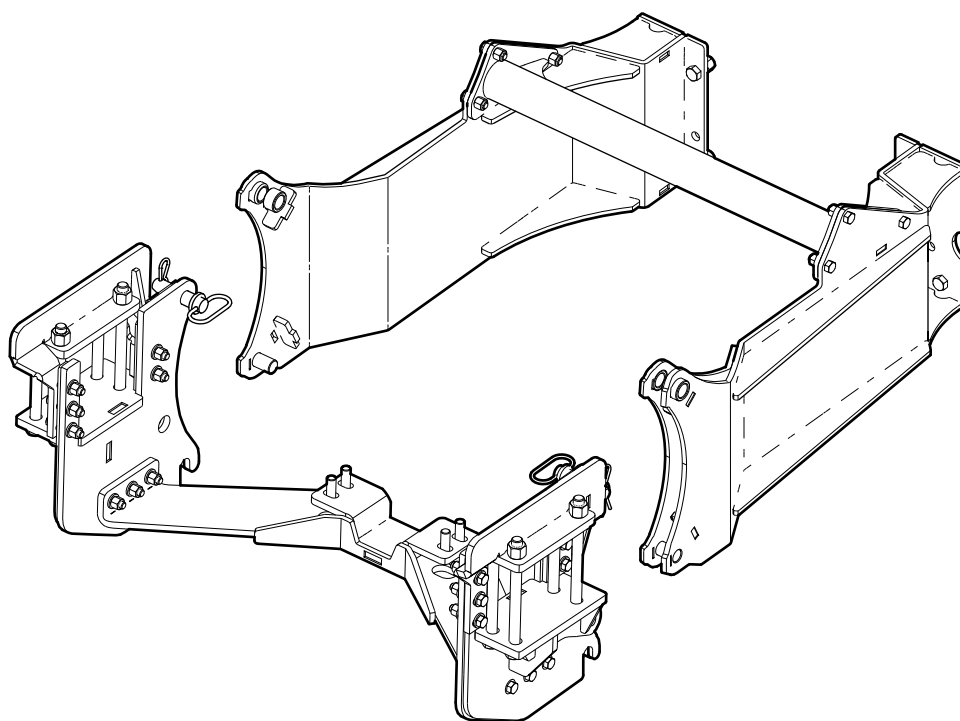


# INSTALLATION INSTRUCTIONS

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## 3611A550 Backhoe Subframe Kit



## Introduction

The Wallenstein backhoe is designed to work with a wide variety of tractors. With the Wallenstein Sub-frame Kit you can easily and quickly attach and detach your Wallenstein backhoe to your particular 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.



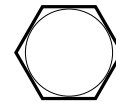
**NOTE:** All sub-frame parts and hardware to mount them are included in the kit. Make sure the parts are not damaged from shipping.

