



2900 DOUBLE FOLD FIELD CULTIVATOR - ASSEMBLY GUIDE

Kongsilde
2900 Series



*Model may not be exactly as shown.

Kongsilde reserves the right to make changes to product designs and specifications without notice or obligation to rework.
See your local Kongsilde representative for current product specifications, instructions and options.

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Introduction:

Please take the time to carefully read all the instruction booklets provided with your new Kongskilde product. Once you are finished reading do not throw these guides out. Keep them for later review.

The "Spare Parts List" is referenced to by this guide. We suggest having it on hand during the assembly process.

Accessories may have their own instruction guide. Please read the relevant booklets for instructions on how to perform the installation of accessories. (Harrows, light kit etc.)

Be sure to read and understand the "Owner's Manual" before operating this equipment. It contains information about adjustment settings, operating instructions and safety precautions.

Please fill out and return the Owners Registration and Warranty Form provided in the Owners Manual to activate the warranty.

Pre-assembly Instructions:

Assembly of Kongskilde products should only be undertaken by authorized Kongskilde Dealers or an approved service provider with the necessary tools, equipment and training for safe assembly of the unit.

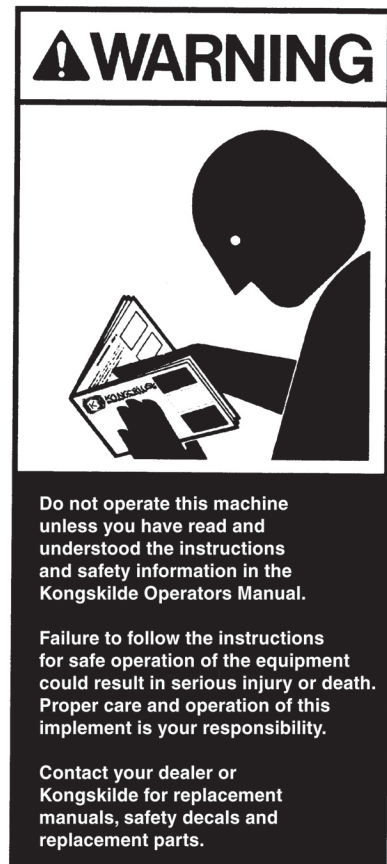
Frame components are heavy and somewhat awkward to handle. Proper lifting devices such as overhead cranes, boom lifts or mobile lift trucks should be used at all times when moving or handling the large frame components.

Proper steel assembly stands or support jacks should also be used to support the frame components, preventing them from falling. Recommended assembly tools include:

A full set of standard open or box end wrenches and sockets; assorted sizes of pin punches; a heavy hammer and/or sledge hammer; a pry bar; a large adjustable wrench; and pair of vise-grip or similar type pliers.

Optional tools could include an all purpose jack and a good quality air or electric drive impact tool with heavy drive sockets.

The assembly area should be large enough to allow workers and equipment to move around freely during assembly of the unit. For example; to fully assemble a 2900 Double Fold with 8m working width, a minimum area of 12M x 13M with an overhead clearance (wing fold) of 7M is needed (12M x 13M x 7M)



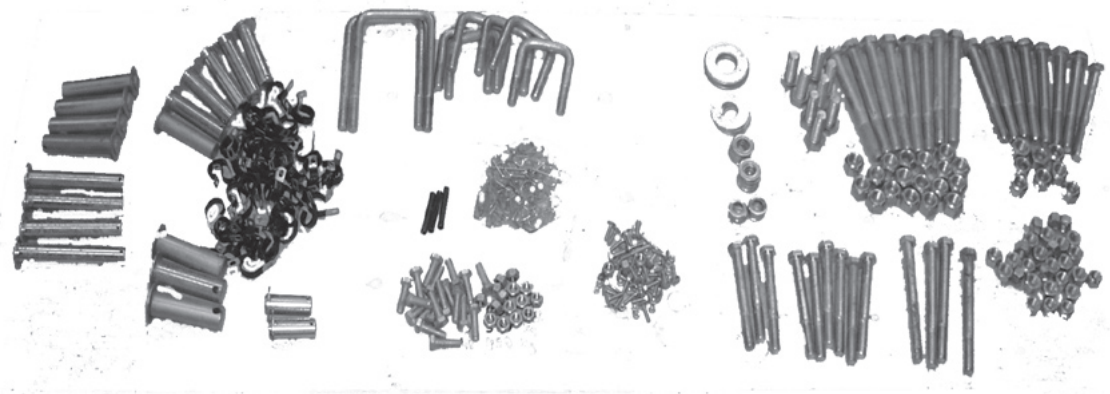
If the unit is to be assembled and folded indoors, additional clearance may be needed in the assembly area.

The ceiling height and the size of the building exit door must also be considered in order to safely fold and move the cultivator outdoor after assembly.

The floor area should be level and clean.

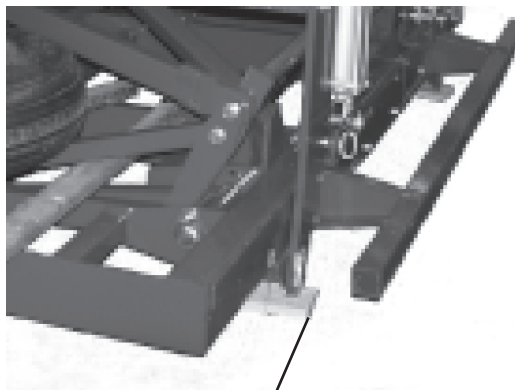
Be sure to check the packing slip to be certain everything is present.

Carefully unpack and lay out all of the fasteners and hardware. Sort and organize the hardware by type and size.



Fasteners sorted for ease in assembly.

Some of the components of the cultivator are very heavy. Extra care should be exercised when working with these parts. Be sure to properly support all large components, especially the frames. Proper supports protect the assembler, the product and the workspace. Improper supports can lead to accidents causing injury or death as well as damaging the product, which can make it difficult to sell. On this page and the next are examples of good supports for a frame.



Support here.

Supporting the frame prevents damage to the product.

Moving heavy parts can be hazardous. Use proper equipment for heavy lifting, and make sure that it is operated by certified technicians. Failure to do so can lead to accidents and injuries.

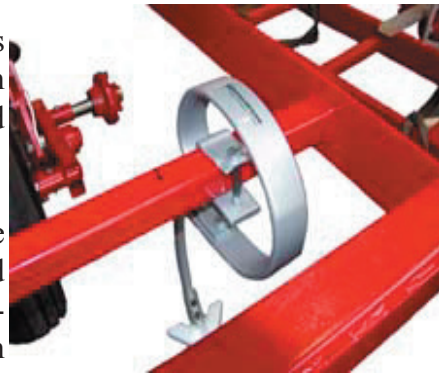
Utilizing proper supports stabilize the frame and make the assembly safer and easier. In the example below example steal saw horses are used to prevent swaying while the frame is supported by an overhead crane.

Safety should be the first concern of anyone assembling a Kongskilde cultivator. Such an assembly can be a safe project, if the assembler takes the appropriate steps, and applies a bit of common sense.

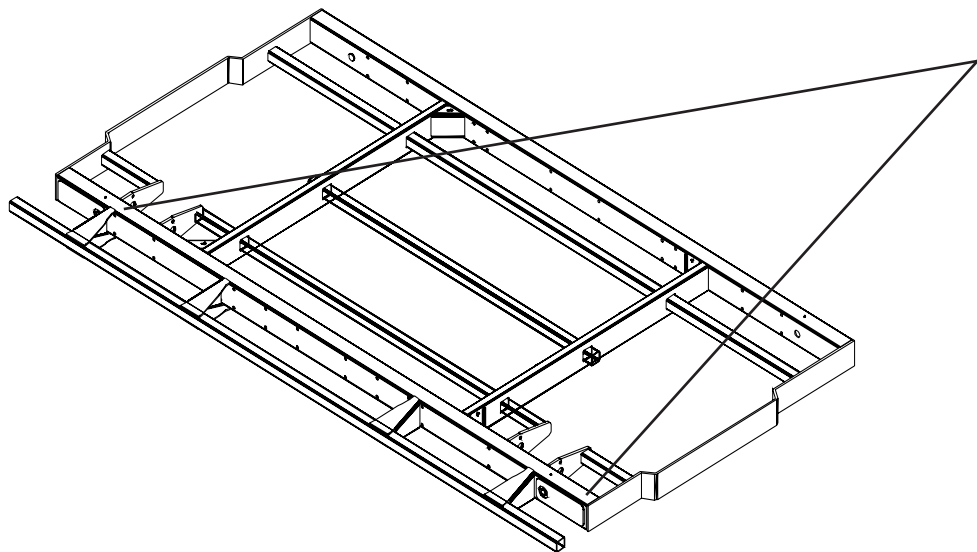
Tines:

Each tines must be assembled and then attached. Assembly is straight forward simply look up the exploded view of the tine in the "Spare Parts List." This contains all the information needed to assemble the individual tines.

Once the tines are assembled, they must then be attached to the toolbar. There is a booklet that came with the machine called "Tine Patterns." This booklet contains a number of different arrangement of tines design for different soil conditions. Chose an appropriate pattern for the conditions expected and then attach the tines where indicated by the pattern. The actual attachment is shown in the picture in the upper right.



An attached tine



Note: 10cm or wider sweeps can not be placed on toolbar behind the outer tandem wheels Sweep will interfere with tire. Use only 7 cm goose-foots here in these locations

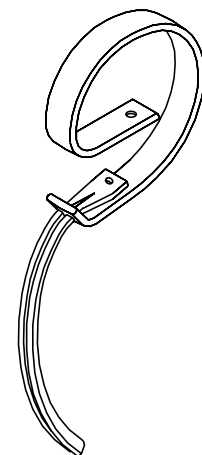
A warning for those attaching tines

For the VT 2900 the tines can be attached in a number of different patterns.

For the VTH and the Conser-tine the standard patterns are: 10cm (4") and 15.5cm (6"). These patterns are included in the tine pattern book.

These tine patterns show measurements from the centre line (marked with an M) of the cultivator frame to the centre of each tine. Once the tine has been placed, remember to tighten it.

Most tines can be assembled separately and later attached to the frame. The VFM tines is the exception (see next page).



The VTH Tine

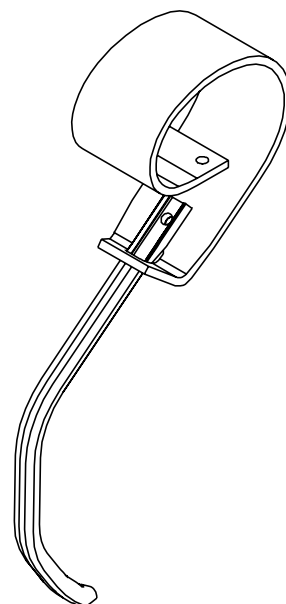
Assembly Information for the VFM Tine:

The VTM tines are larger than most other tines. For this reason this the stem of the tine will interfere with attachment of the tine to the toolbar. Hence, the tine can not be assembled prior to being attached to the toolbar.

