Form No.
904167

SKID LOADER

6620 SERIES

SL6620
SL6625



SHOP MANUAL

GEHL®

PREVIEW FROM YOUFIXTHIS.COM

Download full manual at youfixthis.com

TABLE OF CONTENTS

SECTION 1 INTRODUCTION 1
Torque Values 3
Abbreviations 3

SECTION 2 SPECIFICATIONS 4
General 4
Engine 4

SECTION 3 SAFETY 5-6

SECTION 4 DECALS 7
General Information 7
New Decal Application 7
Decal Locations 7C
General Information 7C
New Decal Application 7C

SECTION 5 LUBRICATION 9
General Information 9
Oils 9
Chaincases 9
Engine Crankcase 9
Hydraulic Oil Reservoir 9
Planetary Gearcase 9
Greasing 9
Engine Oil Viscosity Index 9
Hydrostatic Oil Viscosity Index 9

SECTION 6 CHASSIS 11
Description 11
General Information 11
Overhead Guard 11-12
In-Seat Safety Switch-Before S.N. 2651 13
In-Seat Safety Switch-After S.N. 2650 13
Seat 14
Restraint Bar Switch 15
Lift Arm Assembly 15-17
Attachment Assembly 17-18
Floor Plate 18
Bottom Covers 19
Consoles 19-20
Access Cover 20
Fuel Tank 20-21

SECTION 7 DRIVE 23
Brakes 23
Disc Brake Adjustment 23
Brake Pad Replacement 23-24
Brake Cables 25-26
Traction Drive T-Bar 26
Neutral Adjustment 26
Servo Adjustment 27
Take-Up Rods 28
Control Rods 28-29
Pivot Shaft and Torsion Tube 29-20
T-Bar Assembly 30-31
Lift/Tilt T-Bar 31
Control Linkage Adjustment 31-32
Control Rods 32
T-Bar Assembly 32-33
Throttle Assembly 33
Hand Throttle Adjustment 33
Throttle Cable Adjustment 34
Throttle Cable 34-35
Throttle Handle Assembly and Throttle Rod 35-36
Drive Chains 36
Adjustment 36
Removal 37
Installation 37
Axle and Sprocket 37
Removal 37-38
Installation 38
Axle and Wheel Bearings 39
Disassembly 39
Assembly 39
Idler Sprockets and Bearings 40
Removal 40
Installation 40

SECTION 8 HYDROSTATIC SYSTEM 41
Introduction 41
Neutral 42
Forward 43
Reverse 44
Turns 44
Troubleshooting 45-47
Hydrostatic Testing 48
Drive Motor 48
Charge Pressure 48
Service 48
Tandem Pump 48-53
Tandem Pump-Valve Block 54-55
Pump Drive Coupling 55
Hydrostatic Drive Motor 56-60

SECTION 9 HYDRAULIC SYSTEM 61
Introduction 61
Cylinders 62
Hydraulic Hoses and Tubing 62
Electrical Components 62
Troubleshooting 63-64
Hydraulic Testing 65
Control Valve Relief Pressure 65
Lift and Tilt System Pump 65
Tilt Cylinders 65
Lift Cylinders 66
Service 66
Tilt Cylinders 66-67
Lift Cylinders 67
Lift and Tilt Cylinders Breakdown 68-69
Lift and Tilt System Gear Pump 69-71
Servos 72-73
Seal Kit Installation 73-74
Hydraulic Oil Filter 74
Hydraulic Oil Strainer 74-75

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

6. Install Relief Valve Springs into Valve Block.

7. Assemble a new O-ring on each of the four Plugs and install them in Valve Block. Torque to 128-148 ft. lbs.

8. If Bearing Races were removed from the Valve Block, install new Bearing Races.

PUMP DRIVE COUPLING (Fig. 8-10)

Removal

1. Lock Lift Arm up, roll Overhead Guard back and remove Floor Plate.

2. Drain the hydraulic oil from the Reservoir.

3. Remove both Servos. (See Servo Removal in Hydraulic Section.)

4. Remove Tandem Pump. (See Tandem Pump Removal in this Section.)

5. Remove (11) CS, L and (1) P attaching Pump Adapter and Left Servo Support to Engine. Remove Servo Support and Pump Adapter. It may be necessary to bend Tube Support slightly ahead to remove Pump Adapter.

6. Remove (3) Metric SHCS attaching Flexible Coupling to Flywheel Drive Disc. Remove Flexible Coupling with Coupling Hub.

7. If necessary to remove Flywheel Drive Disc, remove (8) CS and L attaching Flywheel Drive Disc to Engine.

8. Remove (3) Metric SHCS attaching Coupling Hub to Flexible Coupling.

Installation

1. Attach Coupling Hub to Flexible Coupling with (3) Metric SHCS. Apply Loctite to SHCS.

2. If removed, attach Flywheel Drive Disc to Engine with (8) CS & L.

3. Attach Flexible Coupling with Coupling Hub to Flywheel Drive Disc with (3) Metric SHCS. Apply Loctite to SHCS.

4. Attach Pump Adapter, Left Servo Support, Cable, Auxiliary Control Bracket and Tube Support to Engine with (11) CS, L and (1) P. The P is used on the lower hole in Tube Support.

5. Install Tandem Pump. (See Tandem Pump Installation in this Section.)

6. Install both Servos. (See Servo Installation in Hydraulic Section.)

7. Add oil to the Hydraulic Reservoir.

NOTE: DO NOT overfill Hydraulic Reservoir. Check oil level after Lift Arm is lowered, for the proper oil level.

8. Start engine and check for hydraulic oil leaks and proper drive control neutral adjustment. Readjust, if necessary. (See Neutral Adjustment in Drive Section.)

