Form No.
907809

SL4635
and SL4835
Skid Loaders



GEHL®

Service Manual

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SPECIFICATIONS

	4635 / 4635SX	4635DXT	4835SXT/DXT
Engine: Make	Deutz	Deutz (Turbo)	Deutz (Turbo)
Model	F3M1011F	BF3M1011F	BF3M1011F
Fuel	Diesel	Diesel	Diesel
Displacement	133 CID (2,18 L)	133 CID (2,18 L)	133 CID (2,18 L)
Horse power - Net	SAE 44 hp (32,4 kW) @ 2600 rpm	SAE 57 hp (42 kW) @ 2500 rpm	SAE 57 hp (42 kW) @ 2500 rpm
Torque - Maximum	106 ft-lbs (140 N•m) @ 1800 rpm	140 ft-lbs (190 N•m) @ 1600 rpm	140 ft-lbs (190 N•m) @ 1600 rpm
SAE-Rated Operating Load	1425 lbs (646 kg)	1425 lbs (646 kg)	1625 lbs (737 kg)
Operating Weight	6100 lbs (2800 kg)	6100 lbs (2800 kg)	6300 lbs (2900 kg)
Shipping Weight	5200 lbs (2350 kg)	5200 lbs (2350 kg)	5300 lbs (2500 kg)
Capacities: Fuel Tank	15 US gal (57 L)	15 US gal (57 L)	17 US gal (64 L)

Specifications Below Apply To All 4635 and 4835 models	
Capacities	
Hydraulic Reservoir	12 US gal (45 L)
Chaincases (each)	8 US quarts (7,6 L)
Engine Oil	8.5 US quarts (8 L)
Electrical	
Battery	12 volt DC with 1000 CCA
Starter	12 volt DC (2.3 kW)
Alternator	55 A
Hydraulic System	
Main Hydraulic System Pressure	2750 psi (190 bar)
High-Flow Hydraulic System Pressure	2500 psi (172 bar)
Standard Flow Rate (Single)	19 gpm (72 L/min)
High-Flow Rate (Dual - DX models)	30 gpm (114 L/min)
Travel Speed	0 to 8.4 mph (0 to 13,5 km/h)

Tire Options	
10 x 16.5 - 6 ply	Flotation tires
10 x 16.5 - 8 ply	Heavy Duty Flotation tires
31 x 1330 x 15	Heavy Duty Fat Foot Flotation Tires
12 x 16.5 - 6 ply	High Clearance Flotation tires
7.5 x 15 - 6 ply	Chevron tires
6.5 x 16	Solid Rubber tires
7.5 x 15	AirBoss Segmented Industrial tires
12 x 16.5	AirBoss Segmented Flotation tires

Buckets and Capacities			
Width - inches (millimeters)	**Bucket Description**	**Capacity (Heaped)**	
60 inches (1520 mm)	Dirt/Construction	10.0 cubic feet	0,28 cubic meters
65 inches (1650 mm)	Dirt/Construction	10.8 cubic feet	0,31 cubic meters
65 inches (1650 mm)	Dirt/Construction	14.7 cubic feet	0,42 cubic meters
65 inches (1650 mm)	Utility	18.4 cubic feet	0,52 cubic meters
68 inches (1730 mm)	Dirt/Construction	15.3 cubic feet	0,43 cubic meters
68 inches (1727 mm)	Utility	19.0 cubic feet	0,54 cubic meters
72 inches (1830 mm)	Dirt/Construction	20.0 cubic feet	0,57 cubic meters
72 inches (1830 mm)	Utility	27.0 cubic feet	0,76 cubic meters

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General Information

The above alert sym bol means:

- ❑ **ATTENTION!**
- ❑ **BECOME ALERT!**
- ❑ **YOUR SAFETY IS INVOLVED!**

It stresses an at ti tude of "Heads Up for Safety" and can be found throughout this service manual and on the machine it self.

Before you operate this equipment, read and study the following information. In addition, make sure that every individual who operates or works with this equipment is familiar with these precautions.

The Gehl Company ALWAYS considers the user's safety when designing its machinery and guards exposed moving parts for the user's protection. How ever, some ar eas cannot be guarded or shielded in order to assure proper operation. Furthermore, the Operator's Manual and the decals on the machine warn of additional hazards and should be read and observed closely.

This sec tion of the manual in cludes pro ce dures, which when fol lowed, will al low safe per form ance of serv ice procedures:

- ❑ **Mandatory Safety Shutdown Procedure**
- ❑ **Lift Cylinder Liftarm Support Device**
- ❑ **Roll Over Protective Structure (ROPS)/Falling Objects Protective Structure (FOPS) and Lock Mechanism**
- ❑ **Loader Raising & Lowering Procedures**
- ❑ **Relieving Hydraulic Pressure**

Signal Words

DANGER

"DANGER" indicates an imminently hazardous situation which, if not avoided, will re sult in death or se ri ous in jury.

