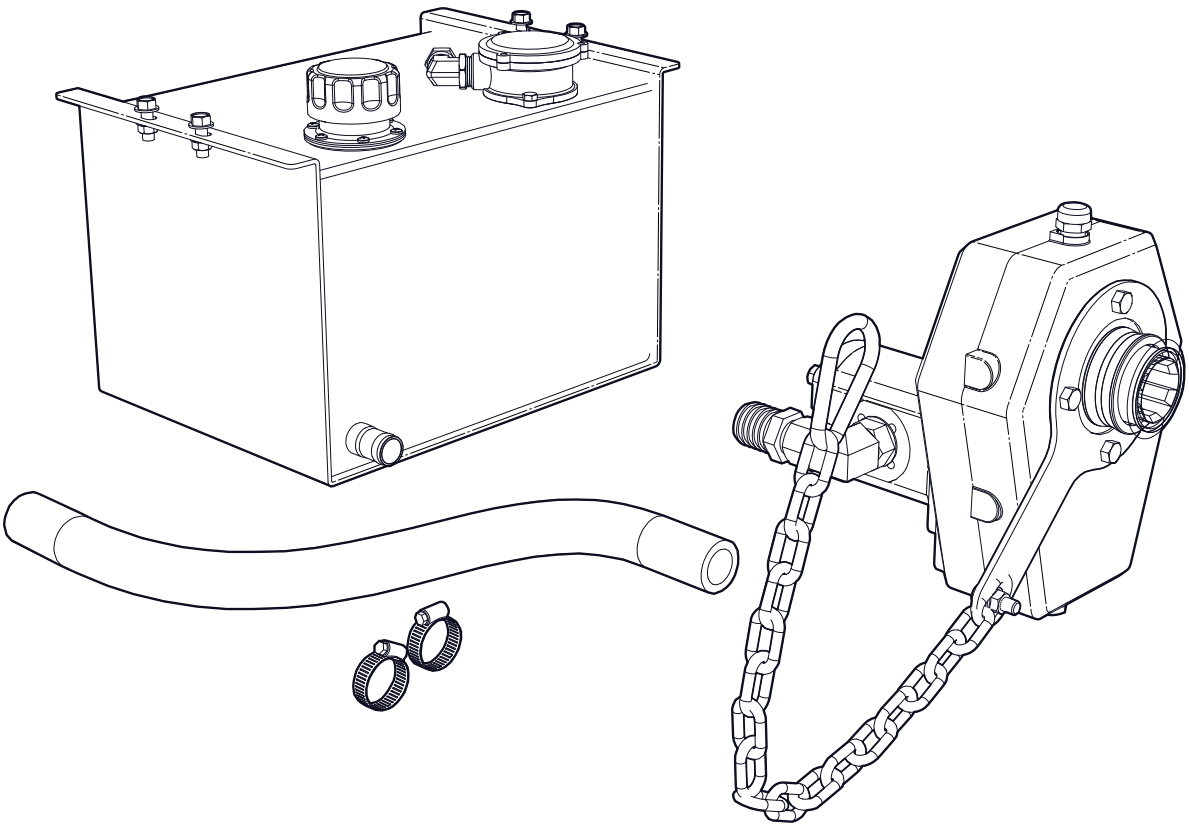
INSTALLATION INSTRUCTIONS

P300
PTO Hydraulic Pump Kit



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WALLENSTEIN

Introduction

CAUTION!

Risk of a hazardous situation if kit is installed improperly or modified in any way. Damage to the machine could result. Read and follow all installation and setup instructions.

W091

A Wallenstein PTO hydraulic pump kit is required to provide power to a Wallenstein firewood processor when a tractor has limited or no hydraulics. The kit provides a 15 gpm (57 Lpm) flow and is sufficient to power the firewood processor.

This kit is designed to provide power for the following Wallenstein firewood processor models:

- WP230
- WP235
- WP260
- WP265
- WP240
- WP245
- WP270
- WP275

Installation is the same for all tractor mounted firewood processor models, unless otherwise specified.

Keep this manual for future reference and to pass on to new operators or owners. Call your local Wallenstein dealer or the distributor if you need assistance, information, or additional copies of the manuals.

The kit includes the following items:

- One PTO mounted gearbox with hydraulic pump.
- One 7 US gal (27 L) hydraulic tank.
- One hydraulic tank return hose and fitting.
- Installation hardware.

For more information, see *Kit Parts on page 5*.

The kit comes partially assembled with instructions that describe the typical assembly and installation. After the initial assembly, only regular maintenance and minor adjustments are required.

In addition to the kit, you will need the following items:

- General shop tools, including a funnel and torque wrench.
- 11 oz (325 cc) of 85W-140 gear oil.
- 7 gal (27 L) of Dexron III ATF fluid.
- Thread sealant.
- Clean cloths.
- Another person to assist you.

Tighten hardware to the specified torque, unless otherwise specified. For the specified torque settings, see *Bolt Torque on page 12*.

Tighten hydraulic connections to the specified torque, unless otherwise specified. For the specified torque settings, see *Hydraulic Fitting Torque on page 13*.

Safety

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.

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 the signal word IMPORTANT indicates a situation that, if not avoided, could result in damage to property or the machine.

☞ *Provides additional information that is helpful.*

Equipment Operation

⚠ WARNING!

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

Safety Signs

WARNING!

Risk of personal injury. Replace safety signs that are removed, damaged, or illegible. If a part with a safety sign on it is replaced, a new safety sign must be applied.

W100

1. WARNING!

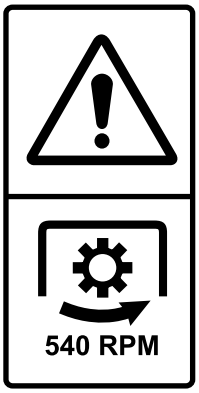
Hydraulic fluid under pressure can puncture skin and cause serious injury.

In the event of an hydraulic fluid leak, turn off the machine. Do not check for leaks with bare hands. Wear proper hand and eye protection when searching for a high-pressure hydraulic leak.

2. WARNING!

Component failure can cause serious injury from impact, cuts, or injection.

The tractor PTO must operate at 540 rpm and rotate in the direction of the arrow. Excessive PTO speeds (above 540 rpm) or incorrect rotation can result in machine damage and component failure.



Replace Damaged Safety Signs

- Always replace safety signs that are missing or have become illegible. Replacement safety signs are available from your authorized distributor, dealer parts department, or Wallenstein Equipment.
- Keep the safety signs clean and legible at all times.
- Parts replaced that had a safety sign (decal) on them must also have the safety sign replaced.

Requirements

- The installation area must be clean and dry.
- The application surface must be clean and free of grease or oil.
- The ambient temperature must be above 50 °F (10 °C).
- A squeegee, plastic bank card, or similar tool is required to smooth out the decal.

Procedure

Determine the exact position for the decal before removing the backing paper. If possible, align the decal with an edge on the machine.

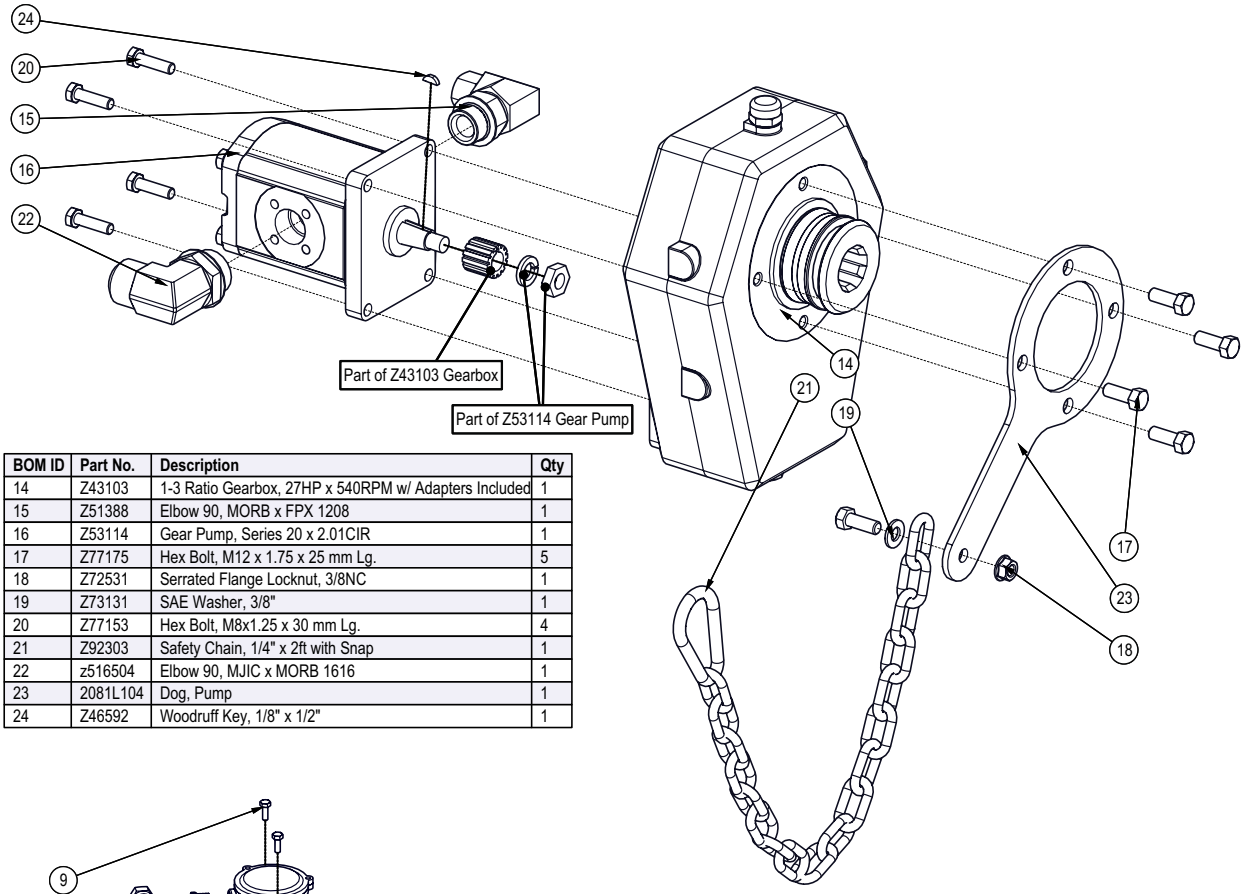
1. Peel the decal off the backing paper.
2. Position the decal above the location where it is being applied to the machine.
3. Starting at one edge, carefully press the center of the exposed sticky-backing in place, smoothing it out as you work from one side to the other.
4. Use an appropriate tool to smooth out the decal, working from one end to the other.

   Small air pockets can be pierced with a pin and smoothed out using a piece of the decal backing paper.

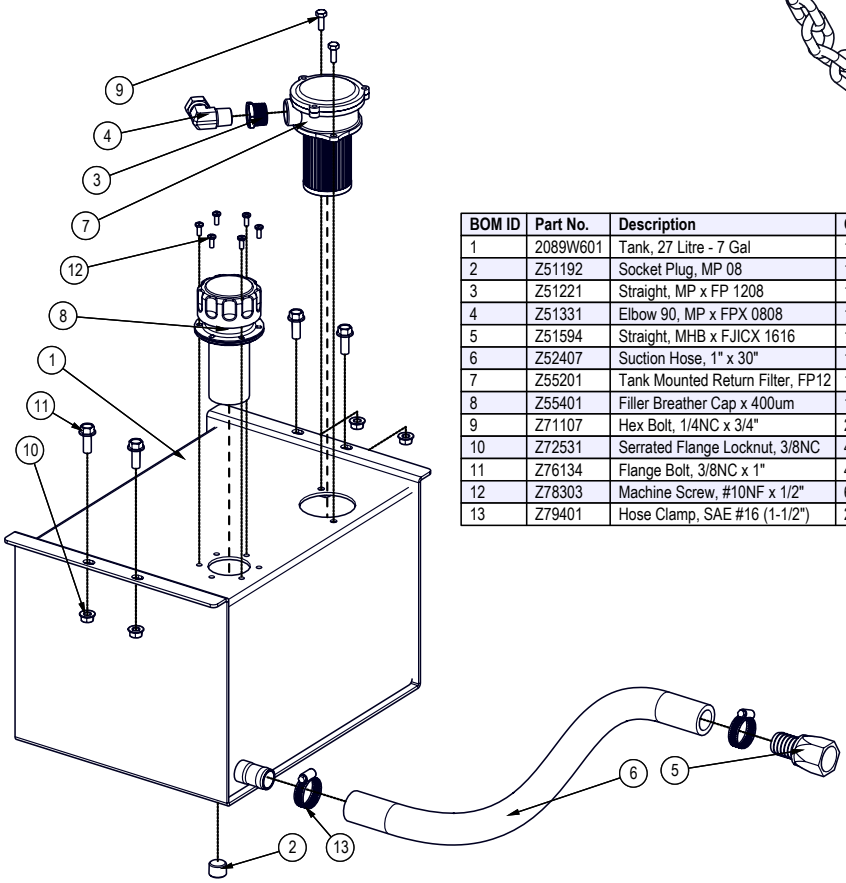
Maintenance Decals

For maximum performance and reliability, replace hydraulic fluid with Dexron III automatic transmission fluid (ATF).

Kit Parts



BOM ID	Part No.	Description	Qty
14	Z43103	1-3 Ratio Gearbox, 27HP x 540RPM w/ Adapters Included	1
15	Z51388	Elbow 90, MORB x FPX 1208	1
16	Z53114	Gear Pump, Series 20 x 2.01CIR	1
17	Z77175	Hex Bolt, M12 x 1.75 x 25 mm Lg.	5
18	Z72531	Serrated Flange Locknut, 3/8NC	1
19	Z73131	SAE Washer, 3/8"	1
20	Z77153	Hex Bolt, M8x1.25 x 30 mm Lg.	4
21	Z92303	Safety Chain, 1/4" x 2ft with Snap	1
22	z516504	Elbow 90, MJIC x MORB 1616	1
23	2081L104	Dog, Pump	1
24	Z46592	Woodruff Key, 1/8" x 1/2"	1



BOM ID	Part No.	Description	Qty
1	2089W601	Tank, 27 Litre - 7 Gal	1
2	Z51192	Socket Plug, MP 08	1
3	Z51221	Straight, MP x FP 1208	1
4	Z51331	Elbow 90, MP x FPX 0808	1
5	Z51594	Straight, MHB x FJICX 1616	1
6	Z52407	Suction Hose, 1" x 30"	1
7	Z55201	Tank Mounted Return Filter, FP12	1
8	Z55401	Filler Breather Cap x 400um	1
9	Z71107	Hex Bolt, 1/4NC x 3/4"	2
10	Z72531	Serrated Flange Locknut, 3/8NC	4
11	Z76134	Flange Bolt, 3/8NC x 1"	4
12	Z78303	Machine Screw, #10NF x 1/2"	6
13	Z79401	Hose Clamp, SAE #16 (1-1/2")	2

- *Replacement filter element:* RTE-10-D-25-B

Decal kit: P300.DKIT.070217

Fig. 1–PTO hydraulic pump kit parts

Kit Assembly

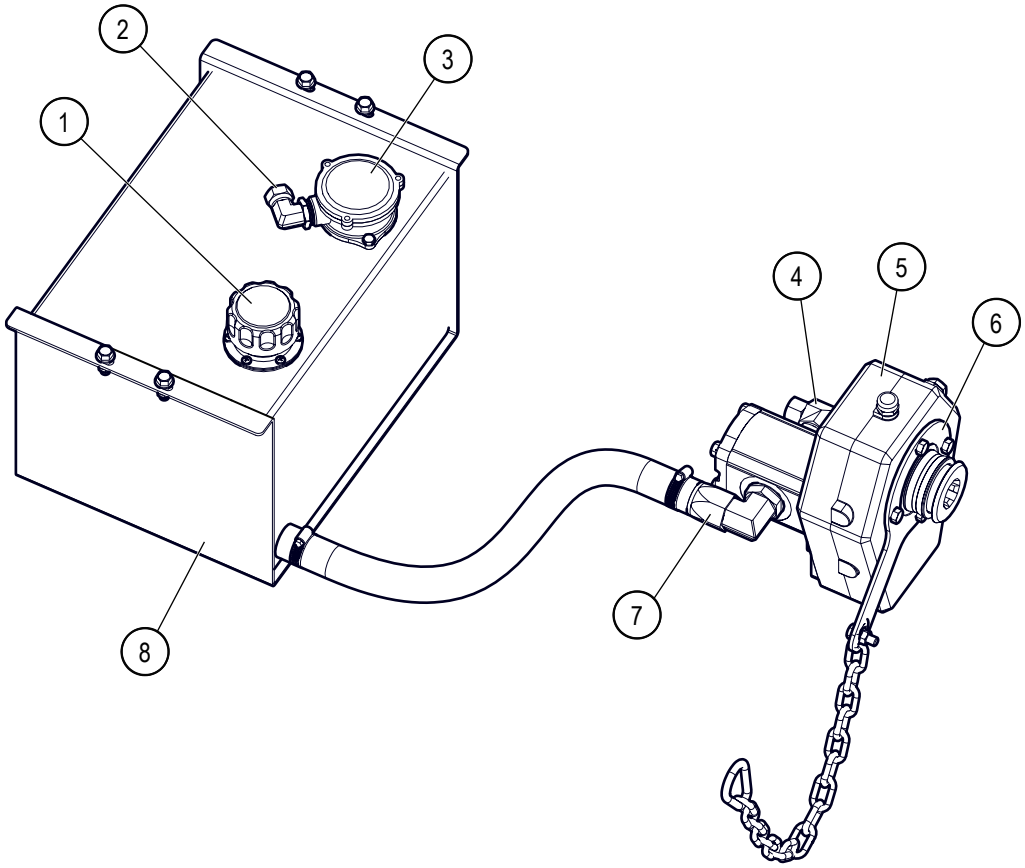


Fig. 2–PTO hydraulic pump kit assembly

1. Filler-breather cap
2. Return hose fitting
3. Return filter
4. Input to the winch control (high pressure line)
5. Gearbox
6. Lock collar
7. Tank suction
8. Tank

Installation Instructions

⚠ WARNING!

Wear the personal protective equipment (PPE) that is required to complete the work safely.

For example; a hard hat, hearing protection, protective eye wear, protective footwear, respirator, and gloves.

W101

⚠ WARNING!

Pinch and crush hazards are present during installation of this kit. Avoid dropping the parts or pinching body parts on the edges of the parts. Parts are constructed of heavy gauge steel. Use caution when moving and installing the kit.

Prepare the Equipment

1. Add oil to the gear box. For instructions, see *Add Oil to the Gearbox*.
2. Park the firewood processor on dry, level ground an area that is clean and free of debris.
3. Disconnect the firewood processor from the tractor.
4. Place the P300 hydraulic pump kit on the ground, in front of the hydraulic hoses, near the three-point hitch.

Add Oil to the Gearbox

IMPORTANT! To avoid contaminating the gearbox and fluid, make sure the work area around the gearbox is clean and free of dirt and debris.

The gearbox is shipped without gear oil. Add gear oil before using the equipment.

1. Make sure the drain plug is in the bottom of the gearbox.
2. On top of the gearbox, carefully, remove the vent cap and set it aside.
3. Add 85W-140 gear oil to the gearbox.
   Fill the gearbox with 11 oz (325 cc) of oil or until the oil level reaches the top of the sight glass.
4. Install the vent cap.
5. Use a clean cloth to remove any spilled oil.

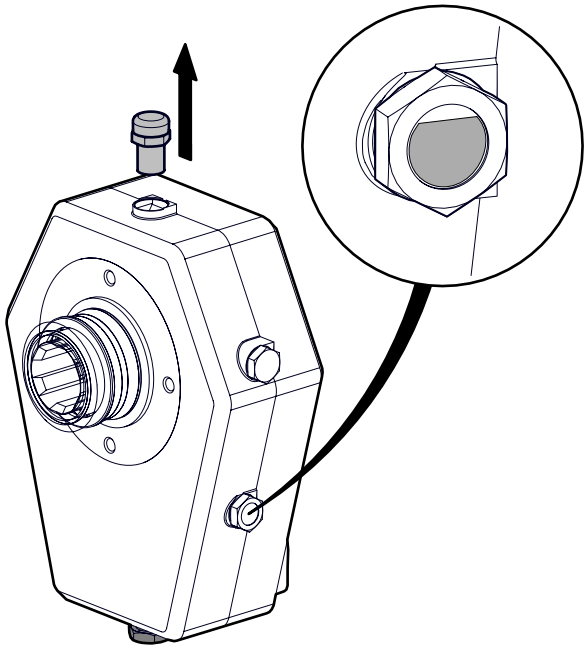


Fig. 3– Add oil to the gearbox

Step 1 - Install the Tank

a. Remove the four bolts and nuts from the tank. Set them aside in a safe place.

b. Carefully, lift the tank and set it inside the firewood processor three-point hitch frame.

c. Have another person lift the tank into position and hold it. Align the tank bolt holes with the holes in the tank-mount plates.

d. Insert the bolts through the holes and install the nuts. Tighten the nuts enough to hold the tank in position.

e. Use a torque wrench to tighten the bolts and nuts to **33 lbf•ft** (**45 N•m**).

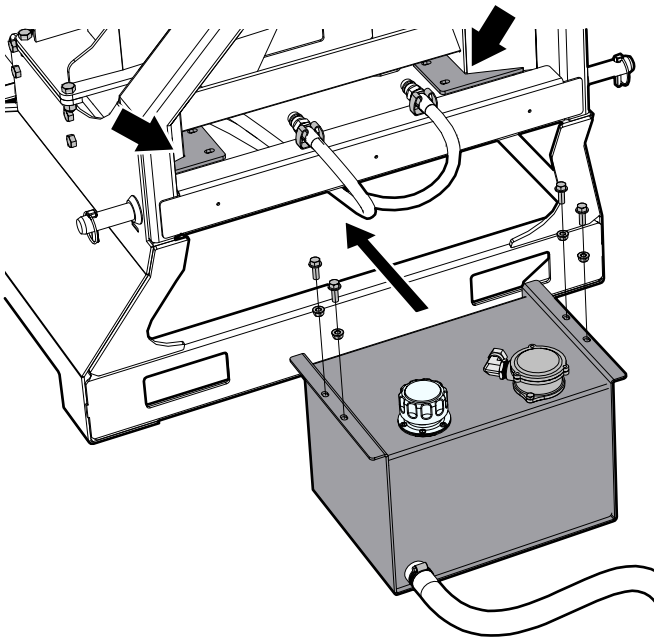


Fig. 4–Install the tank on the firewood processor

Step 2 - Connect the Hydraulic Hoses

⚠ WARNING!

Hydraulic oil under pressure can penetrate the skin or eyes causing serious injury.

- **Tighten all connections before applying pressure.**
- **Search for leaks with a piece of cardboard or wood, not your hand. Take care to protect hands and body from high-pressure fluids. Wear a face shield or goggles for eye protection.**
- **If an accident occurs, see a doctor familiar with this type of injury immediately.**

W040

a. Have cloths handy to absorb hydraulic fluid that drains from the hoses.

b. Use the quick connect fittings to disconnect the firewood processor hydraulic hoses.

c. Identify the hose that connects to the winch control input, and then connect it to the pump fitting for input to the winch control.

d. Attach the remaining hydraulic hose to the tank return hose fitting.

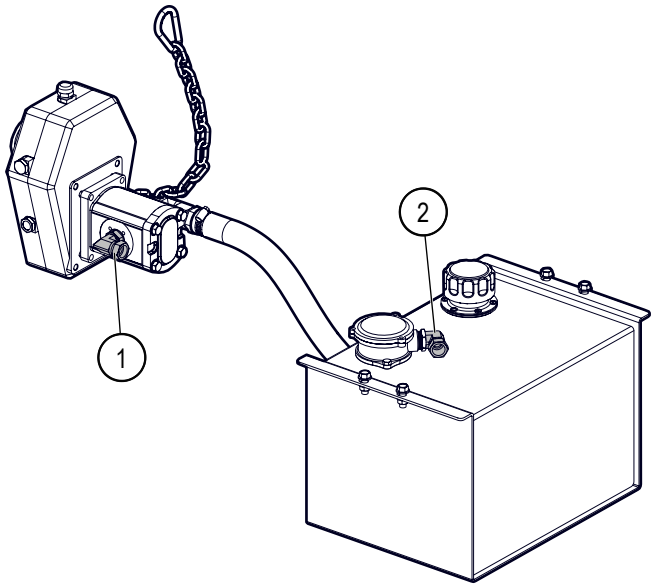


Fig. 5–Connect the hydraulic hoses

1. Input to the winch control
2. Return hose fitting

Step 3 - Fill the Tank

a. Open the filler-breather cap.

b. Insert a funnel.

c. Pour **7 US gal** (**27 L**) of Dexron III ATF fluid into the tank.

d. Remove the funnel.

e. Install and tighten the filler-breather cap.

f. Use a clean cloth to wipe up any spilled fluid.

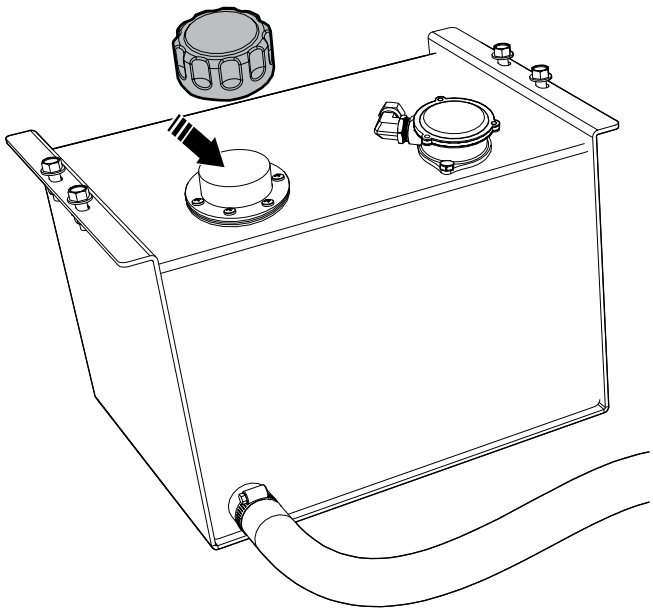


Fig. 6–Fill the hydraulic tank

Step 4 - Install the Pump Assembly

a. Temporarily set the pump assembly on top of the tank.

b. Attach the firewood processor to the tractor's three-point hitch.
For instructions, see the firewood processor's Owner's Manual.

c. Position the gearbox with the vent cap at the top.

d. Slide the pump over the PTO drive shaft.

e. Move the spring-loaded lock collar forward to lock the gearbox on the drive shaft.

f. Verify that the lock collar is locked and the pump assembly is secure on the PTO drive shaft.

g. Wrap the safety chain around a nearby link arm or trailer tow bar to prevent the pump assembly from spinning when the PTO shaft engages.

h. Use the carabiner to attach and secure the safety chain.

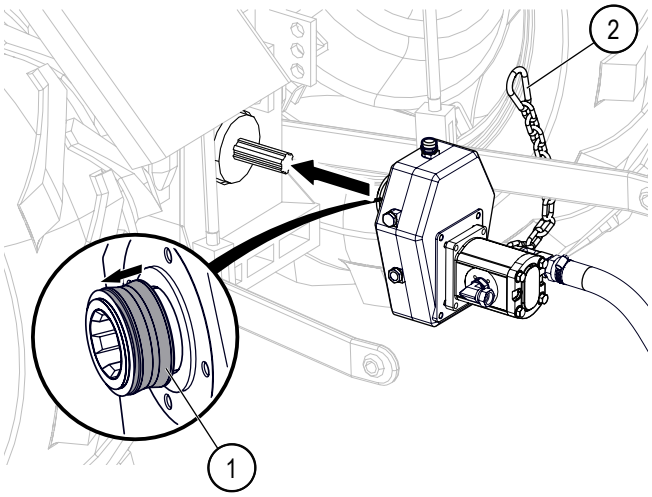


Fig. 7–Install the pump assembly

1. Lock collar
2. Secure the safety chain

Maintenance

Regular preventive maintenance can improve performance and prolong the life of the equipment. Maintenance is your responsibility.

Maintenance Safety

⚠ WARNING!

Hydraulic oil under pressure can penetrate the skin or eyes causing serious injury.

- **Tighten all connections before applying pressure.**
- **Search for leaks with a piece of cardboard or wood, not your hand. Take care to protect hands and body from high-pressure fluids. Wear a face shield or goggles for eye protection.**
- **If an accident occurs, see a doctor familiar with this type of injury immediately.**

W040

⚠ CAUTION!

Risk of burns to exposed skin. Hydraulic oil becomes hot during operation. Hoses, lines, and other parts become hot as well. Wait for the oil and components to cool before starting any maintenance or inspection work.

W028

IMPORTANT! Dispose of hydraulic fluid in an environmentally responsible way and in compliance with your local hazardous waste laws. Do not dispose of hydraulic fluid in a way that may contaminate the environment.

Gearbox Maintenance

Change the gear oil after the first 60 to 80 hours of operation. Thereafter, change the gear oil a minimum of every 1,500 hours.

1. Place a drain pan under the gearbox.
2. Carefully, remove the drain plug from the bottom of the gear box and set it aside.
3. Wait for the used gear oil to drain into the pan.
4. Fill the gearbox with new 85W-140 gear oil.
   For instructions, see *Add Oil to the Gearbox on page 7*.
5. Properly dispose of the used gear oil.

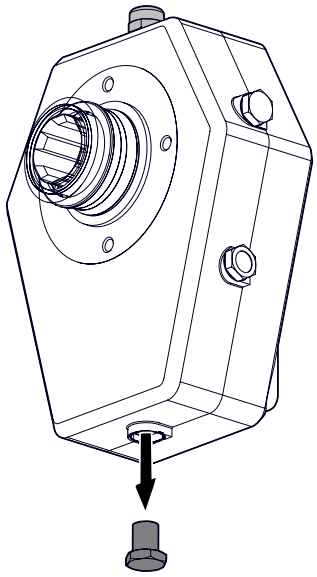


Fig. 8– Drain the gearbox

Hydraulic Maintenance

Replace the hydraulic fluid and return filter every 100 hours or annually.

1. Place a drain pan of suitable capacity below the tank.
2. Clean the area around drain.
3. Use a hex key to remove the drain plug.
4. Wait for the used hydraulic fluid to drain, and then flush the tank.
5. Replace the return filter:
   - Remove the three screws from the return filter cover, and then remove the cover.
   - Remove the return filter element and clean the bottom of the bowl.
   - Check the O-rings for damage. Replace damaged O-rings.
   - Install the new return filter element.
   - Install the return filter cover and tighten the screws to **44 lbf•in** (**5 N•m**).
6. Use a hex key to install and tighten the drain plug.
7. Add hydraulic fluid to the tank.
   For instructions, see *Step 3 - Fill the Tank on page 9*.
8. Operate the backhoe for 1–2 minutes, and then check the hydraulic fluid level.
   The hydraulic fluid level should be approximately 1 inch (25 mm) from the top of the tank.
9. Check for leaks at the drain plug.
10. Properly dispose of the used hydraulic fluid and filter.

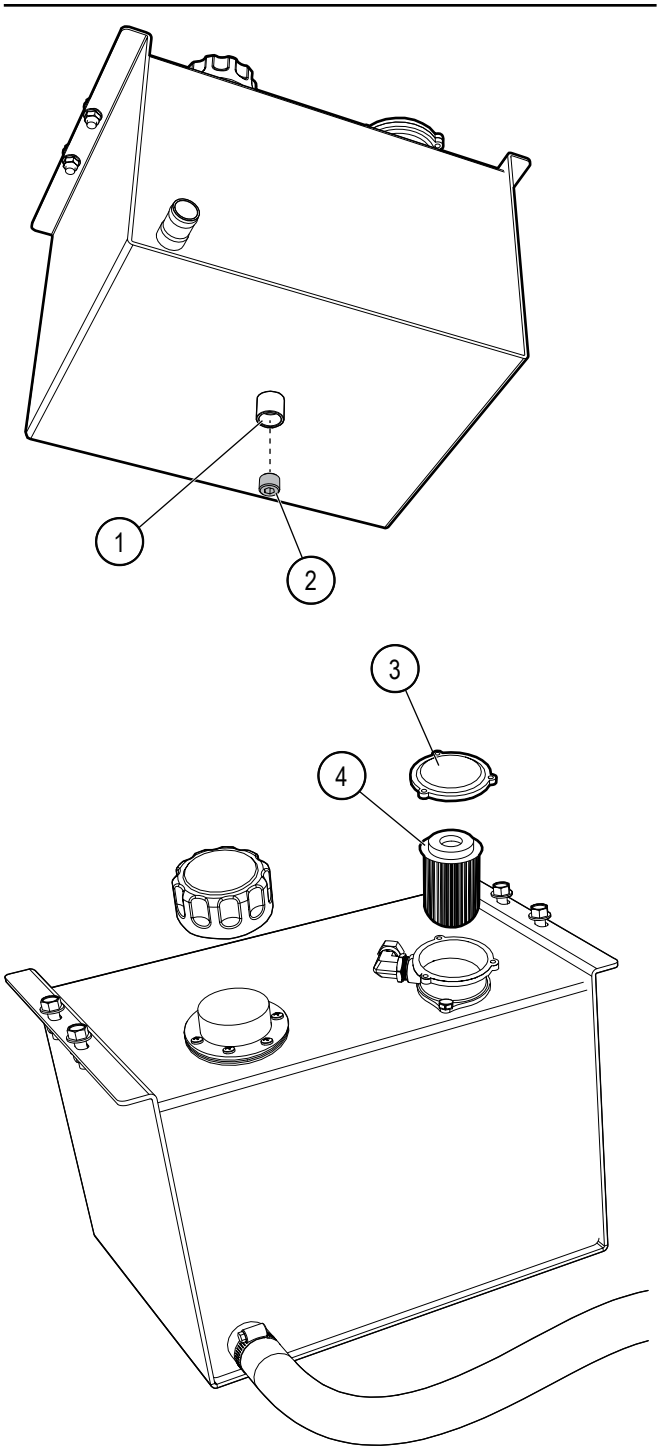


Fig. 9–Drain the tank and replace the return filter

1. Drain
2. Drain plug
3. Return-filter cover
4. Return filter

Bolt Torque

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%.

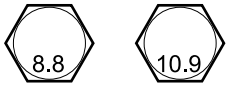
Bolt grades are identified by their head markings.

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



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.

Product 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

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