

INSTALLATION INSTRUCTIONS

3081A250



PTO605 PTO-driven Hydraulic Pump Kit for GE605 Backhoe

Document: Z97850_En

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WALLENSTEIN

1. Safety

1.1 Safety Alert Symbol

This Safety Alert Symbol means:

ATTENTION! BE ALERT!

YOUR SAFETY IS INVOLVED!

The **Safety Alert Symbol** identifies important safety messages on the machine and in this instruction. This symbol means be alert to the possibility of personal injury or death. Follow instructions provided.



1.2 Signal Words

The signal words **DANGER**, **WARNING** and **CAUTION** determine the seriousness level of the warning messages in this manual. The appropriate signal word for each message in this manual has been selected using the following guidelines:

DANGER –

Indicates an imminently hazardous situation that, if not avoided, **will** result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.

WARNING –

Indicates a potentially hazardous situation that, if not avoided, **could** result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION –

Indicates a potentially hazardous situation that, if not avoided, **may** result in minor or moderate injury. It may also be used to alert against unsafe practices.

IMPORTANT – To avoid confusing equipment protection with personal safety messages, a signal word **IMPORTANT** indicates a situation that if not avoided, could result in damage to the machine.

1.3 Equipment Operation



Avoid the risk of personal injury or machine damage! Read the operator's manual before using this equipment. Carefully read all safety messages in the manual and follow all safety signs on the machine.

1.4 PPE Requirements

Wear appropriate Personal Protective Equipment (PPE) when installing this kit. This includes but is not limited to:

- Hearing protection
- Safety shoes with slip resistant soles
- Safety glasses
- Protective gloves

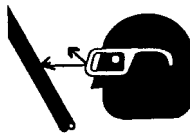
1.5 Hydraulic System Safety

- Make sure that all the components in the hydraulic system are kept clean and in good condition.
- Make sure all components are tight, and that lines, hoses and couplings are not damaged before applying pressure to the system.

- Do not use your hand to check for hydraulic oil leaks. Hydraulic fluid escaping under pressure can penetrate the skin causing serious injury. Use a piece of cardboard.



- Wear proper hand and eye protection when searching for a high pressure hydraulic leak.



- Seek medical attention immediately if injured by a concentrated high-pressure stream of hydraulic fluid. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.
- Do not attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tape, clamps or cements. Doing so can cause sudden failure and create a hazardous and unsafe condition.
- Relieve pressure on the hydraulic system before working it. The hydraulic system operates under extremely high pressure.
- Replace any hydraulic hose immediately that shows signs of swelling, wear, leaks or damage before it bursts.
- Do not bend or strike high-pressure lines, tubes or hoses, or reinstall them in a bent or damaged condition.
- Check to make sure hydraulic hoses are not worn or damaged, and are routed to avoid chafing.
- Never adjust a pressure relief valve or other pressure-limiting device to a higher pressure than specified.

2. General Information

The Wallenstein PTO605 Hydraulic Pump Kit is required when mounting a Wallenstein GE605 backhoe on a tractor that does not have a hydraulic circuit for rear implements. The pump kit is mounted on the backhoe and powered by the tractor PTO. It provides a 5 gpm (19 Lpm) flow sufficient to power the back hoe.

The kit consists of a PTO-mounted hydraulic pump, hydraulic reservoir, hoses, fittings, and hardware.

Tighten all hydraulic connections as specified in the table – *Hydraulic Fitting Torque on page 11*. Apply Loctite® 5452 thread locker to all connections.

The tractor must have a 1-3/8", 6-spline PTO shaft to fit the pump drive coupler. Shaft adapters cannot be used and the tractor cannot operate at any speed other than 540 rpm.

