Form No.
917002

SL46/4840
SL56/6640
Skid-Steer
Loaders



Service Manual

GEHL®

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SPECIFICATIONS

	4640	4840	5640	6640
Make of Engine	Deutz	Deutz	Deutz	Deutz
Model	F3M2011/BF3M2011	F4M2011	F4M2011/BF4M2011	BF4M2011
Fuel	Diesel	Diesel	Diesel	Diesel
Displacement	142 CID (2,3 L)	190 CID (3,1 L)	190 CID (3,1 L)	190 CID (3,1 L)
Horsepower - Net	46/60 hp (34/45 kW) @ 2600 rpm	60 hp (45 kW) @ 2500 rpm	60/82 hp (45/61 kW) @ 2500 rpm	82 hp (61 kW) @ 2500 rpm
Peak Torque	106/140 lb-ft (144/190 N•m) @ 1700/1600 rpm	144 lb-ft (195 N•m) @ 1700 rpm	144/199 lb-ft (195/270 N•m) @ 1700/1600 rpm	199 lb-ft (270 N•m) @ 1600 rpm
Operating Load - SAE*	1500 lbs (680 kg)	1700 lbs (771 kg)	2000 lbs (907 kg)	2400 lbs (1089 kg)
Operating Weight	6200/6250 lbs (2812/2835 kg)	6480 lbs (2939 kg)	7380/7430 lbs (3348/3370 kg)	7800 lbs (3538 kg)
Shipping Weight	5715/5545 lbs (2592/2515 kg)	5825 lbs (2642 kg)	6740/6790 lbs (3057/3080 kg)	7160 lbs (3247 kg)
Hydraulic Reservoir	12 US gal (45 L)	12 US gal (45 L)	16 US gal (61 L)	16 US gal (61 L)
Engine Oil	8.3 US qts (7,9 L)	11.5 US qts (10,8 L)	11.5 US qts (10,8 L)	11.5 US qts (10,8 L)
Fuel Tank	15/17 US gal (56,8/64,4 L)	17 US gal (64,4 L)	19 US gal (71,9 L)	24 US gal (90,9 L)
Hydraulic System Pressure	2750 PSI (190 bar)	2750 PSI (190 bar)	3000 PSI (207 bar)	3000 PSI (207 bar)
Standard Aux. Flow Rate	19 gpm (72 L/min)	19 gpm (72 L/min)	23 gpm (87,1 L/min)	23 gpm (87,1 L/min)
Hi-Flow Aux. Flow Rate	30 gpm (114 L/min)	30 gpm (114 L/min)	36 gpm (136,3 L/min)	36 gpm (136,3 L/min)

Specifications below apply to all 40 Series Models	
Capacities	
Chaincases (each)	8 US qts (7,5 L)
Electrical	
Battery	12-volt DC, 950 CCA
Starter	12-volt DC (2,3 kW)
Alternator	95 A
Hydraulic System	
Travel Speed - Single Speed	0 to 8.4 mph (0 to 13,5 km/h)
Travel Speed - Two-Speed (optional on 4840, 5640, 6640)	0 to 12.5 mph (0 to 20 km/h)

Tire Options	
10 (12) x 16.5 - 8 (10) - ply	High Clearance Flotation tires
10 (12) x 16.5 - 8 (10) - ply	Heavy Duty Poly-filled tires
10 (12) x 16.5 - 8 (12) - ply	Severe Duty tires
10 (12) x 16.5 - 8 (12) - ply	Severe Duty Poly-filled tires
6.50(7.50) x 16 Solid	Solid Rubber tires
33 x 15.50 x 16.5 - 12-ply	Heavy Duty 2000 II tires
14 x 17.5 - 14-ply	High Clearance Flotation tires