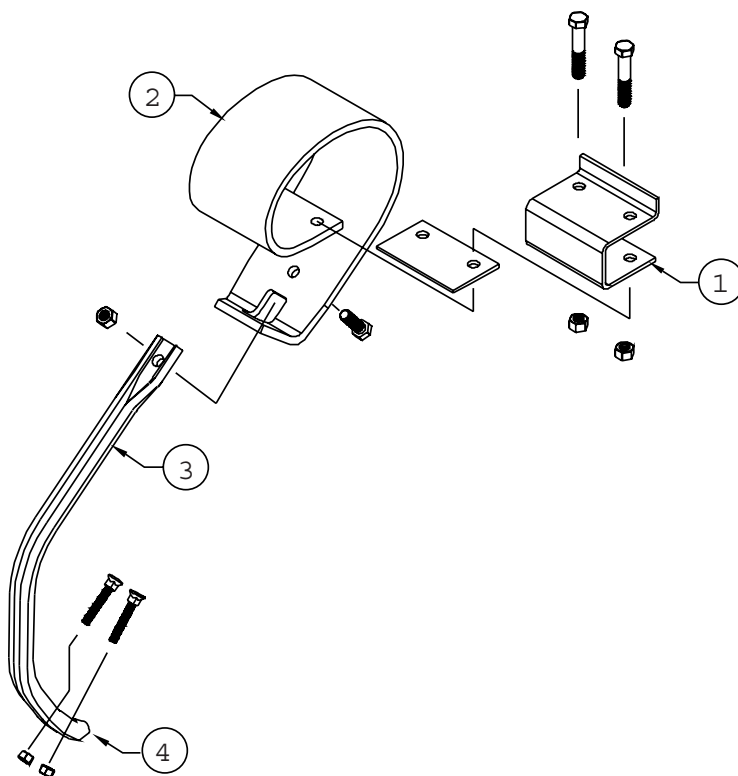
To avoid this problem assemble the tines in the following order. Begin by bolting the clamp to the toolbar (1 in the diagram below) in the position indicated by the tine pattern. Then attach the coil (2) to the clamp using the spacer. Next bolt the stem (3) to the coil. Finally fasten the sweep (4) to the tine. Check the “Spare Parts List” for the types of fasteners needed at each step.

Once the assembly is complete check the individual nuts and bolts to make sure they are tight.

The tine pattern for this tine is found in the tine pattern booklet.



The VFM Tine



Tine Assembly Diagram

Mounting Wheels on the Centre Frame:

The next step in the assembly is attaching the wheels to the centre frame. The top picture shows the wheel assembly and the lower picture shows the exploded view of the wheel assembly.



8000lbs. Center frame
Wheel assembly.

Wheels need to be installed in narrow setting; offset towards wheel arm.

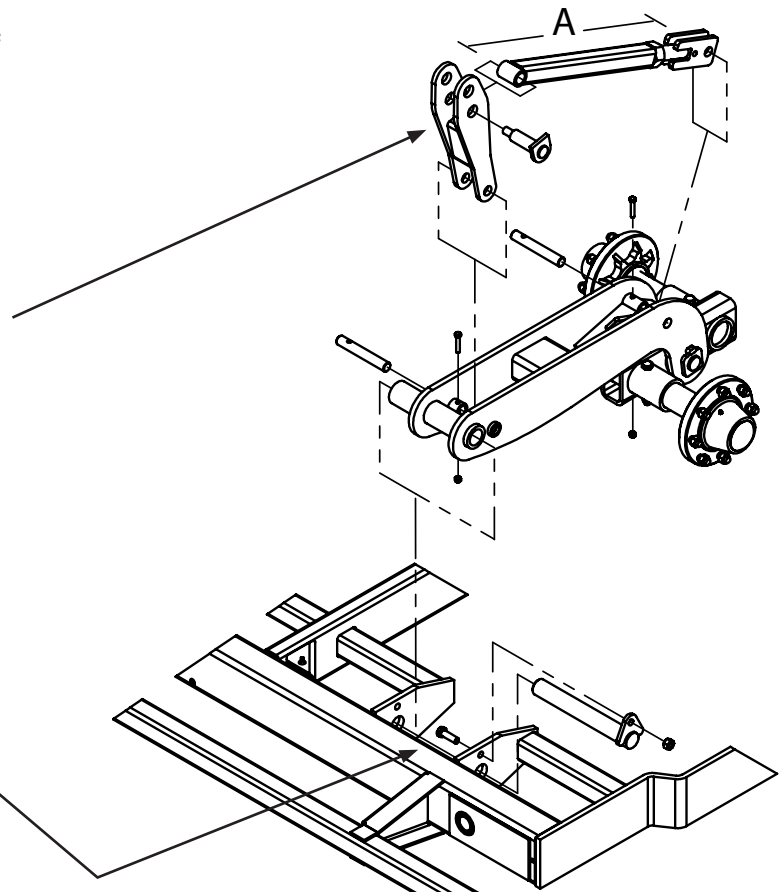
The linkage length from hole center to hole center "Dimension A" should be set at:

A = 28.25" (71cm) for 20" clearance tines.

A = 28.75" (73cm) for 24" clearance tines.

IMPORTANT: Tower linkage needs to be attached to wheel arm before wheel arm is placed into frame.

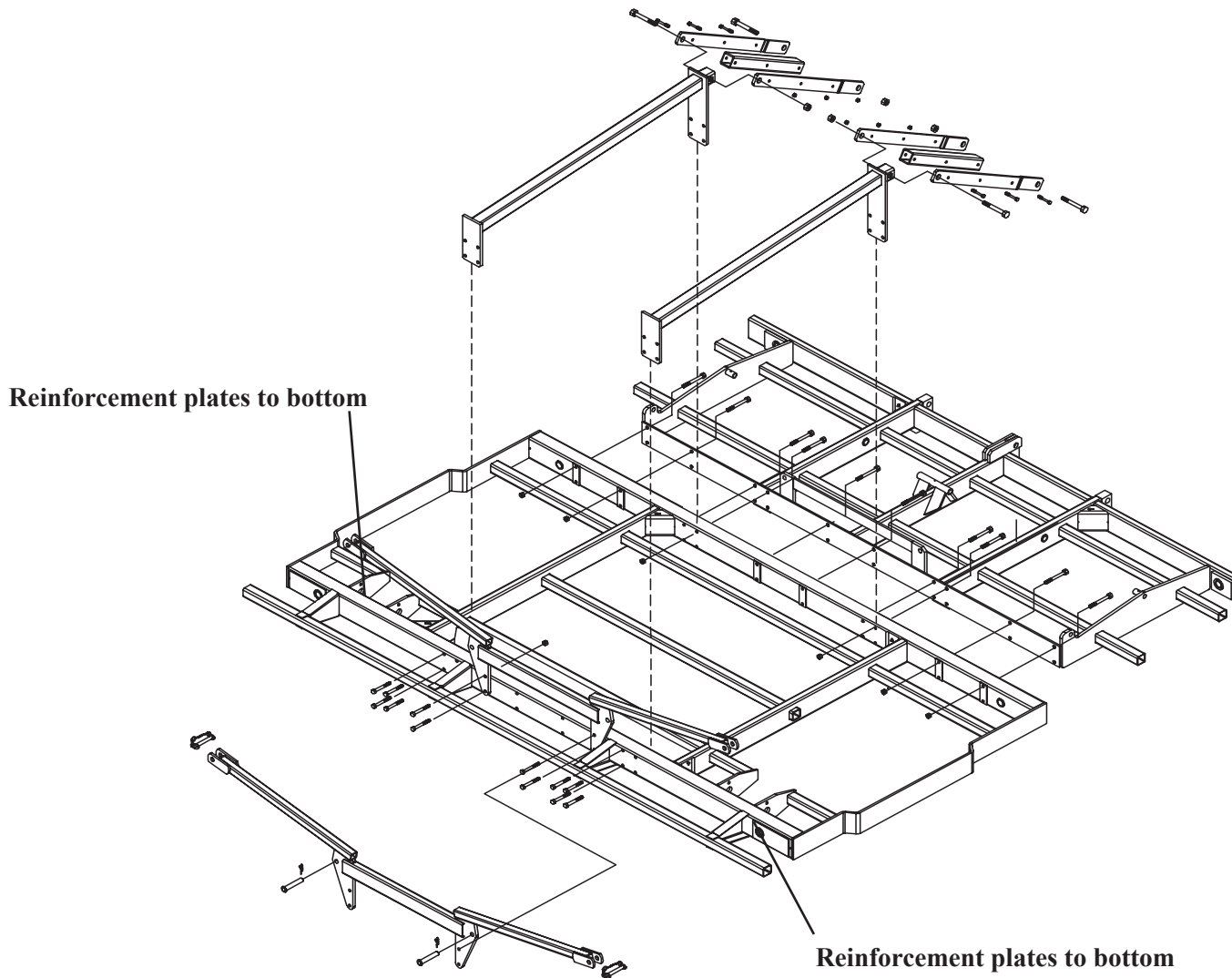
IMPORTANT: Insert 5/8" x 2" bolt into frame before placing wheelarm. Bolt must be inserted from inside with threads toward the outside of the frame.



Assembling the Centre Frame:

The diagram below shows how to assemble the centre frame.

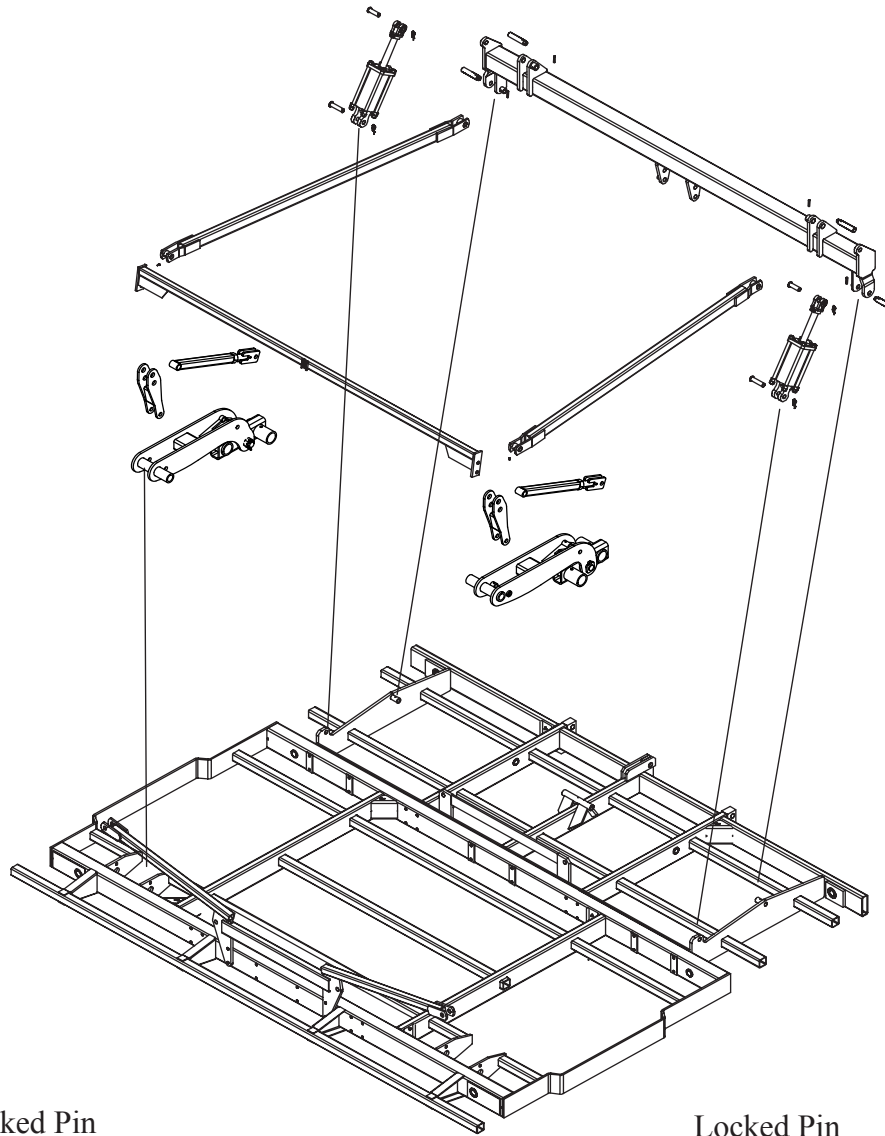
***** The Center Frame has a top and bottom, Be sure the reinforcement plates at the top of the wheelarm connection are on the bottom of the frame**



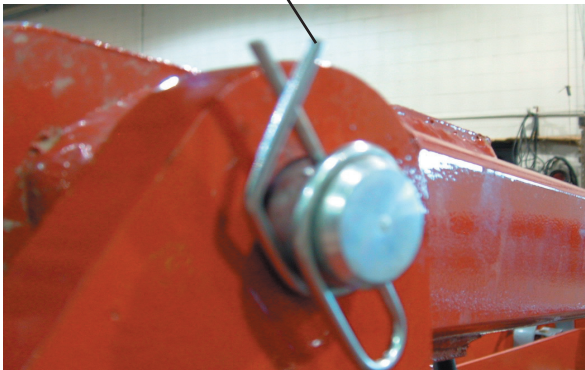
The front frame attaches to the rear frame as shown above. Use the bolts listed in the "parts book". Be sure to bolt both top and bottom holes in the front and back. Remember to tighten them well.

