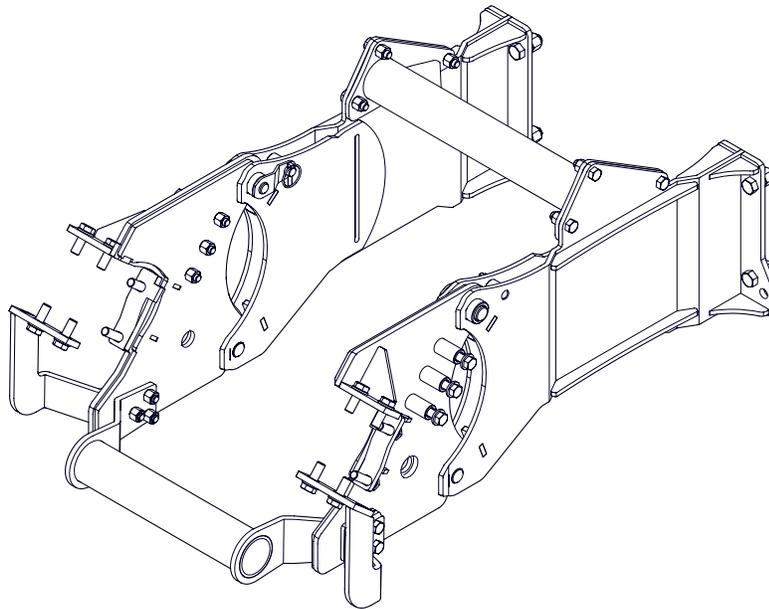


INSTALLATION INSTRUCTIONS

3671A300 Backhoe Subframe Kit



Introduction

This subframe is designed to work with Wallenstein Backhoes.

The Wallenstein backhoe is designed to work with a wide variety of tractors. With this Subframe Kit you can easily and quickly attach and detach your Wallenstein backhoe to your tractor.

Some of the illustrations shown in this manual are general, but important features are detailed in order to install your kit successfully.

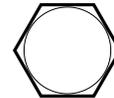
Please review the backhoe operators manual. Safe, efficient and trouble free operation of your Wallenstein Backhoe requires that you and anyone else who will be operating or maintaining the machine, read and understand the Safety, Operation, Maintenance and Trouble Shooting information contained within the Operator's Manual.

IMPORTANT! This installation kit includes both metric and Imperial fasteners. Bolt type is identified by looking at the bolt head markings.