Buckets and Capacities			
Width - inches (millimeters)	**Bucket Description**	**Capacity (Heaped)**	
65 inches (1651 mm)	Dirt/Construction	10.8 cubic feet	0,31 cubic meters
65 inches (1651 mm)	Dirt/Construction	14.7 cubic feet	0,42 cubic meters
68 inches (1727 mm)	Dirt/Construction	15.3 cubic feet	0,43 cubic meters
68 inches (1727 mm)	Dirt/Construction	19.0 cubic feet	0,54 cubic meters
72 inches (1829 mm)	Dirt/Construction	20.4 cubic feet	0,58 cubic meters
65 inches (1651 mm)	Utility/Snow	18.6 cubic feet	0,53 cubic meters
72 inches (1829 mm)	Utility/Snow	32.5 cubic feet	0,92 cubic meters
15.75, 19.68, 24 inches (400, 500, 610 mm)	Pallet Fork	NA	NA

*Operating load rated with a 65" inch 4640/4840 (1651 mm) dirt/construction bucket or 68" inch 5640/6640 (1727 mm) dirt/construction bucket in accordance with SAE J818.

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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 one who operates or works on this equipment is familiar with these safety precautions. It is essential to have competent and careful operators, who are not physically or mentally impaired, and who are thoroughly trained in the safe operation of the machine and the handling of loads. It is recommended that the operator be capable of obtaining a valid motor vehicle operator's license.

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-steer 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 45º to avoid spilling electrolyte.



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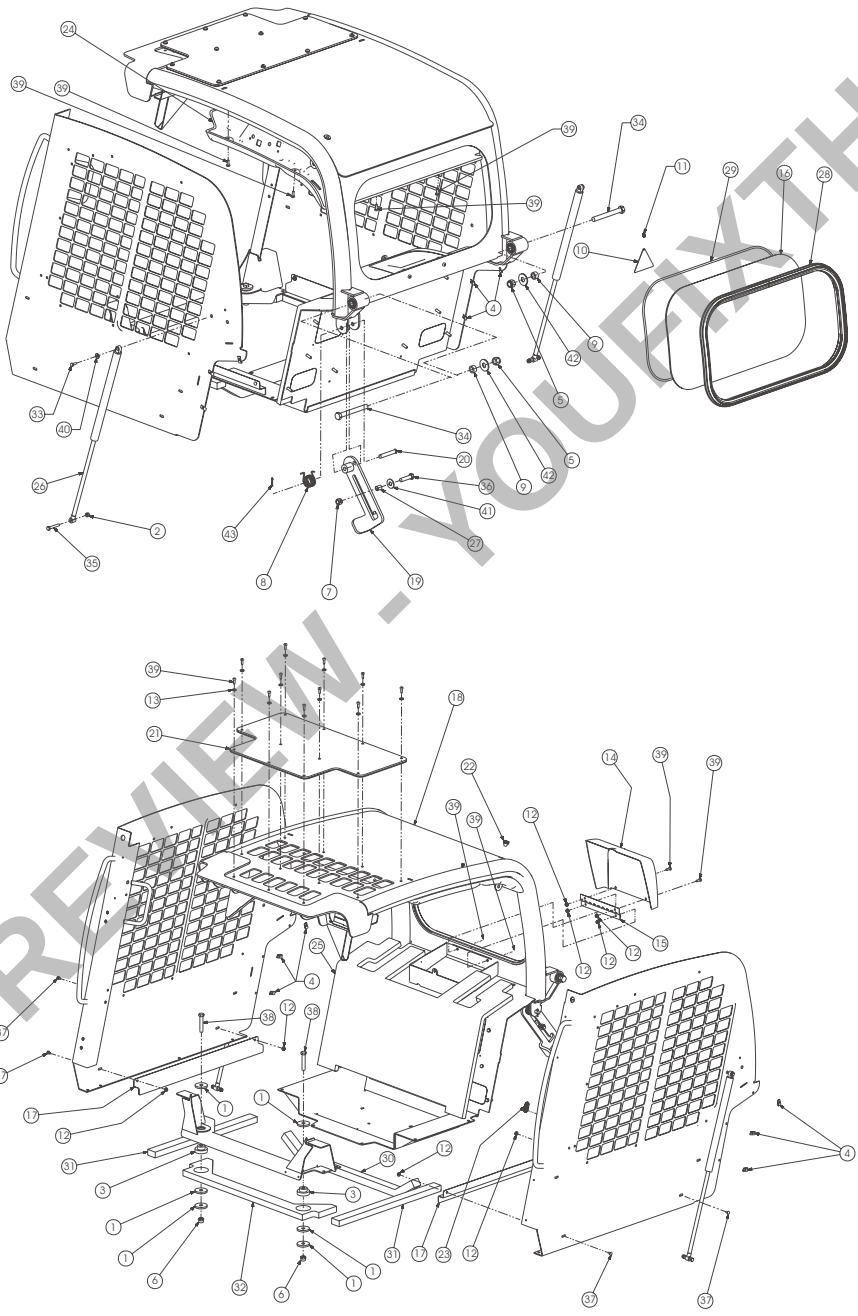
Introduction

