Gehl V270
Gehl V330
Mustang 2700V
Mustang 3300V

Form No.
917435
Revision B
04/11

SKID-STEER LOADERS





Service Manual

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SPECIFICATIONS

Model	V270 / 2700V	V330 / 3300V
Engine Make	Yanmar	Yanmar
Engine Model	4TNV98T-ZNMS	4TNV98T-ZNMS
Fuel	Diesel	Diesel
Displacement	202 CID (3,31 L)	202 CID (3,31 L)
Horsepower - Net	84 hp (63 kW) @ 2500 rpm	84 hp (63 kW) @ 2500 rpm
Peak Torque	215 lbf-ft. (292 N•m) @ 1850 rpm	215 lbf-ft. (292 N•m) @ 1850 rpm
Rated Operating Capacity*	2700 lbs. (1225 kg)	3300 lbs. (1497 kg)
Operating Weight	8100 lbs. (3674 kg)	9010 lbs. (4087 kg)
Shipping Weight	7300 lbs. (3211 kg)	8400 lbs. (3810 kg)
Capacities	**Capacities**	
Engine Oil	11.0 US qts. (10,4 L)	11.0 US qts. (10,4 L)
Fuel Tank	20.0 US gal. (75,7 L)	20.0 US gal. (75,7 L)
Chaincase (each)	10.0 US qts. (9,5 L)	10.0 US qts. (9,5 L)
Hydraulic Reservoir	10.5 US gal. (39,7 L)	10.5 US gal. (39,7 L)
Engine Coolant	9.0 US qts. (8,5 L)	9.0 US qts. (8,5 L)
Electrical System	**Specifications**	
Battery	12-V DC, Group 31, 950 CCA, 170 Res.	12-V DC, Group 31, 950 CCA, 170 Res.
Starter	12-V DC (3,0 kW)	12-V DC (3,0 kW)
Alternator	95 A	95 A
Hydraulic System	**Specifications**	
Hydraulic System Relief Pressure	3300 psi (228 bar)	3450 psi (238 bar)
High-Flow System Relief Pressure	3200 psi (221 bar)	3200 psi)221 bar)
Standard Auxiliary Flow Rate	21.75 gpm (82,3 L/min)	21.75 gpm (82,3 L/min)
High-Flow Auxiliary Flow Rate	36.3 gpm (137,4 L/min)	36.3 gpm (137,4 L/min)
Travel Speed - Single-Speed	0 to 8.1 mph (0 to 13,03 km/h)	0 to 8.1 mph (0 to 13,03 km/h)
Travel Speed - Two-Speed (option)	0 to 11.9 mph (0 to 19,2 km/h)	0 to 11.9 mph (0 to 19,2 km/h)
Tire Options	**Description**	
12 x 16.5 Heavy-Duty 10-Ply	Flotation	Flotation
12 x 16.5 Heavy-Duty 10-Ply	Flotation, Foam-Filled	Flotation, Foam-Filled
33 x 15.5 x 16.5 Heavy-Duty 12-Ply	Extra Wide	Extra Wide
14 x 17.5 Heavy-Duty 12-Ply	Flotation	Flotation
12 x 16.5 Severe-Duty 12-Ply	Severe Duty	Severe Duty
12 x 16.5 Severe-Duty 12-Ply	Severe Duty, Foam-Filled	Severe Duty, Foam-Filled
12 x 16.5 Heavy-Duty 10-Ply	Flotation, Quik-Gel	Flotation, Quik-Gel
14 x 17.5 Severe-Duty 14-Ply	Flotation	Flotation
12 x 16.5 Solid-Flex	Solid, Foam-Filled	Solid, Foam-Filled
14 x 17.5 Solid-Flex	Solid, Foam-Filled	Solid, Foam-Filled
8 x 16 Solid Rubber	Solid Rubber	Solid Rubber
Buckets and Capacities		
Width - Description	**Capacity (Heaped)**	
70 inches (1778 mm) - Dirt/Construction	16.9 cubic feet; (0,48 cubic meters)	16.9 cubic feet; (0,48 cubic meters)
74 inches (1879 mm) - Dirt/Construction	20.2 cubic feet; (0,57 cubic meters)	20.2 cubic feet; (0,57 cubic meters)
15.75-19.68-24 inches (400-500-610 mm) Pallet	Not Applicable	Not Applicable

* V270/2700V Models: Operating load rated with an 70 in. (1778 mm) 16.1 cu. ft. (0.46 m3) Dirt Construction bucket with spill-guard and 12 x 16.5 NHS tires in accordance with SAE J818 and ISO 14397-1.

