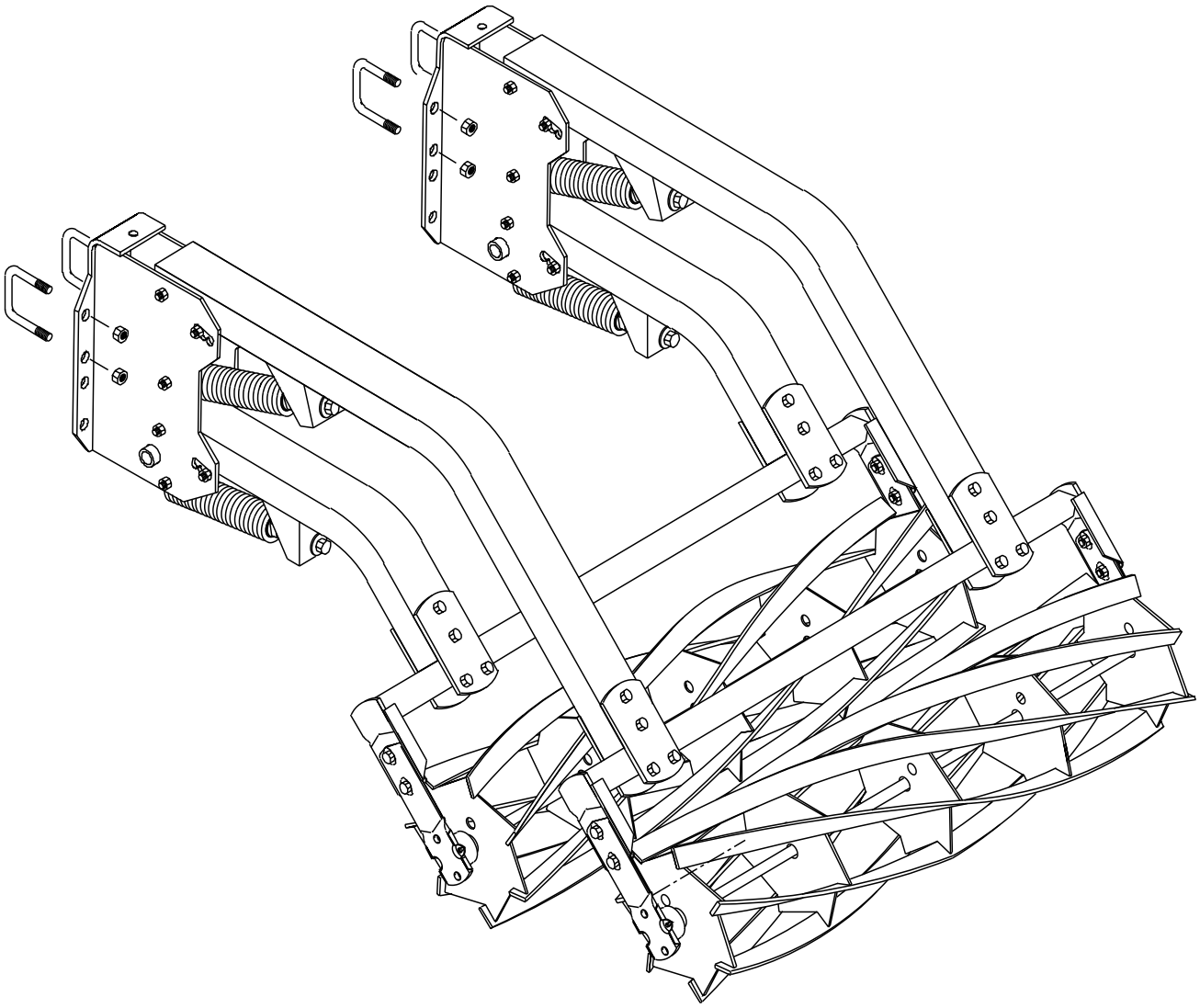
KONGSKILDE

300 SS
DOUBLE ROTA-HARROWS



ASSEMBLY INSTRUCTIONS
& OPERATING GUIDE
300SS DOUBLE SPIRAL BAR ROLLERS
300RR DOUBLE RD WIRE BASKET ROLLERS

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INTRODUCTION:

Kongskilde 300SS Double Spiral Bar Rota Harrows is a levelling attachment for the 2800 series field cultivators. When properly adjusted the Harrow will help to prepare a level surface for planting in various field conditions and soil types.

