



John Deere

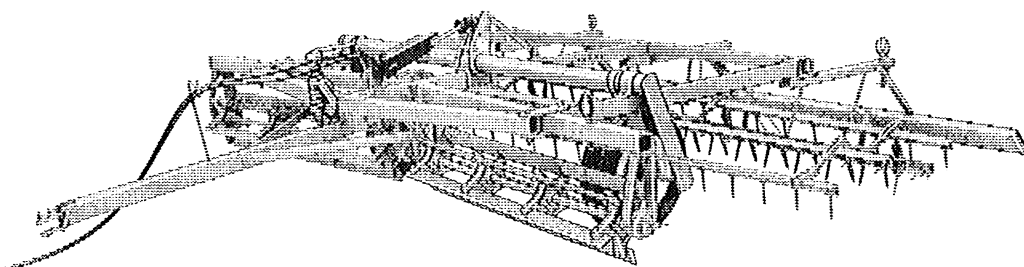
Operator's Manual

BFA Series

OM-B25399

Finishing Harrows

Issue F2





To the Purchaser

This new finishing harrow was carefully designed and manufactured to give years of dependable service. To keep it running efficiently, read the instructions in this operator's manual. Each section is clearly identified so you can easily find the information you need—whether it is operation, lubrication, or safety. Read the Table of Contents to learn where each section is located.

In addition to the equipment furnished with your finishing harrow, attachments are available to help you do a better job in special crop conditions. These are described in the special equipment section of this manual and can be purchased from your John Deere dealer.

“Right-hand” and “left-hand” sides are determined by facing in the direction the finishing harrow will travel when in use.

Record your finishing harrow serial numbers in the space provided on page 15. Your dealer needs this information to give you prompt, efficient service when you order parts or attachments. If your finishing harrow requires replacement parts, go to your John Deere dealer where you can obtain genuine John Deere parts—accept no substitutes.

The warranty on this finishing harrow appears on your copy of the purchase order which you should have received from your dealer when you purchased the finishing harrow.

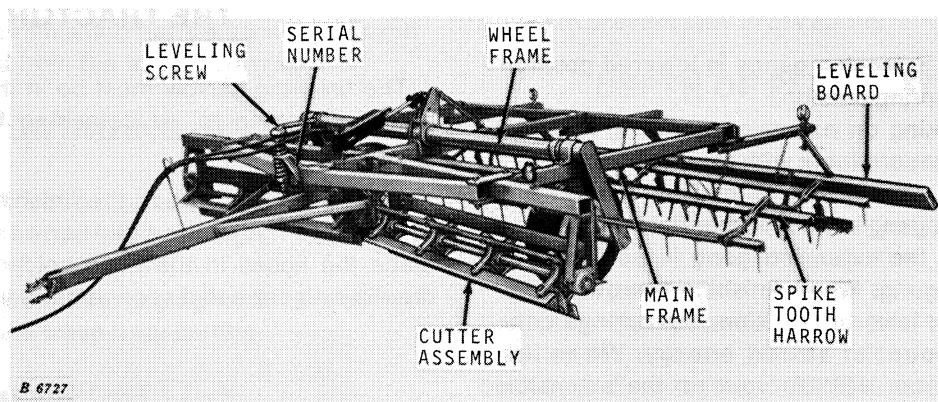


This safety alert symbol identifies important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

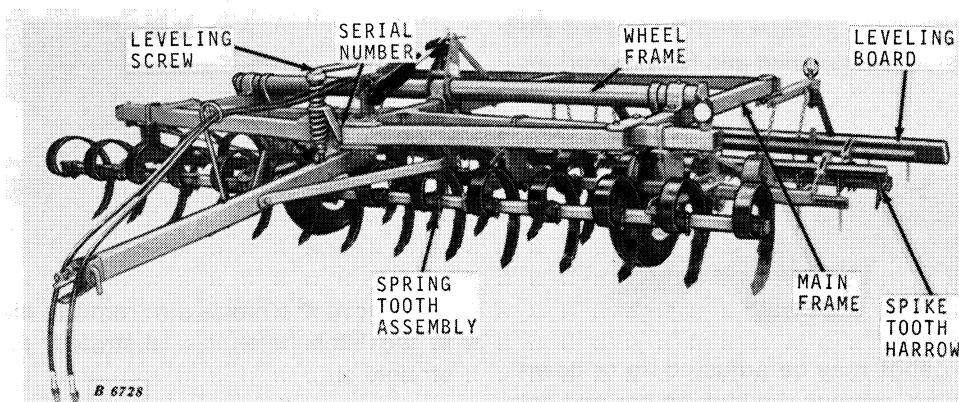


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John Deere 4-Row BFA Finishing Harrow



John Deere 4-Row BFA Spring-Tooth Finishing Harrow



Operation

PREPARING FINISHING HARROW

Inflate the finishing harrow tires to 30 psi of air pressure.

Lubricate the finishing harrow as instructed on page 6.

The finishing harrow can be used with John Deere Tractors equipped with a remote hydraulic cylinder or any other tractor using a remote cylinder that conforms to ASAE-SAE standards.

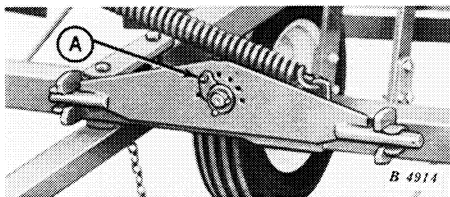
Extension Gangs

CAUTION: Extension gangs in lowered position are under spring tension.

1. Before working on extension gangs in lowered position, always secure them with locking bar.
2. Stand clear when raising or lowering gangs.
3. Always lock gang in transport or field position.