9. Install Floor Plate, roll Overhead Guard down and lower Lift Arm.

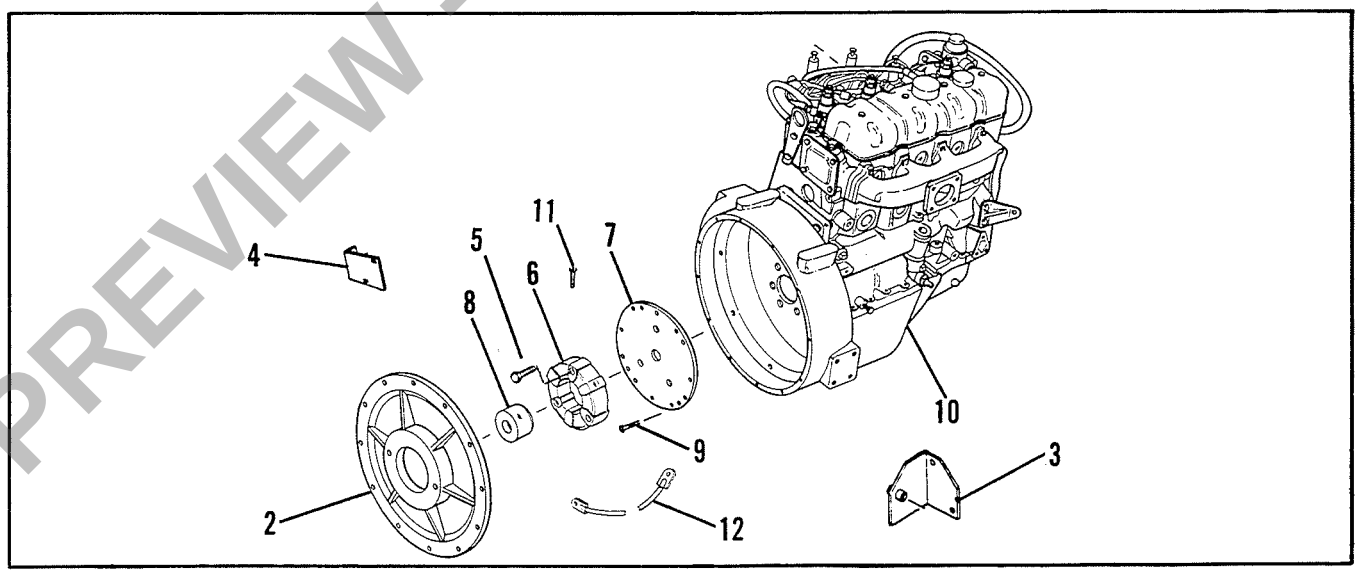


Fig. 8-10: Pump Drive Coupling

KEY TO ILLUSTRATION

1. CS, L & P (1) of (11)
2. Pump Adapter
3. Left Servo Support
4. Tube Support
5. Metric SHCS (1) of (3)
6. Flexible Coupling
7. Flywheel Drive Disc
8. Coupling Hub
9. CS & L (1) of (8)
10. Engine
11. Metric SHCS (1) of (3)
12. Engine Ground Cable

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Wipe dirt from the fittings before greasing to prevent any dirt from being forced into the Bearings or pivots. Replace any missing fittings. To minimize dirt build-up, avoid excessive greasing.

GREASE FITTING LOCATIONS

NOTE: All fittings listed are provided on both the Right and Left sides of the Loader when the term "(each side)" accompanies the location description.

LUBRICATE EVERY 10 HOURS (OR DAILY)

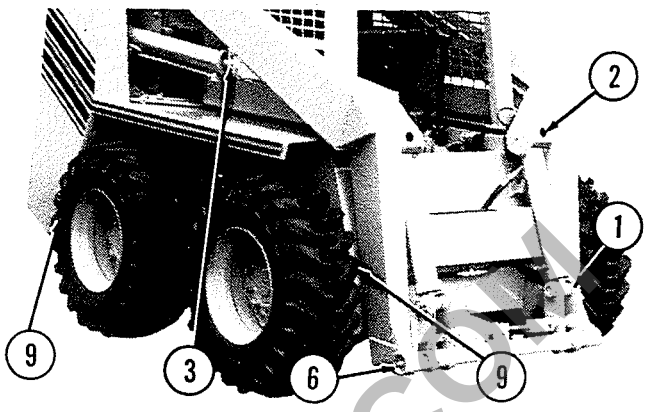
1. Tilt Cylinder Lower Pivot (each side)
2. Tilt Cylinder Upper Pivot (each side)
3. Lift Cylinder Front Pivot (each side)
4. Lift Cylinder Rear Pivot (each side)
5. Lift Arm Pivot (each side)
6. Quick Lock Pivot (each side)

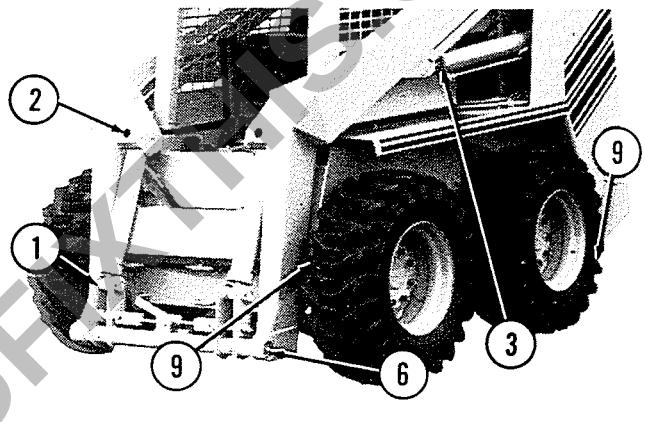
LUBRICATE EVERY 100 HOURS

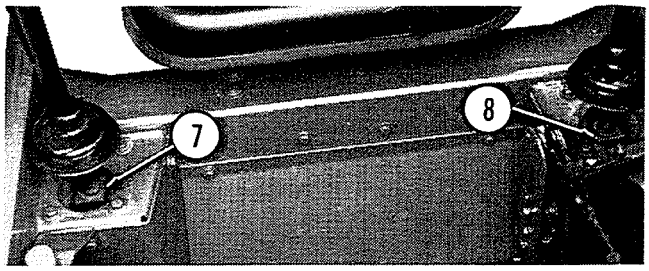
7. Lift/Tilt T-Bar Pivot
8. Propulsion T-Bar Pivot

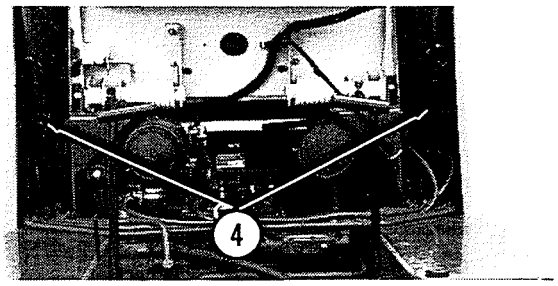
LUBRICATE EVERY 500 HOURS (OR ANNUALLY)

