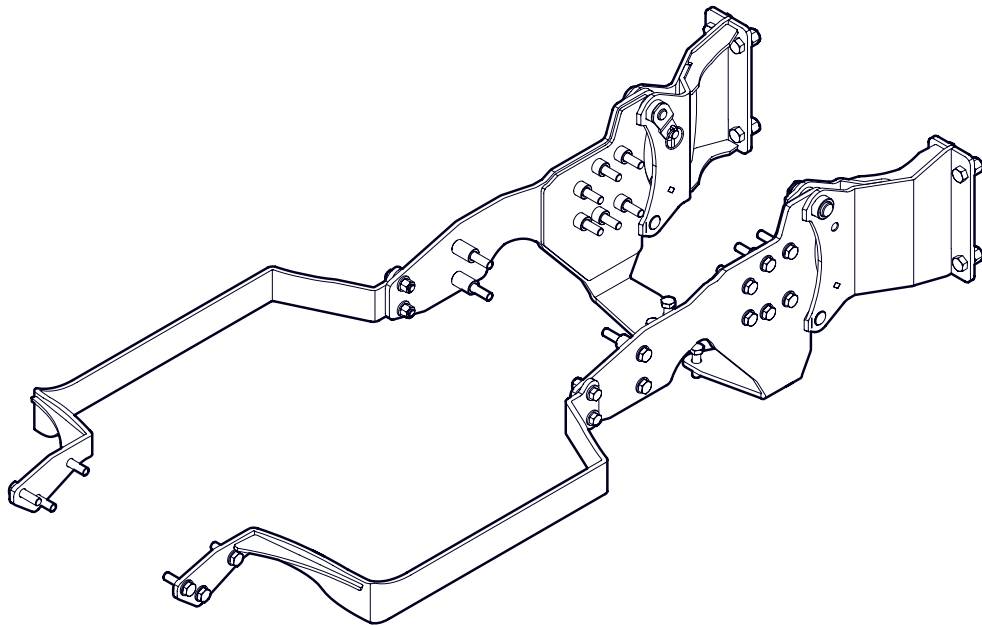


INSTALLATION INSTRUCTIONS

3632A600 Backhoe Subframe Kit



Introduction

This subframe is designed to work with Wallenstein Backhoes.

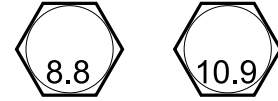
The Wallenstein backhoe is designed to work with a wide variety of tractors. With this Subframe Kit you can easily and quickly attach and detach your Wallenstein backhoe to your tractor.