ALWAYS lock the extension gang in position before working on gang. When finishing harrow extension gangs are in lowered position, the springs contain a great amount of stored energy. When the springs are in place, **NEVER** work on the extension gangs without securing the gangs with the locking bars.

Fold the extension gangs down and lock in working position.



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 the

left-hand extension gangs or counterclockwise to raise the left-hand extension gangs. Rotate the leveling cam clockwise to raise the right-hand extension gangs or counterclockwise to lower the right-hand extension gangs. Replace bolt "A" and the locking bar.

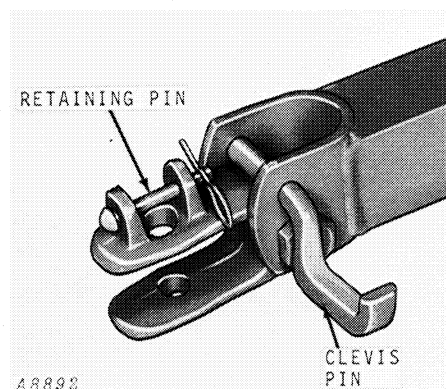
PREPARING THE TRACTOR

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

ATTACHING TO OR DETACHING FROM THE TRACTOR

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

Back the tractor up to the finishing harrow, install the remote hydraulic cylinder on the harrow, and place the hoses in the hose holder. Extend the hydraulic cylinder and disconnect the transport link.



Remove the clevis pin from the clevis and place it in the hitch holes, as illustrated, to hold the clevis straight out.

CAUTION: Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that lines, pipes and hoses are not damaged. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

Retract the hydraulic cylinder until the harrow hitch is the same height as the tractor drawbar. Attach the clevis to the tractor drawbar with the clevis pin and secure in place with the retaining pin.

Before detaching finishing harrow from the tractor, the finishing harrow must be in the raised position. Disconnect the remote hydraulic cylinder hoses from the tractor before pulling away if you leave the hydraulic cylinder on the finishing harrow.

Park or block the finishing harrow so it will not roll when disconnected from the tractor drawbar.

TRACTOR SWINGING DRAWBAR

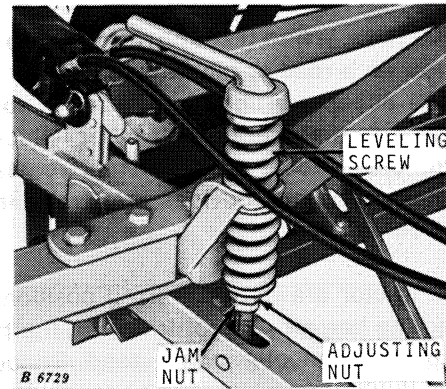
For best results when operating in the field, the tractor drawbar should be free to swing.

CAUTION: Lock the swinging tractor drawbar in a fixed position when transporting.

TRANSPORT LINK

Raise the finishing harrow by extending the remote cylinder. Disconnect the transport link (see page 4) and then lower the harrow to operating position.

LEVELING THE FINISHING HARROW



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

Shorten the leveling screw (turn clockwise) to raise the rear section. Lengthen the leveling screw (turn counterclockwise) to lower the rear section.

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

DEPTH OF PENETRATION

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

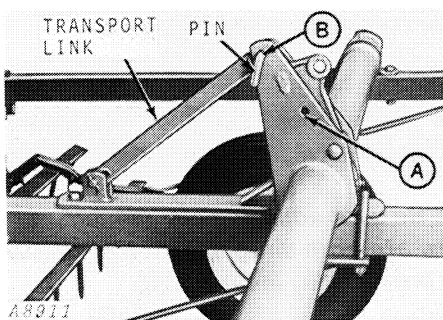
CAUTION: Do not make sharp turns with finishing harrow in operating position.

TRANSPORTING

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

Lock the tractor drawbar in a fixed position when transporting the harrow. Do not transport the harrow over 12 mph on a smooth surface road. Reduce the speed considerably when traveling on rough ground.

Transport Link



The transport link is used to hold the harrow in a raised position for transporting or storage when the hydraulic cylinder is removed.

To place the finishing harrow in transport position: (1) Fully extend the remote hydraulic cylinder. (2) Remove the pin from hole "A," line up the hole in the end of the transport link with hole "B" and install the pin. The cylinder can then be removed and the harrow will stay in the raised position.