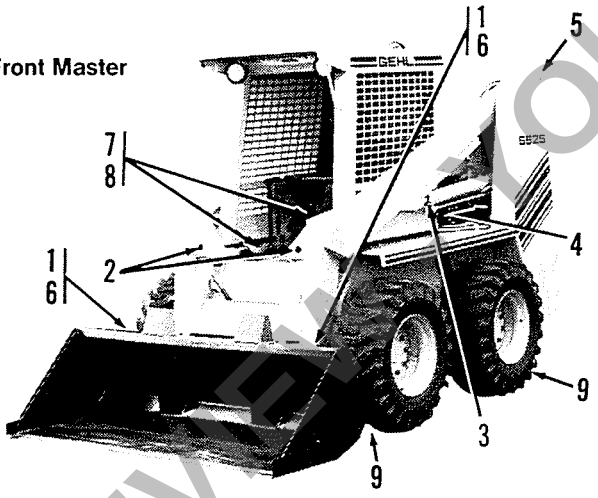
9. Each Axle Bearing (4 places-remove Wheels for access)

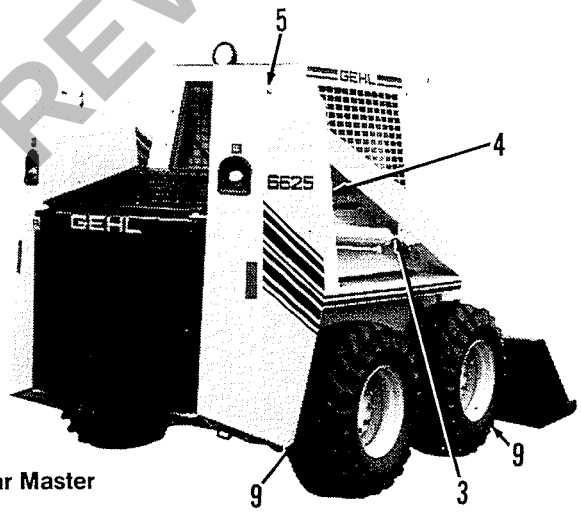


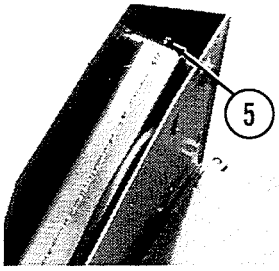


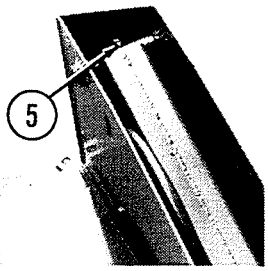












PREVIEW YOUFIXTHIS.COM
Download full manual at youfixthis.com

1. Attach Manifold Elbow to Manifold with (4) L and N.
2. Install Sealing Ring and Muffler with Exhaust Pipe and Clamping Ring. Attach Clamping Ring to Manifold Elbow with (3) N.
3. Attach Muffler to Muffler Brackets with Muffler Clamp. Close Rear Grill. Adjust Muffler so pipe is centered in the hole in the Rear Grill.

FAN BELT ADJUSTMENT (Fig. 11-7)

1. Swing open Rear Grill and open Engine Access Cover.
2. Loosen N on CS securing Alternator to Alternator Mounting Bracket.
3. Loosen CS in Alternator Take-up Slot.