Self Levelling Linkage & Ring Cotter Pin:

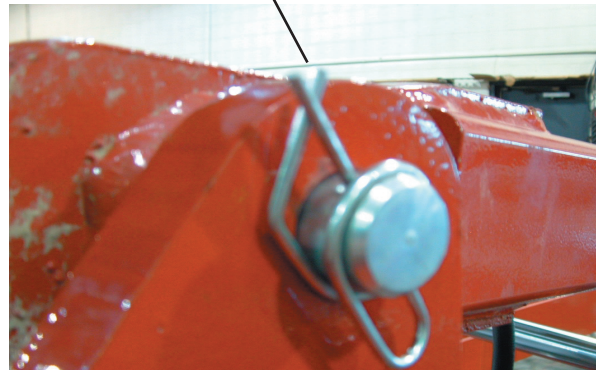
Check the assembly of the self-levelling linkages and make sure all of the clip pins are installed and locked.



Unlocked Pin

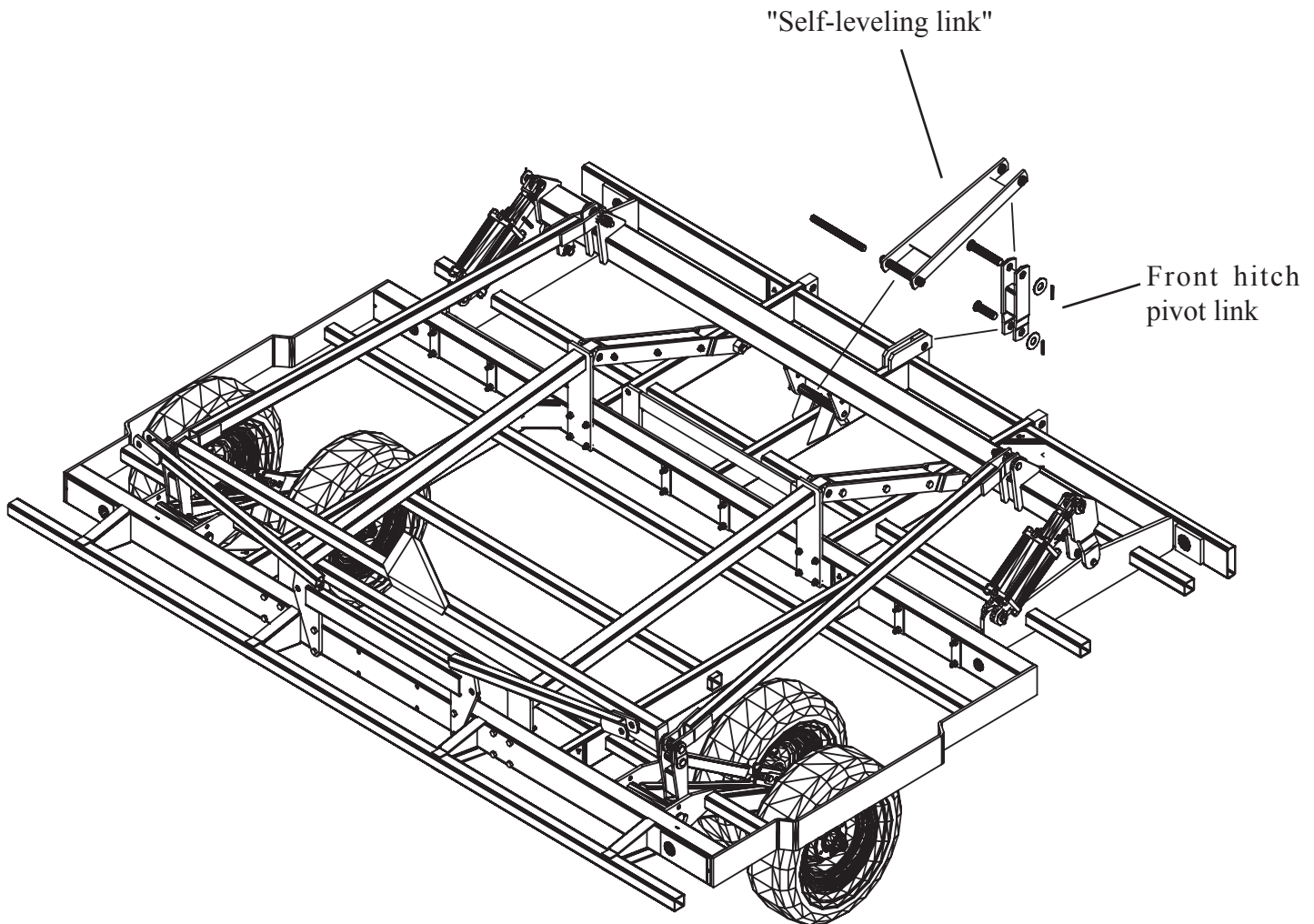


Locked Pin





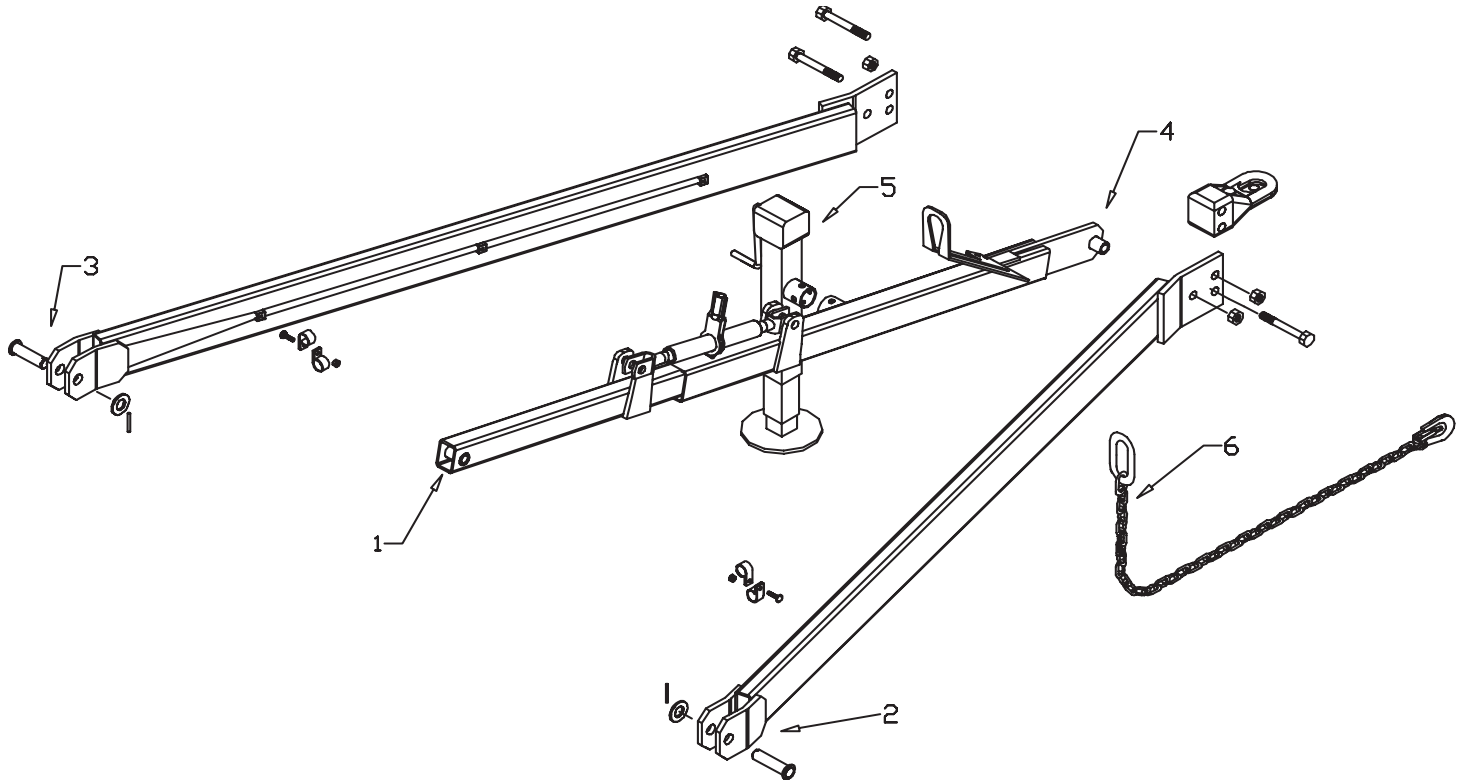
Detail view of front linkages on the centre frame.



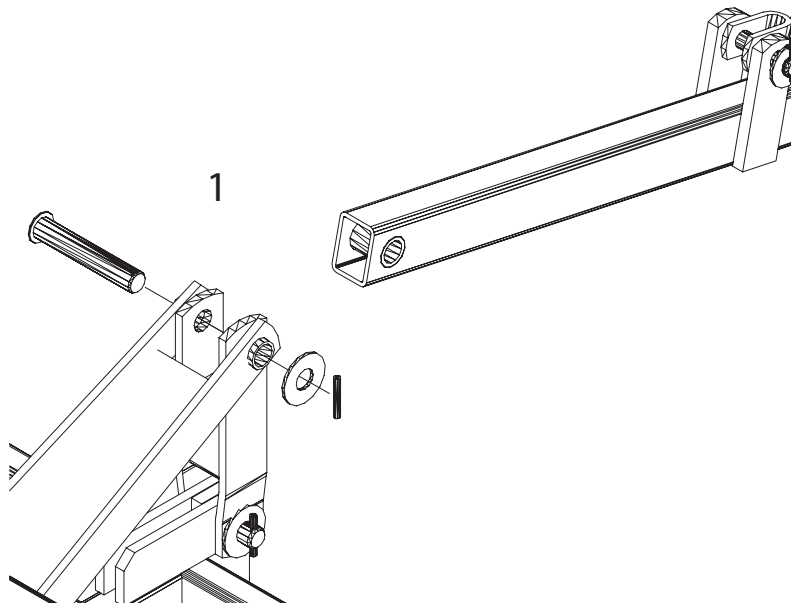
Hitch Assembly

Gather the components and begin assembling the hitch with the hardware described in the spare parts list.

Follow the numbers for the order of assembly on the diagram below and make the connections with the pins and bolts provided.



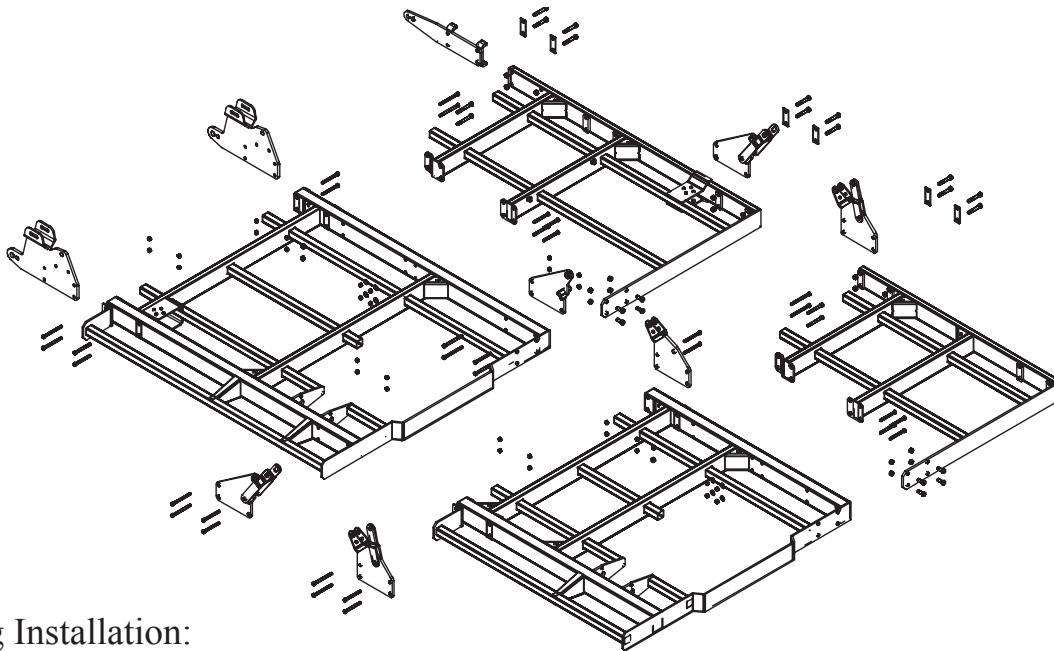
The hitch top link, pivot link and self levelling link are all connected with the same pivot pin at position 1 as shown below. To do this you will have to remove the lock pin and slide the pin to one side to allow the hitch top link to be connected. The top link can be lengthened or shortened as necessary to position the hitch at the tractor drawbar height for easier assembly.