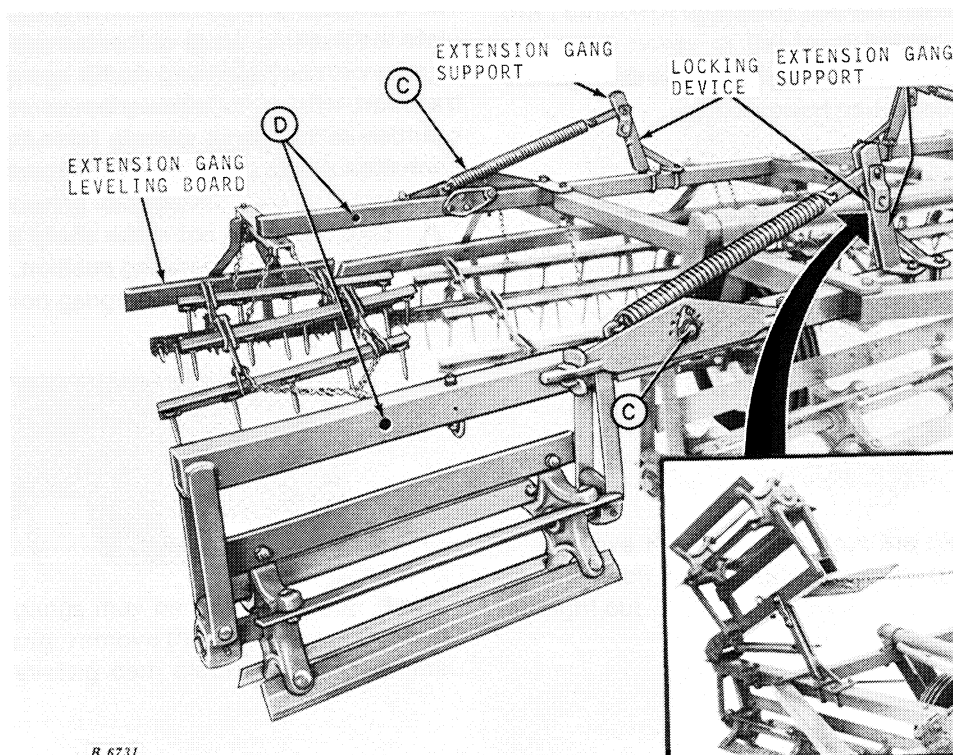
Extension Gangs

CAUTION: Extension gangs have spring lift. Stand clear when folding for transport.

Always secure extension gangs in transport position with locking device.

Remove extension locking bars from locking position "C" on front and rear gangs. Install extension locking bars in hole "D" in the front and rear extension gangs. With the aid of the extension locking bar, raise the front extension gang and fold it over against the extension gang support. Using the rear extension gang leveling board, raise the rear gang and fold it over against the extension gang support. Secure the extension gangs in transport position with the safety strap and Quik-Lock pin.

NOTE: The above procedure applies to both BFA and BFA Spring-Tooth Finishing Harrows with extension gangs.





Safety Suggestions

 The safety of the operator was one of the prime considerations in the minds of John Deere engineers when this finishing harrow was designed. Simple adjustments and other safety features were built into the finishing harrow wherever possible.

However, investigation of thousands of farm accidents show that careless use of farm machinery causes nearly 1/3 of all farm accidents. You can make your farm a safer place to live and work if you observe the safety suggestions given. Study these suggestions carefully and insist that they be followed by those working with you and for you.

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

When transporting finishing 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 finishing harrow to avoid injury.

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

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

Park or block the finishing harrow so it will not roll when disconnected from tractor drawbar.

When leaving the tractor and finishing harrow, connect transport link or lower the disk harrow to the ground.

Connect transport link when transporting finishing harrow long distances.

Extension gangs in lowered position are under spring tension.

1. Before working on extension gangs in lowered position always secure them with locking bar.

2. Stand clear when raising or lowering gangs.

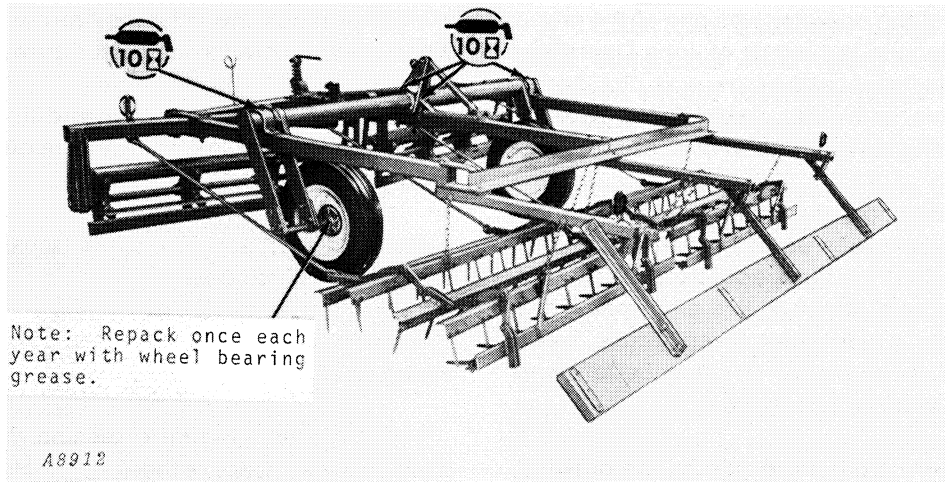
3. Always lock gangs in transport or field position.

Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and the lines, pipes and hoses are not damaged. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.



Lubrication



CAUTION: Do not lubricate a machine while it is in motion.

SYMBOL	
	Lubricate with John Deere Multi-Purpose Lubricant or an equivalent SAE multipurpose-type grease at hourly intervals indicated on the symbol.

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

Wipe dirt from grease fittings before lubricating. If a grease fitting is lost, replace it immediately. Lubricate all parts thoroughly with an SAE Multipurpose-type grease, but avoid excessive lubrication. Excessive lubricant gathers dust.

The anti-friction gang bearings on the cutter assemblies are packed and sealed at the factory. Lubricate these bearings only once or twice a season depending on use of the finishing harrow.

Insert one or two shots of SAE Multipurpose-type grease in each anti-friction bearing with hand gun.