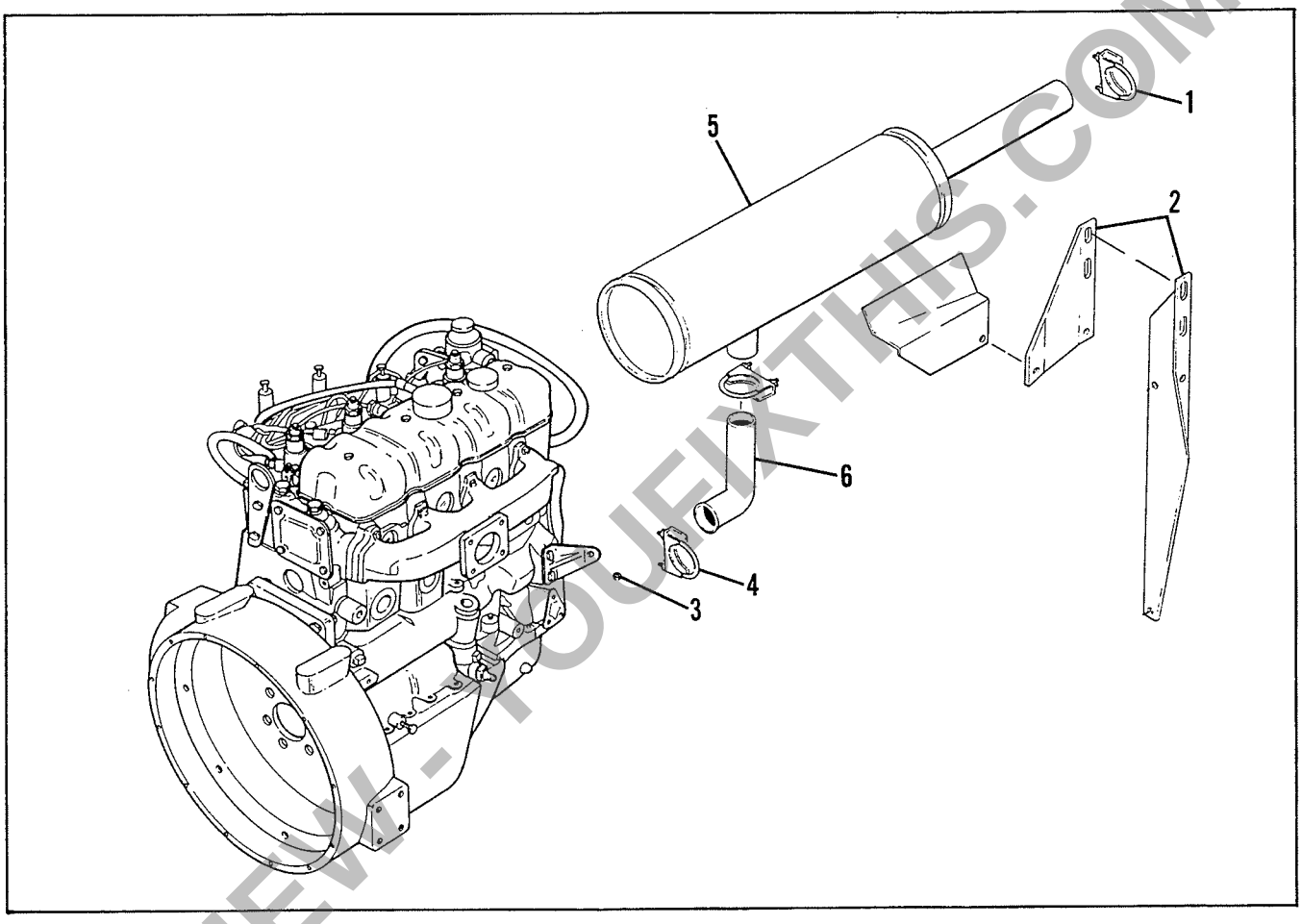


Fig. 11-6: Engine Exhaust Assembly

KEY TO ILLUSTRATION

1. Muffler Clamp	3. N (1) of (3)	5. Muffler
2. Muffler Brackets	4. Clamping Flange	6. Exhaust Pipe

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

AXLE AND WHEEL BEARINGS (Fig. 7-19)

DISASSEMBLY

1. Remove the Cotter Pin from the Slotted Nut and remove the Nut and Washer from the Axle Shaft.
2. Lift the Axle Sprocket off the Shaft.
3. Lift the Wheel Adapter with the Bearings, Bearing Caps, Shim Washers and Oil Seal off the Axle Shaft.
4. Remove the Oil Seal, Bearings and Bearing Cups from the Wheel Adapter.

ASSEMBLY

NOTE: Grease tapered Wheel Bearings BEFORE installation.

After assembly and Shimming is completed, fill cavity in the Wheel Casting with grease using grease fitting. **DO NOT** overfill.

NOTE: Rear Axle Sprockets are assembled with the Sprocket toward Engine. Front Axle Sprockets are assembled with Sprocket toward Wheel.

1. Install Bearing Cups and Outer Bearing in Wheel Adapter.
2. Install Oil Seal into Wheel Adapter. Seal should be recessed into hub 1/4" minimum.
3. Place Wheel Adapter onto Axle Shaft and install Inner Bearing, Shim Washers, Sprocket, Washer, and Slotted Nut.
4. Place Assembly in a vice so that the Axle can be rotated.
5. Tighten the Slotted Axle Nut to 150 ft. lbs. and check Bearing for tightness or looseness. Bearings should be shimmed so there is 0.00 loose to 0.008 tight. This condition can be felt as a slight drag when rotating the Wheel Mounting Flange. Add or remove Shims as necessary.
6. With the Slotted Axle Nut torqued to 150 ft. lbs. minimum, install Cotter Pin and bend the Cotter Pin so it **DOES NOT** extend beyond the end of the Axle Shaft.

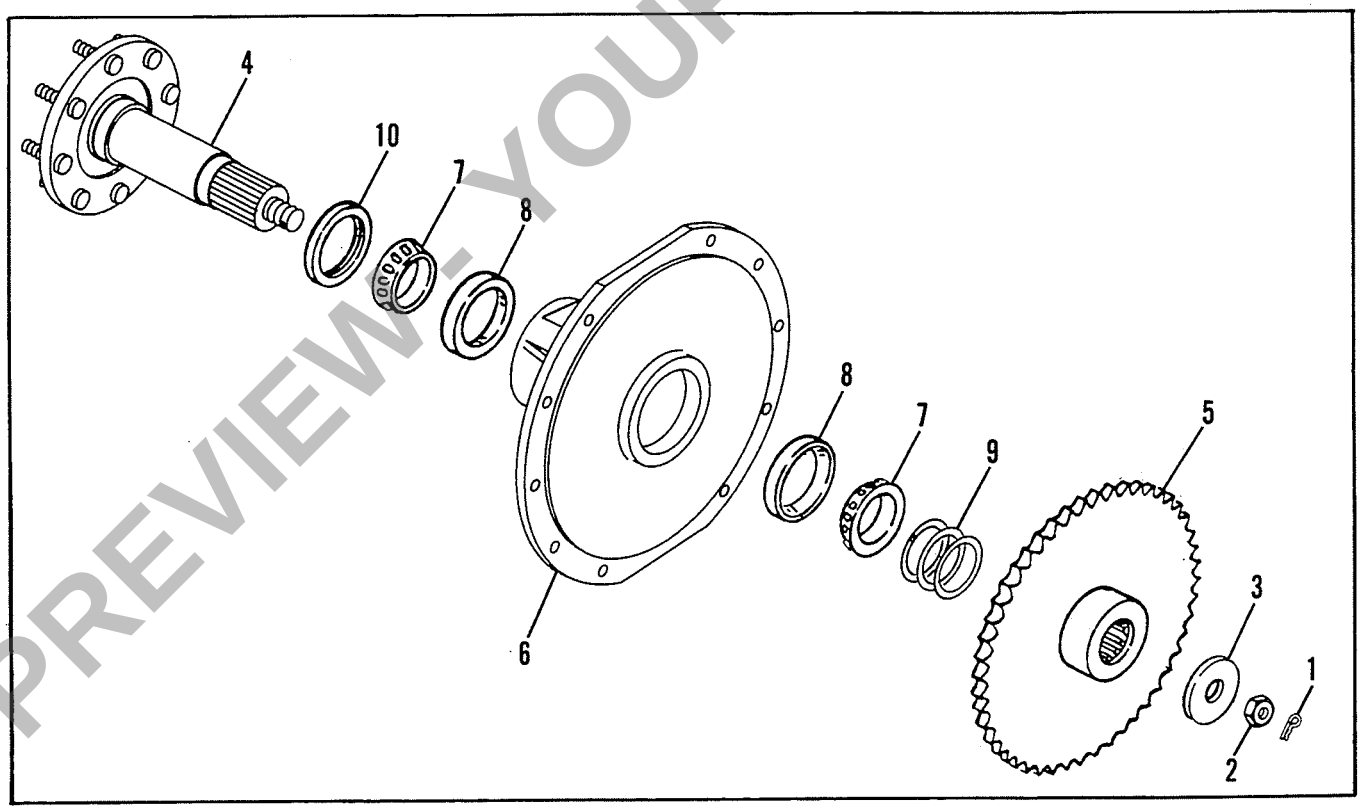


Fig. 7-19: Axle and Wheel Bearings

KEY TO ILLUSTRATION

1. Cotter Pin	4. Axle	7. Bearing	9. Shim Washers
2. Slotted Axle Nut	5. Sprocket	8. Bearing Cup	10. Oil Seal
3. Washer	6. Wheel Adapter		