* V330/3300V Models: Operating load rated with an 74 in. (1879 mm) 19.2 cu. ft. (0.54 m3) Dirt Construction bucket with spill-guard and 14 x 17.5 NHS tires in accordance with SAE J818 and ISO 14397-1.

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General Information

WARNING

NEVER service this unit when any part of the machine is in motion. ALWAYS BE SURE to exercise the "Mandatory Safety Shutdown Procedure" (see *Safety* chapter) BEFORE servicing this equipment.

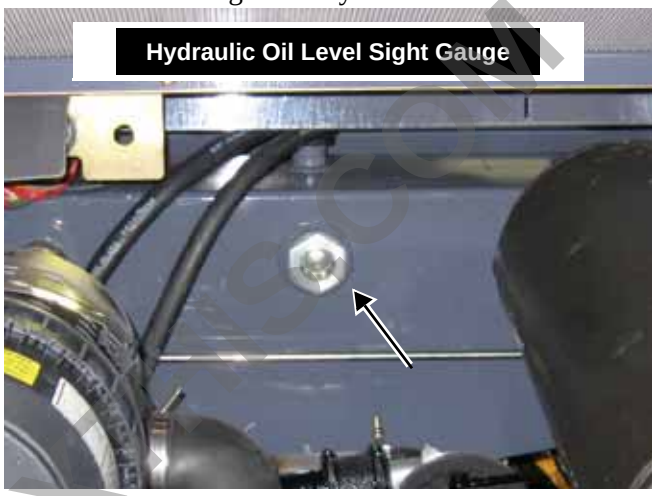
Routine lubrication is an important factor in preventing excessive part wear and premature failures. Loader and engine operation depend on using correct grade, high-quality lubricating oils. This chapter and the chart below list locations, temperature ranges and types of recommended lubricants to be used when servicing this machine. In addition, refer to the engine manual for specific grades and ratings as specified by the engine manufacturer.

IMPORTANT

Whenever service is performed on hydraulic components (valves, cylinders, hoses, etc.), fuel tanks and lines, care must be taken to prevent discharging fluid onto the ground. Catch and dispose of fluid per local waste disposal regulations.

Hydraulic Oil Reservoir

The oil reservoir for hydraulic and hydrostatic systems has a capacity of 10.5 U.S. gallons (39,7 liters). An oil level sight gauge is located on the back of the reservoir, which can been seen with the engine cover raised for convenient checking of the hydraulic oil level.



The hydraulic oil reservoir should be drained and refilled after every 1000 hours of operation or annually (whichever occurs first).



Hydraulic System Reservoir	Chaincases	Grease Fittings	Crankcase Oil	Anti-Freeze Coolant
Use Petro-Canada Premium HVI60, Mobil DTE 15M or equivalent that contains anti-rust, anti-foam, and anti-oxidation additives and conforms to ISO VG46. Capacity: 10.5 Gallons (39,7 L)	Use SAE grade 15W-40 or 10W-30 motor oil. Capacity (each side): 10.0 Quarts (9,5 L)	Use lithium-based grease	Below 32°F (0°C) use SAE Grade* 10 or 10W-30 Above 32°F (0°C) use SAE Grade* 15W-40 *Service Classification: API - CF-4/SL-4 Capacity (w/ filter change): 11.0 Quarts (10,4 L)	Add a mixture of 50% water, 50% ethylene glycol to the recovery tank if coolant level in recovery tank is low.

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Lift Arm Support Device

WARNING

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

Many service procedures require a raised lift arm to allow easier access to loader components. For operator and service personnel safety, a lift arm support device is standard on Gehl and Mustang skid-steer loaders. Used as a cylinder block, it helps prevent a raised lift arm from unexpectedly lowering.

BE SURE to engage the lift arm support device whenever the lift arm is raised. When the device is not being used, secure it to the right side timing link on the lift arm using the clamping knob provided.

The lift arm 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 lift arm support device.

