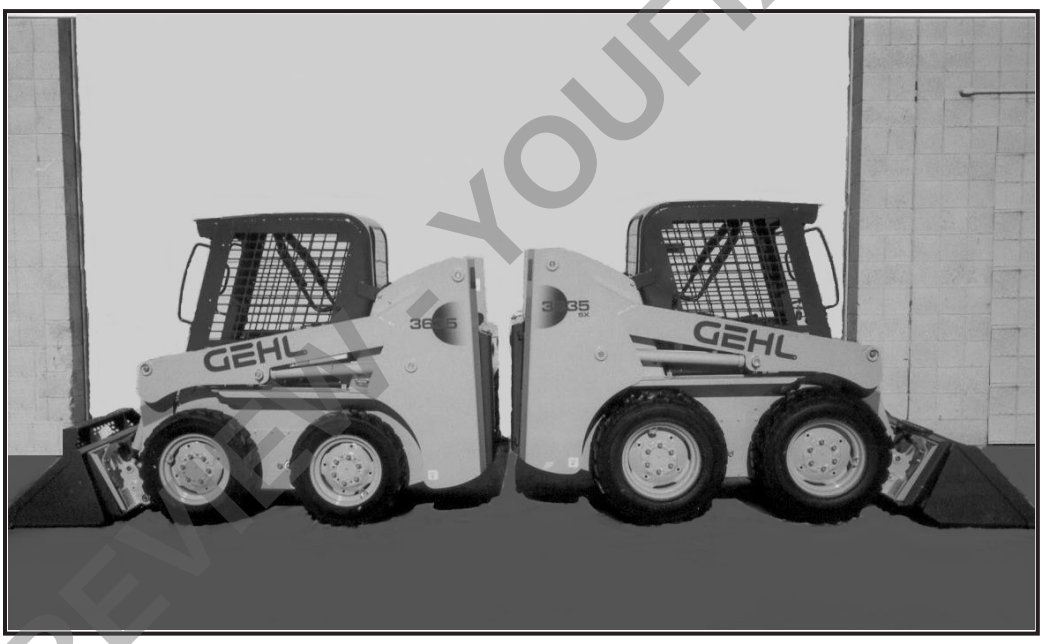
Form No.
908269

SL3635
and SL3935
Skid Loaders



Service Manual

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TABLE OF CONTENTS

Specifications Page 1-1

Specifications · · · · · 1-1
Tire Options · · · · · 1-1
Buckets and Capacities · · · · · 1-1
General Specifications · · · · · 1-2

Safety Page 2-1

General Information · · · · · 2-1
Signal Words · · · · · 2-1
Additional Safety Reminders · · · · · 2-1
Mandatory Safety Shutdown Procedure · · · · · 2-2
Liftarm Support Device · · · · · 2-3
Liftarm Support Device Engagement · · · · · 2-3
Liftarm Support Device Disengagement · · · · · 2-4
Rollover Protective Structure (ROPS) - Raising · · · · · 2-4
Rollover Protective Structure (ROPS) - Lowering · · · · · 2-5
Relieving Hydraulic Pressure · · · · · 2-6
Skid Loader Raising Procedure · · · · · 2-6
Slid Loader Lowering Procedure · · · · · 2-7

Lubrication Page 3-1

General Information · · · · · 3-1
Hydraulic Oil Reservoir · · · · · 3-1
Crankcase Oil · · · · · 3-2
Chaincases · · · · · 3-3
Grease Fitting Locations · · · · · 3-3
Cooling System Drain Procedure · · · · · 3-4

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General Information

The above safety alert symbol means: ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! It stresses an attitude of "Heads Up for Safety" and can be found throughout this service manual and on the decals on the machine.

Before operating or working on this machine, read and study the following safety information. In addition, be sure that every individual who operates or works with this equipment is familiar with these safety precautions.

The use of skid steer loaders is subject to certain hazards that cannot be eliminated by mechanical means, but only by exercising intelligence, care and common sense. Such hazards include, but are not limited to, hillside operation, overloading, instability of the load, poor maintenance and using the equipment for a purpose for which it is not intended or designed.

The Gehl Company ALWAYS considers the operator's safety when designing its machinery and guards exposed moving parts for the operator's protection. However, some areas 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 section of the manual includes procedures, which when followed, will allow safe performance of service procedures: Mandatory Safety Shutdown Procedure, Lift Cylinder Liftarm Support Device, Roll Over Protective Structure (ROPS)/Falling Object Protective Structure (FOPS) Lock Mechanism, Loader Raising and Lowering Procedures, and Relieving Hydraulic Pressure.