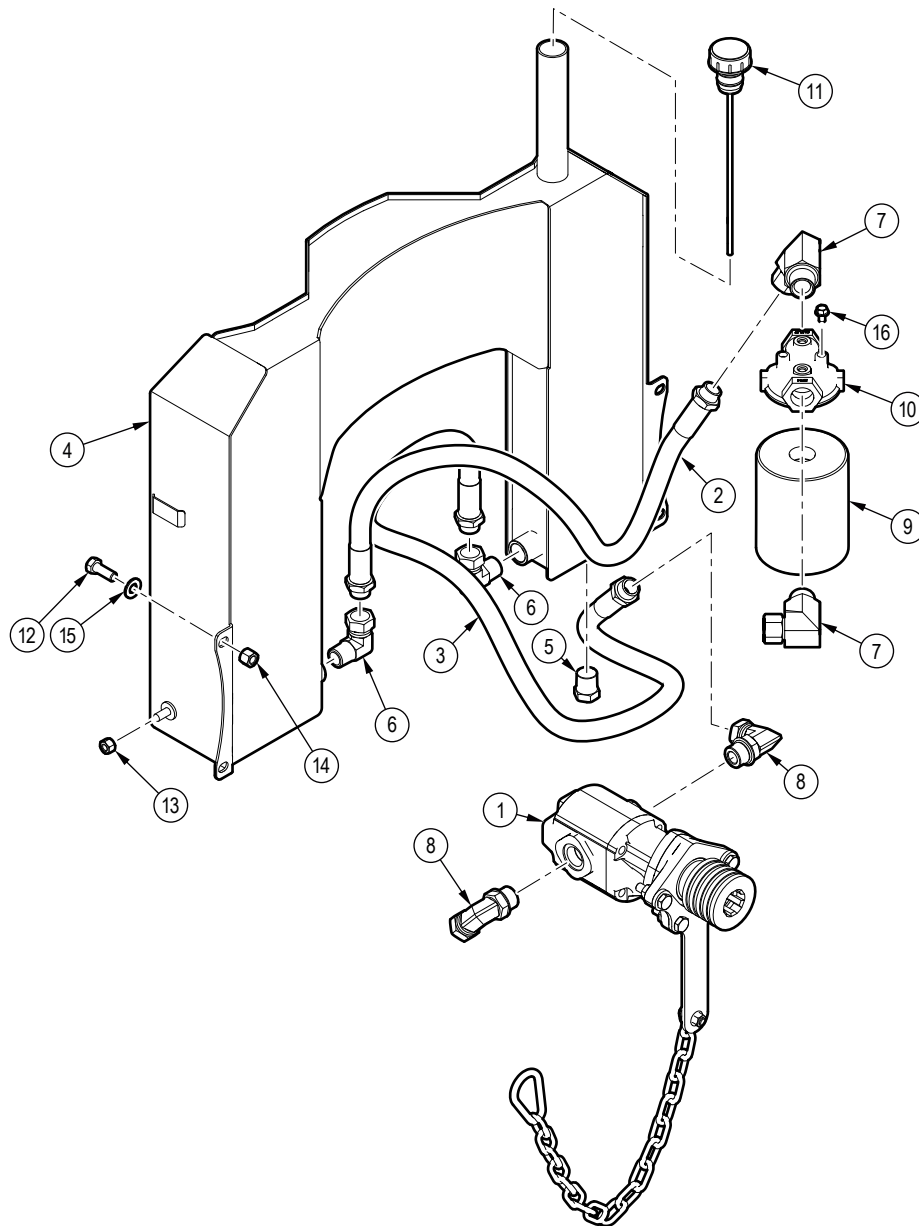
It is not recommended that tractors with a variable speed PTO be used with the Backhoe. Operating at speeds higher than 540 rpm can overwork the pump and cause early failures.

For the backhoe installation, the tractor must have the subframe installed.

2.1 Tools required

- Torque Wrench
- Loctite® 5452 Thread Locker
- Overhead lifting device

3. Parts Breakdown



Item No.	Part No.	Description	Qty
1	3081A251	Pump Assembly	1
2	3081F251	1/2" Hose, MP08 x MP08 x 28"	1
3	3081F252	1/2" Hose, MP08 x MP08 x 40"	1
4	3081W251	2-1/4 Gallon Tank	1
5	Z51191	Hex Plug, MP 08	2
6	Z51331	Elbow 90, MP x FPX 0808	2
7	Z51334	Elbow 90, MP x FPX 1208	2
8	Z51384	Elbow 90, MORB x FPX 1008	2

Item No.	Part No.	Description	Qty
9	Z55301	Particulate Filter, FP12	1
10	Z55302	Filter Cap, MP12 x FP12	1
11	Z55404	Vented Plug Dipstick x 9"	1
12	Z71310	Hex Bolt, 3/8NC	4
13	Z72221	Hex Lock Nut, 5/16NC	1
14	Z72231	Hex Lock Nut, 3/8NC	4
15	Z73131	SAE Washer, 3/8"	4
16	Z76113	Flange Bolt, 1/4NC x 3/8"	2