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



Assembly

SHIPPING BUNDLES

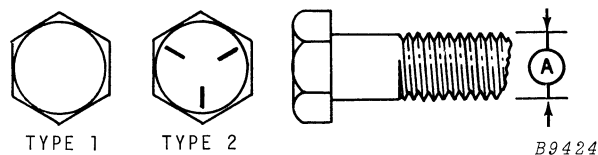
4-Row	6-Row	Bundle Number	Description
BASIC			
1	-	BA 20033	Carton of Parts and Hardwar
-	1	BA 20036	Carton of Parts and Hardware
1	-	BA 20088	Gang Frame (with Cutter Blades)
1	-	BA 20089	Gang Frame (with Spring Teeth)
-	1	BB 12252	Main Gang Frames (with Cutter Blades)
-	1	BB 12256	Main Gang Frames (with Spring Teeth)
-	1	BA 20094	Gang Frame Extensions (with Cutter Blades) (for 40-Inch Rows)
-	1	BB 12257	Gang Frame Extensions (with Spring Teeth)
1	1	BB 11276	Leveling Board
-	1	BB 12249	Leveling Board Extensions
1	-	BB 12890	Main Frame
-	1	BB 12891	Main Frame
1	-	BB 13610	5-Bolt Wheel Hub and Spindle
-	1	BB 13611	6-Bolt Wheel Hub and Spindle
1	-	BB 13614	Wheel Frame
-	1	BB 13613	Wheel Frame
2	2	BB 13616	Drag Sections
-	2	BB 13617	Drag Section Extensions
1	-	BB 33136	Center Section of Main Frame and Drawbar
-	1	BB 33137	Center Section of Main Frame and Drawbar
1	1	BB 12068	Spring-Tooth Gang
-	1	BA 20095	Spring-Tooth Gang Extensions
-	1	BB 12170	Extension Gang Locking Bars
-	1	BB 12412	Drag Harrow Extension Supports
-	1	BB 13300	Stabilizer Sleds (for Spring-Tooth Harrows)
2	-	JD 463	14 - 5 Type KB, 5-Bolt Wheel
-	2	JD 680	15 - 5 Type KB, 6-Bolt Wheel
OPTIONAL EQUIPMENT			
2	-	BB 13245	Tire and Wheel (can be ordered in lieu of two JD463)
2	-	JD 674	15 - 5, 5-Bolt Wheel (can be ordered in lieu of two JD463)
-	2	BA 14945	6.70 - 15 Tire and Wheel (can be ordered in lieu of two JD680)
-	2	BB 13639	11L - 15 Tire and Wheel (can be ordered in lieu of two JD680)
-	2	JD 1102	15 - 8LB Wheel (can be ordered in lieu of two JD680)
-	1	BA 20102	Gang Frame Extensions (with Cutter Blades) (for 36 and 38-Inch Rows)

GENERAL

Bolts must be used in the holes in which they are found or in the parts to which they are attached unless otherwise shown.

All bolts should be left loose until machine is completely assembled. Then tighten all bolts securely.

Bolts furnished with the finishing harrow are identified by radial lines on the head.



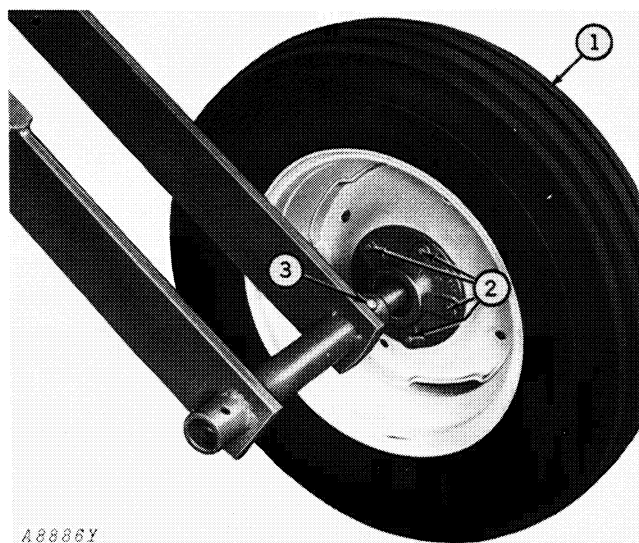
Type 1 is standard strength hardware. Type 2 is high-strength hardware.

Tighten all bolts according to the following table:

BOLT TORQUE IN FOOT-POUNDS

Bolt Type	Bolt Size (dimension "A")				
	1/2"	5/8"	3/4"	7/8"	1"
Type 1	55	105	185	275	365
Type 2	85	170	305	450	600

WHEEL FRAME

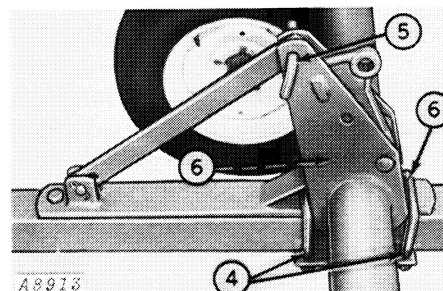


1. Mount the tires on the wheels. Inflate tires to 30 psi of air pressure.

2. Attach the wheel 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.

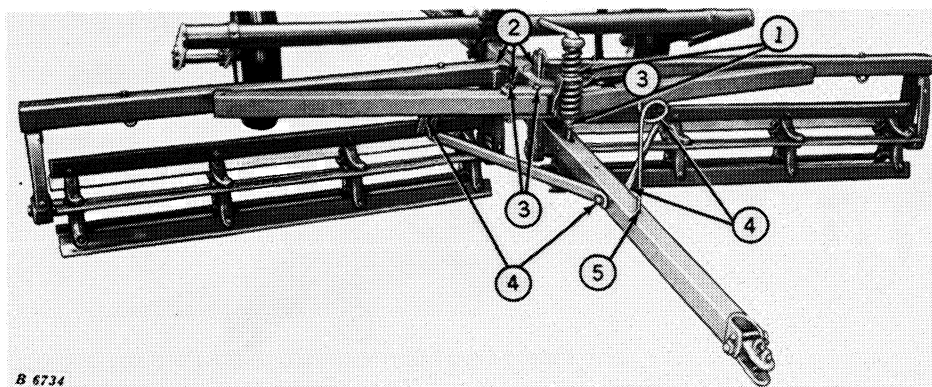


4. Attach the wheel frame to the center section of the main frame.

5. Attach the transport link to the wheel frame.

6. Install grease fittings.

DRAWBAR AND GANGS—BFA ONLY



1. Unfold drawbar into position shown and install leveling screw on center section and drawbar.

NOTE: Be certain that springs, adjusting nut, and jam nut are assembled on leveling screw as shown.

