

BW, BWN and BWS Disk Harrows



JOHN DEERE

OPERATORS MANUAL

BW, BWN and BWS
Disk Harrows

OMB25262 F6 English

OMB25262 F6

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ENGLISH



TO THE PURCHASER

Your new BW, BWN or BWS Disk Harrow is sturdy and dependable. It will give long and efficient service if given proper care and operation.

This operator's manual is provided to furnish information on the proper operation, adjustment, maintenance, and lubrication of your new disk harrow.

When in need of parts, see your John Deere dealer. He will furnish genuine John Deere Parts and prompt and efficient service in the field or in the shop.

Right-hand and left-hand reference is determined by standing at the rear of the disk harrow and facing the direction of travel.



Study this manual carefully. Keep it handy, in a safe place, for future reference.

JOHN DEERE BW, BWN OR BWS DISK HARROW

Check off size of your disk harrow, disk blade size, special equipment obtained, and record date purchased. This information will be valuable when ordering parts.

DISK HARROW SIZE

BW	8-Ft., 6-In	☐
BW	9-Ft., 10-In	☐
BW	11-Ft., 2-In	☐
BWS	12-Ft., 2-In	☐
BW	12-Ft., 6-In	☐
BWN	13-Ft., 4-In	☐
BWS	13-Ft., 4-In	☐
BW	13-Ft., 10-In	☐
BW	15-Ft., 2-In	☐
BW	16-Ft., 6-In	☐

BW	17-Ft., 10-In	☐
BW	19-Ft., 2-In	☐
BW	20-Ft., 6-In	☐

BLADE SIZE

18-In	☐
20-In	☐
22-In	☐

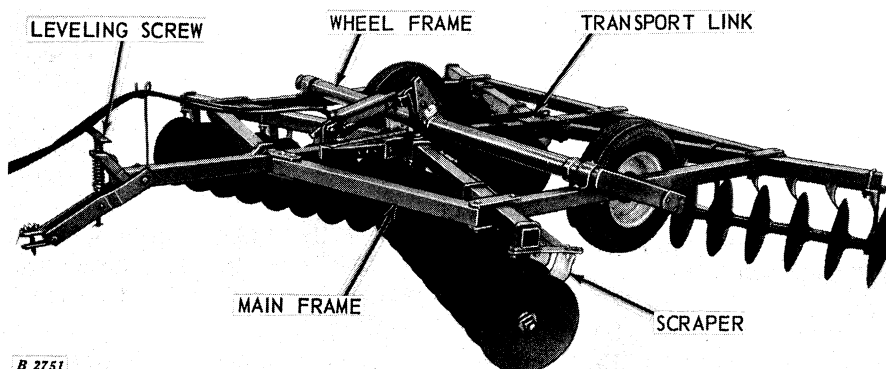
Hitch Loop	☐
Middlebreaker	☐
Dual Wheels	☐
Spike Tooth Harrow	☐
End Scraper Attachment	☐
Furrow Filler	☐
Drive Coupler	☐
Multiple Hitch Attachment	☐
Date Purchased	



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John Deere 12-Foot, 6-Inch BW Disk Harrow



SPECIFICATIONS

The John Deere BW, BWN, and BWS Disk Harrows are double action, heavy duty, rigid, wheel-carried disk harrows. They can be used with John Deere Tractors equipped with an 8-inch stroke remote hydraulic cylinder, or any other tractor using an 8-inch stroke remote hydraulic cylinder that conforms to ASAE-SAE standards.

On BW Disk Harrows the disk spacing is 8-1/2 inches. On BWN Disk Harrows the disk spacing is 7-1/8 inches. On BWS Disk Harrows the front disk spacing is 8-1/2 inches and the rear disk spacing is 7-1/8 inches. All disk gangs have 1-1/4 inch square gang bolts and double tapered roller bearings.

The angle of the gangs can be changed quickly and easily, and the front and rear gangs can be angled independently of each other.

Upper and lower cushion springs on the hitch absorb shocks encountered when disking and transporting. The lower spring also acts as a leveling spring, which compresses when working, and extends when the harrow is raised, keeping harrow gangs level and giving a parallel lift for more transport clearance.

A hitch is provided on the rear of the harrow for pulling such equipment as a spike tooth harrow.

DISKING DEPTH - Controlled by raising or lowering the carrying wheels with the hydraulic cylinder, and the angle of the disk gangs.

LEVELING - Adjusting hand screw on harrow levels the harrow for various tractor drawbar heights.

CARRYING WHEELS - 14-inch wheels with automotive type, adjustable, tapered roller bearings. 15-inch wheels are optional.

WHEEL TREAD - 80 inches when wheels are mounted on inside of wheel frame. 120 inches when wheels are mounted on outside of wheel frame.

DUAL WHEELS - Dual wheels are regular on the 17-foot, 10-inch-19-foot, 2-inch - and 20-foot, 6-inch BW Disk Harrows. They are available as special equipment for all other sizes except the 8-foot, 6-inch and the 9-foot, 10-inch BW Disk Harrows.

DISK BLADES - Regular or Cone - 18-inch, 20-inch, or 22-inch solid or cut-out disk blades are available.

FURROW FILLER ATTACHMENT - Will fill and level the furrow left by rear gang outer disk blades. 14-, 16- or 18-inch disk blades are recommended for this attachment, depending on size of disk blades on disk harrow. (See page 10.)

HITCH LOOP - Optional for use on disk harrow when tractor drawbar is equipped with hammerstrap.

END SCRAPER ATTACHMENT - To clean outside front disk and inside rear disks.

DRIVE COUPLER FOR EXTENSION GANGS - Will connect the extension gangs to the main gangs for positive gang drive.

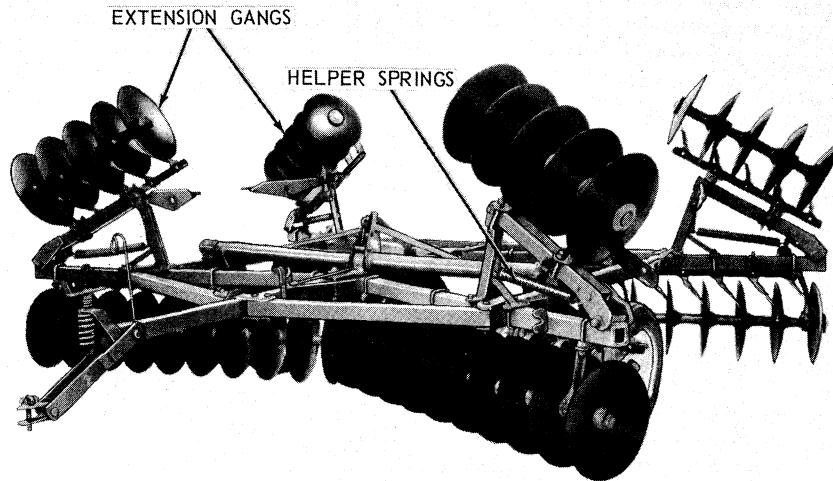
EXTENSION GANGS (BW DISK HARROWS) - The 16-foot, 6-inch - 17-foot, 10-inch - and the 20-foot, 6-inch - BW Disk Harrow is equipped with extension gangs. The following chart gives the transport width and the width of cut when harrow is used with extension gangs folded:

SPIKE-TOOTH HARROW ATTACHMENT - Attaches to rear of harrow for disking and harrowing in one operation. Available for all sizes except when equipped with folding extension gangs.

MIDDLEBREAKER ATTACHMENT - A spring-tooth middle-breaker which cuts out the center strip left by the front disk gangs.

SCRAPERS - One-piece scrapers are regular equipment. Regular and heavy-duty two-piece, spring-loaded scrapers are optional.