Gehl 40 Series skid-steer loaders have a welded steel chassis. Maintenance, service and repair may be performed through standard access panels.

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 interlock switches.

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



1 WASHER/FLAT
2 NUT/LOCK
3 MTG/ISOLATION
4 NUT/SPEED
5 NUT/LOCK
6 NUT/LOCK
7 NUT/LOCK
8 SPRING/TORSION
9 BUSHING
10 TAG/RIPCORD
11 RING
12 NUT/LOCK™
13 WASHER/SEAL
14 COVER/BOX
15 HINGE/PIANO
16 WINDOW/REAR
17 CHANNEL
18 ROPS
19 SUPPORT/ROPS
20 PIN
21 WINDOW
22 GROMMET
23 GROMMET
24 HEADLINER
25 PAD FOAM
26 SPRING/GAS
27 SPACER/TUBE
28 WEATHERSTRIP
29 RIPCORD
30 SEAL/FOAM
31 SEAL/FOAM
32 SEAL/FOAM
33 SCREW/CAP
34 SCREW/CAP
35 SCREW/CAP
36 SCREW/CAP
37 BOLT/CARRIAGE
38 SCREW/CAP
39 SCREW/PHILLIPS
40 WASHER/FLAT
41 WASHER/FLAT
42 WASHER/FLAT
43 PIN/COTTER

Fig. 4-1 Exploded view of ROPS/FOPS components.

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Fig. 2-1 The lock pin secures the liftarm support device inside the left liftarm.



Fig. 2-2 Press in and hold the lock pin button and pull it out.

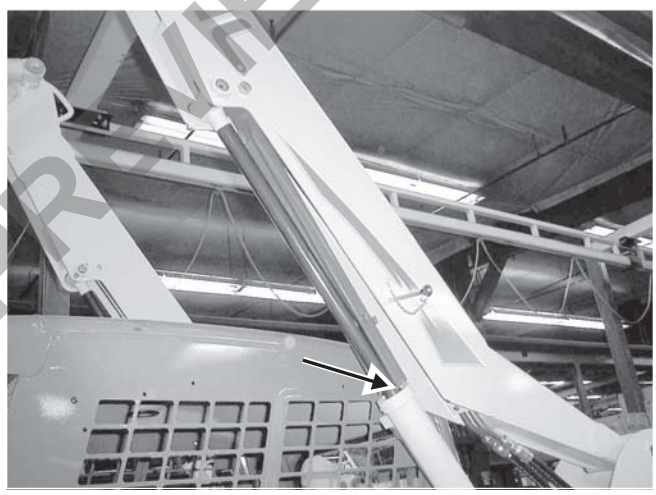


Fig. 2-3 The liftarm support device rests on top of the lift cylinder base.

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-steer 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 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 the keyswitch to the OFF position to stop the engine.
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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Introduction

This chapter covers removal, installation, assembly, and adjustment procedures for wheel drive system components on Gehl 40 Series skid-steer loaders. Wheel drive components covered in this chapter are shown below.