PREVIEW - YOUFIXTHIS.COM

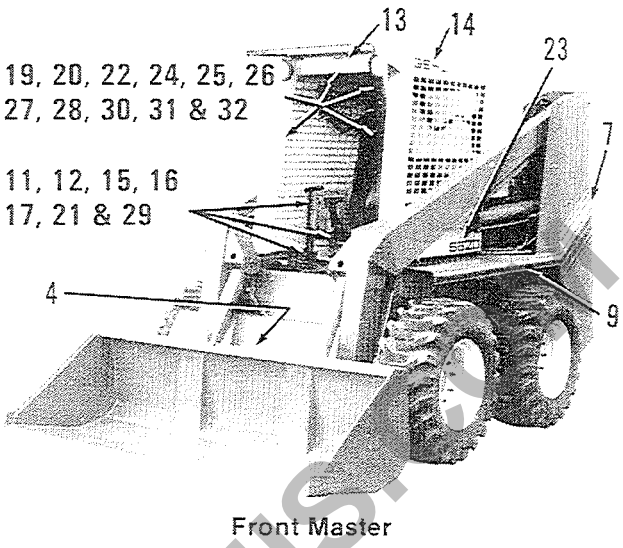
Download full manual at youfixthis.com

DECALS

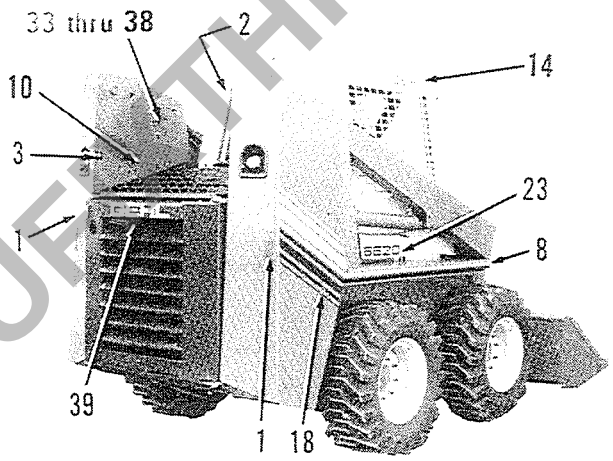
The Decal Set Number for the SL6620 is 079938. The Set includes the following:

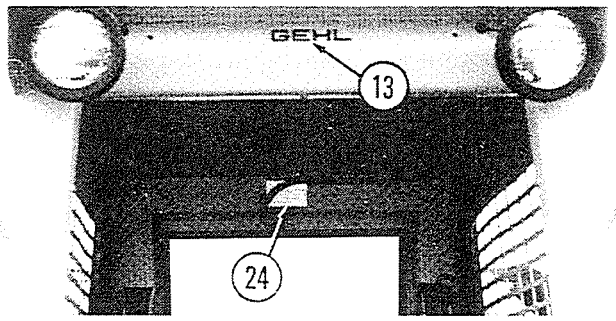
Ref. No.	Part Number	Description
		On Loader Frame or Lift Arms
1	067493	Red Reflector Strip (2 Places)
2	072794	Decal - Hydraulic Oil Symbol
3	072797	Decal - Diesel Fuel Symbol
4	073151	CAUTION - Carry Load Low
5	079090*	Serial Number Plate-Not Shown
6	079354	Right Riser Stripe
7	079355	Left Riser Stripe
8	079356	Right Fender Stripe
9	079357	Left Fender Stripe
10	079362	Decal - Oil Level Indicator
		On Overhead Guard
11	072853	Decal - Lift/Tilt T-Bar Operation
12	072854	Decal - Propulsion T-Bar Operation
13	073030	GEHL 1-13/32 x 5-11/32
14	073031	GEHL 3-5/8 x 14-3/8 (2 Places)
15	073075	Decal - Turtle & Rabbit Symbol
16	073076	Decal - Brake Symbol
17	073086	CAUTION - General Safety
18	073150	CAUTION - Safety Pin for Overhead Guard Locking
19	073152	CAUTION - Carry Load Low
20	073173	CAUTION - Mechanical Lift Cylinder Lock Operation
21	073391	CAUTION - Keep Operator's Manual Here
22	074433	WARNING - Keep Feet Inside
23	079353	6620 (2 Places)
24	079358	Decal - Overhead Guards (ROPS) Rating
25	079361	CAUTION - Fasten Seat Belt & Lower Seat Bar
26	079363	CAUTION - Operating Capacities
27	079485	CAUTION - Check Locking Pin Engagement
28	079486	WARNING - Disc Brake Function
29	079720	CAUTION - Read Operator's Manual
		On Instrument & Control Panel
30	072935	Decal - Left Side of Panel
31	079359	Decal - Right Side of Panel
32	079360	Decal - Middle of Panel
		On Underside of Louvered Engine Cover
33	073153	CAUTION - Ground Loader
34	076445	WARNING - Jump-starting Loader Engine
35	079487	Decal - Maintenance Schedule
		On or Around Engine & Radiator
36	056859	Decal - Factory Installed Coolant Mixture
37	072776	DANGER - Rotating Component
38	072798	Decal - Coolant Under Pressure Symbol
		On Outside of Hinged Rear Grill
39	073081	GEHL (Gray on Black)

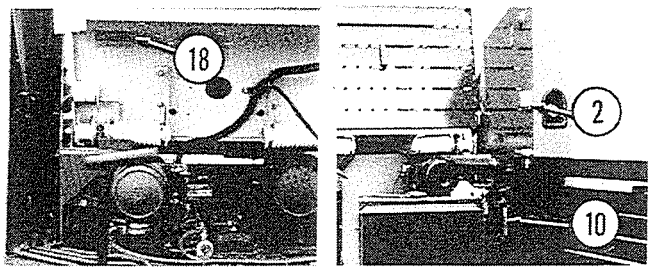
*Replacement NOT necessary.