This technical drawing shows a mechanical assembly with three numbered callouts: 1, 2, and 3. Callout 1 points to a bracket or support structure. Callout 2 points to a small circular component, possibly a pin or a small wheel. Callout 3 points to a larger, more complex component, possibly a pulley or a larger wheel. The drawing is a black and white line drawing, typical of technical manuals.

Hinge Assembly:

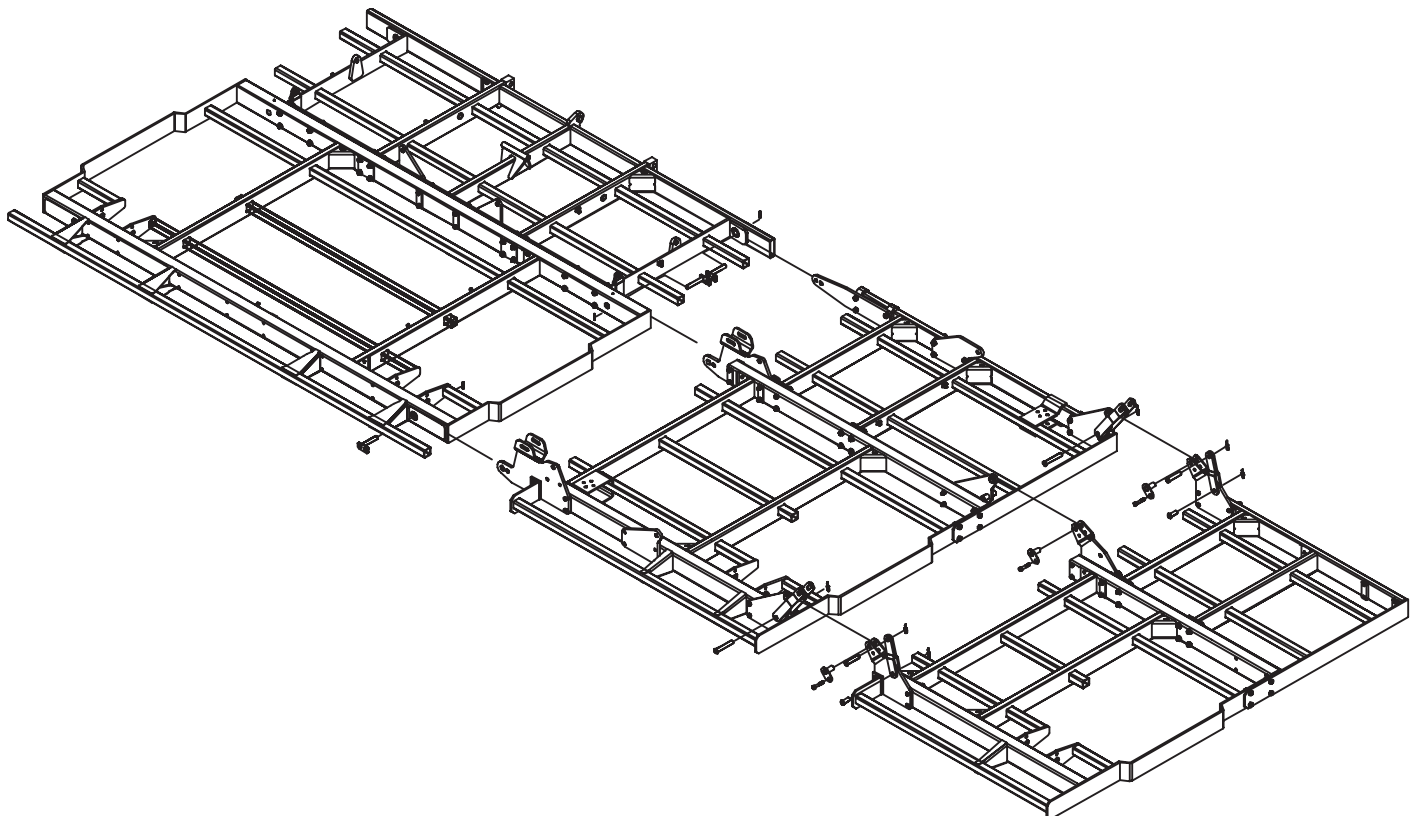
These diagrams show how to assemble wings and how to attach the hinges.



Wing Installation:

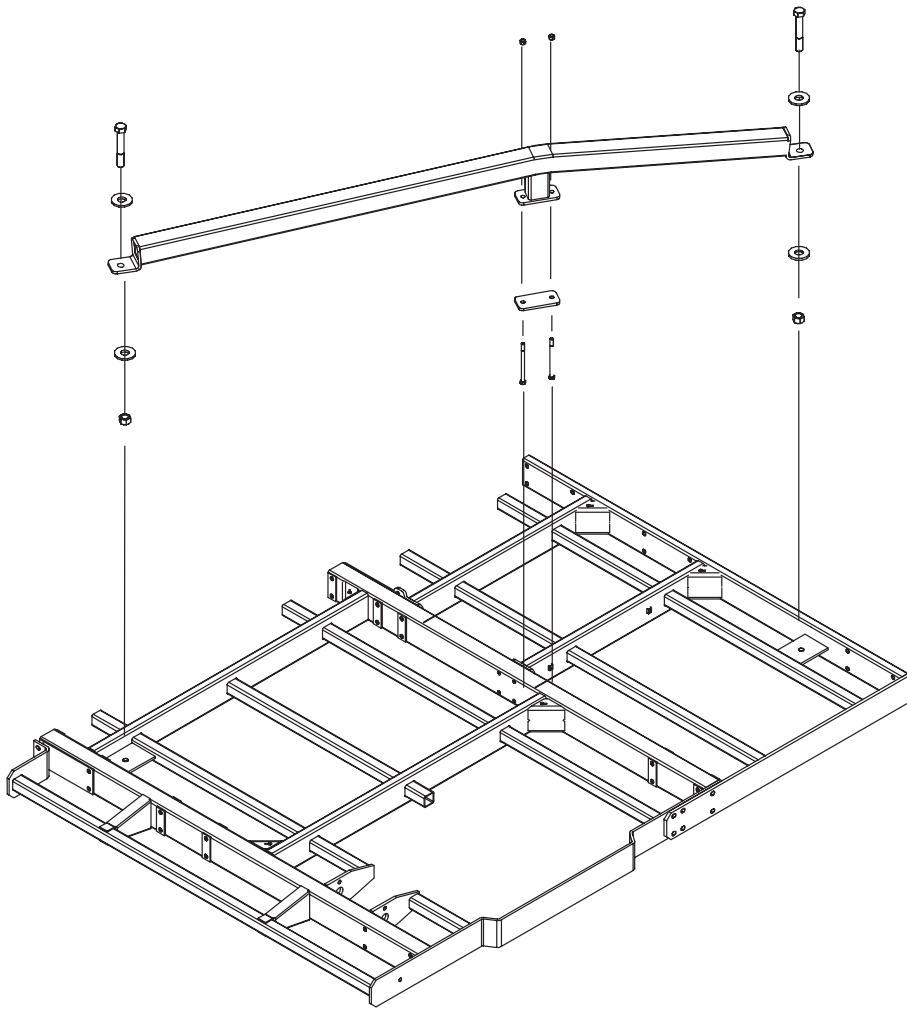
The picture below shows the centre frame and the two sections of one of the wings of the cultivator. The double fold cultivator, as you can see from the picture, folds its wings in two locations to enable this large cultivator to present a small aspect when transporting.

The wings are attached at the hinge points. The second image below shows where the hinges are and how to bring the frames together.



Cross Brace Installation:

The cross brace is present on the inside wing section for 40' (12M), 43' (13M), 46' (14M) and 50' (15M) machines. The cross brace provides greater rigidity on larger wings.

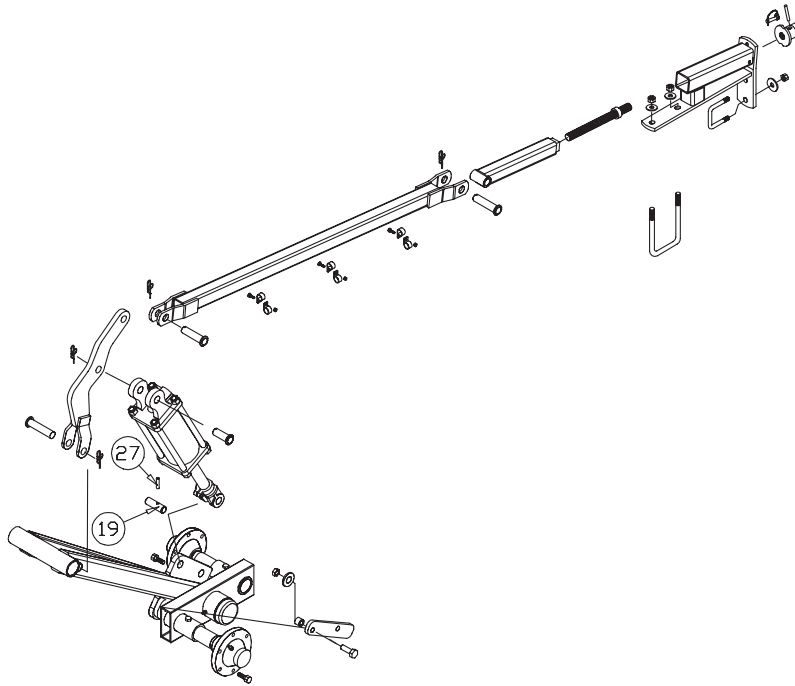


When Positioning the cross brace on the inside wing hand start the nuts on the all bolts and tighten in a even manner. It is normal to have to draw down the cross brace end while tightening the bolts.