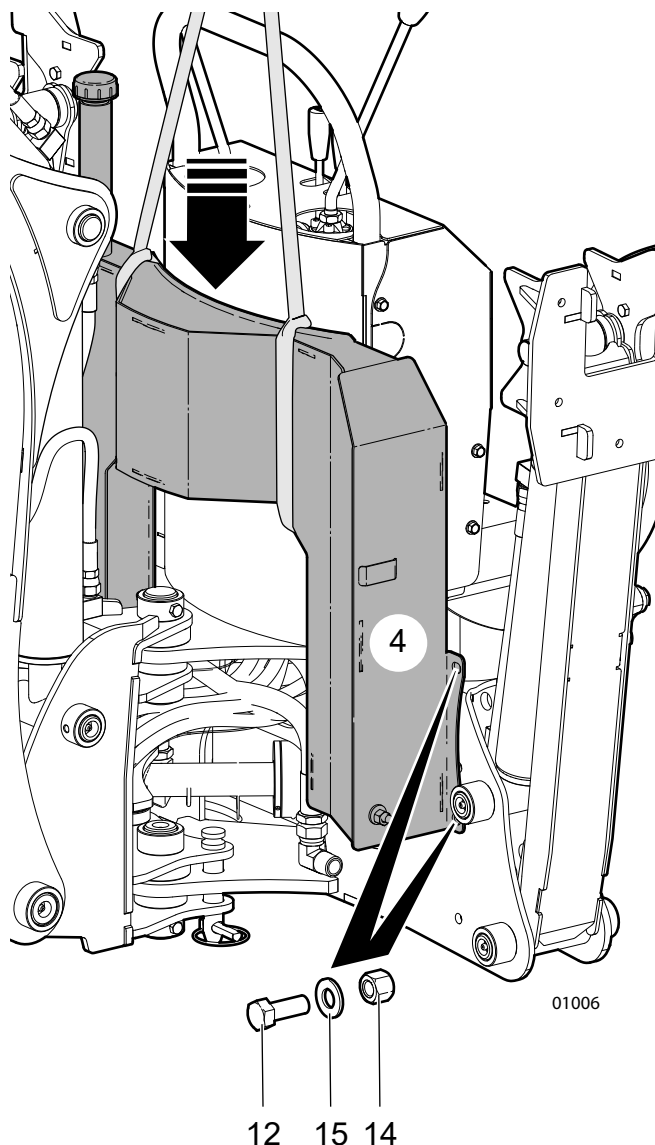
Fig. 1—Parts Breakdown

4. Procedure

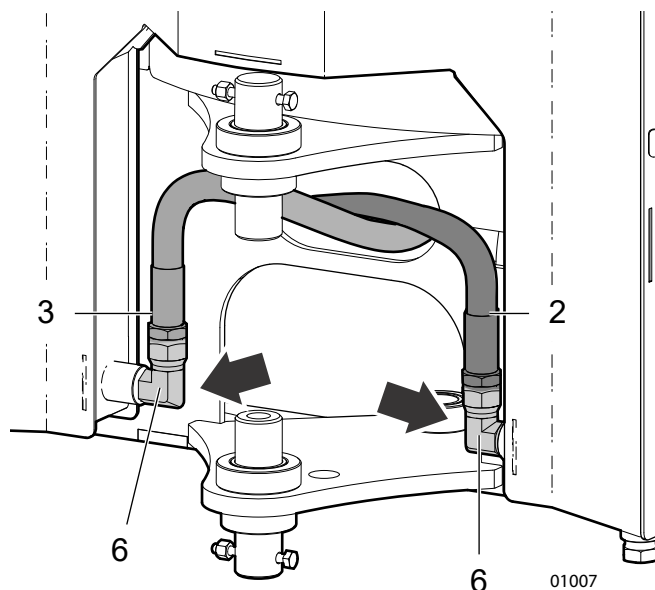
1. Uncrate the back hoe and assemble it, but leave it on the skid.

Step 1– Install Reservoir

2. Remove the Manual Tube from the side of the control pedestal. Set it aside as it is reinstalled on the side of the hydraulic tank in a later step.
3. Install two (**Z51331**) 90° elbow fittings (6) into the bottom of the reservoir. Point fittings upward. Apply Loctite 5452 thread locker to threads.
4. Install (**3081F252**) suction hose (3) in the lower reservoir on the right-hand side (determined if you were sitting in the backhoe operator's seat). This is the longer of the two hoses at 40" (102 cm).

