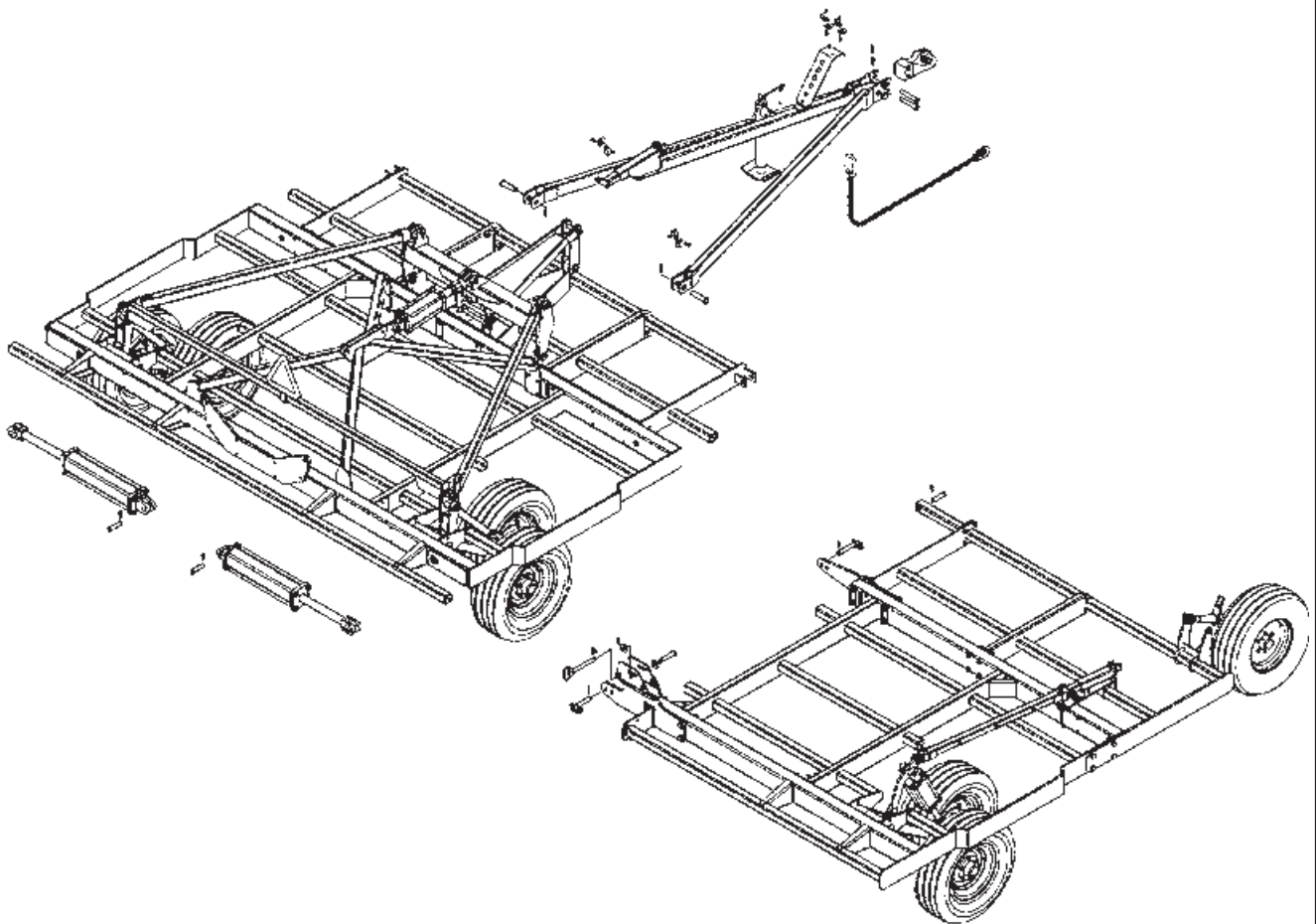




# 2800 VIBRO-TILL FIELD CULTIVATOR

Kongsilde  
2800 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.

## ASSEMBLY INSTRUCTIONS

## Introduction:

Please take the time to carefully read and review all instruction booklets provided with your new Kongskilde product.



These instruction booklets have been developed to assist you in assembling, adjusting and maintaining your new Kongskilde Product. To obtain optimal performance over the lifetime of the product read and follow these instructions carefully.

A copy of the Spare Parts List has also been provided in order to identify the components and hardware needed for each step of the assembly and to help you identify and obtain replacement parts in the future.

When the assembly of the unit is completed, please refer to the Owners Manual before attempting to adjust or use the product. The Owners Manual will provide you with further instructions on the proper Field Settings, Adjustments and Maintenance Procedures for Safe Operation of the unit.

If optional equipment or attachments have been ordered for your unit, please refer to the instruction booklets provided for proper installation and adjustment of these accessories.

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

## **Pre Assembly Instructions:**

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

Proper handling and assembly of the components is critical in order to validate the warranty policy.

It is important to note that the 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 and must only be operated by individuals who have had the proper safety training for using such devices. Proper steel assembly stands or support jacks should also be used to support the frame components and prevent them from falling during assembly.

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 visegrip 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 2800-90 with 29' (9m) working width, a minimum area of 30' x 40' (10m x 12m) with 16' (5m) overhead clearance is required to assemble and fold the machine.

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.

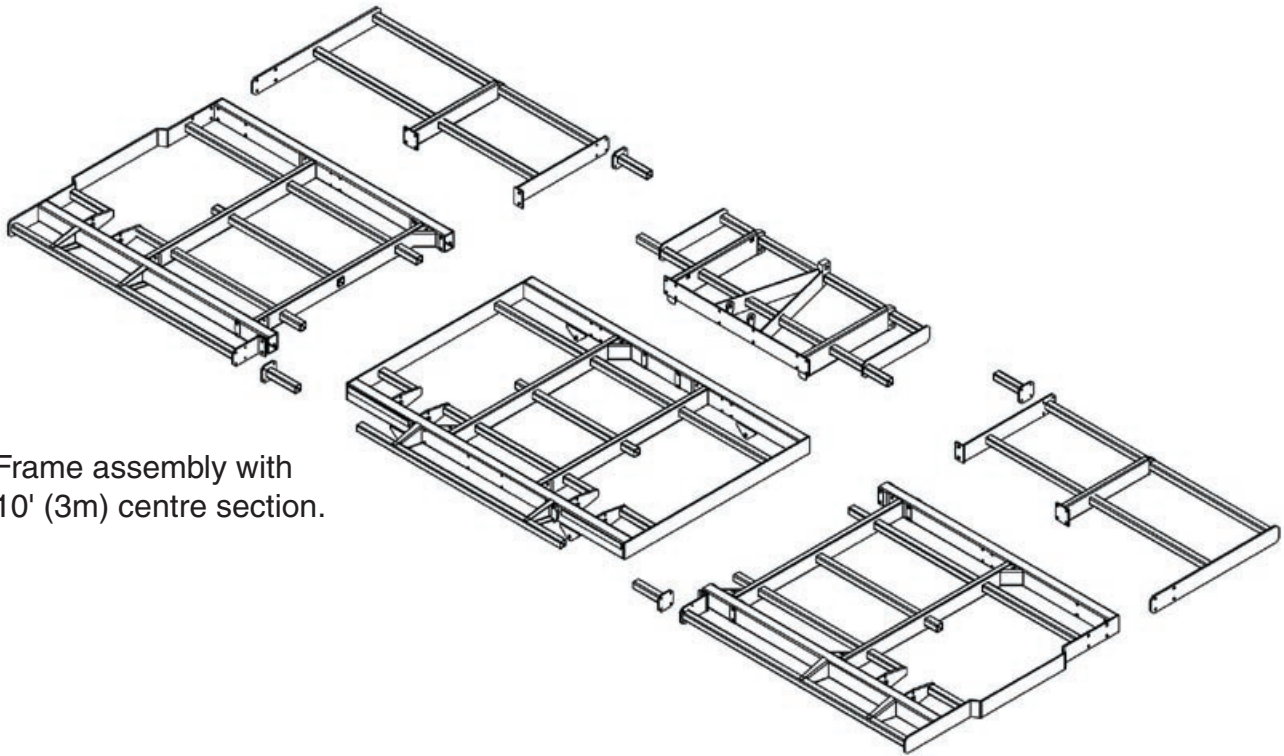
The floor area should be relatively clean and level.

Proper lighting and ventilation should also be provided to allow the work to be carried out in a safe and efficient manner.

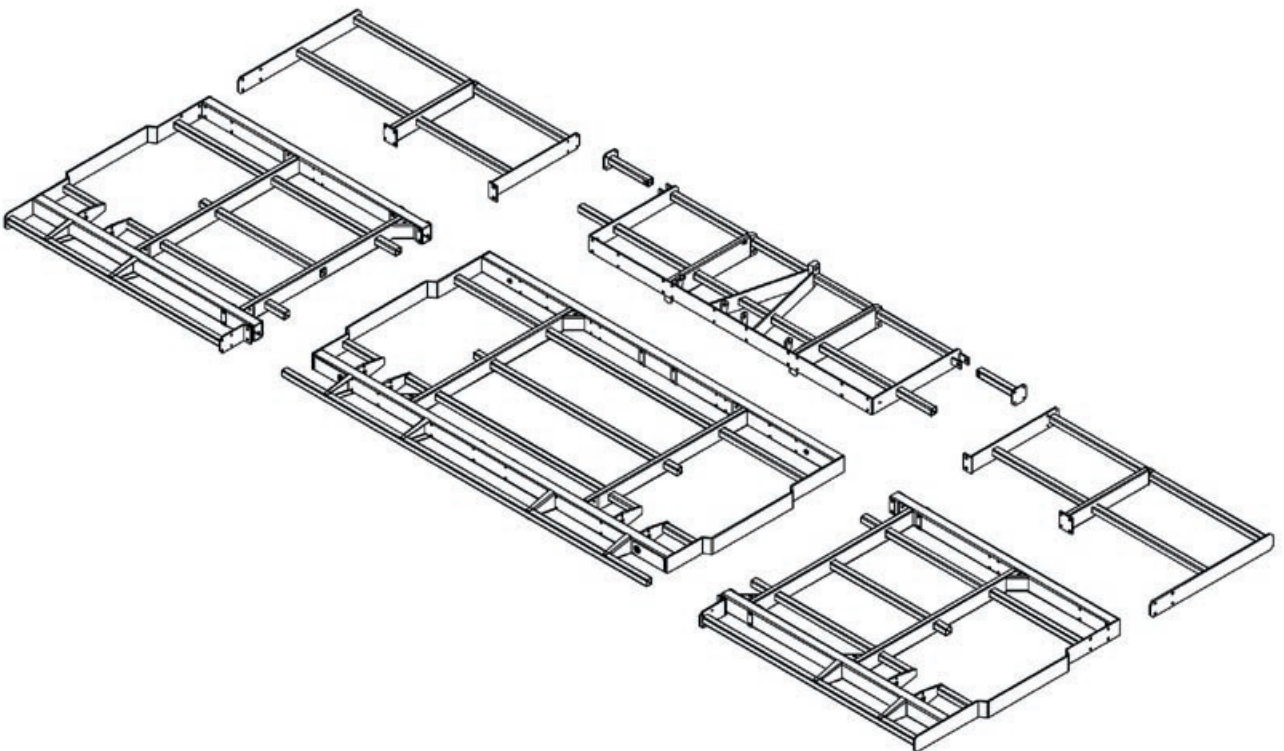
## FRAME ASSMEBLY

Sort out the frame sections for the size of cultivator you are assembling. Note that there are 2 different centre frame configurations as shown below: 1) 10' (3m) narrow transport model or 2) 13' (4m) wide transport model.

The main wing frames are the same for both the 3m and 4m models however, some compnents are different such as the folding hinges, assembly hardware and hydraulic hose kits. Refer to the spare parts list supplied for a full description of all of the different parts for both models.



Frame assembly with  
10' (3m) centre section.



To ensure the stability of the frames and safety of the workers during assembly, place the cultivator frames on sturdy steel shop stands. Do not use construction blocks, tiles or supports constructed of wood or other materials that could crush under continuous load. Position the stands so they do not interfere with the mounting of frame components and tines.



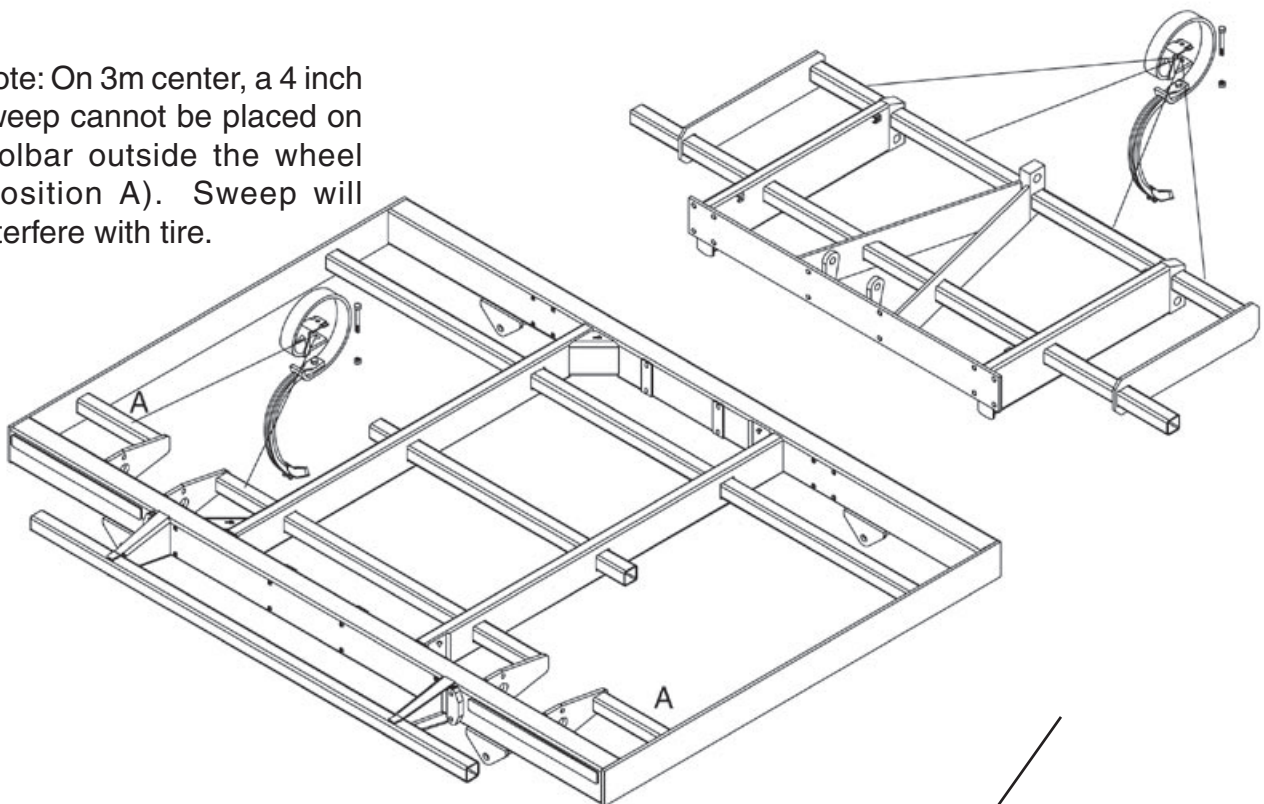
Locate the tine patterns in the back of the booklet for the model of cultivator you ordered and begin measuring the tine locations on each of the toolbar tubes.

Note that there are 2 standard tine patterns: 4" (100mm), and 6" (155mm). Tine quantities delivered with the unit are based on the model size of cultivator and the tine spacing chosen at time of order. Therefore, if you decide to change the tine spacing after delivery of the unit you may need to order extra tines depending on the pattern you choose. Other tine spacings are available on request for various special applications.

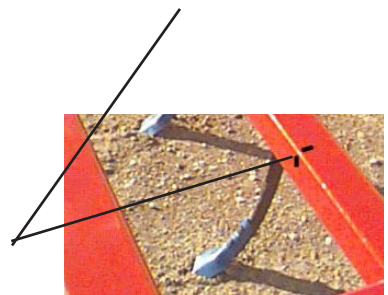
Tines mounted in the wheel area or near the hinge points should be left loose until after the wheel arm assemblies and wing fold hinge plates are installed. This will allow the tine to

n

v  
Note: On 3m center, a 4 inch sweep cannot be placed on toolbar outside the wheel (position A). Sweep will interfere with tire.



Hook a tape measure on the "0" side of the cultivator frame and put a mark on the front side or top of the toolbar tubes at the dimensions shown on the tine pattern drawings. Mount the tines so they are centred at the location marked. The mark will be covered by the clamp and bolt.



Carefully unpack and lay out all of the fasteners and hardware. (The empty shipping crate and cardboard makes an excellent temporary work bench.) Assembling the cultivator is more efficient if you take a few minutes to sort and organize the hardware by type and size instead of dumping the bag or box in a pile on the floor. Place the assembly instructions and parts list on the table for quick reference to help identify the parts for each step of the assembly.



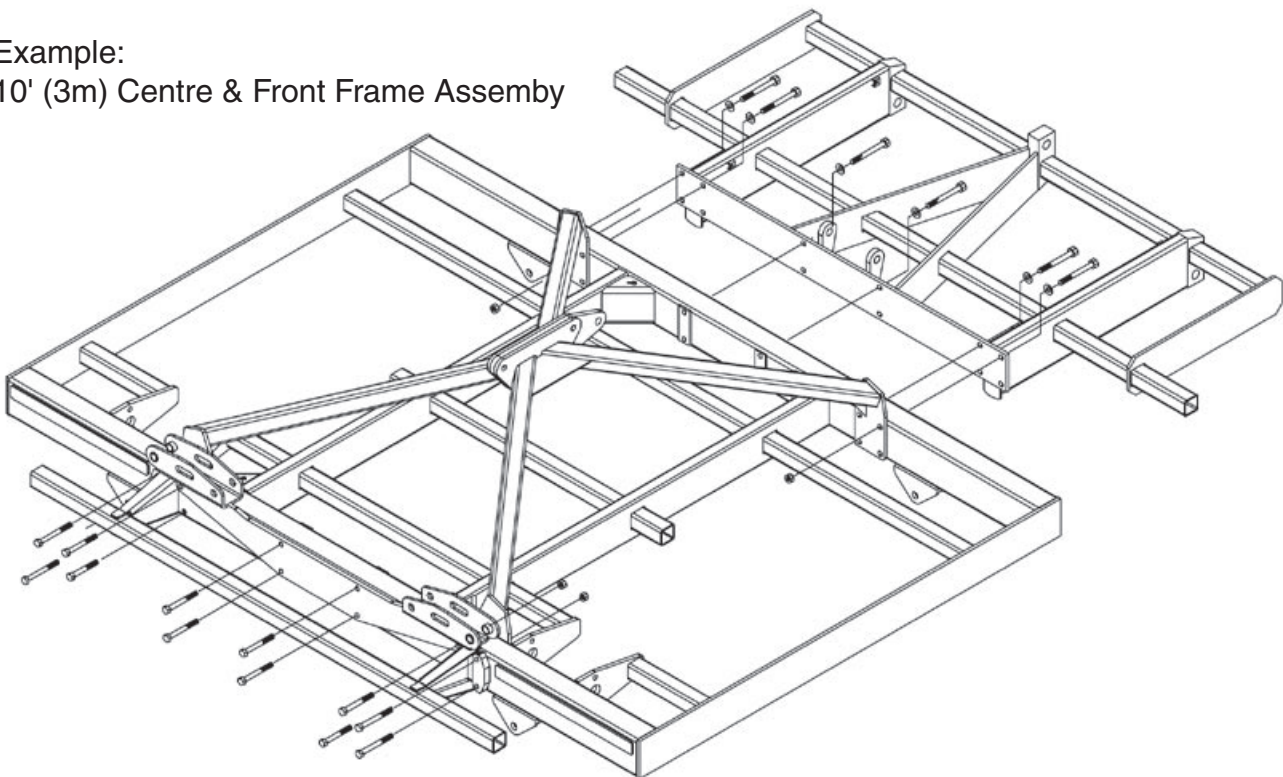
When the tines are mounted to the main frame and front extension, move the 2 frame sections together and assemble the centre section with the bolts, nuts, washers and pins shown in the parts list.

Take care to insert the front frame bolts from the front and insert the back frame bolts from the back so that the locknuts are all facing inside the machine. This will keep the frame assembly looking neat and tidy and make the assembly more efficient.

(Note: The assembly diagrams do not show tines installed for easier viewing. In special situations where the machine must be partly assembled and shipped to another location, the tines may be mounted after assembly. But generally you will find it easier to mount the tines as you assemble each frame section.)

Example:

10' (3m) Centre & Front Frame Assembly

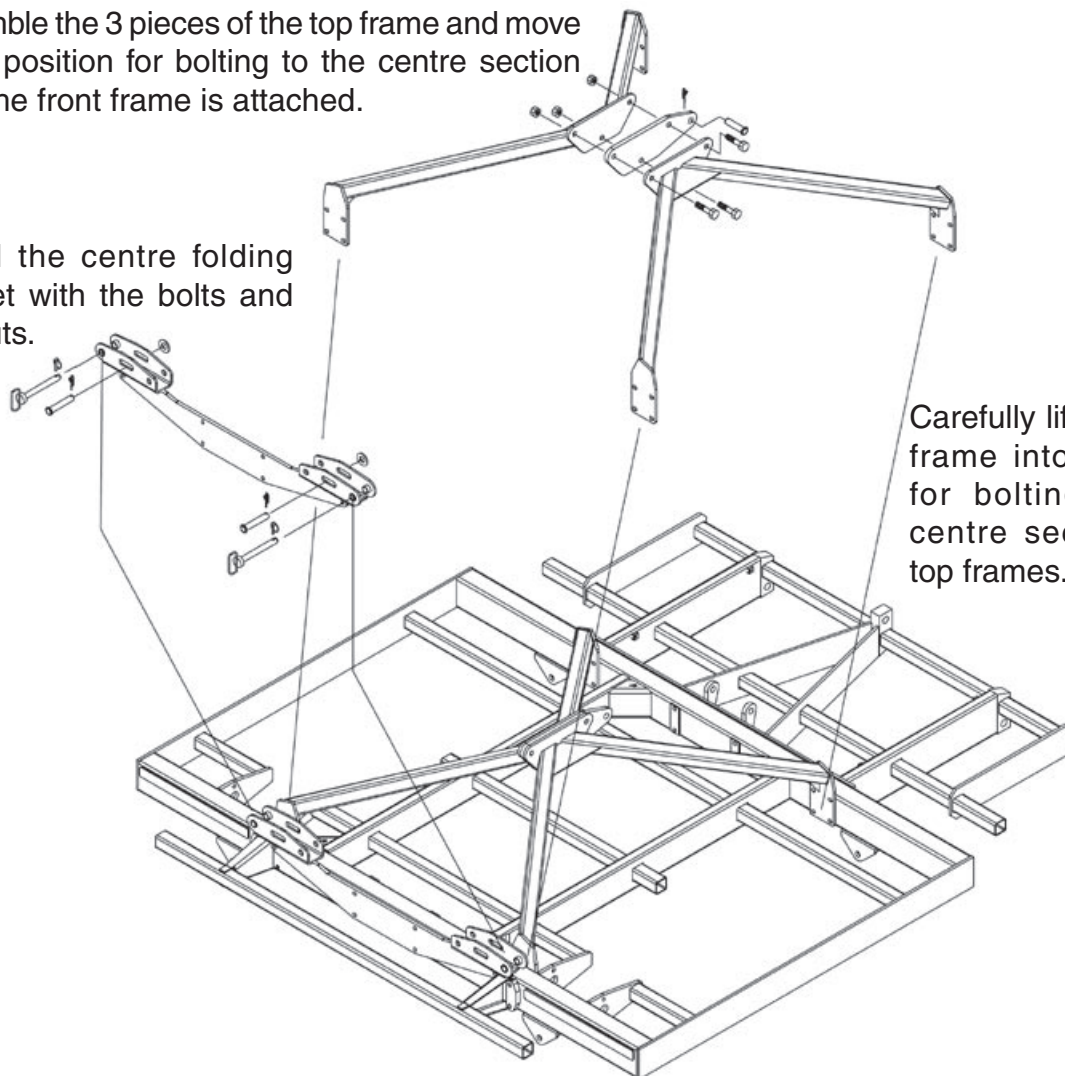


Frame assembly can be done while the frames are sitting on the assembly stands, or the stands may be removed once the tines are mounted. Use a fork lift or overhead hoist to move the heavy frame components into position for assembly.



Assemble the 3 pieces of the top frame and move it into position for bolting to the centre section after the front frame is attached.

Install the centre folding bracket with the bolts and locknuts.



Carefully lift the front frame into position for bolting to the centre section and top frames.

Although the 10' (3M) and 13' (4M) centre sections and self levelling wheel lift linkages have some different components, they both have the same basic function and use the same order of assembly as shown by the numbers below and opposite.

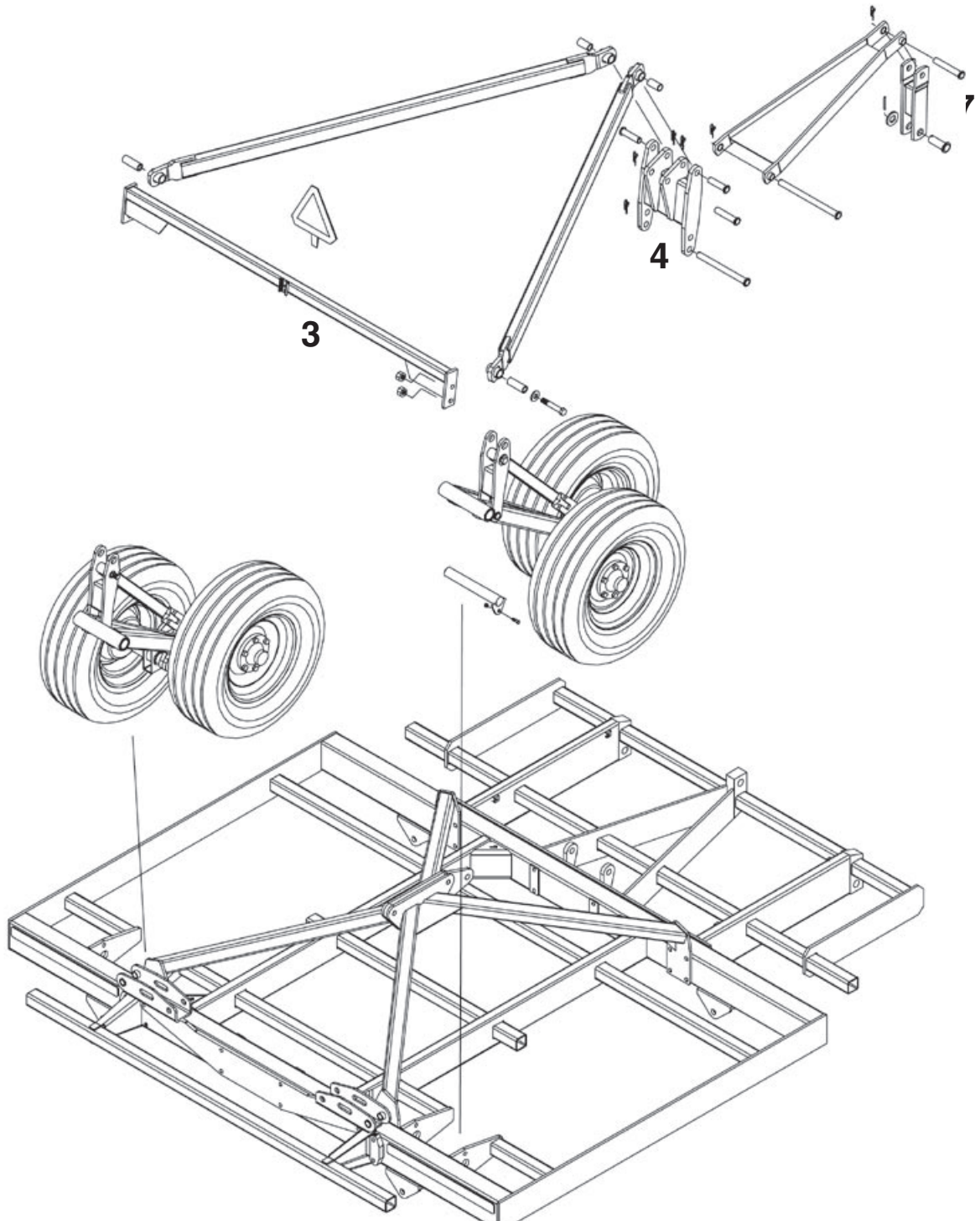
Sort out the pieces for the centre section self levelling linkages and wheel arms according to the parts list and the diagram below for 10' (3m) or opposite on page 9 for the 13' (4m).

Important Note:

It is much easier to pre-assemble the right and left wheel arms according to the instructions on page 10. The entire wheel assembly can then be lifted into the frame and secured with the wheel axle.