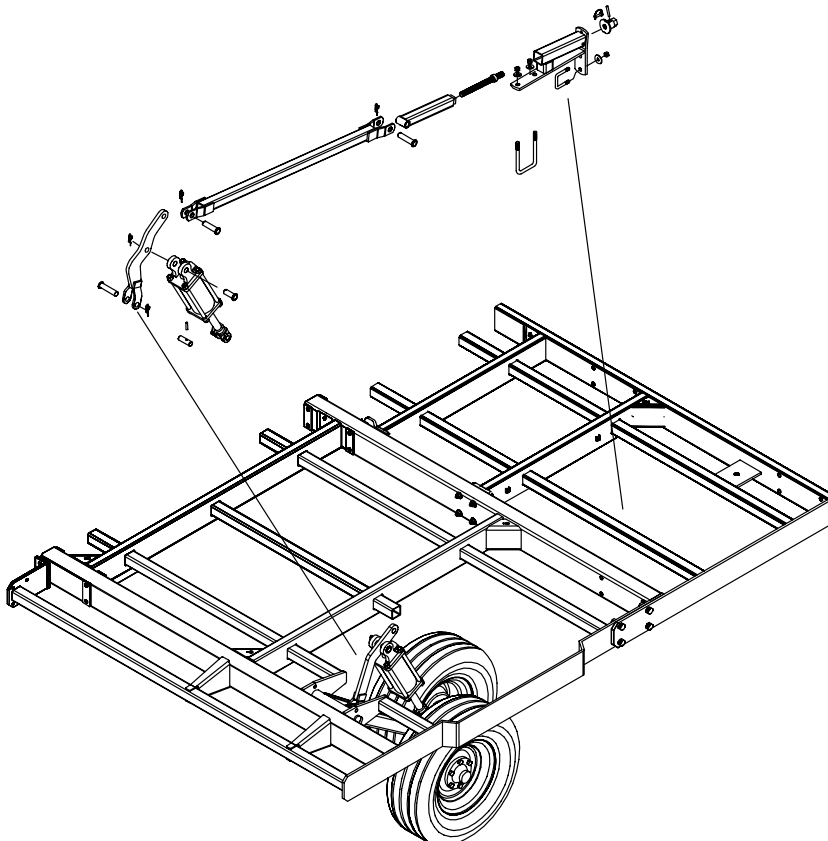
Wing Wheel Linkages

When the wing frame is fully assembled and lowered to the ground resting on the tines, gather the components for the wing tandem wheel and wheel adjustment linkages.



Mount the wheels on the hubs and then lift the complete tandem wheel assembly into the wing frame. Apply a little grease or machine oil to the axle pin to ease assembly and then insert the pin through the holes in the wing frame and wheel arm.

This step may have been completed at the factory prior to shipping.

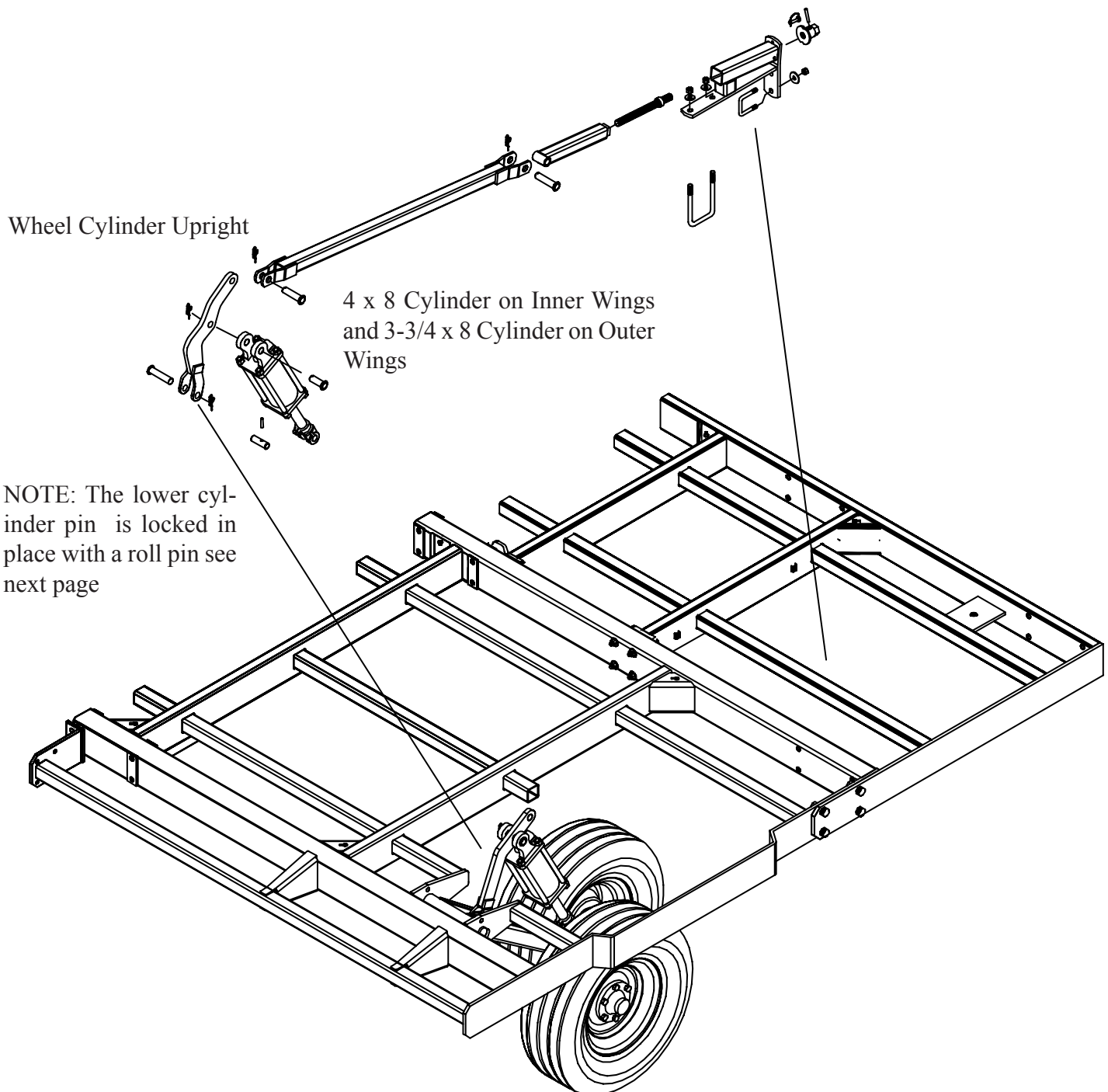


Mount the wing wheel tower and wheel lift cylinder with the pins, bolts and nuts described in the parts list. The wheel cylinder upright attaches to the upper hole in the wheelarm tube with the pin and clip pin supplied.

Note that the wing wheel lift cylinders are different sizes. One is 4 x 8 the other is 3-3/4 x 8.

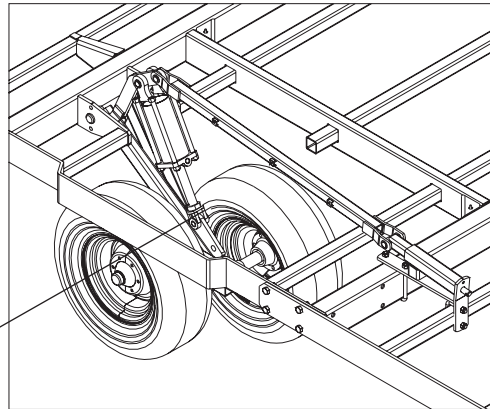
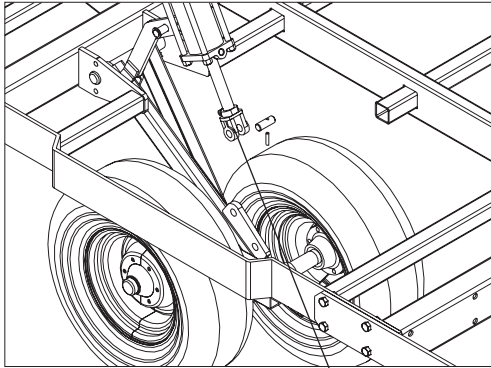
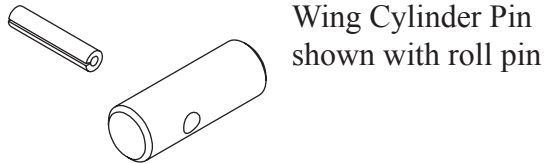
Check the hydraulic layout in order to make sure you install the cylinders on the correct wings of the machine. The 4 x 8 cylinders are installed on the inner wings and the 3-3/4 x 8 cylinders are installed on the outer wings. The ports on both cylinders should face to the front of the machine.

The butt end or top of the cylinder is connected to the wheel upright bar with one of the pins and clip pins supplied. The rod end clevis connects to the lug on the lower end of the wheel arm so the cylinder extends and retracts with the rod pointing down. The clevis pin is special and has roll pin to secure it in place, see next page for details.

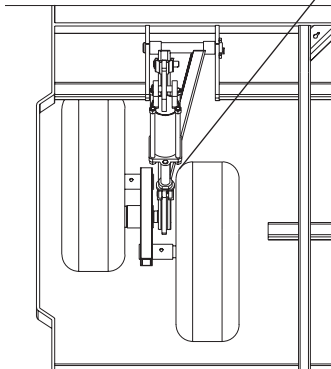


Wing Cylinder Pins

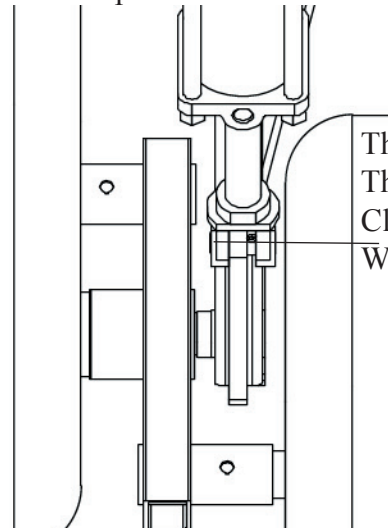
Install the wing cylinder pin such that it keeps the cylinder away from the frame as shown.



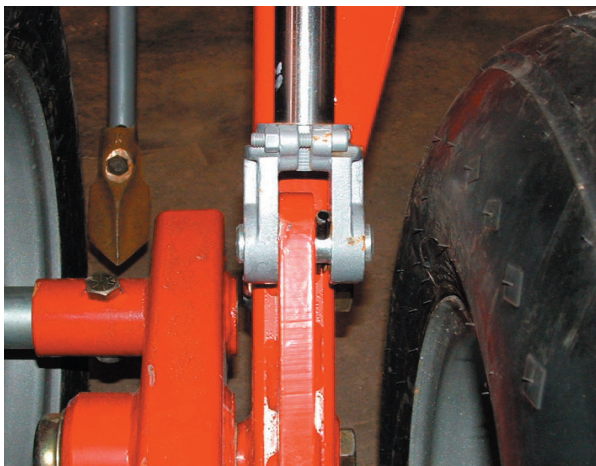
Place wing cylinder pin in these locations