Lift Arm Support Device Engagement

1. Raise the lift arm fully.
2. Turn keyswitch to OFF position to stop engine.
3. Have an assistant remove the lift arm support device from its storage location and place the lift arm support device on either the left or right cylinder rod..





4. Restart the engine.
5. Slowly lower the lift arm until the support device contacts the top end of the lift cylinder.
6. Be sure the support device is secure against the cylinder end. Then, stop the engine, remove the key and leave the operator's compartment.

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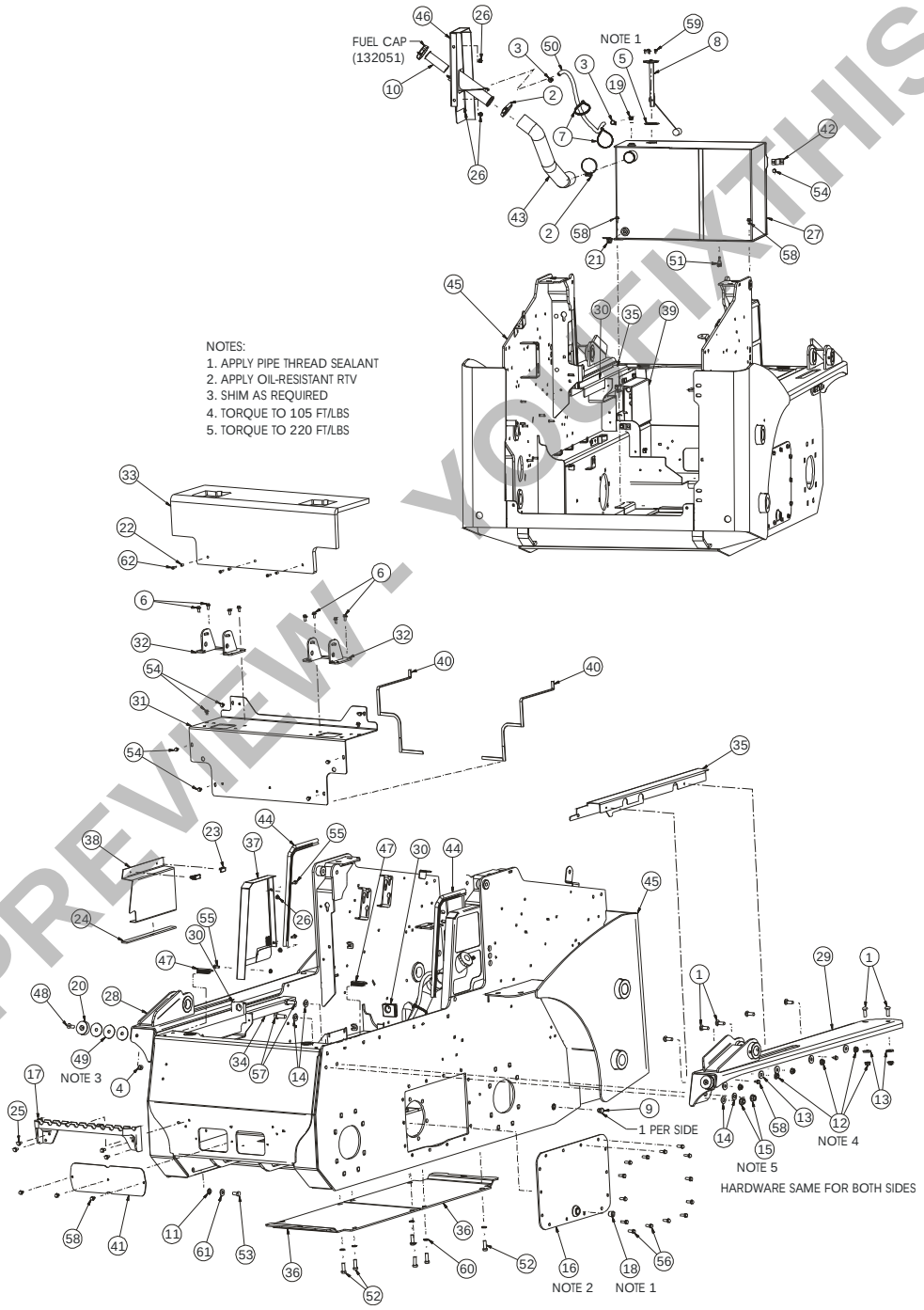
Introduction

Gehl V270/V330 and Mustang 2700V/3300V model skid-steer loaders have a welded steel chassis. Maintenance, service and repair may be performed through standard access panels.