**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



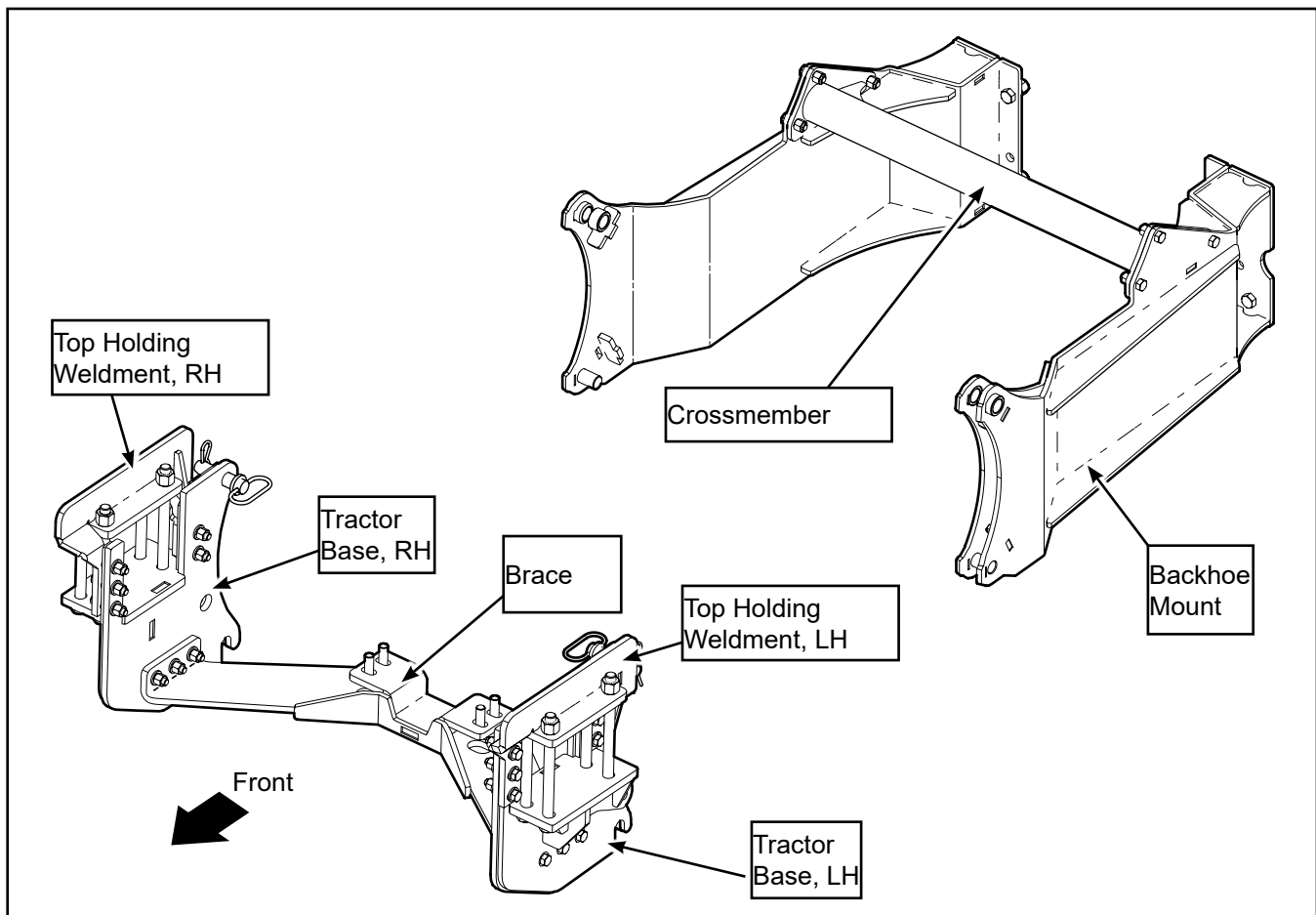
SAE Gr. 5



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## Operator Orientation

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



Subframe Kit 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 sub-frame, backhoe and tractor are positioned on dry level ground before beginning. 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.