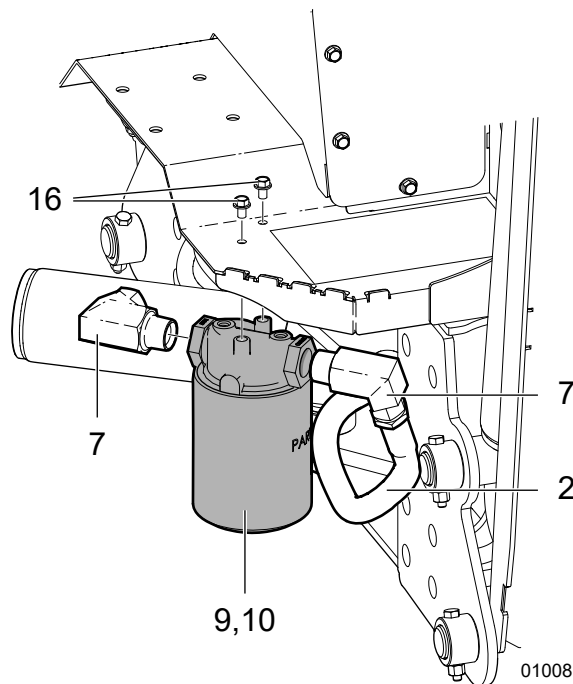
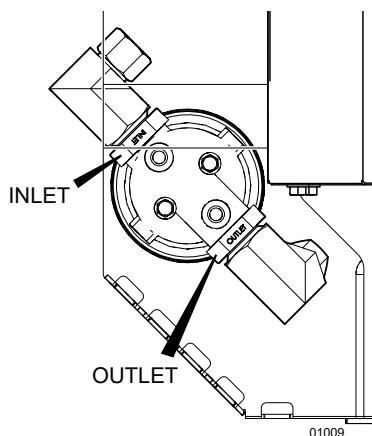


5. Install (**3081F251**) return hose (2) in the lower reservoir on the left-hand side. This is the shorter hose at 28" (71 cm) long.
6. Lower (**3081W251**) Reservoir (4) onto the backhoe, ahead of the control pedestal at the hinge. Fasten it to the main frame weldment with four (**Z71310**) 3/8"NC x 1" hex bolts (12), (**Z73131**) flatwashers (15), and (**Z72231**) 3/8"NC locknuts (14). Torque-tighten these fasteners to 33 lbf•ft (45 N•m).
7. Route these two hoses through the hole in the main frame towards the back.



Step 2 – Install Return Filter Assembly

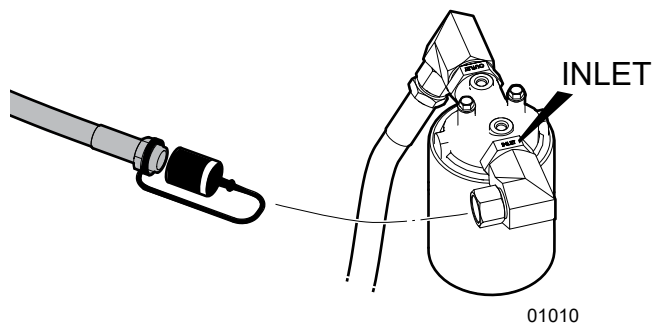
8. Install two (Z51334) 90° elbow fittings (7) into the filter cap. Orient as approximately as shown. Apply Loctite 5452 thread locker to threads.
9. Install (Z55302) return filter cap (10) to the underside of the foot plate on the right-hand side with two (Z76113) 1/4"NC x 3/8" flange bolts (16). **Orient the filter assembly so the Inlet and Outlet ports are as shown.** Torque-tighten the flange screws to 9 lbf•ft (12 N•m).
10. Lightly oil the gasket on (Z55301) filter element (9), then spin it onto the filter head. Hand-tighten only.



11. Connect (3081F251) hydraulic hose (2) to the 90° fitting on the OUTLET port of the return filter. Apply Loctite 5452 thread locker to threads.