2. Install the cutter blade assembly and frame to the center main frame section.

3. Install the front main frame sections to the center main frame section.

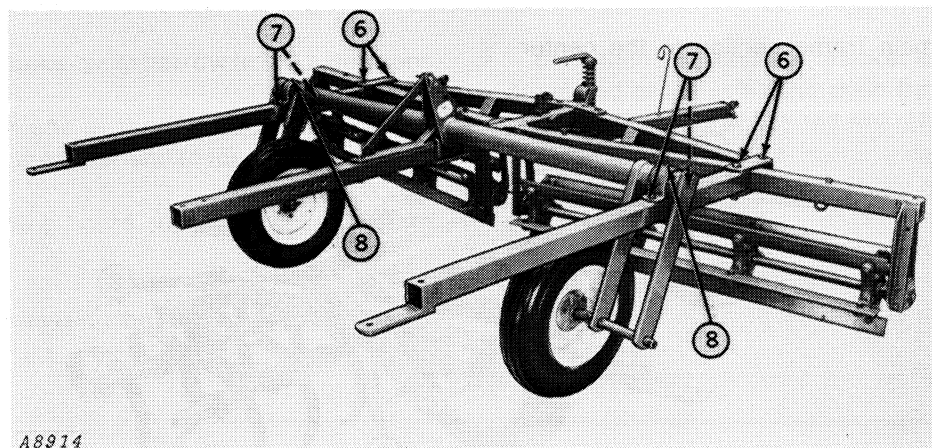
4. Attach the side links.

5. Install the hose holder.

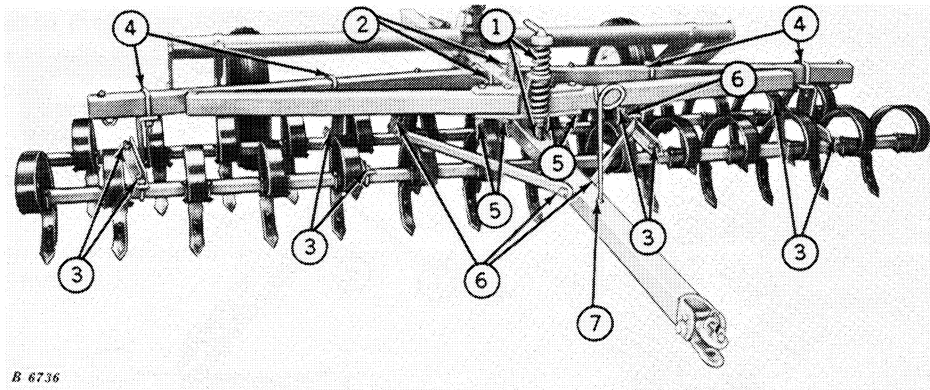
6. Slide the side main frame sections through the wheel frame and bolt them to the front main frame sections.

7. Place the wheel frame bearings over the wheel frame and bolt them to the side main frame sections.

8. Install grease fittings.



DRAWBAR AND GANGS—BFA SPRING-TOOTH ONLY



1. Unfold drawbar into position shown and install leveling screw on center section and drawbar.

NOTE: Be certain that springs, adjusting nut, and jam nut are assembled on leveling screw as shown.

2. Attach gang frames to center main frame section.

3. Attach spring-tooth gangs to support angles.

4. Assemble gang frames to spring-tooth gangs by bolting support angle plate to gang frame.

5. Install front main frame section to the center main frame section.

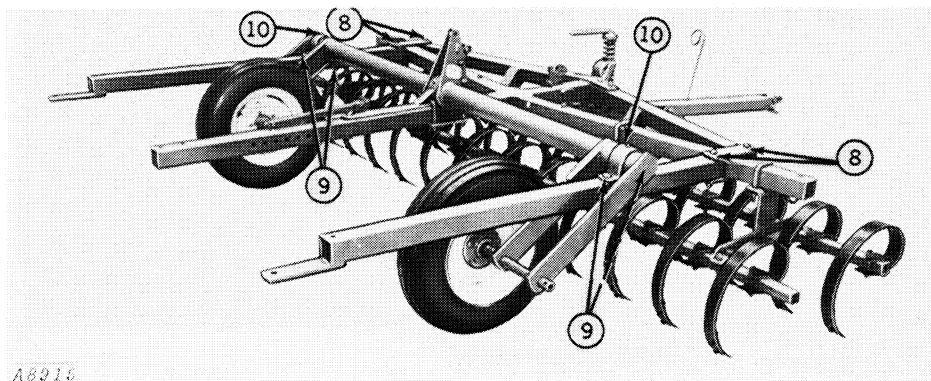
6. Attach side links as shown.

7. Install the hose holder.

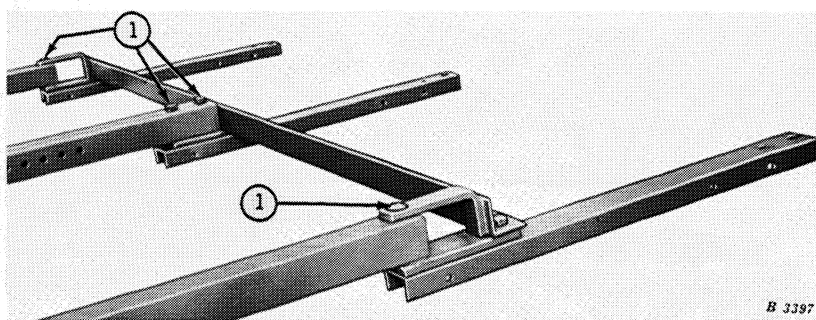
8. Slide the side main frame sections through the wheel frame and bolt them to the front main frame section.