PRE ASSEMBLY TIPS:

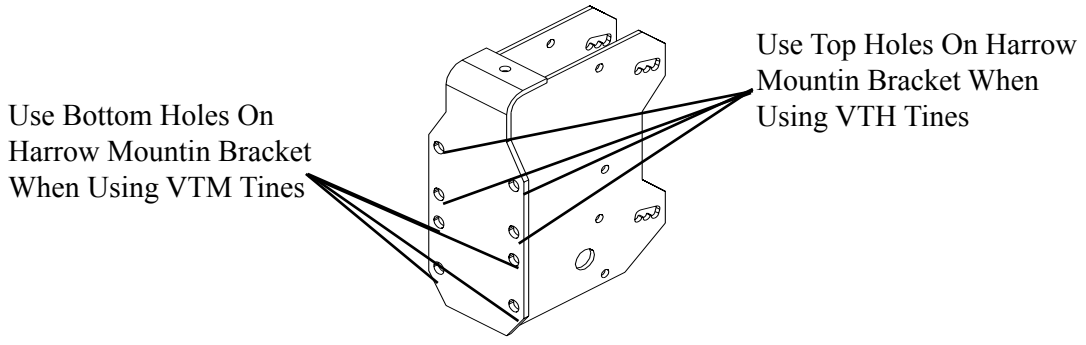
Prior to assembling the 300SS Rota Harrows, the cultivator should be carefully unfolded and lowered to the ground, (resting on the tines), on a flat level area.

It is recommend that you do not attempt to assemble the harrows before mounting to the cultivator, as the harrow sections are heavy and difficult to move when assembled. It is also difficult to insure correct placement and spacing of the harrow sections if they have been pre-assembled.

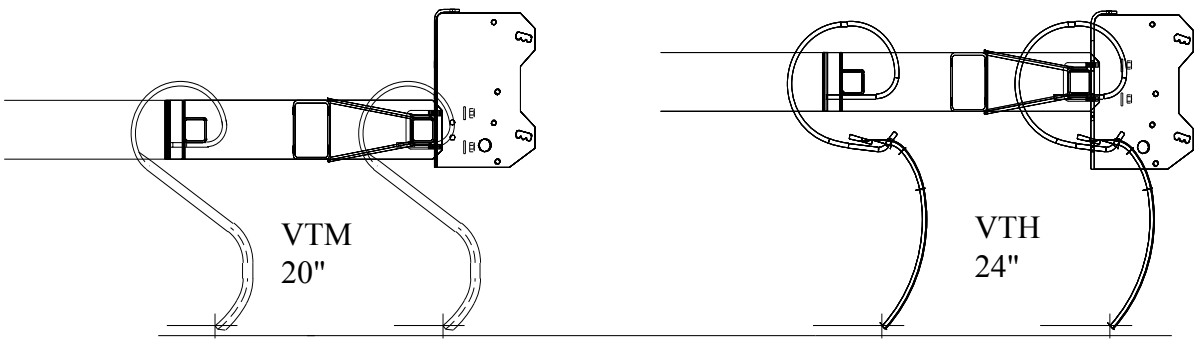
Therefore the harrows should be assembled in two stages:
1) Assemble the mounting brackets and arms to the rear frame tube of the cultivator.
2) Attach the rollers to the harrow arms.

The rota harrows are shipped from the factory in component form. They are packed together and include: the pre-assembled mounting brackets with double arms; the rollers, roller frames, and roller arms; and the assembly hardware bags.
Refer to the parts list booklet for a detailed breakdown and description of the assembled components. This booklet will help you to identify the items required for proper assembly.

NOTE: Position the harrow mounting bracket holes according to the tine in use VTM or VTH



Harrow mounting Braket



Bracket Mounting Placement:

1. After verifying that you have all of the required parts, begin by marking out the locations for the mounting brackets on the rear accessory tube of the cultivator centre section and wing frames. The locations for the mounting brackets are shown on the layout diagrams in the Harrow Mounting Pattern Diagram Booklet provided for each model of cultivator.