Size of BW Disk Harrow	Transport Width with Extension Gangs Folded	Width of Cut with Extension Gangs Folded	Number of Blades	
			Each Main Gang	Each Extension Gang
16-Ft., 6-In.	11-Ft., 6-In.	11-Ft., 2-In.	8	4
17-Ft., 10-In.	11-Ft., 6-In.	11-Ft., 2-In.	8	5
19-Ft., 2-In.	14-Ft., 2-In.	13-Ft., 10-In.	10	4
20-Ft., 6-In.	14-Ft., 2-In.	13-Ft., 10-In.	10	5



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John Deere 20-Foot, 6-Inch BW Disk Harrow with Extension Gangs in Transport Position

4 Specifications

SPECIFICATIONS - CONTINUED

Model	Width of Cut	Spacing		No. of Blades	Size of Blades
		Front	Rear		
BW 2418	8-Ft., 6-In.	8-1/2"	8-1/2"	24	18"
BW 2420	8-Ft., 6-In.	8-1/2"	8-1/2"	24	20"
BW 2422	8-Ft., 6-In.	8-1/2"	8-1/2"	24	22"
BW 2818	9-Ft., 10-In.	8-1/2"	8-1/2"	28	18"
BW 2820	9-Ft., 10-In.	8-1/2"	8-1/2"	28	20"
BW 2822	9-Ft., 10-In.	8-1/2"	8-1/2"	28	22"
BW 3218	11-Ft., 2-In.	8-1/2"	8-1/2"	32	18"
BW 3220	11-Ft., 2-In.	8-1/2"	8-1/2"	32	20"
BW 3222	11-Ft., 2-In.	8-1/2"	8-1/2"	32	22"
BW 3618	12-Ft., 6-In.	8-1/2"	8-1/2"	36	18"
BW 3620	12-Ft., 6-In.	8-1/2"	8-1/2"	36	20"
BW 3622	12-Ft., 6-In.	8-1/2"	8-1/2"	36	22"
BWS 3618	12-Ft., 2-In.	8-1/2"	7-1/8"	36	18"
BWS 3620	12-Ft., 2-In.	8-1/2"	7-1/8"	36	20"
BWS 3622	12-Ft., 2-In.	8-1/2"	7-1/8"	36	22"
BW 4018	13-Ft., 10-In.	8-1/2"	8-1/2"	40	18"
BW 4020	13-Ft., 10-In.	8-1/2"	8-1/2"	40	20"
BW 4022	13-Ft., 10-In.	8-1/2"	8-1/2"	40	22"
BWS 4018	13-Ft., 4-In.	8-1/2"	7-1/8"	40	18"
BWS 4020	13-Ft., 4-In.	8-1/2"	7-1/8"	40	20"
BWS 4022	13-Ft., 4-In.	8-1/2"	7-1/8"	40	22"
BW 4418	15-Ft., 2-In.	8-1/2"	8-1/2"	44	18"
BW 4420	15-Ft., 2-In.	8-1/2"	8-1/2"	44	20"
BW 4422	15-Ft., 2-In.	8-1/2"	8-1/2"	44	22"
BWN 4418	13-Ft., 4-In.	7-1/8"	7-1/8"	44	18"
BWN 4420	13-Ft., 4-In.	7-1/8"	7-1/8"	44	20"
BWN 4422	13-Ft., 4-In.	7-1/8"	7-1/8"	44	22"
BW 4818	16-Ft., 6-In.	8-1/2"	8-1/2"	48	18"
BW 4820	16-Ft., 6-In.	8-1/2"	8-1/2"	48	20"
BW 4822	16-Ft., 6-In.	8-1/2"	8-1/2"	48	22"
BW 5218	17-Ft., 10-In.	8-1/2"	8-1/2"	52	18"
BW 5220	17-Ft., 10-In.	8-1/2"	8-1/2"	52	20"
BW 5222	17-Ft., 10-In.	8-1/2"	8-1/2"	52	22"
BW 5618	19-Ft., 2-In.	8-1/2"	8-1/2"	56	18"
BW 5620	19-Ft., 2-In.	8-1/2"	8-1/2"	56	20"
BW 5622	19-Ft., 2-In.	8-1/2"	8-1/2"	56	22"
BW 6018	20-Ft., 6-In.	8-1/2"	8-1/2"	60	18"
BW 6020	20-Ft., 6-In.	8-1/2"	8-1/2"	60	20"
BW 6022	20-Ft., 6-In.	8-1/2"	8-1/2"	60	22"

(Specifications and design subject to change without notice.)



OPERATION

PREPARING DISK HARROW

Inflate the disk harrow tires to 30 pounds pressure.

Lubricate the disk harrow as instructed on page 13.

The BW, BWN, or BWS Disk Harrow can be used with any tractor equipped with an 8-inch stroke remote hydraulic cylinder that conforms to ASAE-SAE standards.

PREPARING TRACTOR

Refer to your tractor operator's manual for wheel weighting instructions and tire inflation pressures.

On John Deere 2010, 2020, 2510, 3010, 3020, 4010, 4020, 5010, or 5020 Tractor equipped with rear rockshaft, set the selector lever in the "D" position.

If the tractor has an adjustable swinging drawbar, position it in the long, low position.

ATTACHING TO OR DETACHING FROM THE TRACTOR

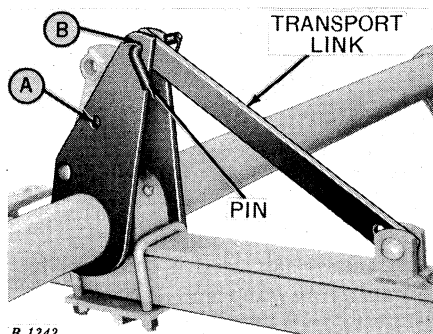
The disk harrow must be in the raised position before attaching it to, or detaching it from, the tractor drawbar.

Back the tractor up to the disk harrow, install the remote hydraulic cylinder on the disk harrow, and place the hoses in the hose holder. If the disk harrow is not in the transport position, raise it with the cylinder and attach the disk harrow drawbar to the tractor drawbar.

When detaching the disk harrow from the tractor, be sure the disk harrow is in the raised position and the remote hydraulic cylinder hoses are disconnected before pulling the drawbar pin and driving the tractor away from the disk harrow.

TRANSPORTING

Use the transport link to hold disk harrow in a raised position for transporting or storage.



To connect the transport link: (1) Fully extend the remote hydraulic cylinder. (2) Remove the pin from hole "A." Line up the slotted hole in the end of the transport link with hole "B," and install the pin.

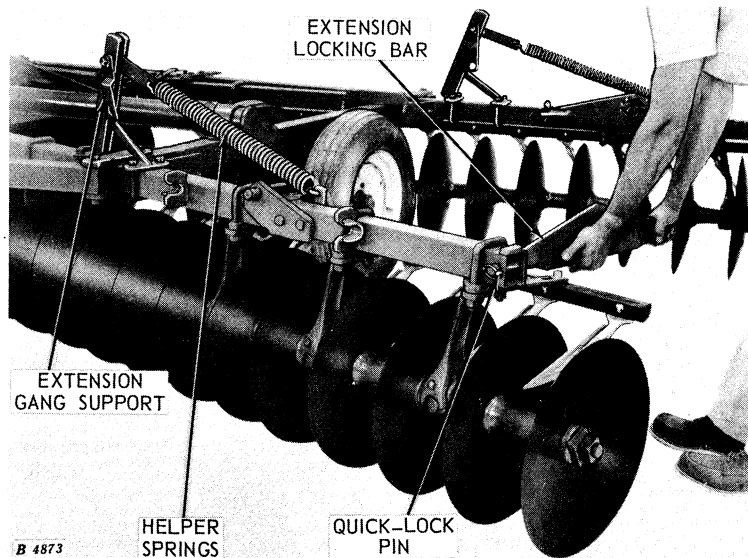
NOTE: If desired, the remote hydraulic cylinder can now be removed and the disk harrow will stay in the raised position.

Lock the tractor swinging drawbar in a fixed position.

Do not transport the disk harrow over 12 miles per hour on a smooth surface road, and reduce the speed considerably when traveling over rough ground.

TRANSPORTING—Continued

EXTENSION GANGS



Install the extension gang locking bar in the hole in the end of the extension gang, and secure it in place with the Quik-Lock pin. Raise the extension gang and fold it over against the extension gang support.

CAUTION

1. Extension gangs have spring lift. Stand clear when folding for transport.
2. Always secure extension gangs in transport position with locking device.

FIELD OPERATION

REMOTE HYDRAULIC CYLINDER

Install the remote hydraulic cylinder on the disk harrow and disconnect the transport link.

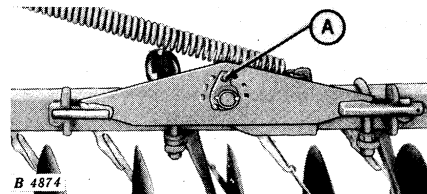
TRACTOR SWINGING DRAWBAR

For best results when disking, the tractor drawbar should be free to swing.

EXTENSION GANGS

Fold the extension gangs down and lock in working position on the 16-foot, 6-inch BW, 17-foot, 10-inch BW, 19-foot, 2-inch BW, or 20-foot, 6-inch BW Disk Harrow.