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

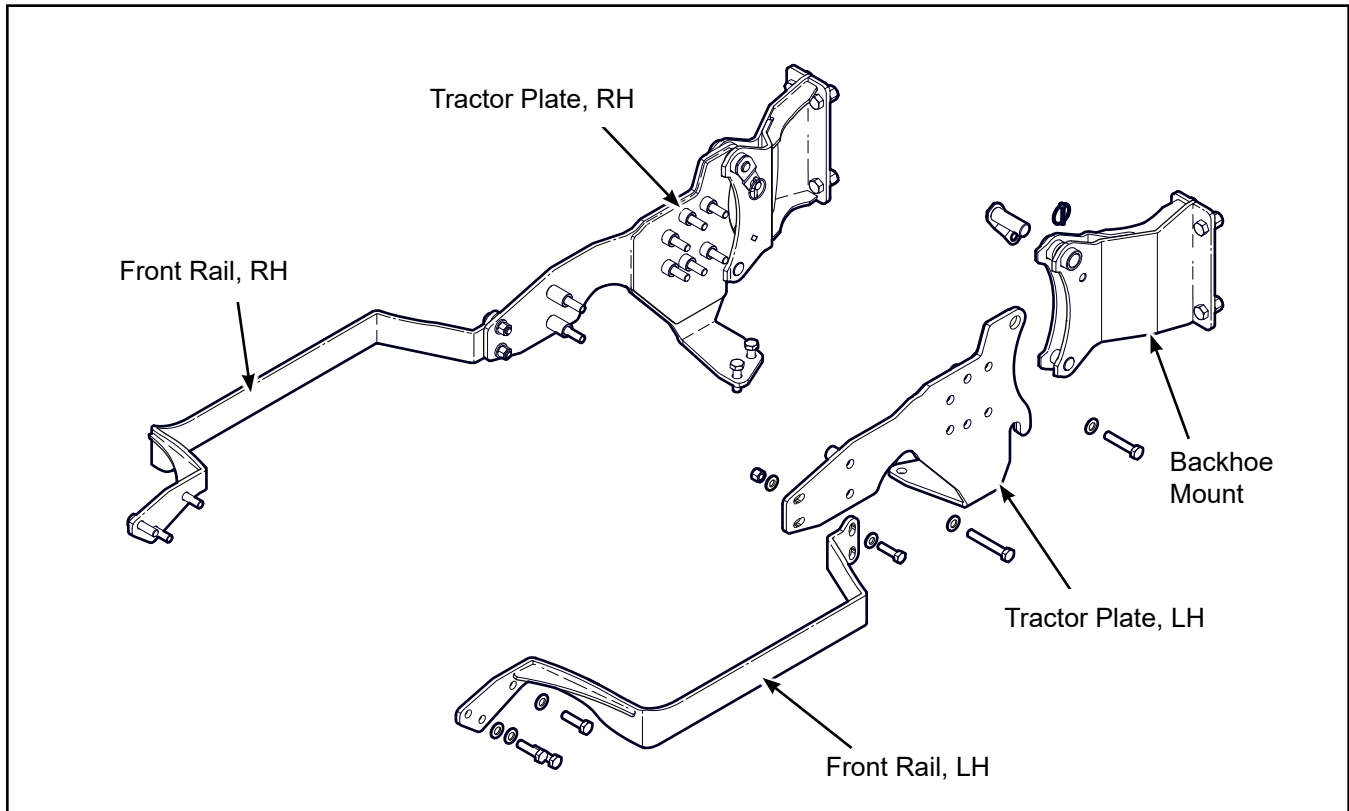


Imperial



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!

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!