### WARNING!

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

W009

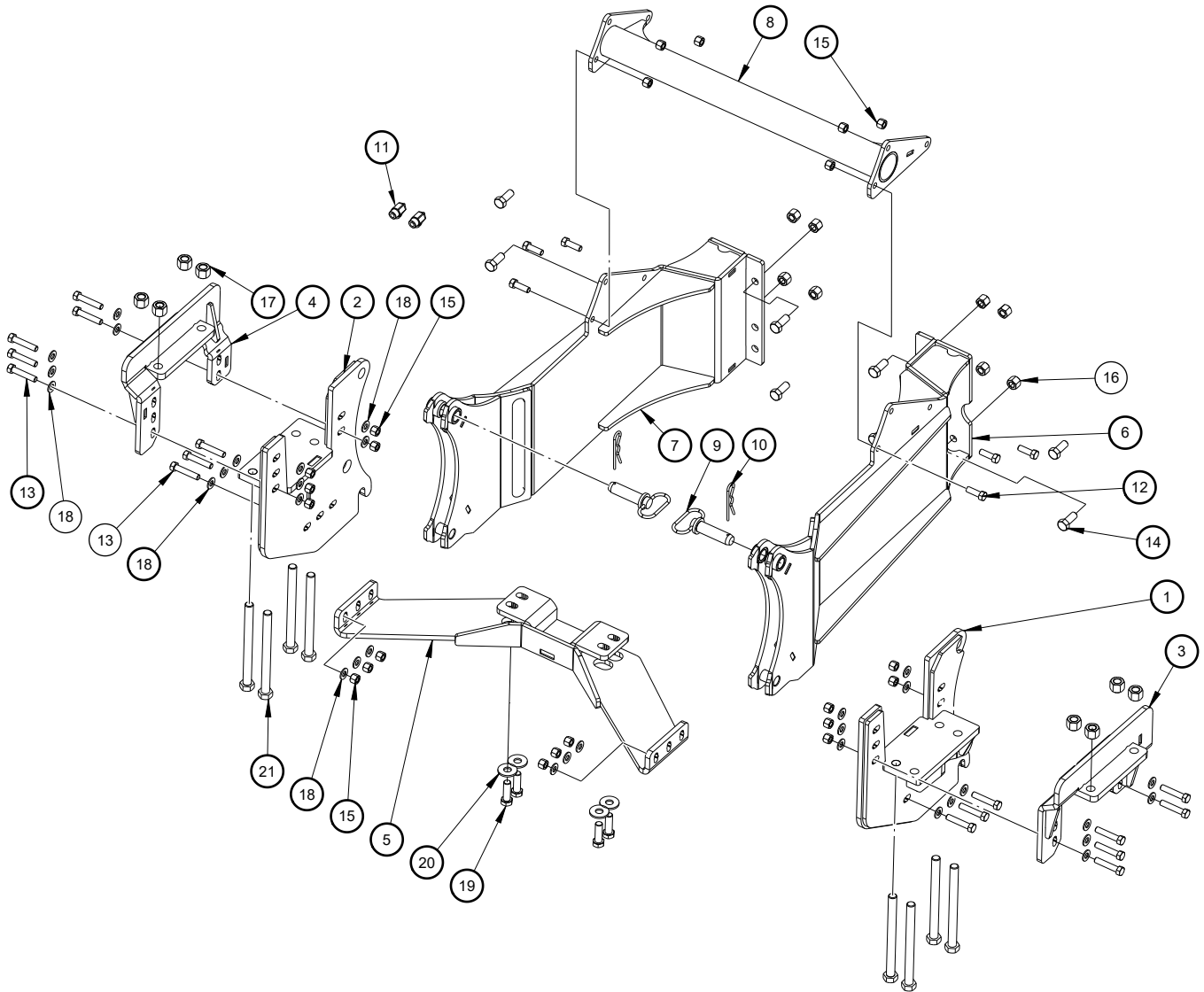
### WARNING!

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

W018

1. Do not install backhoe and required counterweights on tractor if the total tractor and equipment weight then exceeds the ROPS weight certification of the tractor.
2. Be sure machine is properly mounted, adjusted and in good operating condition.
3. Ensure that all safety shielding and safety signs are properly installed and in good condition.

## Sub-frame Kit Parts



Item 11 is required so hydraulic hoses are of clear backhoe seat.

