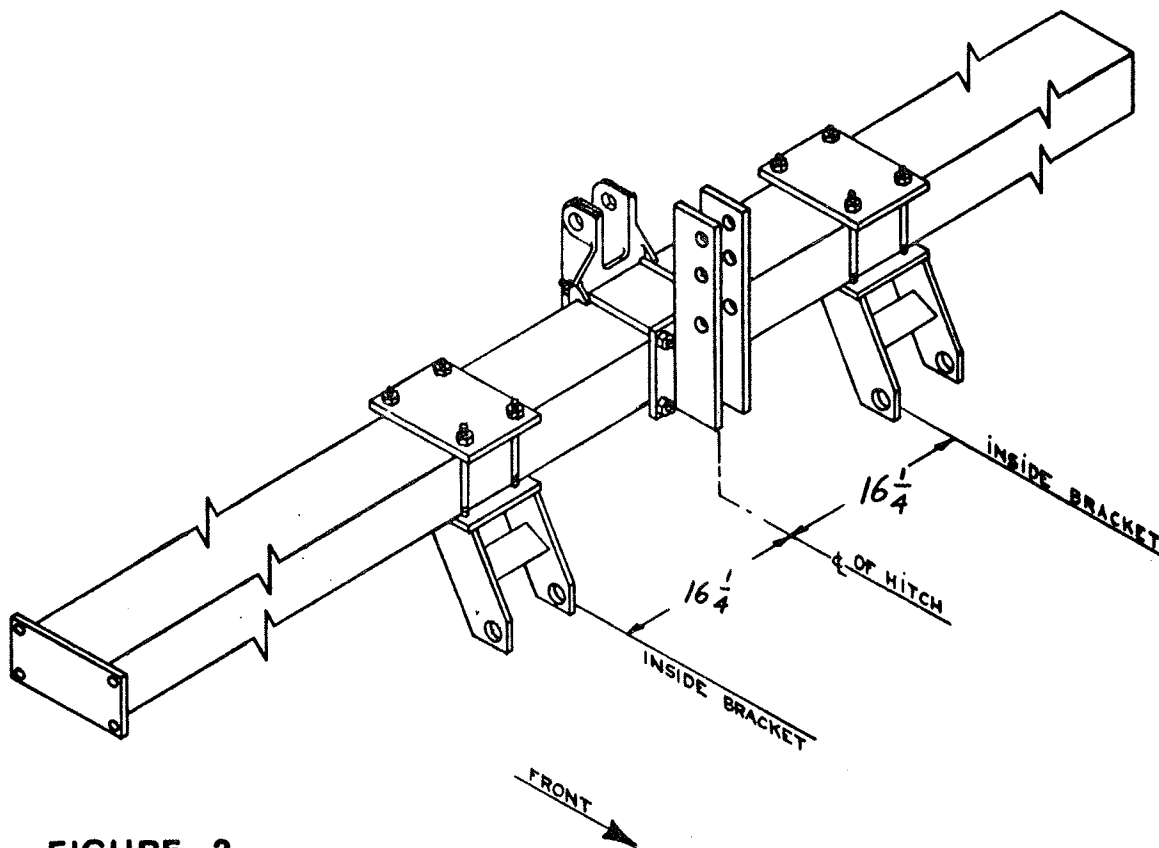


FIGURE 2

GANG AND EXTENSION PLACEMENT

Clamp the remainder of the gang assemblies to the frame tube, centering the gangs on the marks laid out in the previous step. Use studs with regular nuts and lock nuts. Use clamp plates at all locations except where coulters assemblies are mounted.

Attach coulters to the gang just outside of tractor rear wheels. Attach frame gauge wheels (where used) to gang just outside coulters. See figures 3 and 4.