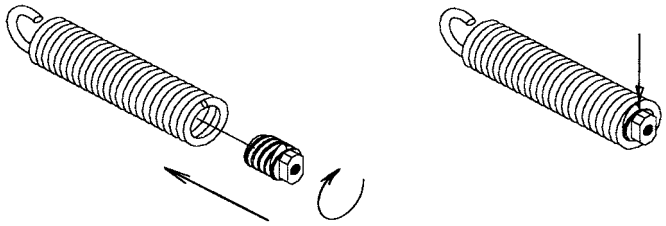
2. The mounting bracket has 2 sets of mounting holes:The upper set of holes are for mounting to the 2800 series cultivators equipped with 24" high tines.The lower set of holes are for mounting to the 2800 series cultivators equipped with 20" consertines.

Please note that if the 300SS harrows can be used in combination with the 300SB spike bar harrow on 2800 series cultivators.

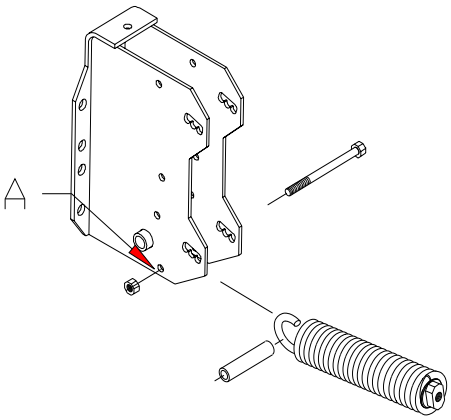
3. Place the harrow mounting brackets on the rear toolbar of the cultivator so that the bracket is centred at each mark. Always start with the harrows in the centre of the machine then work out to the wings in order to keep the spacing even between each of the harrow sections. Make sure that the bracket is straight up and down and secure with the U-bolts and locknuts provided. Leave the nuts loose to allow repositioning if necessary before final assembly.

Spring & Arm Assembly:

4. The harrow arms and spring assemblies for the rotaharrows are pre-assembled at the factory. However for repair or replacement of the spring & arm assemblies, assemble the spring insert into the open end of the spring with the wrench tab pointing outwards. Use a wrench to screw the insert down inside the spring until the stop tab at the end of the threads contacts the end coil of the spring. See diagram below:



5. Mount the lower spring assembly to each mounting bracket by placing a wear bushing through the hook of the spring. Align the bushing with the lowest hole (A) in the mounting bracket as shown below, and secure with the 1/2" x 4-1/2" bolt and locknut provided. Leave hanging loose.



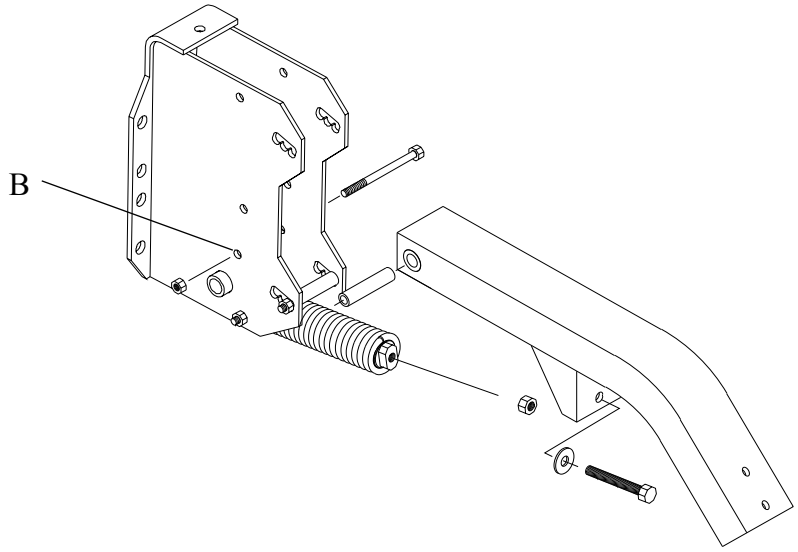
Transport Bushings:

6. Align a wear bushing with the notchess in the mounting bracket and secure with the1/2" x 4-1/2" bolts and locknuts. This will allow the proper ground clearance for the harrow and act as transport stops for the hanger arms when the cultivator is raised at the end of the field or during road transport.