40 Series skid-steer loaders are equipped with a hydrostatic pump assembly coupled to the diesel engine providing hydrostatic power to the two fixed-displacement hydrostatic drive motors. The drive motors are directly connected to chaincases. Single speed or two-speed, each motor drives one set of wheels on each side of the loader through a chain and sprocket system.

Service procedures related to the hydrostatic pump and drive motors can be found in the *Hydrostatic System* chapter.

Wheel Drives Components

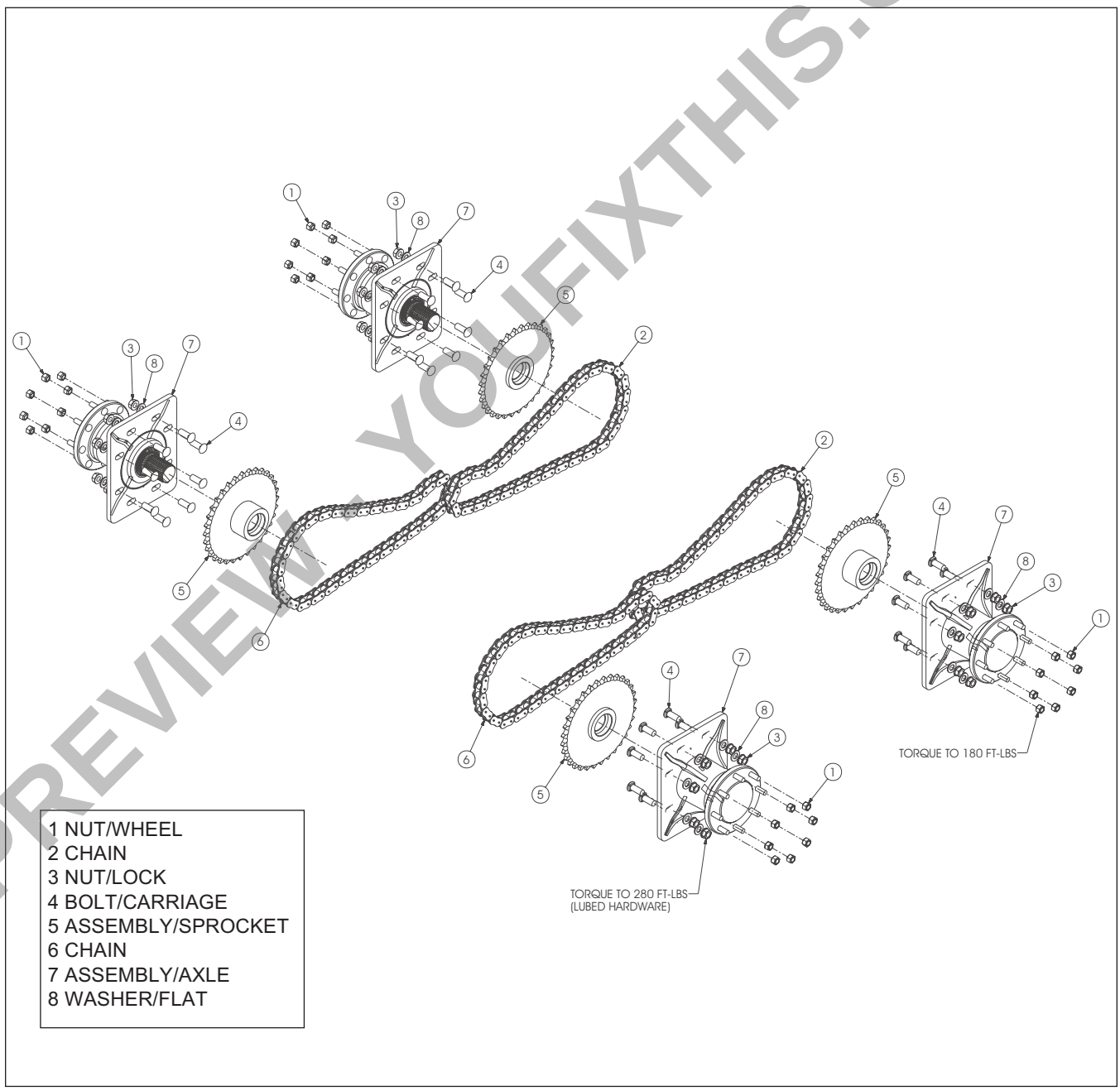


Fig. 5-1 Exploded view of the wheel drive components.