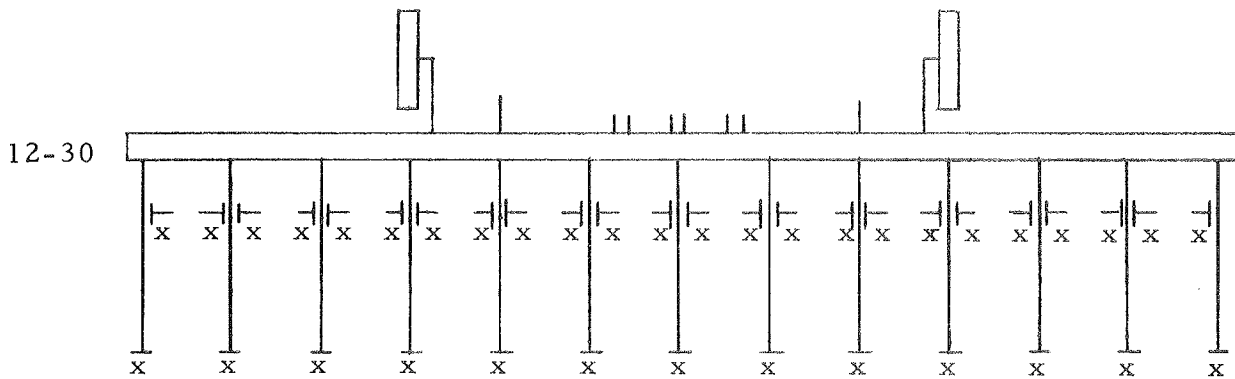
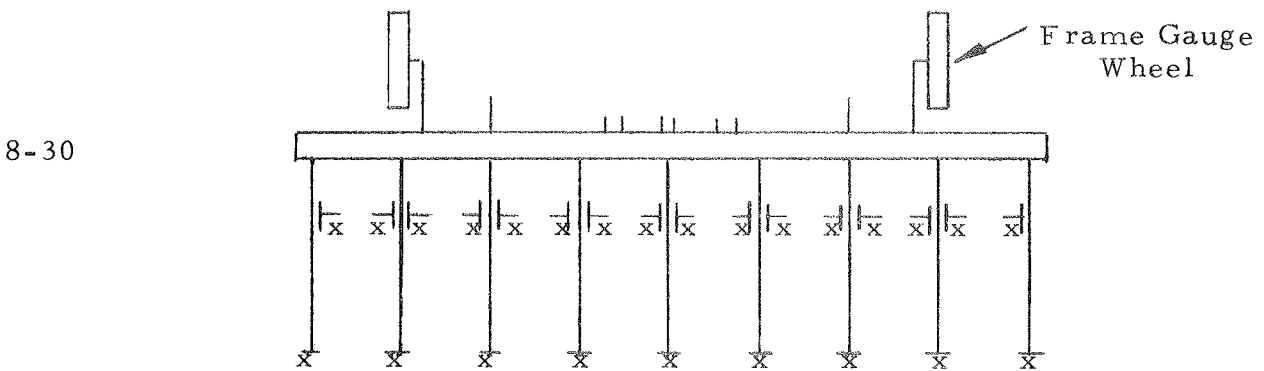
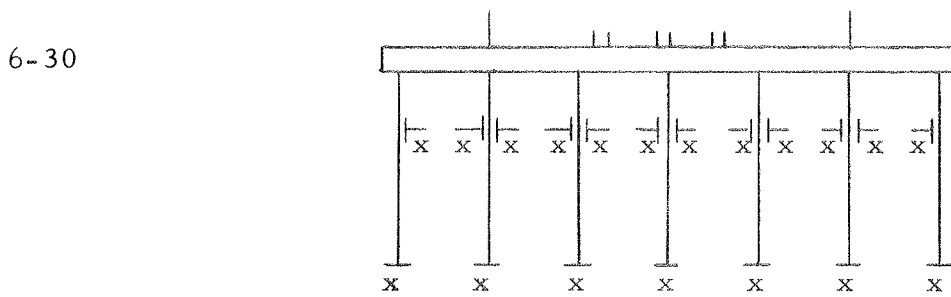
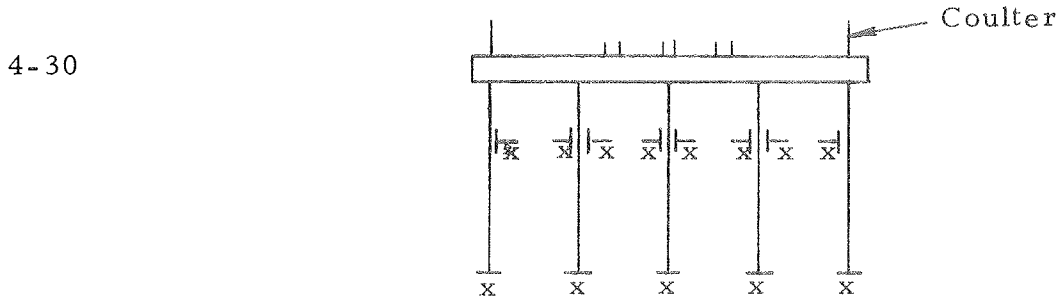
On 30" row spacing, only one extension is used on each end gang. Mount these extensions to point in towards the center of the cultivator. Two extensions are used on all intermediate gangs. Locate these extensions on the front part of the gang tube, between the gauge wheel pivot and adjusting rod anchor. See figure 5.