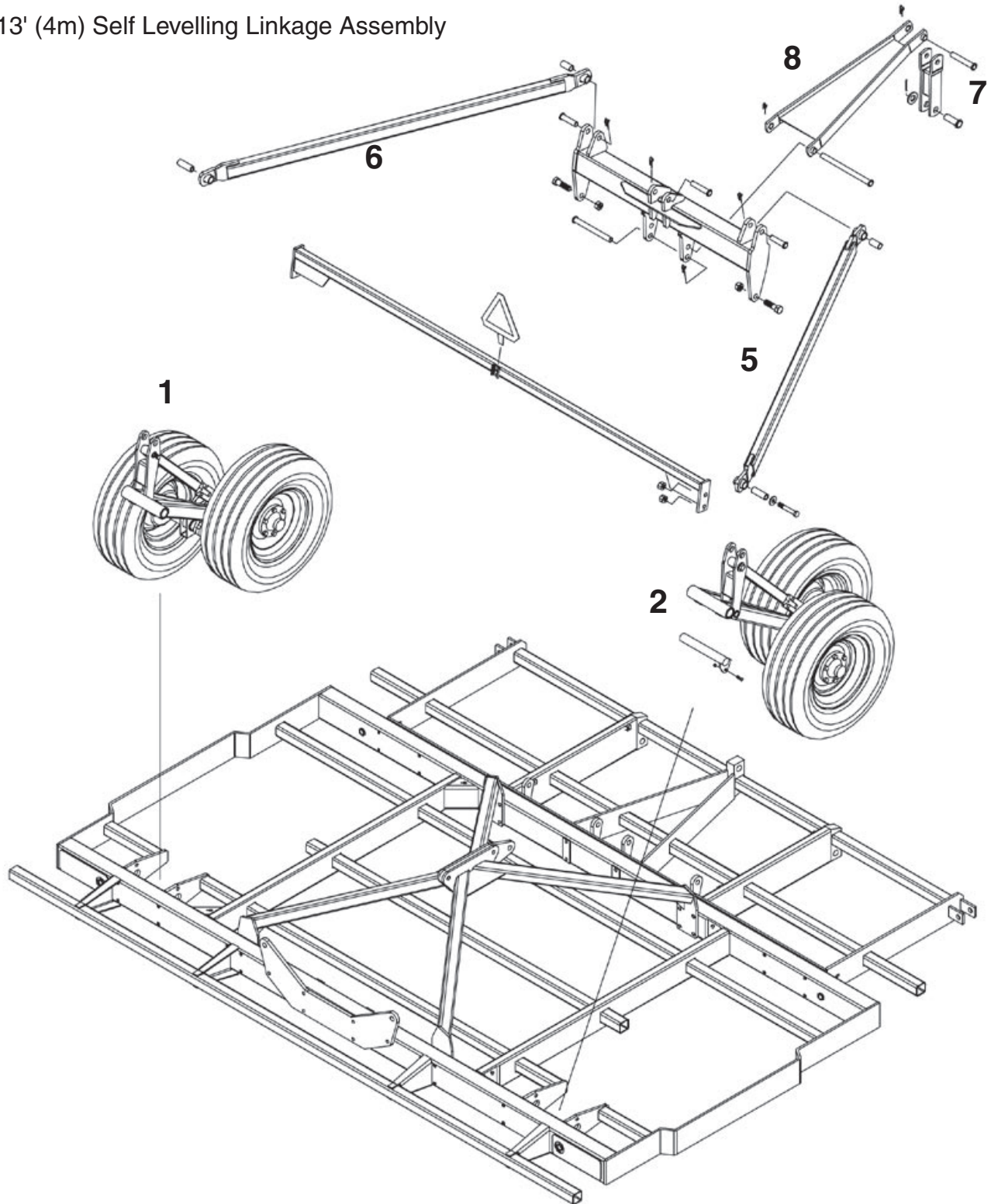
The remaining steps for installing the linkages are outlined in detail beginning on page 11.

10' (3m



After the wheel arm assemblies are installed, the self levelling linkages can be attached starting with the wheel connection link at the back and work forward to the hitch. The numbers below show the proper order of assembly. Refer to the detailed instructions beginning on page 10 for proper assembly of the wheel arms and self levelling lift linkages.

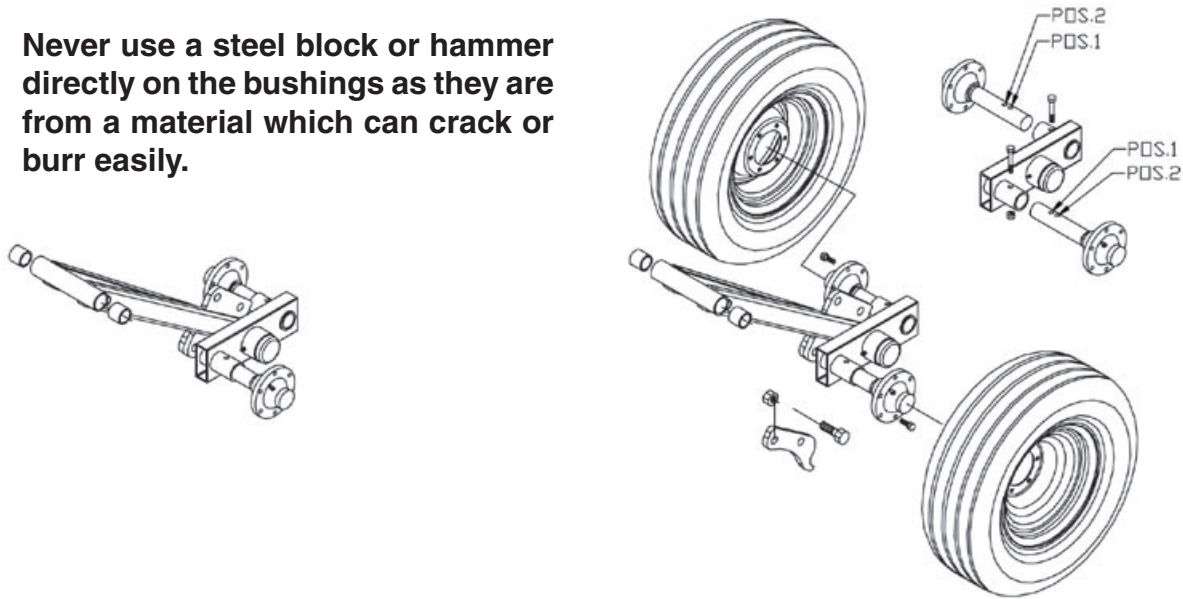
### 13' (4m) Self Levelling Linkage Assembly



Carefully insert the wheel axle pivot bushings into the ends of the wheel arm tubes. Tap the bushings into the ends of the tubes with a block of wood or rubberized hammer.

Before mounting the tires, install the wheel spindle bolts as shown. The front spindle must be in the 1st hole or wide position for all centre machines. The rear spindle must be in the 2nd hole on the 10' (3m) centre. The rear spindle should be in the 1st hole for the 13' (4m) center.

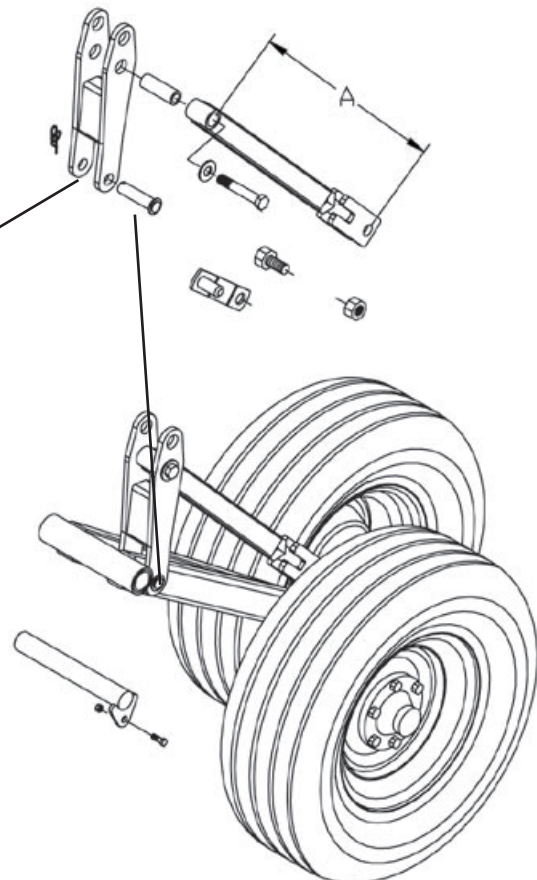
**Never use a steel block or hammer directly on the bushings as they are from a material which can crack or burr easily.**



Assemble the wheel linkage as shown below with the pivot pins and bushings provided. Note that the wheel pivot link shown below is a 2 piece adjustable linkage. This linkage can be lengthened or shortened as necessary to provide proper under frame clearance for 20" or 24" tine options. This adjustable wheel link also provides side to side levelling for the centre section.

The linkage length from centre to centre "Dimension A" should be set at:  
A = 28" (71cm) for 20" clearance tines.  
A = 28.5" (73cm) for 24" clearance tines.

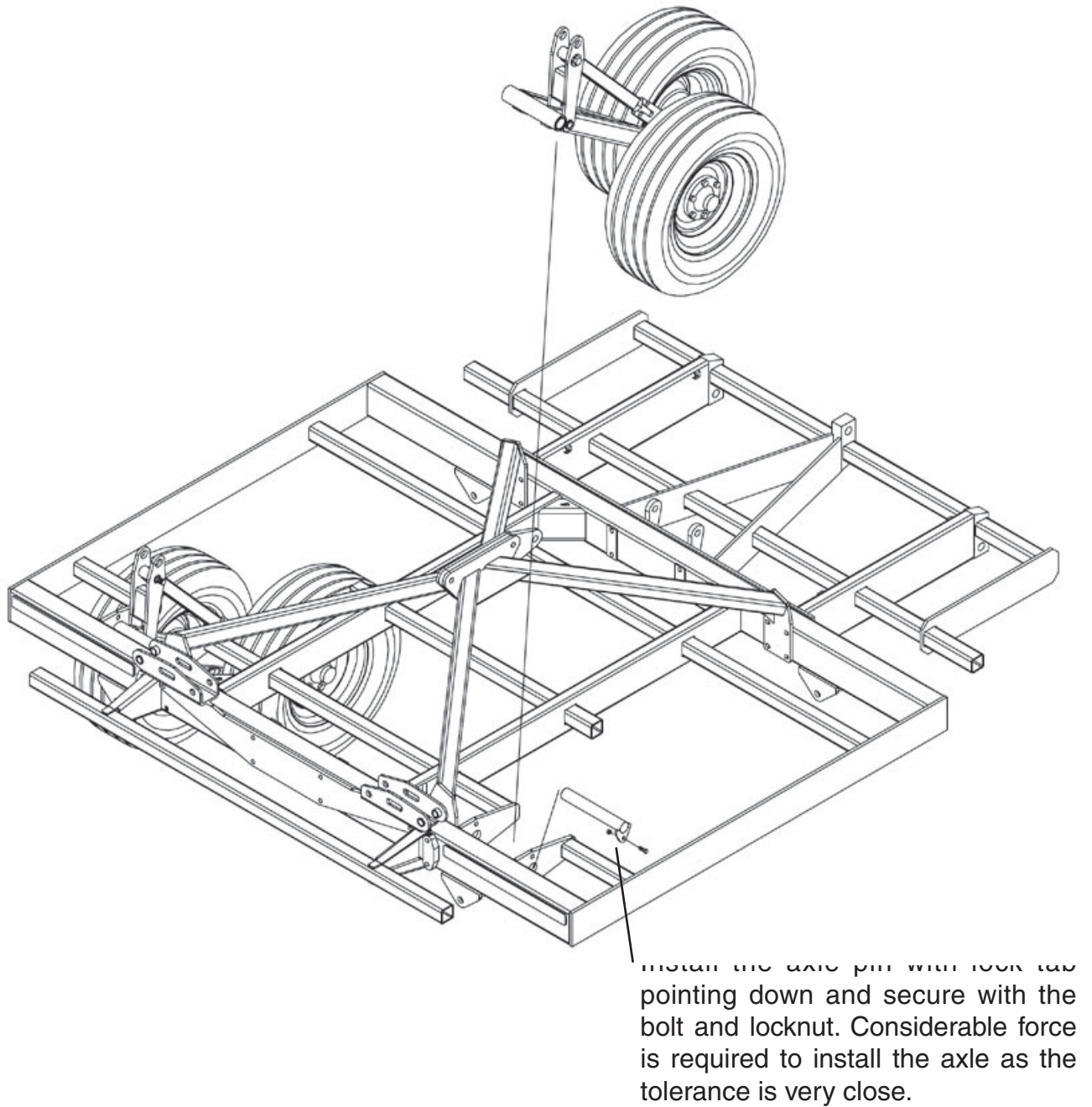
Take care to install the pins from the outside as shown with the clip pins on the inside of the wheel arm.



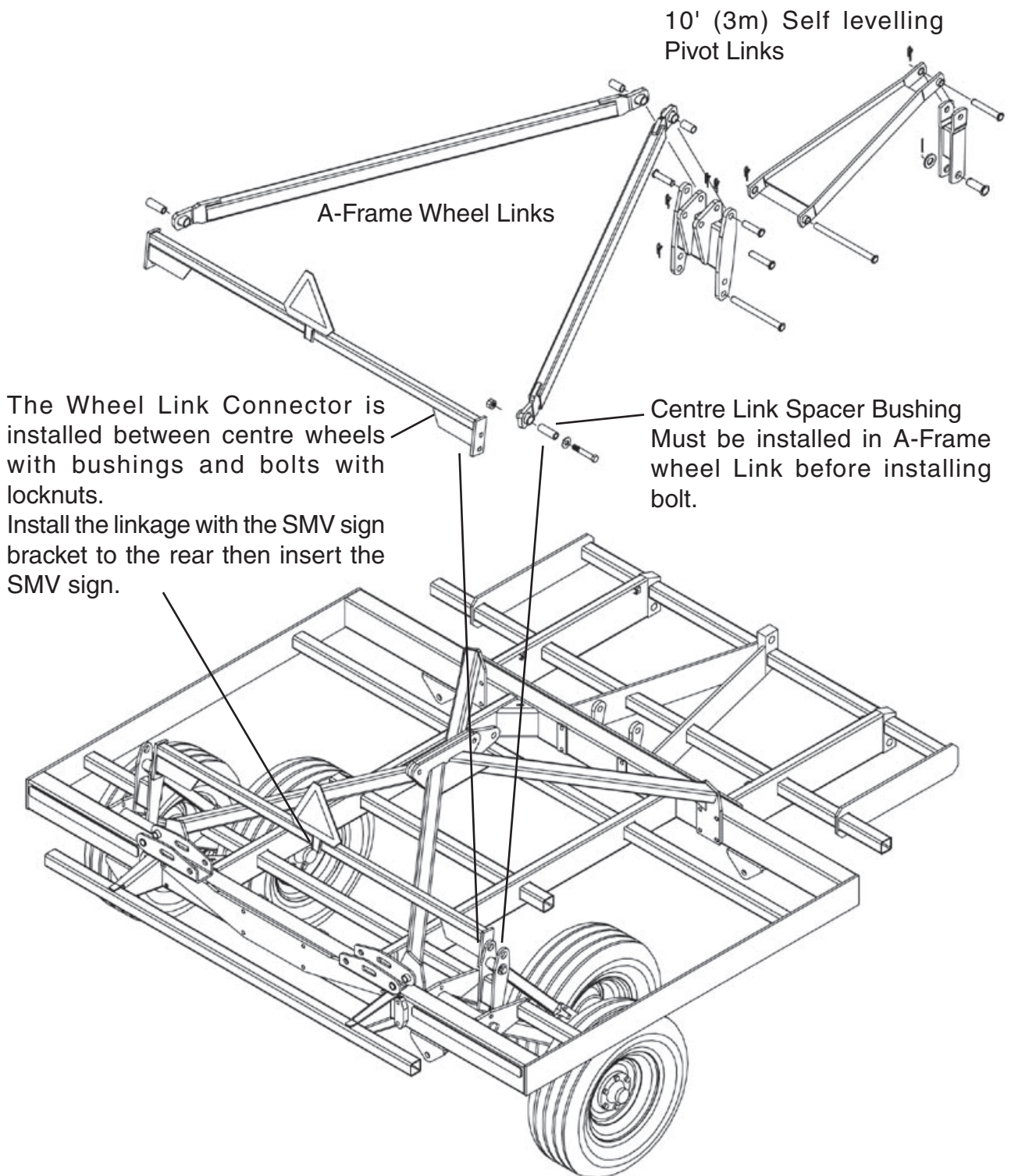
Using a lift truck or overhead hoist equipped with an approved lifting chain or strap, lift the wheel arm assemblies one at a time into the centre frame as shown below before installing the Self Levelling Wheel Arm Pivot Linkages.

The wheel arm pivots must be aligned with the holes in the frame and then secured with the axle pin as shown in the detail below.

The pin can be coated with a light machine oil or grease to ease assembly but otherwise needs no lubrication as the pivot bushings in the wheel arms are oil impregnated.

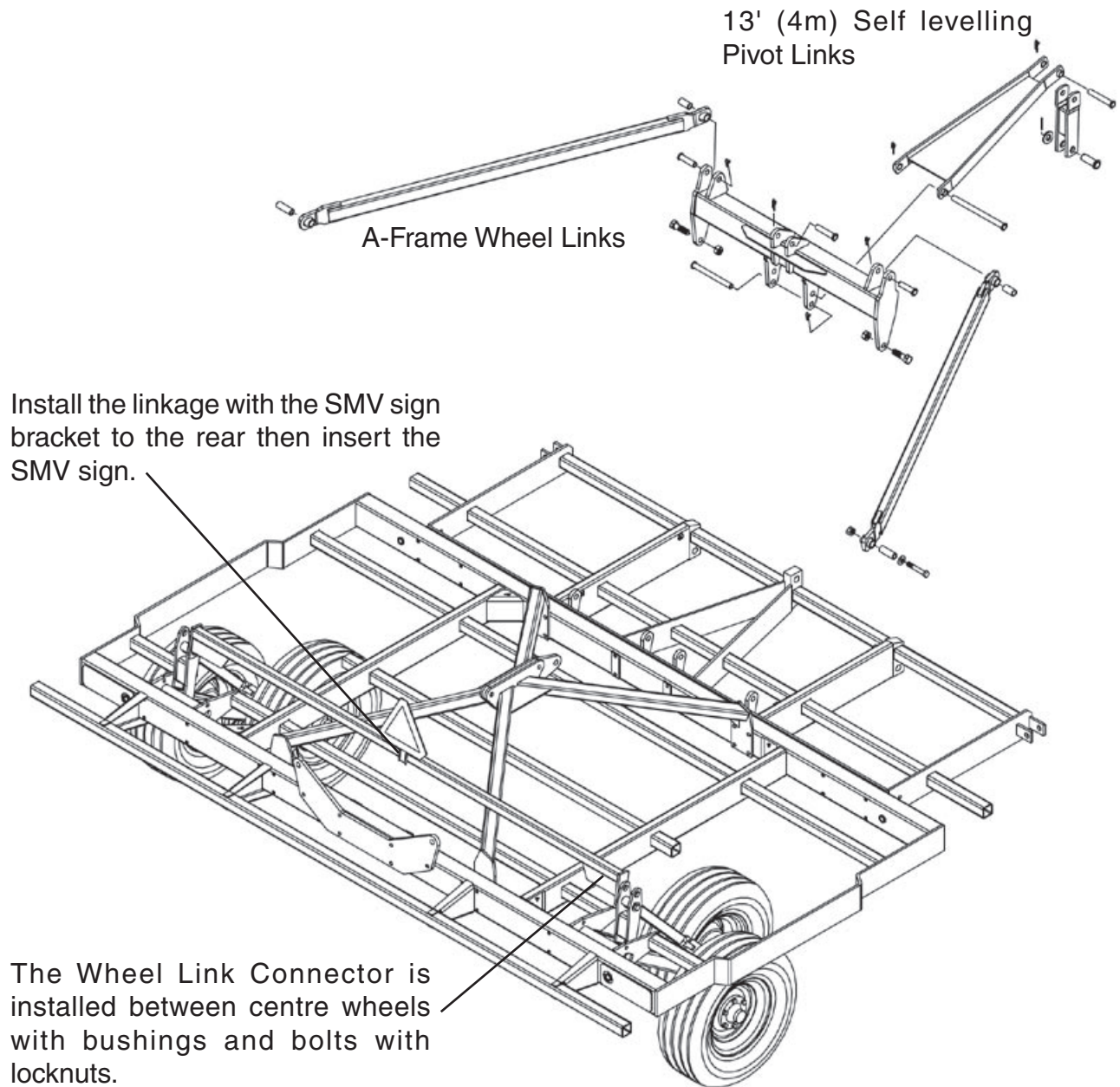


For the 10' (3m) centre, attach the short Wheel Link Connector to the Wheel Arm Pivot Links and A-Frame Wheel Links with the bolts provided. Remember to install the spacer bushings so the upper pivot point will not bind when the bolts are tightened.

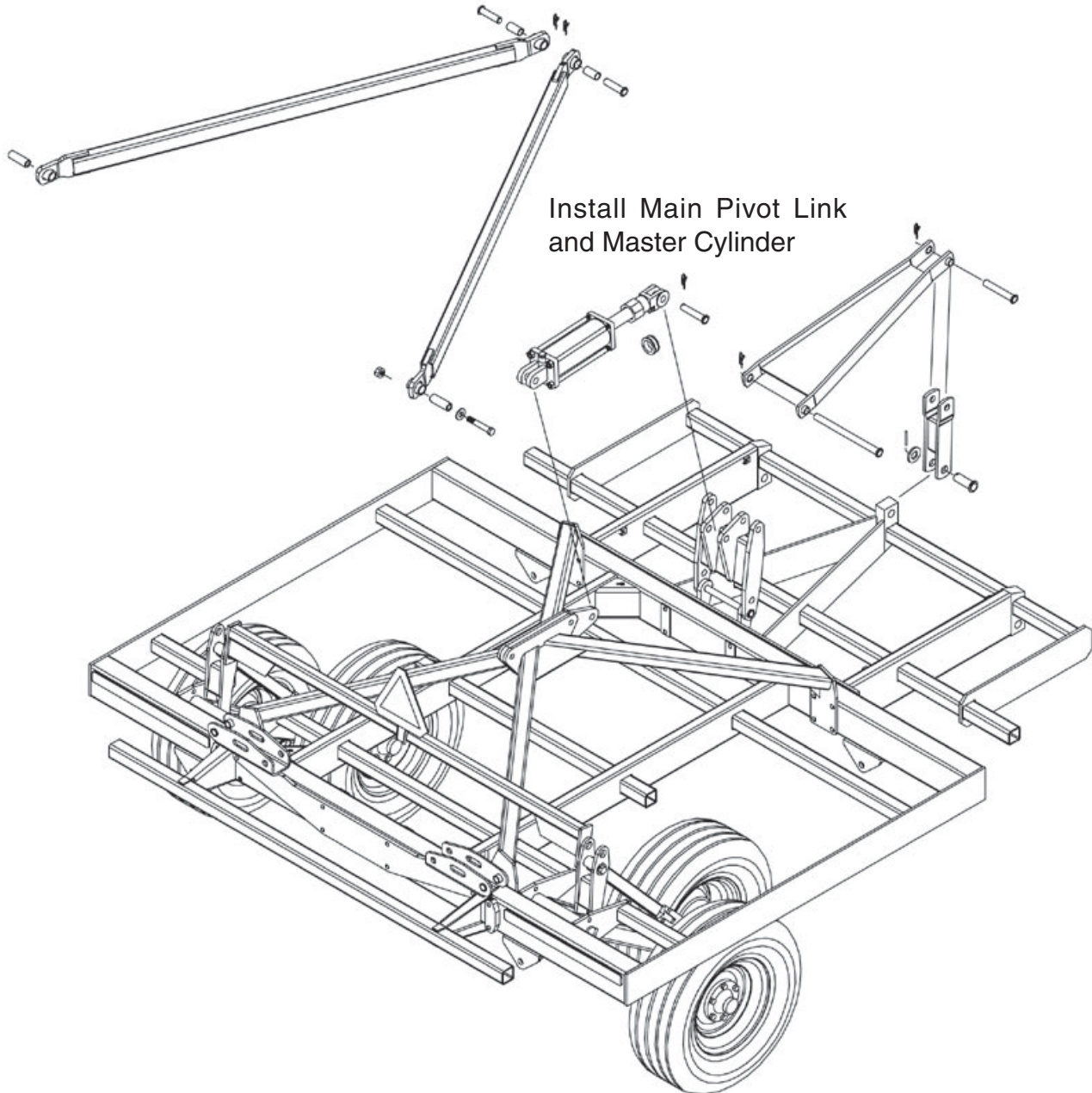


For the 13' (4m) centre, the assembly is the same only the Wheel Link Connector is longer. Attach the Wheel Link Connector to the Wheel Arm Pivot Links and A-Frame Wheel Links with the bolts provided.

Once again, remember to install the spacer bushings so the upper pivot point will not bind when the bolts are tightened.



Install the 10' (3m) main pivot link with the long pin provided. When the main link is in place install the 4.5" x 8" master cylinder as shown in the detail below. Do not install the other linkages until both the main pivot link and cylinder are in place.



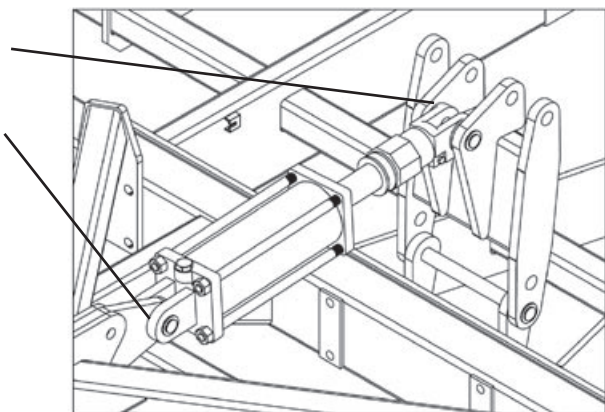
provided.

The rod clevis attaches to the lugs on the main pivot link.

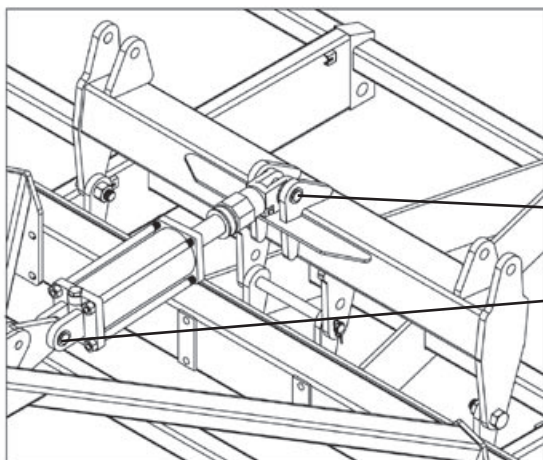
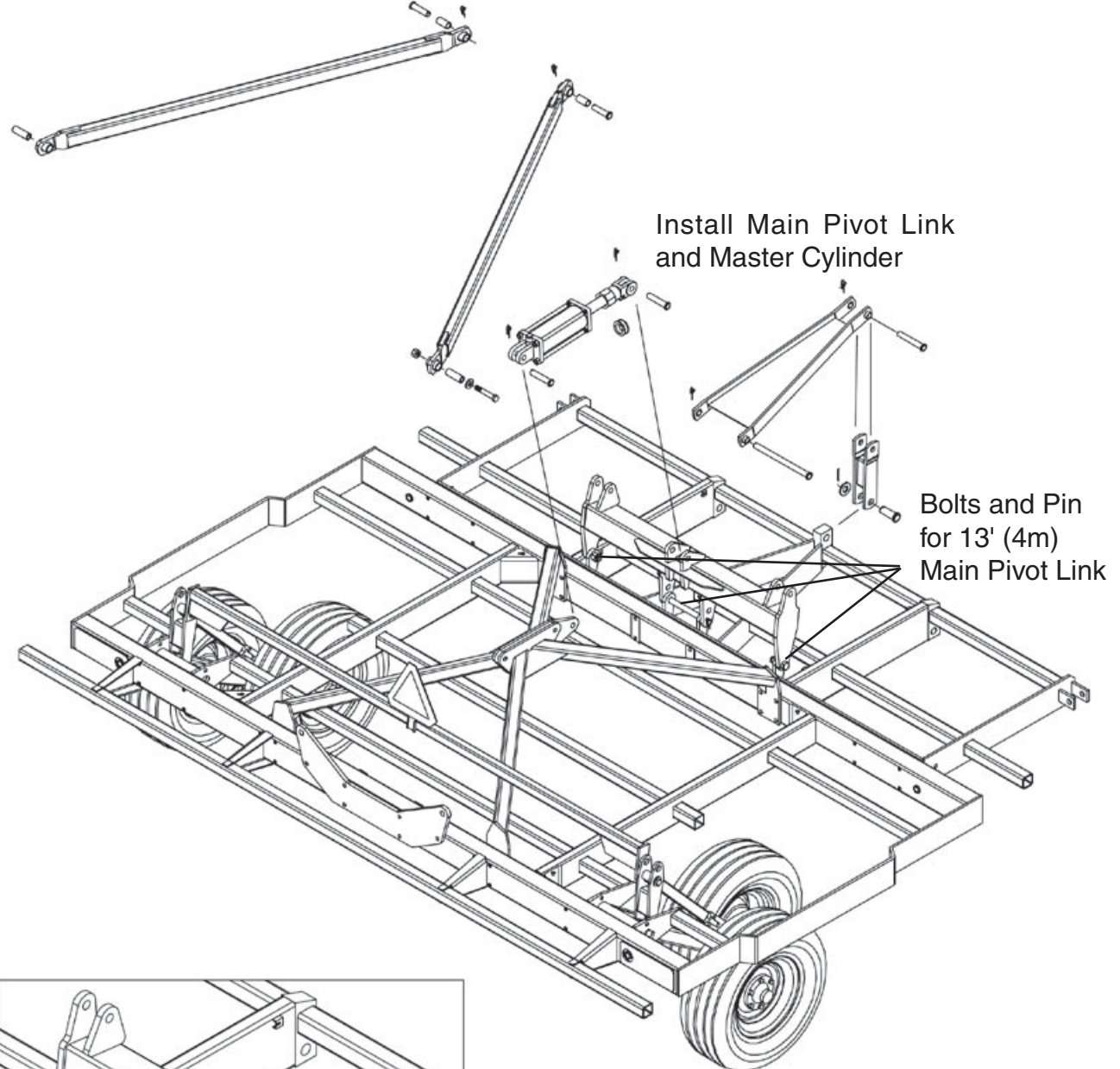
The butt end of the cylinder attaches to the lug in the centre of the top cross frame.