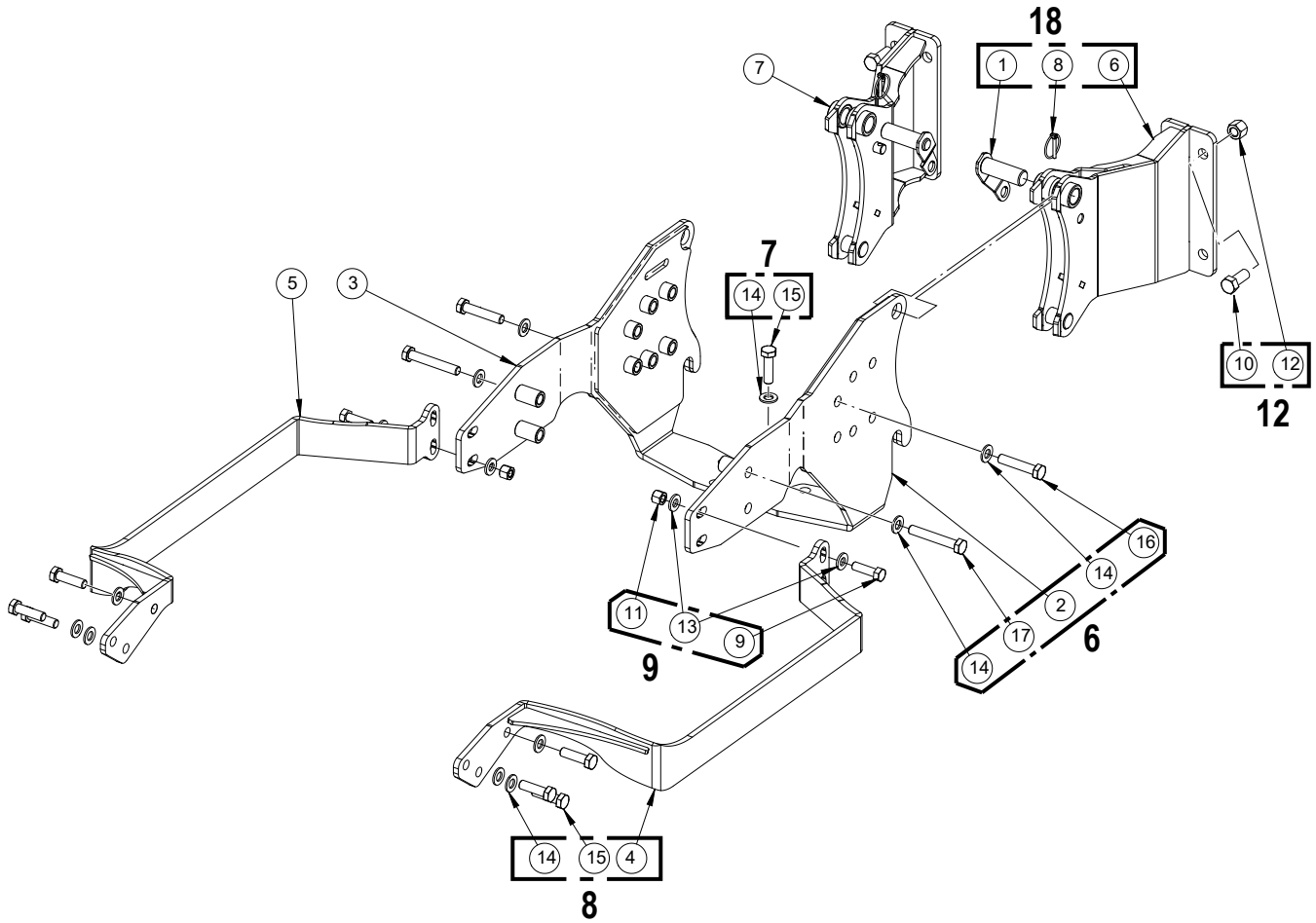
Review and understand the operating instructions for the backhoe. Part of the installation process includes operating the hydraulics to position the attachment points on the tractor.

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	3632W601	LH Tractor Plate	1
3	3632W601H	RH Tractor Plate	1
4	3632W602	LH Front Rail	1
5	3632W602H	RH Front Rail	1
6	3632W630	RH Backhoe Link	1
7	3632W630H	LH Backhoe Link	1
8	Z12110	Lynch Pin	2
9	Z71517	Hex Bolt, 1/2"NC x 1-3/4"	4

Item	Part Number	Description	Quantity
10	Z71615	Hex Bolt, 5/8"NC x 1-1/2"	8
11	Z72251	Hex Lock Nut, 1/2"NC	4
12	Z72261	Hex Lock Nut, 5/8"NC	8
13	Z73151	SAE Washer, 1/2"	8
14	Z77381	DIN 125 Washer, M14	26
15	Z77683	Hex Bolt, M14 x 1.5 x 50 mm	10
16	Z77686	Hex Bolt, M14 x 1.5 x 70 mm	12
17	Z77689	Hex Bolt, M14 x 1.5 x 90 mm	4

Preparation:



Removing the rear tractor wheels can make the installation easier.

Position the tractor with the backhoe lined up behind it.