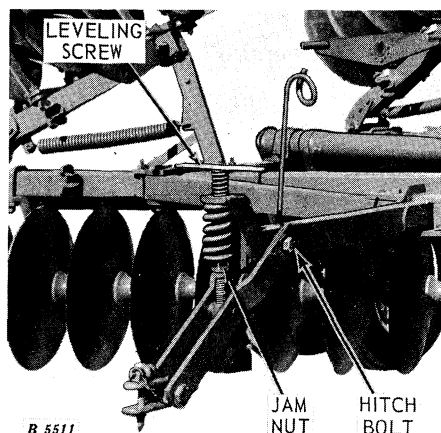
Check the gang bolt nuts occasionally, to be sure they are tight.



The extension gangs may be adjusted up or down. To adjust each

gang, remove the locking bar and bolt "A." Rotate the leveling cam clockwise to lower extension gang or counterclockwise to raise extension gang. Replace bolt "A," and the locking bar.

LEVELING THE DISK HARROW



Adjust the leveling screw on the drawbar as follows to level the disk harrow and to obtain uniform penetration of the front and rear gangs.

Shortening the leveling screw (turning clockwise) will raise the rear section. Lengthening the leveling screw (turning counterclockwise) will lower the rear section.

NOTE: Be sure nut and jam nut on leveling screw are both snug against the bottom of the spring to prevent play in the spring.

Check hitch bolt to be sure it is tight and retighten jam nut on hitch bolt.

ADJUSTING DISKING DEPTH

The depth of disking is controlled by the remote cylinder control lever of the tractor and the angle of the disk gangs. The transport wheels will act as gauge wheels to regulate the working depth of the disk harrow. After determining the correct disking depth as regulated by the transport wheels, position stop on remote cylinder so transport wheels raise to same position each time. See tractor operator's manual.

For maximum penetration, set the gangs at a full cutting angle and raise transport wheels completely off the ground.

For less than maximum penetration lower the transport wheels to raise the gangs or reduce the cutting angle of the gangs.

ADJUSTING SCRAPERS

One-piece scrapers are regular equipment. Two-piece spring loaded scrapers are optional.

The holes in the top of each scraper bar are slotted so that by adjusting the scraper bar you can move all the scrapers on the bar in or out at one time. Also, the hole for each scraper is slotted so each scraper blade can be adjusted individually.

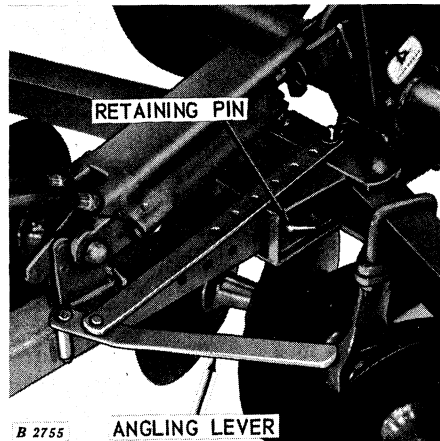
When scrapers are required, adjust blades so the scraping edge of each scraper blade is flush against the disk blade but not tight enough to prevent the gang from revolving freely.

When scrapers are not required adjust the scraper bars to move scraper blades away from the disk blades.

8 Operation

ANGLING GANGS

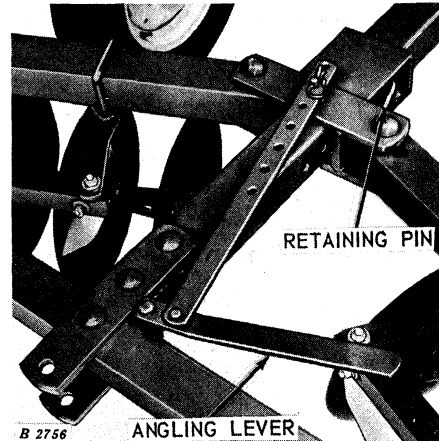
The disk harrow must be in the raised position to angle the gangs.



Angling Front Gangs

To change the angle of the front gangs, remove the retaining pin and pull the angling lever forward to decrease the angle, and push the angling lever to the rear to increase the angle.

When the desired angle has been obtained, replace the retaining pin.



Angling Rear Gangs

To angle the rear gangs, remove the angling device from the front gangs and attach it to the rear gangs.

Remove the retaining pin and pull the angling lever to the rear to decrease the angle, and push the angling lever forward to increase the angle.

When the desired angle has been obtained, replace the retaining pin.

It pays to be careful for your own sake!

Accidents can . . .

Pain

Lame

Maim

and cost you money!

WHEEL TREAD

The wheel tread is 80 inches when wheels are mounted on inside of wheel frame or 120 inches when wheels are mounted on outside of wheel frame. (See page 14.)

Dual wheel spindles are regular on the 17-Foot, 10-Inch BW, 19-Foot, 2-Inch BW and 20-Foot, 6-Inch BW. They are also available as special equipment for all other BW Disk Harrows except the 8-Foot, 6-Inch BW and 9-Foot, 10-Inch BW.

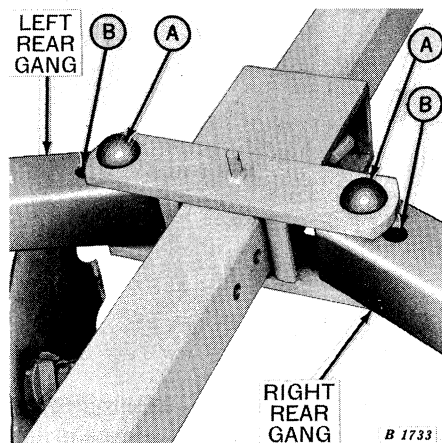
ADJUSTING REAR GANGS LATERALLY

The variations in soil from one field to another, and sometimes in the same field, can have an effect on the way the rear gangs level the soil.

The rear gangs can be set in a wide or narrow lateral position.

Certain field conditions, blade sizes, or tractor speeds may make it necessary to change this lateral position to eliminate a ridge or furrow between the rear gangs.

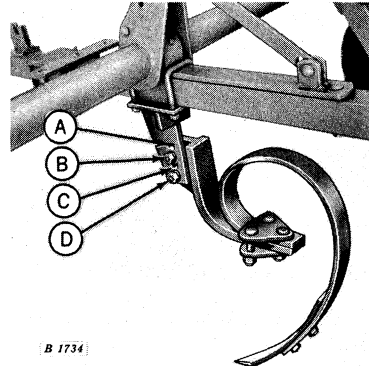
For 18- and 20-inch blades holes "B" will usually be most satisfactory. For 22-inch blades it may be necessary to use holes "A" if the disk harrow is run in full angle.



Rear Gangs in Wide Lateral Position

To place the rear gangs in the narrow position, pull pins "A," move the gangs inward to hole "B." Replace the pin.

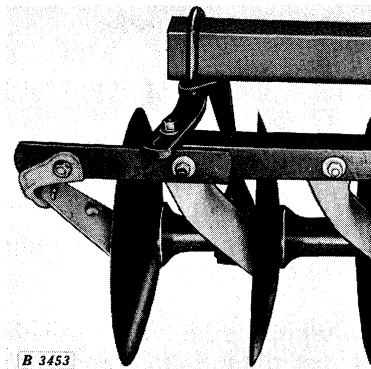
MIDDLEBREAKER ATTACHMENT



The middlebreaker attachment (BB12067) is available as special equipment to remove the center strip left by the front gangs.

If the disk harrow is equipped with 18- or 20-inch disk blades use holes "A" and "C." If the disk harrow is equipped with 22-inch disk blades use holes "B" and "D," as illustrated.

END DISK SCRAPER ATTACHMENT



The end scraper attachment (BB-11531B) is available as special equipment. The end scrapers will clean the two outside front disk blades and the two inside rear disk blades.

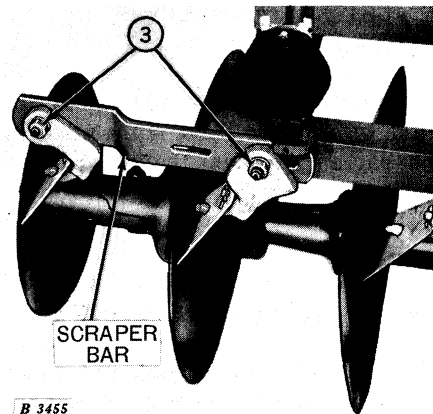
10 Operation

FURROW FILLER ATTACHMENT

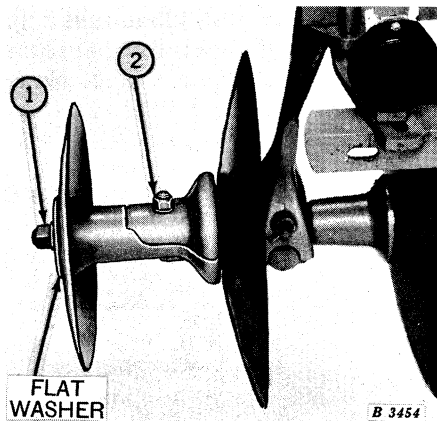
The furrow filler attachment (BB11545B), when mounted at the outer end of each rear gang, will fill and level the furrow left by the rear gang outer disk blades.