Metric



Imperial



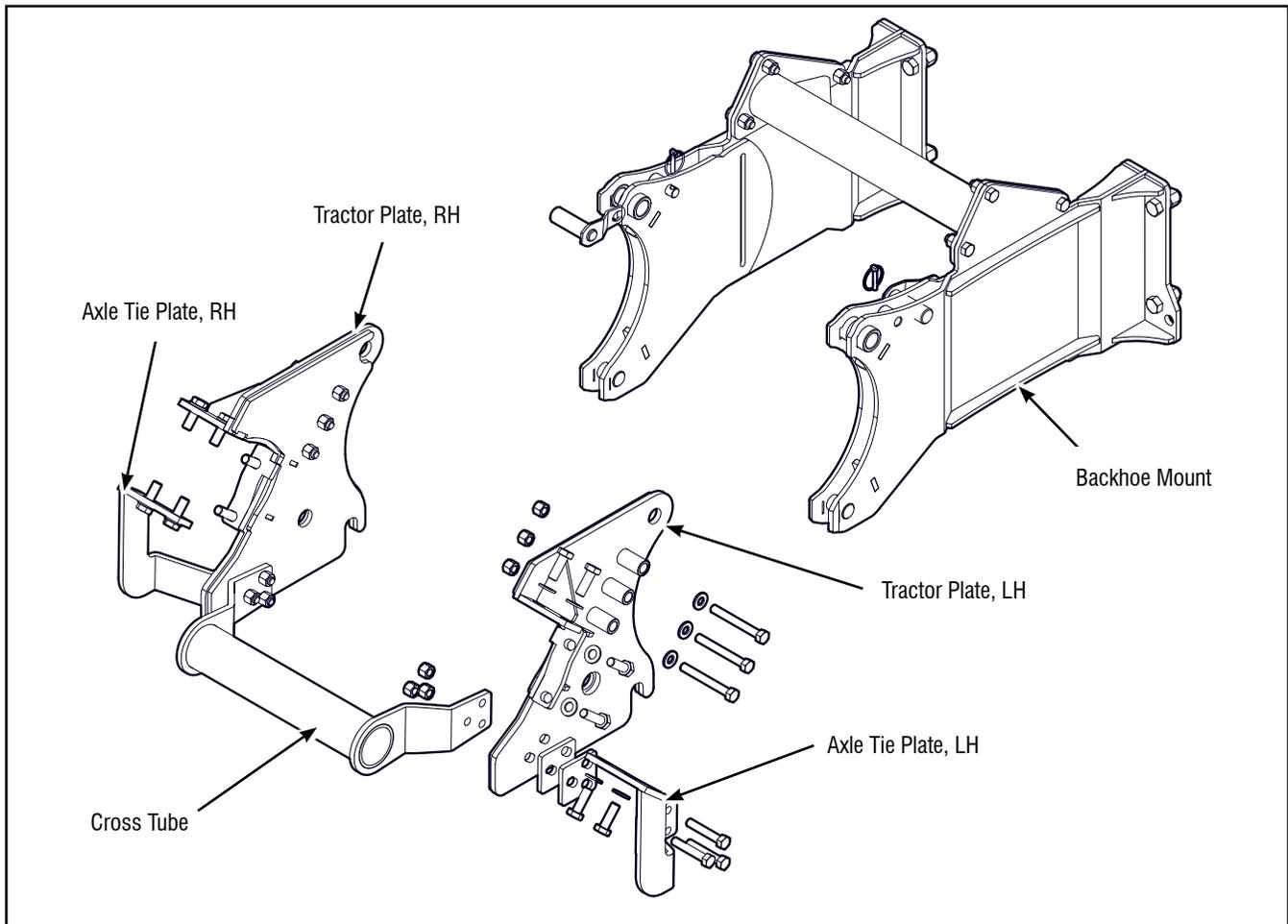
SAE Gr. 2

SAE Gr. 5

SAE Gr. 8

Operator Orientation

The directions left, right, front and rear as mentioned throughout this instruction, are determined when sitting in the tractor driver's seat, facing the direction of forward travel.



Subframe Main Components

Safety Rules

WARNING!

ATTENTION! BE ALERT! YOUR SAFETY IS INVOLVED!

Working around equipment can be dangerous. Always be aware of bystanders, the area around the machine, and what to do in case of emergency.

Learn how to install and operate the new equipment safely. Read and understand these instructions before attempting installation.

W007

WARNING!

Before operating the backhoe:

- Check that all pins and adapter plates are secure and correctly attached to the sub-frame.
- Ensure that all fasteners are correctly torqued according to the bolt torque table.
- Inspect and test all hydraulic connections.
- Thoroughly read the backhoe operator's manual for safe operation.

W008

WARNING!

Make sure the tractor is parked on a level surface with the front wheels chocked to prevent movement. Use properly rated jack stands to support the tractor.

W009

WARNING!

The loader frame could move unexpectedly when the mounts are disconnected. Make sure loader is resting on the ground in a relaxed state.

W018

WARNING!

Make sure the subframe, backhoe and tractor are positioned on dry, level ground. The area around them should be clear and free of debris. Make sure the tractor is shut off, the brake is applied, and key is removed.

WARNING!

Review and understand the operating instructions for the backhoe. Part of the installation process includes operating the hydraulics to position the attachment points on the tractor.

WARNING!