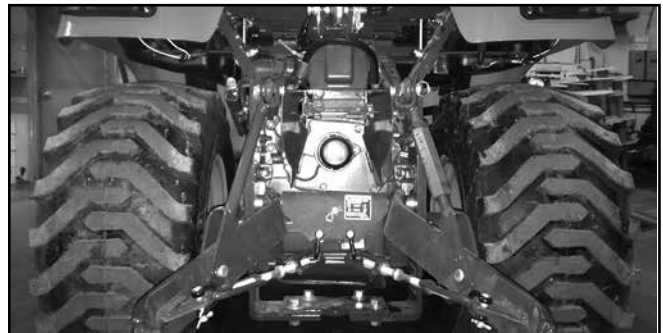
- Backhoe should be assembled but left on the shipping skid.
- The tractor must have a front bucket loader installed. The front loader is required to offset the weight of the backhoe, as well as provide the stability required to operate the backhoe safely.
- The loader should be in the lowered position,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

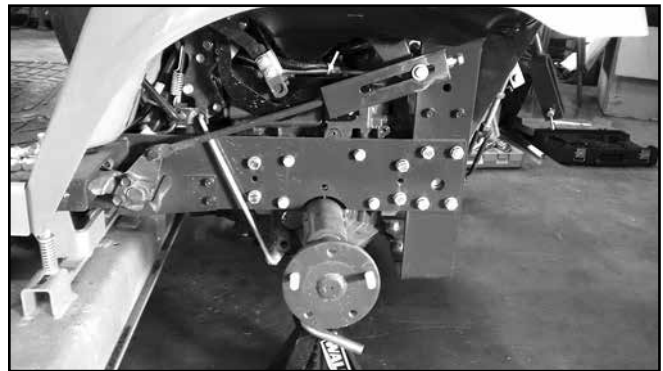
Step 1

Remove the topline from the tractor. Unlink the bottom 3-PT links and the lift arms and store them up as close to the tractor as possible.



Step 2

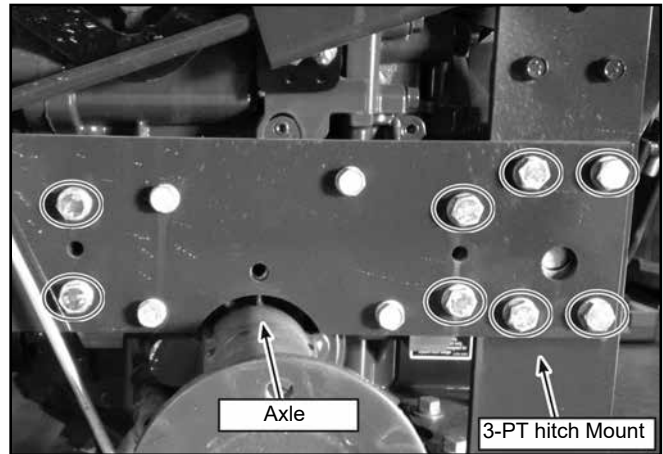
Remove any obstructions to seating for the backhoe such as slow moving vehicle sign, toolbox, or brackets and so on.



Step 3

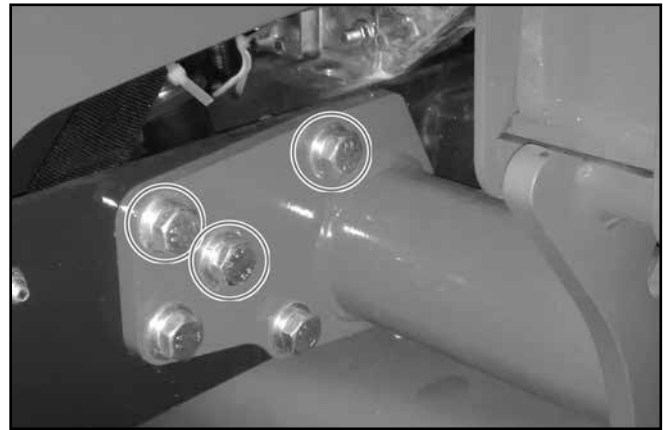
Starting on the left-hand side of the tractor, remove the two front bolts of the frame, as well as six of the rear frame bolts as shown.

Set this hardware aside as is not reused on assembly. New hardware is supplied in the kit.



Step 4

Remove the top three bolts of the loader mount as shown. Set the bolts aside as they are not reused on assembly. New hardware is supplied in the kit.