Disk blades are not furnished with this attachment but the following sizes are recommended:

When Disk Harrow is Equipped with This Size Disk Blades	Use This Size Disk Blades on Furrow Filler
22 inch	18 inch
20 inch	16 inch
18 inch	14 inch



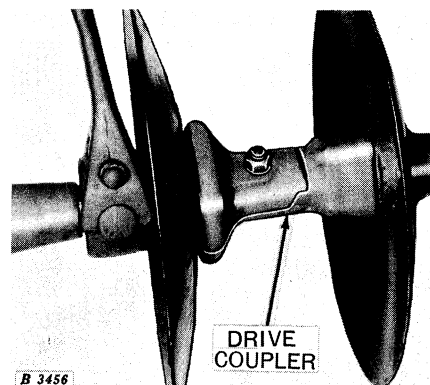
3. Mount a scraper attaching bar and scrapers on each rear gang. See page 7 for adjusting scrapers.



1. Assemble a disk blade on each disk attaching spool.

2. Assemble a disk attaching spool and clamp to the head washer on each rear gang.

DRIVE COUPLER FOR EXTENSION GANGS

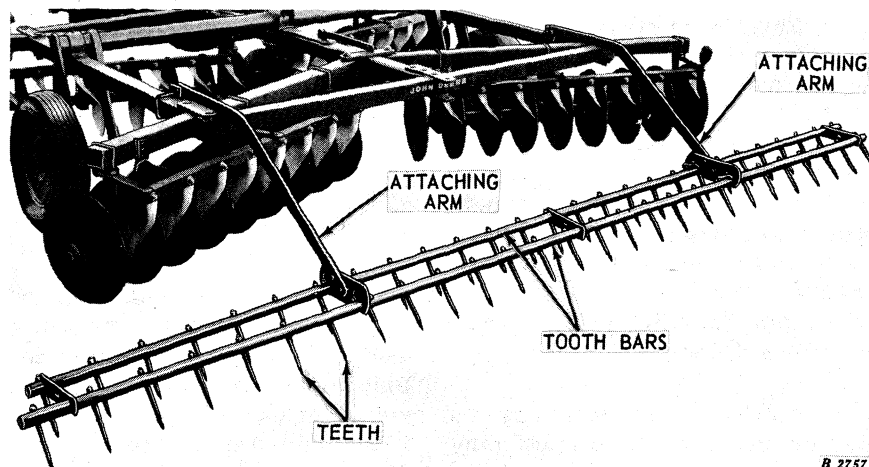


The drive coupler (BB11572B) is available as special equipment and connects extension gangs to main gangs for positive gang drive.

Bend both ends of nut lock down over each gang bolt nut. Bolt the drive coupler to the head washer. The other end of each coupler fits over the gang bolt nut.

The extension gangs may be placed into transport position without removing the drive coupler from the head washer.

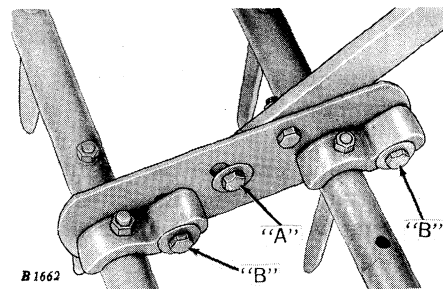
SPIKE TOOTH HARROW ATTACHMENT



The spike tooth harrow attachment permits disking and harrowing in one operation, and eliminates drag harrow transporting problems.

This attachment is connected to the disk harrow main frame with two quik-lock pins so it can be easily attached or detached. It consists of two rows of spike teeth properly spaced.

NOTE: One bundle (BB12137) is used on the 8-foot, 6-inch BW and the 9-foot, 10-inch BW disk harrows. One bundle (BB11321B) is used on 11-foot, 2-inch BW, 12-foot, 2-inch BWS, 12-foot, 6-inch BW, 13-foot, 4-inch BWN, 13-foot, 4-inch BWS, 13-foot, 10-inch BW, and 15-foot, 2-inch BW harrows. The spike tooth harrow attachment is not available for the 16-foot, 6-inch BW, 17-foot, 10-inch BW, the 19-foot, 2-inch BW, or the 20-foot, 6-inch BW disk harrow with folding gangs.



The tooth bars may be adjusted up or down by loosening bolt "A," set the bars to the desired height and tighten bolt "A."

The angle of the teeth may be changed by loosening bolts "B," set the teeth to the desired angle and tighten the bolts.

MULTIPLE HITCH ADAPTER ATTACHMENT

The multiple hitch adapter attachment has been designed for use with a John Deere 5010 or 5020 tractor or with other tractors of similar horsepower. Two BW 11-foot, 2-inch, 12-foot, 6-inch or 13-foot, 4-inch; two BWS 12-foot, 2-inch, or 13-foot, 4-inch; two BWN 13-foot, 4-inch disk harrows can be used in this application.

SAFETY SUGGESTIONS

Never ride or permit others to ride, on the drawbar of the tractor or on the disk harrow.

CAUTION: When transporting disk harrow on a road or highway at night or during the day, use accessory lights and devices for adequate warning to operators of other vehicles. In this regard check local governmental regulations. Lights and devices may be obtained from your John Deere dealer.

Be careful when operating on hillsides because the tractor may tip sideways if it strikes a hole, ditch, or other irregularity.

Be careful when operating the disk harrow, to avoid injury.

Only one person—the operator—should be permitted on the tractor platform while tractor and disk harrow are in operation.

Never clean, lubricate, or adjust a machine that is in motion.

Refuel the tractor only when the engine has been shut off. Do not smoke or use an oil lantern when working around inflammable fuel, especially when refueling the tractor.

CAUTION

1. Extension gangs have spring lift. Stand clear when folding for transport.
2. Always secure extension gangs in transport position with locking device.

MAINTENANCE SUGGESTIONS

Inspect your disk harrow after the disking season and note excessively worn or broken parts, so that repairs and replacements can be made during the off season. Replace worn or broken parts promptly so that your disk harrow will be ready for use when needed.

To insure maximum penetration and satisfactory performance, keep the cutting edge of the disks sharp. Dull disks will not cut properly, making it impossible to secure sufficient penetration, and they will not do a good job of mixing the trash in the soil. Be sure disks are free from rust before operating disk harrow in the field.

Repaint all parts necessary and protect all unpainted surfaces with a good rust-preventive grease or oil.

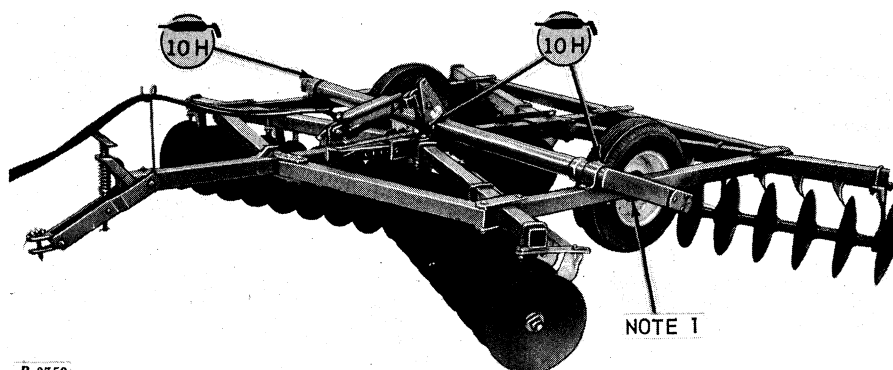
Keep all bolts tightened securely.

Remember—Practically all trouble with new machines is due to improper setting-up and lack of lubrication.

NOTE: After any replacement of disk or bearing parts, be sure to draw up nut on end of gang bolt very tight. Failure to do this will result in breakage or loss of parts. When attaching the gang frame standards to the bearings, be sure to draw up bolts as tightly as possible.



LUBRICATION



B 2752

Symbol
Grease every 10 hours of operation with SAE Multi-purpose Type Grease.