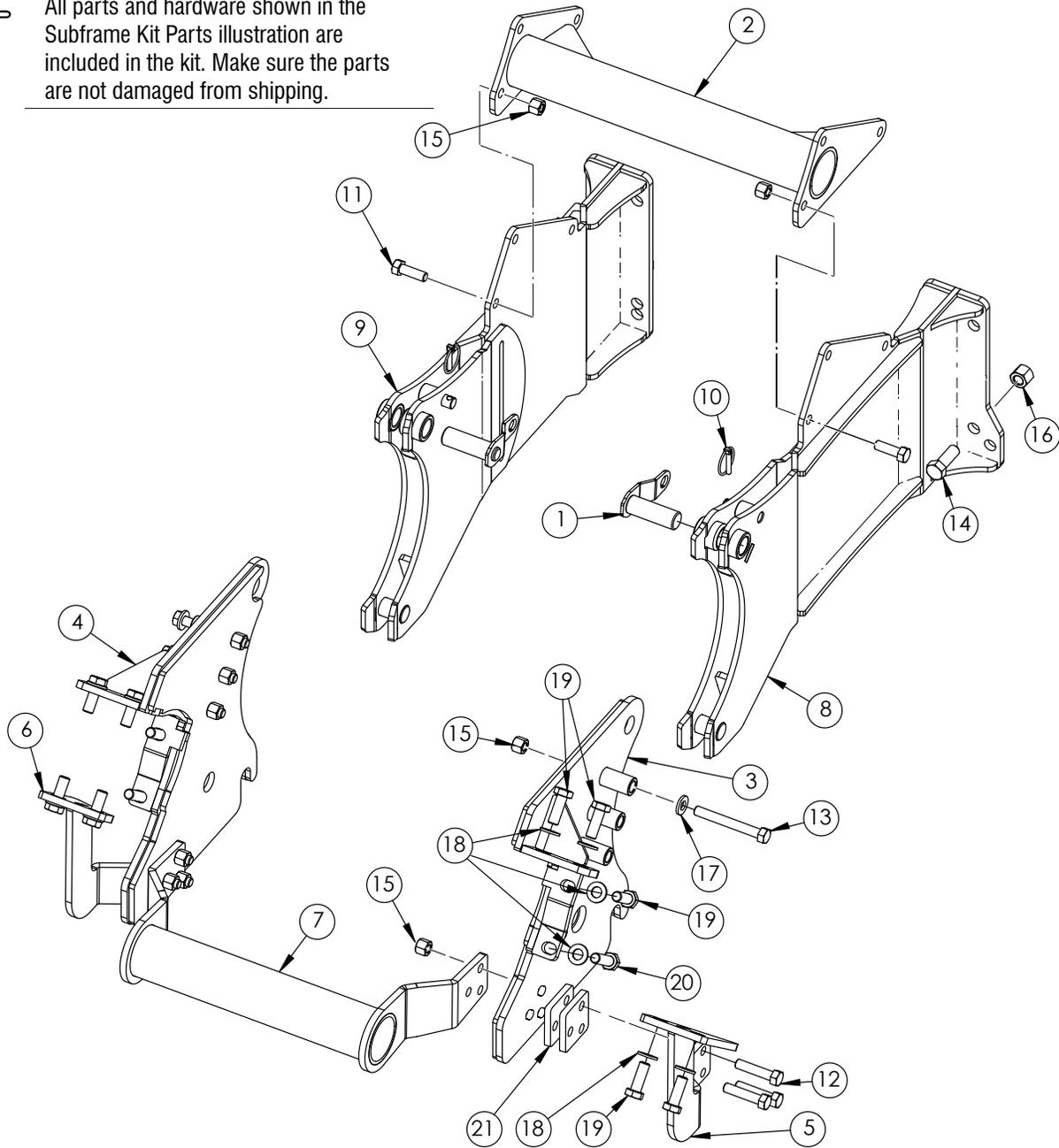
Proceed with caution. During the course of assembly, the ROPS / cab support bolts are removed. Support for the cab may be required when removing cab mounting bolts. Remove and replace bolts one side at a time.

- Do not install backhoe and required counterweights on tractor if the total tractor and equipment weight exceeds the tractor ROPS weight certification.
- Make sure equipment is properly mounted, adjusted and in good operating condition.
- Make sure that all safety shielding and safety signs are properly installed and in good condition.

Subframe Kit Parts



All parts and hardware shown in the Subframe Kit Parts illustration are included in the kit. Make sure the parts are not damaged from shipping.



Item	Part Number	Description	Quantity
1	3600W201	Subframe Top Pin	2
2	3600W603	Crossmember	1
3	3671W301	LH Tractor Plate	1
4	3671W301H	RH Tractor Plate	1
5	3671W302	LH Axle Tie Plate	1
6	3671W302H	RH Axle Tie Plate	1
7	3671W303	Cross Tube	1
8	3671W330	RH Backhoe Link	1
9	3671W330H	LH Backhoe Link	1
10	Z12120	Lynch Pin, 1/4"	2
11	Z71515	Hex Bolt, 1/2"NC x 1-1/2"	6