Enlargement of picture to left



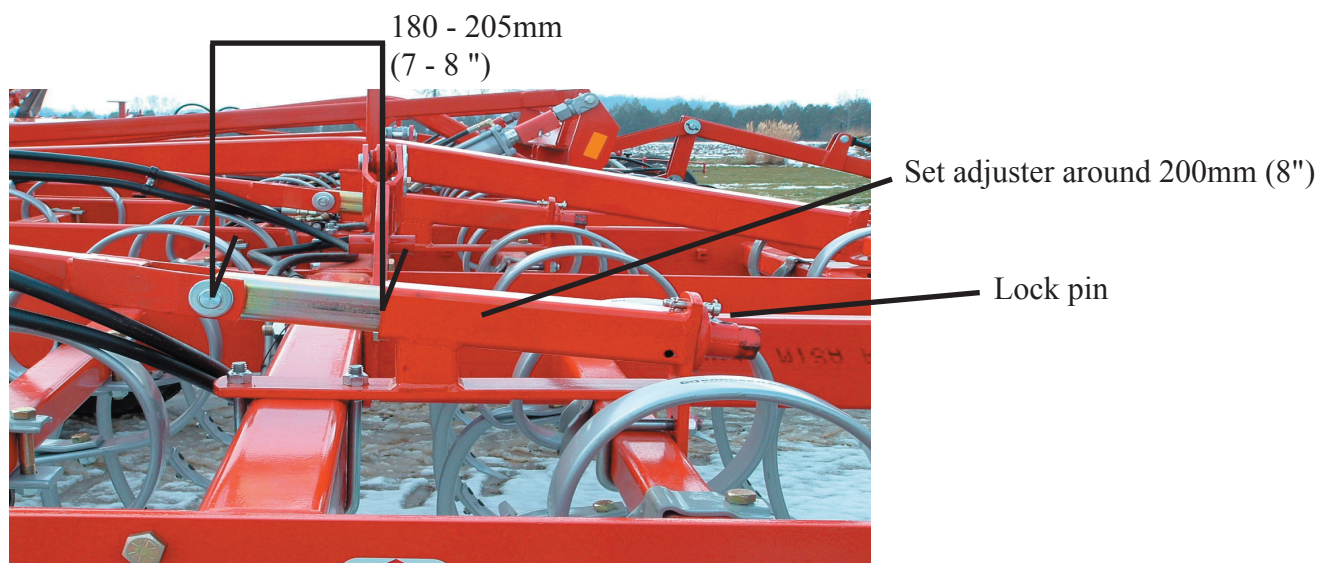
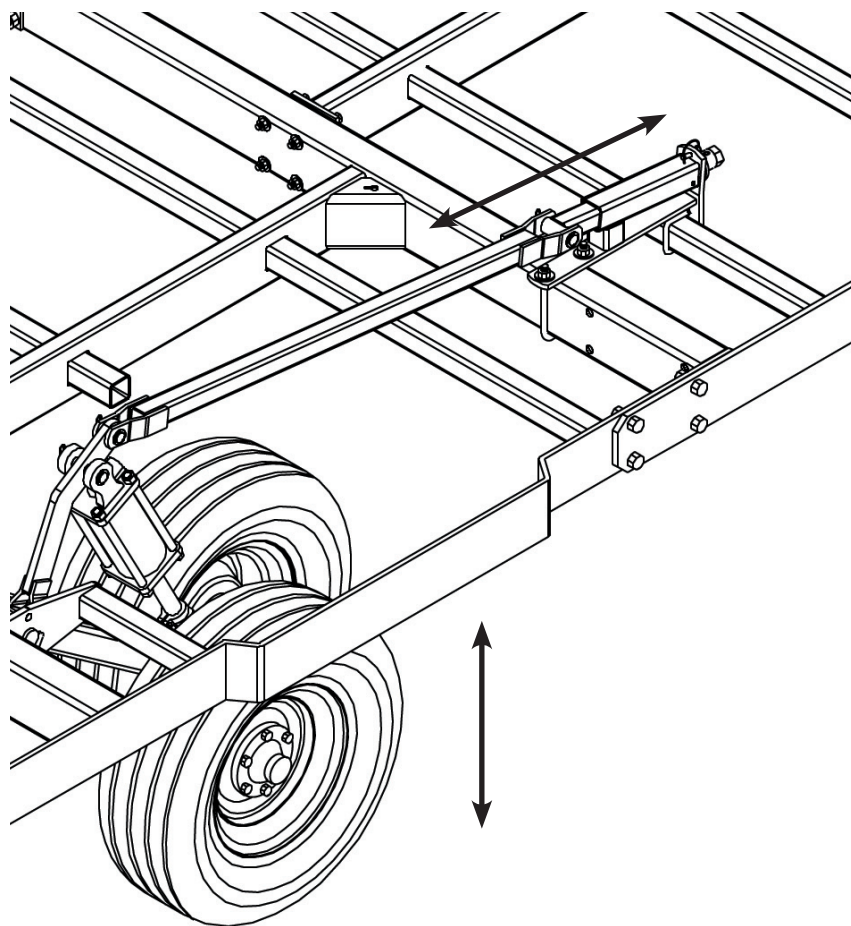
The roll pin fits inside
The clevis keeping the
Clevis away from the
Walking tandem arm.



Adjustment Point Attachment:

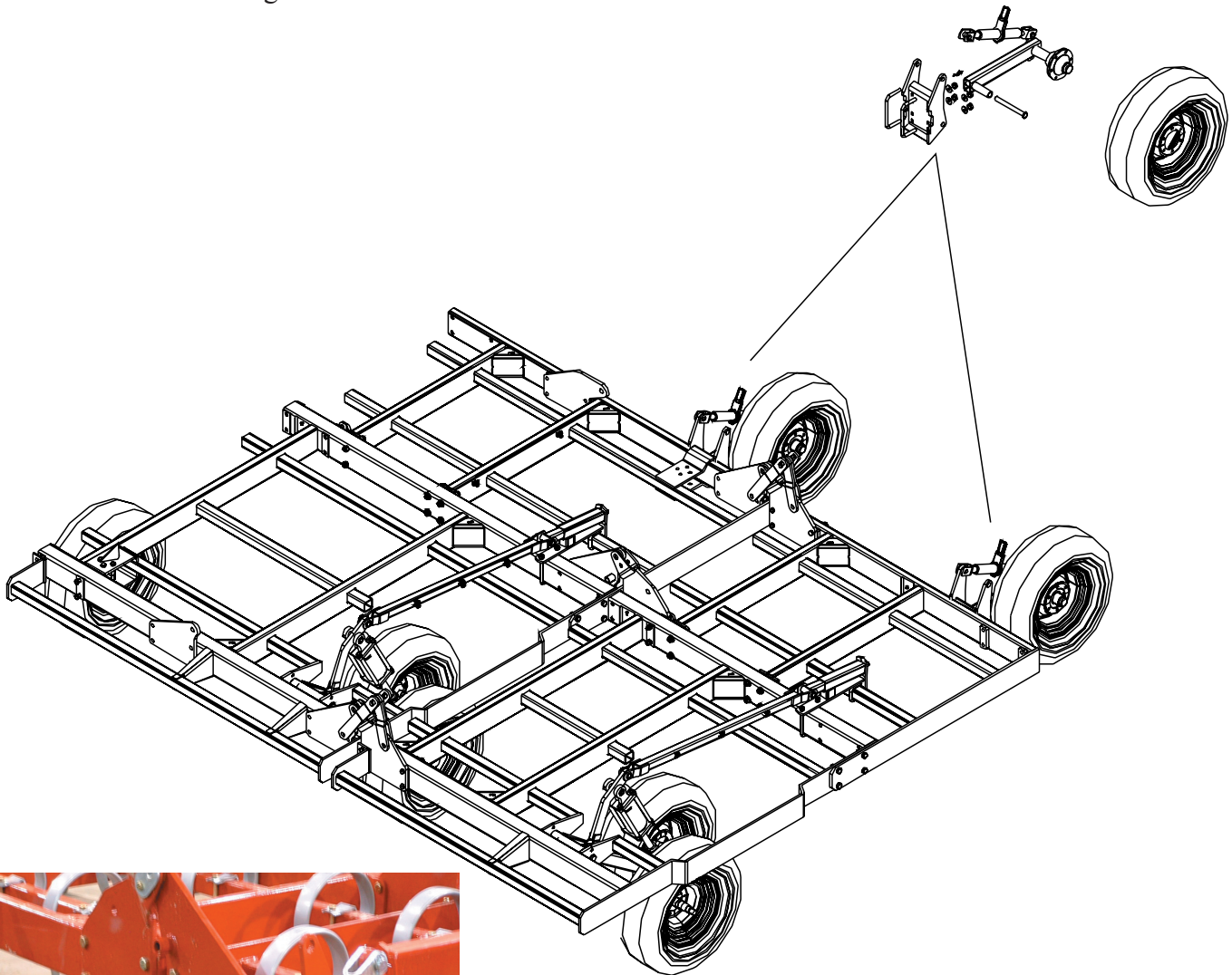
Attach the adjustment arm as shown below.

Extending the adjustment arm raises the wheels and lowers the body. For more information on adjustments refer to the "Owners Manual".



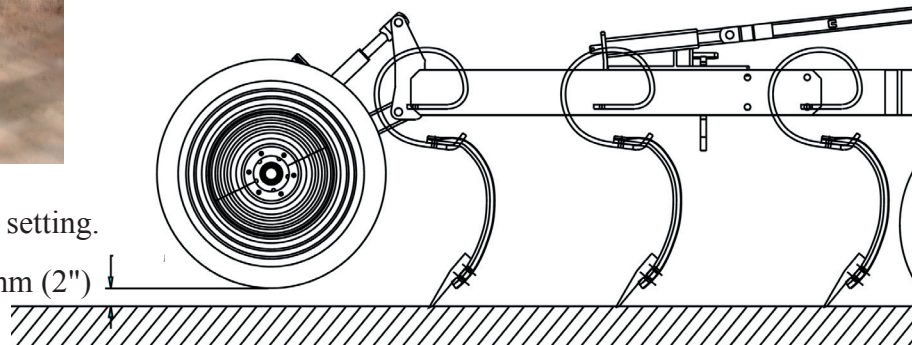
Mechanical Adjust Wheel as Front Gauge Wheel:

A mechanical adjust wheel can be attached to the wings. The part is symmetrical, and can therefore be attached to either wing. The method of attachment is shown below.



Approximate setting.

50mm (2")



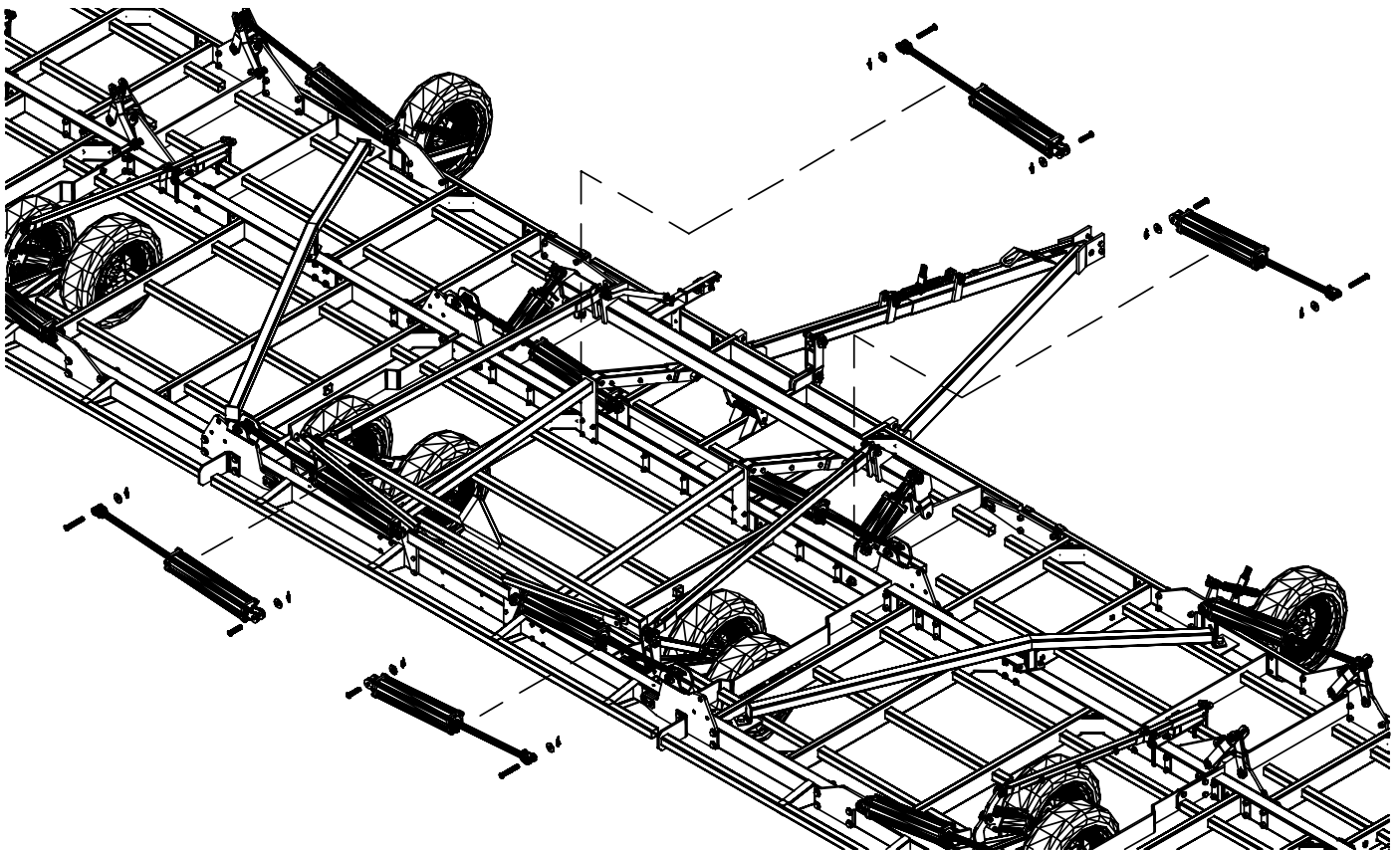
Fold Cylinders Inner Wings:

When the wings are attached to the centre section the wing fold cylinders fittings can be installed.