Two side chaincases 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 lift arm 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.

Mainframe (Chassis) Components - V330/3300V and Later V270/2700V Models



1 BOLT/CARRIAGE
2 CLAMP/HOSE
3 CLAMP/HOSE
4 NUT/HEX LOCK
5 GASKET/FUEL SENDER
6 SCREW/CAP LOCK
7 TIE/NYLON
8 SENDER/FUEL
9 PLUG
10 STRAINER/FUEL FILL
11 WASHER/SEAL
12 NUT/SPIRALOCK™
13 WASHER/FLAT
14 WASHER/FLAT
15 NUT/SPIRALOCK™
16 COVER/CHAINCASE
17 STEP
18 PLUG/PIPE SQ. SKT.
19 FITTING/90º
20 STOP/DOWN
21 VALVE/FUEL SHUT OFF
22 SPACER
23 LATCH/SWELL
24 STRIP/FOAM
25 SCREW/TAPPING
26 NUT/LOCK
27 TANK//FUEL
28 T-LINK FENDER/RIGHT
29 T-LINK FENDER/LEFT
30 PLUG/PASS THROUGH
31 COVER/CROSSMEMBER
32 BASE/JOYSTICK
33 COVER/CROSSMEMBER
34 FILLER/ROPS RIGHT
35 FILLER/ROPS LEFT
36 BELLY PAN
37 COVER/RIGHT
38 COVER/PANEL RIGHT
39 COVER/PANEL LEFT
40 SEAL
41 COVER/CLEAN-OUT
42 PLATE/RETAINER
43 HOSE/FILL
44 SEAL/BULB 90°
45 CHASSIS
46 COVER/FUEL
47 SEAL/FILLER PLATE
48 SCREW/CAP FLAT
49 SHIM
50 HOSE/FUEL
51 FITTING/90º
52 SCREW/CAP
53 SCREW/CAP
54 SCREW/TAPPING
55 BOLT/CARRIAGE
56 SCREW/MACHINE
57 SCREW/CAP
58 SCREW/TAPPING
59 SCREW/TAPPING
60 WASHER/LOCK
61 WASHER/FLAT
62 SCREW/TORX

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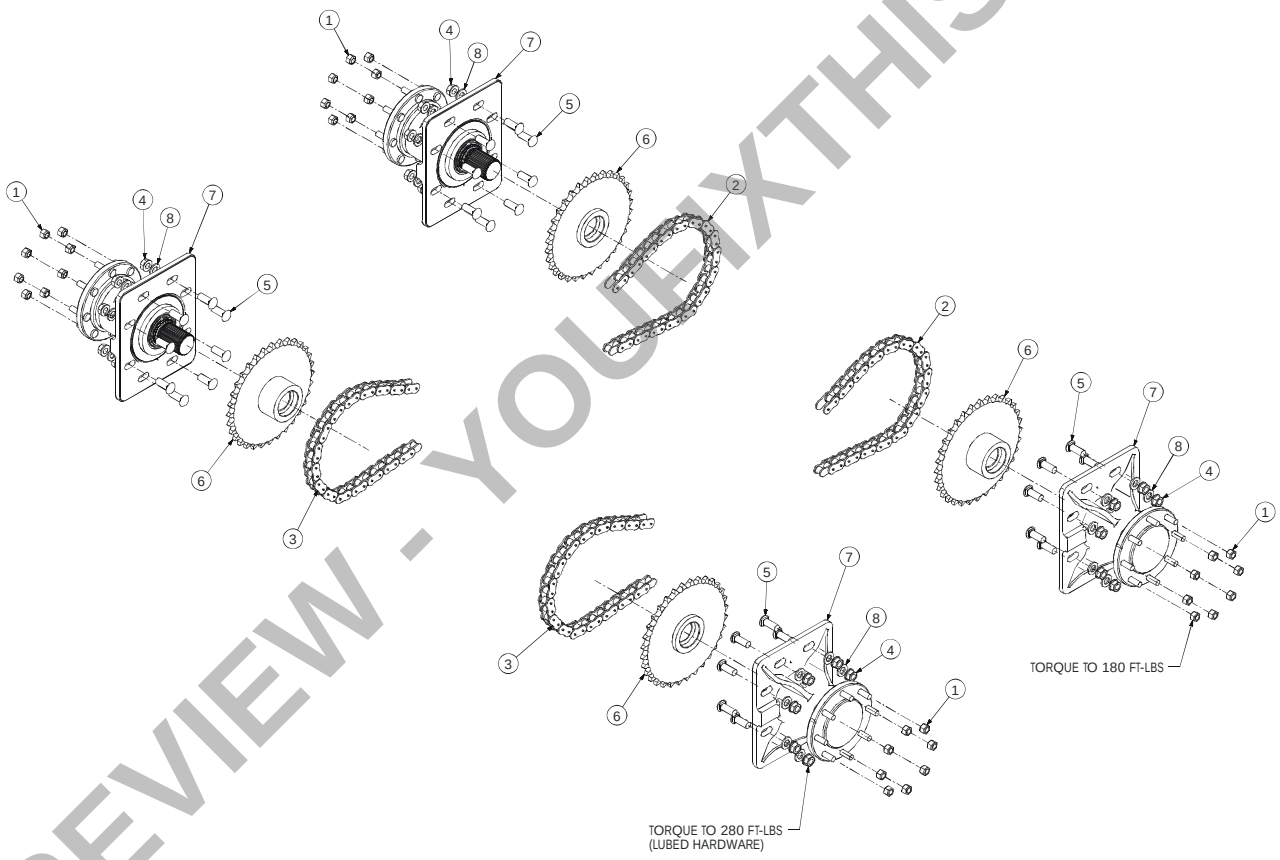
Introduction