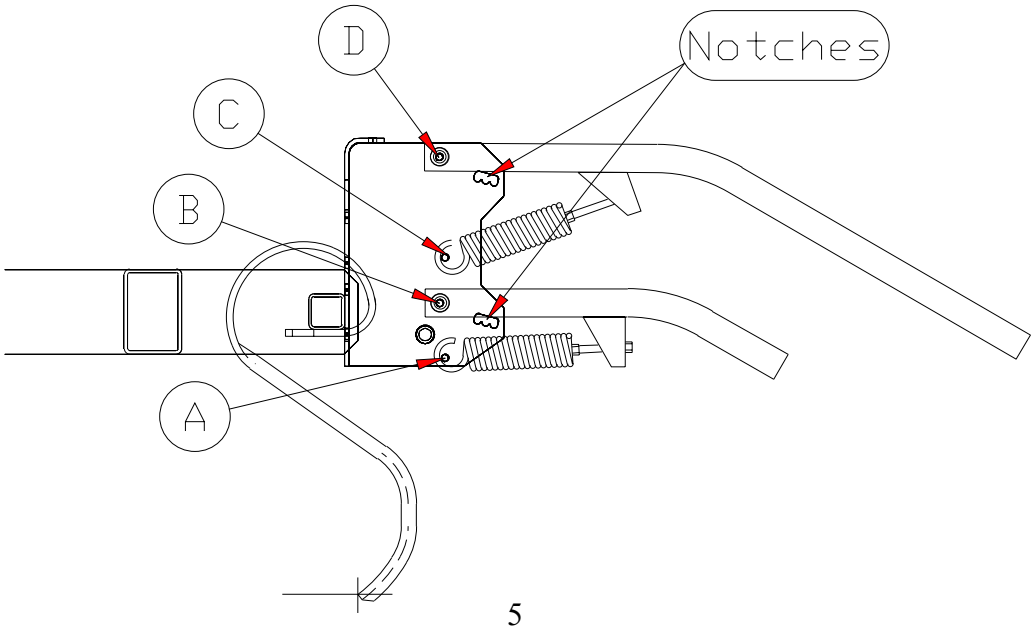
Hanger Arms:

7. Insert a wear bushing into the pivot bushing of the short hanger arms. Assemble the short hanger arms into the mounting brackets by aligning the hole in the wear bushing with hole (B) in the mounting bracket. Secure with 1/2" x 4-1/2" bolt and locknut provided.

8. Insert the 5/8" x 4" full thread spring adjustment bolt (with washer) through the hanger arms. Install a 5/8" jamnut on the bolt and thread at least half way on to the bolt. Insert the bolt into the threaded insert in the end of the spring assembly and tighten with a 15/16" socket wrench until the spring has been stretched about 1/2" to 1", then secure the jamnut to lock the bolt in position.