The hydraulic assembly is different for the 13' (4m) centre machines so make sure you have the correct hose layout diagram for the machine model you are assembling.

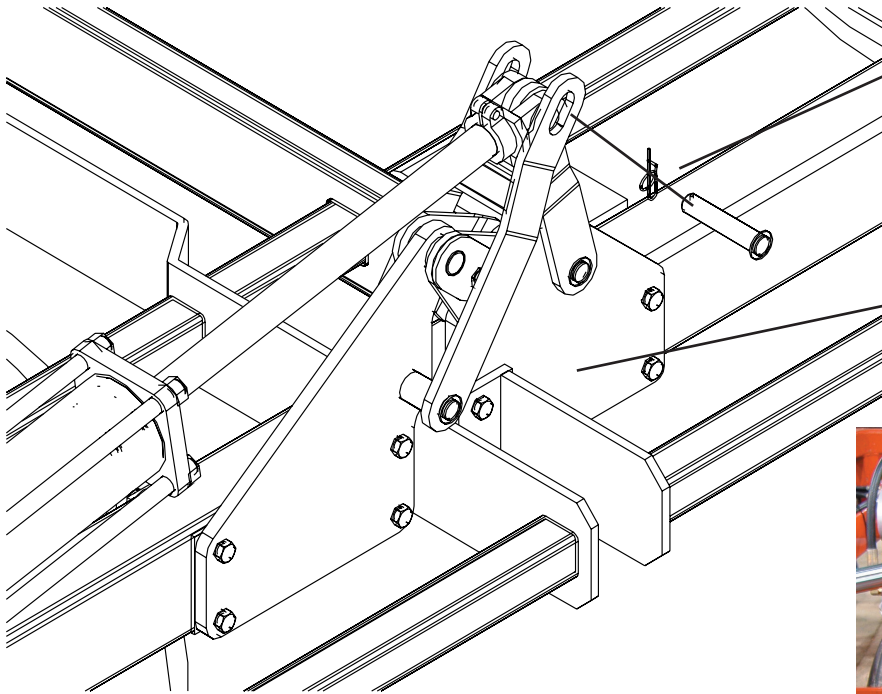
The cylinder base clevis is attached to the centre fold plate and the rod clevis is attached to the slot in the folding hinge brackets on the inner wings. (This allows the wing to float up and down in the field when the cylinders are fully extended.)

Install the rear folding brackets and cylinders as shown on the assembly diagram below and follow the Hydraulic Hose layouts carefully for proper assembly of the hoses and fittings shown later in this booklet.



Outside Wing Fold Cylinders Installed

Cylinder in extended position

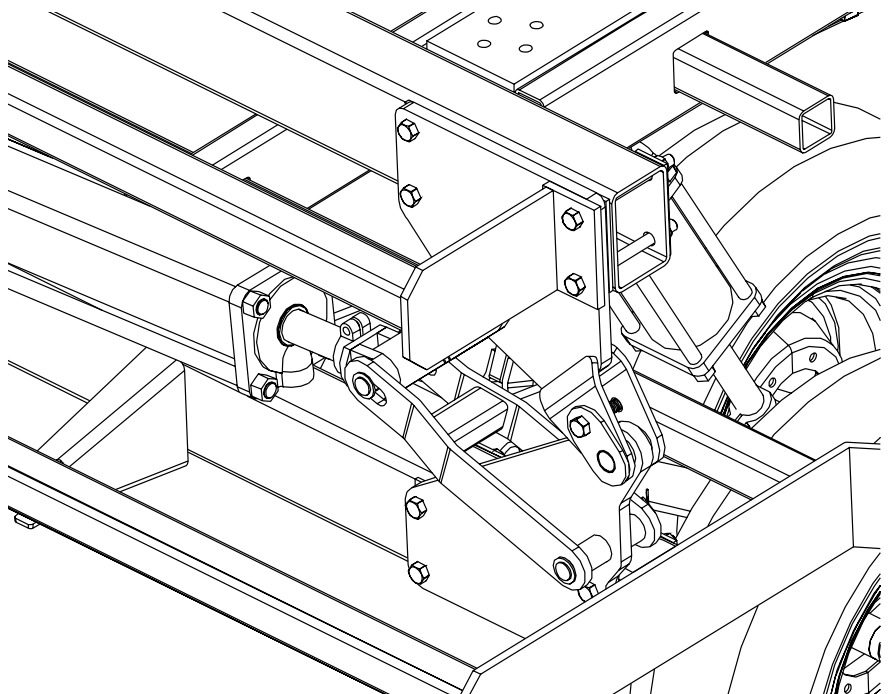
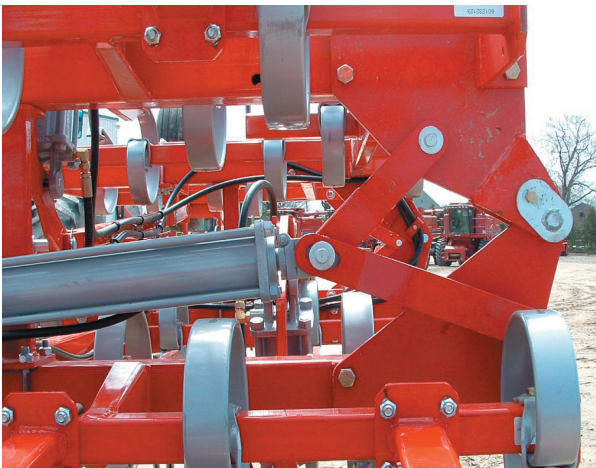


When installing the outside fold cylinder pin, remember to attach the clip pin.

Bolt the hinge plate to the frame.



Cylinder in folded position

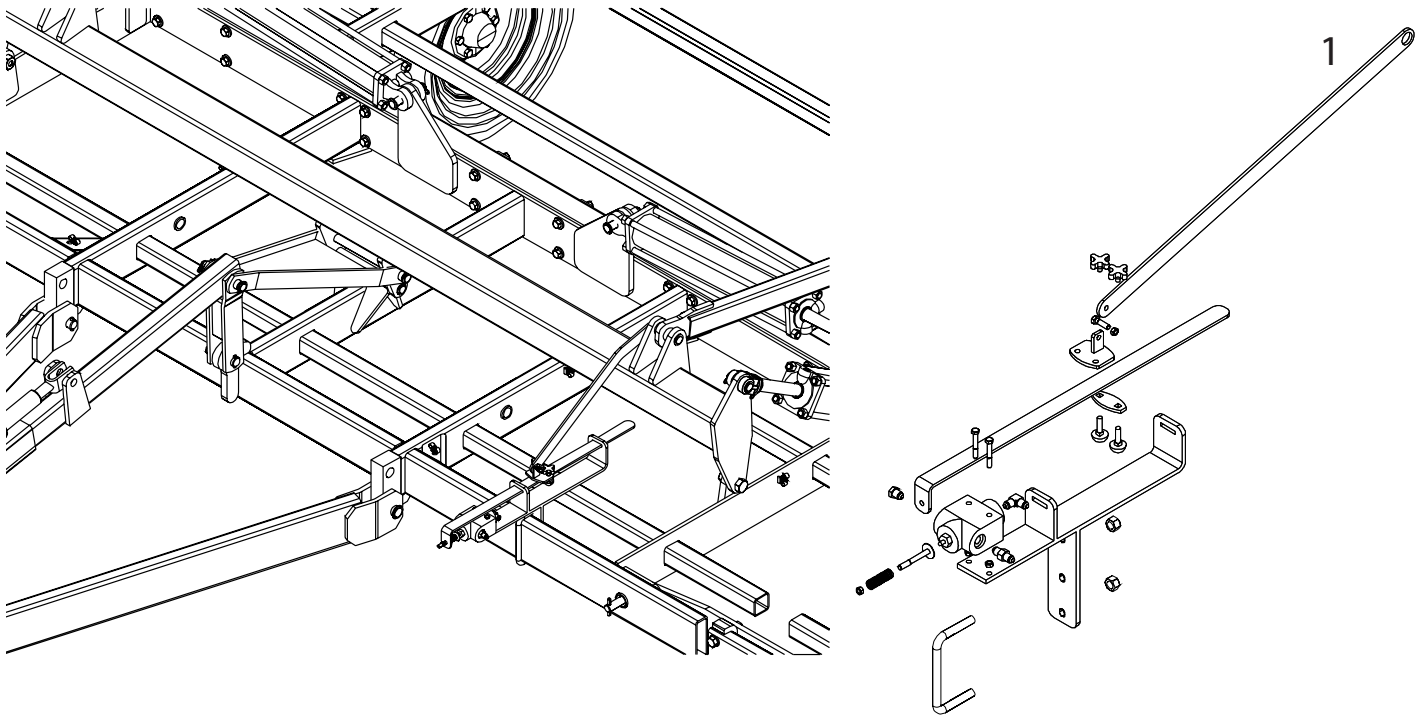


Single Point Hydraulics Instructions on 2900 Series Cultivators

1 - Assemble and install single point hardware as shown on drawings below. Note that item #1 is fastened using the 1" pin already in place on the cultivator self leveling link.

4 - Follow the hose layout diagram located in the parts book.

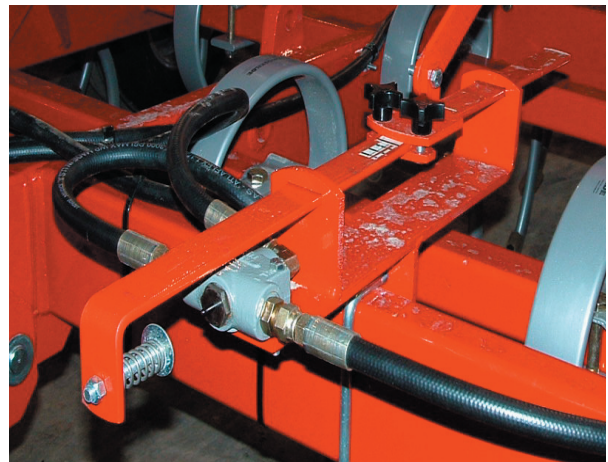
5 - Once all hoses and fittings are tightened, loose the torque knobs (item#6 shown in the diagram from the spare parts list below). Lift the machine completely off the ground and hold for 5-10 seconds to remove any air from the system.



As the cultivator is lowered, the spring loaded 'striker' bolt approaches the valve.

Once the bolt reaches the valve, no more oil from the tractor may pass. This sets the working depth.

The point when the valve is engaged may be adjusted using the torque knobs, and slide plate.