This chapter covers removal, installation, assembly and adjustment procedures for wheel drive system components on Gehl V270/V330 and Mustang 2700V/3300V model skid-steer loaders. Wheel drive components covered in this chapter are shown below.

Gehl V270/V330 and Mustang 2700V/3300V model 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. Each motor, single-speed or two-speed, drives one set of wheels on each side of the loader through a chain and sprocket system.

Service procedures for the hydrostatic pumps and drive motors are in the *Hydrostatic System* chapter.

Wheel Drive Components



1 NUT/HEX LUG
2 CHAIN
3 CHAIN
4 NUT/SPIRALOCK
5 BOLT/CARRIAGE
6 ASSEMBLY/SPROCKET
7 ASSEMBLY/AXLE
8 WASHER/FLAT

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Installation Procedure - Follow all warnings first, then reverse the removal steps.

NOTE: It is recommended that new o-rings for pressure hoses and flat-faced fittings (on or attaching to the drive motor) should be installed prior to the reinstallation of the drive motor. It is also recommended that a new o-ring on the mating surface of the drive motor is installed before reinstallation of the drive motor to the chassis. Scrape off old gasket material and apply new sealant to mating surface of the drive motor, and before reassembly to the chassis.

CHAPTER NOTES

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Charge Pressure Test and Adjustment

Gehl V270/V330 and Mustang 2700V/3300V model skid-steer loaders have, as standard equipment, a charge pressure test port as part of the hydrostatic pump system. Before performing the following test, run the skid-steer loader to be sure the hydraulic oil is at normal operating temperature.

NOTE: This test requires a minimum of a 500 psi (34.5 bar) pressure gauge.

⚠ WARNING

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

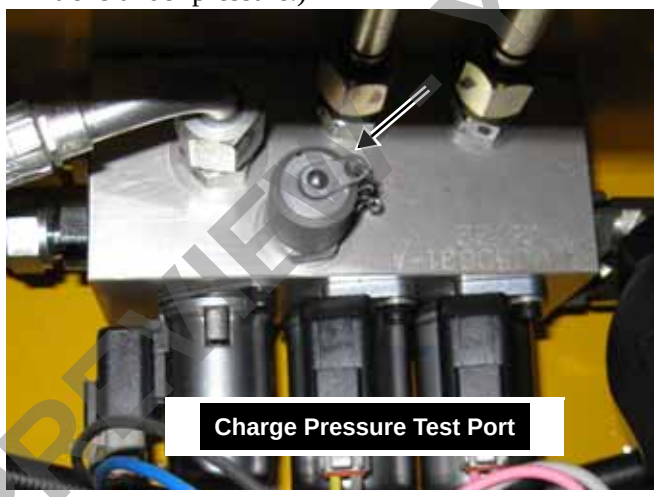
• Shut off the engine.