On 40" rows, two long extensions are used on the front part of the gang tube. Mount these straight across from each other using four 1/2" capscrews for clamping. Mount the short extensions on the rear portion of the gang tube, about halfway between the front extensions and the back end of the tube. Offset these short extensions from each other, using 1/2" U-bolts, lockwashers and nuts.

GANG AND EXTENSION PLACEMENT

SHANK LOCATION

30" ROWS



X = Shank Location

— = Short Extension

GANG AND EXTENSION PLACEMENT

SHANK LOCATION

40" ROWS

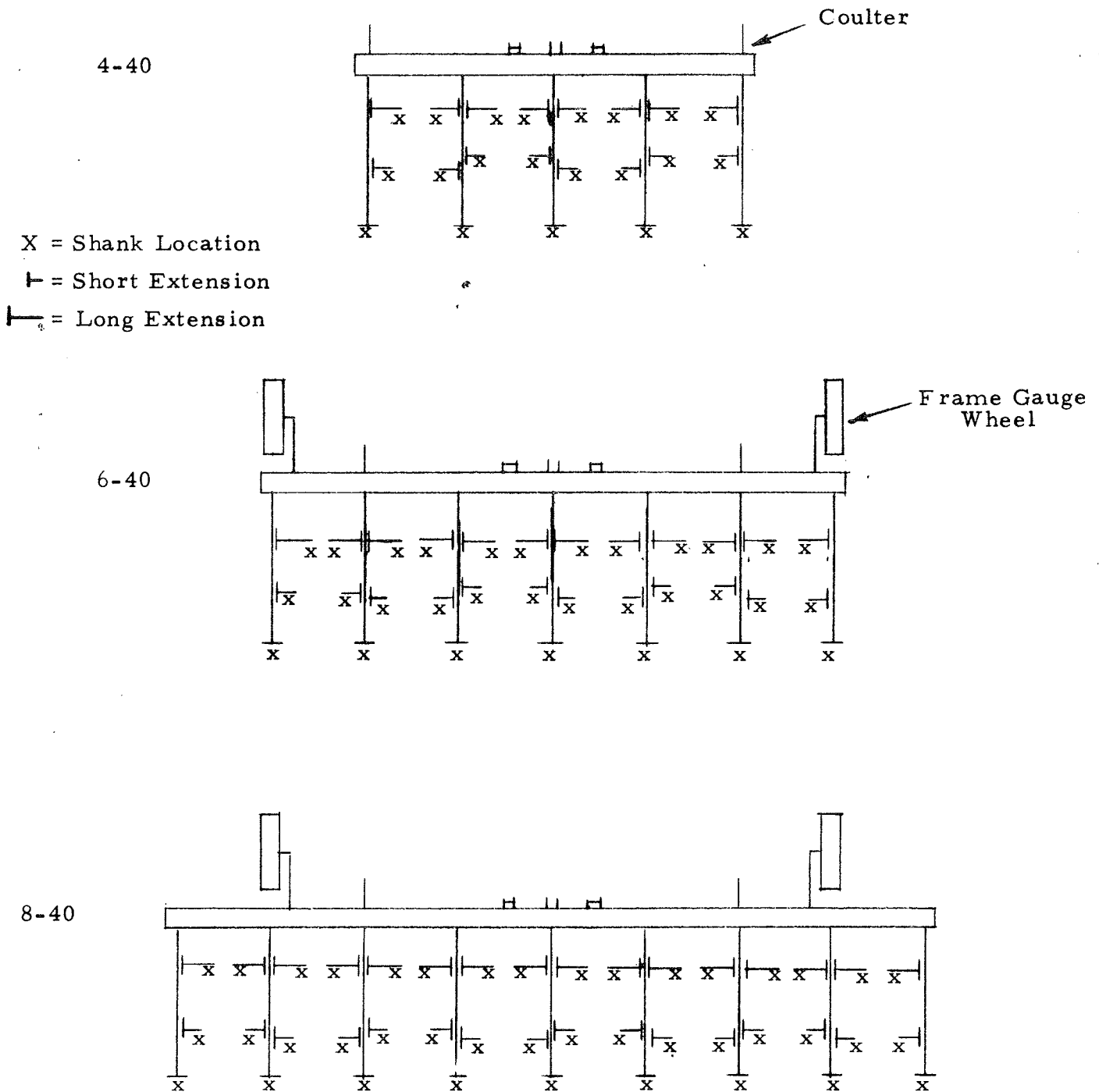


Figure 4

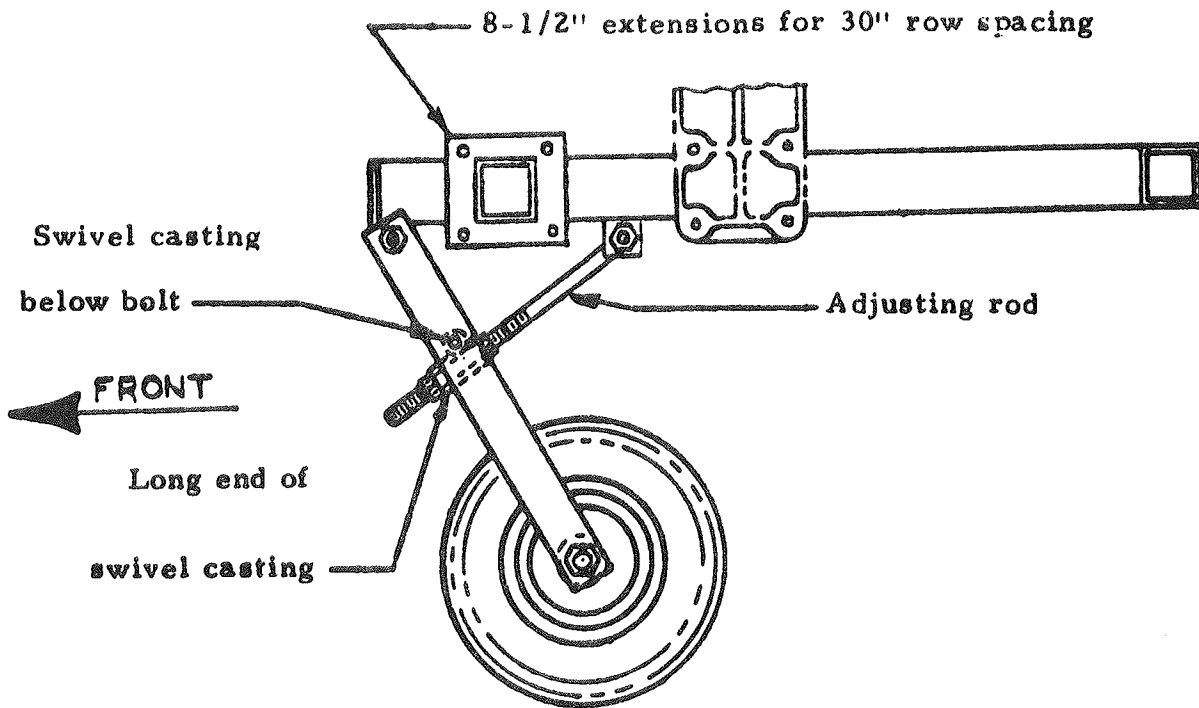


Figure 5

Typical extension placement for 40" row spacing

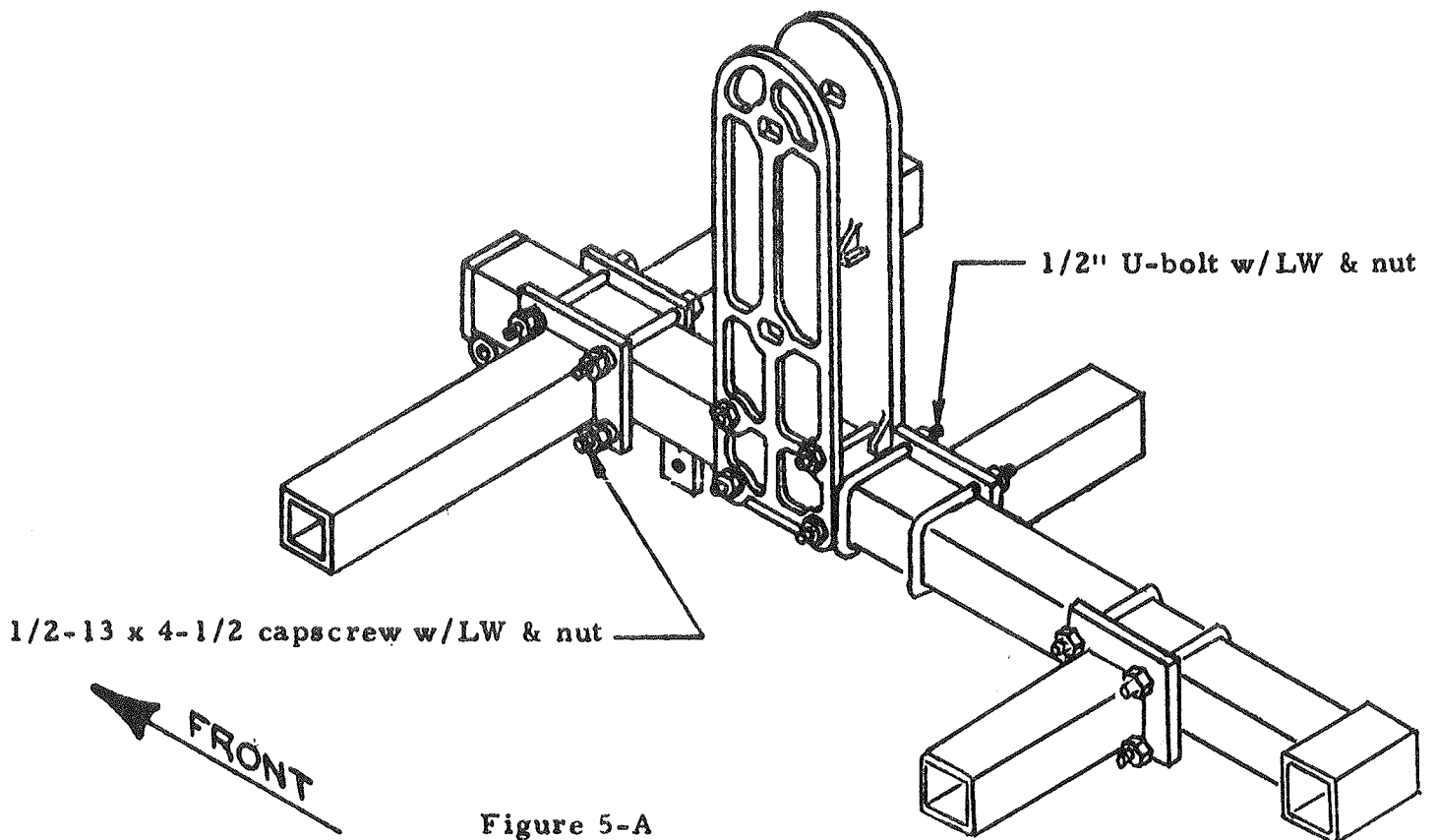


Figure 5-A

GANG GAUGE WHEEL INSTALLATION

The gauge wheel is shipped as a unit, ready to mount, except for the adjusting rod. Run a 3/4 jam nut on the threads of the adjusting rod and insert the rod into the short end of the swivel casting between the gauge wheel arms. Install another jam nut on the adjusting rod against the long end of the casting. Bolt the top of the gauge wheel arms to the pivot tube welded to the front of the gang