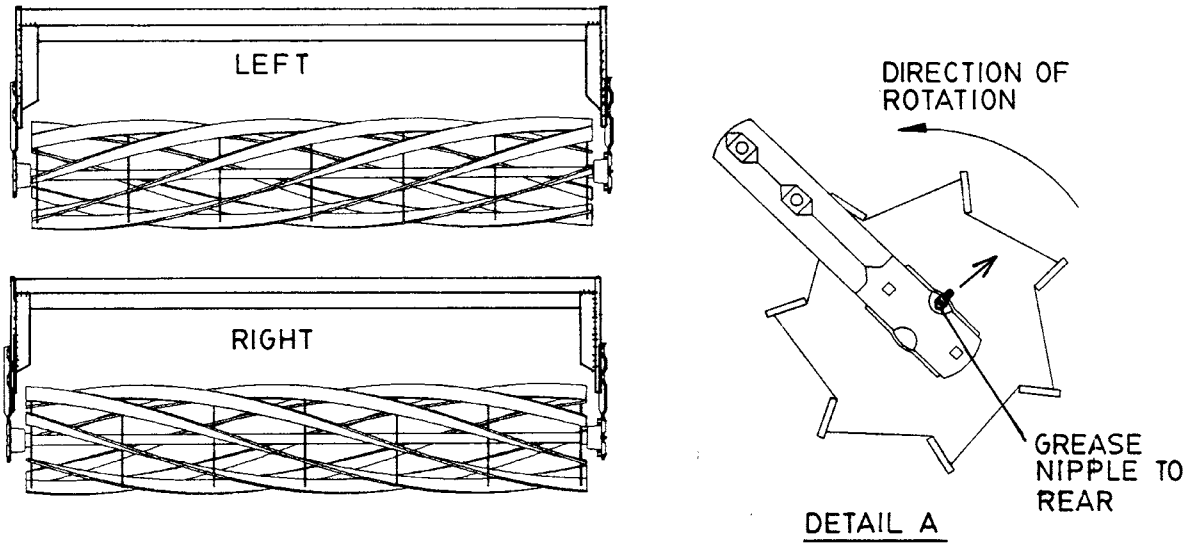


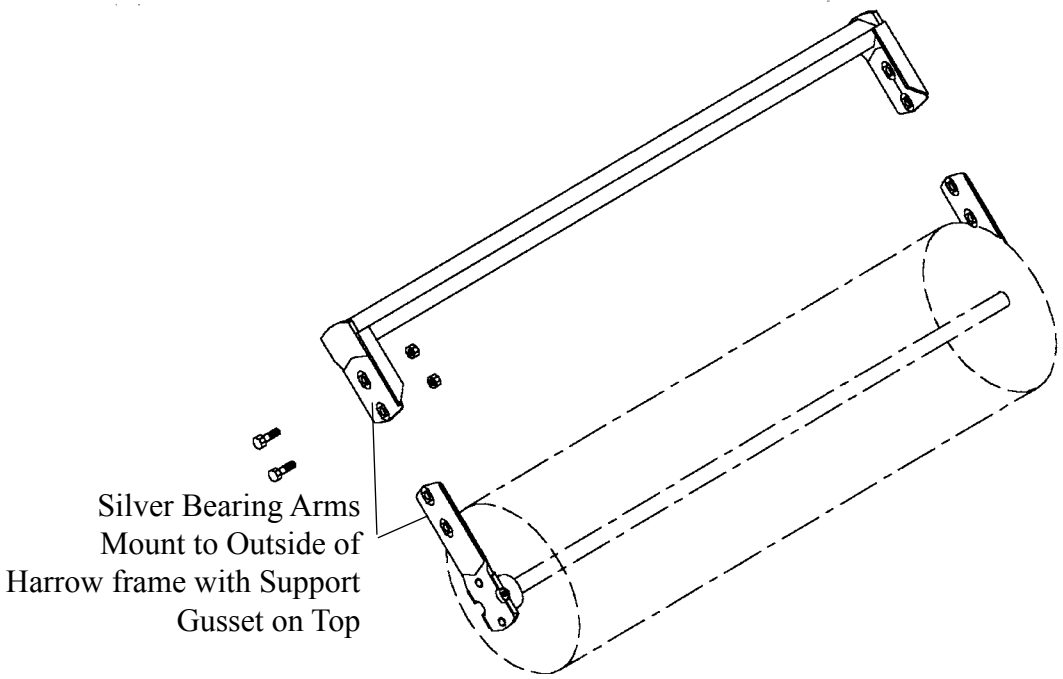
9. Install the upper spring assembly and upper (intermediate) arm in the same manner as steps 5 through 8. Use hole (C) for upper spring assembly and hole (D) for the upper hanger arms.



Rollers and Assembly:

11. When assembling 300SS Double Spiral Rota Harrows it is important to note that there are left and right hand rollers. These are identified by a decal on the roller assemblies. If the decal is missing the rollers can be identified by looking at them from the end. The Left rollers have the spiral bar turning to the Left and the Right roller spiral bars turn to the Right. Mount the rollers to the roller frames with the 3/8" x 1-1/2" bolts and locknuts provided. The gusset on the frames should be on top with the black bearing arms mounted to the outside of the frame. See diagram below.
IMPORTANT NOTE: All rollers are assembled at the factory so that the grease fittings on the roller bearings point to the rear and not in the direction of travel. See detail A below.