WARNING

"WARNING" indicates a potentially hazardous situation which, if not avoided, could re sult in death or se ri ous in jury.

CAUTION

"CAUTION" indicates a potentially hazardous situation which, if not avoided, may result in mi nor or mod er ate in jury. May also alert against un safe prac tices.

Additional Safety Reminders

Read and un der stand the service manual and all decals be fore main tain ing, ad just ing or serv ic ing this equip ment.



Doors, Guards and Shields - Some photographs in this manual may show doors, guards and shields open or removed for il lus tra tion pur poses only. BE SURE all doors, guards and shields are in their proper operating positions BE FORE start ing engine to op er ate unit.

Damaged or Worn-out Parts - For safe operation, replace damaged or worn-out parts with genuine Gehl service parts, BEFORE operating this equipment.

Attachments - Gehl skid loaders are designed and intended to be used only with Gehl Company attachments or ap proved referral attachments. The Gehl Company cannot be re spon si ble for op era tor safety if the loader is used with a non-ap proved attachment.



Battery Safety - To avoid injury from a spark or short circuit, disconnect the negative battery cable (-) be fore serv ic ing any part of the electrical system. Do not tip the battery more than 45° to avoid spill ing elec tro lyte.

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Fig. 2-1 The lock pin secures the liftarm support device underneath and inside the liftarm in the "storage" position.



Fig. 2-2 Press in and hold the lock pin button and pull it out of the liftarm, allowing the support device to lay on the lift cylinder.



Fig. 2-3 Start the loader and raise the liftarm until the support device drops onto the lift cylinder rod end, above the lift cylinder.

Liftarm Support Device

WARNING

BE FORE leaving the operator's compartment to work on the loader with the liftarm raised, ALWAYS engage the liftarm support device. Turn the keyswitch to OFF, remove the key and take it with you.

Many service procedures require a raised liftarm to al low easier ac cess to loader com po nents. For operator and service personnel safety, a liftarm support device is standard on GEHL skid loaders. Used as a cylinder block, it helps prevent a raised liftarm from un ex pect ed ly lower ing.

BE SURE to engage the liftarm support device when ever the liftarm is raised. When the device is not be ing used, se cure it to the an chor pin on the un der side of the liftarm us ing the lock pin and re tainer pro vided.

The liftarm support device is a safety de vice which must be kept in proper op er at ing con di tion at ALL times.

The following procedures outline the correct way to en gage and dis en gage the liftarm support device.

Liftarm Support Device Engagement

1. Lower liftarm until contact with loader frame.
2. Turn the keyswitch to the OFF position to stop the engine. Remove the key and take it with you.
3. Leave operator's compartment. Press in and hold lock pin button to release its locking mechanism. Remove lock pin holding support device up against liftarm. Allow support device to come down into contact with lift cylinder. **Figs. 2-1 and 2-2**
4. Return to the operator's compartment and restart the engine.
5. Use lift control to raise liftarm until lift arm support device drops over the end of the lift cylinder and around cylinder rod. Slowly lower liftarm until free end of support device contacts top end of lift cylinder. **Figs. 2-3 and 2-4**
6. Make sure the support device is secure against the cylinder end. Then, stop the loader engine, remove the key and leave the operator's compartment.

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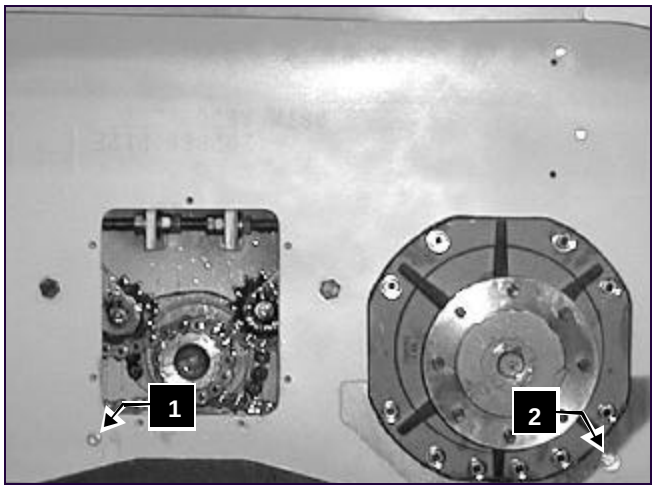


Fig. 3-6 Location of chaincase check plug (1) and rear drain plug (2). Front drain plug is inside and underneath front of chassis, note Fig. 2-12 in the *Safety* chapter.



Fig. 3-7 Location of chaincase oil fill plug.

