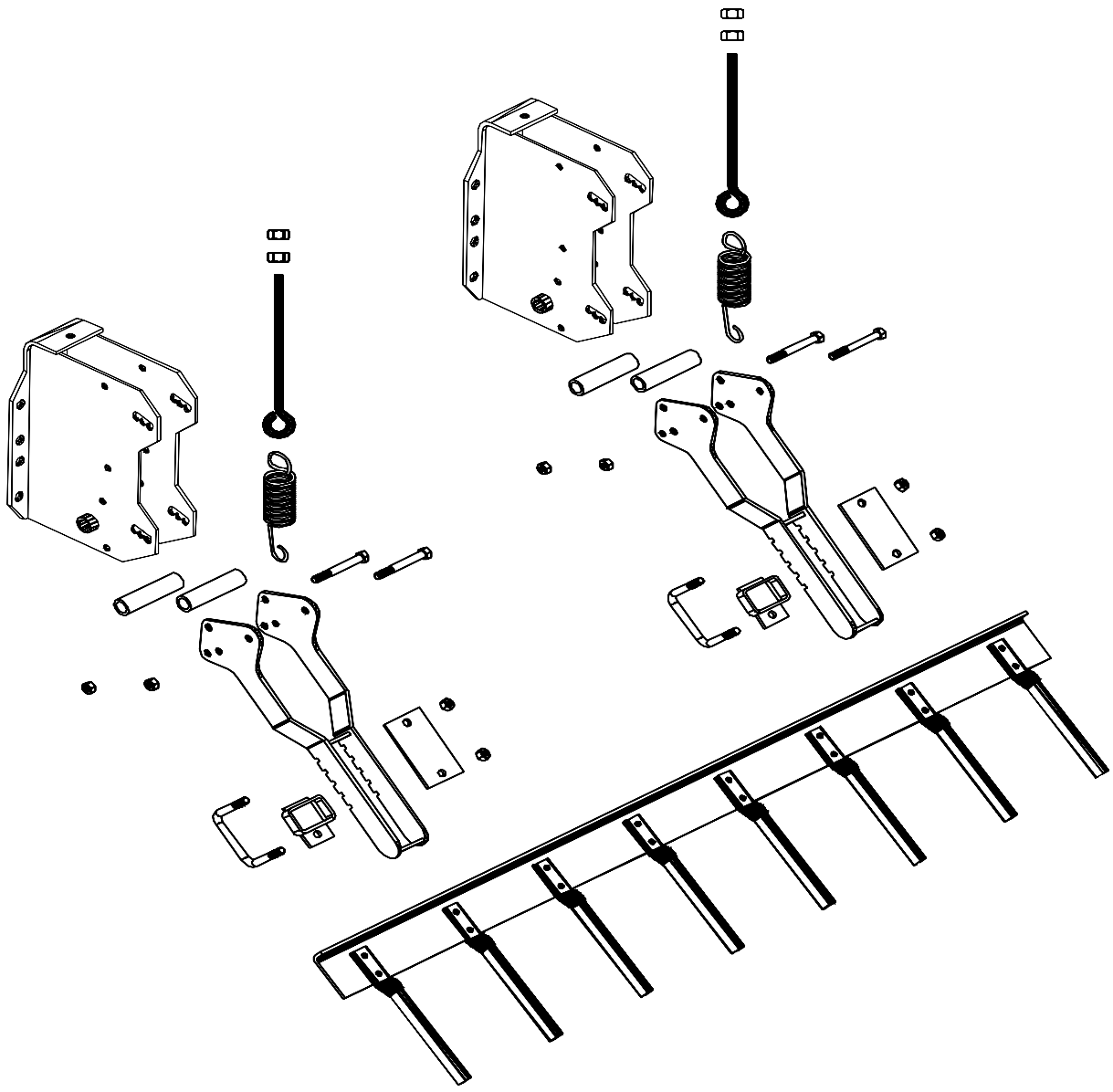
KONGSKILDE

300SB Harrows

SPIKE BAR LEVELING ATTACHMENT

(2005)