NOTE 1: Repack wheel bearings once each year with wheel bearing grease.

The initial lubrication is of the utmost importance to assure long life and satisfactory performance of the disk harrow.

Wipe dirt from fittings before greasing. If a grease fitting is lost, replace it immediately. Lubricate all parts thoroughly, but avoid excessive lubrication. Excess lubricant gathers dust.

Oil all pivot points of remote hydraulic cylinder control parts and drawbar.

CAUTION: Do not oil or grease a machine while it is in motion.

ANTIFRICTION BEARINGS

NOTE: The antifriction gang bearings are packed and sealed at the factory. Grease these bearings only once or twice a season depending on the amount the disk harrow is used.

To grease the antifriction bearings, remove the 1/8-inch pipe plug from each bearing housing and install a 1/8-inch pipe thread straight grease fitting.

Insert one or two shots of SAE multipurpose type grease in each bearing with a hand gun.

CAUTION: Do not use a pressure grease gun as this will damage the seals.

Remove the grease fittings and reinstall the pipe plugs.

NOTE: If you install JD7759 1/8-inch pipe thread straight grease fittings with ball check, they can be left in each bearing housing provided bearings are not over greased.



ASSEMBLY

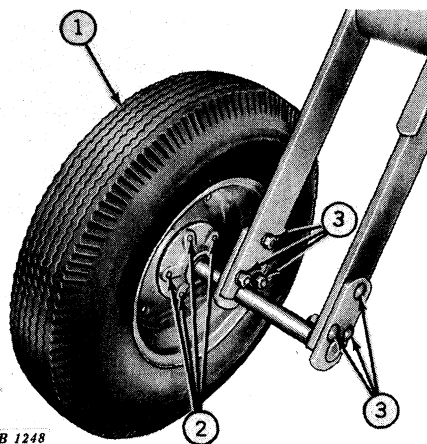
DRAWBAR AND WHEEL CARRIER

1. Mount the tires on the wheels. Use 7.50 x 14 or 8.00 x 14 tires and inflate to 30 pounds pressure.

2. Attach the wheels and tires to the wheel hub.

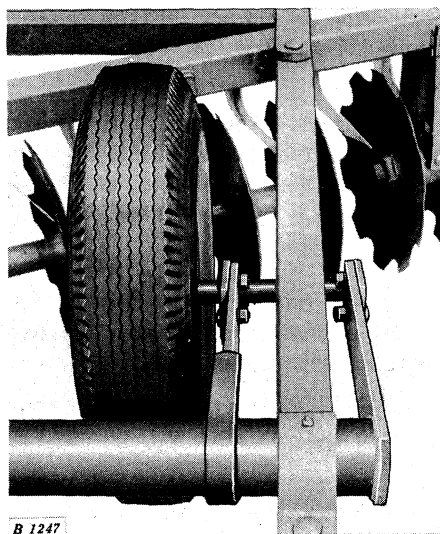
3. Attach each wheel and axle assembly to the wheel frame.

NOTE: When the wheels are mounted on the inside of the wheel frame, the wheel tread is 80 inches. When the wheels are mounted on the outside of the wheel frame, the wheel tread is 120 inches.



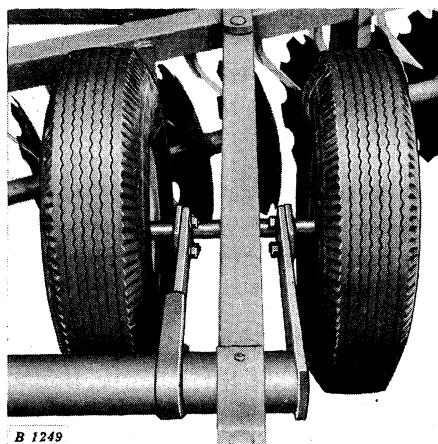
B 1248

Wheels Set for 120-Inch Wheel Tread



B 1247

Wheels Set for 80-Inch Wheel Tread

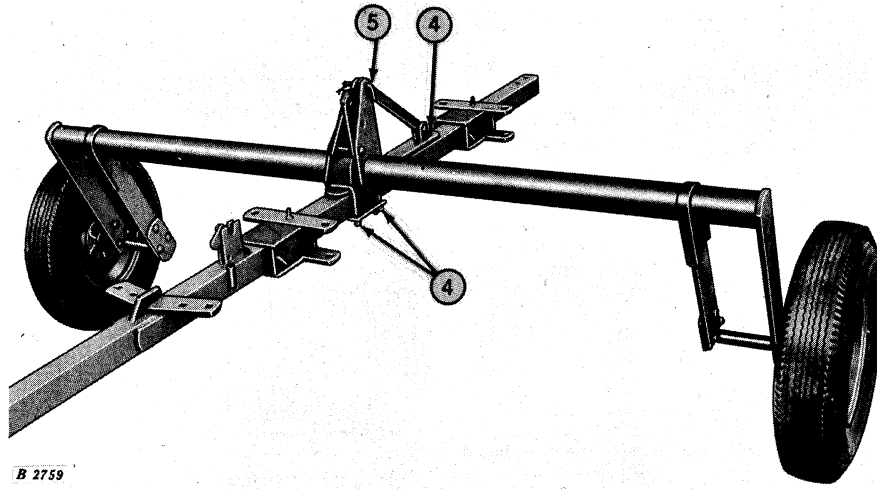


B 1249

Dual Wheel Spindle

If dual wheels are used, each wheel spindle attaches to the wheel frame with the same six bolts as the single wheel.

NOTE: Dual wheels are regular equipment on the 17-foot, 10-inch BW, 19-foot, 2-inch BW, and 20-foot, 6-inch BW disk harrows.

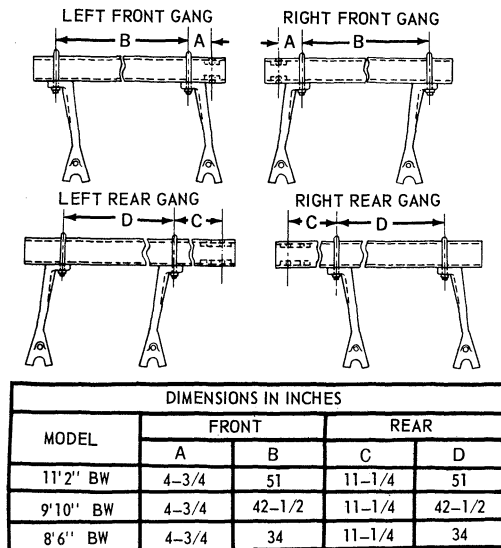


4. Attach the wheel frame to the center section of the main frame.

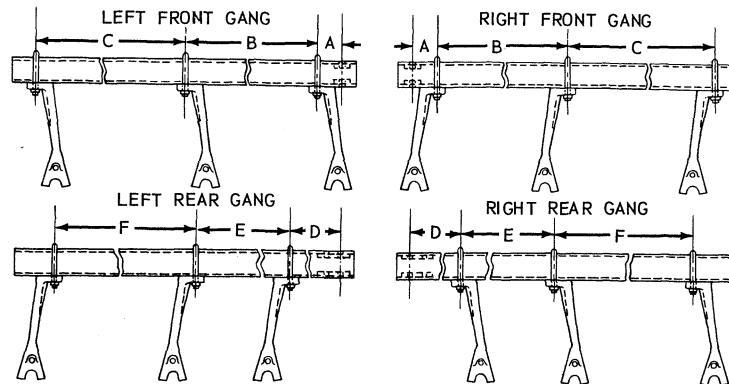
5. Attach the transport link to the wheel frame.

GANG FRAMES

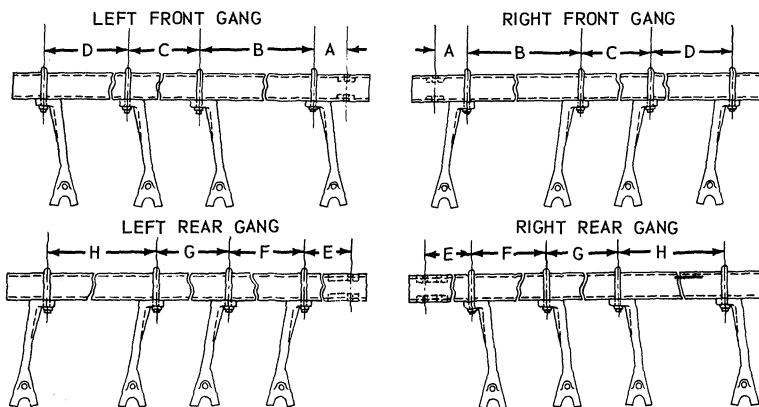
The bearing standards and scraper bar brackets are attached to the gang frames at the factory. If for any reason they should be incorrectly located, the following illustrations and charts show their correct location. The scraper bar brackets point out on the front gangs and in on the rear gangs.