tube. Making sure that the adjusting rod is below the swivel attaching bolt, attach the adjusting rod to the two lugs on the gang tube with a 5/8" capscrew. See figure 5. Check the tire pressure to be sure it is maintained at 30 psi.

ROW MARKER ASSEMBLY

The row marker is used as a guide for the tractor operator to follow the row without the need for looking back over his shoulder. Attach the angle bracket with rod to any suitable location on the tractor frame. Set the block with two cross holes on the rod and insert second rod into remaining set of holes. Adjust holder and rod so that the pointer is over a row. Tighten set screws. See figure 6.

FRAME GAUGE WHEEL ASSEMBLY

Attach the frame gauge wheel to the second gang outside of the tractor rear wheels. Remove the inner of the two clamp plates holding this gang to the frame tube. Position the gauge wheel bracket on the front of the frame tube, using the studs from the gang to secure one side of the gauge wheel bracket. Use the clamp plate removed from the gang to clamp the other side of the gauge wheel bracket. The spindle and hub should point out towards the end of the frame tube. See figure 7.

SHANK ASSEMBLY

The cultivator shank is completely assembled and needs only to be attached to an extension tube or rear of the gang tube. Refer to figures 3 and 4 for approximate shank locations.

Set a V-block on the back side of the extension tube with the ears above and below the extension tube. Set the shank assembly into the V with the spring to the rear. Set the clamp on the back of the hex shank and place two 1/2" U-bolts around the extension tube and through the clamp. Position the shank assembly near the outer end of the extension tube. The hex shank has about 3" of vertical adjustment. Set the shank at a mid position and tighten nuts. This allows for individual adjustment in the field. See figure 8.

MAINTENANCE

Clean dirt, weeds, dried grease and rust from cultivator before storing. Apply light coat of oil or grease to sweeps to prevent rusting. Repaint areas where paint has worn off. Repair or replace any broken or damaged parts. Place board under sweeps to prevent contact with damp ground. Raise gang gauge wheels and frame gauge wheels to prevent ground contact. Store in a dry, protected place. Check the gang gauge wheel tire pressure to be sure it is maintained at 30 psi.