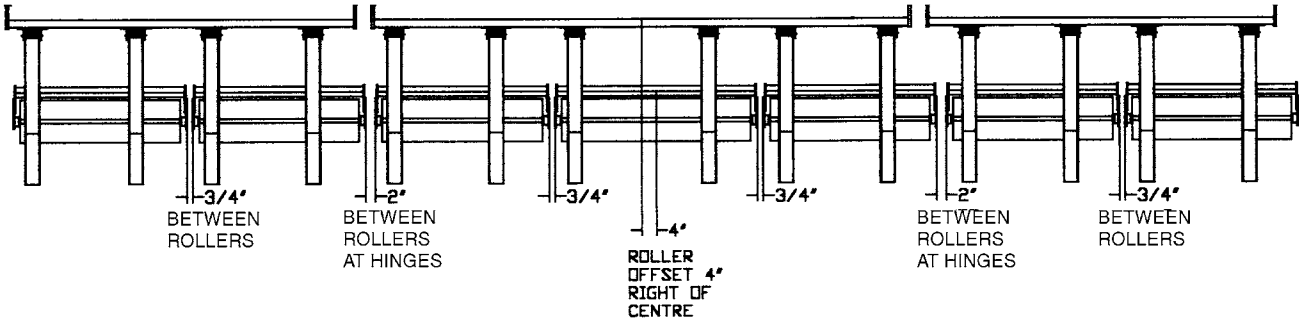


Assembly of Front Rollers to Hangers:

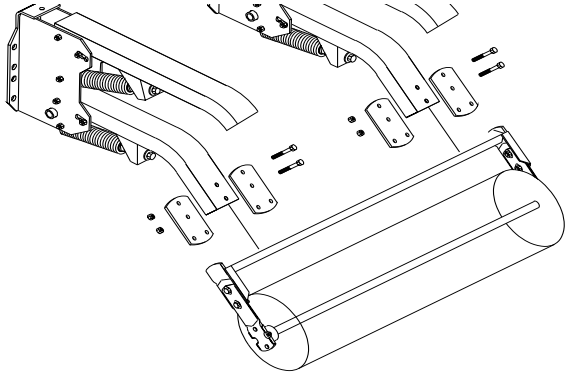
When assembling the rollers to the arms the Left roller is always mounted to the front (or short) hanger arms and the Right roller is always mounted to the rear (or long) hanger arm.
This insures that the soil contacting the rota harrows is moved completely in both directions to provide optimal levelling.

12. Move the roller assemblies into position behind each assembled section of double hanger arms. Refer to the layout diagrams in the cultivator harrow mounting patterns booklet in order to determine the correct location for each roller section.

13. Start assembling the rollers with the front, middle roller in the centre section and work out in both directions to the wings. Shift the roller to the right so that it is 4" right of centre and tighten the locknuts. See sample diagram below.
NOTE: On some harrow patterns, the centre section does not have a roller in the centre of the machine. In this situation the rollers must be positioned equally on either side of the centre line of the cultivator. Proper centring of the harrow sections across the back of the machine is important to make sure that the harrows have equal overlap and spacing on both sides, and prevent the cultivator from pulling crooked in the field.



14. Mount left SS roller to the front or short hanger arms with the mounting plates and 1/2" x 3-1/2" bolts and locknuts provided. Be sure to butt the roller frames tight against the end of the hanger arms before tightening the locknuts. See diagram below.