Front Master







PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

SECTION 5
LUBRICATION

GENERAL INFORMATION

CAUTION: NEVER attempt to lubricate the Skid Loader with the Engine running. ALWAYS BE SURE to use the MANDATORY SAFETY SHUTDOWN PROCEDURE 9 (page 8) BEFORE lubricating the Loader.

NOTE: Use space provided in the Maintenance Chapter for recording Dates of Lubrication.

A sufficient amount of oil or grease at the correct intervals will prevent excessive part wear and early failure.

OILS

Loader and Engine operation greatly depends on correct grade, good quality lubricating oils. In addition to the following information, also refer to the Engine Manual (provided) for specific quantities, grade and ratings spelled-out by the Engine manufacturer.

CHAINCASES

Each Drive Chaincase requires 2 U.S. gallons (7.6 liters) of multi-viscosity (or equivalent good quality) motor oil. This quantity of oil should be maintained at all times. The oil in both Chaincases should be removed and new oil installed after every 500 hours of operation, or annually; refer to the Service Chapter for additional details.

ENGINE CRANKCASE

The Engine Crankcase Sump has a capacity of 6-1/3 U.S. quarts (6 liters) of lubricating oil. Refer to the Chart provided for the recommended oil viscosity to be used for different operating temperature ranges. Refer to the Engine Manual (provided) for additional Engine Crankcase oil information. Remove the Loader Bellyplate rear Access Cover to drain the Engine oil and replace the Filter Element.

NOTE: For a new Engine Oil Filter, order GEHL Part Number 079756.

HYDRAULIC OIL RESERVOIR

The Oil Reservoir for the Loader Hydraulic and Hydrostatic Systems has a capacity of 18 U.S. gallons (68 liters). An Oil Level Visual Indicator is provided on the Right Riser for convenient maintenance of the proper oil level at all times. Use Type F Automatic Transmission Fluid (installed at the factory), Type A (Suffix A), Dexron Automatic Transmission Fluid or equivalent Hydraulic Fluid which meets characteristics specified in the Hydrostatic Fluid Viscosity Chart provided.

The hydraulic oil Reservoir should be drained and new oil should be installed after every 500 hours of operation, or annually; refer to the Service Chapter for draining and refilling details.

PLANETARY GEARCASE

The Planetary Gearcase on each Hydrostatic Drive Motor has a capacity of 1 U.S. quart (0.9 liters) of 80W-90 oil. The oil level should be checked after every 500 hours or annually. Remove the Lower Pipe Plug to drain the oil. Add oil until it just starts to run out the Upper Pipe Plug Port. BE SURE both Pipe Plugs are tightly secured before operating the Loader.

NOTE: Beside the various oil level checks and replacements on the Loader and Engine, BE SURE to apply a few drops of oil to all Linkage Ball Joints after every 200 hours of operation or every 6 months.

GREASING

NOTE: Grease all fittings at the intervals listed. Use a good grade of Lithium based grease.

ENGINE OIL VISCOSITY INDEX
(Per API Specifications)

Temperature in F (C)	10 (-12) & Above	Below 10 (-12)
Viscosity (Type CC or SF)	30W, 10W-30 or 10W-40	10W, 5W-20 or 5W-30

HYDROSTATIC OIL VISCOSITY INDEX
(VI level 150 - 200 per SUS Specifications)

Temperature in F (C)	0 (-18)	100 (38)	210 (99)
Viscosity	5000 Maximum	180 Minimum	47 Minimum

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

SECTION 1

INTRODUCTION

This service manual covers the SL6620 and SL6625 Skid Loaders. The latest factory service information has been compiled by our Service and Engineering personnel to give you the best Service Information available. Follow all procedures carefully to avoid unnecessary delays and damage to any part of the Loader. Where procedures are given step by step, please follow them in order.

The Hydraulic System and the Engine are the two most critical systems of the Skid Loader, from a service standpoint. When any service is performed on the Hydraulic System, always clean the Hydraulic Components and Fittings before disconnecting any Hydraulic Lines, since contamination is the greatest cause of failure. For Engine repairs, consult your 200 Series Perkins Workshop Manual.

The Model Number and Serial Number are located on a Decal inside the Right Chassis Riser, above the Lift Cylinder Pivot.

"Right" and "Left" are determined from position on the Seat facing forward. From this position the Traction Control T-bar is on the "Left" and the Lift/Tilt Control T-bar is on the "Right".

The Perkins 4.154 Diesel Engine is used in the SL6620 and SL6625. The Engine Number is stamped on a machined pad on the right side of the Cylinder Block just above the Fuel Injection Pump. A typical Engine Number is GAB12345J.

TORQUE VALUES

The chart on the inside rear cover contains torque values for hardware used on this Loader. The grade of the Bolt can be identified by markings on the Bolt head. Most of the Bolts used are Grade 5. Use these torque values for all hardware except LN, TCS, TFS and SMS.

ABBREVIATIONS

AR	- As Required
AUX	- Auxiliary
BRKT	- Bracket
CB	- Carriage Bolt
CN	- Castellated Nut
CS	- Cap Screw (Hexagon Head)
DEG	- Degree
FLN	- Flanged Lock Nut
FLS	- Flanged Lock Screw
I.D.	- Inside Diameter
JIC	- Joint Industry Conference
JN	- Jam Nut
L	- Lock Washer
LH	- Left-Hand Thread
LN	- Lock Nut
LT	- Left
N	- Nut
NA	- Not Applicable
NF	- National Fine Thread
NILN	- Nylon Insert Lock Nut
NPT	- National Pipe Thread
O.D.	- Outside Diameter
P	- Plain Washer
RGT	- Right
RH	- Right Hand Thread
RHMS	- Round Head Machine Screw
SHSS	- Socket Head Set Screw
SL	- Self-Locking
SMV	- Slow Moving Vehicle
S/N	- Serial Number
Sq.	- Square
SQHSS	- Square Head Set Screw
T	- Tooth
TCS	- Thread-Cutting Screw
TFS	- Thread-Forming Screw
THD	- Thread
THMS	- Truss Head Machine Screw
WLS	- Whiz-Lock Screw

The GEHL® Company and the Automotive Society Engineers have adopted this **SAFETY ALERT SYMBOL**



to pinpoint characteristics which, if **NOT** properly followed, can create a safety hazard. When you see this symbol in this manual or on the unit itself, you are reminded to **BE ALERT! YOUR SAFETY IS INVOLVED.**