Item	Part Number	Description	Quantity
12	Z71522	Hex Bolt, 1/2"NC x 2-1/4"	6
13	Z71540	Hex Bolt, 1/2"NC x 4"	6
14	Z71617	Hex Bolt, 5/8"NC x 1-3/4"	8
15	Z72251	Hex Lock Nut, 1/2"NC	18
16	Z72261	Hex Lock Nut, 5/8"NC	8
17	Z73151	SAE Washer, 1/2"	6
18	Z77381	DIN 125 Washer, M14	12
19	Z77682G10-9	Hex Bolt, M14 x 1.5 x 40 mm G10.9	10
20	Z77683G10-9	Hex Bolt, M14 x 1.5 x 50 mm G10.9	2
21	3671L333 ¹	Spacer	4

¹ Spacer item 21 required for Massey 1825E and 1835E models

Preparation:



Removing the rear tractor wheels can make the installation easier.

Position the tractor with the backhoe lined up behind it.

- Backhoe should be assembled but left on the shipping skid.
- The tractor must have a front bucket loader installed. The front loader is required to offset the weight of the backhoe, as well as provide the stability required to operate the backhoe safely.
- The loader should be in the lowered position, resting on the ground.

Tools required:

- Basic shop tools
- 3/4", 15/16" wrenches and sockets
- M21 wrenches and sockets
- Overhead lifting device
- Jack stands
- Torque wrench

Step 1

Starting on the left-hand-side of the tractor, remove the anti-sway bar and 3-point hitch arm from the mount.

Swing the lift arm in as far as it can go and secure there out of the way.

Remove the anti-sway bar. Set the bolts and washers aside for later re-use.

Step 2

Remove four of the six bolts and washers holding the ROPS mount to the frame, as circled in the images.

Set these bolts and washer aside as they are not reused on subframe installation.



Step 3

Remove the two bolts and washers holding the loader rail, as circled in the image.

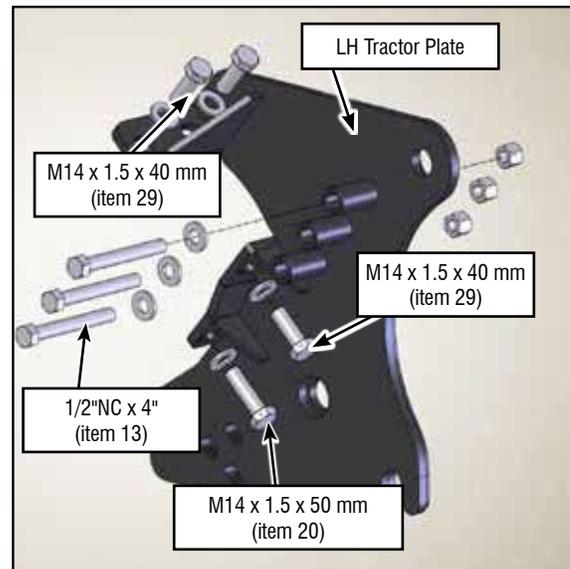
Set these bolts and washer aside as they are not reused on subframe installation.

**Step 4**

Fit the LH Tractor Plate (item 3) over the axle and ROPS post. Secure to axle with bolts (item 19) M14 x 1.5 x 40 mm (x3) & M14x1.5 x 50mm (x1) and M14 washers (x4).

Install the 1/2"NC x 4" bolts, 1/2" washers and 1/2"NC nuts through the side (x3 each).

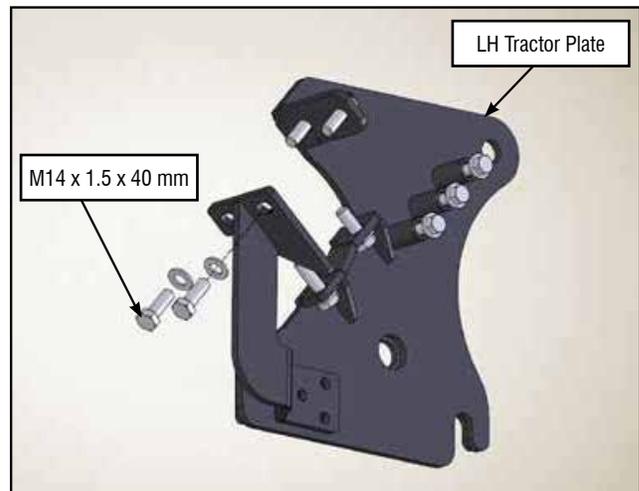
Hand tighten only at this time.