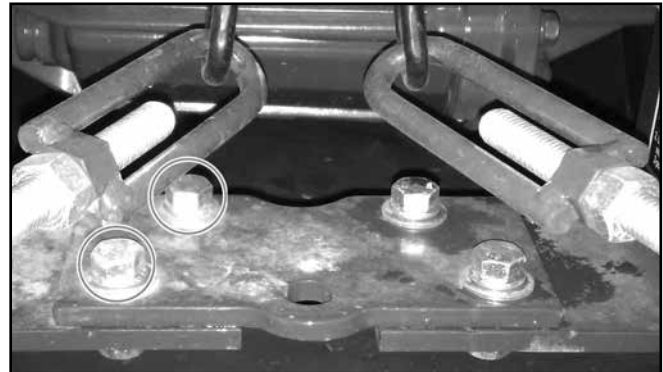


Step 5

Remove two of the bolts from the lower hitch as shown.

Set the bolts aside as they are not reused on assembly. New hardware is supplied in the kit.

Keep the washers and nuts for re-use in Step 8.

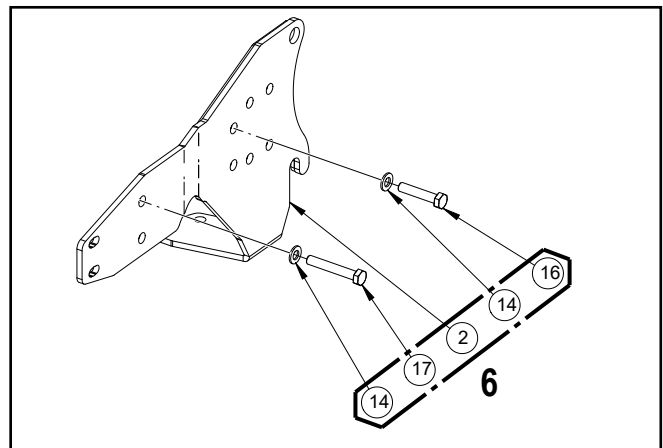


Step 6

Place item 2 left-hand Tractor Plate (**3632W601**) up against the tractor frame over the axle.

In the six rear holes, install item 16 (**Z77686** Hex Bolts M14 x 1.5 70 mm long) with item 14 (**Z77381** M14 Flatwashers). Hand-tighten only for now.

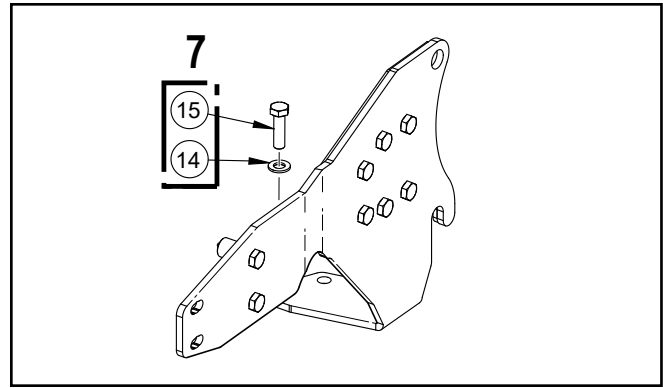
In the two holes next towards the front, install item 17 (**Z77689** Hex Bolts M14 x 1.5 x 90 mm long) with item 14 (**Z77381** M14 Flatwashers). Hand-tighten only for now.



Step 7

In the lower holes, install two item 15 (Z77683 Hex Bolts M14 x 1.5 x 50 mm) with item 14 (Z77381 M14 Flatwashers) and hex nuts and washers removed in Step 5.

Hand-tighten only for now.