9. Place the wheel frame bearings over the wheel frame and bolt them to the side sections of the main frame.

10. Install grease fittings.

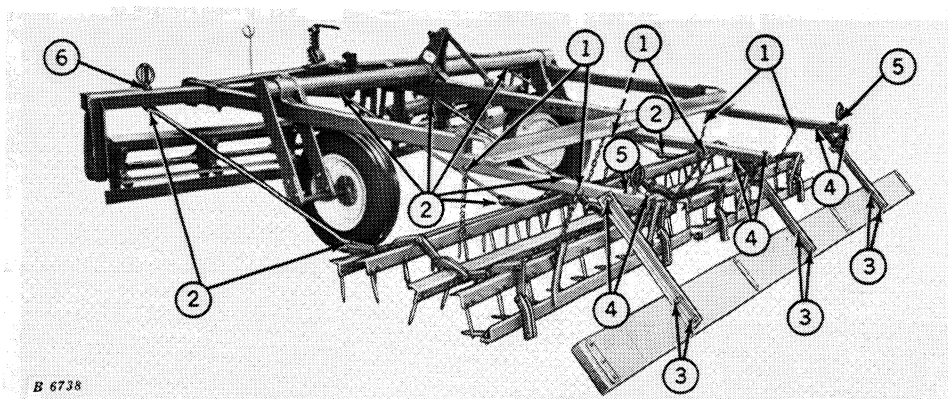


REAR MAIN FRAME



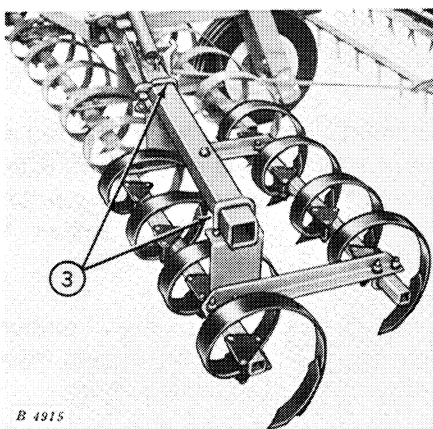
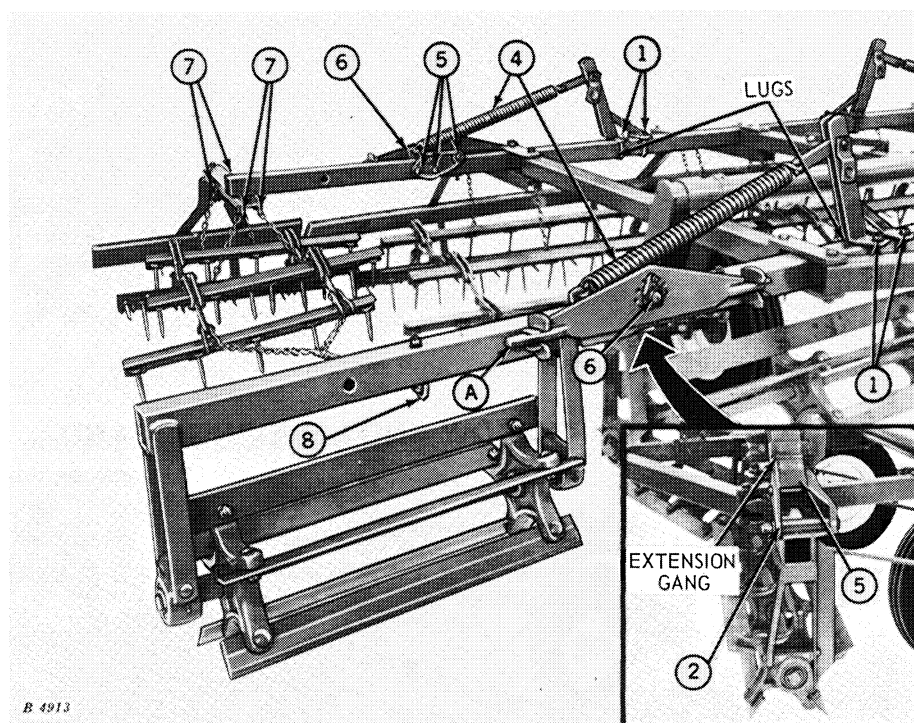
1. Attach the extension to the side and center main frame sections.

SPIKE-TOOTH HARROW AND LEVELING BOARD

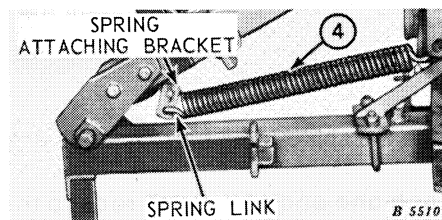


1. Attach the spike-tooth harrow to the extensions.
2. Attach one end of the pull rods to the spike-tooth harrow and the other end to the cutter frames.
3. Attach leveling board support bracket to leveling board.
4. Attach the leveling boards to the main frame extension.
5. Attach the reflector bracket and red reflector to outer end of the left-hand main frame extension. Attach a reflector bracket and red reflector to outer end of the right-hand main frame extension. Mount the red reflectors so that they face the rear.
6. Attach a reflector bracket and amber reflector to the outer end of the left-hand gang frame. Mount the amber reflector so it faces the front.

EXTENSION GANGS



Attaching Spring-Tooth Extensions



1. Install the extension gang support on the front and rear gang frames. The U-bolts must be positioned between the lugs shown above.