Take care to turn the cylinder so the front or rod end port is pointing down and the rear port is facing to the left side.

Remove the protective port plugs so the cylinder can be moved in or out during the assembly of the remaining self levelling linkages.



The 13' (4m) main pivot installs in much the same way as the 10' (3m) except that the 13' main pivot is larger and requires a central pivot pin and additional mounting bolts to be installed in the outside pivot mounts. The pivot bolts should not be tightened fully so that the pivot link can move freely when the cylinder is extended or retracted. When the main link is in place install the 4.5" x 8" master cylinder as shown in the detail below. Do not install the other linkages until both the main pivot link and cylinder are in place.



Attach the master cylinder with the pins provided.

The rod clevis attaches to the lugs on the main pivot link.

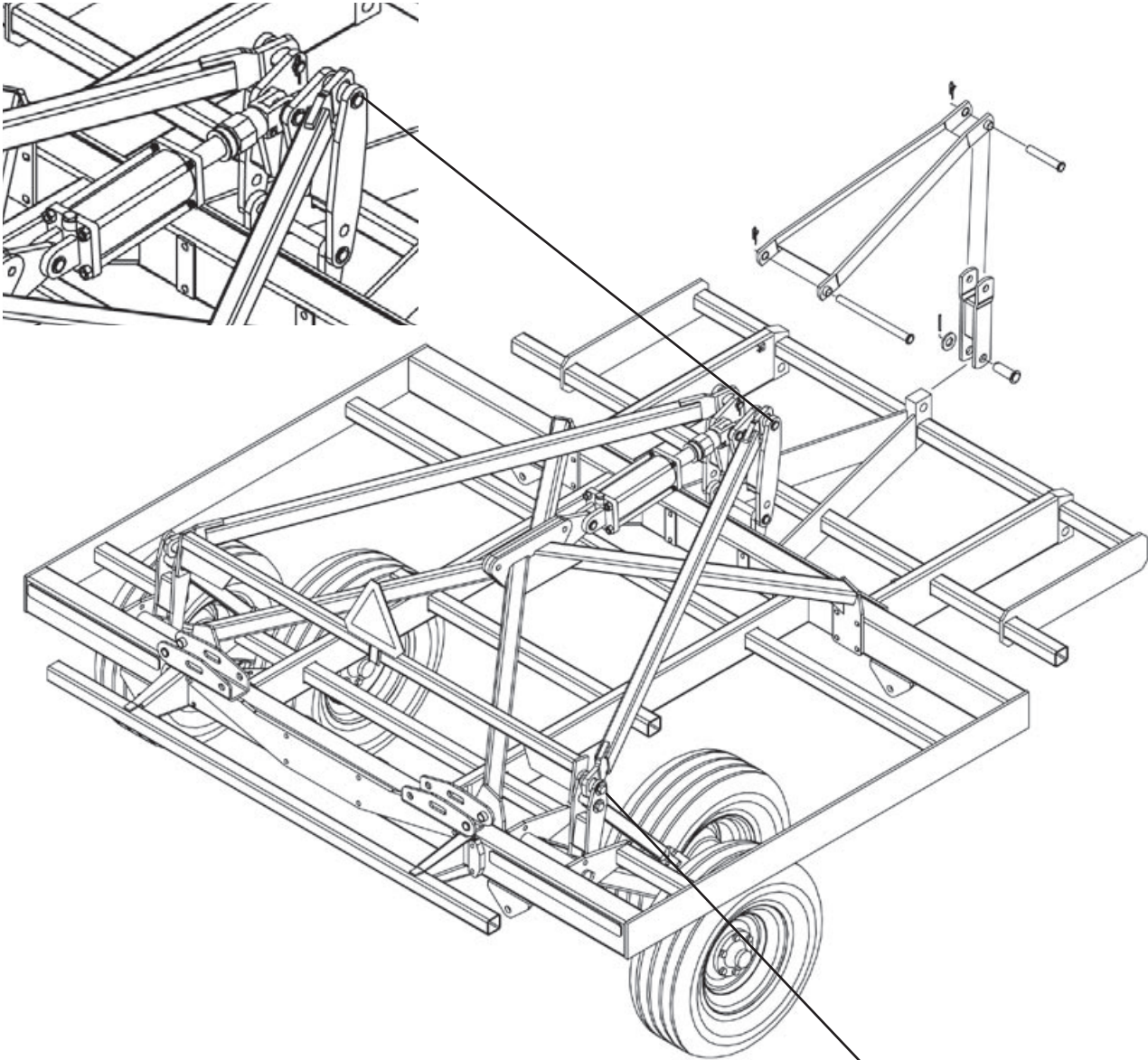
The butt end of the cylinder attaches to the lug in the centre of the top cross frame.

Turn the cylinder so the front or rod end port is pointing down and the rear port is facing to the left side.

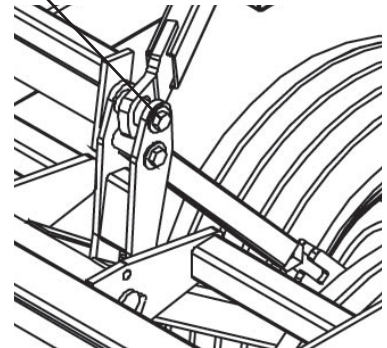
Remove the protective port plugs.

Install the A-frame wheel links on the 10' (3m) centre as shown below. The wheel links are identical so it does not matter which way you turn them.

Attach the front of the wheel linkages to the main pivot with the 1" (25mm) ID bushings and insert the pins from the outside to secure both linkages to the main pivot link. It may be necessary to extend or retract the cylinder rod by hand in order to line up the holes and install the linkage pins. Take care to insert and lock the clip pins when finished.

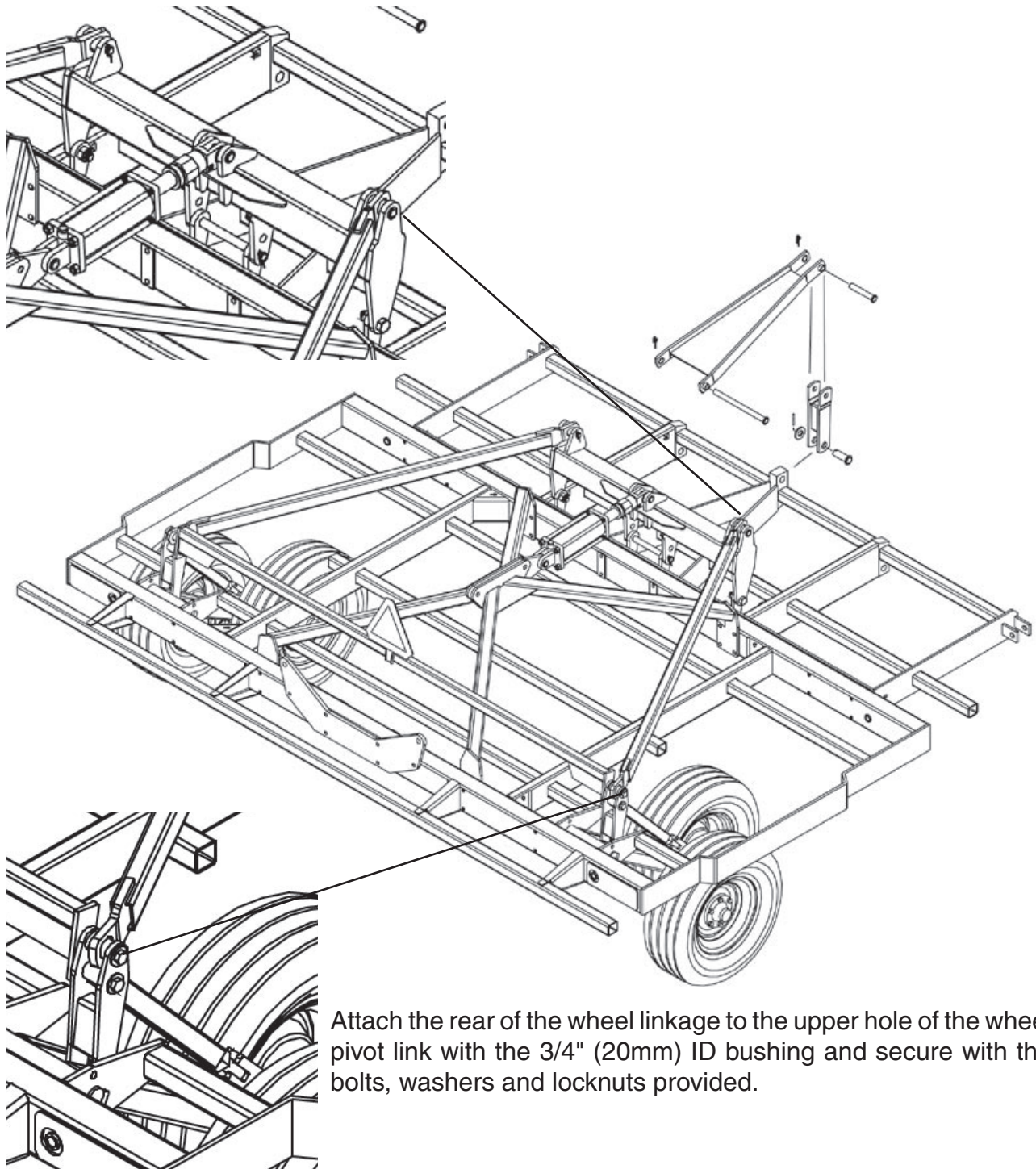


Attach the rear of the wheel linkage to the upper hole of the wheel pivot link with the 3/4" (20mm) ID bushing and secure with the bolts, washers and locknuts provided.



The A-Frame wheel links are the same for both the 10' and 13' centres, and are installed the same way as shown below. The only difference is that the links are spaced wider apart on the 13' centre due to the wider frame and wheel spacing.

Attach the front of the wheel linkages to the main pivot with the 1" (25mm) ID bushings and insert the pins from the outside to secure both linkages to the main pivot link. It may be necessary to extend or retract the cylinder rod by hand in order to line up the holes and install the linkage pins. Take care to insert and lock the clip pins when finished.



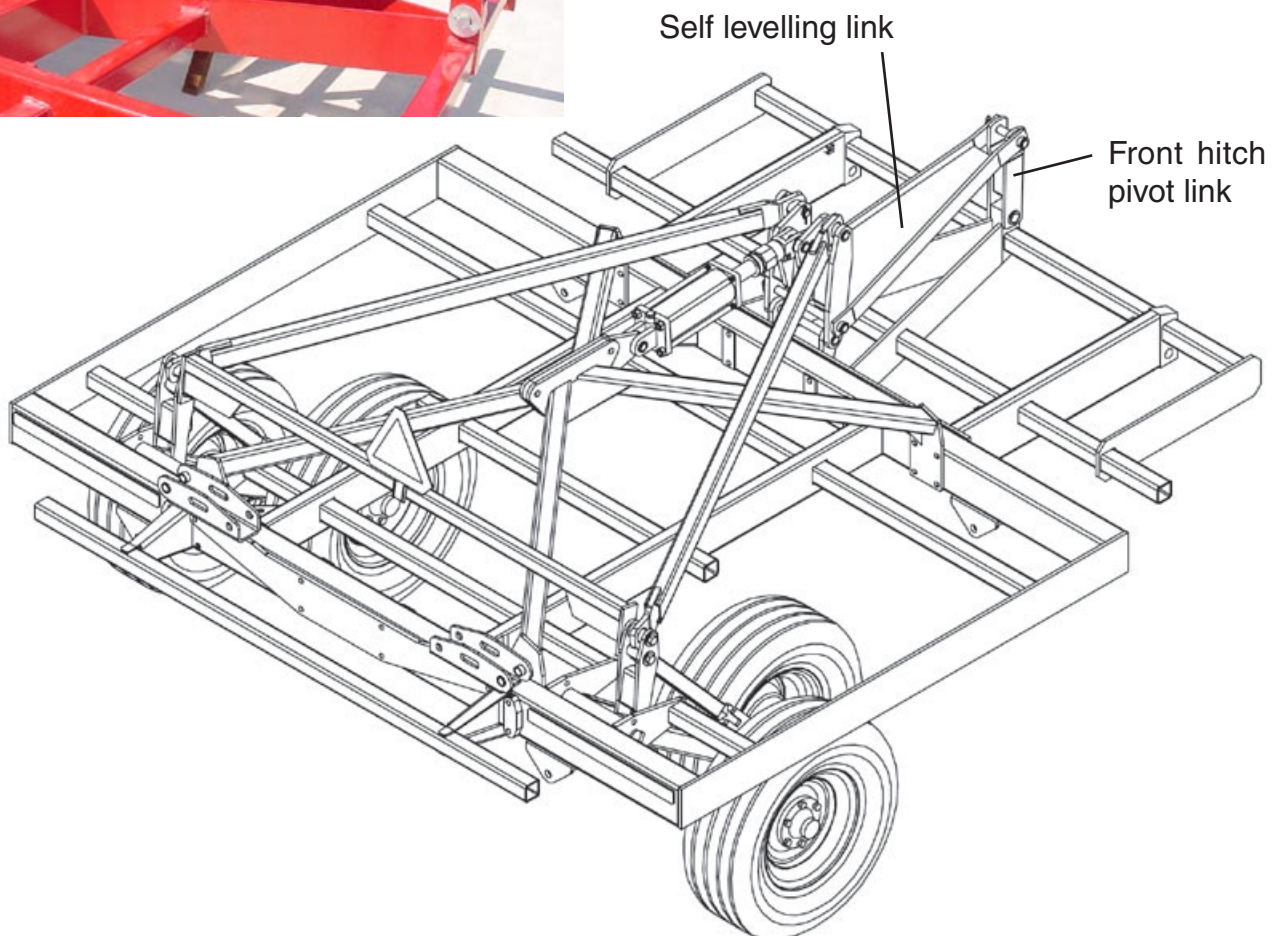
Attach the rear of the wheel linkage to the upper hole of the wheel pivot link with the 3/4" (20mm) ID bushing and secure with the bolts, washers and locknuts provided.

To complete the assembly of the self levelling wheel link system, install the front pivot link to the lug in the centre of the front frame. Attach the wide end of the large triangular self levelling link to the main pivot with the long pin provided and attach the narrow end to the front pivot link with the shorter pin provided. These pieces are the same for both the 10' and 13' centres and are installed in the same manner.

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



Detail view of front linkages  
on 10' (3m) centre



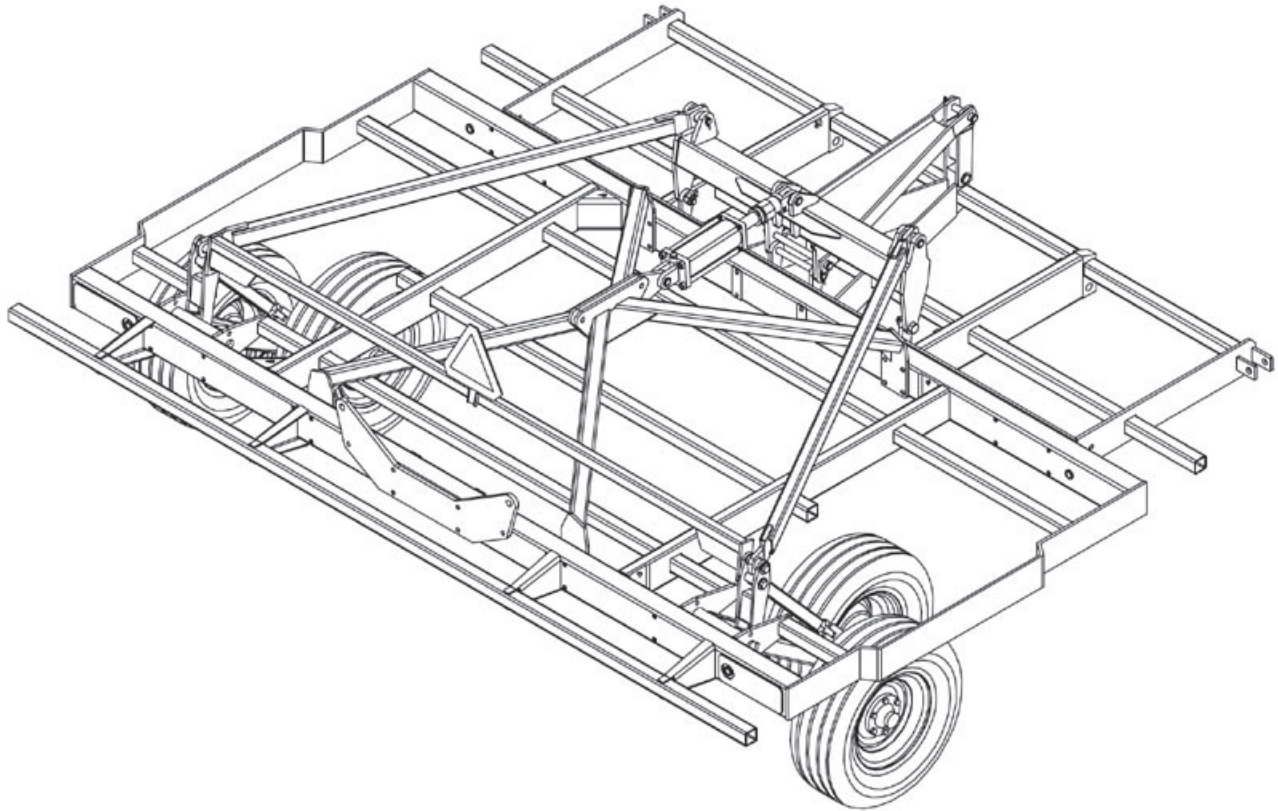
Overview of completed 10'  
(3m) self levelling linkage  
system.



The diagram below shows the completed 13' (4m) centre frame and self levelling wheel lift linkage assembly.

Take care to go over the assembly of the centre section and linkage system to make sure that all nuts and bolts are installed and tightened.

Check all pin connections and make sure the roll pins or clip pins are installed and locked.



If there is lots of room in the assembly area, the hitch can be assembled to the centre section now. However if space is limited, the draw hitch can be assembled and attached later after the wings are assembled and attached.

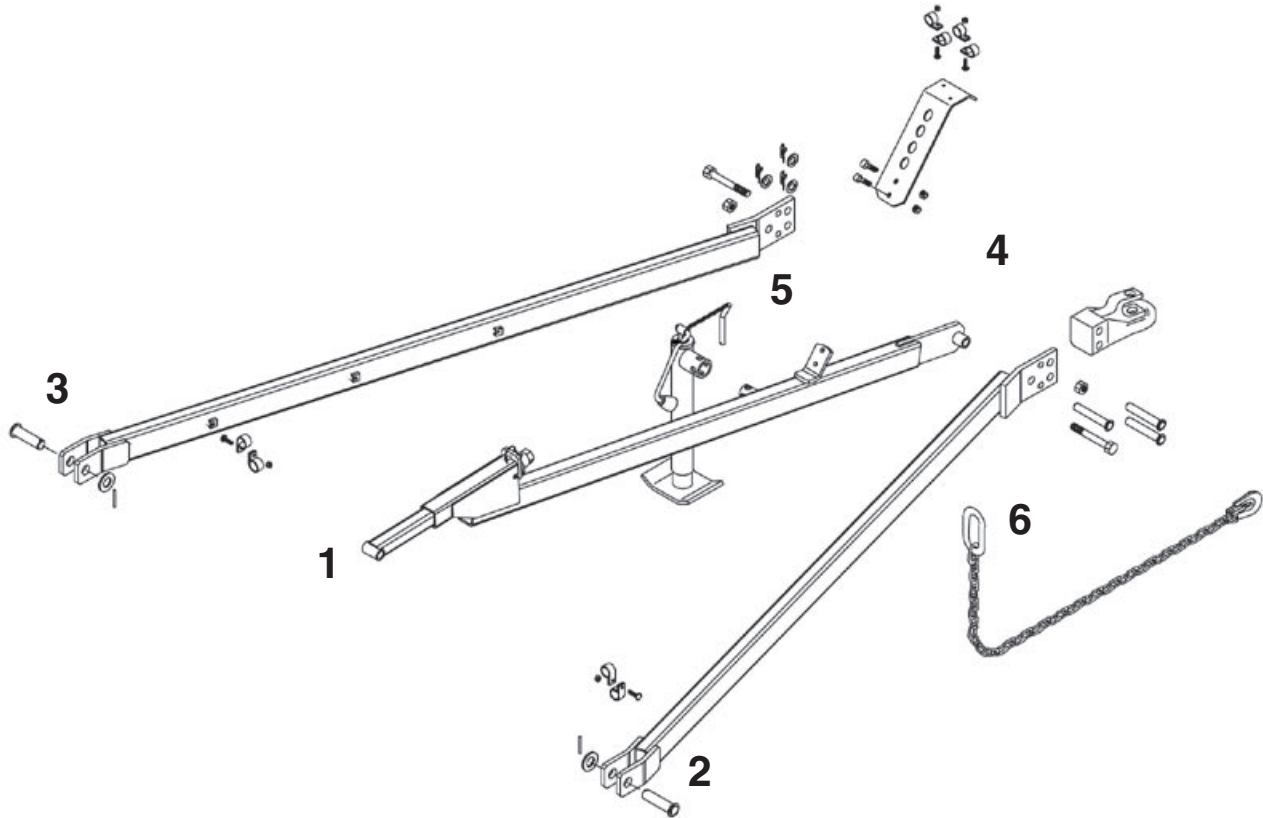
The hitch must be attached prior to installing the hydraulic lines and preparing the cultivator to be raised and folded for transport.

## HITCH ASSEMBLY

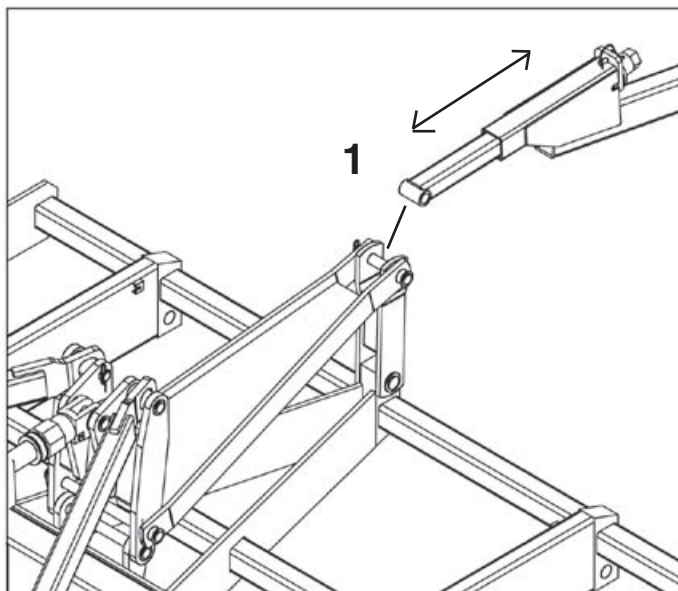
The draw hitch components are identical for both the 10' and 13' centre sections and follow the same order of assembly as shown on the numbered diagram below.

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

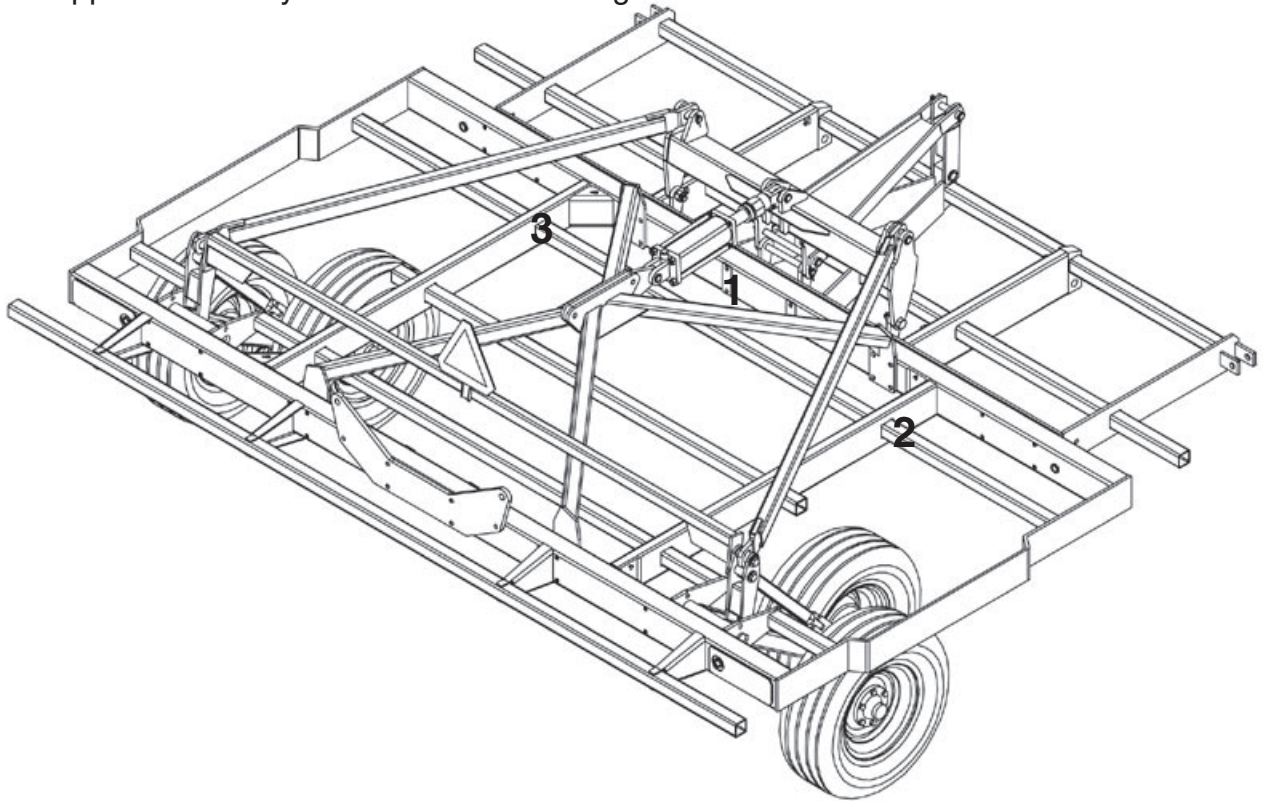
Follow the numbers for the order of assembly on the diagram below and make the connections with the pins and bolts provided.



The hitch adjuster, 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 clip pin and slide the pin to one side to allow the hitch adjuster to be connected. The adjuster can be lengthened or shortened as necessary to position the hitch at the tractor drawbar height for easier assembly.

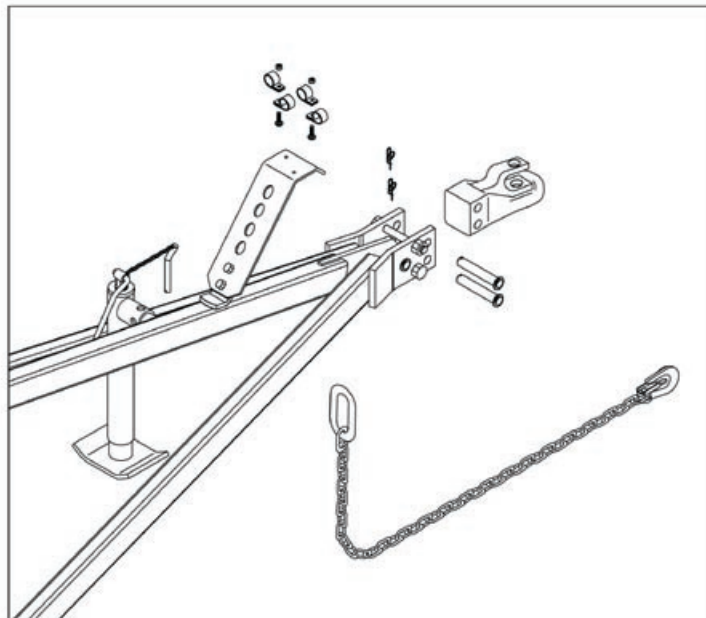


After connecting the hitch adjuster at position 1, attach the hitch side members with the 1-1/2" pins with washers and roll pins at position 2 and 3. The side tubes are both the same and can be flipped either way to make the left and right side member.



As shown in step 4 below, connect the hitch tubes together at the front by inserting the the 2 long bolts from opposite sides and tightening the locknuts. The hitch adjuster link and clevis casting are secured in place with the long pins and clip pins. Install the jack and hose tower as shown in step 5.

To complete the hitch assembly in step 6, loop the safety tow chain around the hitch frame and back thru the large ring. The hook end is for connecting the chain to the tractor hitch.



## WING ASSEMBLY

Gather the components for the wing frames and assemble using the hardware described in the parts list booklet. The wing frame sections are basically the same for both 10' (3m) - shown below, and 13' (4m) centre machine - shown opposite. The main difference between the wing assembly of these 2 models is in the folding hinges and stub toolbars.

Note how the wing fold hinges for the 10' (3m) model below are different from the ones shown on the opposite page, and how the model below has front and rear stub toolbars.