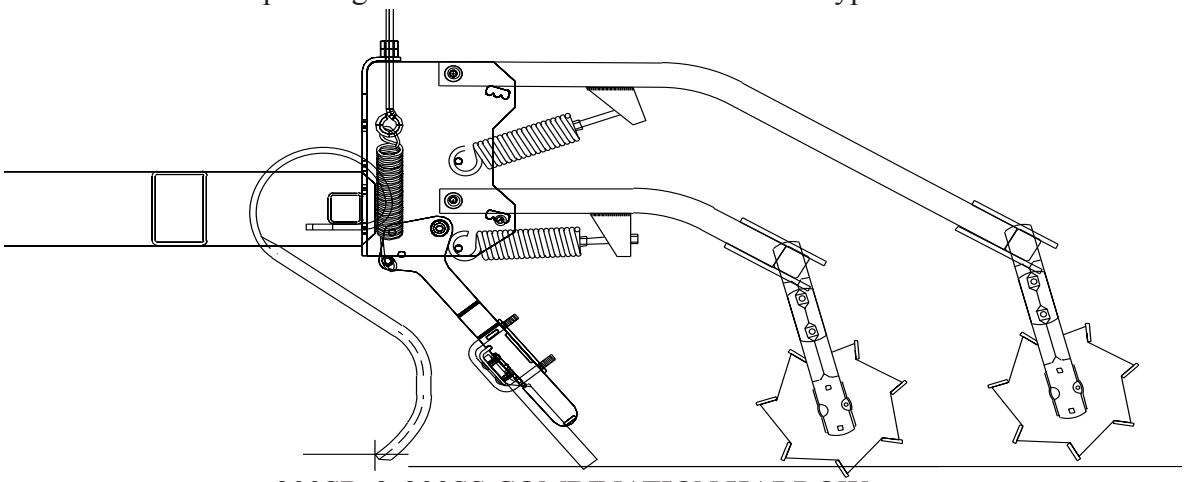
Kongskilde
300 SB



ASSEMBLY INSTRUCTIONS
& OPERATING GUIDE

INTRODUCTION:

Kongskilde 300SB Spike Bar Leveller is as a levelling attachment for field cultivators. It works in conjunction with the 300ss rolling harrow to which it is attached. When properly adjusted the harrow will help to prepare a level surface for planting in various field conditions and soil types.



300SB & 300SS COMBINATION HARROW

PRE ASSEMBLY TIPS:

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

The harrows are shipped from the factory in component form and include the pre-assembled spike bar sections and the mounting brackets with hanger arms. In most cases there are additional assembly hardware bags and an envelope containing the spare parts list and assembly instruction manuals.

If the 300SB is together with the 300SS rolling harrows. It is recomended that the assembly is treated as one harrow assembly. If the 300SS has been mounted prior to the installation of the 300SB it might be nessary to loosen and shift the rollers to make them match with the 300SB.

The basic order of assembly is as follows:

- Choose the layout diagram for your cultivator model from the Harrow Mounting Patterns Booklet provided and position the harrow sections behind the machine accordingly.
- Attach the mounting bracket and arm assemblies to the rear frame tube of the cultivator.
- Attach the Harrow assemblies to the mounting arms.
- Check the assembly according to the layout diagram and shift the sections as necessary to obtain an even spacing and to ensure that the harrow appears balanced from side to side.
- Secure all nuts and bolts.

Refer to the 300SB Harrow Spare Parts List provided. This booklet will help you to identify the items required for proper assembly.
Refer to the operating instructions in this manual for making adjustments and to obtain optimal levelling and performance.

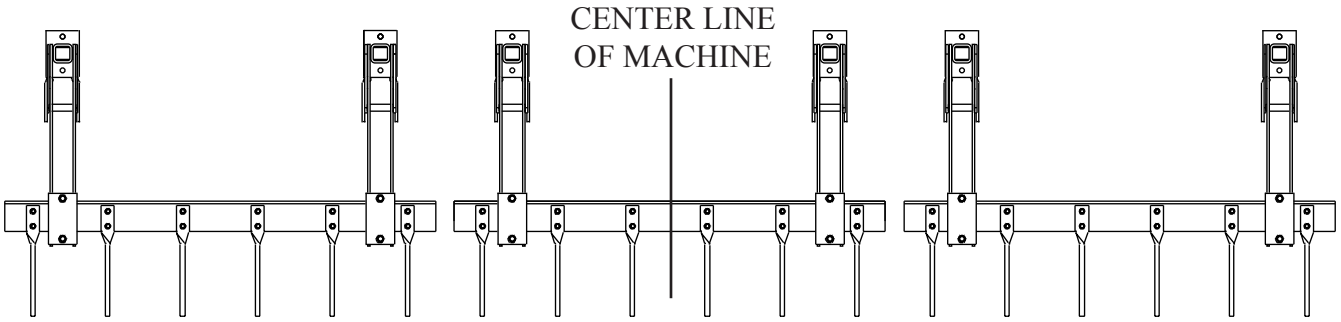
*(Kongskilde reserves the right to make changes to product designs and specifications without notice or obligation to rework.)