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

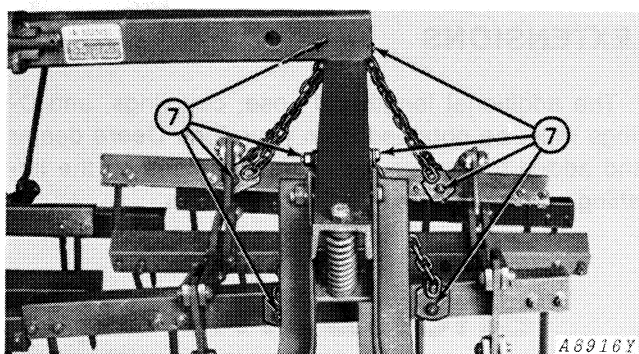
3. BFA Spring-Tooth Harrow Only - Assemble extension gang frames to spring-tooth extension gangs by bolting support angle plate to gang frame with U-bolts.

4. Attach the spring links and the springs.

5. Slip the plates over the pivot pins and bolt them in place on front and rear gangs.

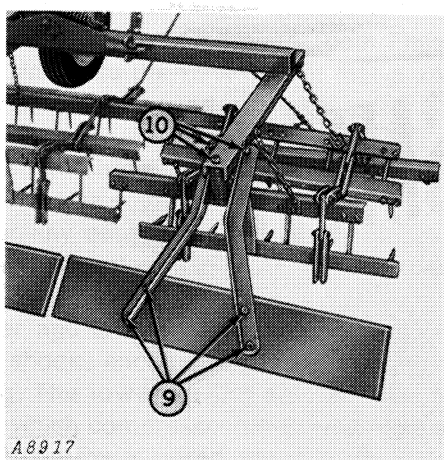
6. Install the extension gang locking bar. Insert locking pin as shown.

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



7. Attach the spike-tooth harrow extensions to the main frame extension.

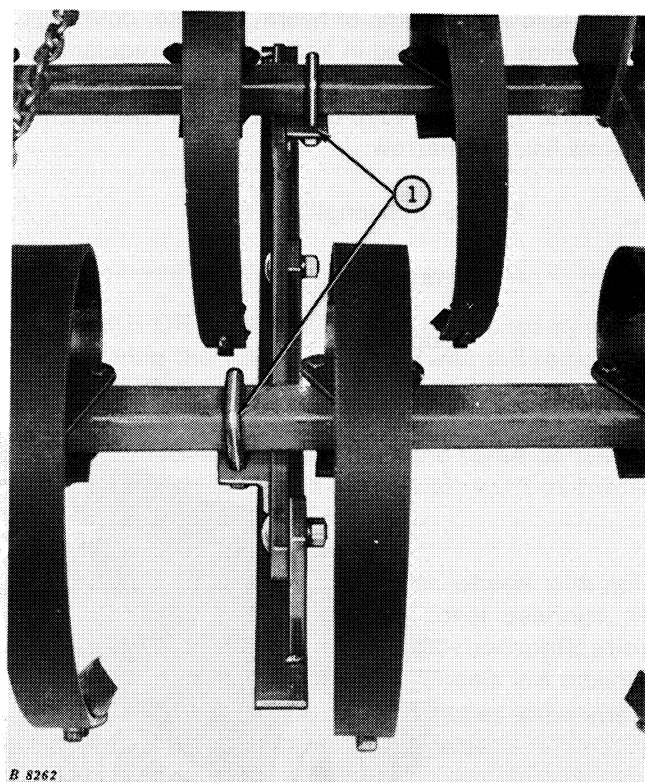
8. Attach spike-tooth harrow extensions pull chain to J-bolt on front extensions. (See pg. 12.)



9. Bolt Leveling boards to brackets.

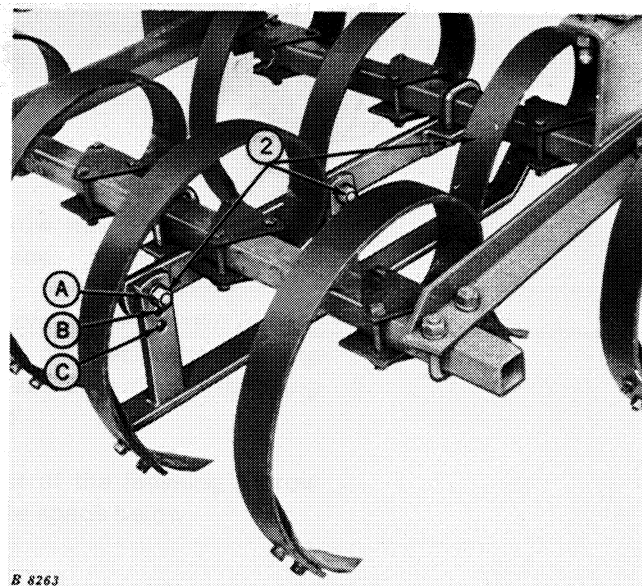
10. Attach the leveling board extension brackets to the main frame extension.

STABILIZER SLEDS FOR SPRING-TOOTH FINISHING HARROW



1. Install sleds as shown.

NOTE: Sleds must ride on top of outside beds.