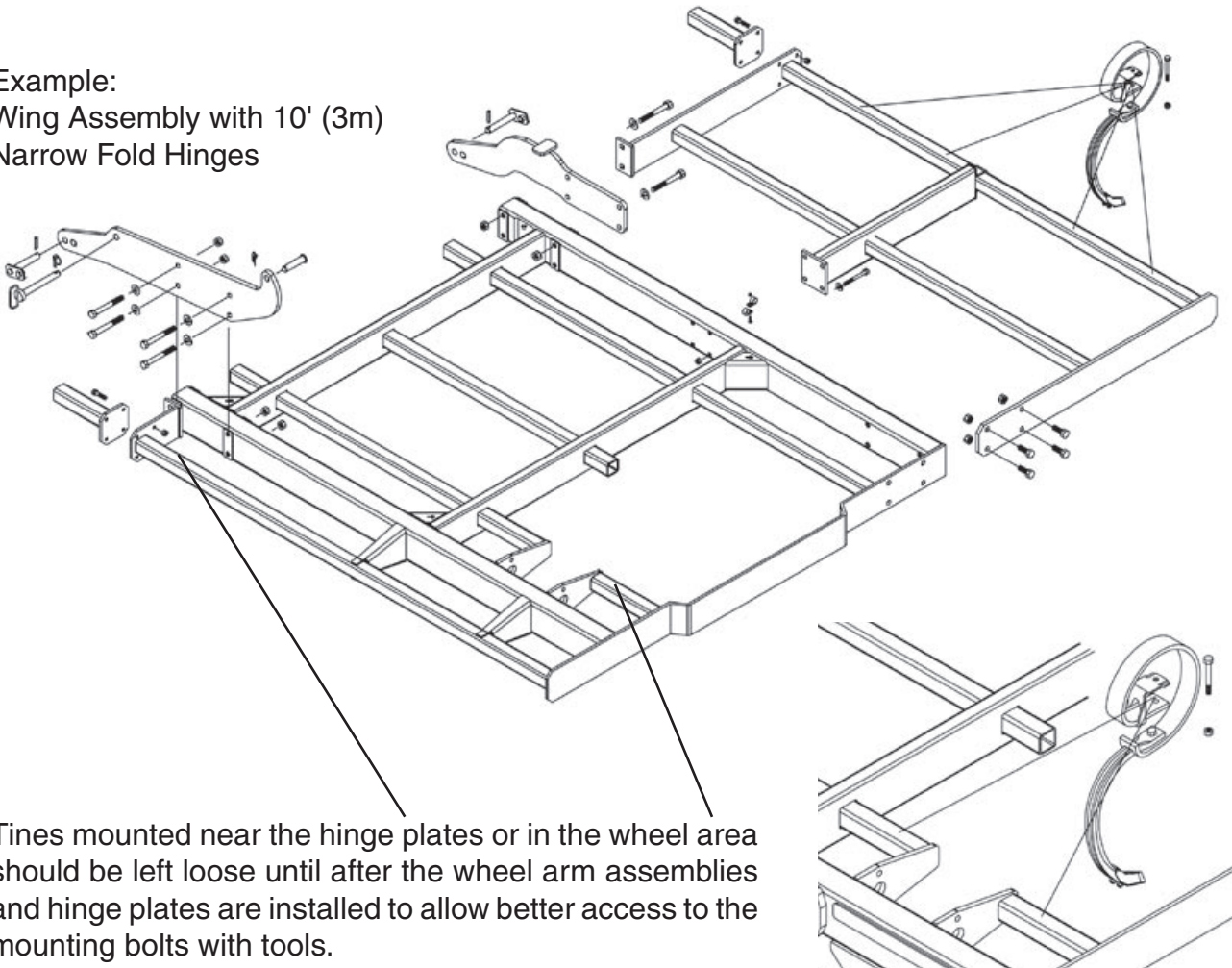
Please note that there are no right or left wing frame components. Therefore if you assemble the right wing first as shown below, you will need to flip the frames over opposite to the diagram below to assemble the left wing.

Mark the tine pattern on the wing frame tubes according to the locations given for each wing frame section in the back of the book by hooking the tape measure on the side marked "0" and measuring across the frame as you did for the centre section.

The frames should be placed on steel support stands during assembly and mounting of the tines, then carefully lowered to the ground to rest on the tines for assembly of the wheel components.

Note: Front and Rear  
Bolt-on Stub Toolbars

Example:  
Wing Assembly with 10' (3m)  
Narrow Fold Hinges



Tines mounted near the hinge plates or in the wheel area should be left loose until after the wheel arm assemblies and hinge plates are installed to allow better access to the mounting bolts with tools.

The assembly diagram below shows the different folding hinges and front bolt on stub toolbar used on the cultivator model with 13' (4m) centre section.

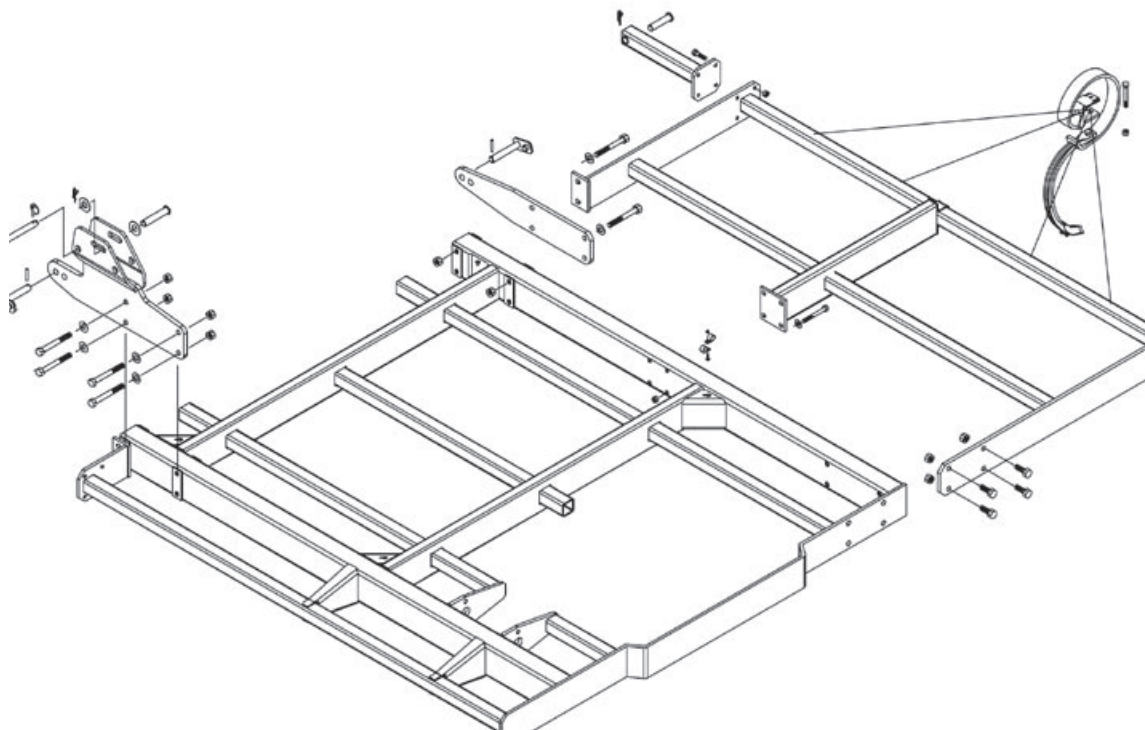
Also, Note how the front stub toolbar has a hinge pin that connects to the 13' centre front frame and there is no rear stub toolbar on this model.

Refer to the parts list provided for complete discription of the components and hardware for proper assembly of the wings.

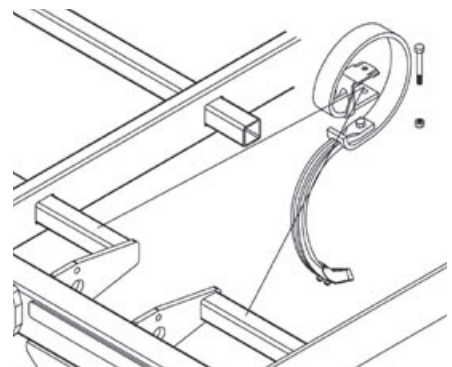
The assembly diagrams do not show tines installed on the frames for easier viewing of the components. You may choose to assemble the frames first and mount tines later, but generally you will find it is easier to mount the tines as you assemble the frame sections.

Example:  
Wing Assembly with 13' (4m)  
Wide Fold Hinges

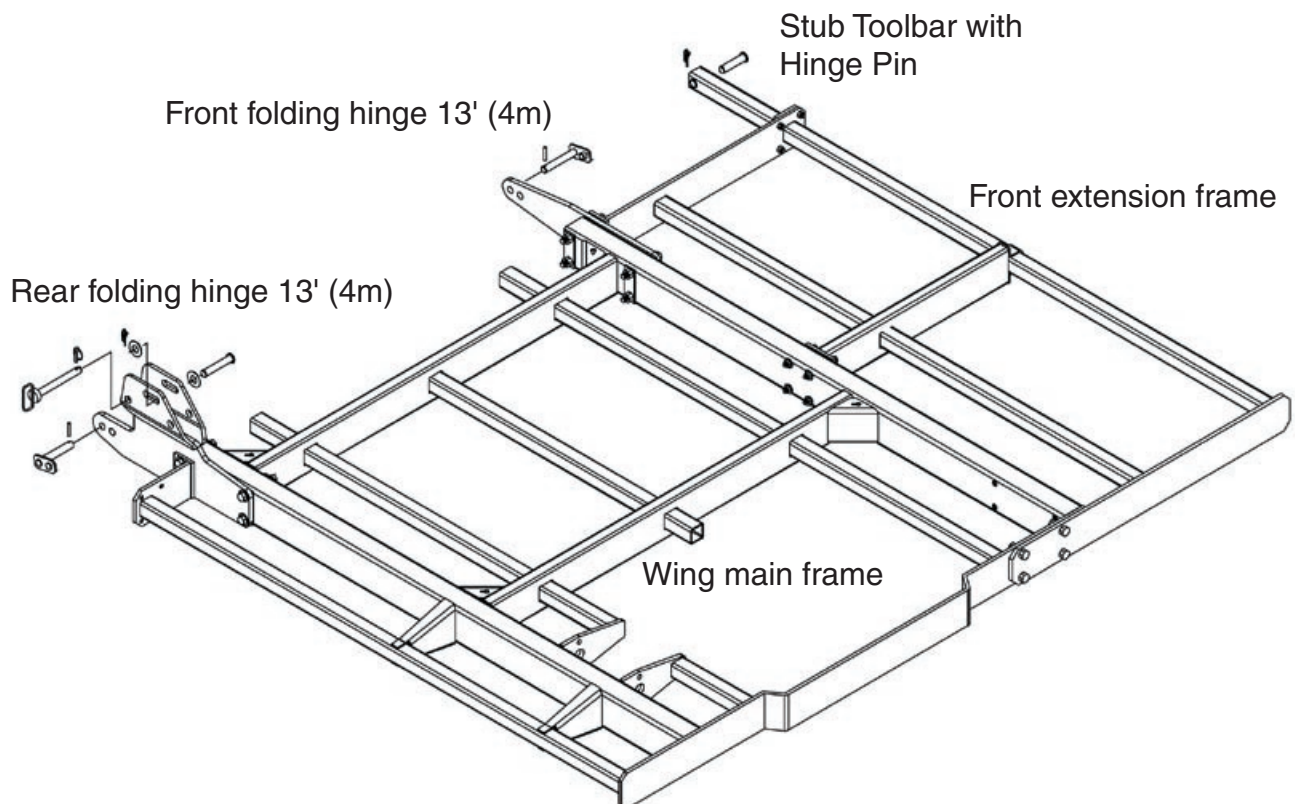
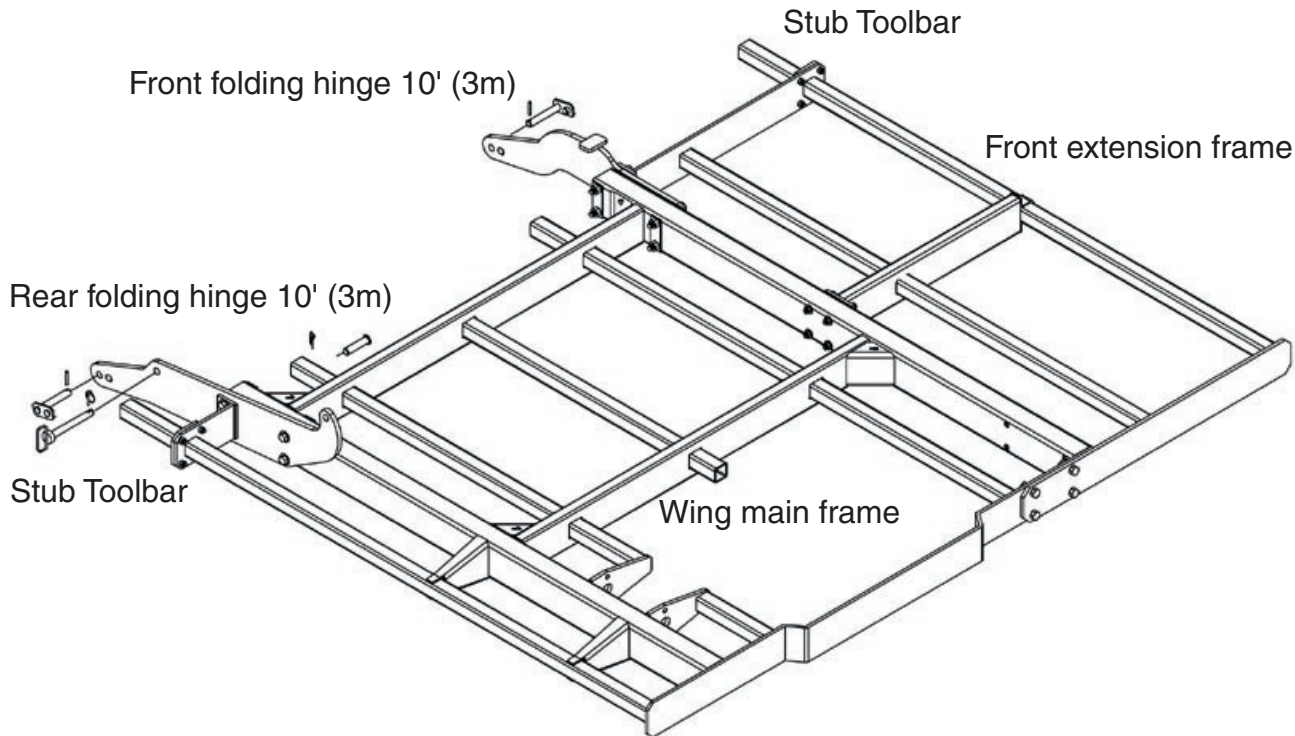
Note: Front Bolt-on Stub  
Toolbar with Hinge Pin



Tines mounted near the hinge plates or in the wheel area should be left loose until after the wheel arm assemblies and hinge plates are installed to allow better access to the mounting bolts with tools.



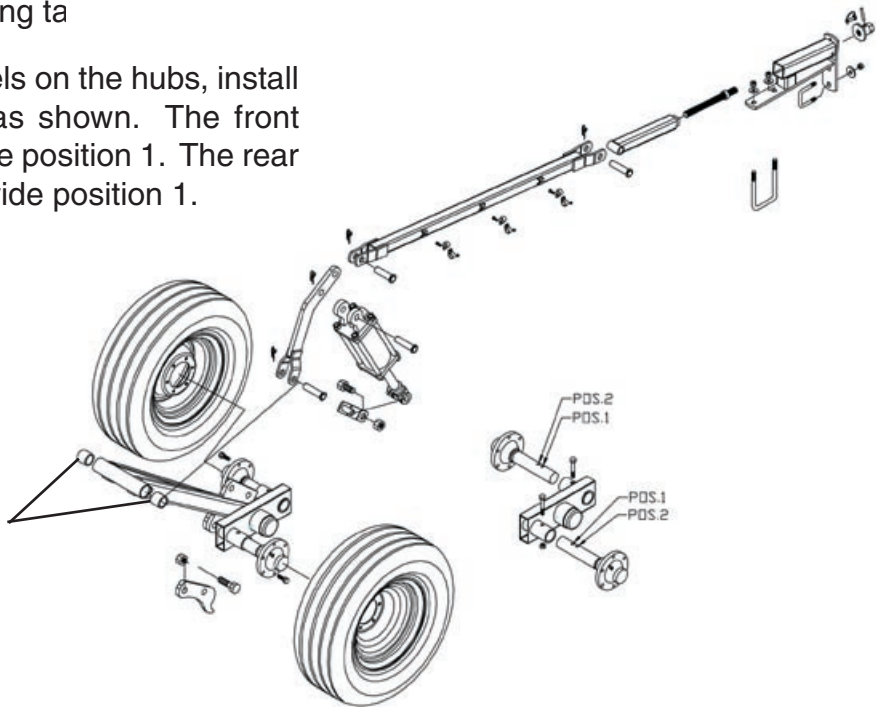
Install the front and rear folding hinges to the frames at the same time as you assemble the wing frames. The hinge pins and fold cylinder pins are installed later when connecting the wings to the centre section. Take care to leave the nuts and bolts loose at the hinges as it makes it easier to align the holes when attaching the wings to the centre section.



When the wing frame is fully assembled and lowered to the ground resting on the tines, gather the components for the wing ta

Before mounting the wheels on the hubs, install the wheel spindle bolts as shown. The front spindle must be in the wide position 1. The rear spindle should be in the wide position 1.

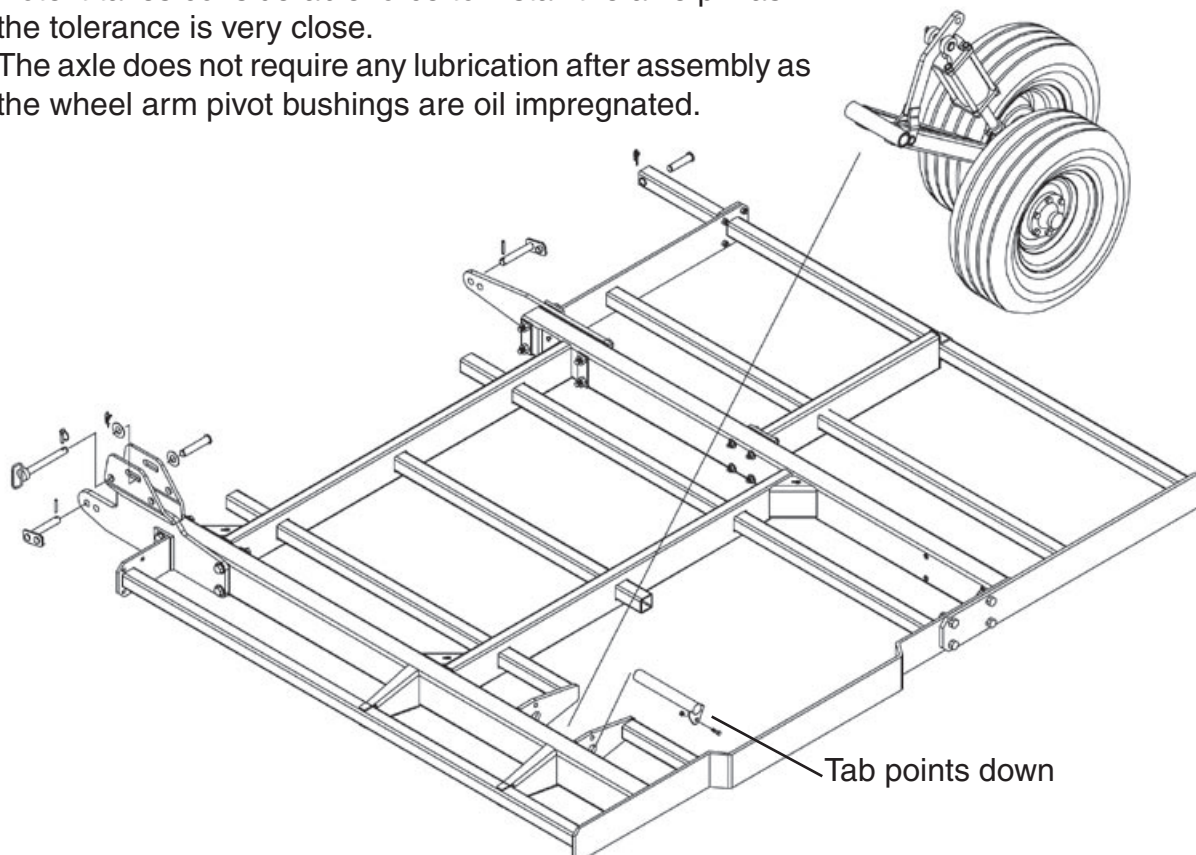
Install the pivot bushings into the ends of the wheel arm tubes. Do not hammer directly on the bushings, tap them in using a wooden block or rubber mallet.



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. Make sure the pin lock tab is pointing down before installing the lock nut and bolt.

Note it takes considerable force to install the axle pin as the tolerance is very close.

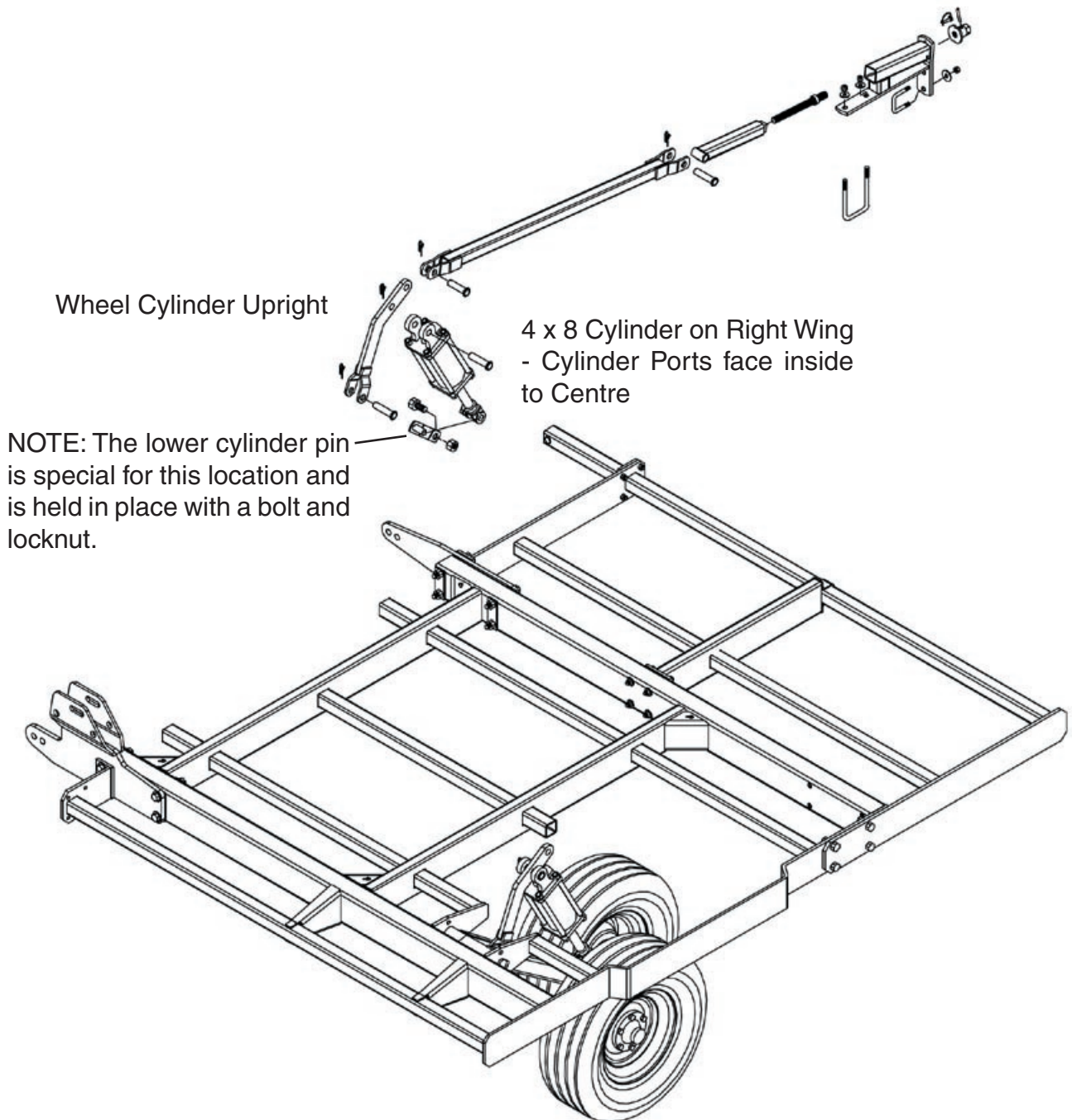
The axle does not require any lubrication after assembly as the wheel arm pivot bushings are oil impregnated.



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 4.25 x 8 the other is 4 x 8. Check the hydraulic layout in order to make sure you install the cylinders on the correct side of the machine. The 4.25 x 8 cylinder is installed on the left wing and the 4 x 8 cylinder is installed on the right wing as shown below. The ports on both cylinders should face into the centre of the machine.

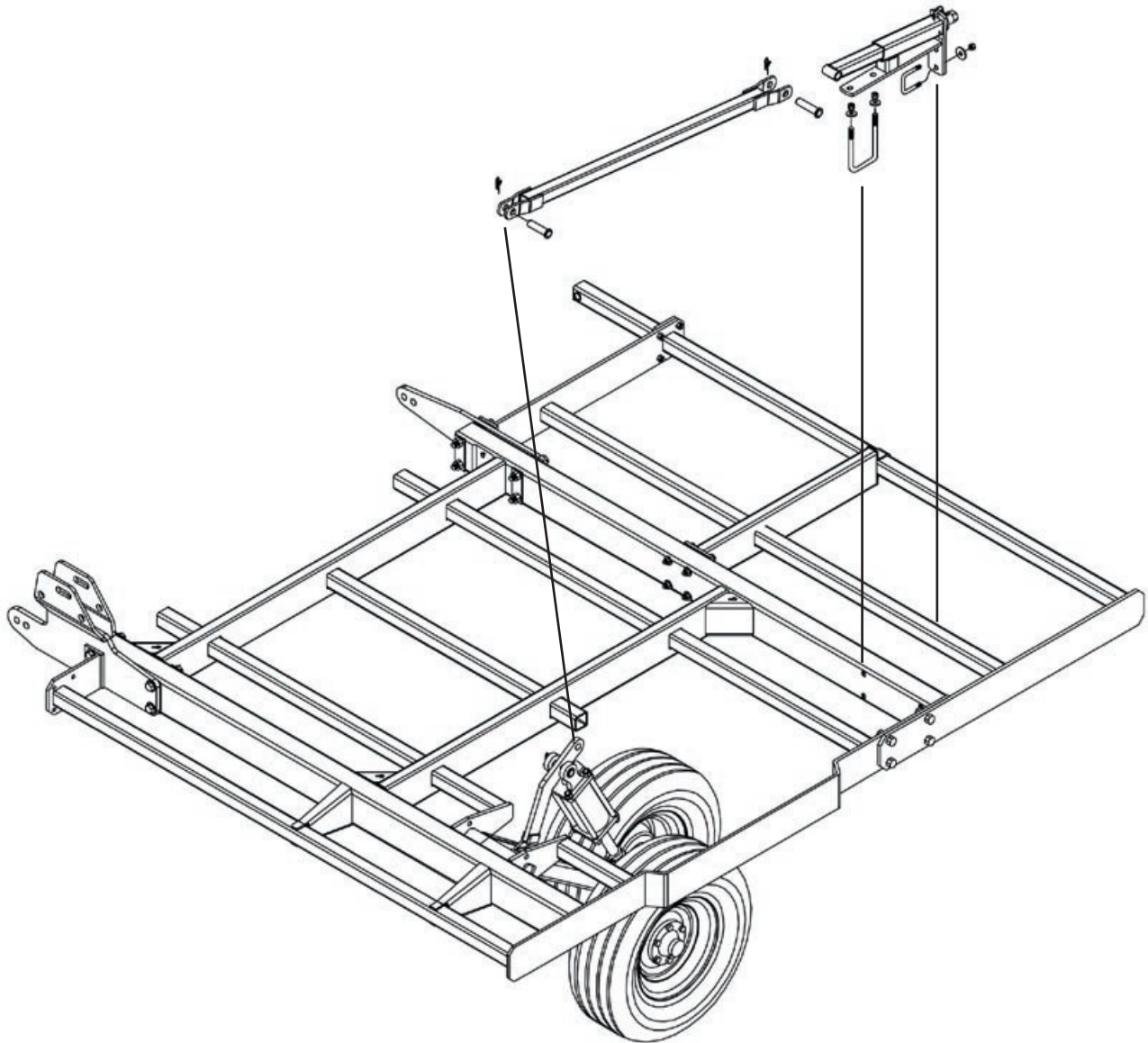
The butt end or top of the cylinder is connected to the wheel upright bar with one of the pins and clip pins supplied. The rod end clevis connects to the lug on the lower end of the wheel arm so the cylinder extends and retracts with the rod pointing down. The clevis pin is special and has a mounting plate with bolt and locknut to secure it in place.



Install the wing wheel adjustment linkage with the pins, locking clip pins and U-bolts supplied.

The wheel linkage tube should be mounted with the hose brackets on the inside as shown in the detail photo below.

Take care to keep the linkages straight when tightening the U-Bolts so the adjustment slider does not bind when adjusted in and out.