**LEFT HAND
FRAME GAUGE WHEEL**

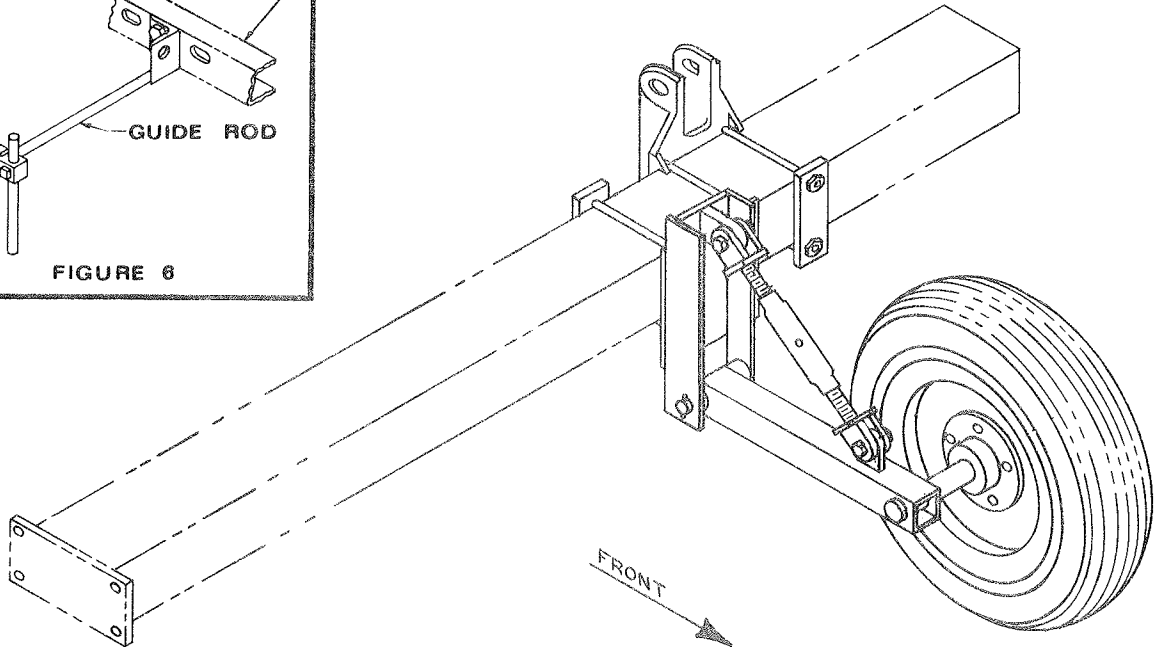
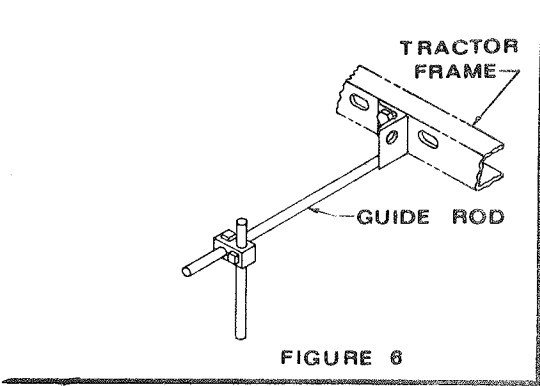