B 4876

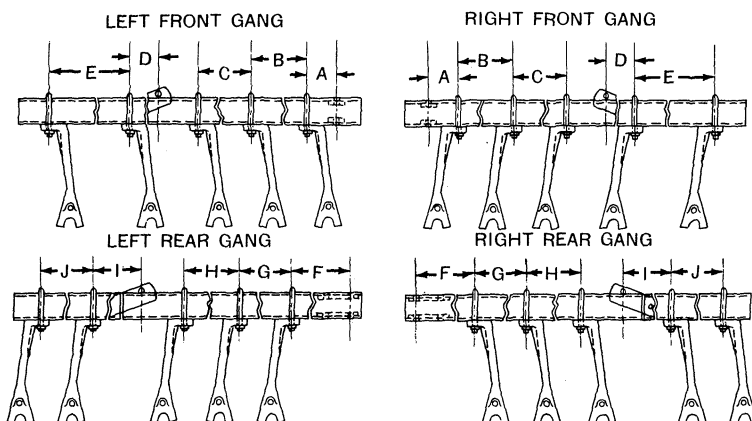


B 4877



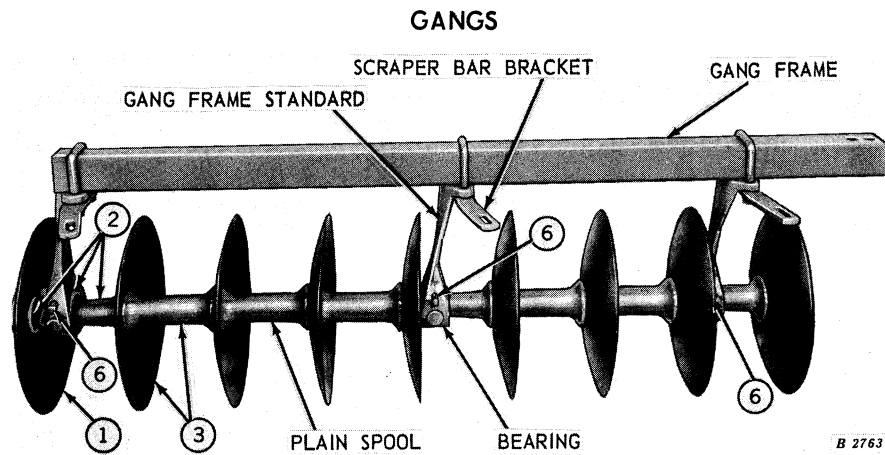
B 4878

DIMENSIONS IN INCHES								
MODEL	FRONT				REAR			
	A	B	C	D	E	F	G	H
15'2" BW	4-3/4	34	17	25-1/2	11-1/4	25-1/2	25-1/2	25-1/2



B 4879

DIMENSIONS IN INCHES										
MODEL	FRONT					REAR				
	A	B	C	D	E	F	G	H	I	J
16'6" BW	4-3/4	25-1/2	25	13-1/8	17	11-1/4	25-1/2	25-1/2	11-3/4	17
17'10" BW	4-3/4	25-1/2	25	13-1/8	17	11-1/4	25-1/2	25	11-3/4	17
19'2" BW	4-3/4	25-1/2	42-1/2	13-1/8	17	11-1/4	25-1/2	42-1/2	11-3/4	17
20'6" BW	4-3/4	25-1/2	42-1/2	13-1/8	17	11-1/4	25-1/2	42-1/2	11-3/4	17



Left Rear Gang—12-Foot, 6-Inch BW Disk Harrow

Always use the gang frame standards as a guide for placing the bearings on the gangs.

The extension gangs on the 16-foot, 6-inch or 19-foot, 2-inch BW Disk Harrows are four disk, two bearing gangs. The extension gangs on the 17-foot, 10-inch or 20-foot, 6-inch BW Disk Harrows are five disk, two bearing gangs. They should be assembled in the same manner as the main gangs.

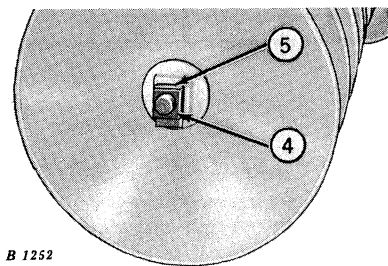
Remember, disks on front gangs must be assembled to throw the dirt out and rear gangs must be assembled to throw the dirt in.

Remove the bearings and plain spools from the gang bolts.

1. Install a disk blade next to the bumper on the gang bolt.

2. Install a spool end, a bearing, and another spool end.

3. Install another disk blade and then a plain spool.



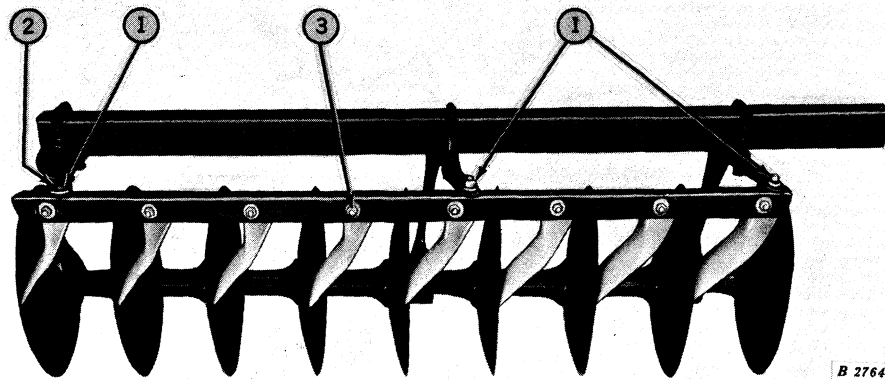
Proceed in this manner, making sure that a bearing is installed in the proper place to line up with the bearing standard on the gang frame. Tighten the gang bolt to 800 ft-lbs torque.

4. Install a nut lock and nut on the gang bolt, with the flat side of the nut to the outside. Tighten the gang bolt nut very tight. After the nut is tightened, tap the bumper end of the gang bolt with a hammer, and then again tighten the gang bolt nut.

5. Bend the nut lock down over the gang bolt nut.

6. Place the gang frames in position on the bearings and attach them to the bearings with the pins.

SCRAPER BARS AND SCRAPERS



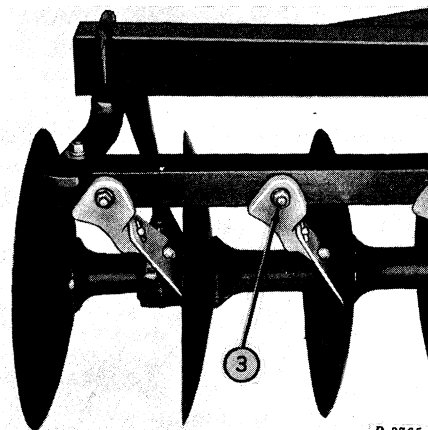
B 2764

1. Bolt each scraper bar to the scraper bar brackets. Center the bolts in the slotted holes so there will be room for adjustment.

2. Attach the warning lamp bracket socket, the reflector bracket, and the reflector to the outer end of the left-hand rear gang frame. (Attach a reflector bracket and reflector to the outer end of the right-hand rear gang frame.)

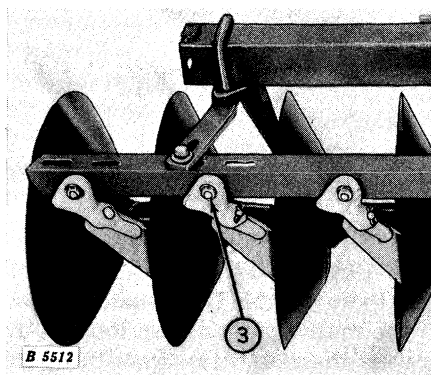
3. Attach the scrapers to the scraper bar. Adjust each scraper so the scraping edge is flush against the disk but not tight enough to prevent the disk gangs from revolving freely.