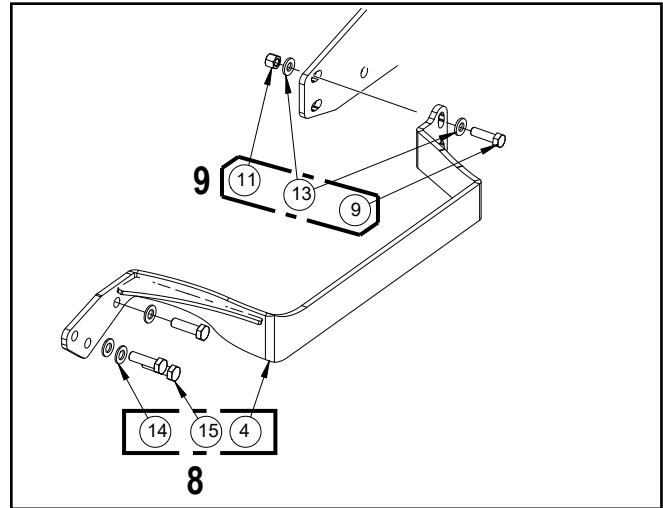
**Step 8**

Install item 4, LH Front Rail (**3632W602**) connecting the LH Tractor Plate to the loader mount on the tractor frame.

At the front loader mount connection, use three item (**Z77686** Hex Bolts M14 x 1.5 70 mm long) with item 14 (**Z77381** M14 Flatwashers). Hand-tighten only for now.

Step 9

To connect the LH Tractor Plate to the Front Rail, use two each of item 9 (Z71517 Hex Bolt 1/2"NC x 1-3/4"), item 13 (Z73151 1/2" Flatwasher), and item 11 (Z72251 Hex Locknut 1/2"NC).

**Step 10**

Perform Steps 1–9 on the right-hand side of the tractor.

Step 11

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.

Re-install the wheels if removed and reconnect the adjustable stabilizer arm.

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

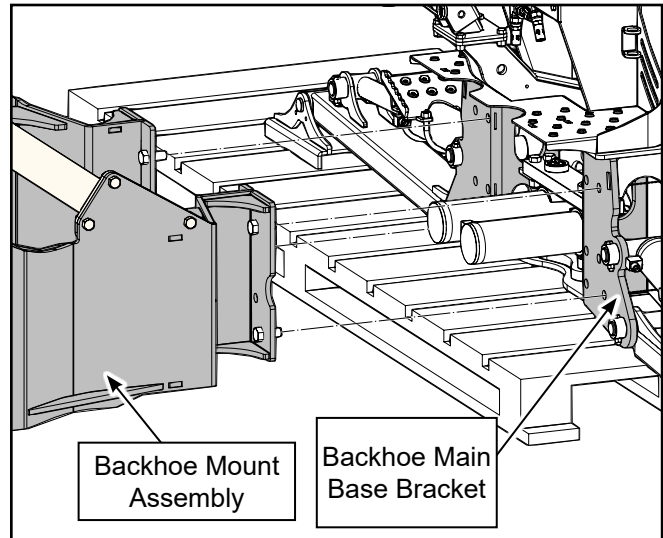
Step 12

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 13

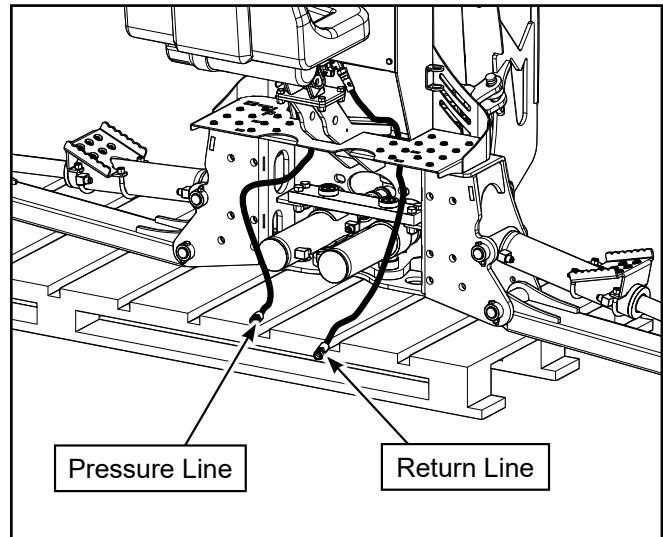
Align and reverse the tractor up to the bracket. Get close enough to attach the hydraulic hoses to the backhoe.