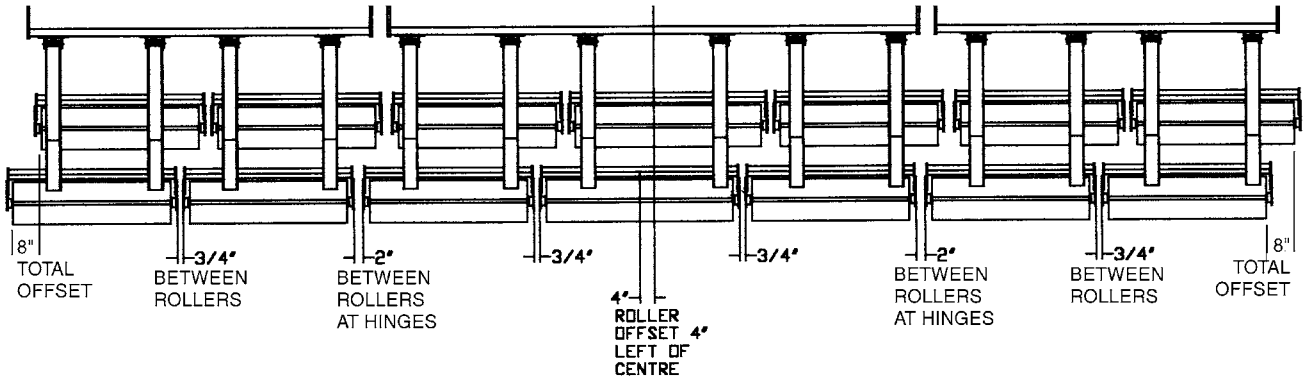


15. Mount the next front roller to the hanger arms in the same manner as in step 13 and 14. There should be 3/4" between the end frames of the rollers and 2" between the centre section and wing roller frames that meet at the hinges. See diagram previous page.

16. Continue the assembly until all of the front rollers are mounted to the hanger arms.

Assembly of Rear Rollers to Hangers:

17. As in steps 12 to 14 for front rollers, move the rear rollers into position behind the hanger arms according to the layout diagrams in the harrow layout booklet. Once again start with the roller in the middle of the centre section and work your way out to the wings.
Mount the RD, or Right SS roller to the rear hanger arms with the mounting plates, bolts and locknuts provided. Shift the rear roller 4" to the left of centre, and tighten the locknuts.
NOTE: The total offset between the front and rear rollers should be 8". See diagram below.

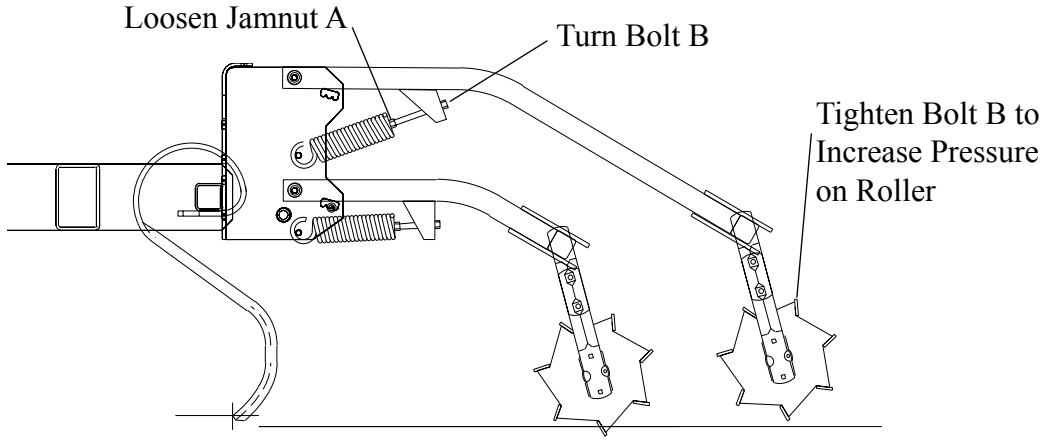


18. Continue mounting the rear rollers across the back of the cultivator until the assembly is completed. Remember to leave 3/4" between the end frames of the rollers and 2" between the centre section and wing rollers that meet at the hinges according to the diagram above.