ASSEMBLY INSTRUCTIONS:

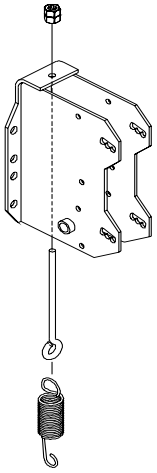
Before starting, be sure you have the correct quantity and size of spike bar sections for the size of machine that you are mounting them to. The size combinations and approximate mounting bracket locations are shown on the layouts in the Harrow Mounting Patterns booklet provided for each cultivator model.

1) Lay out the spike bars behind the cultivator according to the layout diagram.

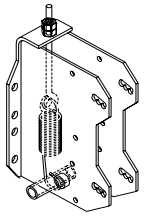
2) It is Recomended to start the assembly of the harrows with the centre spike bar in the middle of the cultivator centre section. If the harrow is not centered, the cultivator may not pull straight in the field. Leave all nuts and bolts loose until the entire harrow assembly is attached to the machine and has been checked according to the diagram. In cases where there is not a spike bar section in the centre of the machine, pay careful attention to the layout diagram for correct placement and centring of the spike bar sections.



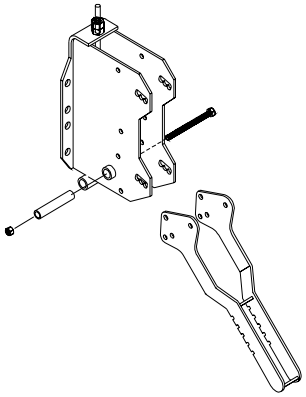
3) Hang the tension spring on the eyebolt. Insert the assembly between the two side plates on the 300SS harrow mounting bracket. Fasten the eyebolt in place with two 1/2" nuts.



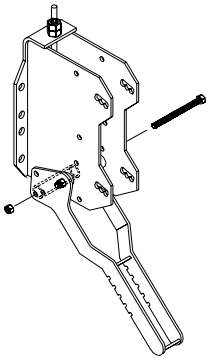
4) Stretch the spring downwards and hold it in place with one of the longer bushings. The Bushing should be resting on the bottom of side plates, held there by the tension of the spring.



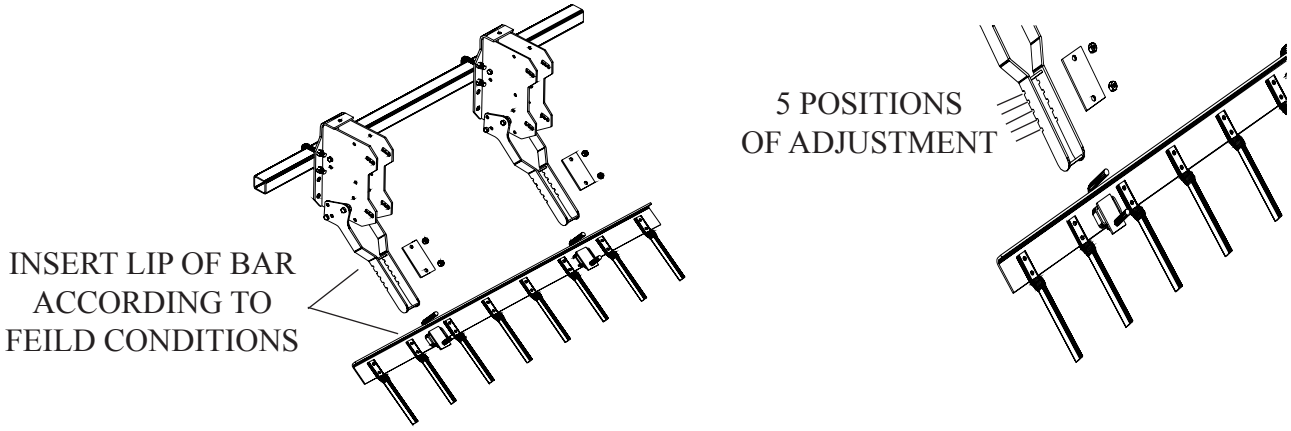
5) Insert the other long bushong into the bushing on the mounting bracket, Bolt the spike leveller to the bushing with a 1/2 x 6" bolt and locknut.