Signal Words

DANGER

"DANGER" indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

"WARNING" indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

"CAUTION" indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. May also alert against unsafe practices.

Additional Safety Reminders



Read and understand the Service Manual and all decals before maintaining, adjusting or servicing this equipment.

Doors, Guards and Shields - Some photographs in this manual may show doors, guards and shields open or removed for illustrative purposes only. BE SURE all doors, guards and shields are in their proper operating positions BEFORE starting engine to operate 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 approved referral attachments. The Gehl Company cannot be responsible for operator safety if the loader is used with a non-approved attachment.



Battery Safety - To avoid injury from a spark or short circuit, disconnect the negative battery cable (-) before servicing any part of the electrical system. Do not tip the battery more than 45° to avoid spilling electrolyte.

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SPECIFICATIONS

	3635 / 3635SX	3935 / 3935SX
Engine: Make	Yanmar	Yanmar
Model	3TNE88	3TNE88
Fuel	Diesel	Diesel
Displacement	100 CID (1,64 L)	100 CID (1,64 L)
Horsepower - Net	SAE 36 hp (27 kW) @ 3000 rpm	SAE 36 hp (27 kW) @ 3000 rpm
Torque - Maximum	77 ft-lbs (104 N•m) @ 1600 rpm	77 ft-lbs (104 N•m) @ 1600 rpm
Rated Operating Load (SAE)	1050 lbs (476 kg)	1260 lbs (572 kg)
Operating Weight	4410 lbs (2000 kg)	4550 lbs (2064 kg)
Shipping Weight	3970 lbs (1801 kg)	4170 lbs (1892 kg)
Chaincases (each)	4.5 US gal (17 L)	5.0 US gal (19 L)

Specifications Below Apply To All 3635 and 3935 models	
Capacities	
Hydraulic Reservoir	8.0 US gal (30 L)
Engine Oil	5.0 US quarts (4,8 L)
Fuel Tank	8.5 US gal (32,2 L)
Radiator	6.5 US quarts (6,2 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)
Standard Flow Rate (Single)	14.4 gpm (54,5 L/min)
Travel Speed	0 to 7.0 mph (0 to 11,0 km/h)