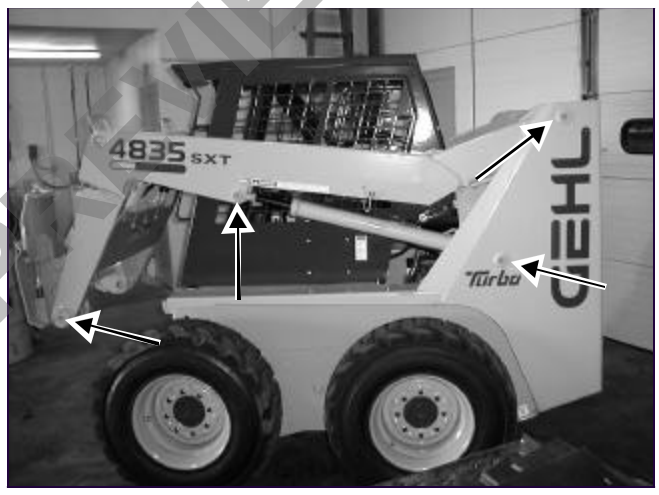


Fig. 3-8 Liftarm grease fitting locations.

Chaincases

Each chaincase re quires 8 quarts (7,6 L) of SAE mo tor oil. This quan tity of oil should be main tained at all times. The oil in both chaincases should be drained and re filled every 500 hours of operation or annually, whichever hap pens first.

Change Chain case Oil

Raise the loader off the ground following the "Loader Rais ing" pro ce dure in this manual.

1. Remove the front and rear drain plugs and drain the oil. **Figs. 2-12 and 3-6**
2. Reinstall the drain plugs.
3. Remove both fill and oil level check plugs.
4. Add oil through the fill plug until the oil starts to flow out of the check plug. **Fig. 3-7**
5. Reinstall the check plug then the fill plug.

Fol low the "Loader Lower ing" pro ce dure in this manual to re turn the loader to the ground.

Grease Fitting Locations

Use lithium- based grease on all grease fittings. **Figs. 3-8 through 3-12**

Grease Every 10 hours of op era tion (or daily)

1. Grease liftarm pivots
2. Grease lift cylinder pivots
3. Grease tilt cylinder pivots
4. Grease All-Tach™ attachment pivots

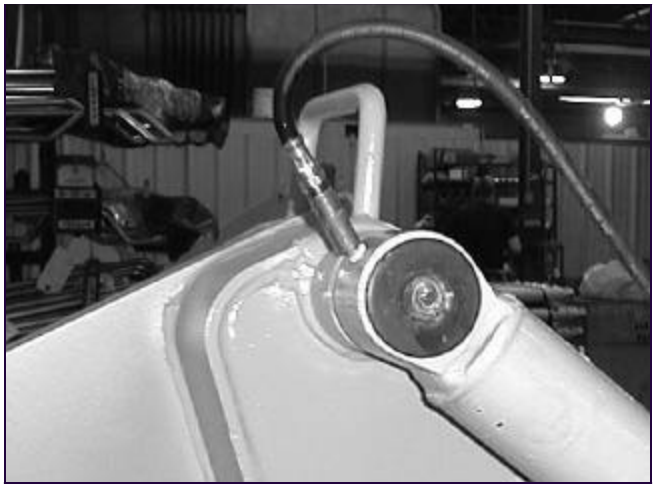


Fig. 3-9 Top of tilt cylinder grease fitting location.

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Mainframe Introduction

Gehl SL4635/4835 skid loaders have a welded steel chassis. Maintenance, service and repair can be performed through standard access panels. The right rear chassis riser serves as the hydraulic reservoir and the left rear chassis riser serves as the fuel tank.

Two sidecases provide mounting for the drive motors and for the front and rear axles. The side cases also serve as sealed housings for the drive chains and sprockets. Oil is used inside these cases to ensure the chains always receive proper lubrication.

The liftarm and the lift and tilt cylinders are mounted with pivot pins. Capscrews are used to secure the pivot pins. A Rollover Protective Structure/Falling Objects Protective Structure (ROPS/FOPS) is standard for operator safety, and both the seat and restraint bar include interlock switches.