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Self Leveling Valve 75-79
Differential Relief Valve 79
Planetary Gearcase 79-83
Solenoid Valve 83
Control Valve 83-87
Auxiliary Hydraulic Tubes 88
Auxiliary Hydraulic Control Cables 89

SECTION 10 ELECTRICAL SYSTEM 91
Troubleshooting 91-92

SECTION 11 ENGINE 93
Introduction 93
Ordering Engine Parts 93
Troubleshooting 94-95
Service 96
Engine Oil Filter 96
Air Cleaner 96-97
Air Cleaner Element 97
Battery 97
Starter 98
Engine Exhaust Assembly 98-99
Fan Belt Adjustment 99-100
Radiator and Oil Cooler 100-102
Engine 102-104
Torque Specifications for Standard Machine Hardware 104-105

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

7. Drive Roll Pin out and remove Tilt Lever Arm.

8. Slide Trunnion with Needle Bearings off of T-Bar. Remove Washer, Retaining Ring and Rubber Boot.

Installation

1. Check Needle Bearings in Trunnion. Install new Needle Bearings, if necessary.

2. Slide Rubber Boot on T-Bar. Install Retaining Ring. Slide Washer and Trunnion on T-Bar.

3. Slide Tilt Lever Arm on T-Bar and install Roll Pin. Lever Arm **MUST** face the same direction as longer part of T-Bar Handle.

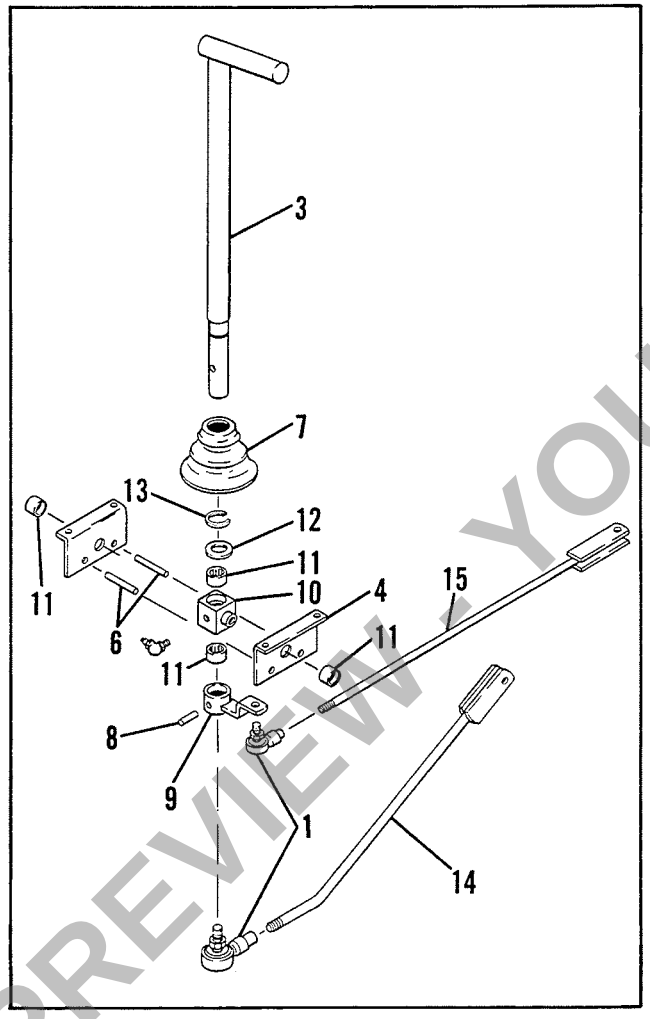


Fig. 7-12: T-Bar Assembly

KEY TO ILLUSTRATION

1. Control Rod Ends
2. Tilt Lever Arm
3. T-Bar
4. Lever Bracket
5. NILN (1) of (2)
6. Spacer
7. Rubber Boot
8. Roll Pin
9. Tilt Lever Arm
10. Trunnion
11. Needle Bearings
12. Washer
13. Retaining Ring
14. Lift Control Rod
15. Tilt Control Rod

4. Install T-Bar in Chassis. Slide Trunnion Shaft into Bearing in Outside Lever Bracket. Be sure T-Bar has the longer part of Handle facing inward, and Grease Fitting in Trunnion is to the front.

5. Install Spacers on long CSs in Outside Lever Bracket.

6. Slide Inside Lever Bracket onto Trunnion Shaft and insert CSs through Inside Lever Bracket. Attach (2) NILN. Leave hardware loose.

7. Attach Inside Lever Bracket to Chassis with (2) CS and L. Tighten all hardware.

8. Connect Control Rod Ends to bottom of T-Bar Tilt Lever Arm.

9. Grease Trunnion and slide Rubber Boot down. Attach Rubber Boot to Screws in Chassis.

10. Install Right Console and Floor Plate. Roll Overhead Guard down.

THROTTLE ASSEMBLY

HAND THROTTLE ADJUSTMENT (Fig. 7-13)

1. Lock Lift Arm up and roll Overhead Guard back.

2. Tighten LN to increase Spring Tension against Friction Pad, until Hand Throttle stays where it is positioned with the Engine running.

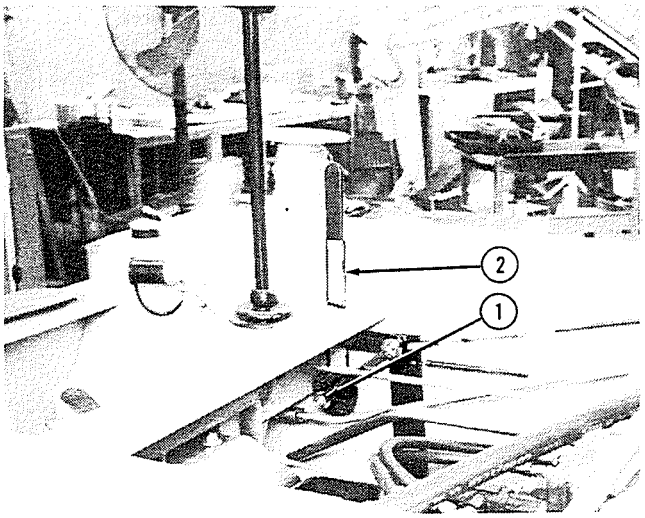


Fig. 7-13: Hand Throttle Adjustment

KEY TO ILLUSTRATION

1. LN
2. Hand Throttle

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

NOTE: Because of the difficulty of replacement, it is recommended that poly-pak Seal be replaced ONLY if there is noticeable external leakage of fluid from the Cylinder. If Seal MUST be replaced, soak Seal in hot water first, to make Seal flexible. Hold Seal, as shown, and install it in the groove in the Cylinder Head.