FIGURE 7

Shank Assembly

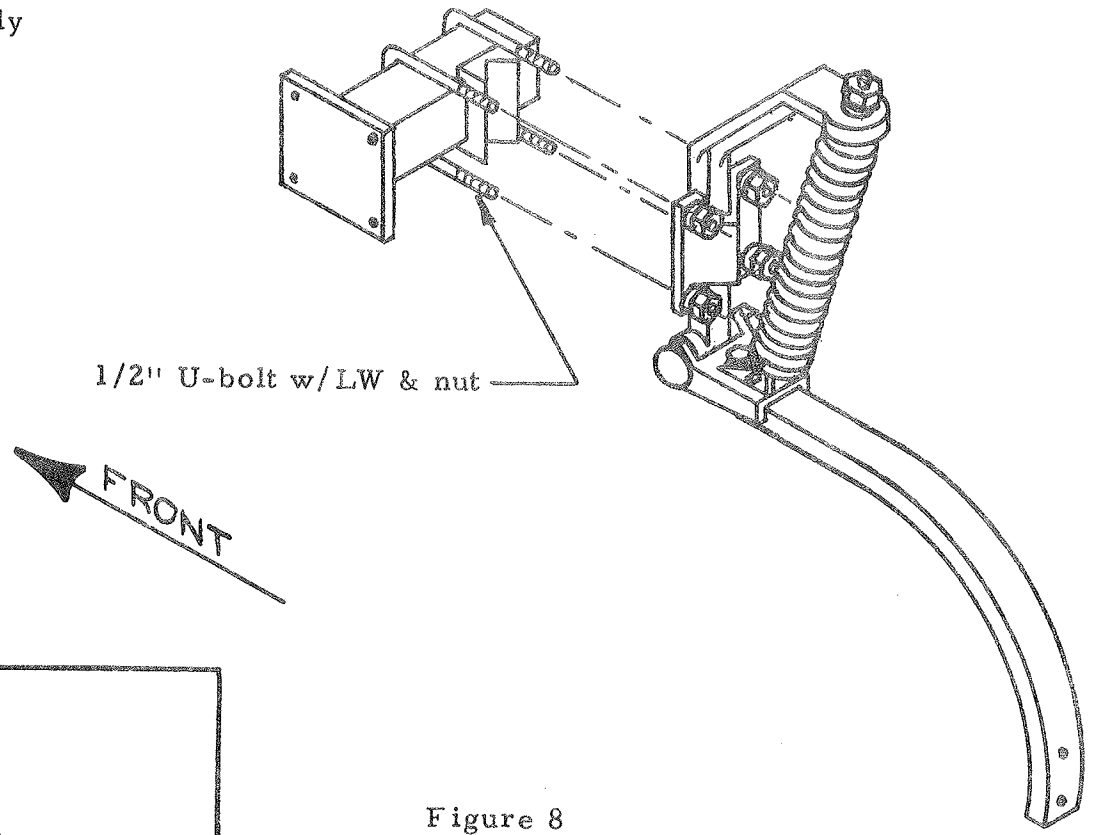
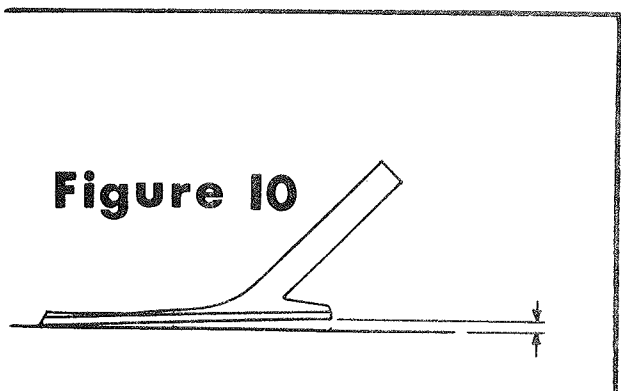


Figure 8



OPERATING PROCEDURE

PREPARING THE TRACTOR

Set tractor wheels to straddle two rows to be cultivated. The ideal setting is for the tires to run in the middle of the row space. Make sure that the tractor lower hitch arms are set at the same height. Adjust sway blocks or chains to allow flexibility between cultivator and tractor while cultivating, but side sway should be eliminated for field transport. Refer to your tractor operators manual for the proper method of adjusting side sway of the three point hitch.

Refer to tractor operators manual for proper method of setting and controlling three point lift. On cultivator models without frame gauge wheels, the tractor hydraulic system will control the height of the frame tube. On models with frame gauge wheels this height is controlled by the wheels. Whatever the means of controlling the frame tube height, it should be set to hold 27-1/2" beneath frame tube to ground when operating (25-1/2" on 7 x 7 tube).

Make sure that the tractor front end has sufficient weight to prevent tractor front end from coming off the ground when raising the cultivator or during transport.

FIELD OPERATING

Attach cultivator to tractor three point hitch. Adjust the top link until the frame tube is level when in the operating position. Adjust tractor hydraulics or gauge wheels to hold bottom of frame tube 27-1/2 inches above the ground (25-1/2 on model 840). This should result in 5" - 7" clearance between bottom of frame tube and top of individual gang tube. This allows gang to move up and down to conform to field irregularities. See figure 10A

Shorten hitch top link to give sweeps more suck, lengthen top link to decrease suck of sweeps. Proper suck or pitch of sweeps is for back edge of sweep to be 1/8 to 1/4 off ground when point is on the ground. See figure 10.

Adjust individual gang gauge wheel to give proper operating depth. Adjust individual shanks for working side of beds, leaving a drainage furrow between rows, etc.

Select proper field speed for best results depending on size of crop being cultivated and soil conditions.

Reduce speed when turning at end of row, crossing ditches, etc. Use tractor brakes as necessary for field turns. Always raise cultivator before backing tractor.

Row Shields

Use rotary row shields when cultivating young crops. See your dealer for this attachment.

SAFETY

Do not make high speed turns at any time.

Lower cultivator to ground when leaving unattended.

Do not make adjustments while machine is operating.