Step 14

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!

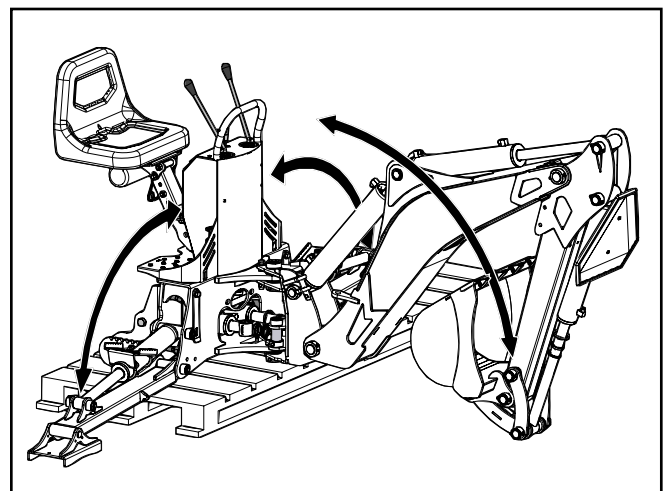
When operating the boom and stabilizers, ensure the area is clear of bystanders and operator is safely positioned.

Step 15

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 16

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

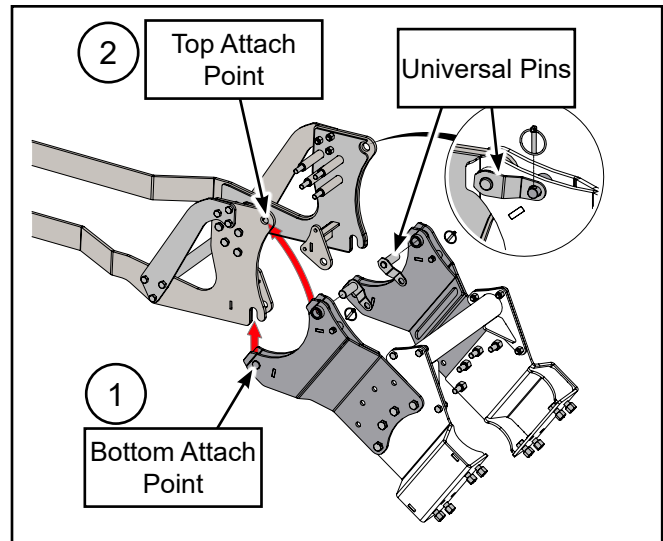


Step 17

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 18

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



Generic illustration showing hitching principal.

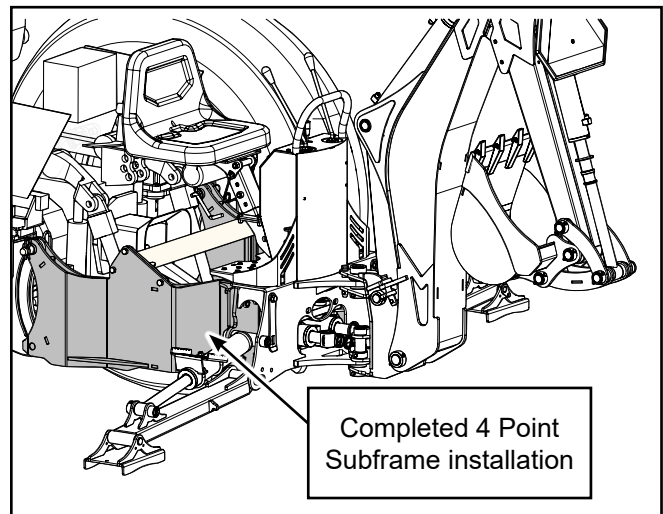
Step 19

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