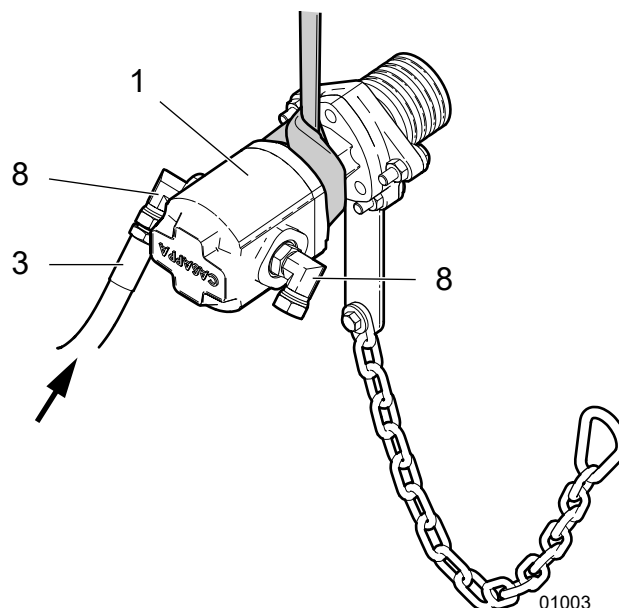
IMPORTANT! The pressure and return hoses on the backhoe have plastic color-coded caps. The black cap is the return hose, and the red cap is the pressure hose.

12. Remove the black nipple cap and quick disconnect coupler from the return hose on the backhoe. Connect this hose to the return filter INLET port. Apply Loctite 5452 thread locker to threads.



- 13.** Install two (Z51384) 90° elbows (8) into (3081A251) hydraulic pump assembly (1).
The return elbow fitting is identified with a black zip tie. The pressure elbow fitting is identified with a red zip tie.

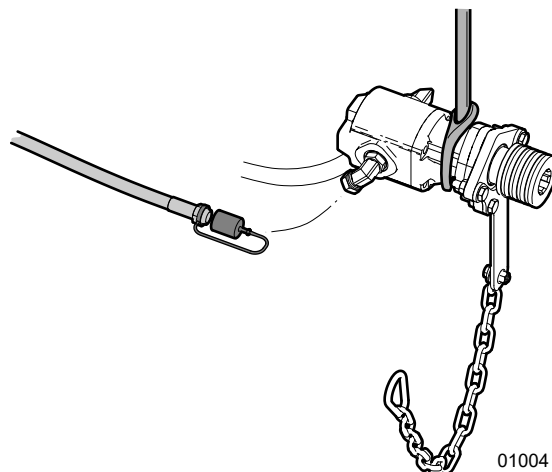
- 14.** Connect (3081F252) suction hose (3) from the left-hand side of the reservoir to the right-hand pump port. (This hose is the longer one from the bottom of the reservoir.) Apply Loctite 5452 thread locker to threads.



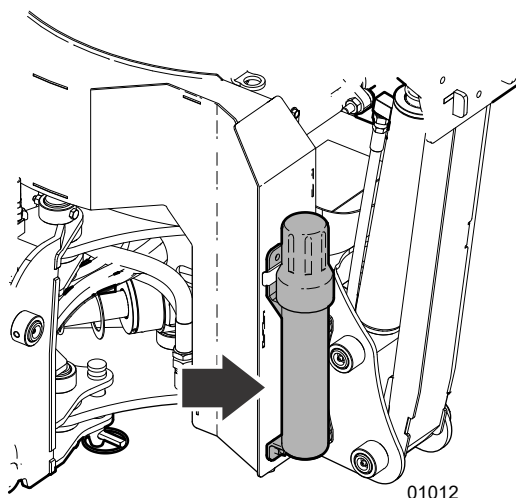
- 15.** Remove the red nipple cap and quick-disconnect coupler from the pressure hose. Connect this hose to the left-hand port on the pump assembly. The port is identified with a red zip tie. Apply Loctite 5452 thread locker to threads.

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

NOTE: If unsure about the pressure and return lines, the pressure line is connected to the right-hand side of the directional control valve at the 'P' connection point (it is embossed on the valve body, upside down).



- 16.** Reinstall the manual tube to the side of the reservoir. Slide the end of the tube under the tab and fasten in place with (Z72221) 5/16"NC hex locknut (13).



Step 3 — Install the Pump on Tractor PTO

WARNING!