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Troubleshooting Guide

The following troubleshooting guide lists potential hydrostatic system problems, as well as possible causes and remedies, for Gehl 40 Series skid-steer 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. 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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Glow Control Module

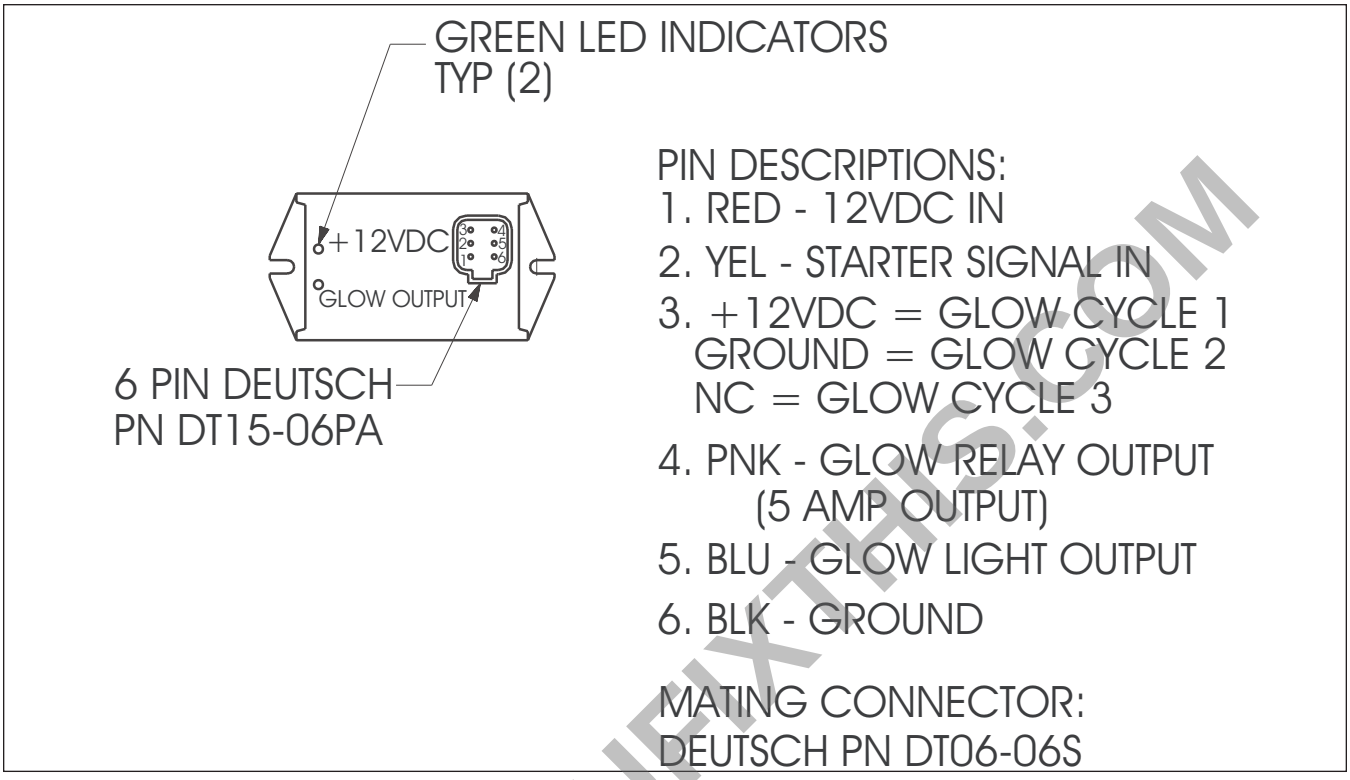


Fig. 9-14 Illustration of the glow control module.