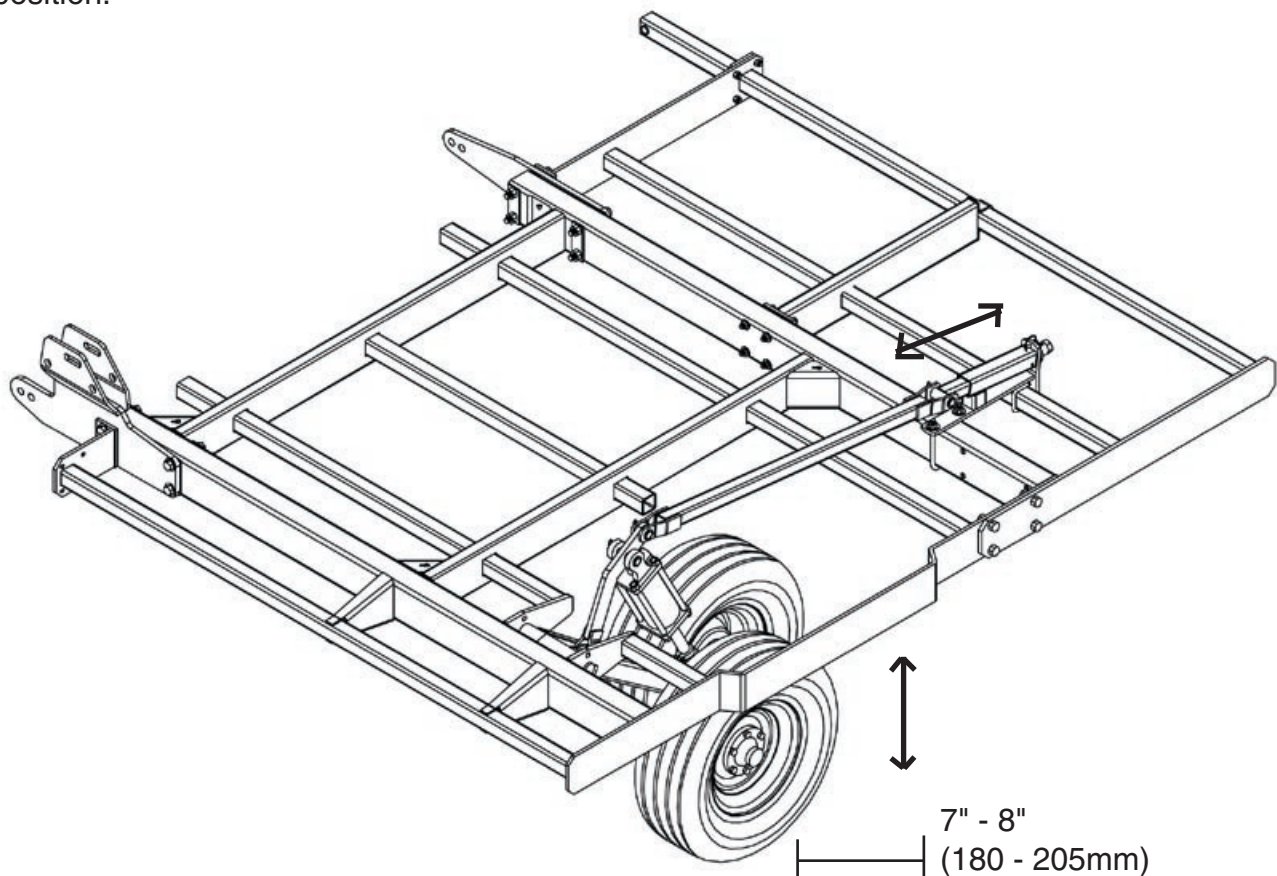
The adjustment linkage is used to adjust the wings so they are level with the centre section when working in the field.

To adjust the linkage, remove the clip pin and turn the adjustment casting clockwise or counter clockwise to lengthen or shorten the linkage. This in turn will raise or lower the wing wheel arm position so the wings will run level at the same depth as the centre section. The adjustment can be made with either a large adjustable wrench, or 1-1/2" socket, or a 3/4" drive socket wrench handle only.

More information on the proper adjustment of these linkages is covered in the Owners Manual under Field Settings and Adjustments.

Initially the adjustment slider can be set at 7" - 8" or (180 to 205mm). The distance is measured from the edge of the outer housing tube to the centre of the pin.

Take care to replace the clip lock pin so the slider adjustment does not move from the set position.



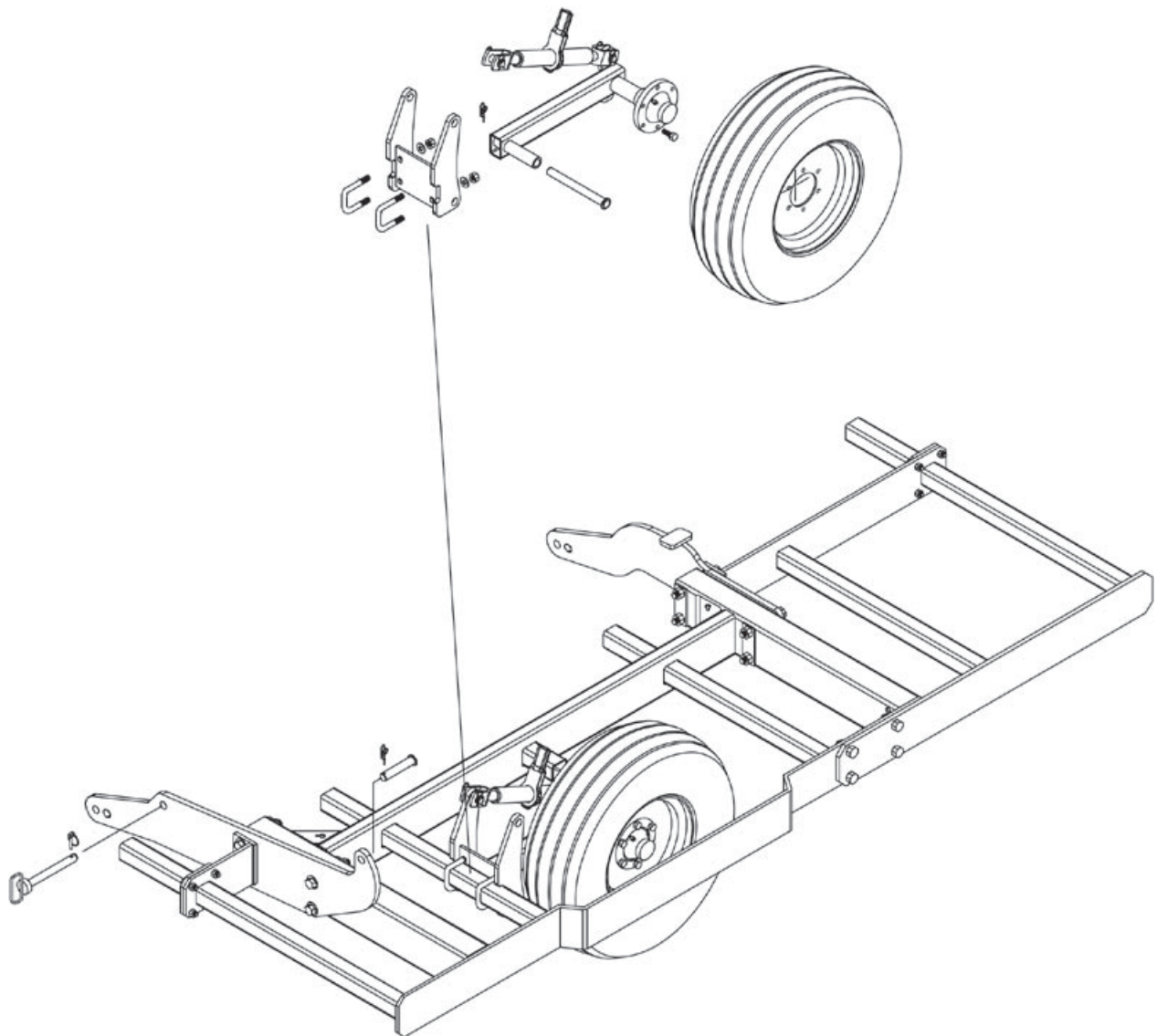
### **Mechanical Adjust Wheels on 3'3" (1.0m) Wings:**

The mechanical adjusting wheel is used as the wing depth wheel on the 16' (5m) model cultivator with 1m wings. It is also available as an accessory wing gauge wheel on all other models.

On the small 3'3" (1.0m) Wing, the wheel is mounted inside the wing frame to the toolbar as shown below. It should be assembled with the wheel mounted to the outside and positioned to run about 1-1/2 to 2" away from the outside of the wing.

The mounting bracket and wheel arm are designed to allow the wheel to be assembled for right or left hand use by turning the wheel arm over and mounting the turnbuckle adjuster on the opposite side of the mounting bracket. The diagram below shows the wheel assembled for the right side wing.

Adjustment of the working depth of the wing is accomplished using the mechanical ratchet on the turnbuckle. An extension handle is provided for easier adjustment of the mechanical ratchet.



## Mechanical Adjust Wheel used as Front Gauge Wheel:

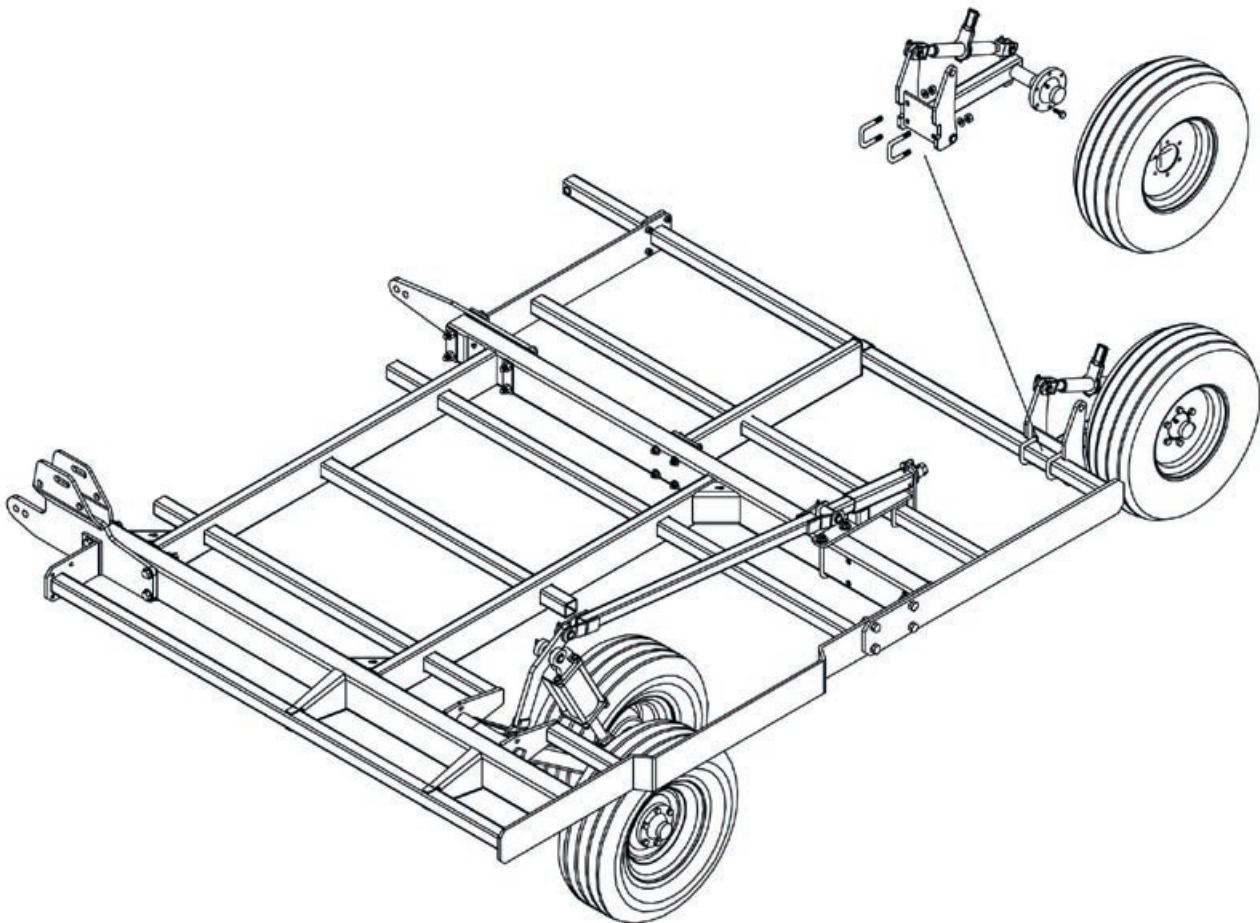
When used as a front gauge wheel the gauge wheel mounting bracket is attached to the front toolbar with the U-bolts provided. Again, the tire is usually mounted to the outside and positioned near the front corner of the machine. The exact position will vary depending on the tine pattern but the wheel should not stick out past the outside of the wing.

The mounting bracket and wheelarm are designed to allow the wheel to be assembled for right or left hand use by turning the wheel arm over and mounting the turnbuckle adjuster on the opposite side of the mounting bracket. The diagram below shows the wheel assembled for the right side wing.

Adjustment of the gauge wheel is accomplished using the mechanical ratchet on the turnbuckle. An extension handle is provided for easier adjustment of the mechanical ratchet.

Instructions for adjusting wheels and setting the working depth is explained in detail in the Cultivator Owners Manual. When working in the field, the gauge wheels should only have light contact with the ground in order to hold the depth accuracy of the wing and prevent it from bouncing.

As a preliminary setting the wheels can be adjusted about 2" from the ground when the cultivator is resting on the tines.

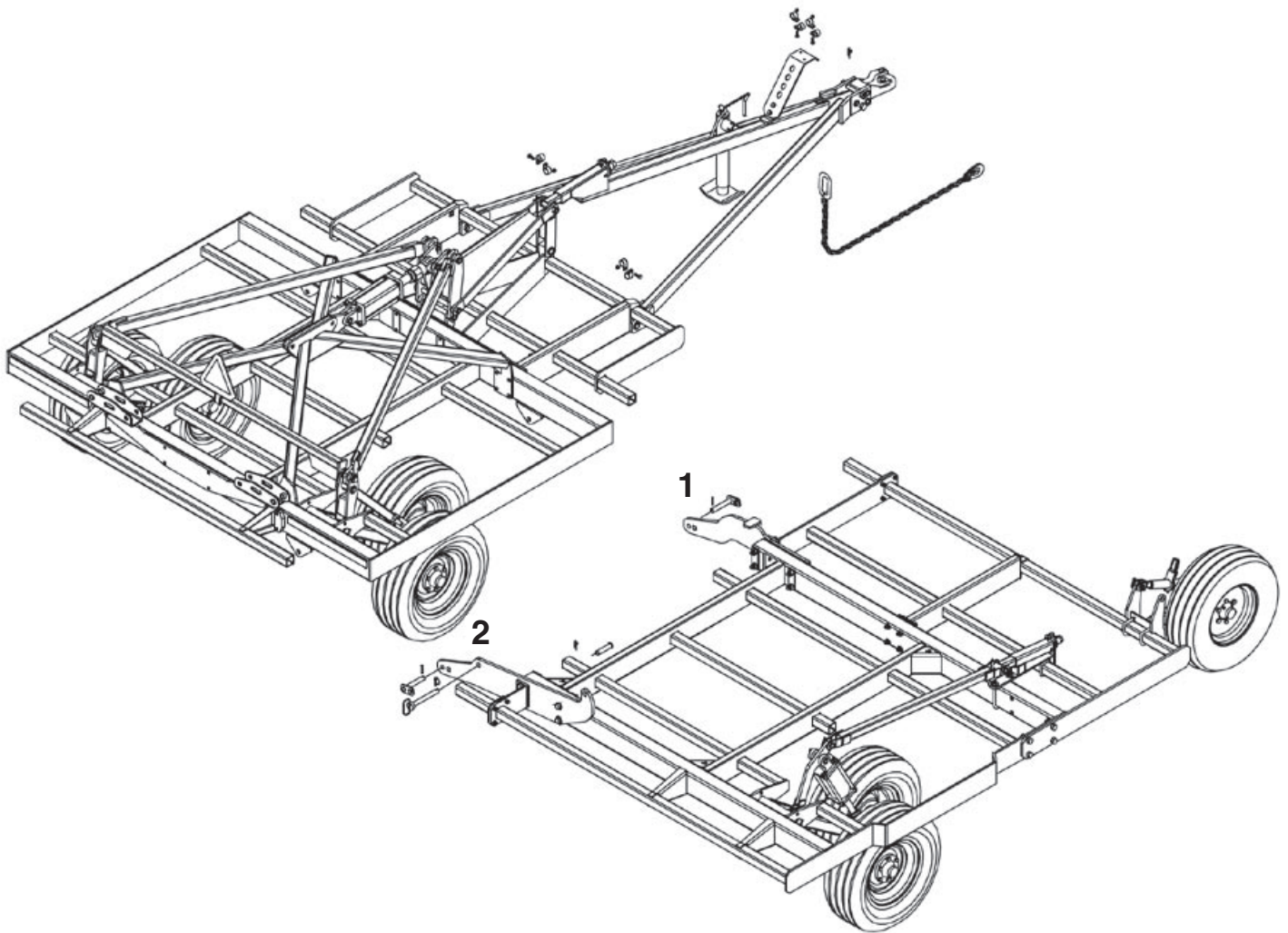


## Final Assembly of the 10' (3m) Centre Section and Wings:

Move the wing assemblies into position beside the centre section.  
Install the wing hinge pins according to step 1 & 2 in the diagram below. The hinge plate bolts should be loose to allow easier alignment and insertion of the hinge pins.

The main hinge pins are designed to lock in position and must be turned so that when they are inserted thru the hinge plates and centre frame, the pin stub locks into the second hole in the hinge plate before the roll pin can be installed.

When the pins are installed tighten the hinge plate bolts



## Folding Cylinders for 10' (3m) Centres:

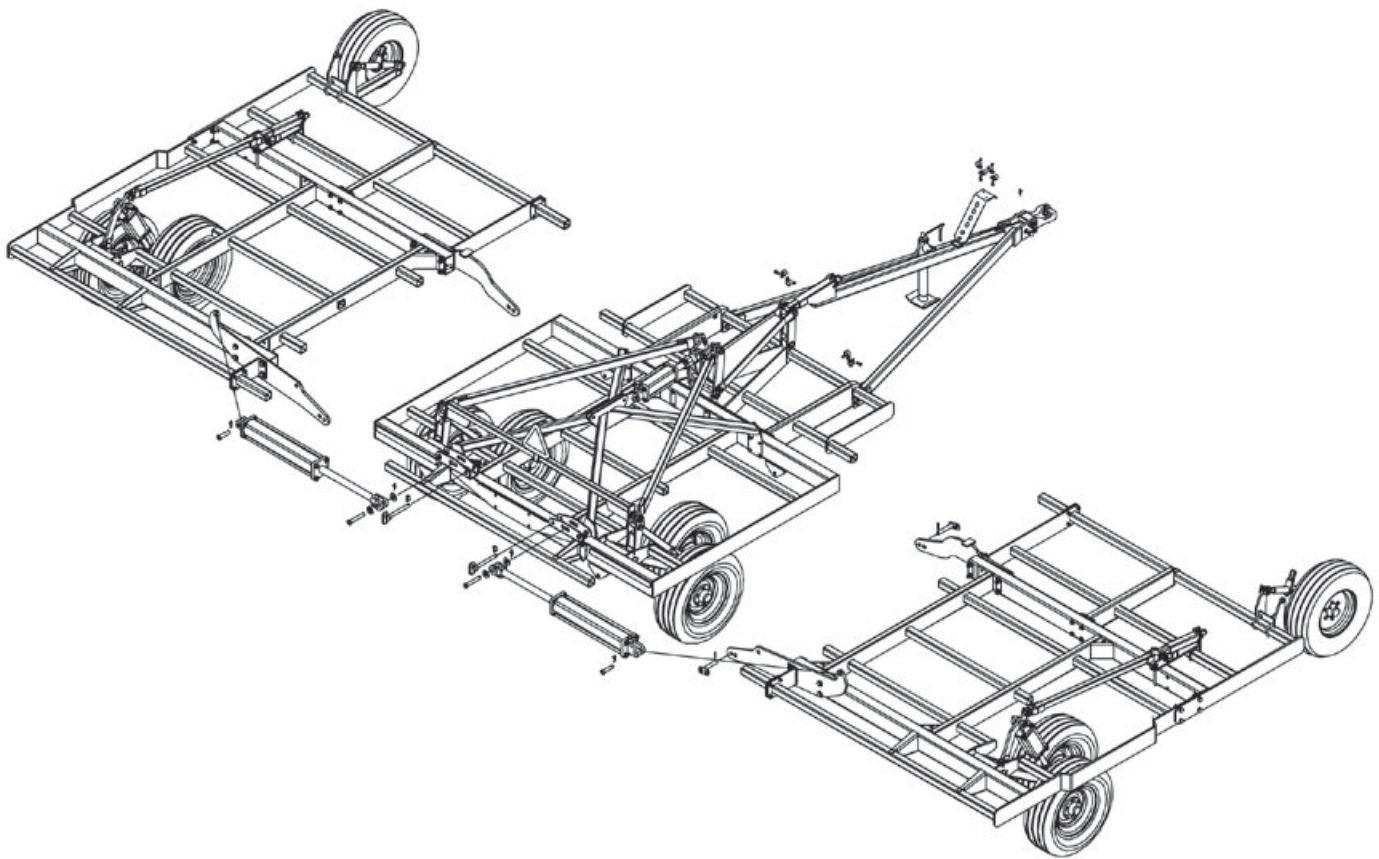
When the wings are attached to the centre section the wing fold cylinders with hydraulic hose lines and fittings can be installed.

The hydraulic assemblies are different for the 10' (3M) and 13' (4m) centre machines so make sure you have the correct diagram for the machine model you are assembling.

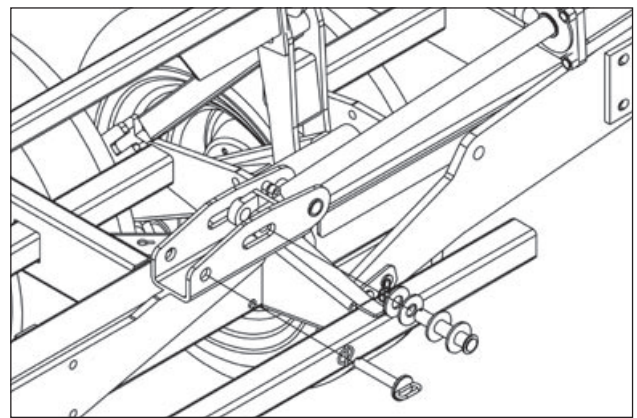
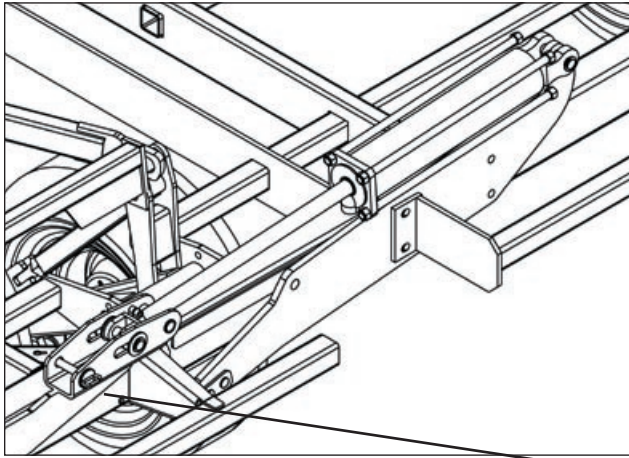
The most noticeable difference is that the machines with 10' (3m) centres have a different wing fold system to keep the machine as narrow as possible in road transport.

The wing fold hinge pivots are lower and the folding cylinders are installed to extend and retract in reverse with cylinder rods pointing towards each other. The butt clevis are attached to the folding hinge plates on the wings and the rod clevis are attached to slots in the centre section fold bracket. (The slots allow the wings to float up and down in the field when the cylinders are fully extended.)

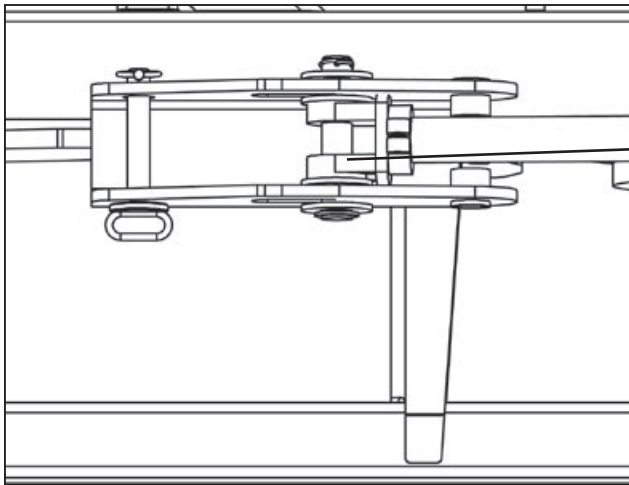
Install the wings and fold cylinders as shown on the assembly diagram below and follow the Hydraulic Hose layouts carefully for proper assembly of the hoses and fittings shown later in this booklet.



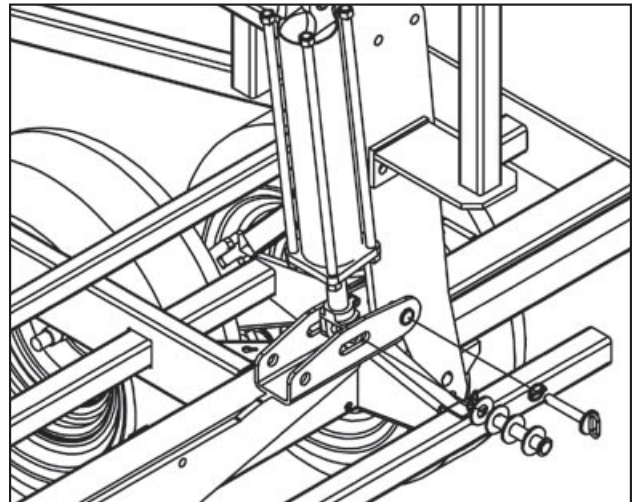
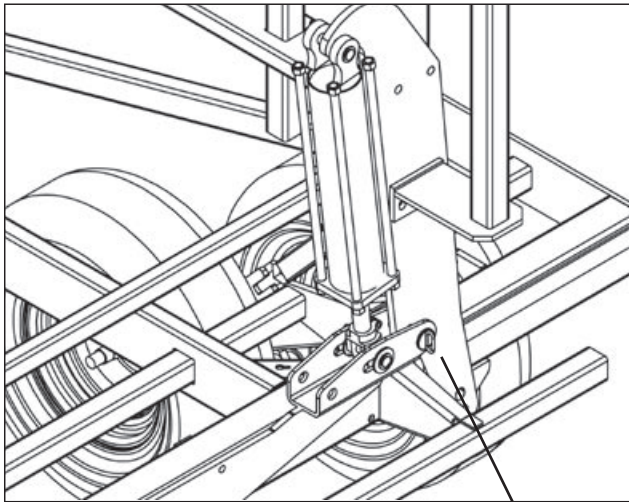
## Detail Pictures of the 10' (3m) Fold Cylinders Installed:



Shown: Cylinders in extended position. Fold lock pin goes in storage hole when not being used.



Be sure to place 4 1" washers at rod end of cylinder. These keep the clevis centered.



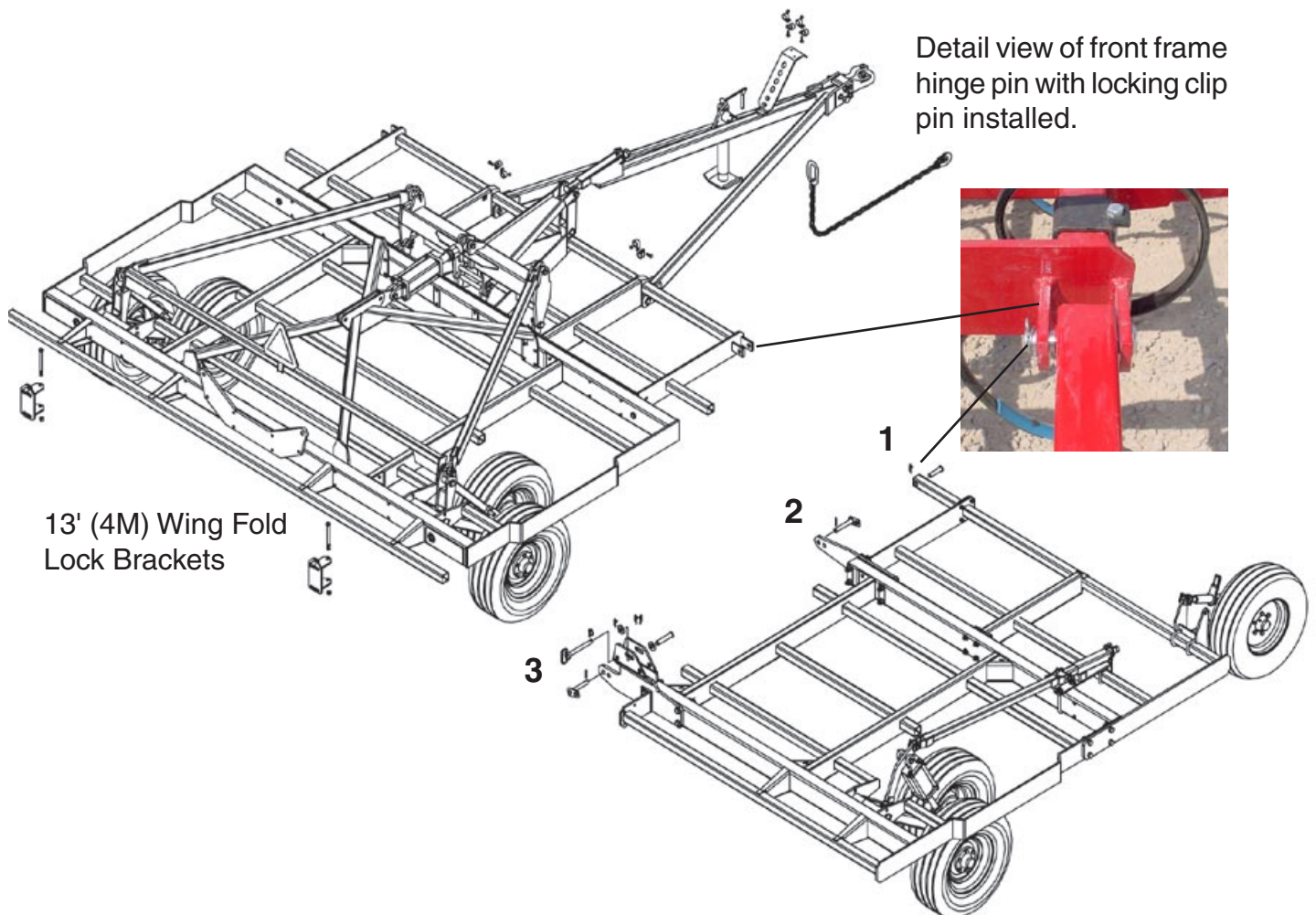
Cylinders in folded position.  
Insert fold lock pin as shown.