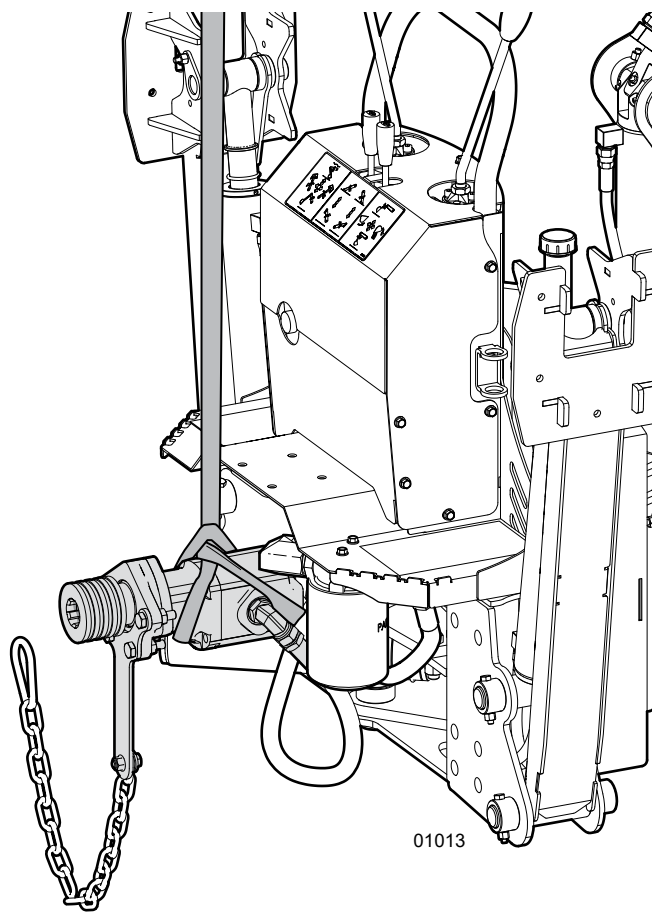
Set parking brake and shut off tractor engine.
Remove ignition key.
Block or chock tractor wheels.

IMPORTANT! Leave the backhoe on the skid until mounted to the tractor.

CAUTION!

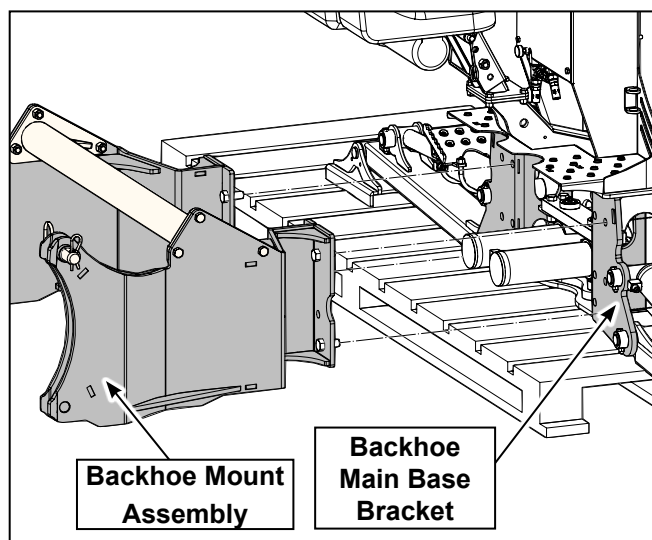
Pump must be supported with a suitable lifting device for the next steps.

17. Reverse the tractor up to the backhoe. Make sure there is enough room and clearance to back up safely. Keep the pump supported so the hoses are not damaged as the tractor reverses.
18. Stop close enough so the length of the hydraulic lines allow the pump to be mounted to the tractor. Set the park brake, shut the tractor off, and remove the ignition key.
19. Retract the lock collar on the pump and slide it over the PTO shaft. Be sure the collar seats in the groove and locks. Tug on the pump to ensure the collar has locked.
20. Attach the anchor chain to a part of the tractor frame to keep the pump body stationary as the PTO turns.



Step 4— Attach Backhoe Mount to Main Base Bracket

21. Attach the backhoe mount assembly to the backhoe main base bracket. Use the 5/8" NC bolts and nuts provided — 4 for each left- and right-hand side.
Torque -tighten the bolts to 160 lbf•ft (215 N•m)



Step 5 — Start Up

WARNING!