**Step 5**

Fit the axle tie weldment under the axle between the axle and loader rail. Install and hand tighten with new ROPS mount bolts M14 x 1.5 x 40 mm (x2) and M14 washers (x2).

Step 6

Perform Steps 1–5 on the right-hand side of the tractor.



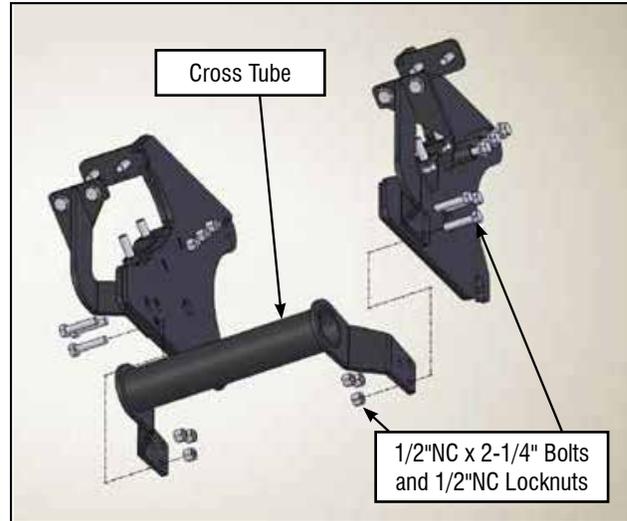
Step 7

Install bottom Cross Tube (item 7) with three per side of 1/2"NC x 2-1/4" hex bolts and 1/2"NC hex locknuts.

Step 8

Torque-tighten all fasteners on the subframe.

Subframe installation is now complete.

**Step 9**

Re-install the wheels if removed and torque lug nuts/bolts (see torque chart or tractor owner's manual). Note that depending on the wheels it may be necessary to reverse the offset for clearance to the subframe.

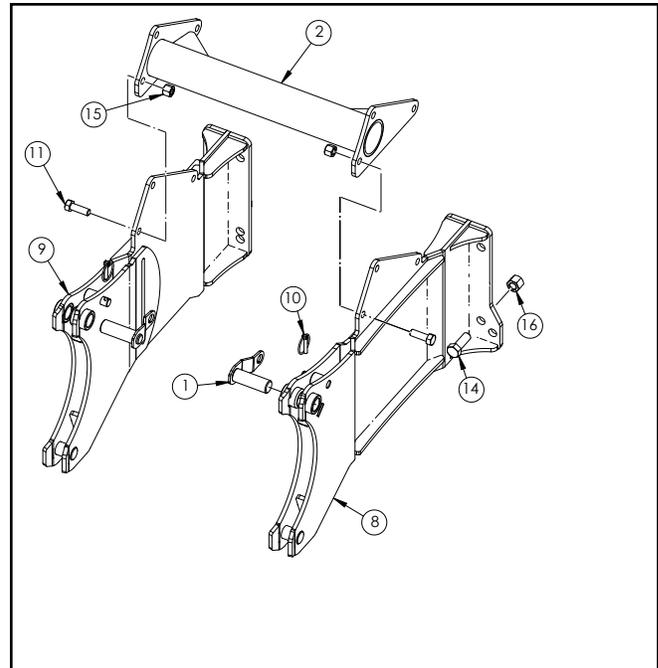
Reconnect the adjustable stabilizer arms

The subframe should remain on the tractor and not be removed. Check that the lift arms move freely with the subframe installed.

Step 10

If not already put together, the Backhoe Subframe can be assembled. Assemble LH Backhoe Link (item 8), RH backhoe Link (item 9) and Crossmember (item 2) with three per side of 1/2"NC x 1-1/2" hex bolts and 1/2"NC hex locknuts.

Torque-tighten to 80 lbf•ft (10 N•m).