Item	Part Number	Description	Quantity
1	3611W551	Tractor Plate LH	1
2	3611W551H	Tractor Plate RH	1
3	3611W552	Top Holding Plate LH	1
4	3611W552H	Top Holding Plate RH	1
5	3611W553	Brace	1
6	3611W580	Backhoe Mount, LH	1
7	3611W580H	Backhoe Mount, RH	1
8	3611W581	Crossmember	1
9	Z11265	Hitch Pin, 1" x 3" MOD	2
10	Z12250	Hitch Pin Clip, 3/16" x 4"	2
11	Z51136	Elbow 90 MP x FP 0808	2
12	Z71515	Hex Bolt, 1/2"NC x 1-1/2	6
13	Z71525	Hex Bolt, 1/2"NC x 2-1/2	16

Item	Part Number	Description	Quantity
14	Z71615	Hex Bolt, 5/8"NC x 1-1/2	8
15	Z72251	Hex Lock Nut, 1/2"NC	22
16	Z72261	Hex Lock Nut, 5/8"NC	8
17	Z72271G8	Hex Lock Nut, 3/4"NC Grade 8	8
18	Z73151	Flat Washer, 1/2	32
19	Z77191	Hex Bolt, M16 x 2.0 x 50 mm	4
20	Z77391	Flat Washer, M16	4
21	Z717090G8	Hex Bolt, 3/4"NC x 9 Gr.8	8

## Preparation:

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:

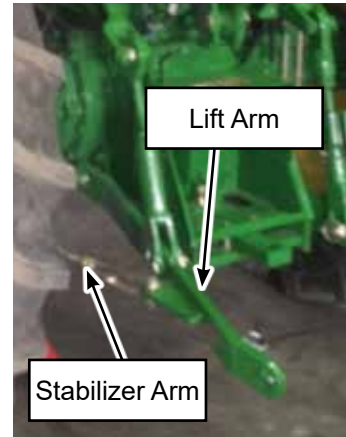
- Basic shop tools
- 1/2", 5/8" 3/4" wrenches and sockets
- M16 wrenches and sockets
- Overhead lifting device
- Jack stands
- Torque wrench



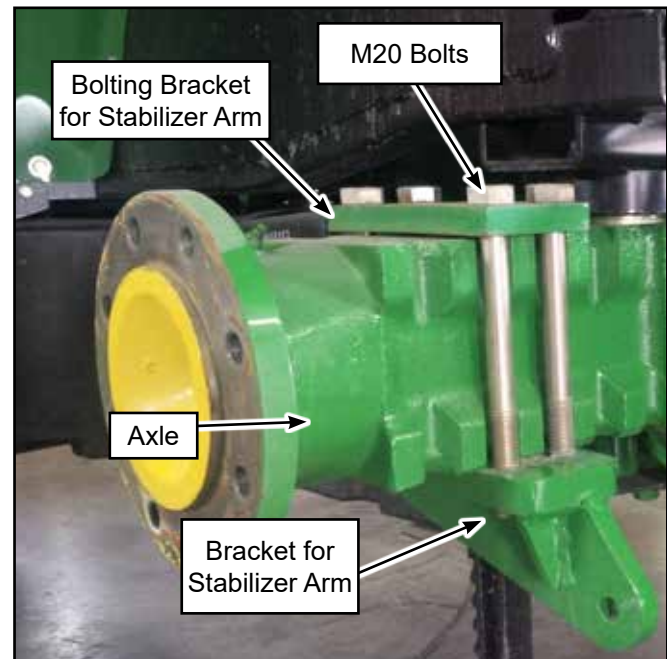
**NOTE:** *Installation is made easier if rear tractor wheels are removed beforehand.*