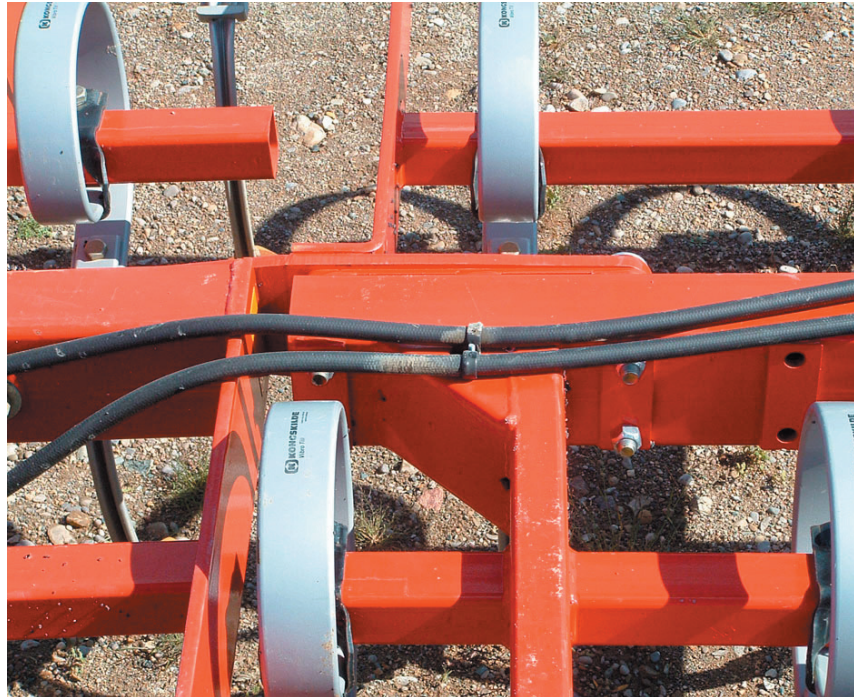


Hydraulic Assembly Information:

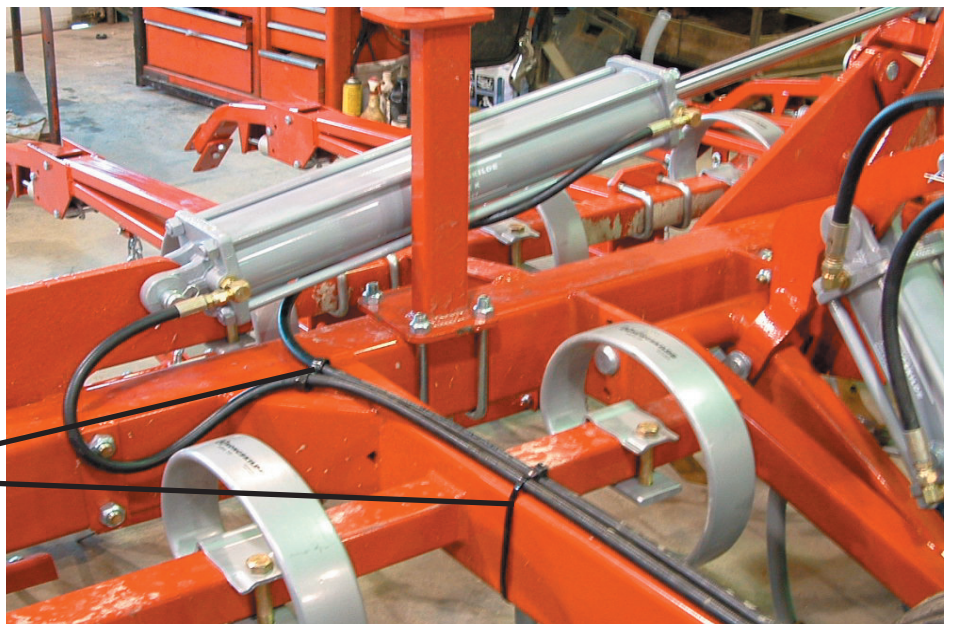
For proper installation of the hose lines and fittings refer to the hose layout diagram provided later in the booklet. The hydraulic hose lines and fittings are provided in the hose kit. Secure the hoses to the frames with the hose clamps, carriage bolts and lock-nuts provided.

IMPORTANT NOTE:

DO NOT PLACE HOSE LINES ALONG FRAME IN THE ROTATIONAL PATH OF THE FOLDING HINGES AS HOSES CAN BECOME PINCHED DURING FOLDING AND UNFOLDING OF THE WINGS.



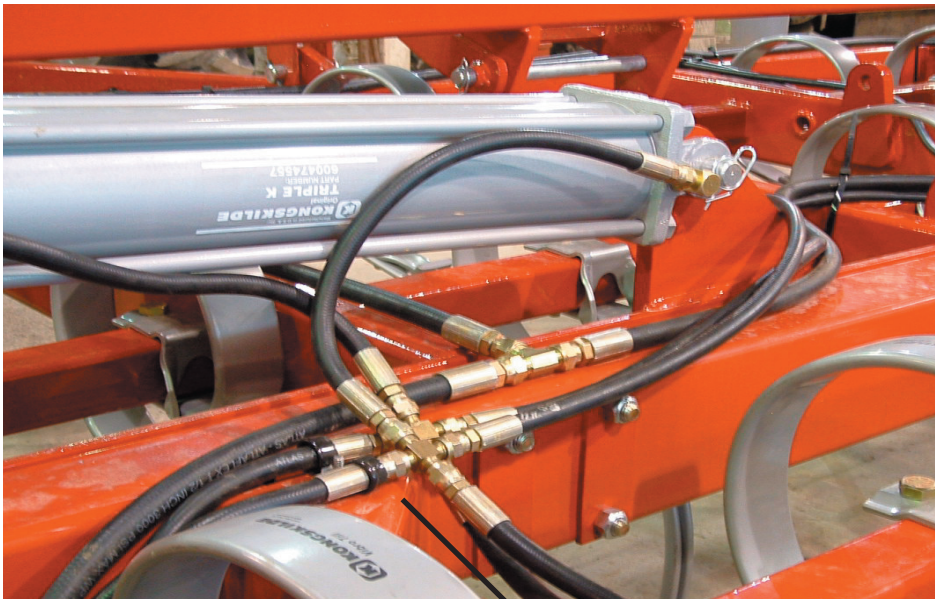
NOTE: Using the tie straps and hose clamps provided. Fasten the hoses to the wing frame and feed the cylinders from there.



NOTE: Route the fold hoses under top frame leg. To avoid any kinks or pinches on the hoses.



Charge the wheel lift hydraulics by fully extending and retracting the wheel lift hydraulic cylinders several times. Hold the hydraulic lever open at the end of the stroke to purge the air from the system. The wheel lift cylinders are re-phasing type cylinders and must be fully extended at the end of the field when turning to equalize the oil pressure across the system. This will ensure that the cultivator raises and lowers evenly and stays at a uniform working depth when working in the field.



Example of what the hydraulic cross section should look like at the front fold cylinders.

The wing fold cylinders must be charged with oil before attempting to fold the cultivator. Disconnect the cylinder rod clevis from the fold bracket and place a block under the cylinders as shown.

Connect the hoses to the tractor or portable hydraulic unit and stroke the wing fold cylinders in and out several times holding the lever at the end of the stroke to remove the air from the system and ensure the cylinders and hoses are full of oil. Remove the block and reconnect the cylinder to the fold bracket with the cylinder pin, washer and clip pin.

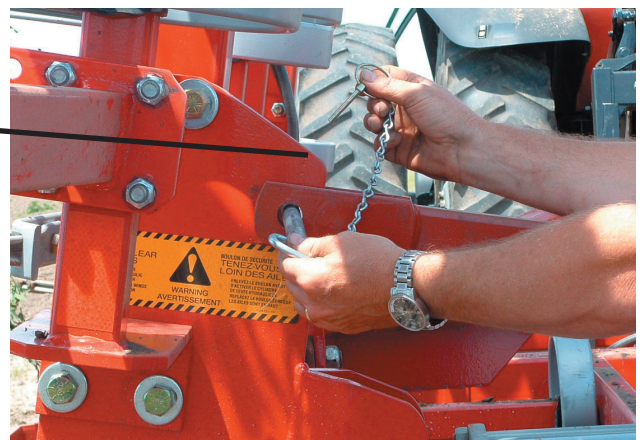


Always insert the transport lock on the master cylinder when ever the cultivator is placed in the raised position for transport, maintenance or storage.

Secure with the lock pin and clip provided.

Always insert the wing lock pin whenever the wings are in the folded position for transport, maintenance, or storage.

Be sure to remove the lock latch before unfolding the cultivator.



Installing the Product Identification and Safety Decals:

1) Install the Kongskilde Logo decals #600475237 and Vibro-Till 2900 decals #600475251 on both sides of the draw tongue and wing frames as shown.

KONGSKILDE & 2800 Vibro Till on both sides of hitch



KONGSKILDE & 2800 Double Fold on both side of wing frames



2) Install a Kongskilde Decal #600475113 on both sides of the centre frame side bar as shown below.



3) Install Yellow Safety Reflectors #600475131 on both front corners and sides of the 2800 centre section.

YELLOW REFLECTORS
on the side of the pivot arm
and the front corner of the centre frame.



4) Install Red Safety Reflectors #600475132 on both rear fold brackets and sides of the 2800 centre section.

RED REFLECTORS on Rear
Hinges and side bar



5) The 3 safety decals #600475170, 600475169 & 600475160 are located on the front frame between the three point hitch connection.

ELECTROCUTION
DANGER

TOWING SAFETY

TIPPING HAZARD



6) Install the Wing Fold Lock Warning decals #600475176 on the top of the centre section frame tubes near the wing fold lock plates so it can be viewed with the wings in the folded or unfolded position as shown below.

Wing Fold Lock
Warning Decal



7) Install the WING FOLD SAFETY DECALS #600475039 on the front and rear main frame tubes on the 2900 wing frames. The decals should be centred on the tube at about eye and tractor level so they can be read clearly when the wings are folded as shown.

WING SAFETY on
front wing frame tube

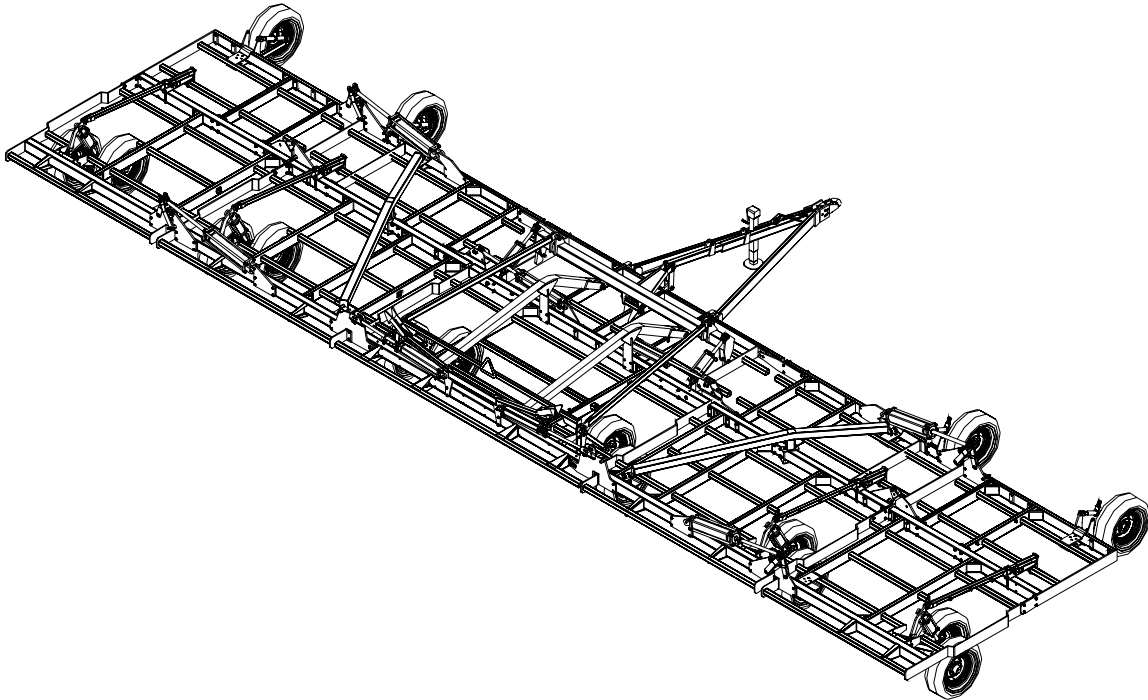


On Completing the Assembly:

When the cultivator frame is fully assembled check all that nuts and bolts are secure.

Check the hose layout and hydraulic connections according to the hydraulic diagram.

Be sure to read the Owners Manual before attempting to fold or operate the cultivator. The Owners Manual provides important instructions and safety precautions that must be followed before attempting to hook up and move the cultivator after assembly.



If you have purchased optional levelling attachments such as the combi-harrows shown on the cultivator below, refer to the Manual provided with the Harrow Assembly for proper installation and adjustment of the attachments.



[illegible]