6) Insert a bolt through either of the two holes on the spike leveller arm and, through the bushing holding the spring in place. Fasten the bolt with a locknut.

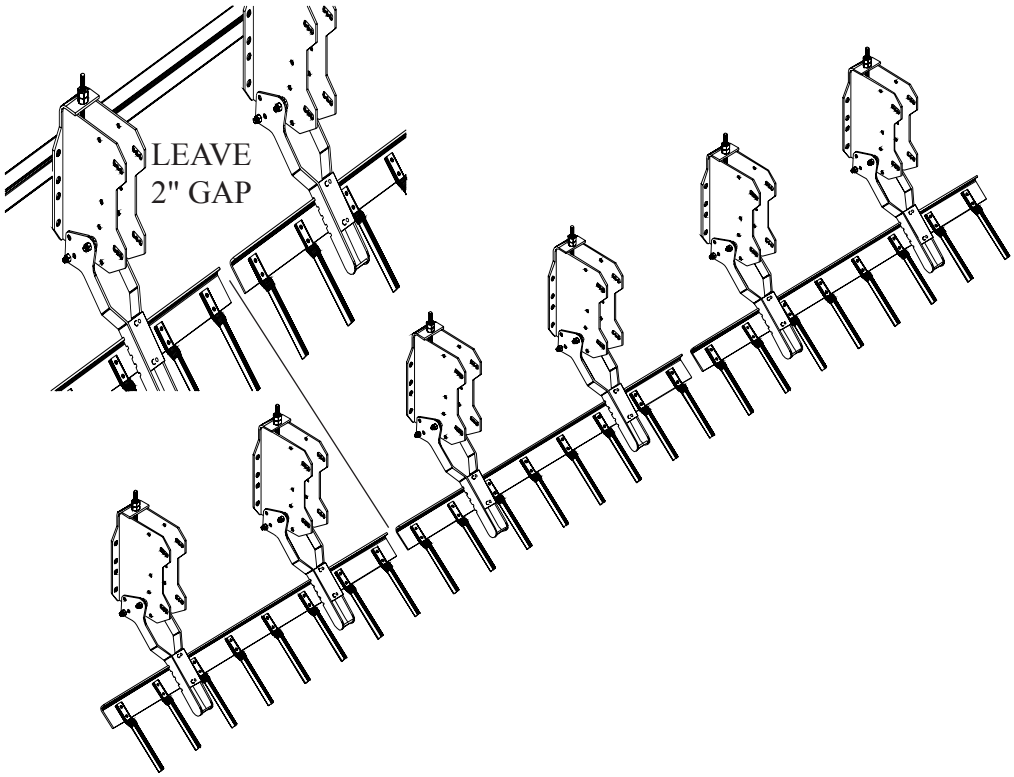


7) Attach the centre spike bar section to the arms by placing the lip of the spike bar angle into one of the 5 notches in the hanger arm and securing the bar in place with the lower spacer, backing plate and U-Bolt.



NOTE: The 5 notches in the arm provide an opportunity to change the aggressiveness or depth setting of the spike bar. The setting you choose initially will likely need to be changed once you get to the field, so for now set them all in the upper position or 1st notch.
(See the section on Field Settings and Adjustments later in this manual).

10) Attach the remaining sections of spike bar to the cultivator frame by alternating assembly from side to side. This will keep the harrow centered on the machine. Attach the mounting brackets and arms to the cultivator frame tube then attach the spike bars to the arms. Allow 2” spacing between the ends of the spike bars sections but allow 3” - 4” spacing at the hinge points to allow for wing float clearance.



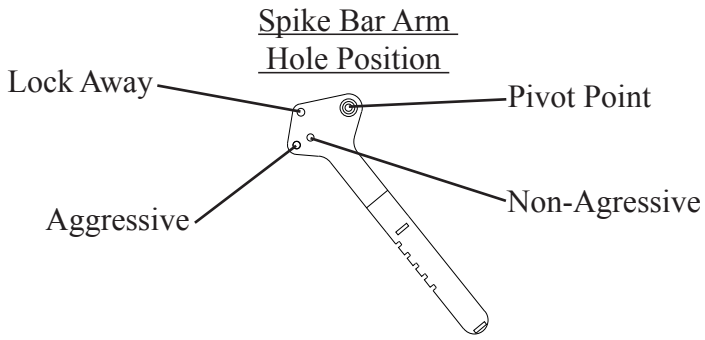
11) When you are satisfied with the spacing of the spike bars and position of the mounting brackets, tighten all nuts and bolts.