## Procedure

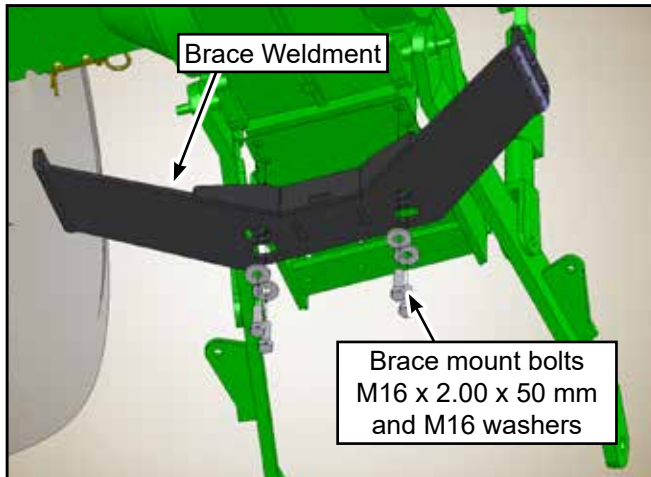
1. Starting on the left-hand side, remove the stabilizer arm. Unbolt the left stabilizer arm bracket and bolting bracket from the axle (4 x bolts).
2. Swing the lift arms in as far as they will go and secure them here to keep them out of the way.



3. Remove bolts at the rear of the hitch (4 x bolts).



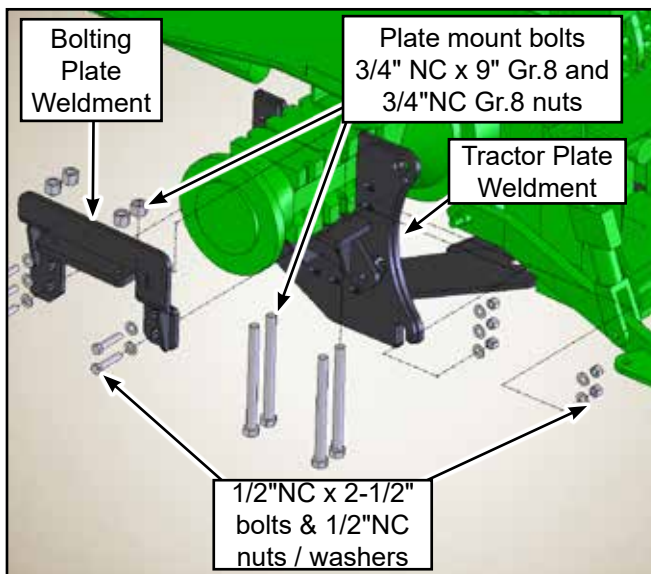
4. Attach the brace weldment to the bottom of the hitch where the bolts were removed with the M16 x 2.00 x 50 mm bolts and M16 washer. Hand-tighten only.



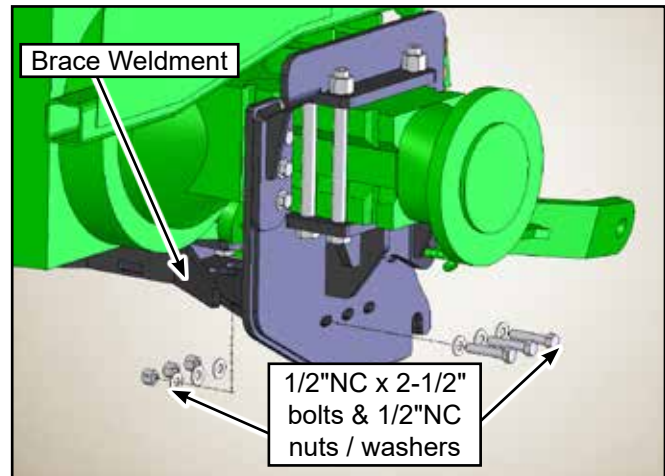
### CAUTION!

Support for the cab may be required when removing ROPS / cab mounting bolts. Proceed with caution. Remove and replace bolts one side at a time.

5. Fit the bolting plate weldment over the axle and tractor plate weldment bolts. Install with 3/4" NC Gr.8 hex nuts. Install the 1/2" NC x 2-1/2" bolts & 1/2" NC nuts / washers through the sides. Hand tighten only.
6. Repeat steps 1–5 for the right side. Hand tighten only.
7. When left- and right-hand sides are assembled, attach all weldments together with 1/2" NC x 2-1/2" bolts, nuts, and flatwashers.