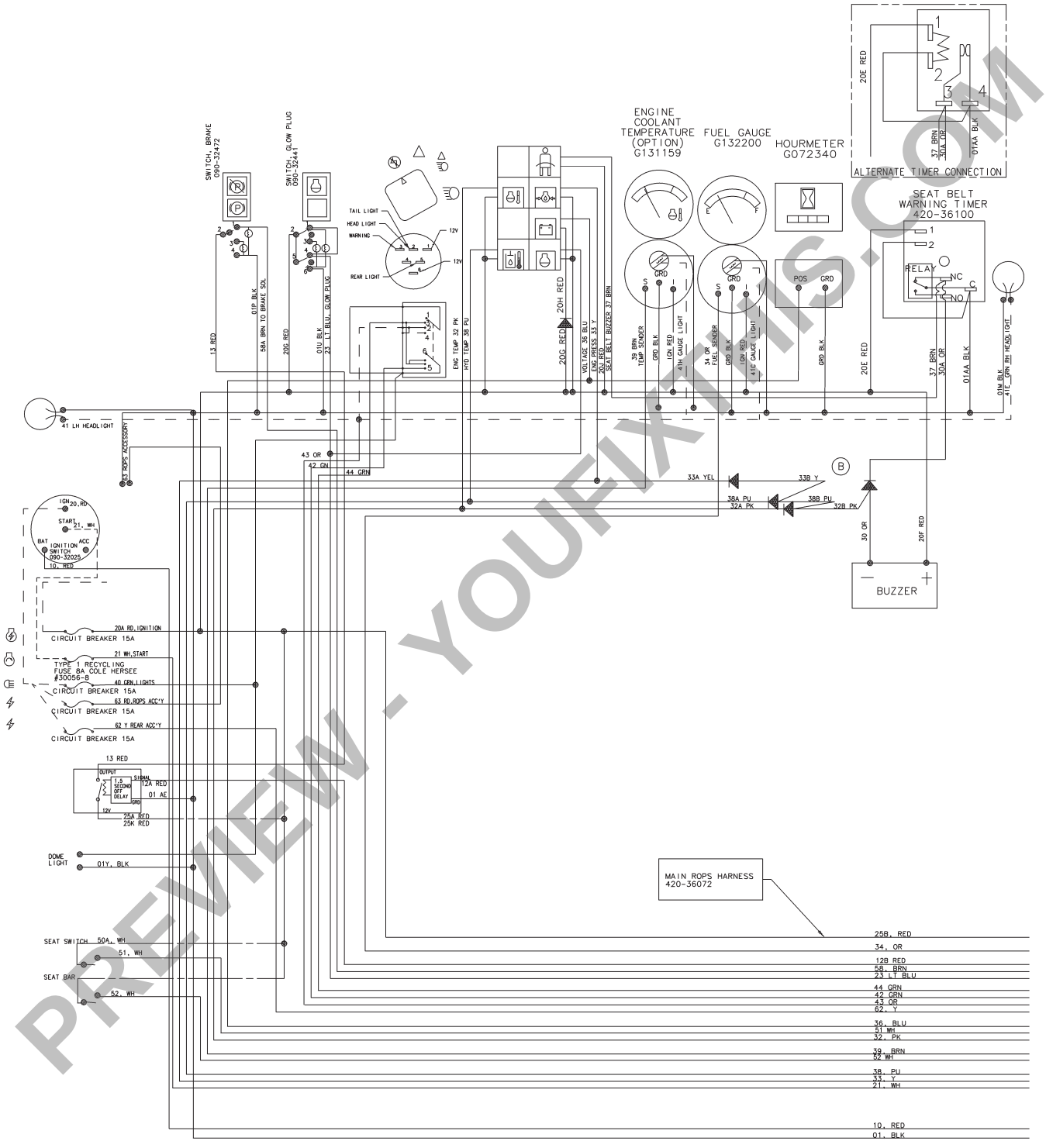
Tire Options	
10.50 x 15 - 8 ply	
8.5 x 15 - 8 ply	
10 x 16.5 - 6 ply	Standard Flotation tires
10 x 16.5 - 8 ply	Heavy Duty Flotation tires
27 x 8.50 x 15 - 6 ply	
27 x 10.50 x 15	Heavy Duty Fat Foot Flotation Tires
6.5 x 16	Solid Rubber tires

Buckets and Capacities			
Width - inches (millimeters)	**Bucket Description**	**Capacity (Heaped)**	
48 inches (1219 mm)	Utility	11.9 cubic feet	0,34 cubic meters
54 inches (1372 mm)	Dirt/Construction	9.5 cubic feet	0,27 cubic meters
54 inches (1372 mm)	Utility	13.5 cubic feet	0,38 cubic meters
60 inches (1524 mm)	Utility	15.2 cubic feet	0,43 cubic meters
61.5 inches (1562 mm)	Dirt/Construction	13.0 cubic feet	0,37 cubic meters
61.5 inches (1562 mm)	Bucket/Construction	13.0 cubic feet	0,37 cubic meters