NOTE: *One-piece scrapers are regular equipment; two-piece, spring loaded scrapers are optional. Either style scraper attaches to the scraper bar in the same holes, but one-piece scraper attaches on inside of scraper bar and two-piece scraper attaches on outside of scraper bar.*



B 2765

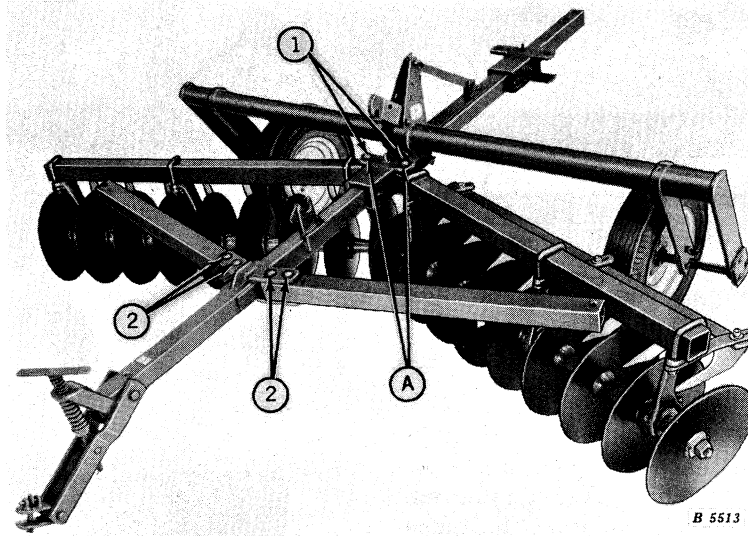
Two-Piece Spring Loaded Scrapers
Used with Regular Disk Blades



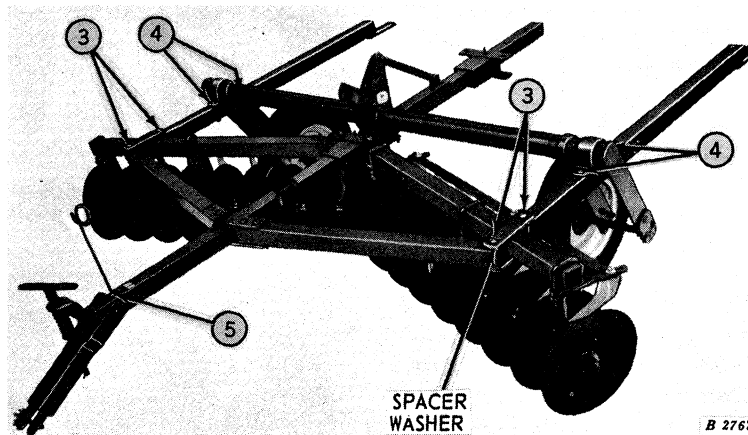
B 5512

Two-Piece Spring Loaded Scrapers
with Cone Disk Blades

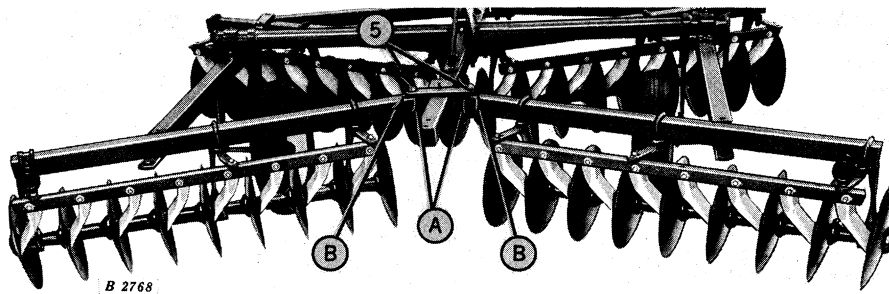
INSTALLING GANGS ON THE MAIN FRAME



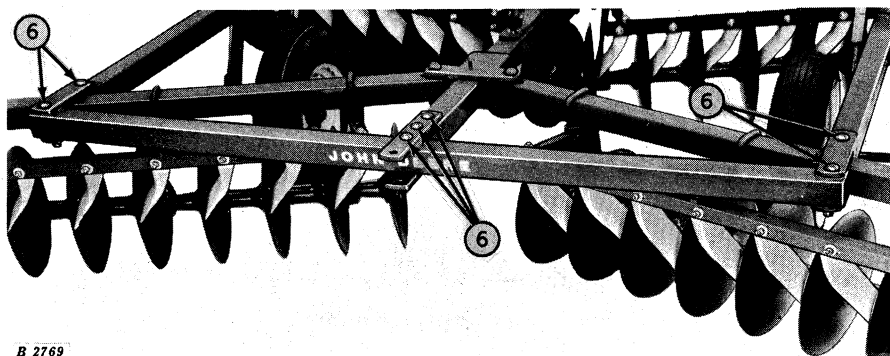
1. Insert enough 1-1/16-inch flat washers on top of the gang frame to take up the space between the gang frame and latch box at "A" and attach the front gangs to the latch box with the pins.
2. Bolt the front main frame sections to the center section of the main frame.



3. Slide the side main frame sections through the wheel frame and bolt them to the front main frame. (If the main frame draws too tightly against the gang frame when the bolts are tightened, use the large flat spacer washers to provide additional clearance, so the gangs can be angled.
4. Place the wheel frame bearings over the wheel frame and bolt them to the side sections of the main frame.
5. Install the hose holder.

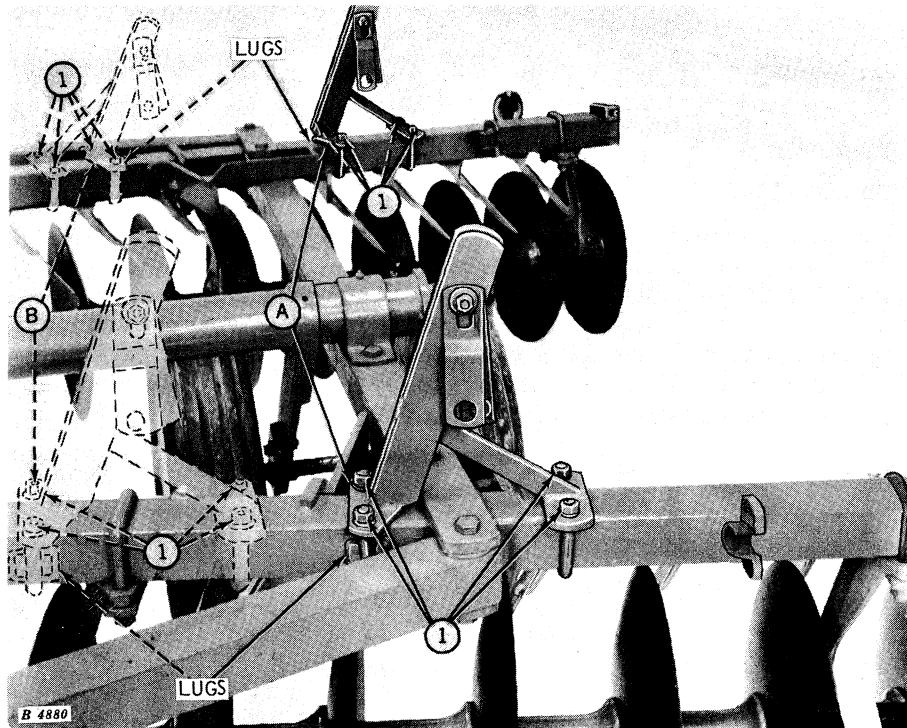


5. Place the rear gangs over the side section of the main frame. Insert enough 1-1/16-inch flat washers on top of the gang frame to take up the space between the gang frame and latch box at "A" or "B" and pin the gang frames to the rear latch box. Holes "B" are normally used for 18- and 20-inch blades. It may be necessary to use holes "A" for 22-inch blades to prevent ridging when the harrow is in full angle.



6. Bolt the rear section of the main frame to the side and center sections of the main frame. As in Step 3, it may be necessary to use the spacer washers on the corners to secure clearance for the gang frames.