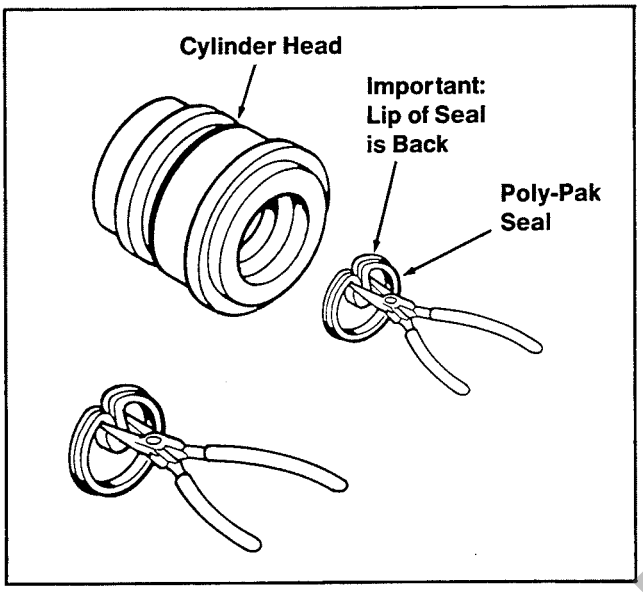


Fig. 9-6: Poly-Pak Seal

LIFT AND TILT SYSTEM GEAR PUMP (Figs. 9-7 and 9-8)

Removal (Fig. 9-7)

NOTE: ALWAYS clean exterior of Gear Pump before disconnecting any Hydraulic Lines. When removing Hydraulic Lines, cap ends to prevent contamination from getting into Hydraulic System. Fasten Hydraulic Lines in an upright position immediately after removing, to prevent more oil loss.

1. Lock Lift Arm up, roll Overhead Guard back, and remove Floor Plate.
2. Drain the oil from the Hydraulic Reservoir.
3. Remove the Suction Hose from the Male Elbow on the right side of the Gear Pump.
4. Remove the System Pressure Hose from the Male Elbow on the left side of the Pump.
5. Remove the (2) CS and L attaching the Gear Pump to the Pump Adapter and remove Gear Pump.

Installation (Fig. 9-7)

1. Check condition of Mounting O-ring and replace, if necessary.

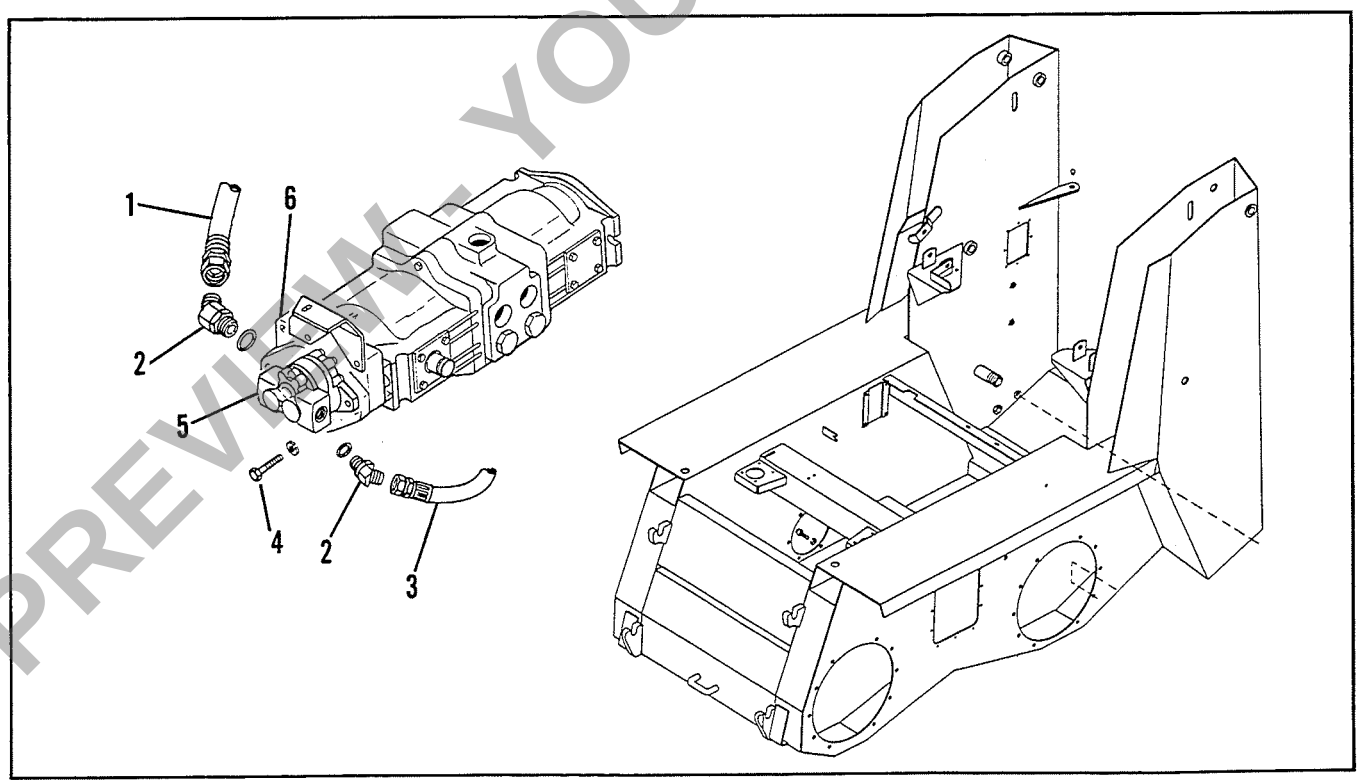


Fig. 9-7: Lift and Tilt System Gear Pump

KEY TO ILLUSTRATION

1. Suction Hose	3. Pressure Hose	5. Gear Pump
2. Male Elbow	4. CS & L (1) of (2)	6. Pump Adapter

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 12 of 114 pages

The full manual includes:

- All 114 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Gehl SL6620, SL6625 Shop Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual