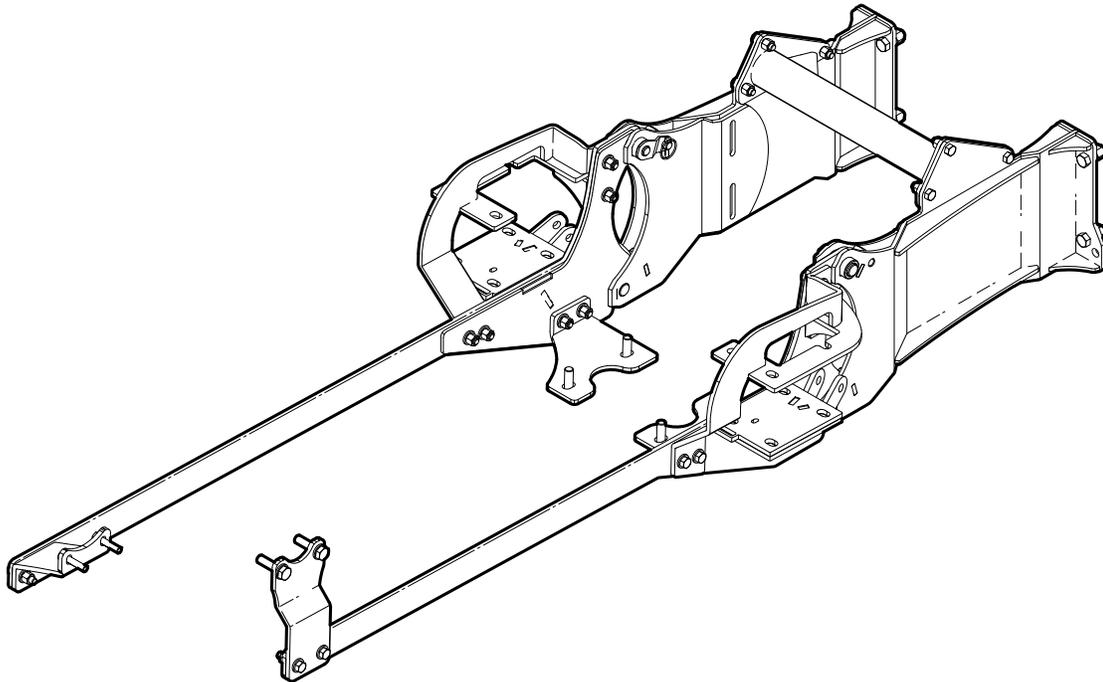


INSTALLATION INSTRUCTIONS

3611A750 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.

NOTE: 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.

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

Metric

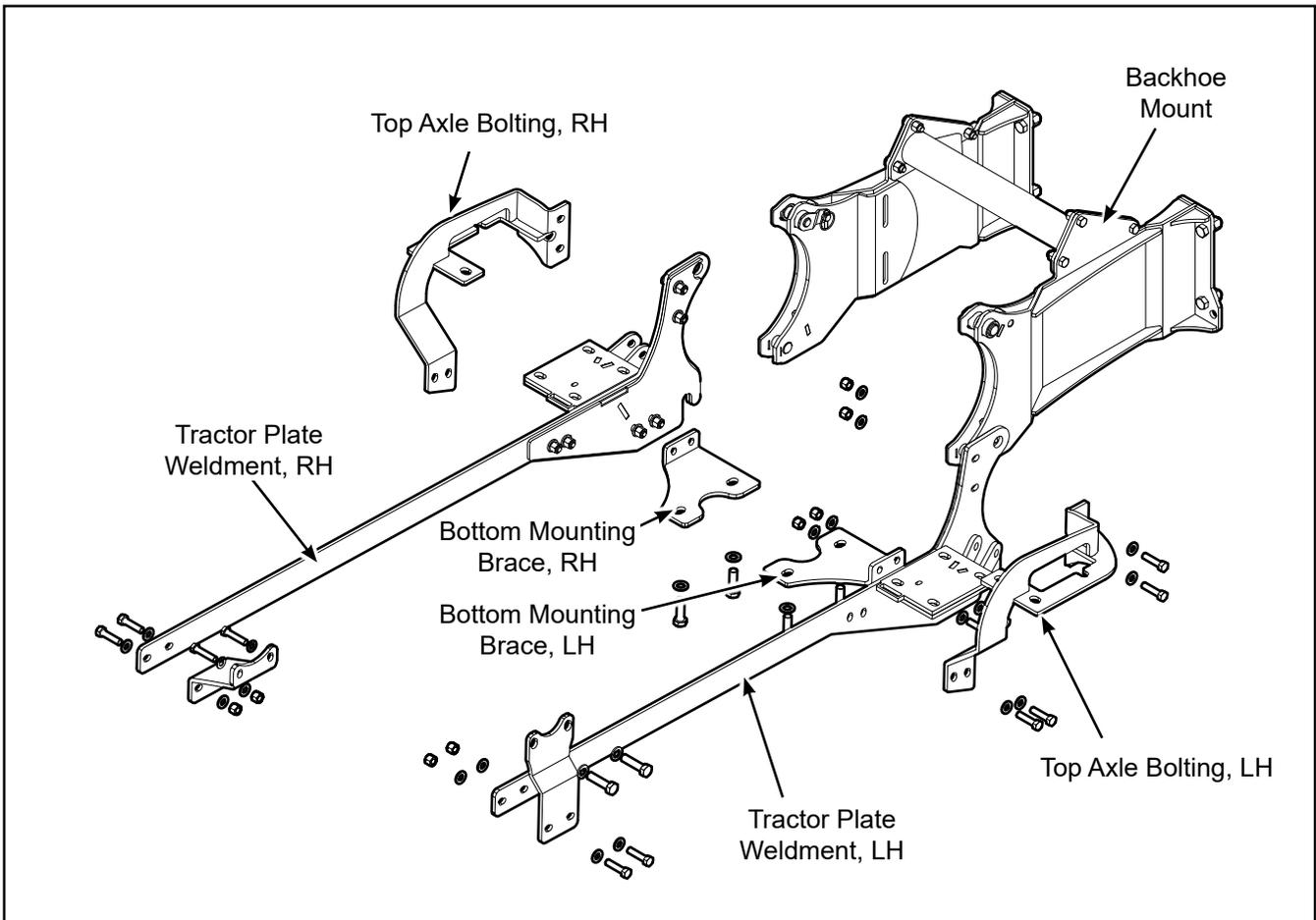


Imperial



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 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 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!

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!

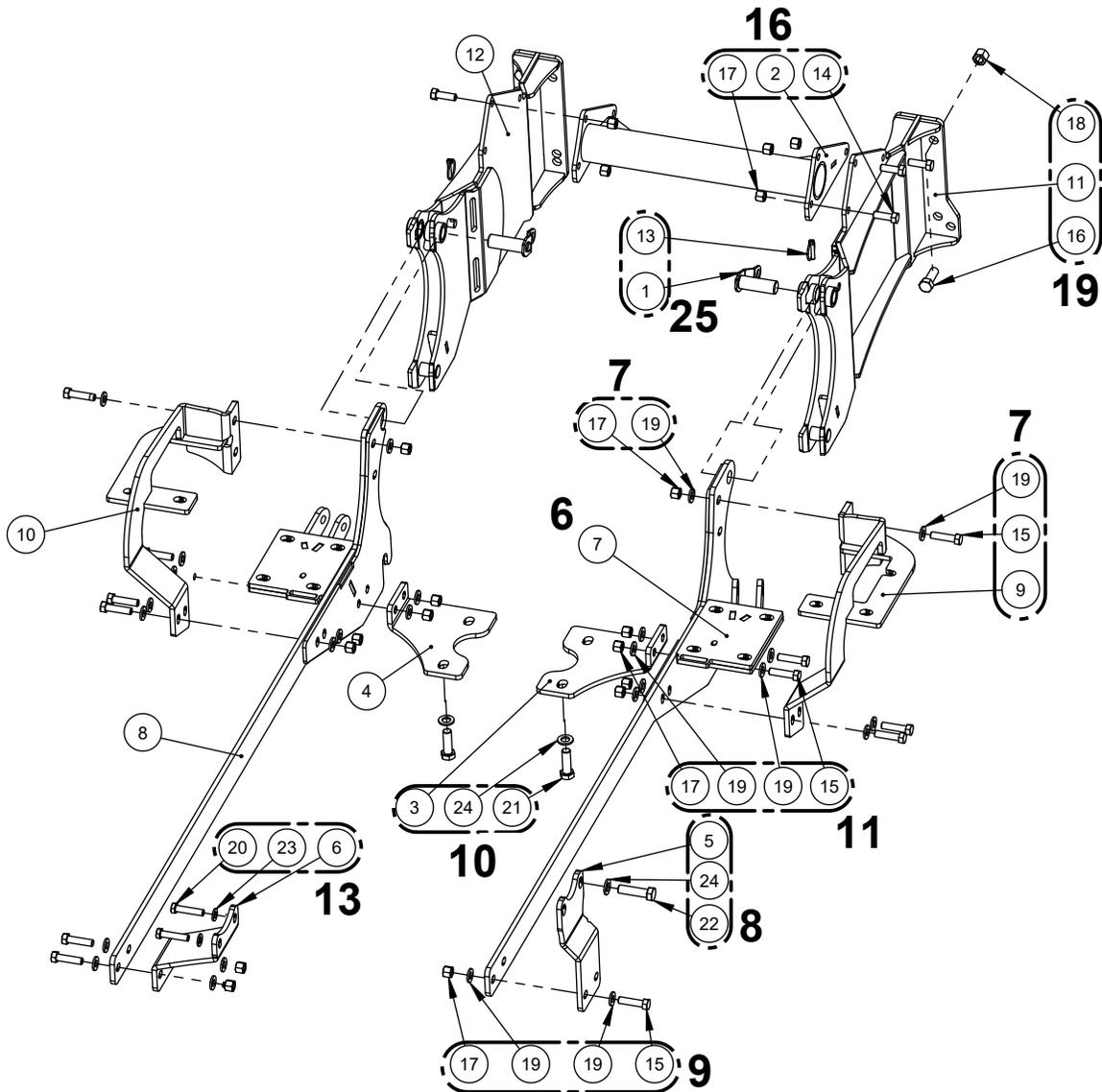
Review and understand the operating instructions for the backhoe. Part of the installation process includes operating the hydraulics to position the attachment points on the tractor.

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	3611L757	Bottom Mounting Brace LH	1
4	3611L757H	Bottom Mounting Brace RH	1
5	3611L760	Mount, Front Load Rail LH	1
6	3611L761	Mount, Front Load Rail RH	1
7	3611W750	Tractor Plate LH	1
8	3611W750H	Tractor Plate RH	1
9	3611W751	Top Axle Bolting Plate LH	1
10	3611W751H	Top Axle Bolting Plate RH	1
11	3611W780	RH Backhoe Link	1
12	3611W780H	LH Backhoe Link	1

Item	Part Number	Description	Quantity
13	Z12120	Lynch Pin, 1/4"	2
14	Z71515	Hex Bolt, 1/2"NC x 1-1/2"	6
15	Z71520	Hex Bolt, 1/2"NC x 2"	16
16	Z71617	Hex Bolt, 5/8"NC x 1-3/4"	8
17	Z72251	Hex Lock Nut, 1/2"NC	22
18	Z72261	Hex Lock Nut, 5/8"NC	8
19	Z73151	SAE Washer, 1/2"	32
290	Z771715G10-9	Hex Bolt, M12 x 1.75 x 55 mm G10.9	2
21	Z77191G10-9	Hex Bolt, M16 x 2.0 x 50 mm G10.9	4
22	Z77192G10-9	Hex Bolt, M16 x 2.0 x 60 mm G10.9	2
23	Z77372	DIN 125 Washer, M12	2
24	Z77391	DIN 125 Washer, M16	6

Preparation:



Removing the rear tractor wheels can make the installation easier.

Position the tractor with the backhoe lined up behind it.

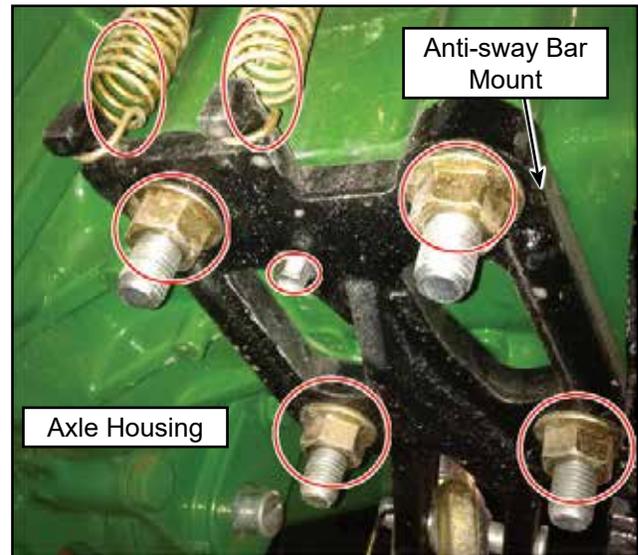
- Backhoe should be assembled but left on the shipping skid.
- The tractor must have a front bucket loader installed. The front loader is required to offset the weight of the backhoe, as well as provide the stability required to operate the backhoe safely.
- The loader should be in the lowered position,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

Tools required:

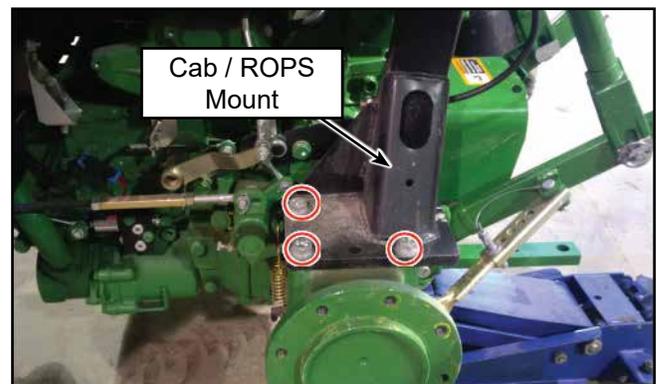
- Basic shop tools
- 3/4", 15/16" wrenches and sockets
- M18, M24 wrenches and sockets
- Overhead lifting device
- Jack stands
- Torque wrench

Procedure

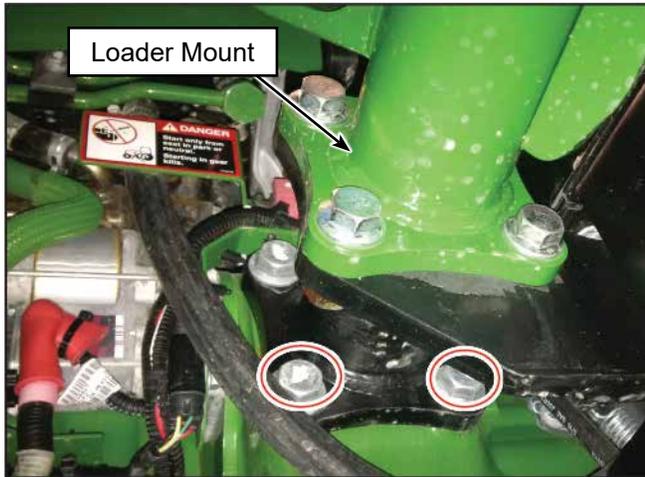
1. Starting on the left-hand side of the tractor, remove the anti-sway bar from the ROPS mount and swing the lift arms in as far as they will go. Secure there out of the way.
2. Remove four nuts from the through bolts as well as the smaller holding bolt and both springs from the Anti-sway bar mount. All parts are shown circled in the image to the right for the left-hand side. All fasteners will be reused later. Set the mount aside.



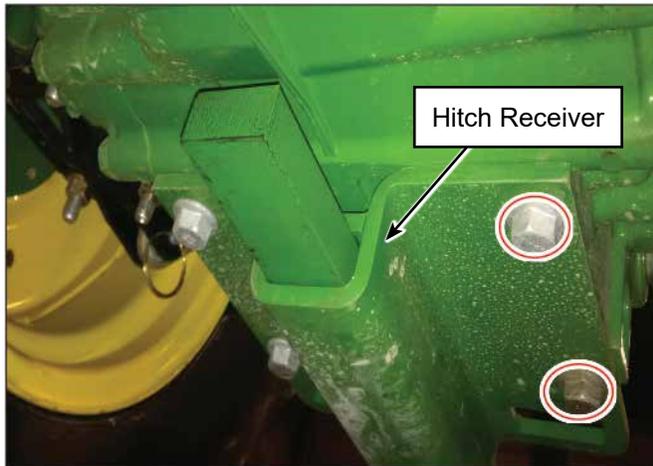
3. Remove the three of the through bolts from the cab/ROPS mount, as shown below for the left-hand side. Place the bolts in a safe place for later reuse.



4. Remove the two bolts of the left-hand loader mount, as shown. Set the bolts aside.

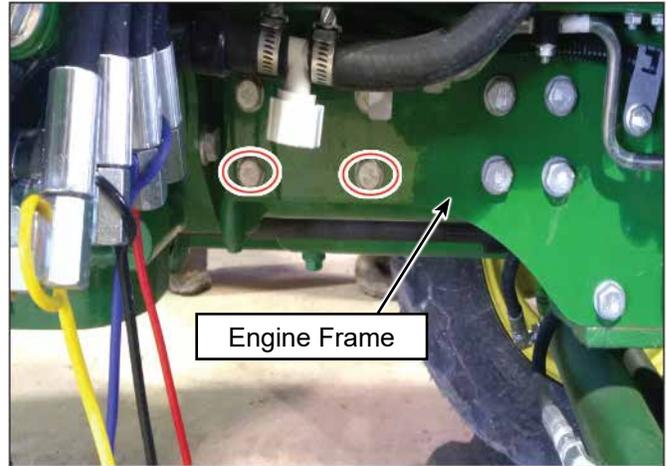


5. Remove the two bolts on the bottom of the hitch receiver, as shown. Set the bolts aside.



6. Place tractor weldment underneath the axle replacing the anti-sway bar mount. Hand-tighten one nut from Step 2 to the remaining through bolt.
7. Place top axle bolting bracket over axle and against tractor weldment. Hand tighten the remaining hardware from Step 2 in addition to the new hardware. Remember to reinstall the springs.
8. Attach the LH loader mount bracket to the tractor weldment using provided hardware. Hand tighten only. Skip step for right-hand side.
9. Tie the load rail to the tractor mount weldment with provided hardware. Hand tighten only.
10. Attach the bottom mounting brace to the hitch receiver using provided hardware. Hand tighten only.
11. Tie the bottom mounting brace to the tractor weldment using provided hardware. Hand tighten only.

12. On the right-hand side remove the two bolts from the engine frame near the loader mount, shown circled in the picture.

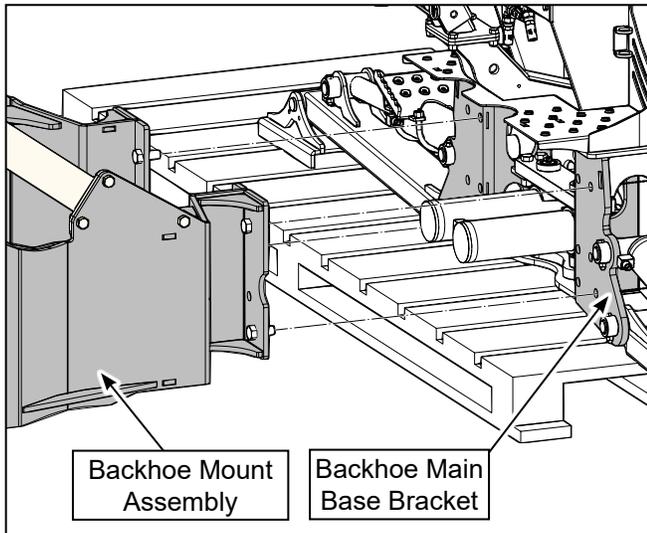


13. Attach the RH loader mount bracket using new hardware provided. Hand tighten only.
14. Repeat Steps 2–11 for the right-hand side. Hand tighten only.
15. Torque down all nuts and bolts on the subframe (refer to Common Bolt Torque Values on last page).
16. Assemble the backhoe mount weldments with hardware as shown.
17. Torque down all nuts and bolts in the backhoe mount.
18. 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.

⚠ WARNING!

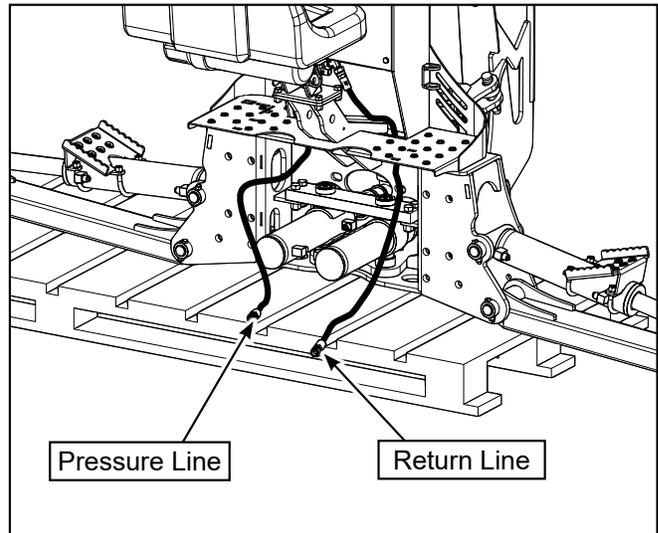
When operating the boom and stabilizers, ensure the area is clear of bystanders and operator is safely positioned.

19. Refer to 'Step 25' on the parts drawing page 4. Take the backhoe sub-frame mount completed in 16 and attach it to the backhoe on main base bracket. Use **(Z71617)** 5/8" NC x 1-3/4" bolts (16) and **(Z72261)** 5/8" locknuts (18) — 4 for each left- and right-hand side. Tighten to 160 lbf•ft (216 N•m).



20. Align and reverse the tractor up to the bracket. Get close enough to attach the hydraulic hoses to the backhoe.
21. Attach the hydraulic lines from the backhoe to the tractor. See illustration.