## Final Assembly of the 13' (4m) Centre Section and Wings:

Move the wing assemblies into position beside the centre section.

Install the wing hinge pins according to step 1, 2 & 3 in the diagram below. The hinge plate bolts should be loose to allow easier alignment and insertion of the hinge pins. The main hinge pins are designed to lock in position and must be turned so that when they are inserted thru the hinge plates and centre frame, the pin stub locks into the second hole in the hinge plate before the roll pin can be installed.

The front toolbar stub also acts as a 3rd hinge to provide greater stability for the front frame extension on the wide fold models. Secure the front toolbar hinge pins in place with the locking clip pin. When the pins are installed re-tighten the hinge plate bolts



The 13' (4m) centre also has special wing lock brackets that must be installed before folding the wings. The brackets are installed on the main frame tube behind the wheel arm. Mount the lock brackets with the bolts provided but do not tighten the locknut. You will need to move the brackets in order to align the hole in the bushing with the hole in the wing hinge plates in order to insert the wing fold lock pin.

Refer to the pages for the hydraulic assembly for further instructions.

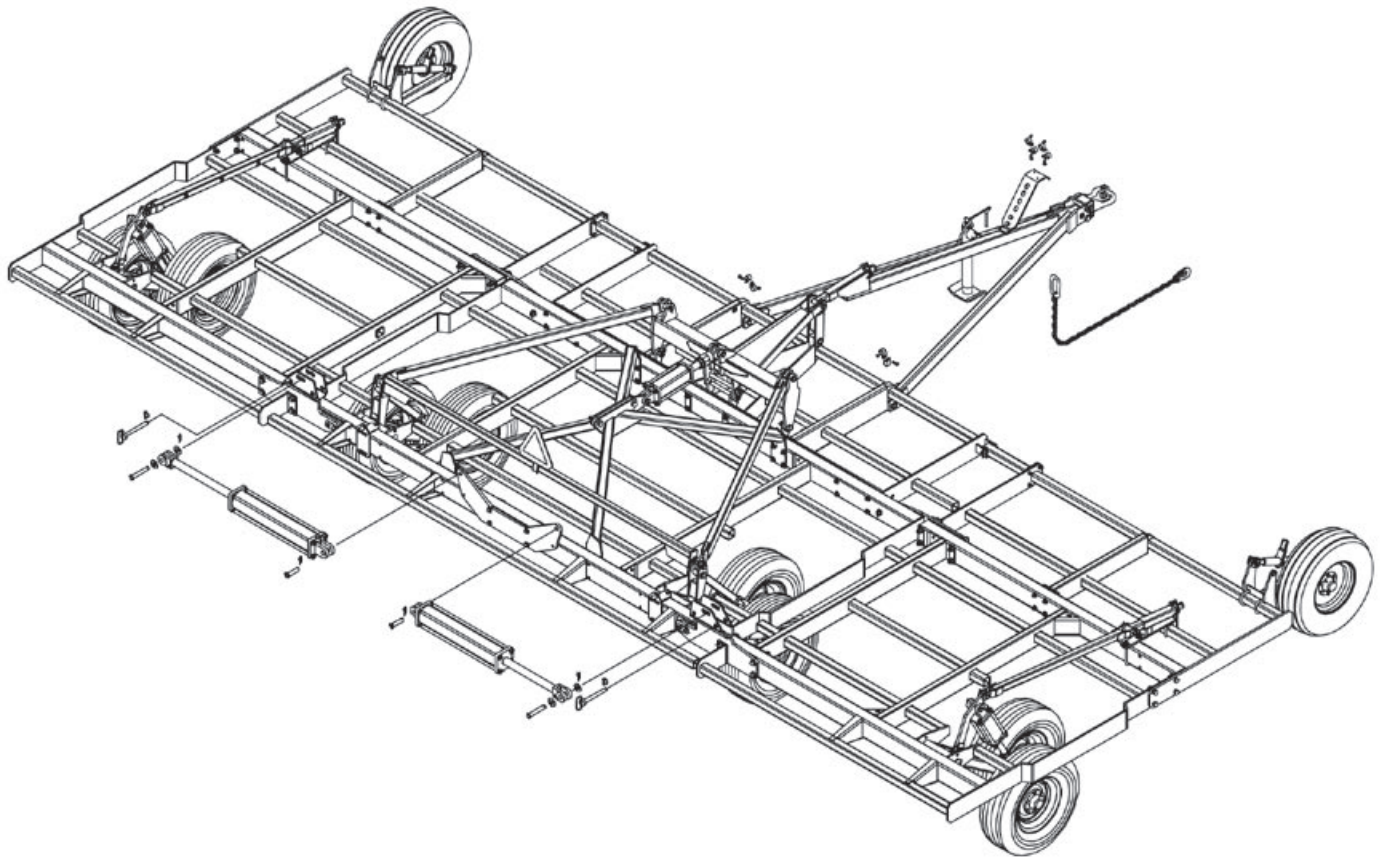
## Folding Cylinders 13' (4m) Centres:

When the wings are attached to the centre section the wing fold cylinders with hydraulic hose lines and fittings can be installed.

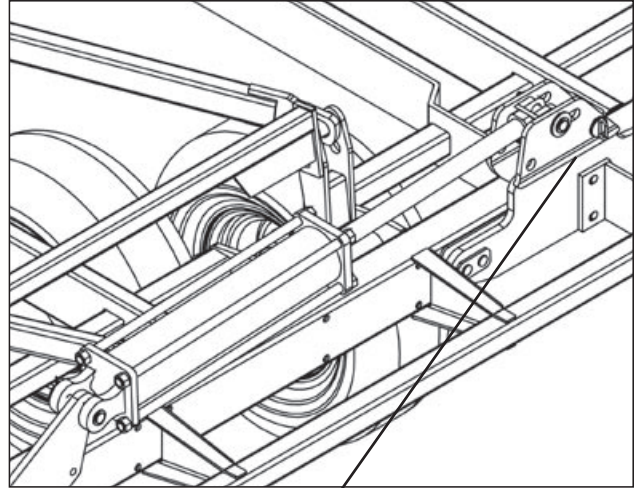
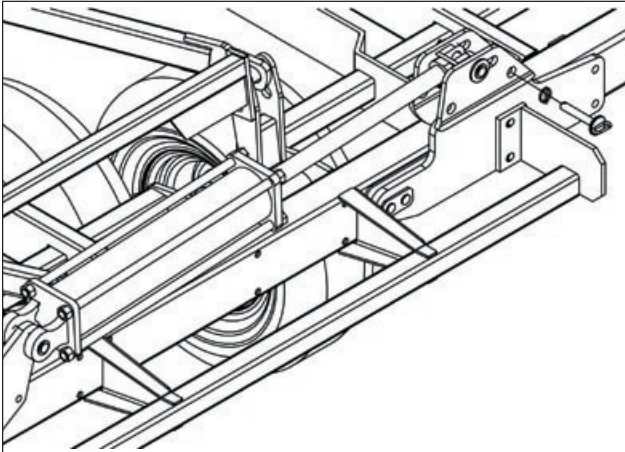
The hydraulic assembly is different for the 13' (4m) centre machines so make sure you have the correct hose layout diagram for the machine model you are assembling.

The most noticeable difference is that the models with 13' (4m) centres have additional fold lock brackets that must be installed in order to lock the wings in the folded position for transport. The other difference is that the folding cylinders are installed so the cylinder rods extend and retract pointing away from the centre. The cylinder butt clevis are attached to the centre fold plate and the rod clevis are attached to the slot in the folding hinge brackets on the wings. (This allows the wing to float up and down in the field when the cylinders are fully extended.)

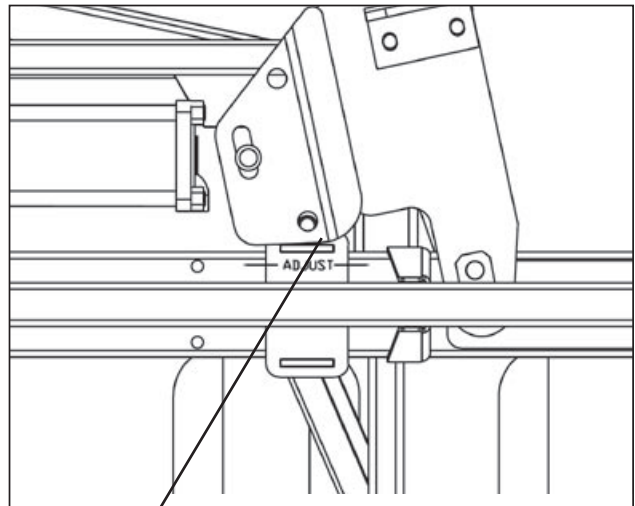
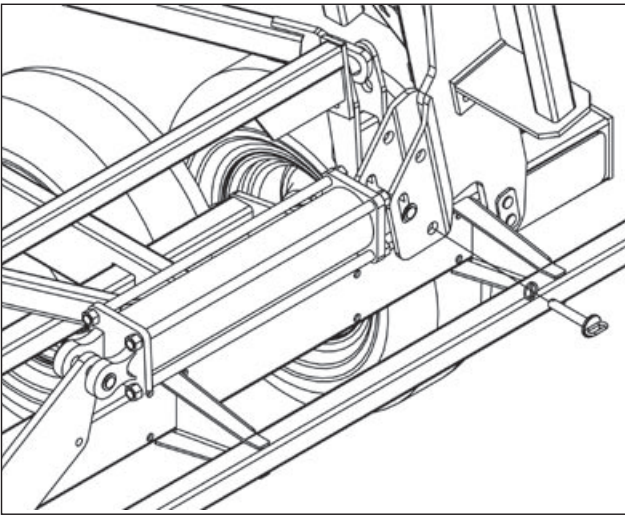
Install the rear folding brackets and cylinders as shown on the assembly diagram below and follow the Hydraulic Hose layouts carefully for proper assembly of the hoses and fittings shown later in this booklet.



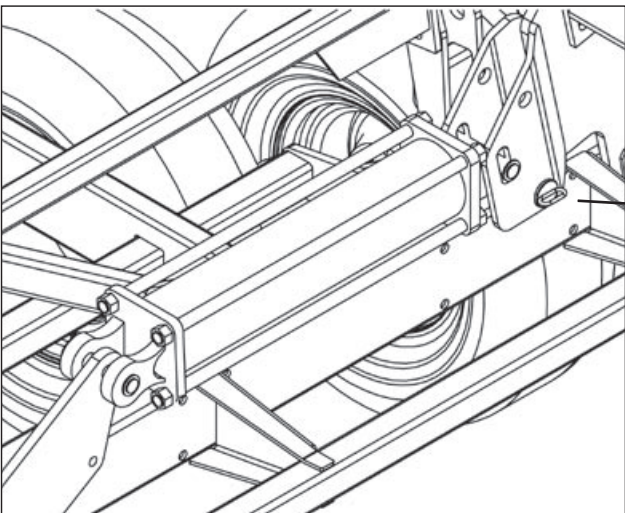
## Detail Pictures of the 13' (4m) Fold Cylinders Installed:



Cylinders in extended Position. Place fold lock pin in storage hole when not being used.



With cylinders in folded position, adjust fold lock plate so that holes lineup.



Insert fold lock pin as shown.

## Hydraulic Diagrams and 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 locknuts provided.

### IMPORTANT NOTE:

DO NOT PLACE HOSE LINES ALONG FRAME IN FRONT OF TOP FRAME MOUNTING PLATES AS SHOWN BELOW.

HOSE LINES CAN BECOME PINCHED BY THE FRONT WING FOLD STOP PLATE WHEN FOLDING IF HOSES ARE LAYING ON TOP OF THE FRAME TUBE.

HOSES SHOULD BE BEHIND THE TOP FRAME AND NEATLY CLAMPED SO THEY DO NOT INTERFERE WITH THE HINGES WHEN FOLDING.



KEEP HOSES LINES RUNNING ACROSS THE CULTIVATOR BEHIND THE FRAME TUBE AND NEATLY CLAMPED TO THE FRAMES WITH THE HOSE CLAMPS OR PLASTIC TIE STRAPS PROVIDED.



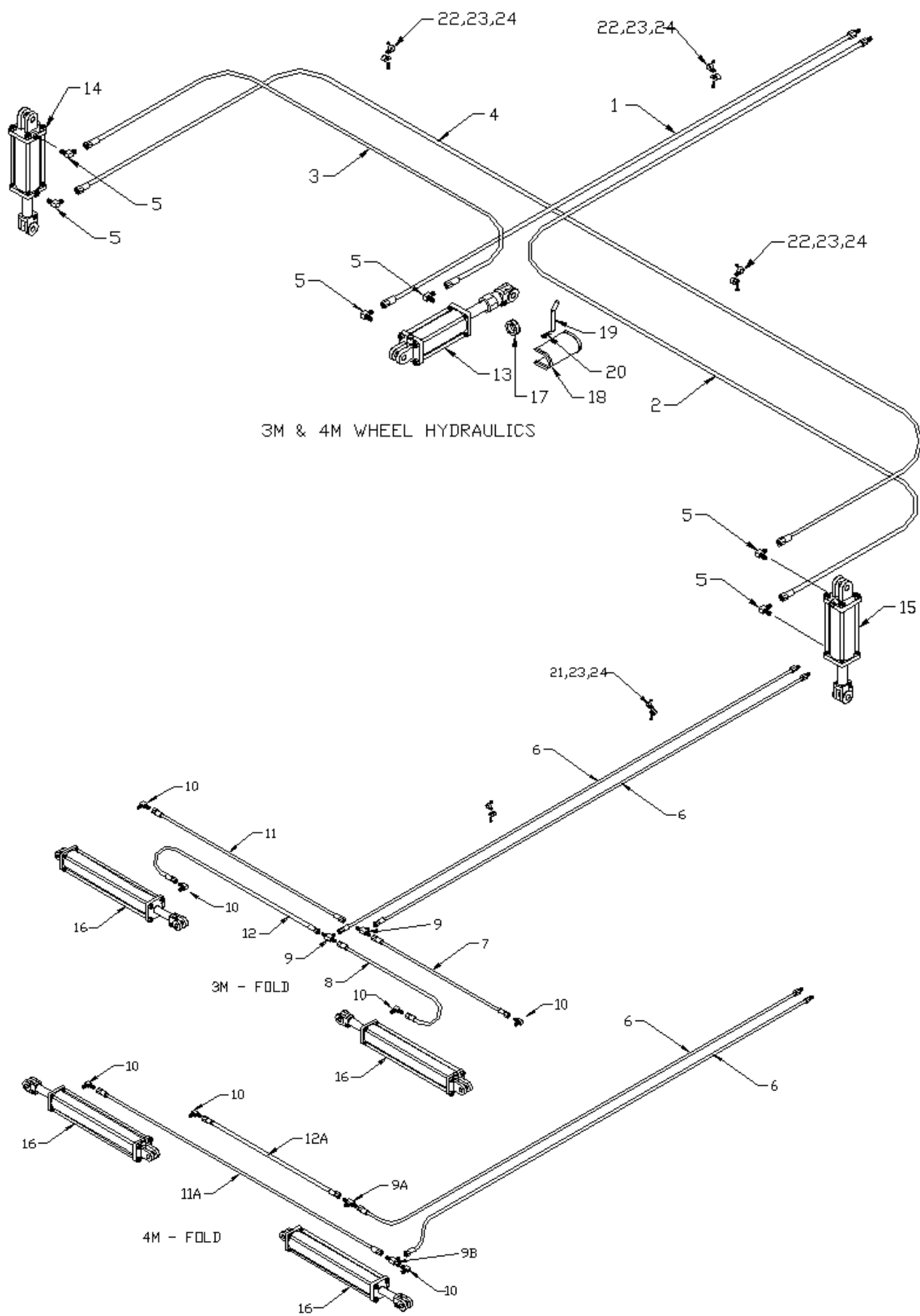


Fig.	Part no.	Description
1	600470233	1/2" Hose 1/2" Pipe x 1/2" JIC - 208" all models (2 req'd on non fold models)
2	600470244	1/2" Hose 1/2" Pipe x 1/2" JIC - 397" (2800-60-20')
	600470235	1/2" Hose 1/2" Pipe x 1/2" JIC - 417" (2800-70-23')
	600470245	1/2" Hose 1/2" Pipe x 1/2" JIC - 437" (2800-80-26')
	600470234	1/2" Hose 1/2" Pipe x 1/2" JIC - 457" (2800-90-30')
	600470269	1/2" Hose 1/2" Pipe x 1/2" JIC - 477" (2800-100-33')
3	600470182	1/2" Hose 1/2" JIC x 1/2" JIC - 175" (2800-60-20')
	600470239	1/2" Hose 1/2" JIC x 1/2" JIC - 195" (2800-70-23')
	600470177	1/2" Hose 1/2" JIC x 1/2" JIC - 215" (2800-80-26')
	600470137	1/2" Hose 1/2" JIC x 1/2" JIC - 235" (2800-90-30')
	600470272	1/2" Hose 1/2" JIC x 1/2" JIC - 255" (2800-100-33')
4	600470147	1/2" Hose 1/2" JIC x 1/2" JIC - 310" (2800-60-20')
	600470149	1/2" Hose 1/2" JIC x 1/2" JIC - 350" (2800-70-23')
	600470151	1/2" Hose 1/2" JIC x 1/2" JIC - 390" (2800-80-26')
	600470153	1/2" Hose 1/2" JIC x 1/2" JIC - 430" (2800-90-30')
	600470273	1/2" Hose 1/2" JIC x 1/2" JIC - 470" (2800-100-33')
5	600470049	Elbow 1/2" O-ring x 1/2" JIC - 90 Degree
6	600470232	3/8" Hose 1/2" Pipe x 3/8" JIC - 280" (All Folding Models)
7	600470270	3/8" Hose 3/8" JIC x 3/8" JIC - 62" (All narrow centre models -3m)
8	600470297	3/8" Hose 3/8" JIC x 3/8" JIC - 82 " (All narrow centre models -3m)
9	600470003	Tee 3/8" JIC (All narrow centre models -3m)
9A	600470295	Tee 3/8" JIC x 3/8" JIC x 1/2" ORB (All wide centre models -4m)
9B	600470296	Tee 3/8" JIC x 3/8" JIC(FS) x 3/8" JIC (All wide centre models -4m)
10	600470124	Elbow 1/2" O-ring x 3/8" JIC
11	600470290	3/8" Hose 3/8" JIC x 3/8" JIC -102 " (All narrow centre models -3m)
11A	600470294	3/8" Hose 3/8" JIC x 3/8" JIC - 100" (All wide centre models -4m)
12	600470289	3/8" Hose 3/8" JIC x 3/8" JIC -126 " (All narrow centre models -3m)
12A	600470293	3/8" Hose 3/8" JIC x 3/8" JIC - 56" (All wide centre models -4m)
13	600474502	Cylinder 4.5 x 8 Rephasing with Mechanical Stroke Control - Midway
14	600474503	Cylinder 4.25 x 8 Rephasing - Midway
15	600474504	Cylinder 4 x 8 Rephasing - Midway
16	600474557	Cylinder 4 x 24 - Midway
17	600474513	Stop Collar 1"
18	606001331	Cylinder Transport Lock
19	601140780	Pin
20	600333011	Hair Pin Clip
21	600470007	Hose Clamp 3/8"
22	600470047	Hose Clamp 1/2"
23		Carriage Bolt 1/4" x 1"
24		Locknut 1/4"



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.



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 rephasing 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.



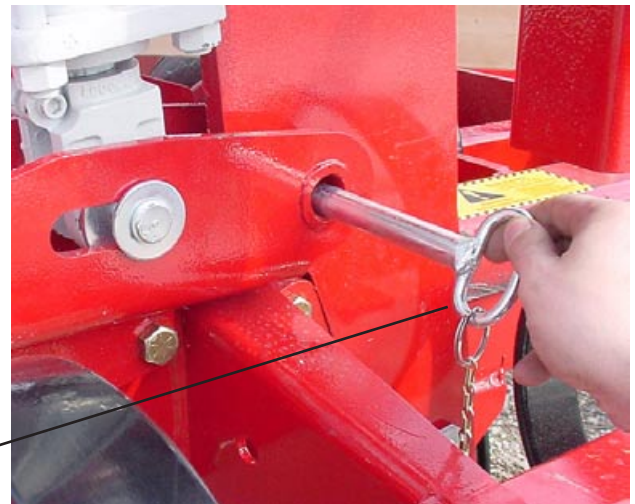
Always insert the transport lock on the master cylinder when ever the cultivator is placed in the raised position for transport, maintenance or stroage.

Secure with the lock pin and clip provided.



On 3m Center machines, be sure to loop hydraulic lines to fold cylinders as shown.

Always insert the wing fold lock pins and secure the lynch pin when ever the wings are raised in the folded position. Be sure to remove the pins and store them in the storage holes before unfolding the cultivator.



Never transport the cultivator on public road ways without installing the transport safety chain and SMV sign.

See the special instruction sheet for proper placement of the cultivator identification decals and safety warning decals

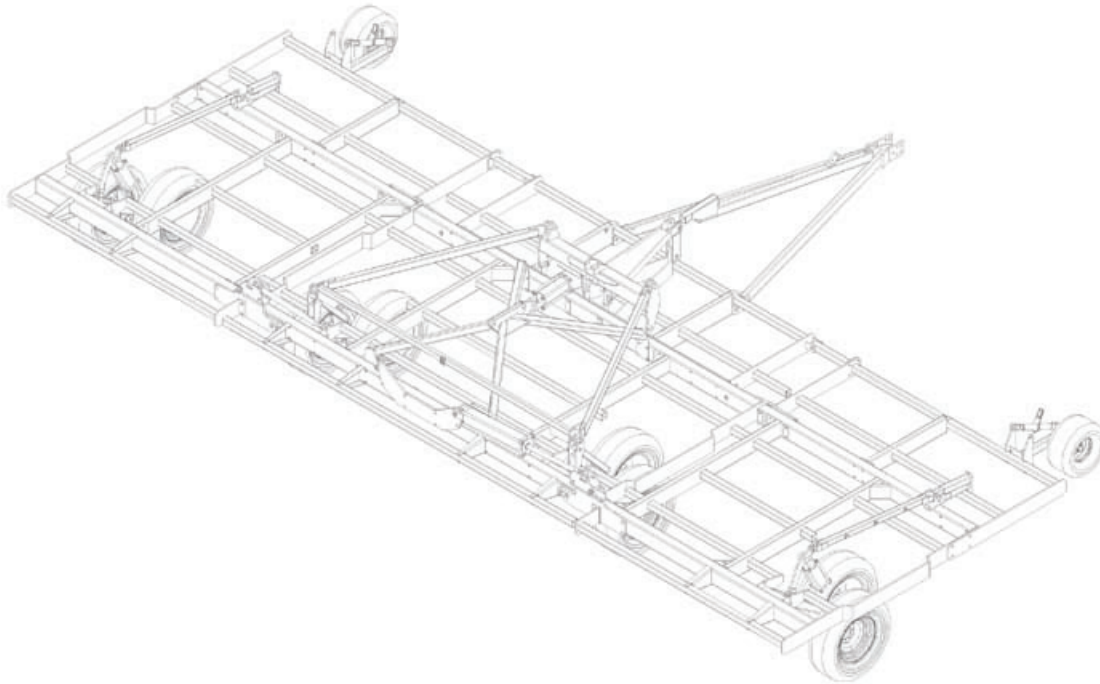
**Refer to the Owners Manual for further safety information before attempting to operate or service the unit**



When the cultivator frame is fully assembled check all nuts and bolts and secure if loose.

Double 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.



**\*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.

## Installing the Product Identification and Safety Decals:

1) Install the Kongskilde Logo decals #600475113 and Vibro-Till 2800 decals #600475168 on both sides of the draw tongue and wing frames as shown.

KONGSKILDE & Vibro-Till  
2800 on both sides of hitch



KONGSKILDE & Vibro-Till  
2800 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 both front corners and  
side bars of front frame.



YELLOW REFLECTOR  
front view



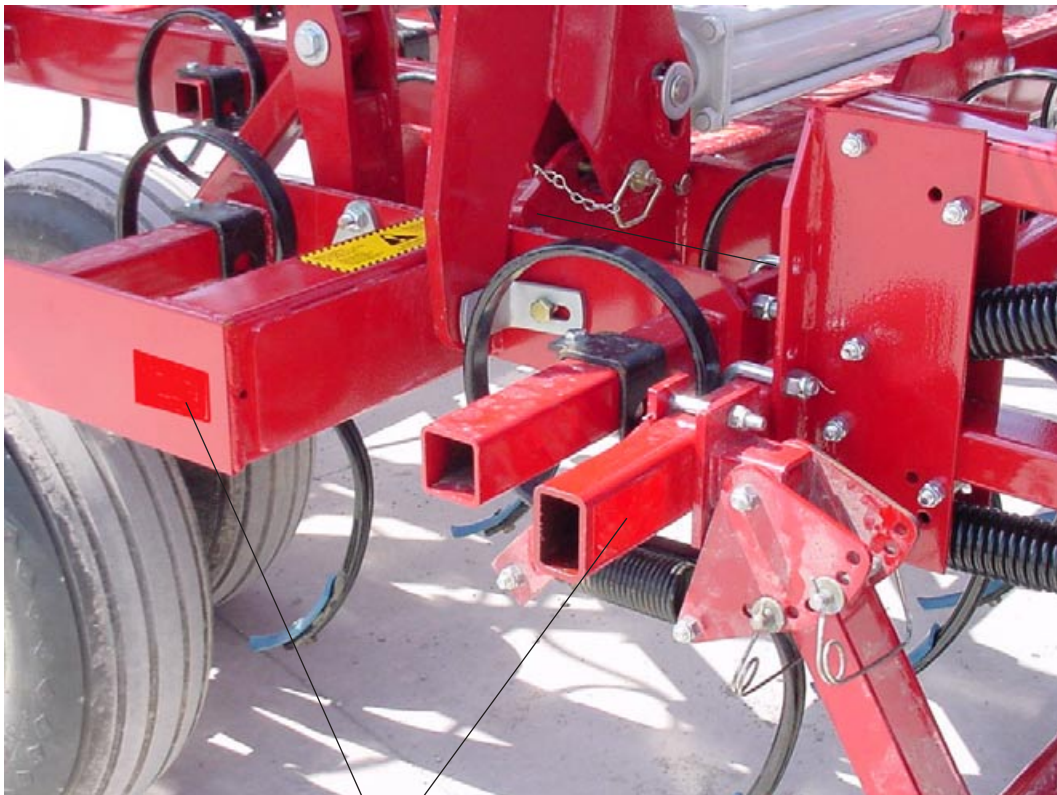
YELLOW REFLECTORS  
side view

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



If the rear reflector position could be blocked from view by harrow mounting brackets then the reflector can be place in an alternate position on the rear corner of the toolbar to provide better visibility.

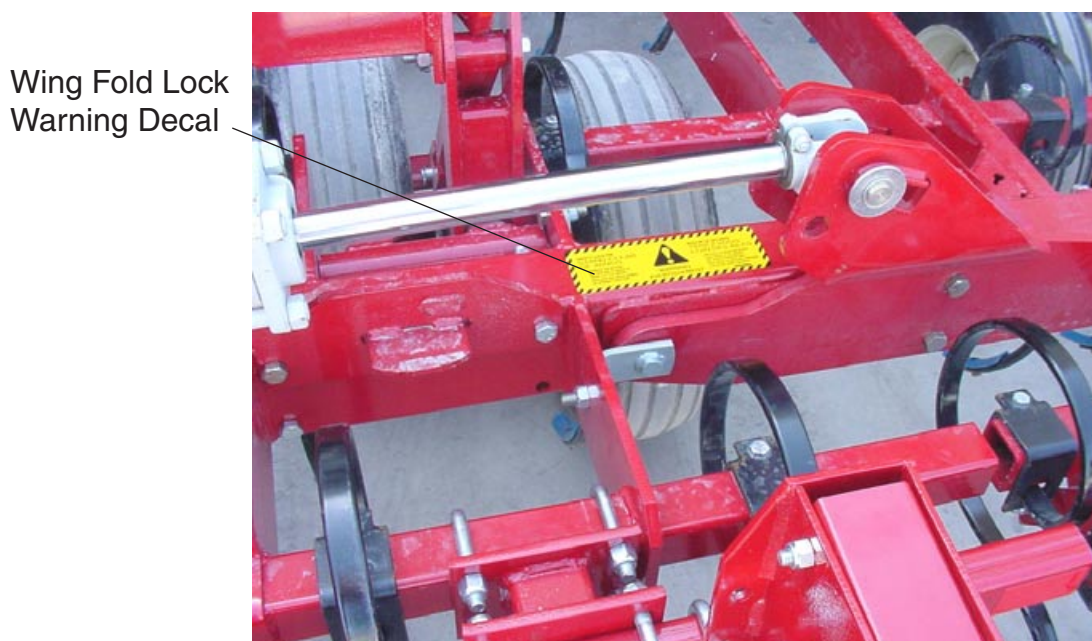


RED REFLECTORS on  
Rear Toolbar Tube and Side Bar

5) The 3 safety decals #600475170, 600475169 & 600475160 are located on the front frame side bar beside the serial number plate and the CE label as shown.



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.



7) Install the WING FOLD SAFETY DECALS #600475039 on the front and rear main frame tubes on the 2800 wing frames. The decals should be centred on the tube at about eye level so they can be read clearly when the wings are folded as shown below.

WING SAFETY on  
front wing frame tube



WING SAFETY on  
rear wing frame tube



## Tine Pattern Reference Section:

Tines Patterns in this section are organized by machine model and spacing as follows:

10' (3m) Centre and Wings - 4" patterns

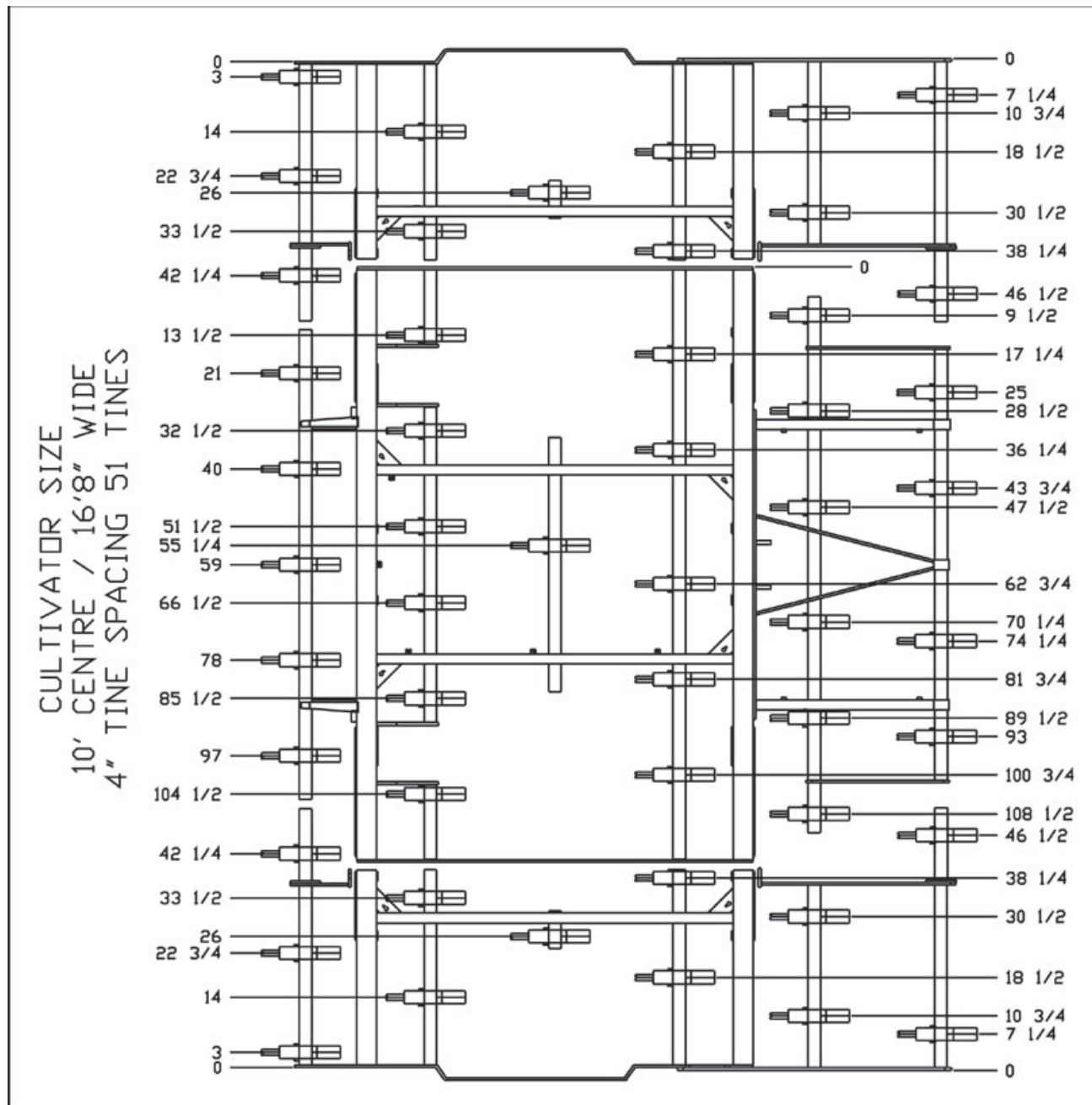
10' (3m) Centre and Wings - 6" patterns

13' (4m) Centre and Wings - 4" patterns

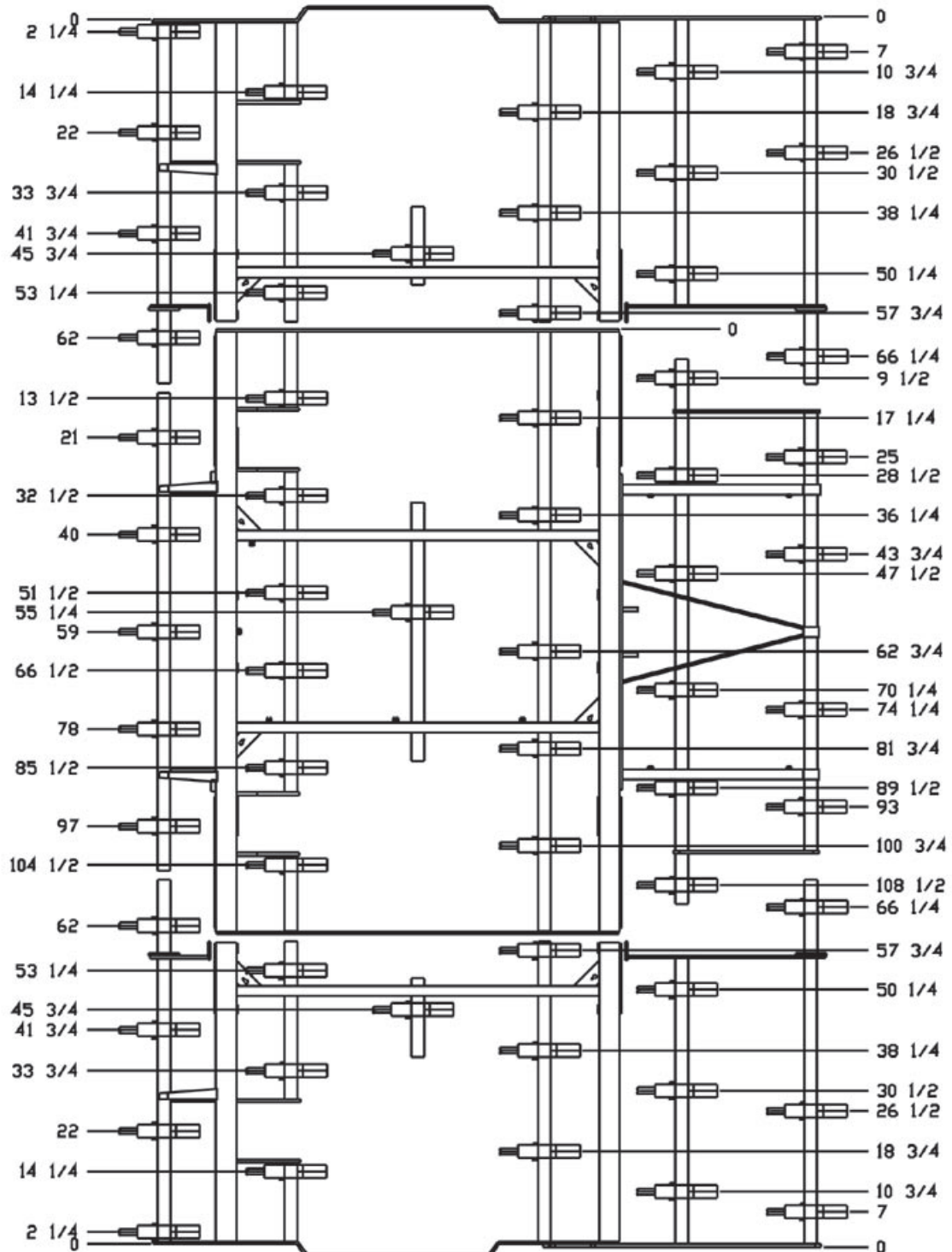
13' (4m) Centre and Wings - 6" patterns

Measure Centre Sections from Left side of frame as indicated by "0" line .

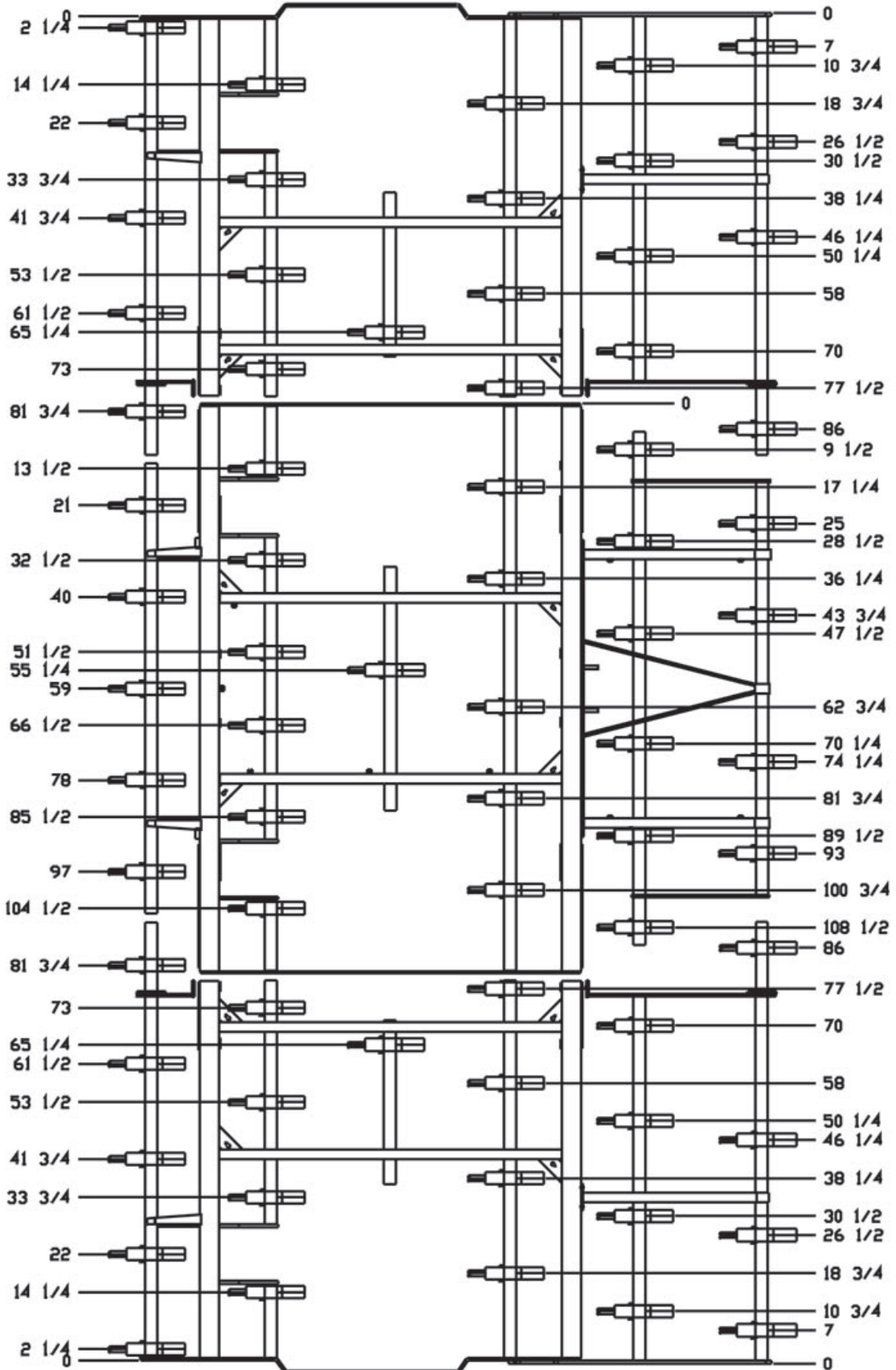
Measure Wings from outside of frame at front and rear as indicated by "0" lines.



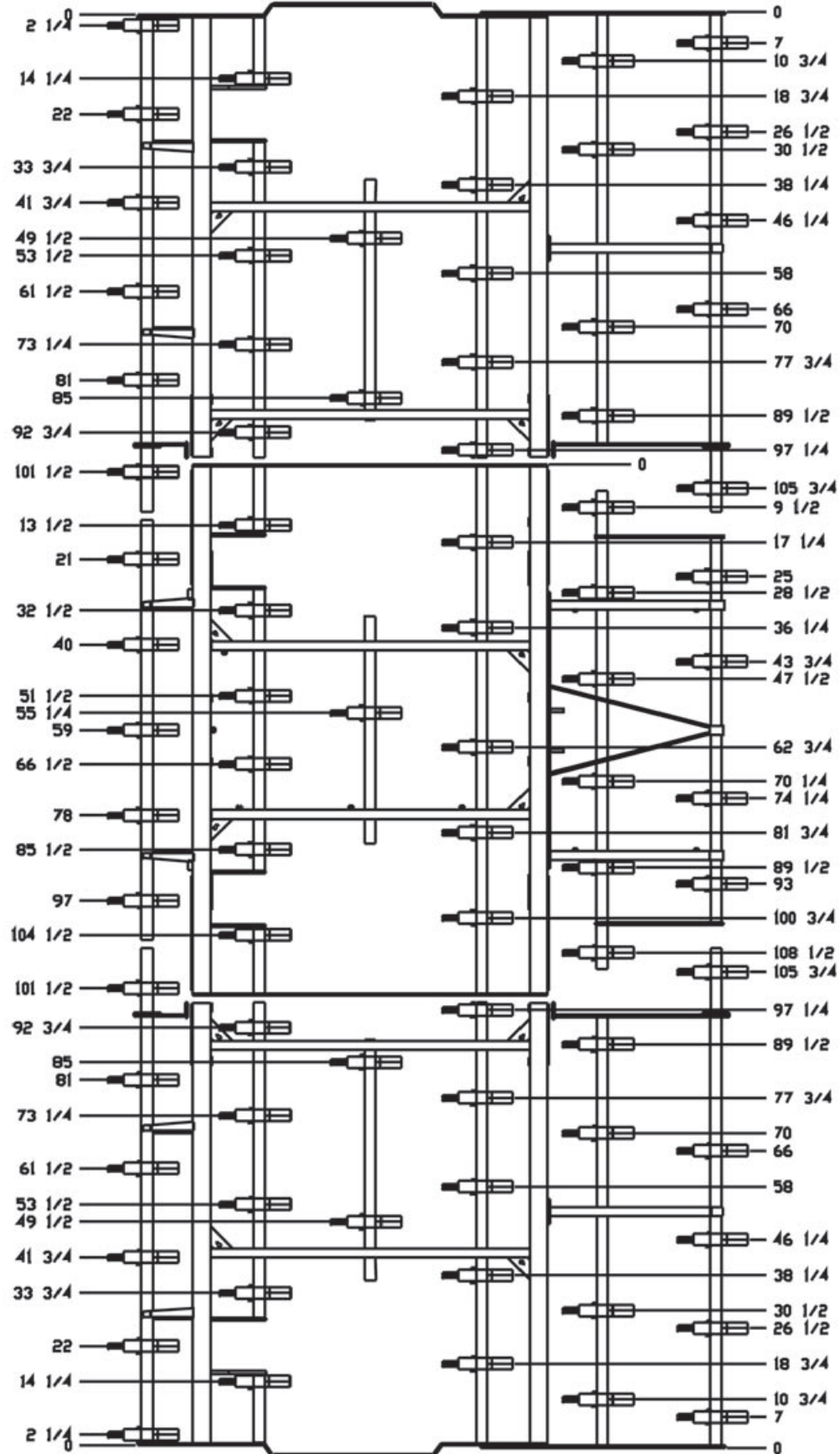
CULTIVATOR SIZE  
10' CENTRE / 20'0" WIDE  
4" TINE SPACING 61 TINES



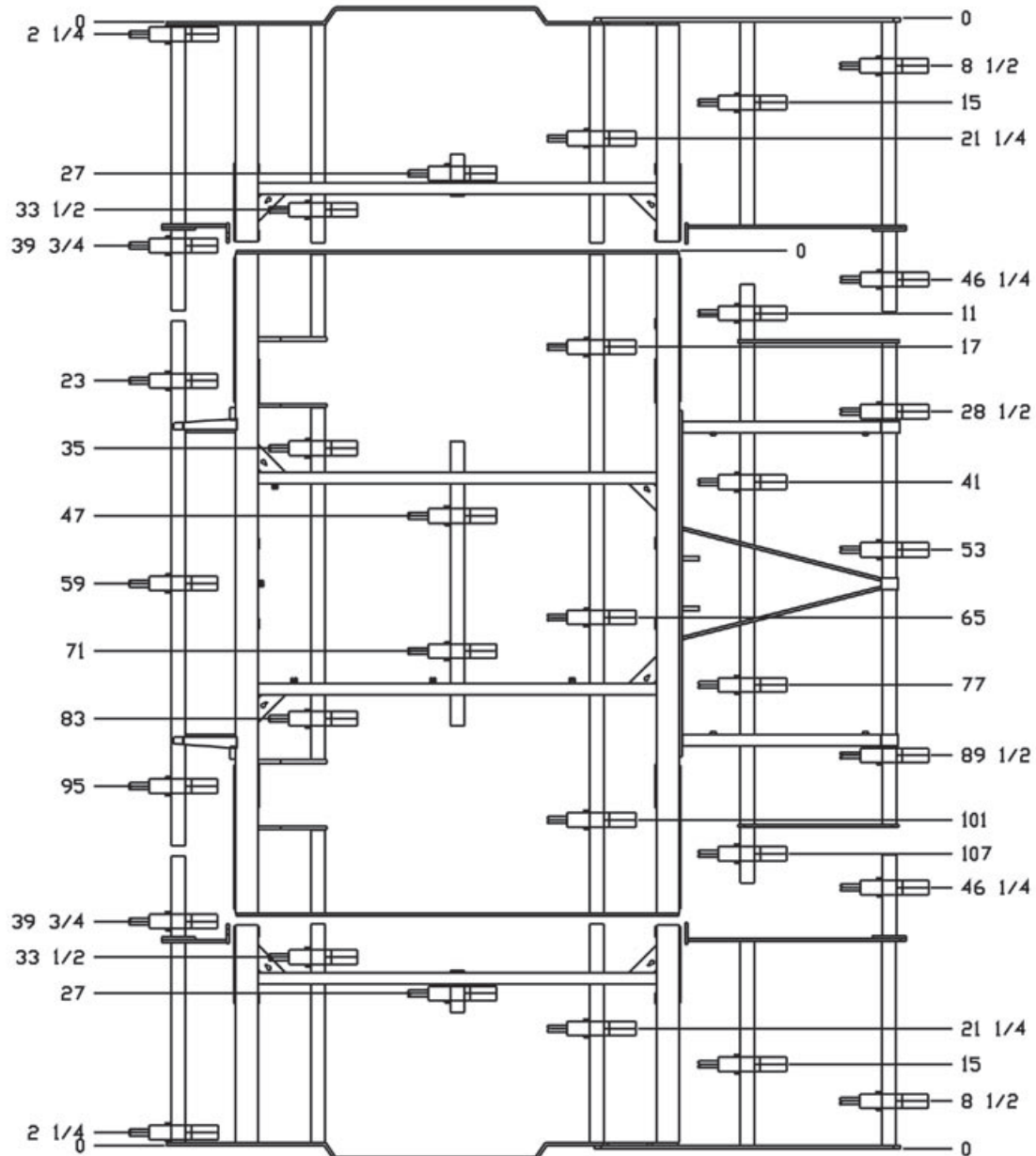
CULTIVATOR SIZE  
10' CENTRE / 23'4" WIDE  
4" TINE SPACING 71 TINES



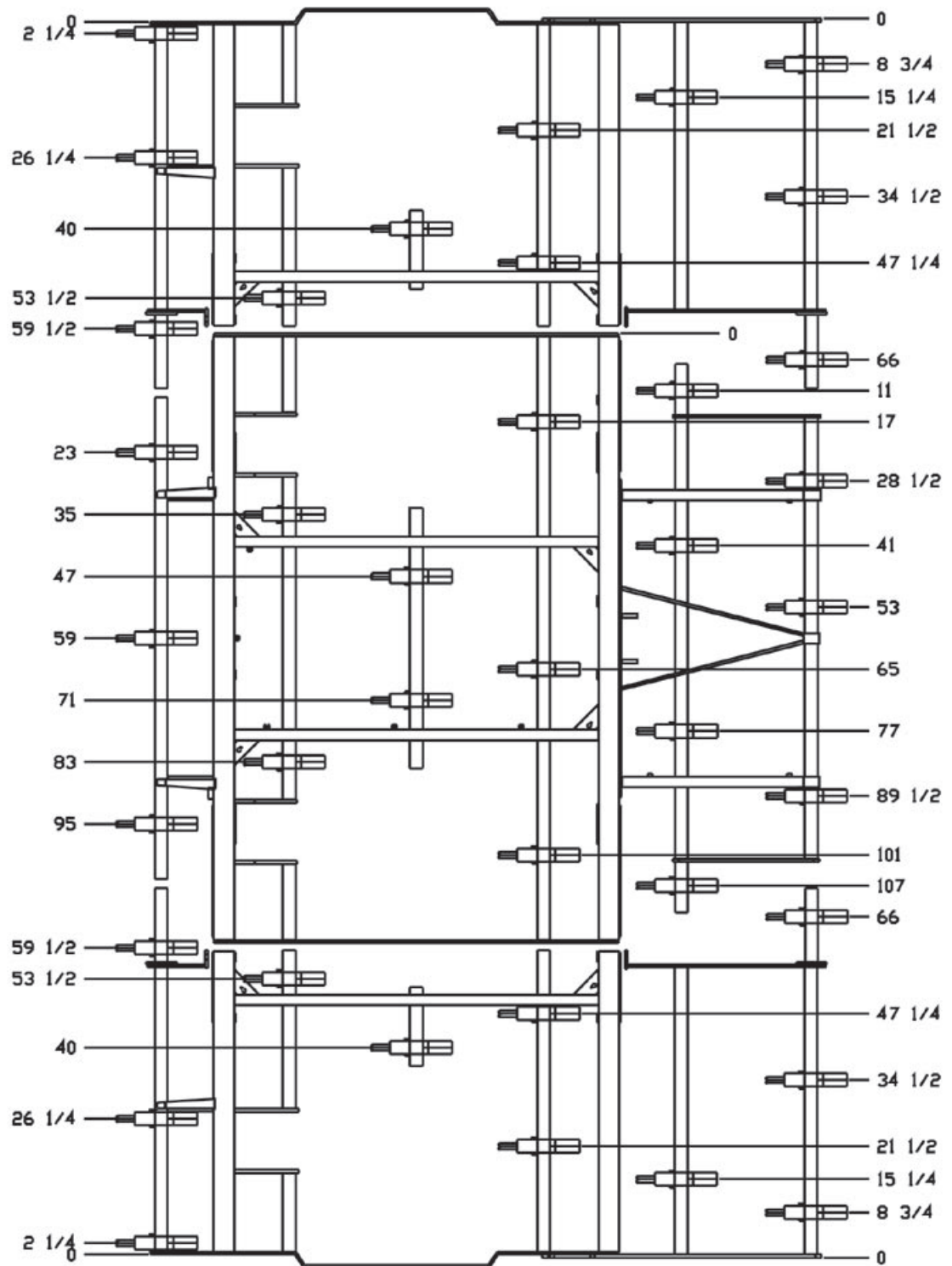
CULTIVATOR SIZE  
10' CENTRE / 26'8" WIDE  
4" TINE SPACING 81 TINES



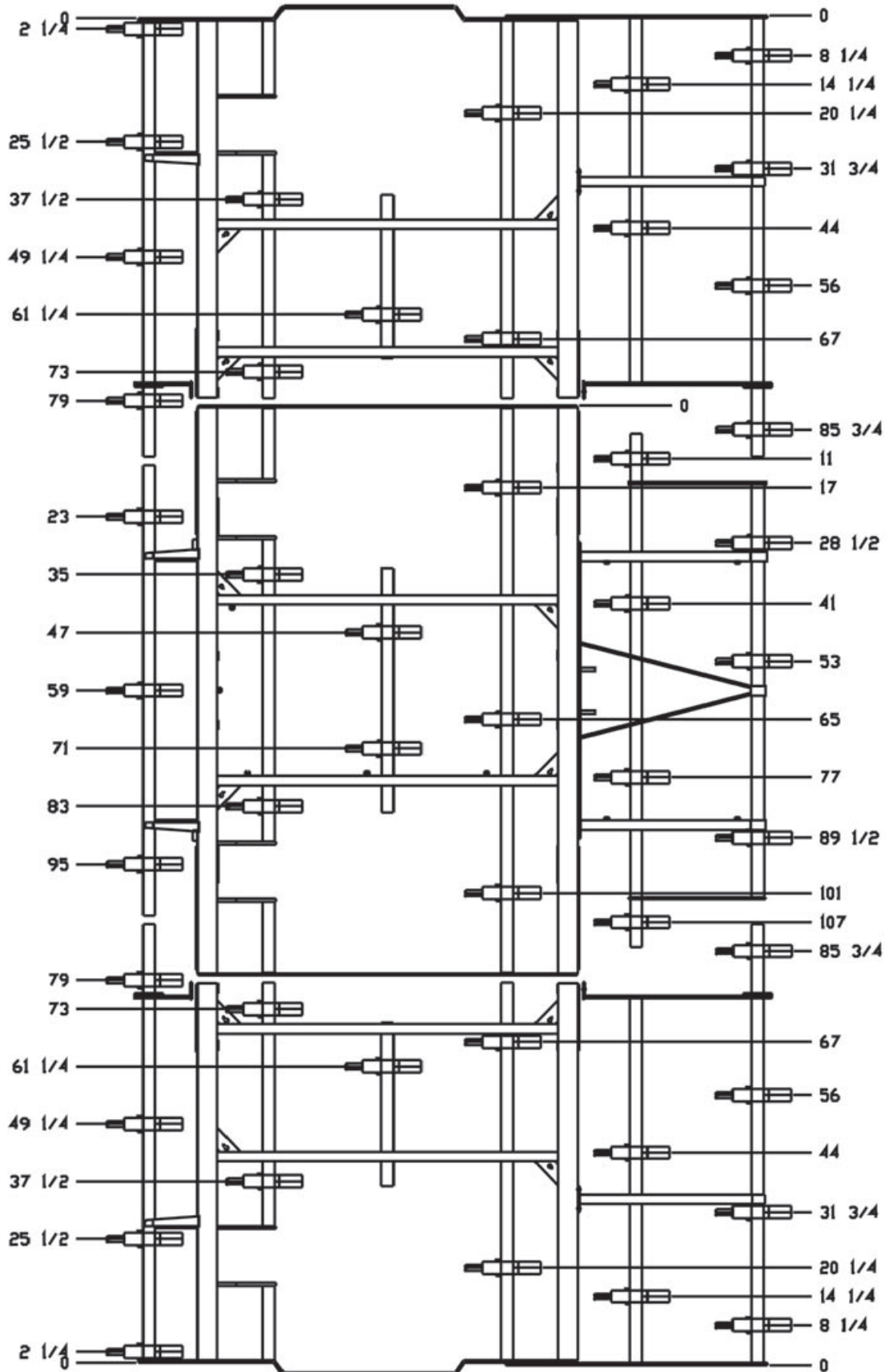
CULTIVATOR SIZE  
10' CENTRE / 16'8" WIDE  
6" TINE SPACING 33 TINES



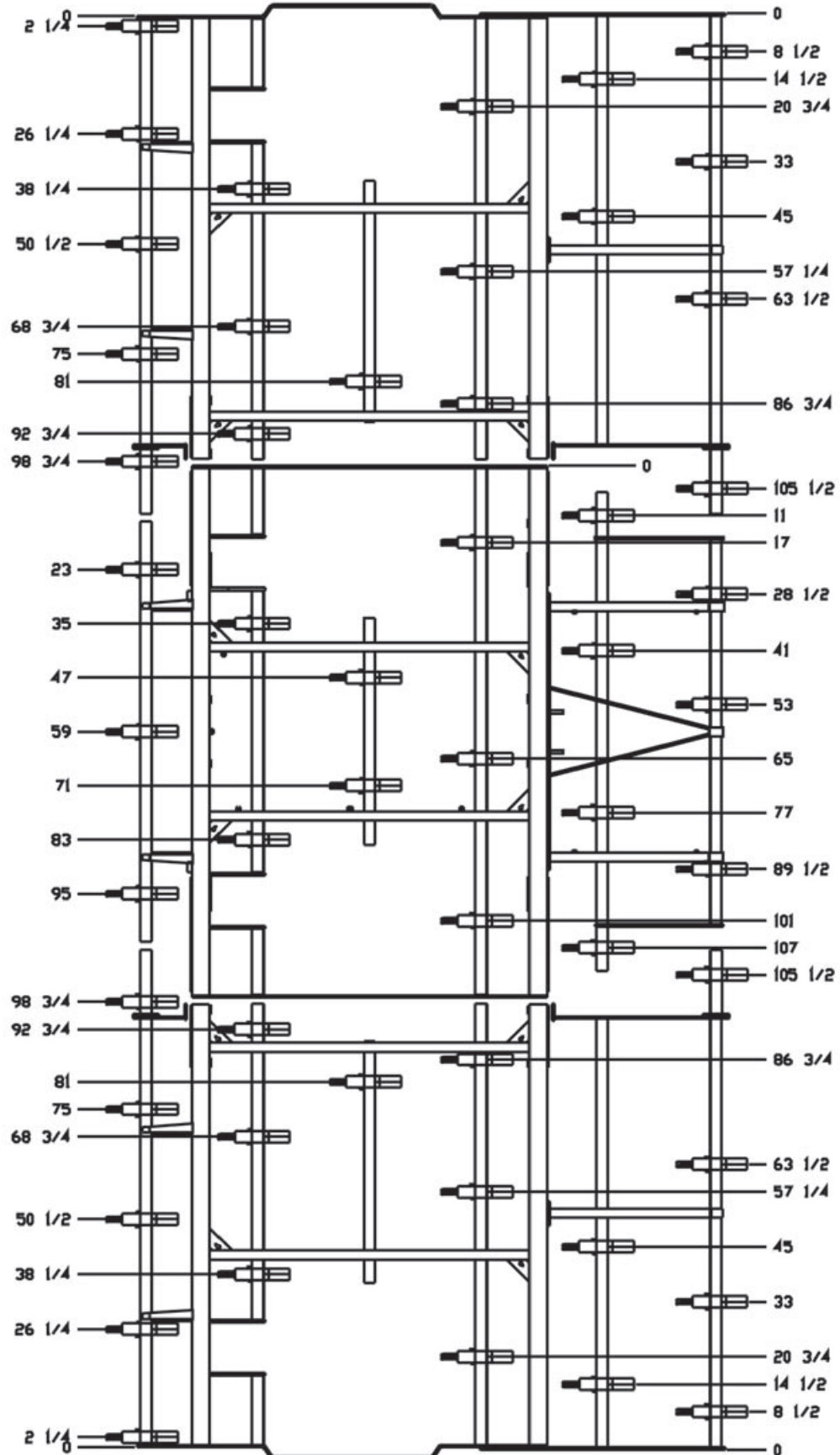
CULTIVATOR SIZE  
10' CENTRE / 20'0" WIDE  
6" TINE SPACING 39 TINES



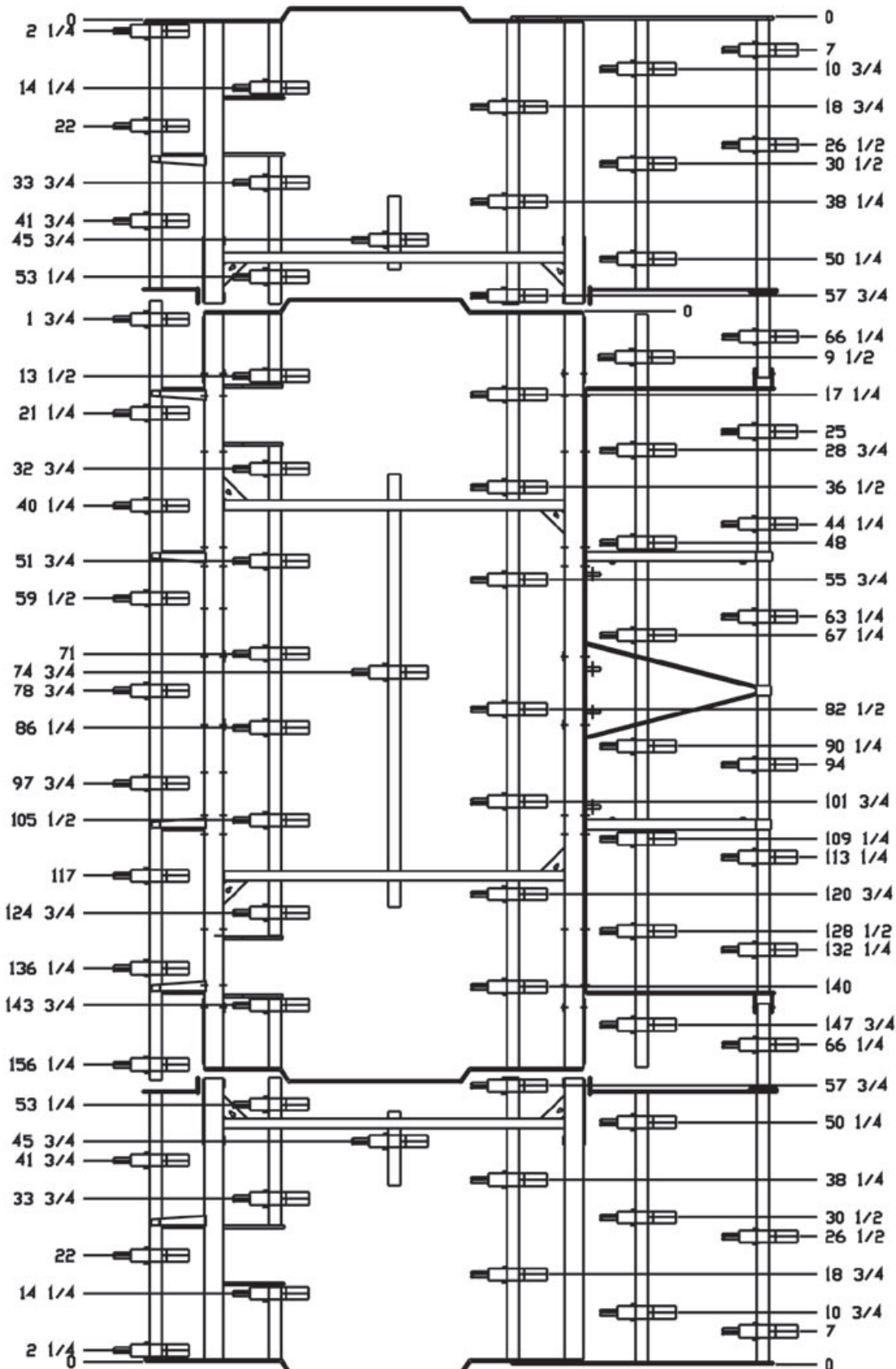
CULTIVATOR SIZE  
10' CENTRE / 23'4" WIDE  
6" TINE SPACING 47 TINES



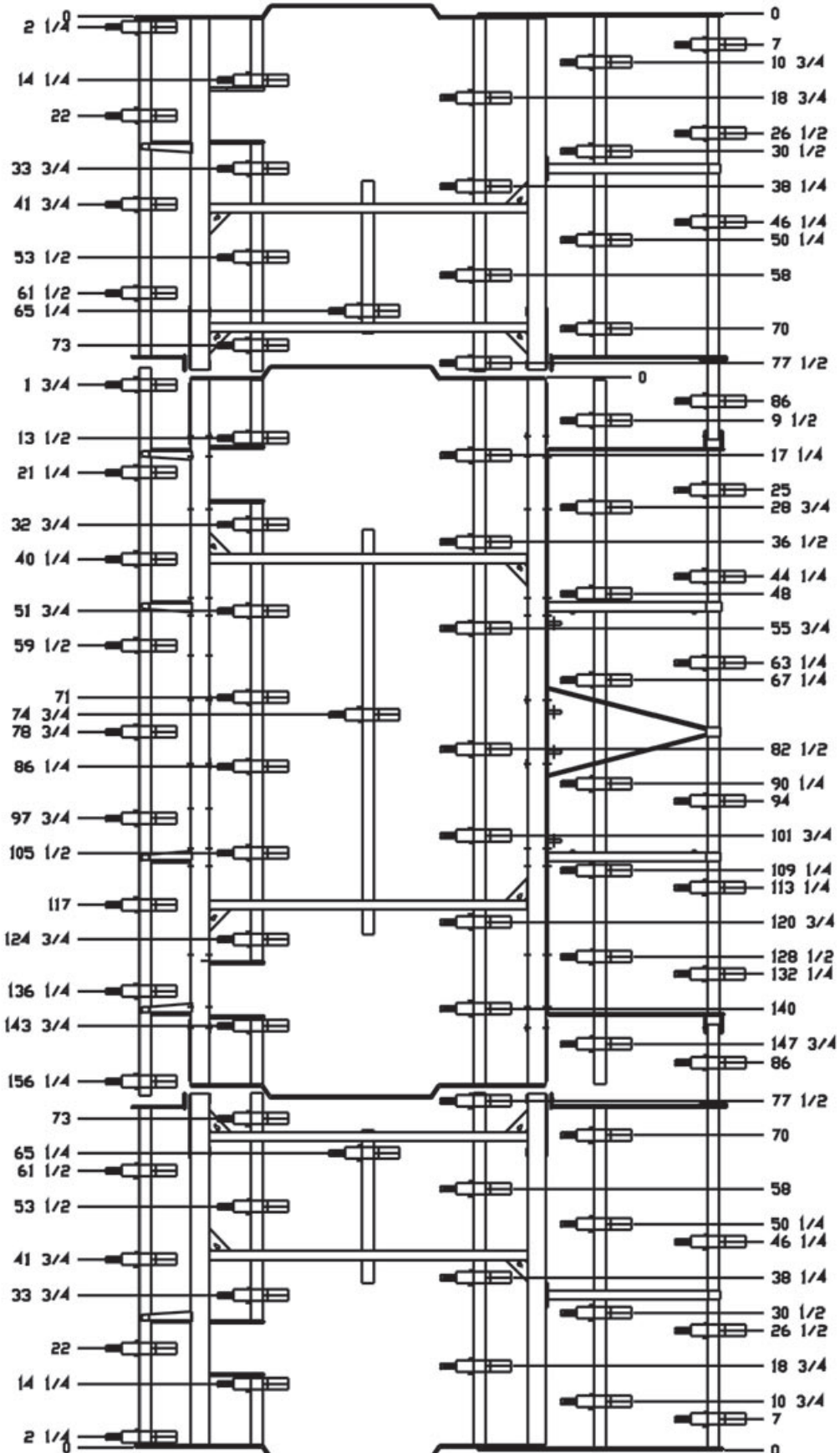
CULTIVATOR SIZE  
10' CENTRE / 26'8" WIDE  
6" TINE SPACING 53 TINES



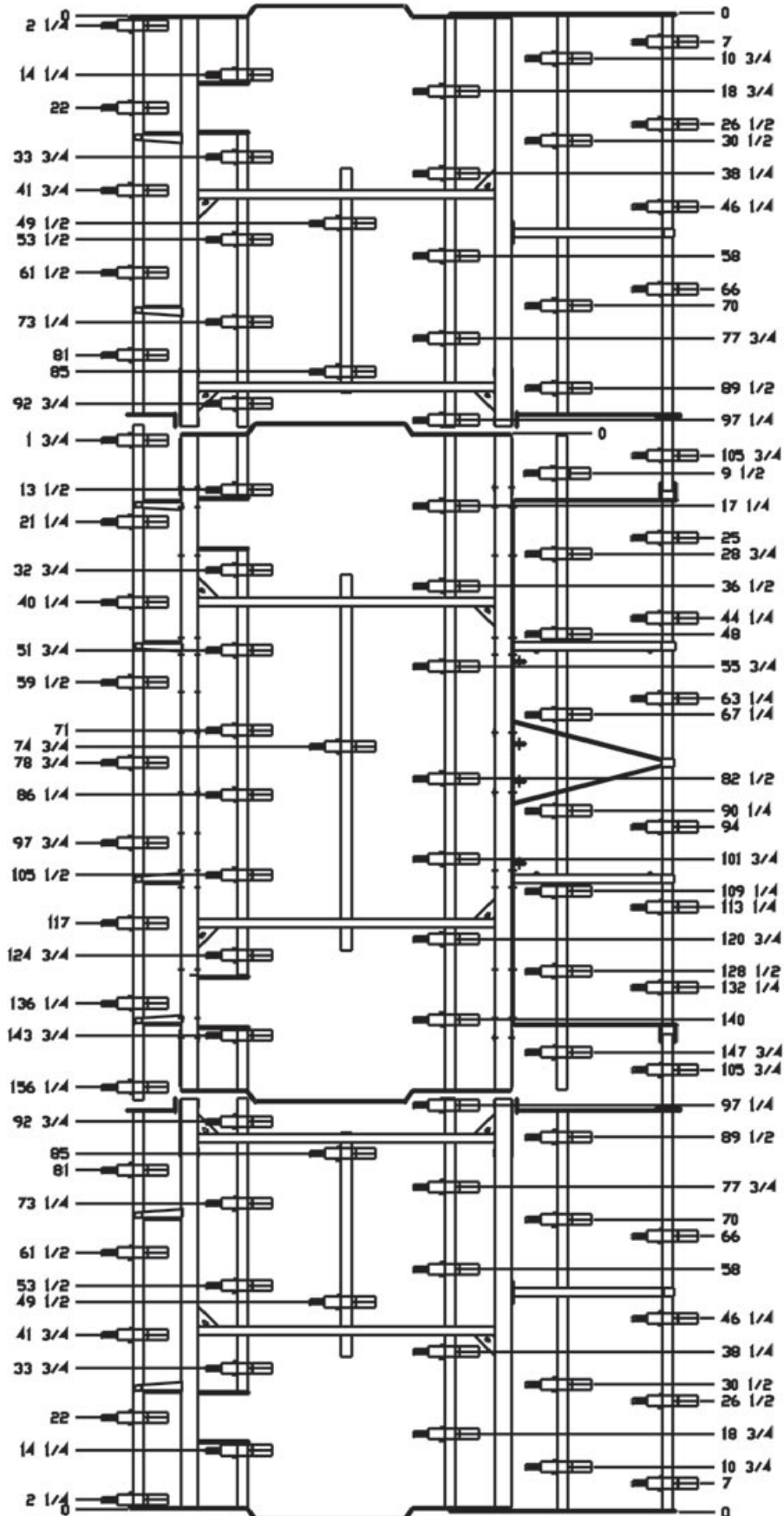
CULTIVATOR SIZE  
13' CENTRE / 23'4" WIDE  
4" TINE SPACING 71 TINES



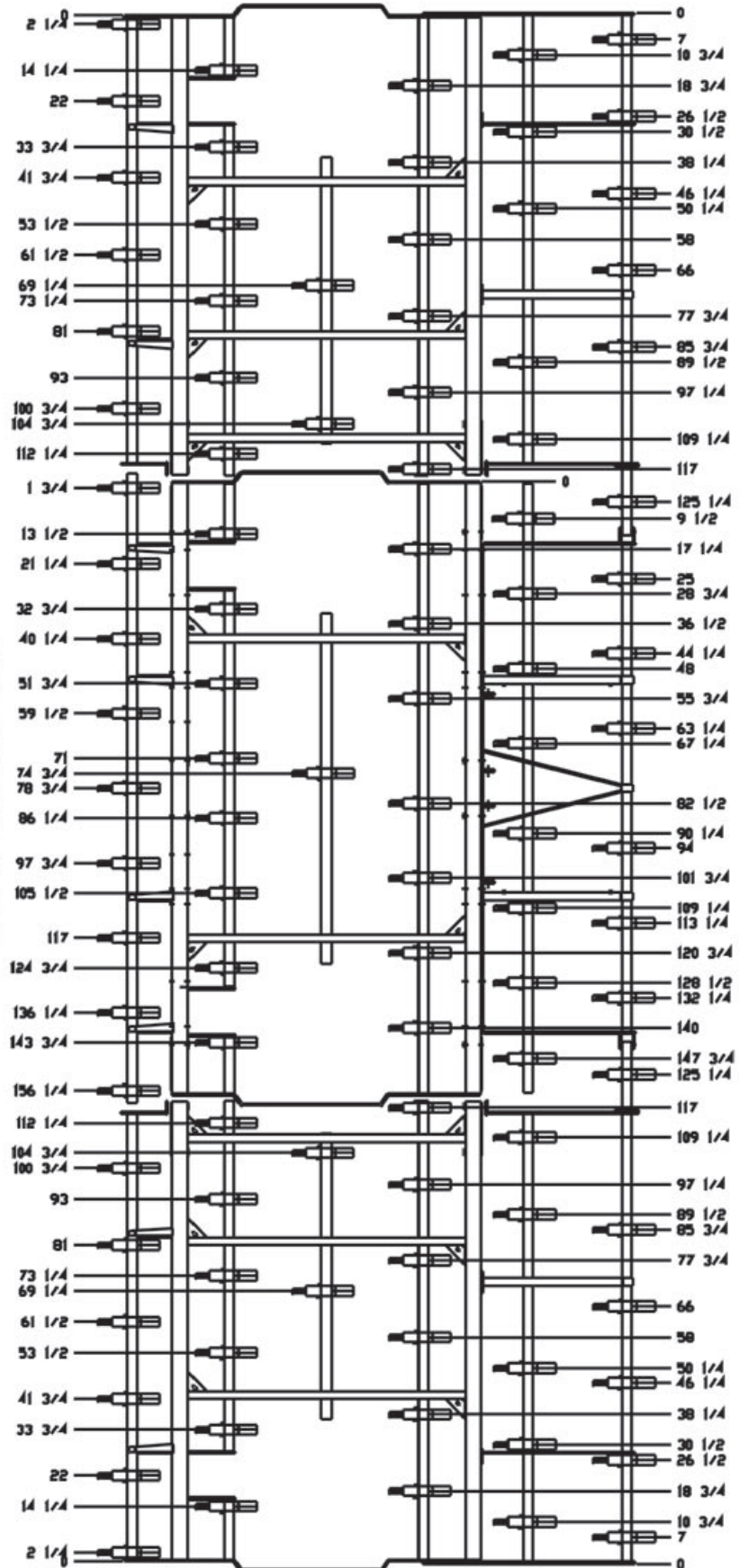
CULTIVATOR SIZE  
13' CENTRE / 26'8" WIDE  
4" TINE SPACING 81 TINES



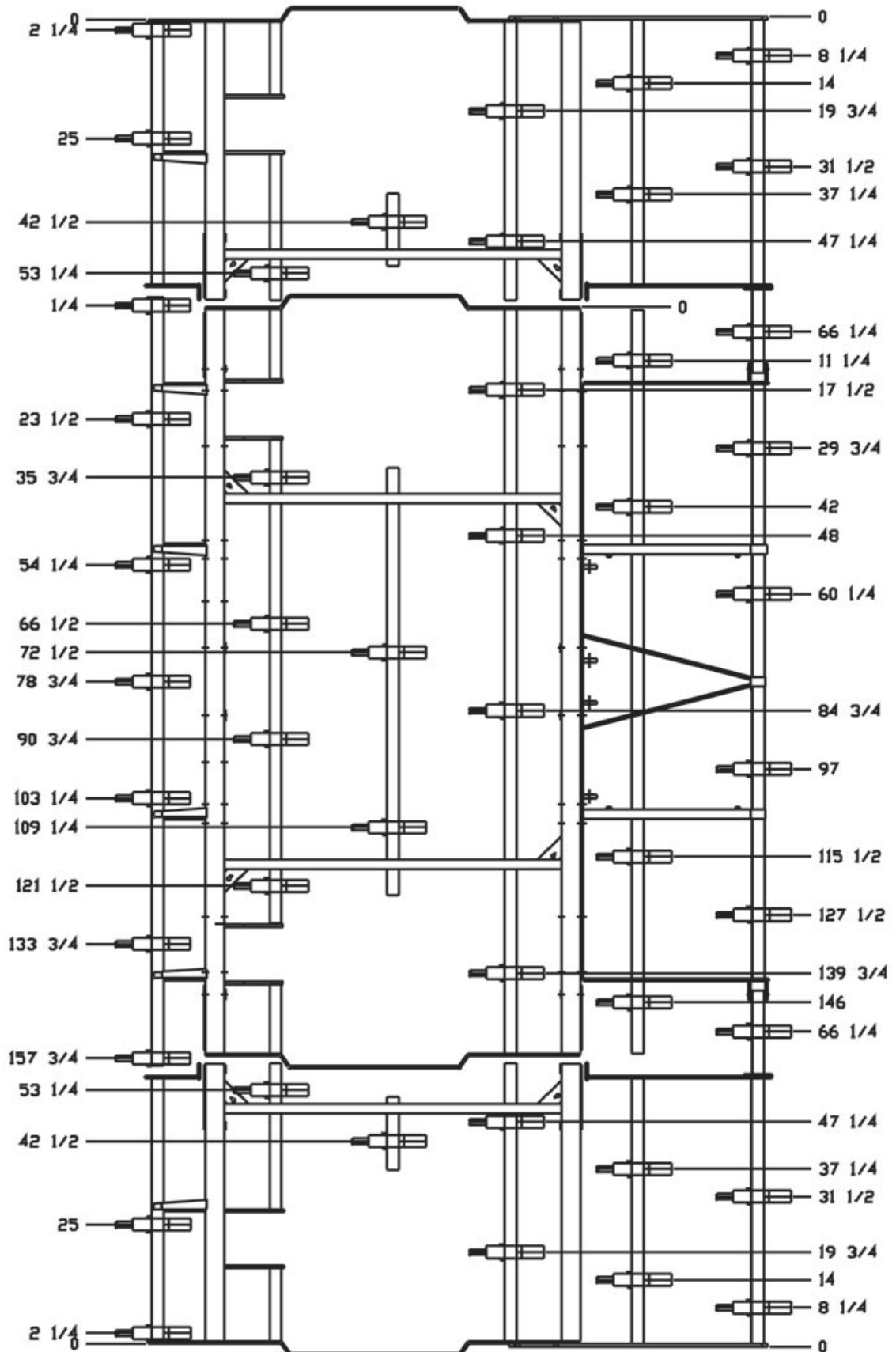
CULTIVATOR SIZE  
13' CENTRE / 29'10" WIDE  
4" TINE SPACING 91 TINES

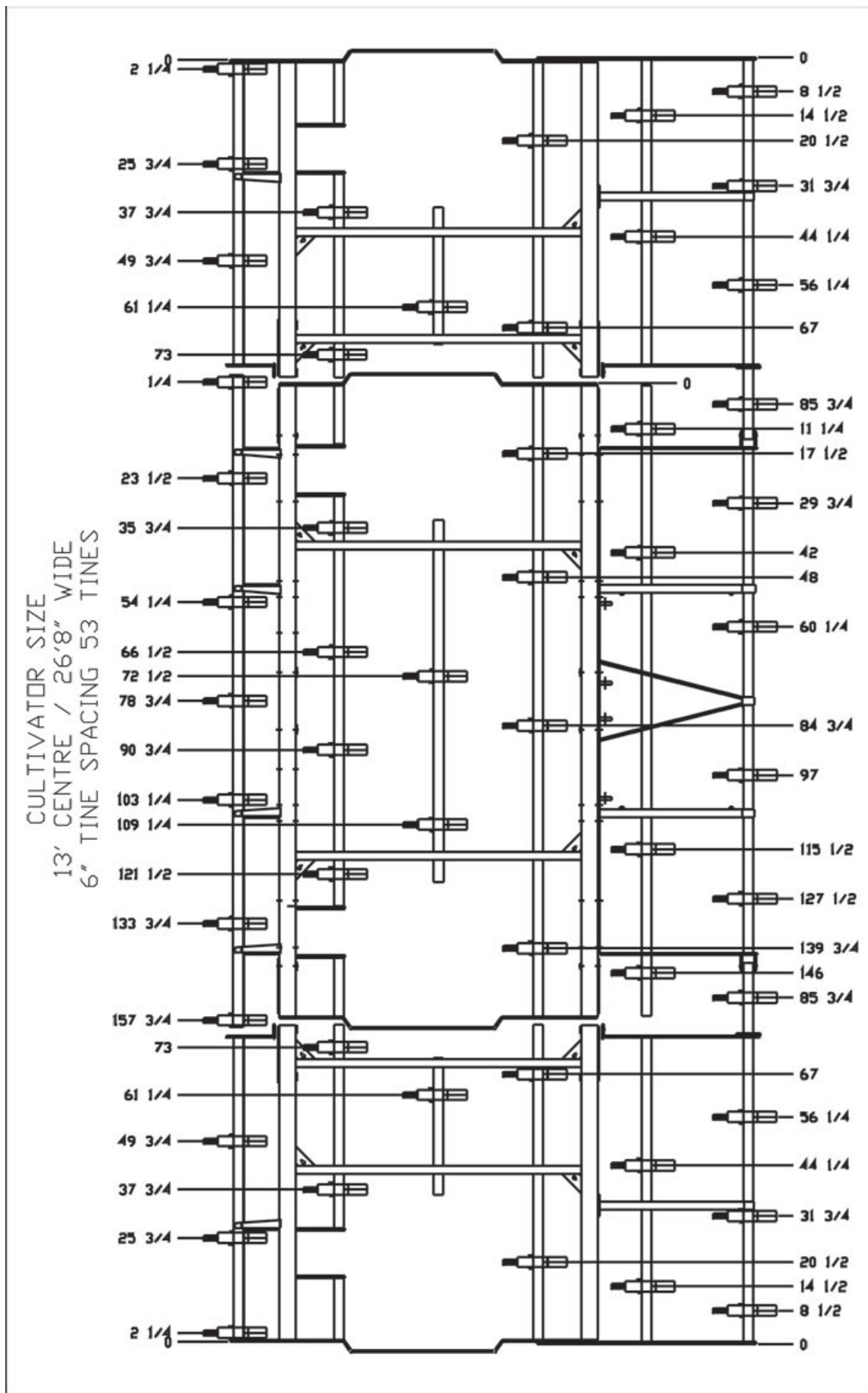


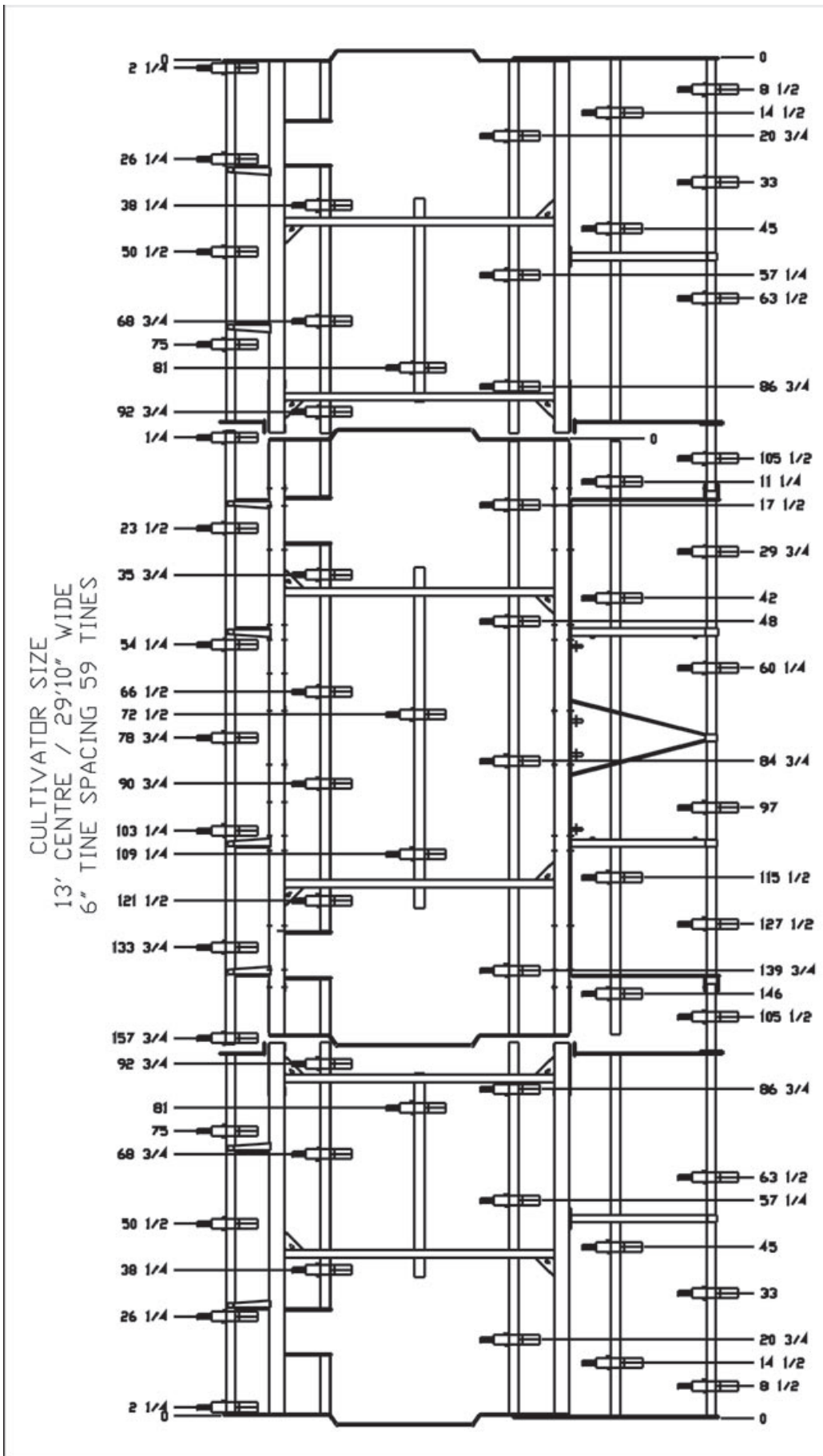
CULTIVATOR SIZE  
13' CENTRE / 33 1/2" WIDE  
4" TINE SPACING 101 TINES



CULTIVATOR SIZE  
13' CENTRE / 23'4" WIDE  
6" TINE SPACING 47 TINES







CULTIVATOR SIZE  
13' CENTRE / 33'2" WIDE  
6" TINE SPACING 65 TINES