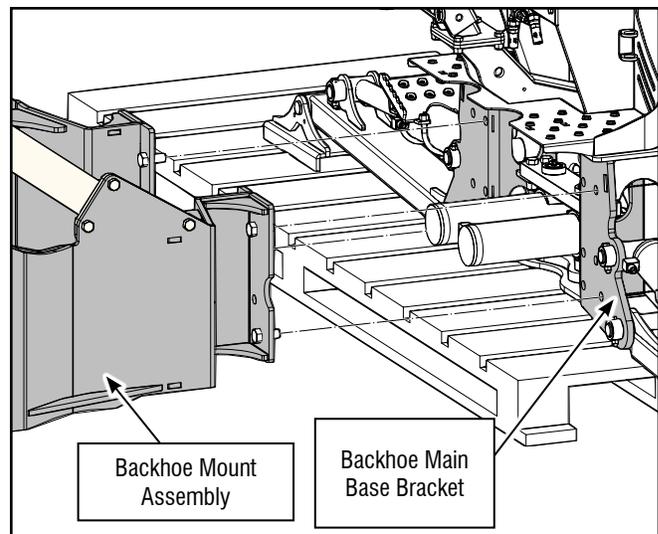
**Step 11**

Take the backhoe subframe mount and attach it to the backhoe on main base bracket. Use the 5/8" NC bolts and nuts provided — 4 for each left- and right-hand sides.

Torque-tighten bolts to 160 lbf•ft (215 N•m).

Step 12

Align and reverse the tractor up to the bracket. Get close enough to attach the hydraulic hoses to the backhoe.



Step 13

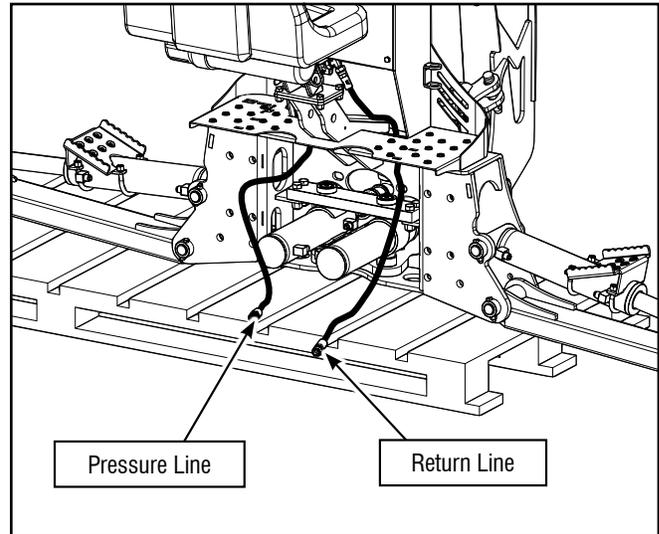
Attach the hydraulic lines from the backhoe to the tractor. See illustration.



NOTE: The backhoe is equipped with a directional control valve and does not allow reverse flow if pressure and return lines are connected incorrectly.

**WARNING!**

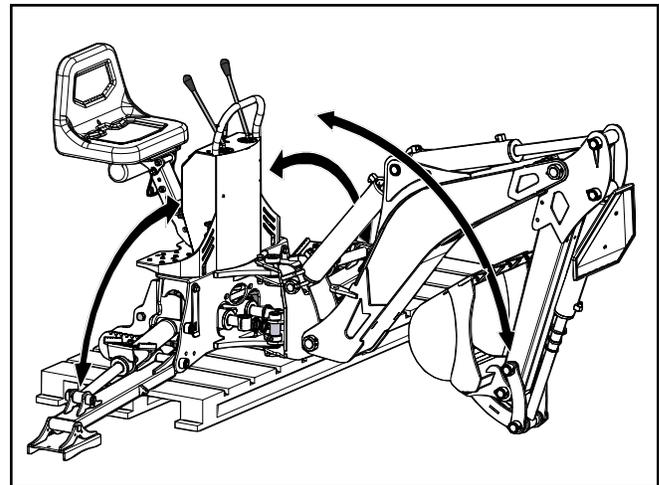
When operating the boom and stabilizers, ensure the area is clear of bystanders and operator is safely positioned.

**Step 14**

Carefully use the dipper arm / stabilizer legs to tilt the bracket / backhoe on an angle, so that the bottom attach points line up with the hooks on the bottom of the subframe on the tractor.