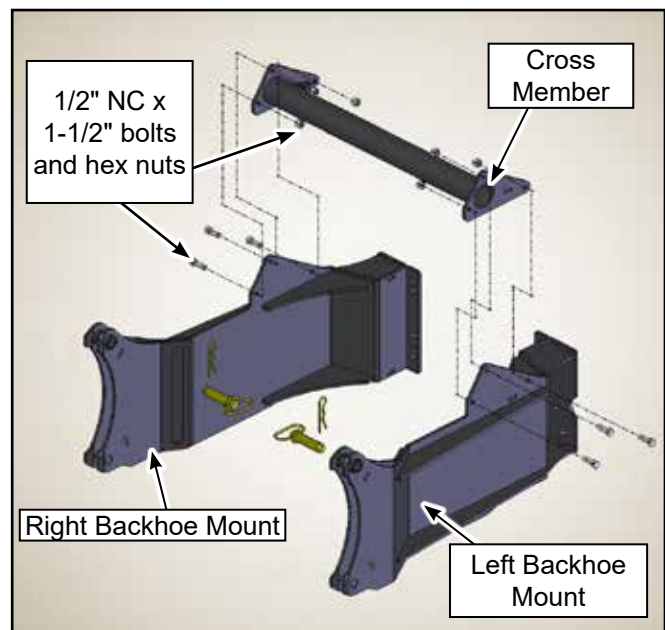
8. Torque-tighten all the nuts and bolts. Refer to bolt torque table at the end of this instruction.



The sub frame is now fully installed.

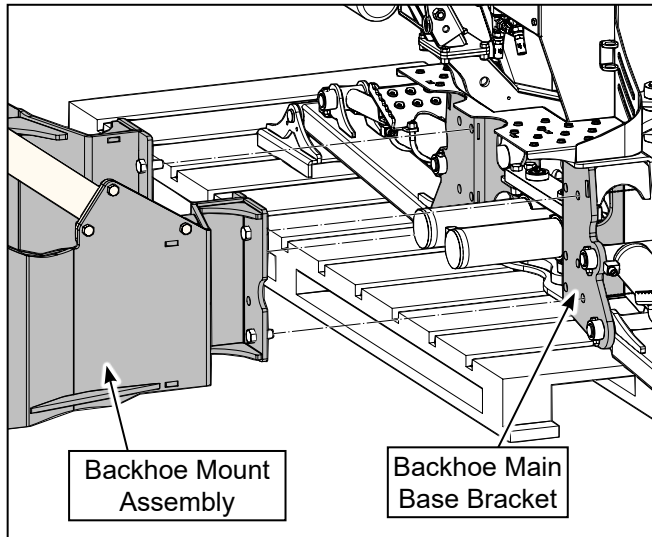
### Assemble the backhoe subframe mount

9. Assemble the left- and right-hand backhoe mounts with the cross member weldment. Use three 1/2" NC x 1-1/2" bolts and 1/2" NC nuts for each side.
10. Torque down all nuts and bolts in the backhoe mount.

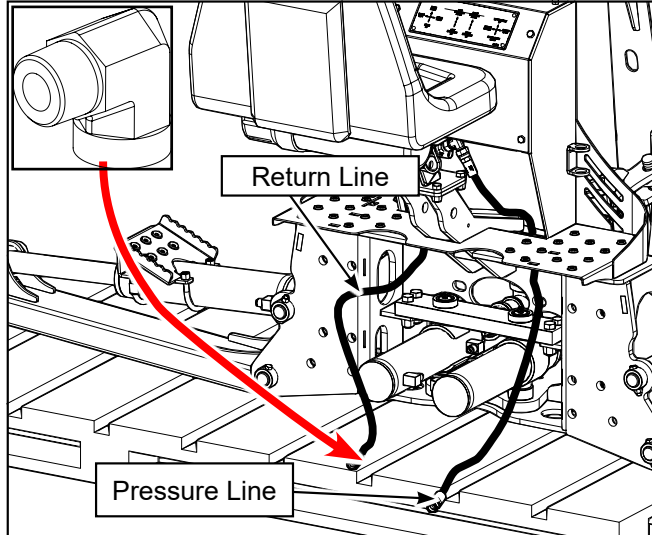




11. Mount the backhoe subframe to the back hoe on main base bracket. Use the 5/8" NC x 1-1/2" bolts and nuts—four for each left- and right-hand sides. Torque-tighten the bolts.



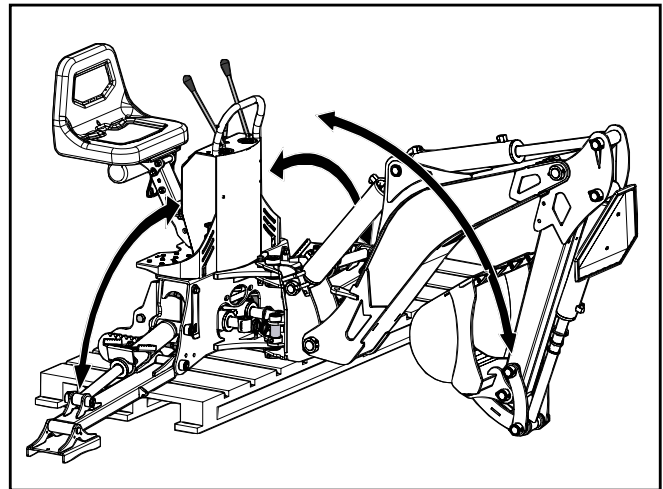
12. Back up the tractor and align it to the bracket. Get close enough to attach the hydraulics to the backhoe.
13. Install the elbow fittings included on the hydraulic lines, and attach to the tractor.



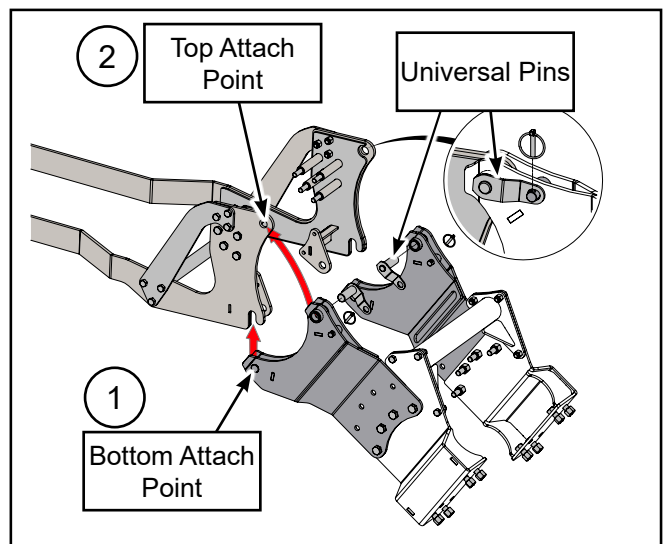
### **! WARNING!**

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

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 sub-frame on the tractor.



15. Carefully use the backhoe hydraulics to raise the bracket assembly into the bottom of the hooks for positive attachment.
16. Carefully use the backhoe hydraulics to rotate the bracket assembly into the top attach points on the sub-frame. Rotate the bracket until it reaches the stop. The pin holes will then be aligned.



Generic illustration showing hitching principal.

17. Insert the two welded universal pins into the pin holes and secure with lynch pins.
18. Check that all attach points are secure, and make sure all bolts / nuts are tightened and torqued.
19. Test the hydraulics: lift the stabilizer legs and remove the skid. Lower the stabilizers and test all boom functions.
20. Check that all moving parts have clearance and do not interfere with the sub-frame.

The sub-frame 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



SAE Gr. 2



SAE Gr. 5



SAE Gr. 8

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



8.8



10.9