• Tilt back ROPS/FOPS until lock engages.

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

Test Procedure

1. Locate the three- or five-bank manifold on the right side chaincase housing, bolted to the chassis.
2. Remove the metal cap from the test port (ISO 15171-2, coupling with M16x2 end for connections under pressure.)





3. Install a pressure gauge on the charge pressure test port.
4. Restart the engine and check the pressure reading on the gauge. The gauge should read as follows:

   Hand/Foot Controls: 250 - 300 psi (17 - 21 bar)

   Dual Joystick Controls: 435 psi (30 bar)
5. If the pressure reading on the gauge is either lower or higher than specified, refer to the manufacturer's service manual for the hydrostatic pump, and the charge pressure adjustment procedure that follows.
6. When finished, reinstall the metal cap on the test port.

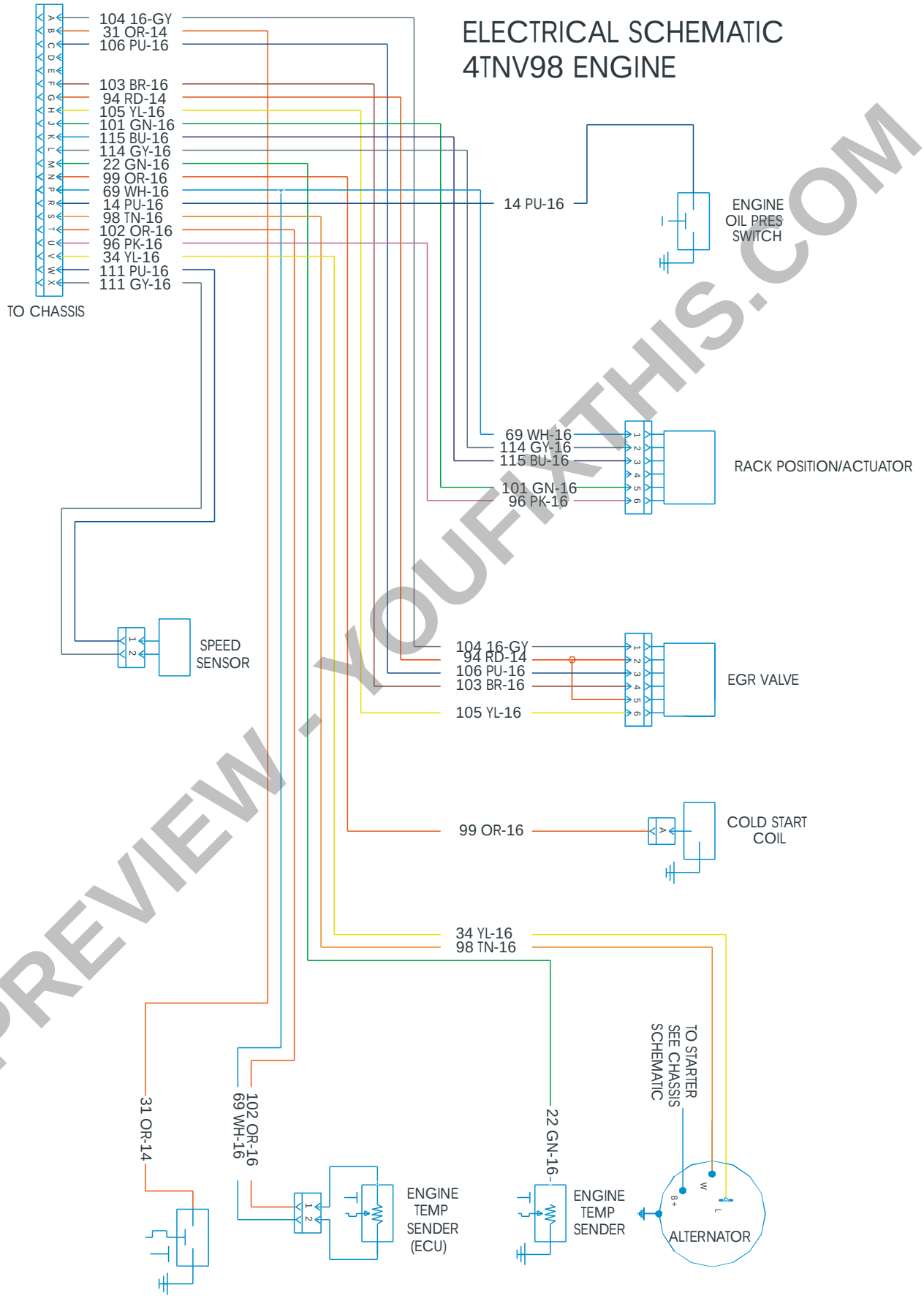
Adjustment Procedure

Add or remove shims on the charge pressure relief valve (on the hydrostatic pump, see next section) to adjust the charge pressure. Add shims to increase the charge pressure; remove shims to decrease the charge pressure.

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Electrical Engine Schematic



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Fan Shroud and Radiator/Cooler Mount Plates Removal and Installation

Removal Procedure

WARNING

BEFORE beginning this service procedure, perform the following SAFETY procedure:

• Shut off the engine and allow to cool.

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

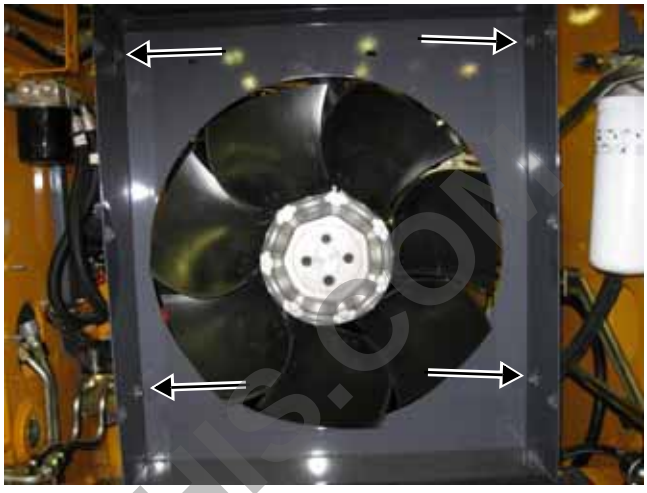
WARNING

DO NOT attempt to service any part of radiator/oil cooler system until engine has been allowed to cool. Serious injury may result from high temperature oil or water coolant or high pressure.

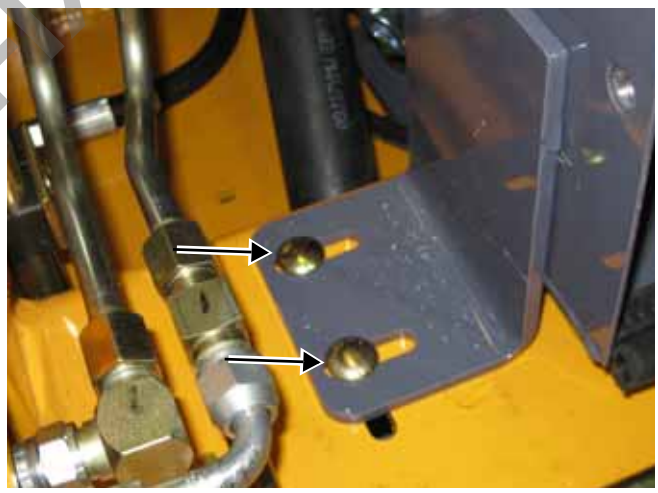
1. Remove the hydraulic reservoir drain plug and drain the hydraulic oil into a suitable container. Refer to the procedure in the *Lubrication* chapter.

NOTE: Hydraulic oil lines should be plugged after disconnecting to prevent contaminants from entering the hydraulic system. If the hydraulic lines are plugged after disconnecting to prevent leakage, it should not be necessary to drain the hydraulic reservoir.

2. Remove the radiator/cooler per the procedure in this chapter.
3. Remove two flange screws on each side securing the shroud assembly to cooler mounting plates that are secured to the floor of the chassis.



4. Remove the fan shroud assembly.
5. Unbolt two carriage bolts securing the cooler mounting plates to the floor of the chassis, one on each side of the skid-steer loader.



6. Remove both of the cooler mounting plates.

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

* BE SURE and uncap/unplug the hydraulic oil lines prior to reconnecting them to the radiator/oil cooler.

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