Glow Control Module Time/Temp Cycle

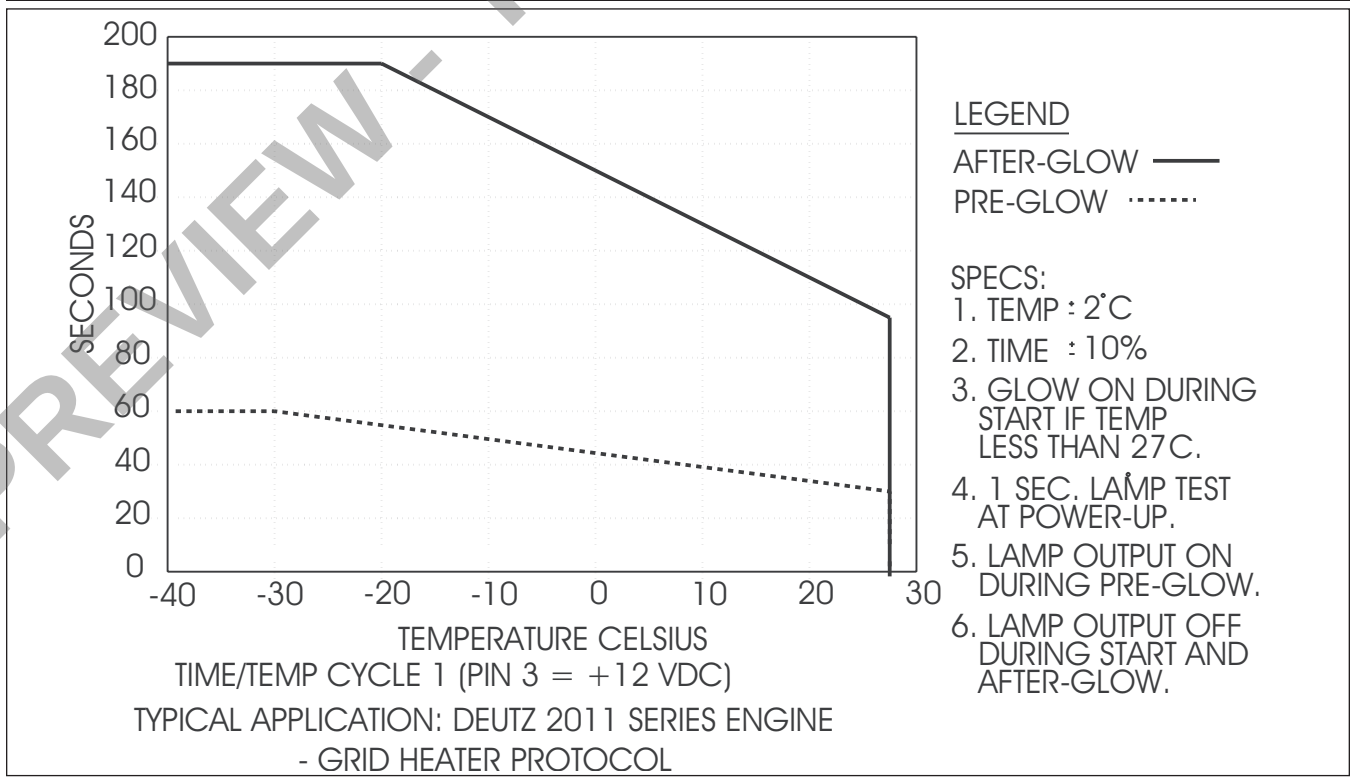
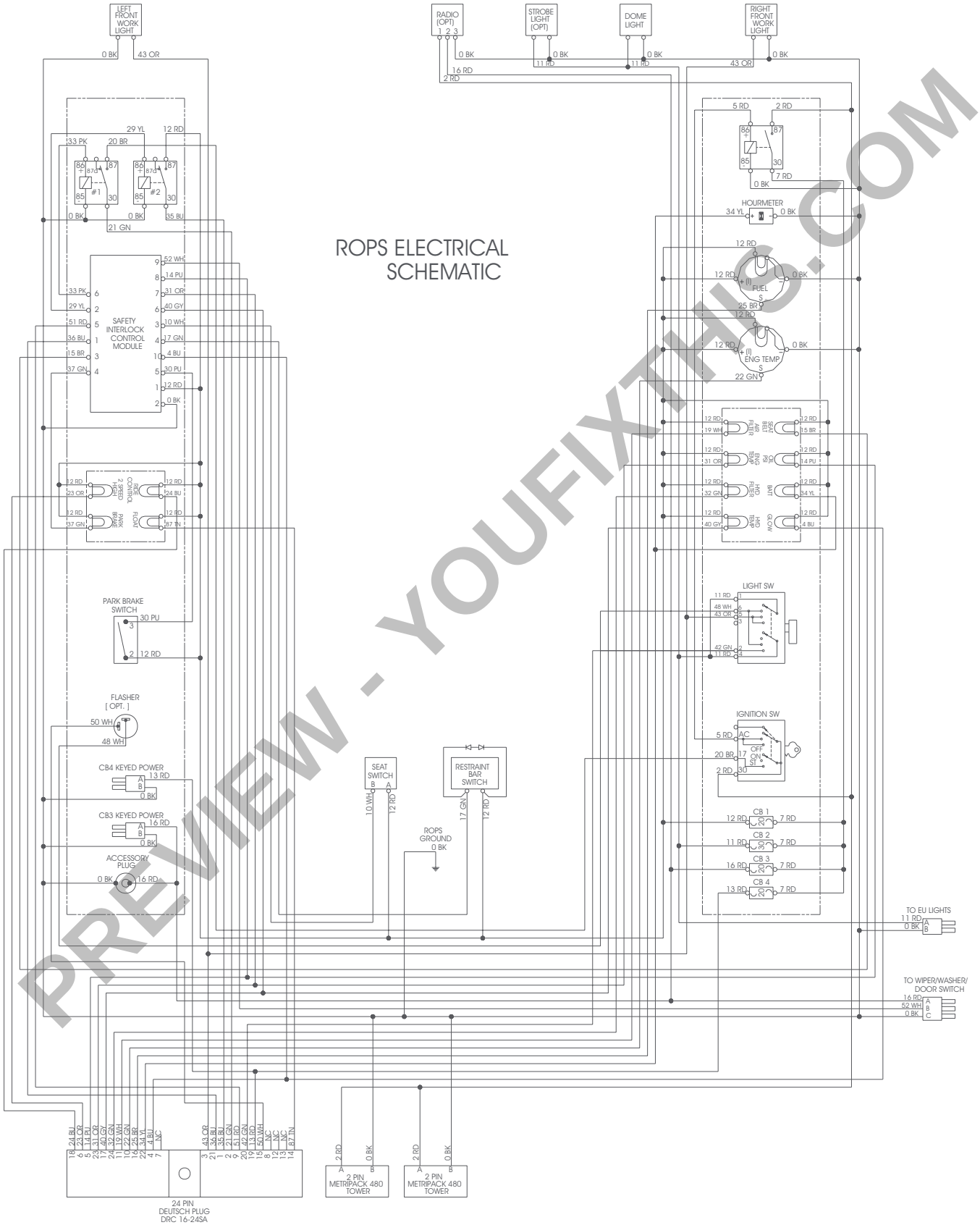


Fig. 9-15 Glow control module time and temperature chart.

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Electrical System Schematic - ROPS/FOPS



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Hydraulic System - High-Flow Auxiliary Components - SL5640

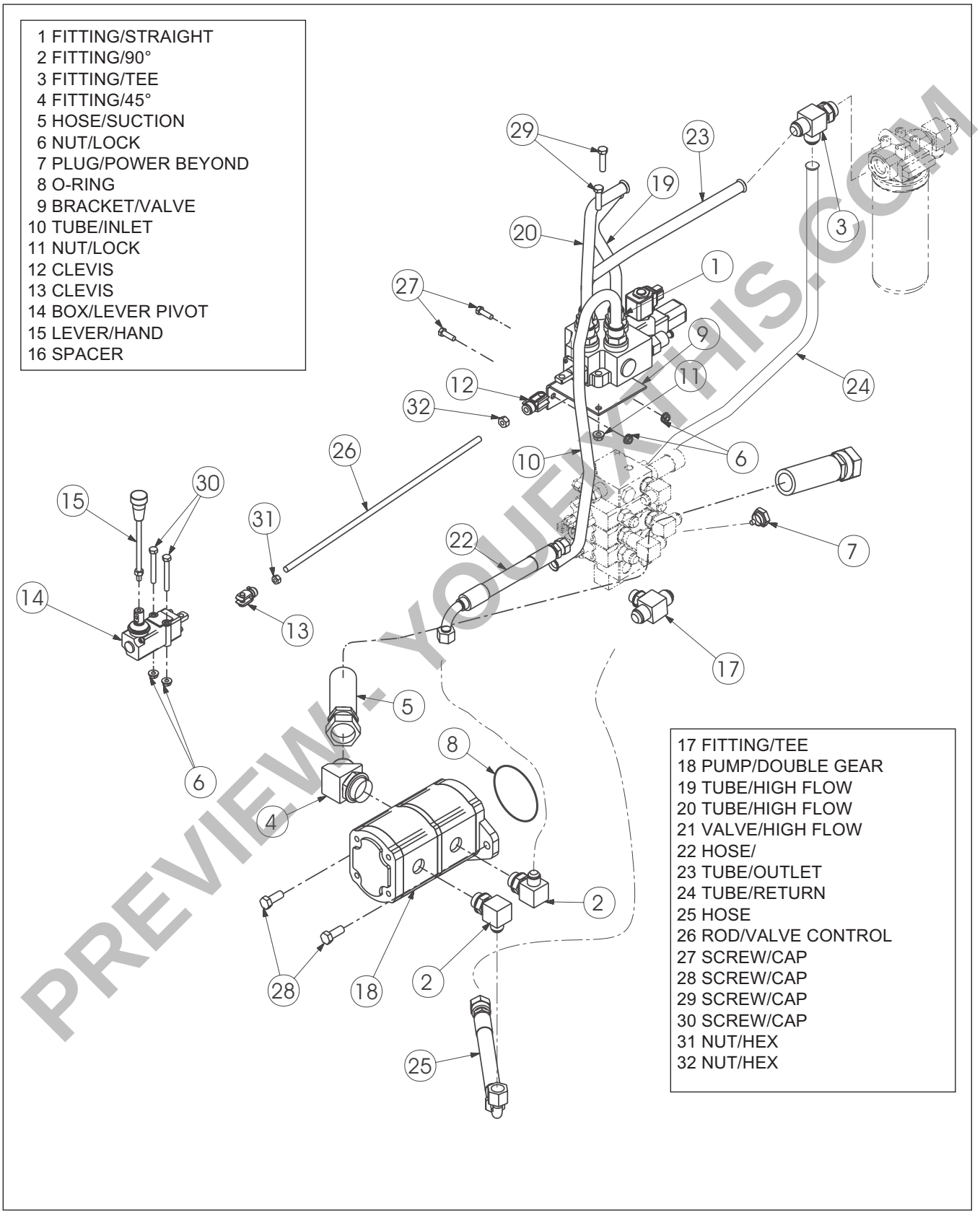


Fig. 8-6 Exploded view of the SL5640 high-flow auxiliary hydraulic system.

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