Step 15

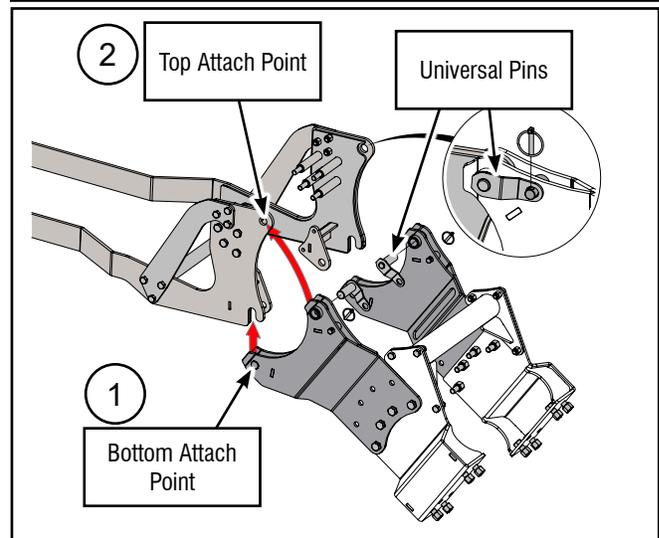
Carefully use the backhoe hydraulics to raise the bracket assembly into the bottom of the hooks for positive attachment.

**Step 16**

Carefully use the backhoe hydraulics to rotate the bracket assembly into the top attach points on the subframe. Rotate the bracket until it reaches the stop. The pin holes will then be aligned.

Step 17

Insert the two welded universal pins into the pin holes and secure with lynch pins.



Generic illustration showing hitching principal.

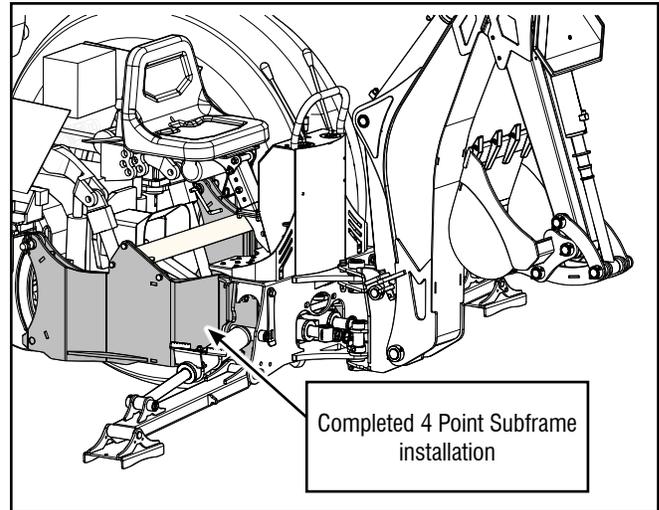
Step 18

Check that all attach points are secure, and make sure all bolts / nuts are tightened and torqued.

Test the hydraulics: lift the stabilizer legs and remove the skid. Lower the stabilizers and test all boom functions.

Check that all moving parts have clearance and do not interfere with the subframe.

The subframe installation is now complete.



Common Bolt Torque values

Checking Bolt Torque

The tables shown give correct torque values for various bolts and capscrews. Tighten all bolts to the torque values specified in the table, unless indicated otherwise. Check tightness of bolts periodically.

IMPORTANT! If replacing hardware, use fasteners of the same grade.

IMPORTANT! Torque figures indicated in the table are for non-greased or non-oiled threads. Do not grease or oil threads unless indicated otherwise. When using a thread locker, increase torque values by 5%.

 **NOTE:** Bolt grades are identified by their head markings.

Imperial Bolt Torque Specifications						
Bolt Diameter	Torque Value					
	SAE Gr. 2		SAE Gr. 5		SAE Gr. 8	
	lbf•ft	N•m	lbf•ft	N•m	lbf•ft	N•m
1/4"	6	8	9	12	12	17
5/16"	10	13	19	25	27	36
3/8"	20	27	33	45	45	63
7/16"	30	41	53	72	75	100
1/2"	45	61	80	110	115	155
9/16"	60	95	115	155	165	220
5/8"	95	128	160	215	220	305
3/4"	165	225	290	390	400	540
7/8"	170	230	420	570	650	880
1"	225	345	630	850	970	1320



Metric Bolt Torque Specifications				
Bolt Diameter	Torque Value			
	Gr. 8.8		Gr. 10.9	
	lbf•ft	N•m	lbf•ft	N•m
M3	0.4	0.5	1.3	1.8
M4	2.2	3	3.3	4.5
M6	7	10	11	15
M8	18	25	26	35
M10	37	50	52	70
M12	66	90	92	125
M14	83	112	116	158
M16	166	225	229	310
M20	321	435	450	610
M30	1,103	1 495	1,550	2 100