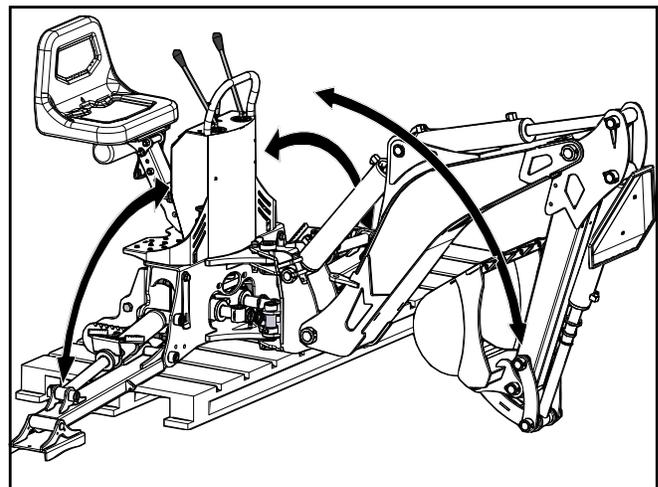
NOTE: *The backhoe directional control valve does not allow reverse flow if pressure and return lines are connected incorrectly.*



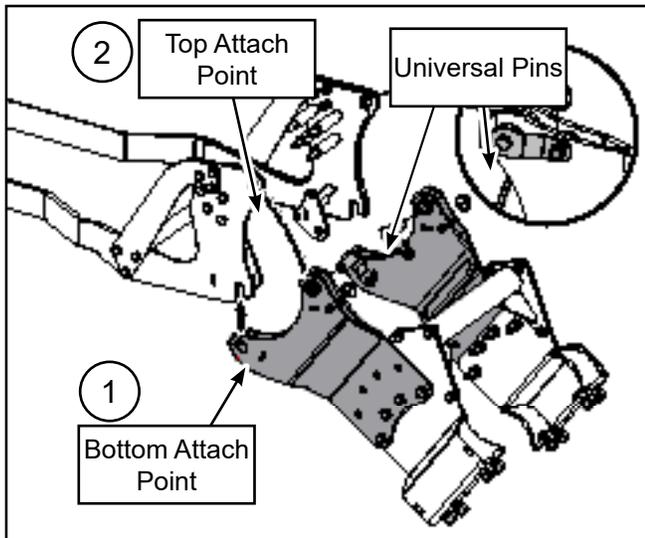
⚠ WARNING!

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

22. 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.



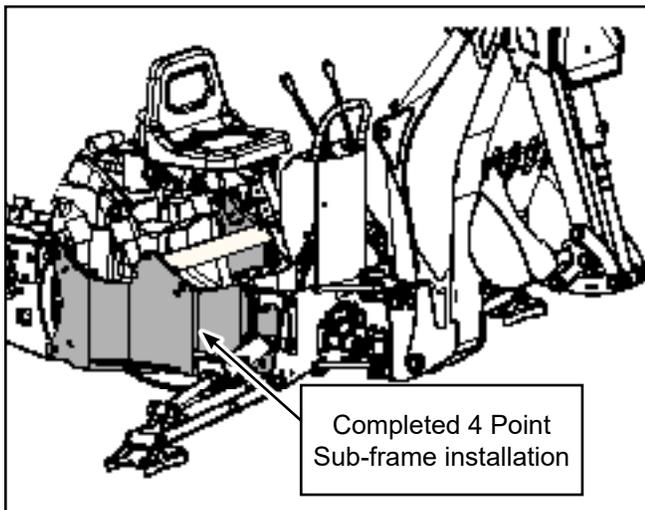
23. Carefully use the backhoe hydraulics to raise the bracket assembly into the bottom of the hooks for positive attachment.
24. Carefully use the backhoe hydraulics to rotate the bracket assembly into the top attach points on the sub-frame. Rotate the bracket until it reaches the stop. The pin holes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



Generic illustration showing hitching principal.

25. Insert the two welded universal pins into the pin holes and secure with lynch pins.
26. Check that all attach points are secure, and make sure all bolts / nuts are tightened and torqued.
27. Test the hydraulics: lift the stabilizer legs and remove the skid. Lower the stabilizers and test all boom functions.
28. 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



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