Rollover & Falling Objects - Protective Structure (ROPS/FOPS) Components

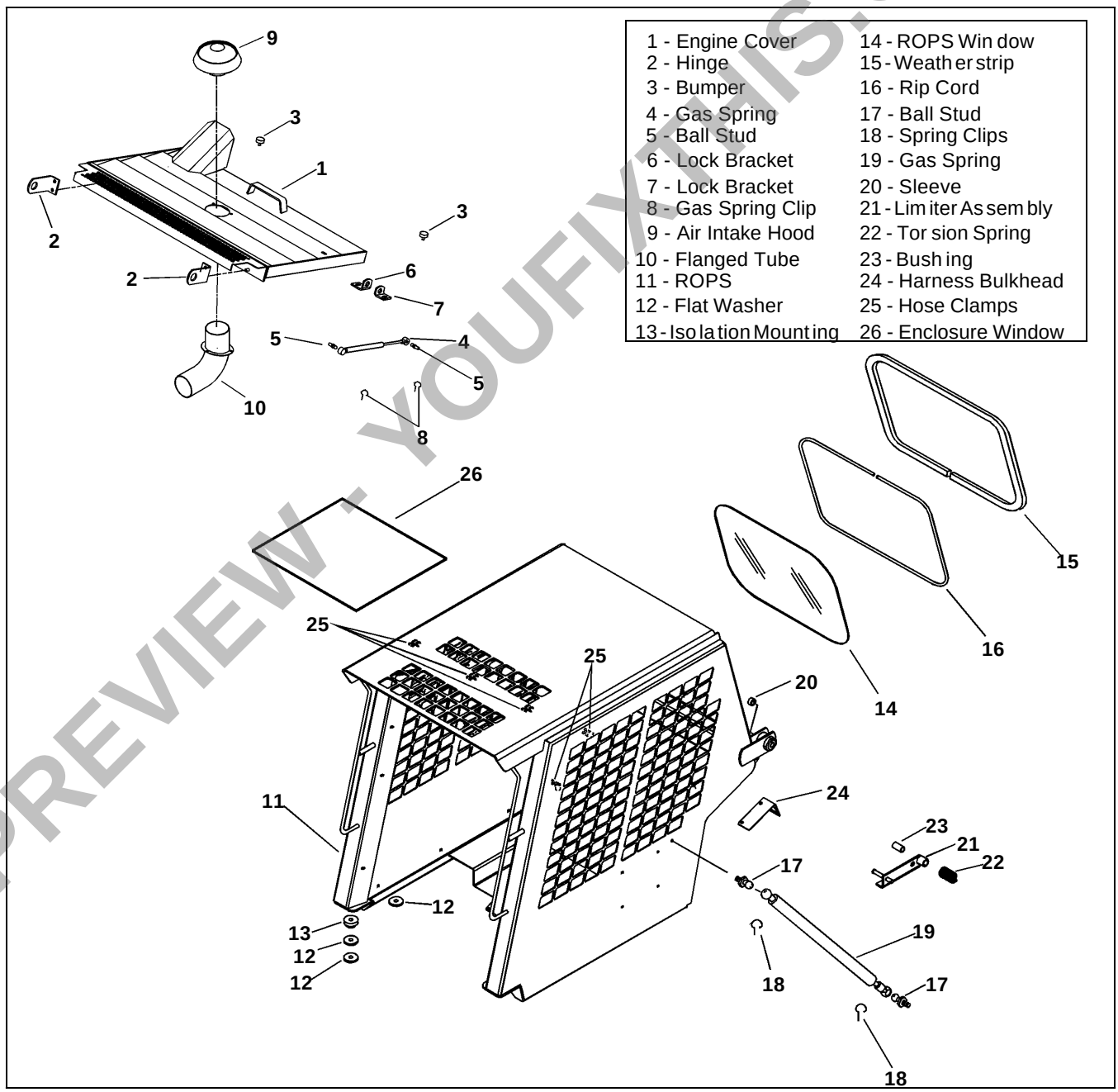


Fig. 4-1 Assembly view of ROPS components.

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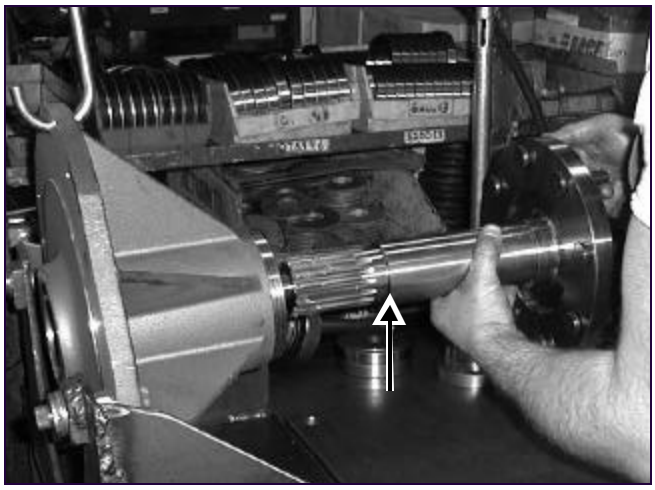


Fig. 5-17 Remove/install the axle shaft.