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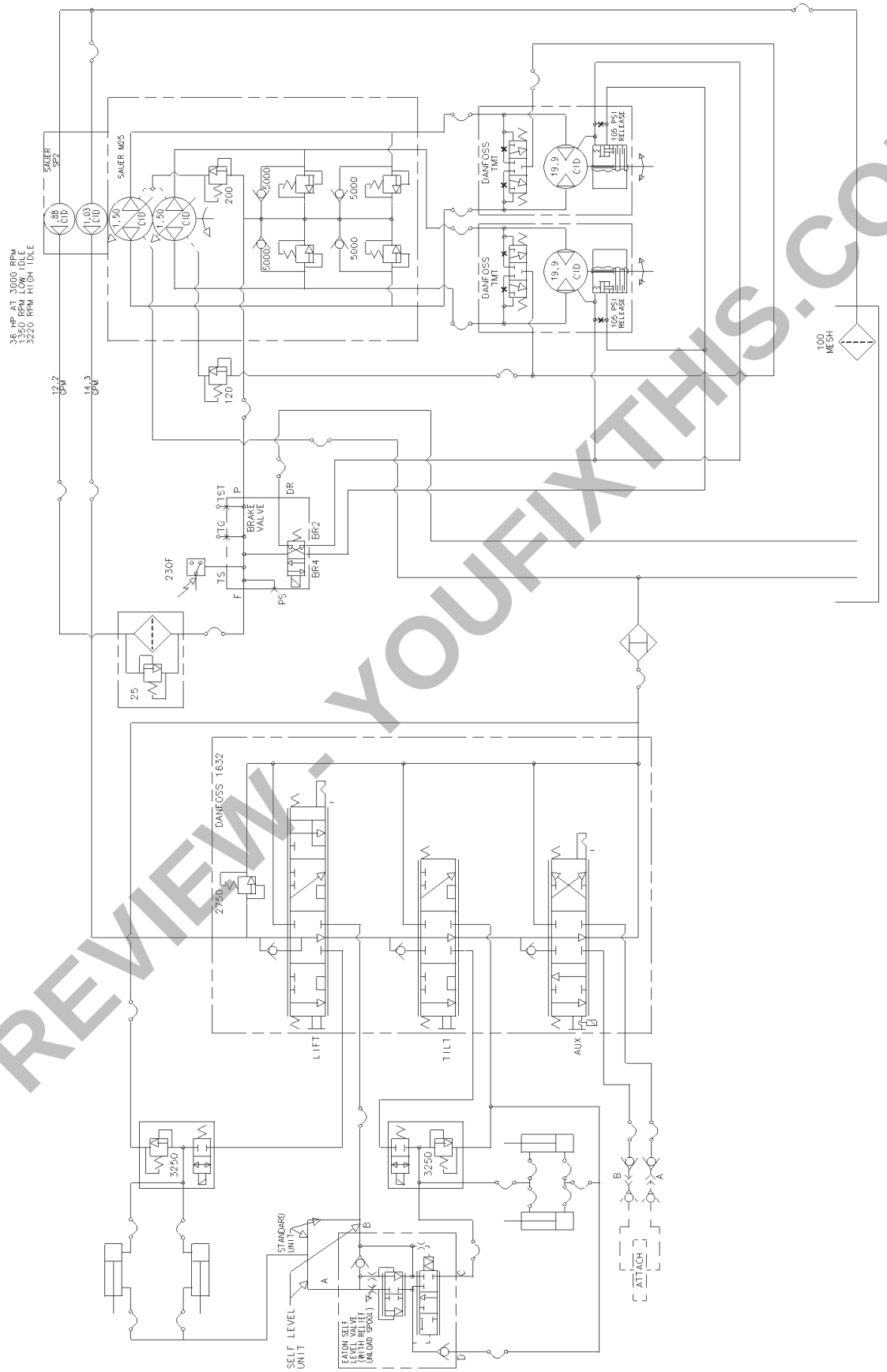
Electrical System Schematic



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Hydraulic/Hydrostatic System Schematic



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Introduction

Gehl SL3635/3935 skid loaders have a welded steel mainframe. Maintenance, service and repair can be performed through standard access panels. The left rear mainframe riser serves as the hydraulic reservoir. A plastic tank bolted to the mainframe behind the ROPS serves as the fuel tank.

Two side cases 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 Object Protective Structure (ROPS/FOPS) is standard for operator safety, and both the seat and restraint bar include safety interlock switches.