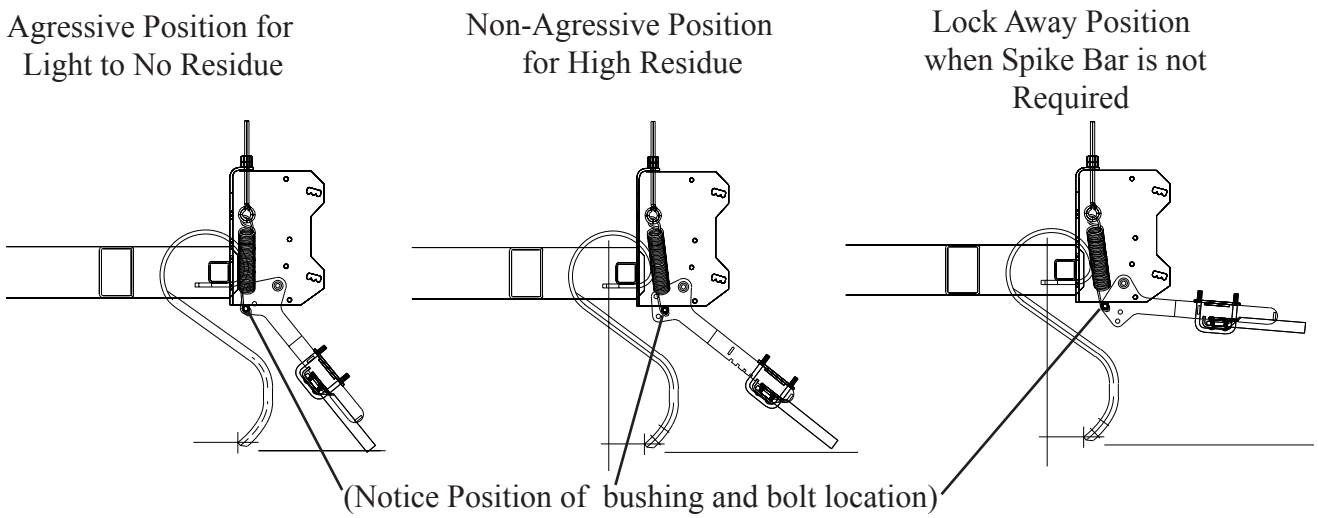
FIELD SETTINGS AND ADJUSTMENTS:

Before attempting to set the levelling attachments it is important to make sure that the cultivator itself is properly adjusted and working level from side to side and front to back at the desired depth.

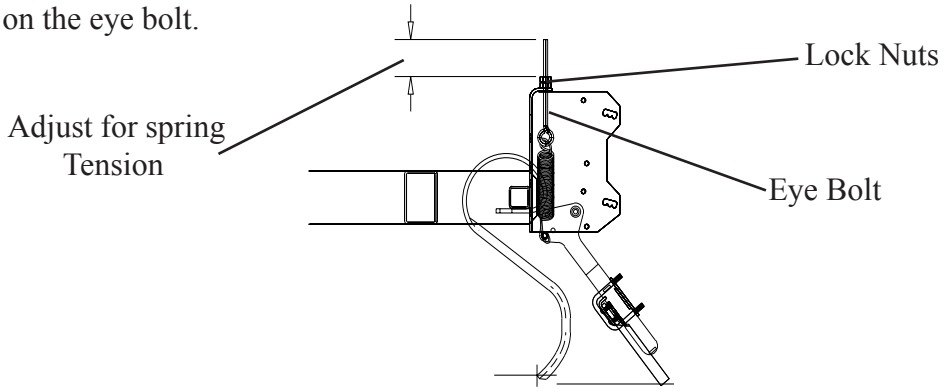
The Spike Bar Levelling Harrows are designed to break lumps, level off high and low spots and groom the surface of the soil before planting. Testing conducted on the 300SB Spike Bar Leveller has demonstrated that in some field conditions a steep working angle on the spike bar and constant spring pressure has improved the breaking ability of the harrow with respect to clods and lumps. Whereas, lowering the angle of the spike bar or angling the spikes, increases the ability of the harrow to drag dirt, level and clear residue.