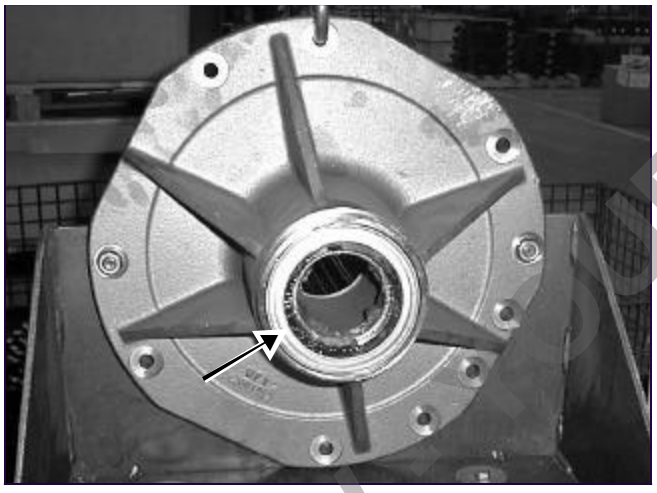


Fig. 5-18 Oil seal and outer bearing left in the axle housing.

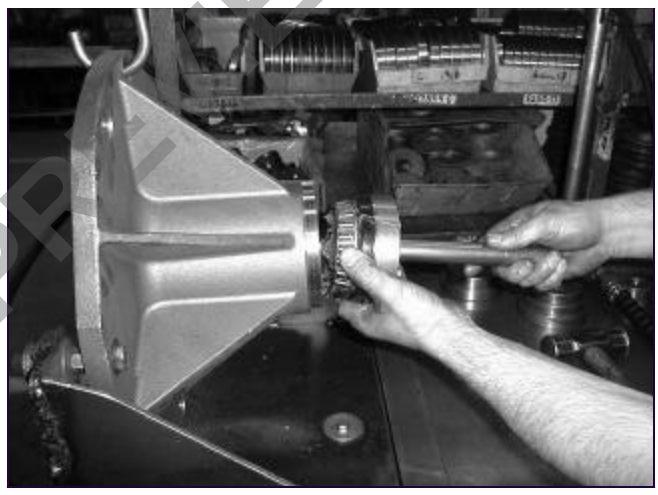


Fig. 5-19 Installing the oil seal and outer bearing.

5. Install V-ring seal with the lip of it oriented towards the axle housing. **Fig. 5-16**
6. Slide the sprocket onto the axle shaft. **Fig. 5-15**

NOTE: Front axle sprockets are installed with the sprocket to the out side. Rear axle sprockets are in stalled with the sprocket to the in side. Re fer to the pro ce dure in this chapter for cor rect ori en ta tion of com po nents. **Fig. 5-11**

7. Install axle nut. Torque axle nut to 150 ft-lbs (200 N•m). Check axle shaft for endplay and adjust as needed. **Fig. 5-20**

NOTE: Allowable endplay tolerance on axle shaft is 0.000" to 0.005" (0.0 mm to 0.127 mm) with axle turning freely. Add shims to increase endplay or remove shims to decrease endplay.

8. Install a cotter pin to secure axle nut (tighten axle nut to line up hole for cotter pin). **Fig. 5-14**
9. Mount the axle housing assembly on the chassis per the procedure in this chapter.

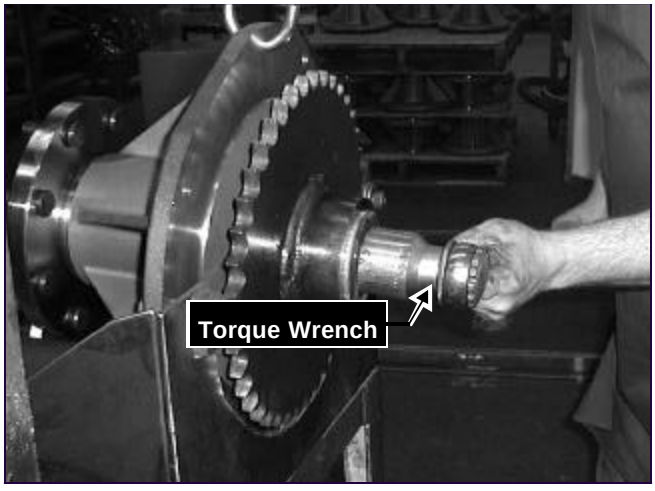


Fig. 5-20 After reassembly, torque the axle nut to 150ft-lbs.

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Controls Introduction

This chapter covers removal, installation, assembly, and adjustment procedures for standard and optional controls equipment on GEHL SL4635/4835 skid loaders.

Equipment Identification

Be cause there are a va ri ety of op tions avail able for the SL4635/4835, it is IMPORTANT to prop erly iden tify the equip ment BE FORE be gin ning serv ice pro ce dures. Illustrations and photographs are provided with each pro ce dure to aid in serv ic ing this equip ment.