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

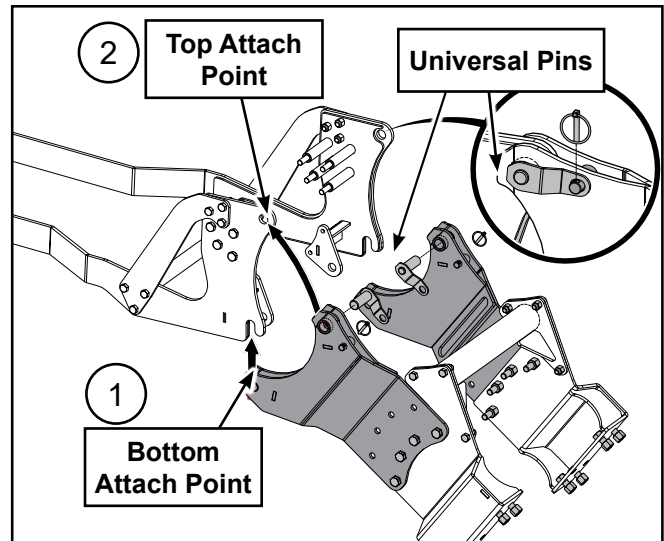
22. Check that all circuit connections are tight. Fill the reservoir with oil. Use Dexron® III Automatic Transmission Fluid (ATF). Dexron VI or Mercon® ATF are also acceptable substitutions.
23. Start the tractor and run the PTO at a slow speed for a few minutes. Disengage the PTO and recheck the oil level and top up as required. The reservoir holds 2-1/2 US gal (8-1/2 L).
24. Gradually increase the PTO speed up to operating level. Disengage the PTO and recheck the oil level again. Top up as required.

WARNING!

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

Step 6 — Hitch the Backhoe to the Subframe

25. 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.
26. Carefully use the backhoe hydraulics to raise the bracket assembly into the bottom of the hooks for positive attachment.
27. 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.

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

5. Hydraulic Fitting Torque

Tightening Flare Type Tube Fittings

1. Check flare and flare seat for defects that might cause leakage.
2. Align tube with fitting before tightening.
3. Hand-tighten swivel nut until snug.
4. To prevent twisting the tube, use two wrenches. Place one wrench on the connector body and tighten the swivel nut with the second. Torque to values shown.

If a torque wrench is not available, use the FFFT (Flats From Finger Tight) method.

Hydraulic Fitting Torque					
Tube Size OD	Hex Size Across Flats	Torque value		Flats From Finger Tight	
Inches	Inches	lbf•ft	N•m	Flats	Turns
3/16	7/16	6	8	2	1/6
1/4	9/16	11–12	15–17	2	1/6
5/16	5/8	14–16	19–22	2	1/6
3/8	11/16	20–22	27–30	1-1/4	1/6
1/2	7/8	44–48	59–65	1	1/6
5/8	1	50–58	68–79	1	1/6
3/4	1-1/4	79–88	107–119	1	1/8
1	1-5/8	117–125	158–170	1	1/8

Values shown are for non-lubricated connections.

6. Warranty



LIMITED WARRANTY

Wallenstein products are warranted to be free of defects in materials and workmanship under normal use and service, for a period of

Five Years for Consumer Use

Two Years for Commercial/Rental Use

from the date of purchase, when operated and maintained in accordance with the operating and maintenance instructions supplied with the unit. Warranty is limited to the repair of the product and/or replacement of parts.

This warranty is extended only to the original purchaser and is not transferable.

Repairs must be done by an authorized dealer. Products will be returned to the dealer at the customer's expense. Include the original purchase receipt with any claim.

This warranty does not cover the following:

- 1) Normal maintenance or adjustments
- 2) Normal replacement of wearable and service parts
- 3) Consequential damage, indirect damage, or loss of profits
- 4) Damages resulting from:
 - Misuse, negligence, accident, theft or fire
 - Use of improper or insufficient fuel, fluids or lubricants
 - Use of parts or aftermarket accessories other than genuine Wallenstein parts
 - Modifications, alteration, tampering or improper repair performed by parties other than an authorized dealer
 - Any device or accessories installed by parties other than an authorized dealer
- 5) Engines. Engines are covered by the manufacturer of the engine for the warranty period they specify. For the details of your engine warranty, see your engine owner's manual. Information about engine warranty and service is also available in the FAQ section at www.wallensteinequipment.com

7. Bolt Torque Specifications

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

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