19. Check all nuts and bolts and secure if loose.

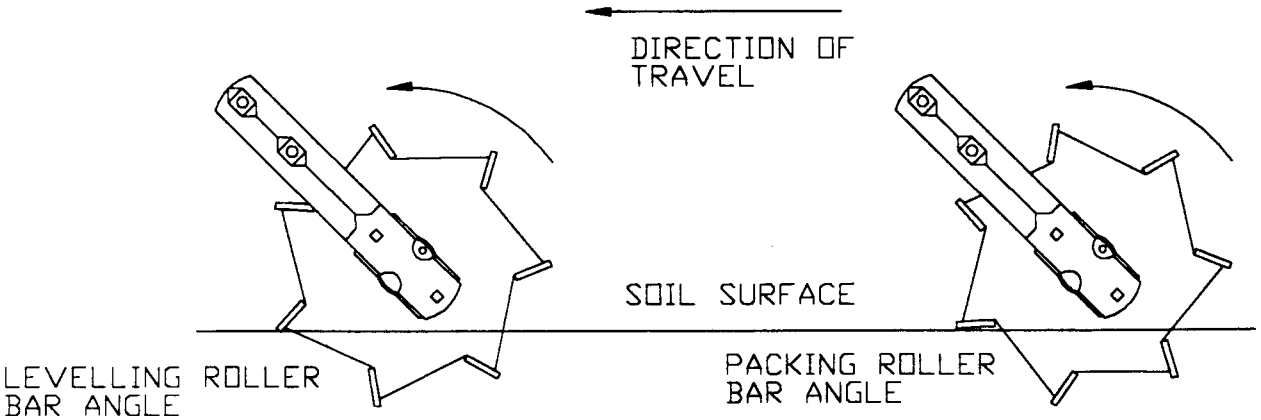
FIELD SETTINGS:

A) The down pressure on the rollers can be increased or decreased by loosening the Jamnut A and turning the Spring Adjustment Bolt B with a 15/16" socket wrench. Adjust the down pressure on the rollers as required to firm the soil, break lumps and obtain an even granular soil surface. Secure the Jamnut A to prevent the Adjustment Bolt B from working loose.



B) NOTE: In stoney conditions the spring pressure should be reduced. Excessive pressure may cause damage to the rollers.

C) 300 SS - spiral bar rollers can be run as a levelling and crumbling roller or as a packing and firming roller. When assembled in the frames as described earlier in this manual the rollers are set up to run as a levelling and crumbling roller.
To set as a packing and firming roller, the rollers can be turned end for end in the frames. This will alter the angle at which the spiral bars enter the soil and hence act as a packing roller. If you change the rollers to operate in this way it is important to remember to change the bearing arms so that the grease fitting is pointing to the rear, away from the direction of travel. See diagram below.



ADJUSTMENTS / PRECAUTIONS:

When the assembly of the harrows has been completed check to make sure that the complete assembly appears evenly spaced and centred across the back of the cultivator. If the harrow assembly is not centred you will have to shift the harrow sections as required. Improper centring of the rota harrows may cause the cultivator to pull crooked in the field.

Check to make sure that the 3/4" spacing between the roller sections has been maintained. It is important to insure that the roller sections have enough clearance between each other so they will not hit each other as they work and move up and down over the surface of the ground.

Check to make sure that the 2" spacing between the centre section and wing rollers that meet at the wing hinges has been maintained. It is important that the roller sections will not hit each other should the wing drop below the centre section when working on uneven ground.

Check all nuts and bolts and secure if loose.

Take care when folding the cultivator for transport for the first time after completing the assembly. Check to make sure that the harrows do not interfere with each other or other cultivator frame components when folding and unfolding.

DANDER! NEVER STAND OR WORK IN THE AREA BELOW THE WINGS OR UNDER AN UNSUPPORTED CULTIVATOR FRAME.

a) ALWAYS USE WING LOCK PINS, AND WHEEL CYLINDER TRANSPORT LOCKS.

b) USE EXTREME CAUTION WHEN WORKING AROUND HEAVY EQUIPMENT.

c) BLOCK THE WHEELS AND MAKE SURE THAT THE UNIT IS SUPPORTED TO PREVENT IT FROM FALLING BEFORE ATTEMPTING TO MAKE ADJUSTMENTS OR WHEN PERFORMING MAINTENANCE OPERATIONS.

MAINTENANCE:

A) Periodically check all nuts and bolts and secure if loose.

B) Lubricate the G-bearings after every 12 hours of operation. DO NOT OVER GREASE THE G-BEARING: Over greasing may cause damage to the bearing seals.

C) Periodically check and remove any foreign material that may become wound around the rollers or bearings and remove any objects (ie: stones) that have become trapped in the rollers.

D) Always check the condition of your field cultivator and levelling attachments regularly, keep in good repair. Optimal performance cannot be expected of equipment in poor condition.