Hand/Foot Controls

On loaders with "hand/foot controls," left and right drive control handles operate independently of each other. Pushed forward together moves the loader forward, but push either one further forward than the other and the loader turns. Sepa rate foot pedals control the lift and tilt functions of the liftarm and bucket. engine Speed is controlled with the hand throttle lever located to the right of the operator's seat. A switch (mo men tary) is lo cated on the right drive control handle and controls the auxiliary hydraulics. On DX models, a right side lever on the crossmember activates the high flow hydraulics and an instrument panel light.

T-bar Controls

On loaders with "T-bar controls," the left T-bar controls the forward and reverse directions of the hydrostatic drive motors (trac tion control) and pumps for both sides of the loader. The right T-bar controls the lift and tilt func tions of the liftarm and bucket. For control of engine speed, foot and hand throttles are stan dard. A pivot ing foot pedal control is stan dard on the floor for control of standard flow auxiliary hydraulics. On DX models, a right side lever on the crossmember ac ti vates the high flow auxiliary hydraulics and an instrument panel light.

Dual hand Controls

On loaders with "dual hand controls," left and right drive control handles with pivoting grips operate independently of each other. Pushed forward together moves the loader forward, but push either one further forward than the other and the loader turns. The left drive control handle also op er ates lift func tions of the liftarm. The right drive control handle also op er ates tilt functions of the bucket. Engine speed is controlled by hand and/or foot throttles. Standard flow auxiliary hydraulics is controlled by a foot pedal. On DX models, a right side lever on the crossmember ac ti vates the high flow auxiliary hydraulics and an instrument panel light.

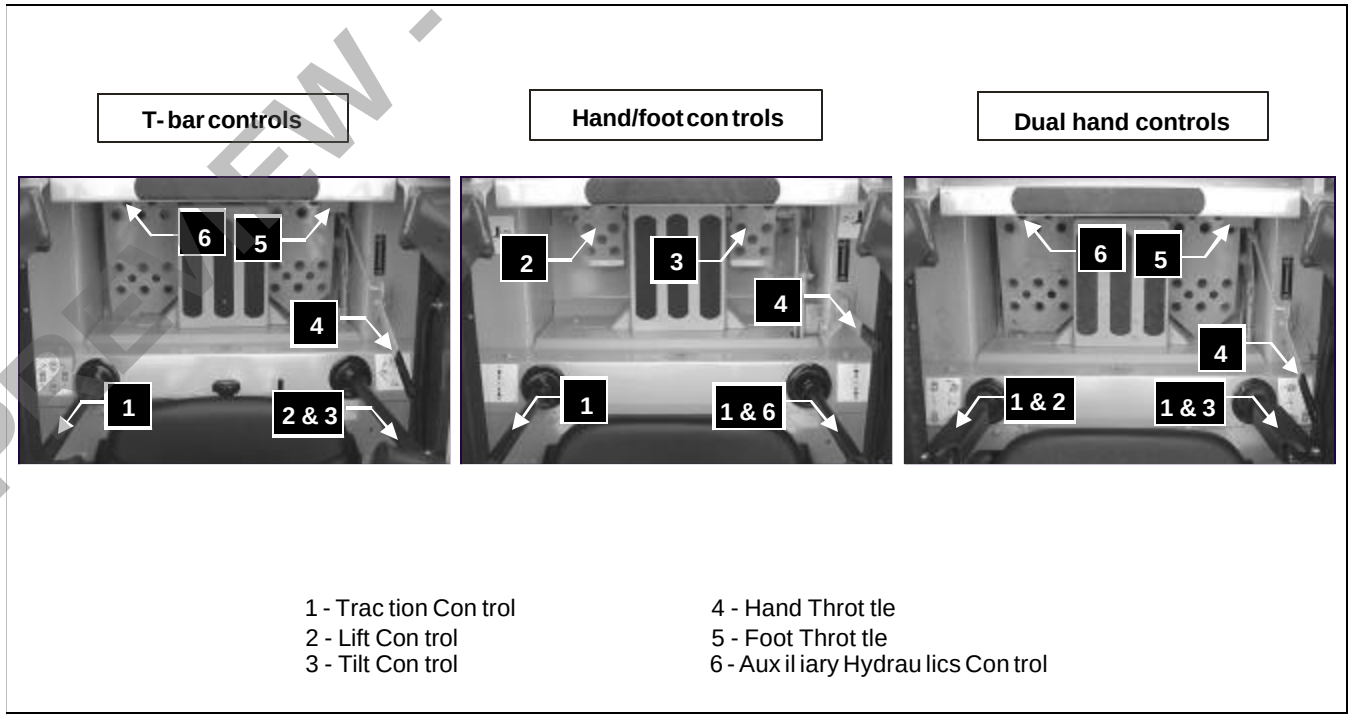


Fig. 6-1 Con trol lo ca tions on T- bar, hand/foot and dual hand con trols.