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

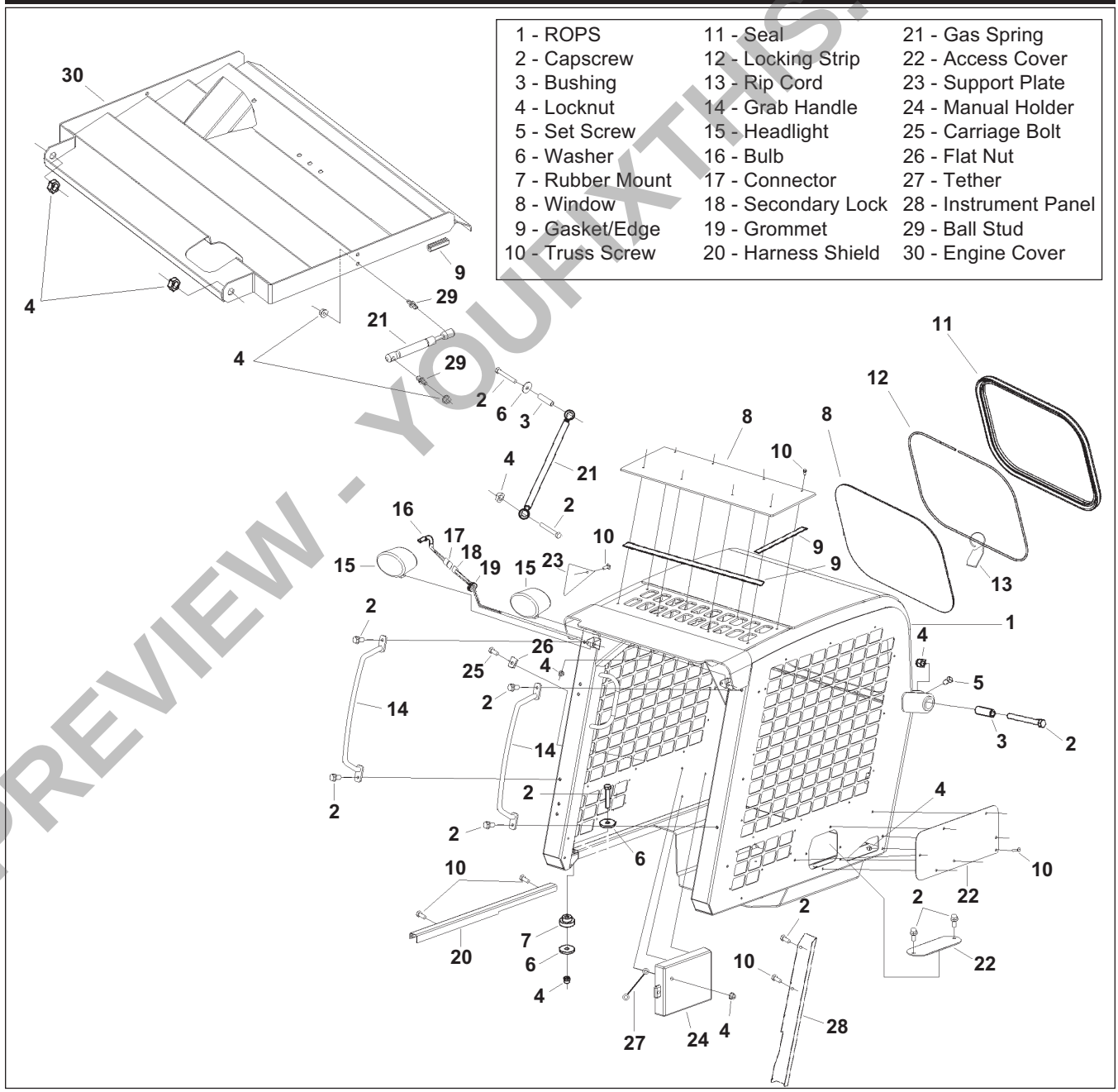


Fig. 4-1 Assembly view of ROPS components.

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Troubleshooting Guide

The following troubleshooting guide lists potential hydrostatic system problems, as well as possible causes hand remedies, for GEHL SL3635/3935 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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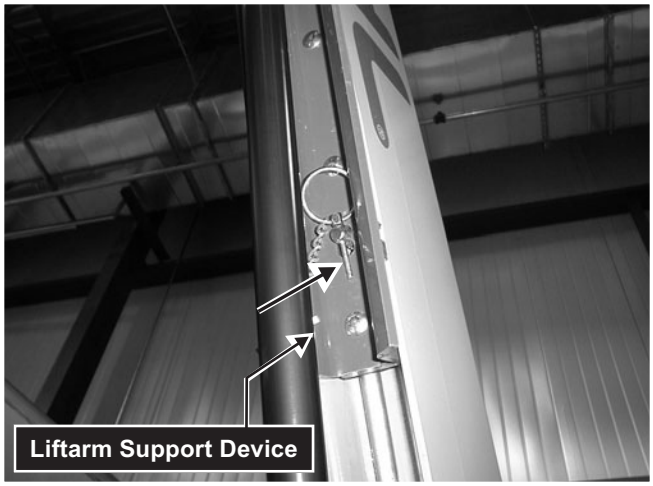


Fig. 2-1 The locking pin secures the liftarm support device underneath and inside the liftarm in the "storage" position.



Fig. 2-2 Grab o-ring tether on locking pin and pull it out of the liftarm, allowing the support device to lie on the lift cylinder.



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

Liftarm Support Device

WARNING

BEFORE 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 allow easier access to loader components. 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 unexpectedly lowering.

BE SURE to engage the liftarm support device whenever the liftarm is raised. When the device is not being used, secure it to the anchor pin on the underside of the liftarm using the lock pin and retainer provided.

The liftarm support device is a safety device which must be kept in proper operating condition at ALL times.

The following procedures outline the correct way to engage and disengage the liftarm support device.

Liftarm Support Device Engagement

1. Lower liftarm until contact with loader frame.
2. Turn keyswitch to OFF position to stop engine. Remove 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 operator's compartment and restart engine.
5. Use lift control to raise liftarm until lift arm support device drops over end of 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 liftarm support device is secure against cylinder end. Then, stop loader engine, remove key and leave operator's compartment.

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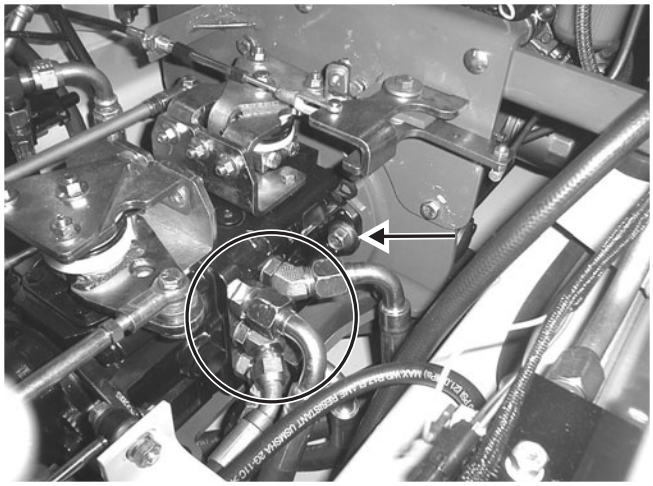


Fig. 7-15 Hoses to remove on left side of hydrostatic pump. Arrow points to location of one of two (1 of 2) capscrew securing hydrostatic pump to the flywheel housing cover.

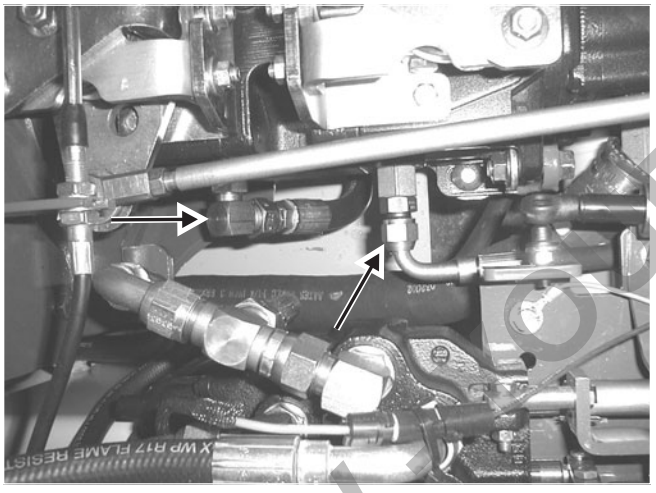


Fig. 7-16 Hoses to remove on right side of hydrostatic pump.

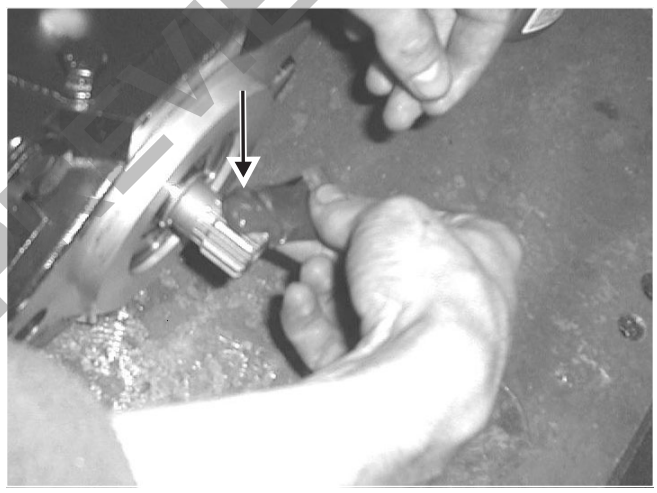


Fig. 7-17 Coat hydrostatic pump shaft spline with molybdenum disulfide “moly” grease.

8. Remove two capscrews (80 ft-lbs) (112 N•m) connecting upper pump support to pump flange. **Fig. 7-14**
9. Remove two capscrews (80 ft-lbs) (112 N•m) and washers securing hydrostatic pump to flywheel housing cover. Lift pump slightly to remove capscrews. **Fig. 7-15**
10. Pull hydrostatic pump forward to disengage splined pump shaft from drive plate and pull pump out of flywheel.
11. Lift and maneuver hydrostatic pump out of loader.

Installation Procedure - Follow all WARNINGS first, then reverse the removal steps*

* Coat pump shaft splines (male and female) with molybdenum disulfide “moly” grease. **Fig. 7-17**

NOTE: After removing and/or replacing any component in the hydrostatic drive system, ALWAYS prime hydrostatic pump by running engine at idle for a short time. Drive loader slowly forward and backward (with no load) until noise, caused by air in the system, stops. Then, stop the loader and recheck the hydraulic fluid level in the reservoir. Add fluid if necessary.

⚠ WARNING

NEVER use your hands to search for hydraulic fluid leaks. Use a piece of paper or cardboard. Escaping fluid under pressure can be invisible and penetrate the skin causing serious injury. If any fluid is injected into your skin, see a doctor at once. Injected fluid MUST be surgically removed by a doctor familiar with this type of injury or gangrene may result.

ALWAYS wear safety glasses when checking for hydraulic fluid leaks. Escaping fluid under pressure can be invisible and cause permanent eyesight damage if safety glasses are not worn.

HYDROSTATIC

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Mainframe Page 4-1

Introduction · · · · · 4-1
Engine Access Cover Removal and Installation · · · · · 4-2
Rollover Protective Structure (ROPS) Removal and Installation · · · · · 4-2
Seat Removal and Installation · · · · · 4-4
Seat Slide Replacement · · · · · 4-4
Rollover Protective Structure (ROPS) Rear Window Removal and Installation · · · · · 4-5
Restraint Bar Removal and Installation · · · · · 4-7
Gehl All-Tach™ Hitch Removal and Installation · · · · · 4-9
Liftarm Removal and Installation · · · · · 4-10
Liftarm Bushing Replacement · · · · · 4-13
Liftarm Stop Installation and Adjustment · · · · · 4-14
Floor Cover and Kick Plate Removal and Installation · · · · · 4-16
Fuel Level Sender Removal and Installation · · · · · 4-19
Rear Grille Removal and Installation · · · · · 4-20

Wheel Drives Page 5-1

Introduction · · · · · 5-1
Drive Chain Adjustment · · · · · 5-2
Drive Chain Removal and Installation · · · · · 5-3
Axle Removal and Installation · · · · · 5-4

Controls Page 6-1

Introduction · · · · · 6-1
Control Handle Removal and Installation · · · · · 6-12
Control Handle Position and Tracking Adjustment · · · · · 6-13
Dual Control Weldment Removal and Installation - T-Bar Controls · · · · · 6-15
Neutral Centering Device and Pump Arm Removal and Installation · · · · · 6-16
Neutral Centering Device Adjustment · · · · · 6-17
Lift/Tilt Control Removal and Installation · · · · · 6-18
Lift/Tilt Control Adjustment · · · · · 6-19
Auxiliary Hydraulics Removal and Installation - T-Bar and Dual Hand Controls · · · · · 6-21
Auxiliary Hydraulics Adjustment · · · · · 6-23
Hand Throttle, Hand Throttle Cable and Throttle Rod Removal and Installation · · · · · 6-25
Foot Throttle and Foot Throttle Cable Removal and Installation - T-Bar and Dual Hand Controls · · · 6-26
Hand Throttle Adjustment · · · · · 6-27
Hand Throttle Tension Adjustment · · · · · 6-28
Foot Throttle Adjustment - T-Bar and Dual Hand Controls · · · · · 6-29

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Charge Pressure Test and Adjustment

The charge pressure system supplies oil to the piston pumps to replace oil lost through the case drain. Oil supply into the piston pumps from the charge pressure system is greater than the case drain flow out of the piston pumps and drive motors. This creates pressure, which prevents cavitation and freewheeling, while providing lubrication to internal components. Charge oil is pumped via an external gear pump located on the front of the hydrostatic pump. A charge relief poppet (**Fig. 7-9**) in the center section of the hydrostatic pump controls charge pressure. Before performing the following test, run loader until hydraulic oil is at normal operating temperature.

NOTE: This test requires a minimum 500 PSI (35 bar) pressure gauge.

Test Procedure

⚠ WARNING

BEFORE beginning this Service procedure, perform the following SAFETY procedures:

- ❑ **Shut off the engine.**
- ❑ **Raise and block the loader so all four tires are off the ground.**
- ❑ **Roll ROPS back until lock engages.**

(For detailed instructions, refer to the *Safety* chapter of this manual).

1. Using an Allen wrench, remove plug and install pressure gauge on brake valve charge pressure port. **Figs. 7-7 and 7-8**
2. Depress brake switch to leave parking brakes locked. **Fig. 7-6**
3. Start engine and run at full throttle.
4. Check pressure reading on gauge at three different times: (1) with steering controls in NEUTRAL, (2) both pumps stroked forward and backward, (3) when stroking each pump individually. The gauge should read as follows:
   a. All models: 130 - 150 PSI (9 - 10 bar). Minimum pressure: 100 PSI (7 bar).
5. A slight drop in pressure is normal when a load is put on the hydrostatic pump. If the pressure reading on

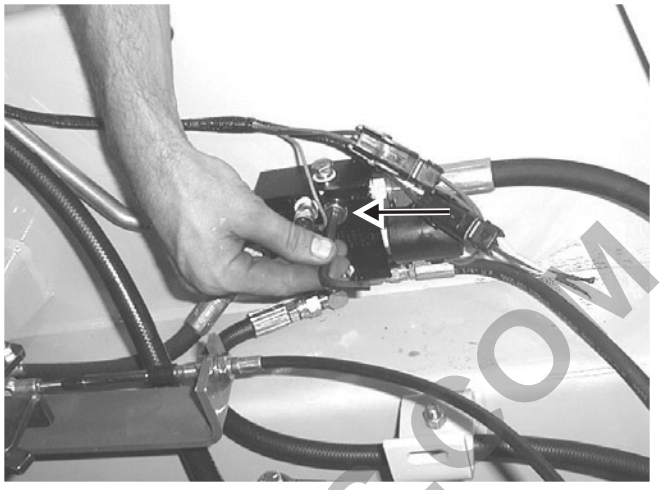


Fig. 7-7 Location of the charge pressure port on the brake valve.

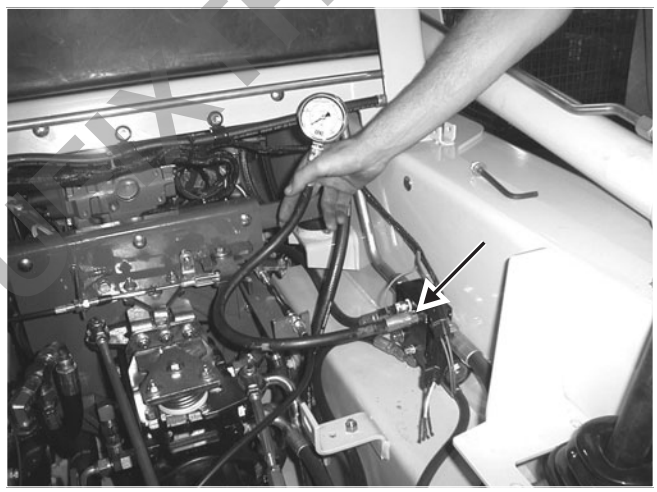


Fig. 7-8 Pressure gauge attached to charge pressure port on brake valve.

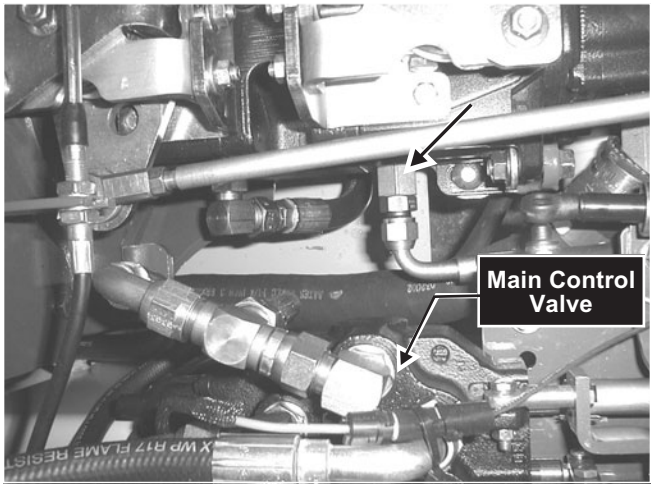


Fig. 7-9 Location of brake check valve (charge relief poppet) on hydrostatic pump.

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