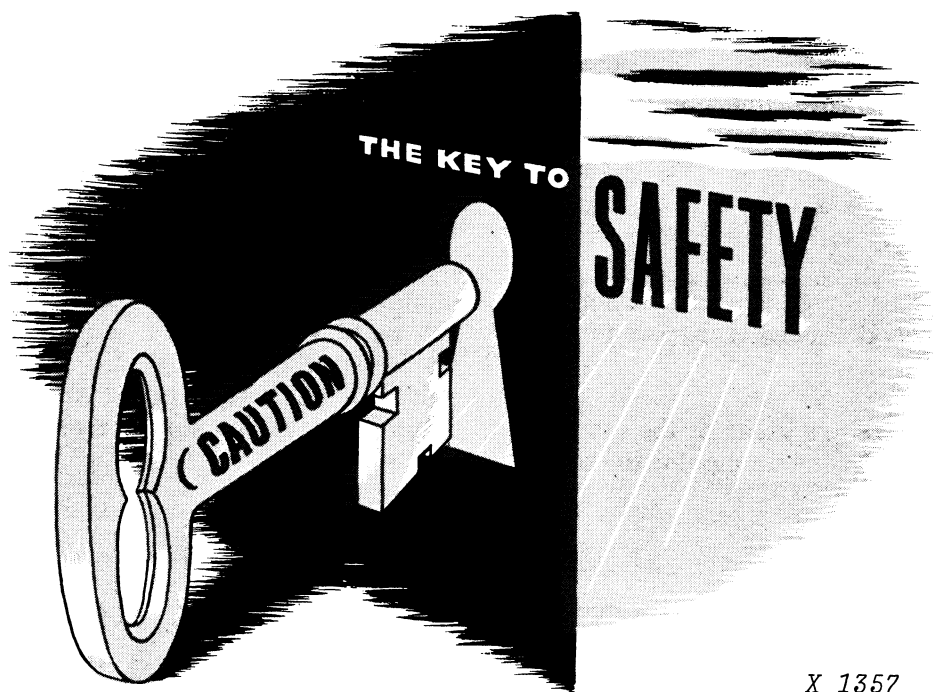
2. Adjust depth as follows: Holes "A" provide approximately 3 inches of tooth penetration; holes "B" approximately 4 inches; and holes "C" approximately 5 inches.

HYDRAULIC HOSE EXTENSIONS

The following lengths of hydraulic hose, couplings, and O-rings are needed in addition to the regular hoses on 3-inch diameter 8-inch stroke remote hydraulic cylinders, used with 4010 or 4020 Series Tractors and six-row finishing harrow:

- 2 - 18-inch lengths of hose
- 4 - O-rings
- 2 - Couplings

The additional lengths of hose, couplings, and O-rings must be obtained from your John Deere dealer and added to the regular hydraulic hoses on the finishing harrow remote hydraulic cylinders.



X 1357



Specifications

The John Deere BFA Finishing Harrow is a four or six-row heavy-duty rigid wheel-carried harrow consisting of cutter blade assemblies, a spike-tooth harrow, and a leveling board. It is designed for preparing seedbeds.

The John Deere BFA Spring-Tooth Finishing Harrow is similar to the BFA except that a spring-tooth harrow assembly is used instead of cutter blades.

Either finishing harrow can be used with John Deere Tractors equipped with a remote hydraulic cylinder or any other tractor using a remote hydraulic cylinder that conforms to ASAE-SAE standards.

Upper and lower cushion springs are provided to absorb shocks encountered when working and transporting. The lower spring also acts as a leveling spring, which compresses when working and extends when the harrow is raised, thus providing a parallel lift for more transport clearance.

DEPTH OF PENETRATION - Controlled by raising or lowering the carrying wheels with the remote hydraulic cylinder.

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

CARRYING WHEELS - 14-inch wheels with automotive type adjustable tapered roller bearings. 15-inch wheels are available for six-row application. Wheel tread is 80 inches when wheels are mounted on inside of wheel frame and 120 inches when wheels are mounted on outside of wheel frame.

BEARINGS - Anti-friction bearings in the cutter blade assembly.

WIDTH - 4-row, 13 feet 4 inches; 6-row, 20 feet 6 inches with extension gangs down, 13 feet 4 inches with extension gangs folded for transport.

(Specifications and design subject to change without notice.)

SERIAL NUMBER

Your BFA Finishing Harrow has a serial number located on the front gang frame.

When ordering parts, always furnish the model and serial number from the serial number plate. By doing so, you will assist your John Deere dealer in giving you prompt, efficient service.

Record the serial number of the finishing harrow and the date purchased in the space below.

Serial Number
Date Purchased 19.....



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MEMORANDA

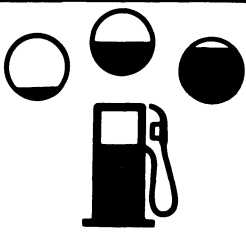
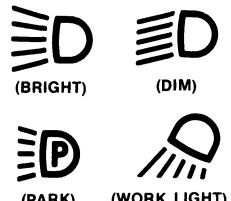
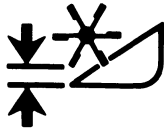
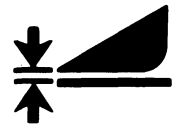
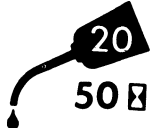
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WORLDWIDE SYMBOLS FOR OPERATOR CONTROLS

Symbols instead of words; that's what John Deere is using to promote worldwide identification of operator controls. Once standardized, they give a quick, positive message anywhere in the world — without translation. Study the symbols below and learn to recognize them at a glance.

				
TRANSMISSION OIL PRESSURE	TRANSMISSION OIL TEMPERATURE	TRANSMISSION OIL FILTER	ENGINE OIL PRESSURE	ENGINE R P M
				
WATER TEMPERATURE	PRESSURIZED—OPEN SLOWLY	AIR FILTER	CHOKE	AMMETER OR GENERATOR LIGHT
		 (FAST) (SLOW)		
FUEL	FUEL SHUTOFF	SPEED RANGE	NEUTRAL	PARK
	 (BRIGHT) (DIM) (PARK) (WORK LIGHT)			
HAND BRAKE	LIGHTS	ALL MECHANISMS	GROUND SPEED	UNLOADING AUGER
				
PLATFORM	REEL SPEED	REEL HEIGHT	PLATFORM HEIGHT	FAN
				
CYLINDER SPEED	CONCAVE ADJUSTMENT	HOURS	GREASE FREQUENCY	OIL TYPE AND FREQUENCY