1) The angle of the spike bar arm is adjusted by moving the spring bushing and bolt to two different working position holes on the spike bar arm. It is possible to lock away the spike bar when it is not required.





2) The spring pressure can be adjusted to maintain constant spring tension by loosening or tightening the two lock nut on the eye bolt.



3) The depth of the spike bar is adjusted by loosening the U-bolts and setting the lip of the bar into one of the 5 notches. Lowering the spike bar will also change the working angle of the arm as the spike bar will lay flatter due to the increased arm length and distance from the tip of the spikes to pivot point on the mounting bracket.

Diagram A shows the position of the spike bar as it is lowered to each of the 5 depth settings.

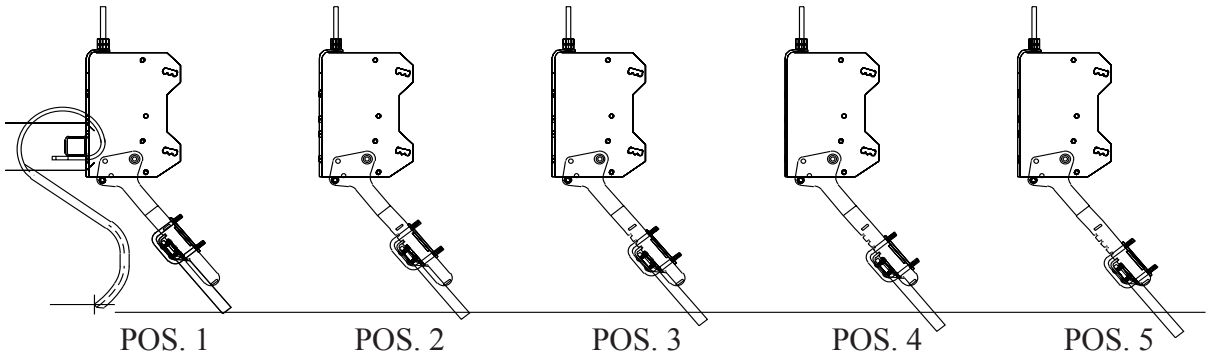
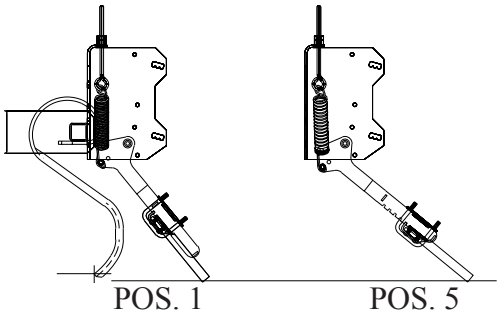


Diagram B shows the effect on the working angle of the arm and how much farther the spring is streatched when the spike bar is lowered.
(Note how the spike bar lays flatter or farther back as the bar is set to a lower notch.)



4) There are many factors that can affect the ability of your new harrow attachment to level the soil surface behind the cultivator. Cultivator tine spacing, type of shares (sweeps vs. goosefoot), cultivating depth, ground speed, direction of travel across the field, soil type and field conditions like moisture content and surface residue levels, all have an affect on the quality and levelness of the seed bed and soil surface. Finding the best setting will therefore require some experimentation. Be prepared to adapt and adjust your equipment and operating practices to obtain the best results for each field condition.

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 2" spacing between the harrow sections has been maintained. It is important to insure that the spike bar 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 4" spacing between the centre section and wing harrows sections that meet at the wing hinges has been maintained. It is important that the harrow sections will not hit each other should the wing drop below the centre section when working on uneven ground.

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.

DANGER! 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:

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

2) Regularly check and remove any foreign materials that may become entangled in the harrow sections.

3) Periodically check the pivot points for signs of wear. Replace pivot bushings before side play becomes excessive and starts to wear into the fasteners or cause the pivot holes to become worn.

4) Check and replace bent, broken or worn out spikes or other wearing parts as required.

5) Always check the condition of your field cultivator and levelling attachments at regular intervals and keep them in good repair, Optimal performance cannot be expected of equipment that is allowed to deteriorate into poor condition.