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Troubleshooting Guide

The following troubleshooting guide lists potential hydrostatic system problems, as well as possible causes hand remedies, for GEHL SL4635/4835 skid loaders.

When a problem occurs, don't overlook simple causes. A malfunction can be caused by something as simple as low oil level. After a mechanical failure has been corrected, be sure to locate and correct the cause of the problem.

IMPORTANT

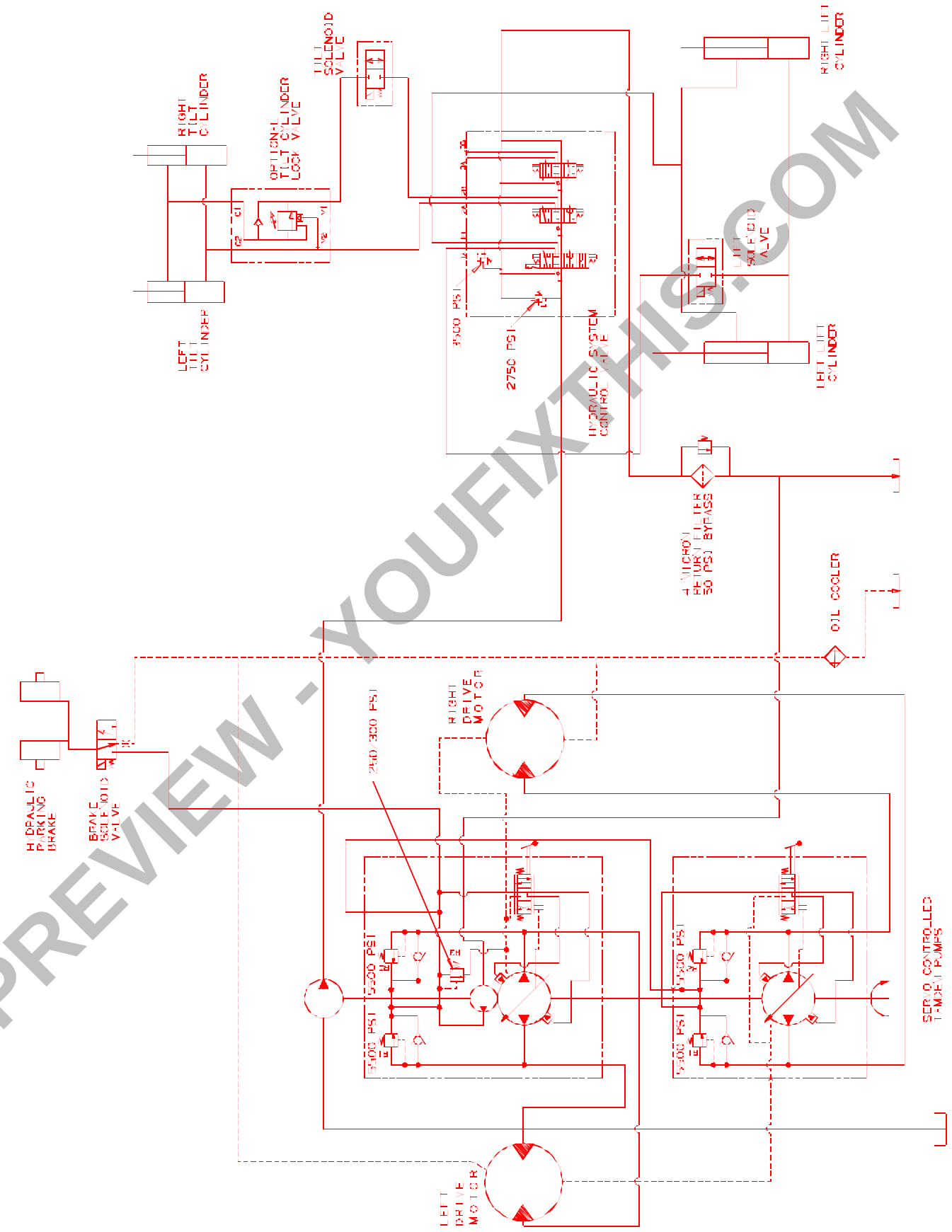
Do Not attempt to service or repair major hydrostatic system components, such as the hydrostatic pumps or drive motors, unless authorized to do so by your GEHL Dealer/Distributor. Any unauthorized repair will void the warranty.