EXTENSION GANGS (16-Foot, 6-Inch BW, 17-Foot, 10-Inch BW, 19-Foot, 2-Inch BW, and 20-Foot, 6-Inch BW)

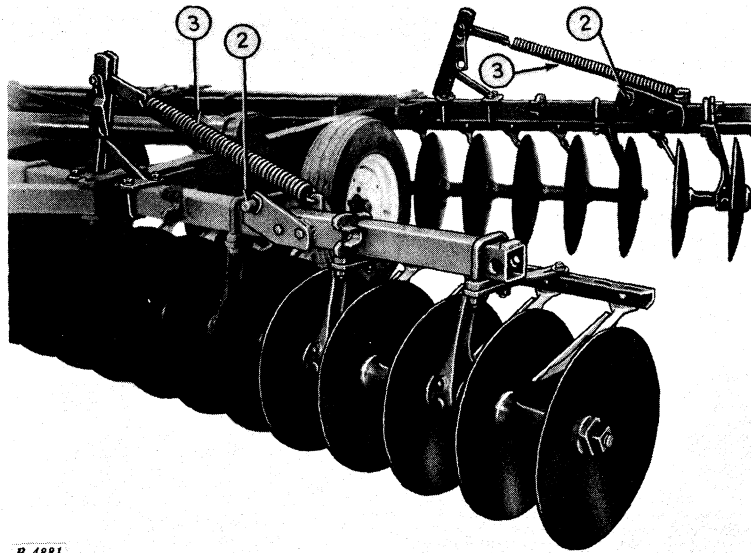


Installing the Extension Gang Support

1. Install the extension gang support on the front and rear gang frames. The extension gang support on the 19-foot, 2-inch BW and 20-foot, 6-inch BW is positioned at "A." The extension gang support on the

16-foot, 6-inch BW and 17-foot, 10-inch BW is positioned at "B."

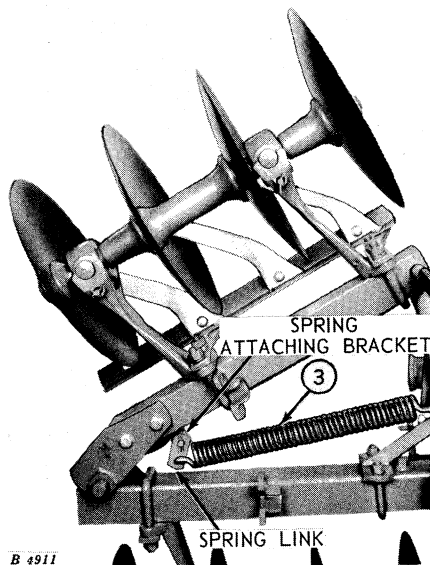
NOTE: The U-bolts must be positioned between the lugs as shown above.



B 4881

Installing the Extension Gangs

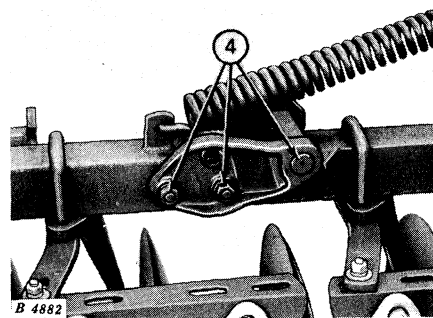
2. Install the extension gangs on the pivot pins which are welded to the end of the gang frames.



B 4911

Four-Disk Extension Gangs Only

3. Attach the springs.

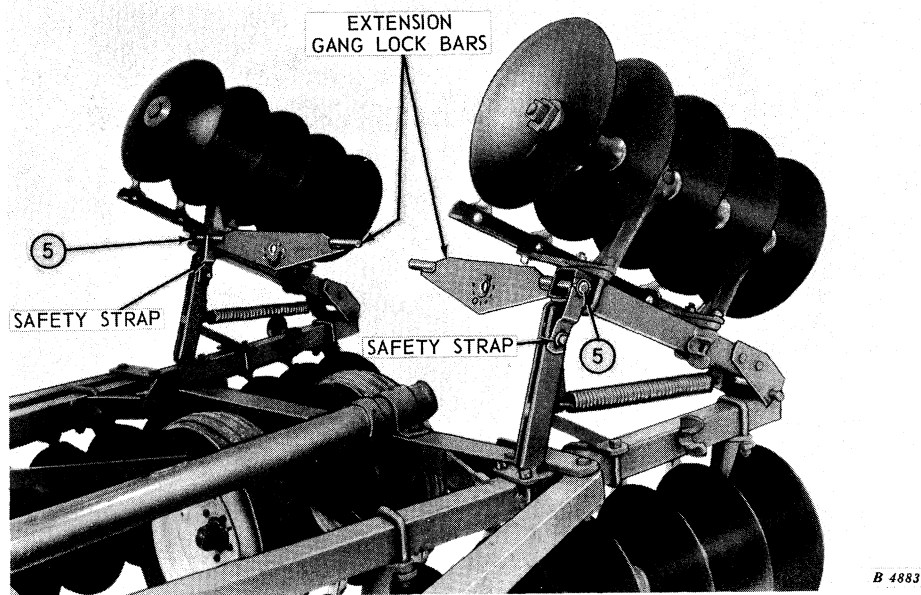


B 4882

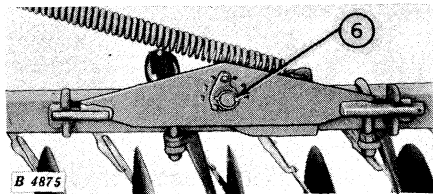
CAUTION: On four-disk extension gangs only, place spring links over end of helper spring. Place one link on either side of spring attaching bracket and attach with pin and cotter pin as shown.

4. Slip the plates over the pivot pins and bolt them in place.

24 Assembly



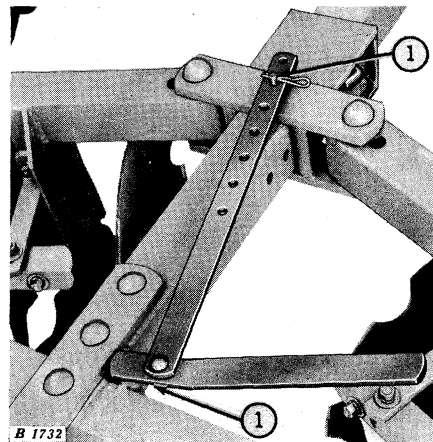
5. Swing the extension gangs up and over against the extension gang supports. Position the safety strap as shown above. Install an extension gang lock bar in the end of each gang and insert a spring locking pin in the extension gang lock bar.



6. Swing the extension gangs back down and install the extension gang locking bar. Insert spring locking pin as shown.

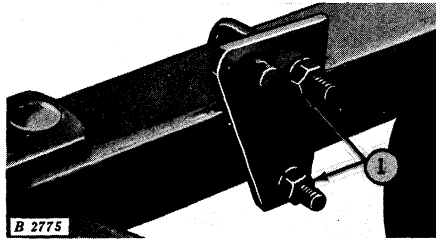
NOTE: Be sure that hole "A" on the end of the extension locking bar is to the outside of the disk harrow gang.

ANGLING DEVICE

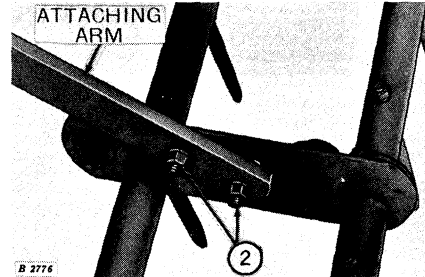


1. Install the angling device. (See Page 8 to set the angle of the gangs.)

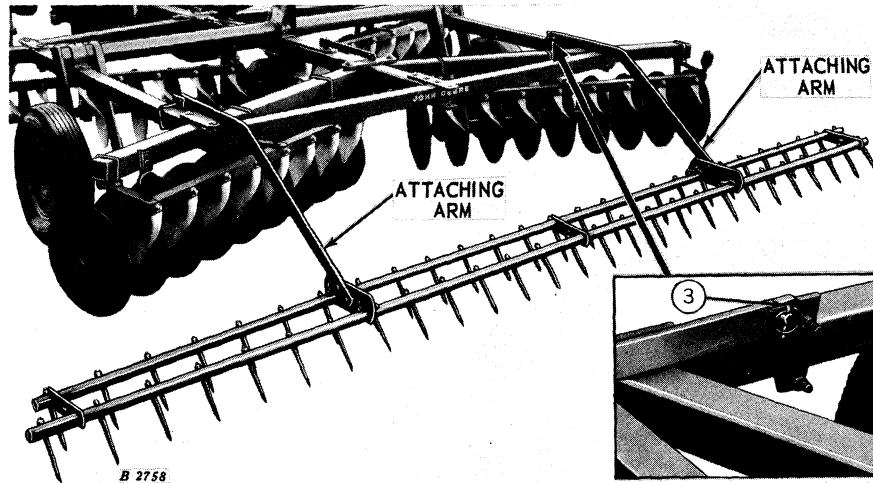
SPIKE TOOTH HARROW ATTACHMENT



1. Install an attaching plate on each side of the harrow main frame.



2. Bolt the attaching arms to the spike tooth harrow.



3. Connect the spike tooth harrow attaching arms to the attaching plate.



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