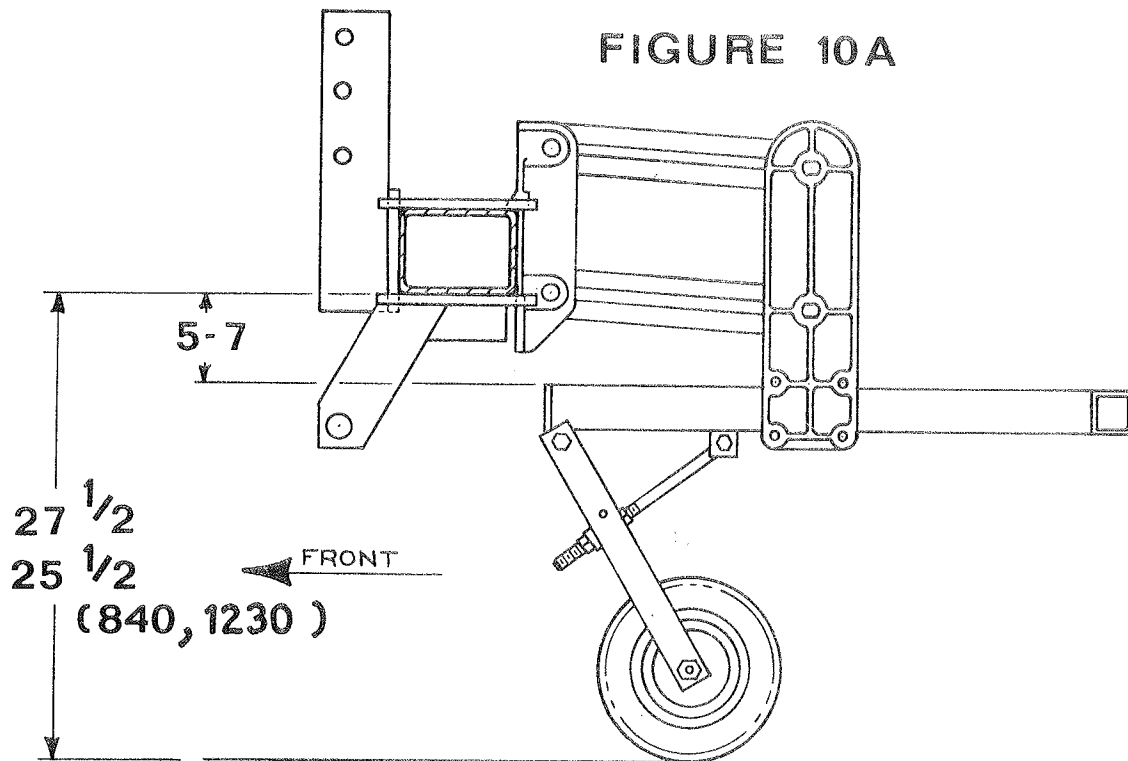
LUBRICATION

Grease two fittings on each parallel link every 4-5 hours of operation.

Repack gang gauge wheels, coulter bearings and frame gauge wheel bearings once per season with a good grade of wheel bearing grease.

TRANSPORT

It is the responsibility of the operator to abide by all pertinent regulations regarding movement of wide agricultural equipment on public roads.



HITCH ASSEMBLY

After installing the hitch members according to Figure 2 of the operators manual, assemble the hitch pins and bushings.

For Category II Hitches

Assemble 1" x 4-1/2" capscrew, item 2, with 1" pipe spacer 2-1/8 long, item 3, into bottom hole of mast assembly. Install 1" locknut and tighten securely. Install 1" clevis pin, item 8, in middle hole of mast assembly, and secure with Klik pin, item 9. The 1-1/4 O.D. sleeve, item 4, is not used with Category II hitches.

Install the lower hitch pin, item 17, into the lower hitch bracket. The cast spacer, item 15, is installed on the hitch pin, between the side members of the lower hitch bracket. The tractor hitch arm is closer to the center of the cultivator and the spacer is further from the machine center. Secure the hitch pin with Klik pin, item 9. The 1-7/16 O.D. sleeve, item 4, is not used with Category II hitches.

For Category III Hitches

Install 1" x 4-1/2" capscrew, item 2, with 1" pipe spacer 2-1/8 long, item 3, into middle hole of mast assembly. Secure with 1" locknut and tighten securely. Install 1" clevis pin, item 8, with 1-1/4 O.D. sleeve, item 4, into top hole of mast. Secure with Klik pin, item 9.

Install lower hitch pin, item 17, into the lower hitch bracket. The cast spacer, item 15, and 1-7/16 O.D. sleeve, item 16, are installed on the pin. Secure with Klik pin, item 9.

When attaching to tractor, the 1-7/16 O.D. sleeve is used inside the tractor hitch ball. The cast sleeve is installed toward the center of the tractor to hold the hitch arms to their proper position.