Problem	Possible Cause	Remedy
No response from the hydrostatic drive or the lift/tilt systems.	Hydraulic oil viscosity is too high.	Allow longer warm-up or replace oil with the proper viscosity oil.
	Hydraulic oil supply is too low.	Check for low oil level in reservoir. Add oil as needed.
	Hydrostatic pump drive is disconnected. Drive coupling failure.	Check for broken or worn pump Drive Coupling and replace, as needed.
Traction drive will not operate in either direction.	Parking brake is engaged.	Disengage parking brake.
	Hydraulic oil supply too low.	Check for low oil level in reservoir. Add oil if necessary.
	Control rod linkage disconnected.	Check linkage connection at control levers and neutral centering mechanisms. Reconnect linkage.
	Low or no charge pressure.	See hydrostatic pump manual.
	Hydrostatic pump relief valves are malfunctioning.	Inspect and clean the relief valves. Replace them as needed.
Drive wheels do not turn in proper direction for T-bar movement.	High pressure hydraulic hoses between hydrostatic pump and drive motors are connected wrong.	Reconnect hoses to proper ports on the drive motors. Refer to schematic and figures in hydrostatic chapter.

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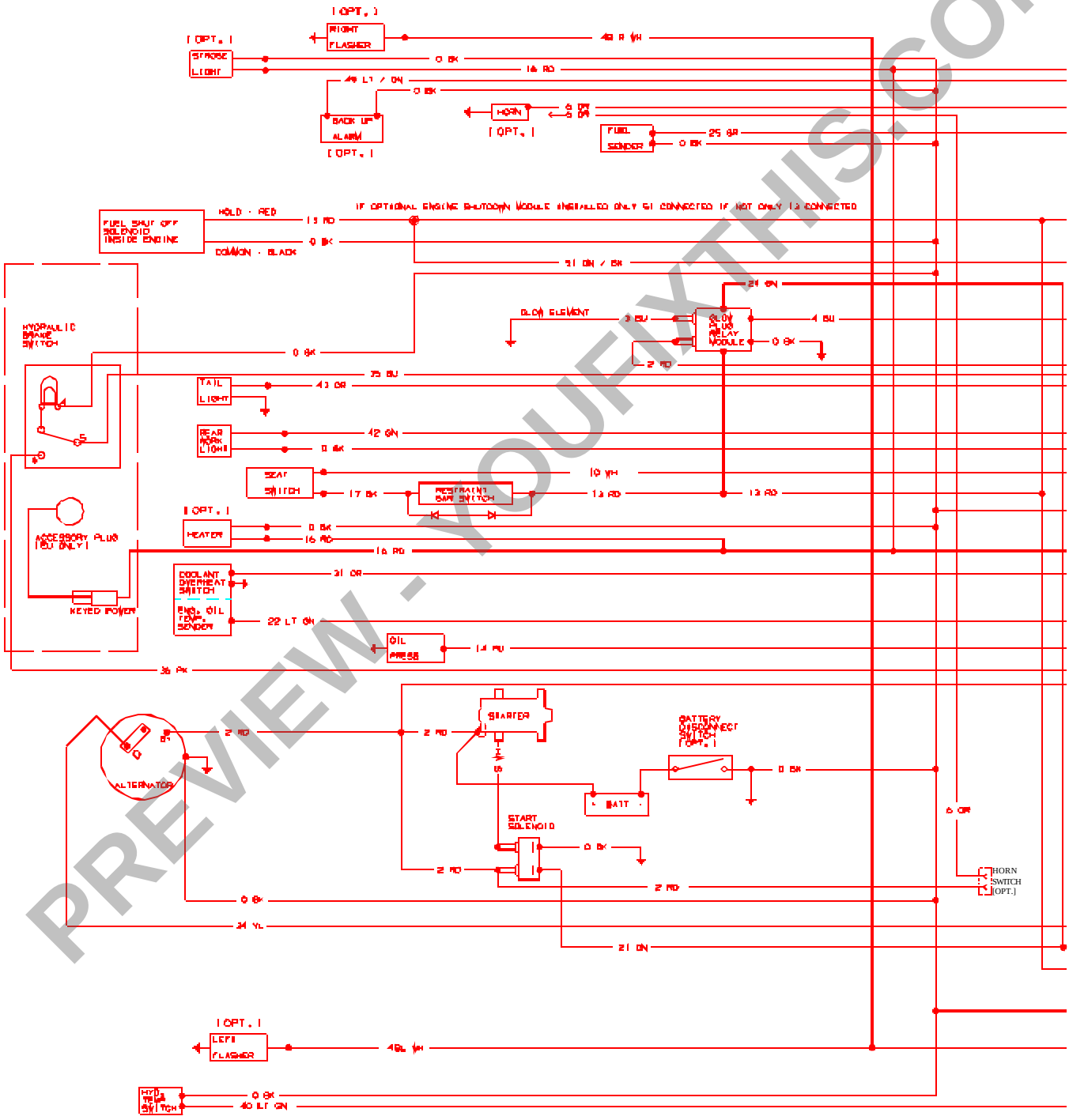
Hydraulic/Hydrostatic System Schematic, SL4635 Models



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Electrical System Schematic



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