Mustang 2066
Mustang 2076
Mustang 2086

Gehl 5640E
Gehl 6640E
SKID-STEER LOADERS

with Tier3 Yanmar Engine

SERVICE MANUAL
Addendum

PART #917292

Revision B - 05/09

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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 everyone 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 and Mustang Manufacturing 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 Lift Arm 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 Mustang service parts, BEFORE operating this equipment.

Attachments - Gehl and Mustang skid-steer loaders are designed and intended to be used only with Gehl Company and Mustang Manufacturing Company attachments or approved referral attachments. The Gehl Company and Mustang Manufacturing 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

	2066	2076/5640	2086/6640
Make of Engine	Yanmar	Yanmar	Yanmar
Model	4TNV98-ZNMS	4TNV98T-ZNMS	4TNV98T-ZNMS
Fuel	Diesel	Diesel	Diesel
Displacement	202 in^3 (3,31 L)	202 in^3 (3,31 L)	202 in^3 (3,31 L)
Horsepower - Net	68.4 hp (51,0 kW) @ 2500 rpm	84.4 hp (62,9 kW) @ 2500 rpm	84.4 hp (62,9 kW) @ 2500 rpm
Peak Torque	182 lb-ft (247 Nm) @ 1600 rpm	222 lb-ft (301 Nm) @ 1850 rpm	222 lb-ft (301 Nm) @ 1850 rpm
Operating Load - SAE*	2018 lbs. (915 kg)	2018 lbs. (915 kg)	2581 lbs. (1171 kg)
Operating Weight	7460 lbs. (3384 kg)	7460 lbs. (3384 kg)	7900 lbs. (3583 kg)
Shipping Weight	6716 lbs. (3046 kg)	6716 lbs. (3046 kg)	7106 lbs. (3223 kg)

Specifications below apply to all 2066/76/86 and 56/6640 Models	
Capacities	
Engine Oil	11.8 U.S. qts. (11,2 L)
Fuel Tank	24 U.S. gal (91 L)
Chaincase (each)	9 U.S. qts. (8,5 L)
Hydraulic Reservoir	16 U.S. gal. (61 L)
Engine Coolant	12 U.S. qts. (11,4 L)
Electrical	
Battery	12-Volt DC, 950 CCA, Group 3, 170 Reserve
Starter	12-Volt DC (3,0 kW)
Alternator	14-Volt DC, 95 A
Hydraulic System	
Hydraulic System Pressure	3000 psi (207 bar)
Standard Aux. Flow Rate	21.5 gpm (81,4 L/min)
Hi-Flow Aux. Flow Rate (2076/86 only)	35.8 gpm (135, L/min)
Travel Speed - Single-Speed	8.1 mph (13,03 km/h)
Travel Speed - Two-Speed	12.3 mph (19,8 km/h)

Tire Options	
10 (12) x 16.5 - 8-ply (10-ply)	High Clearance Flotation tires
10 (12) x 16.5 - 8-ply (10-ply)	Heavy Duty Poly-filled tires
10 (12) x 16.5 - 8-ply (12-ply)	Severe Duty tires
10 (12) x 16.5 - 8-ply (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)**	
70 inches (1778 mm)	Dirt/Construction	15 cubic feet	0,42 cubic meters
70 inches (1778 mm)	Dirt/Construction	19 cubic feet	0,54 cubic meters
74 inches (1879 mm)	Dirt/Construction	20.4 cubic feet	0,58 cubic meters
74 inches (1879 mm)	Utility	27 cubic feet	0,76 cubic meters
74 inches (1879 mm)	Utility/Snow	32.5 cubic feet	0,92 cubic meters
92 inches (2336 mm)	Snow	41.1 cubic feet	1,16 cubic meters
67.5 inches (1715 mm)	Earth and Foundry	14 cubic feet	0,40 cubic meters
15.75, 19.68, 24 inches (400, 500, 670 mm)	Pallet Fork	NA	NA

*Operating load rated with a 70.0" inch (1778 mm) 2066/2076 dirt and construction bucket in accordance with SAE J818.

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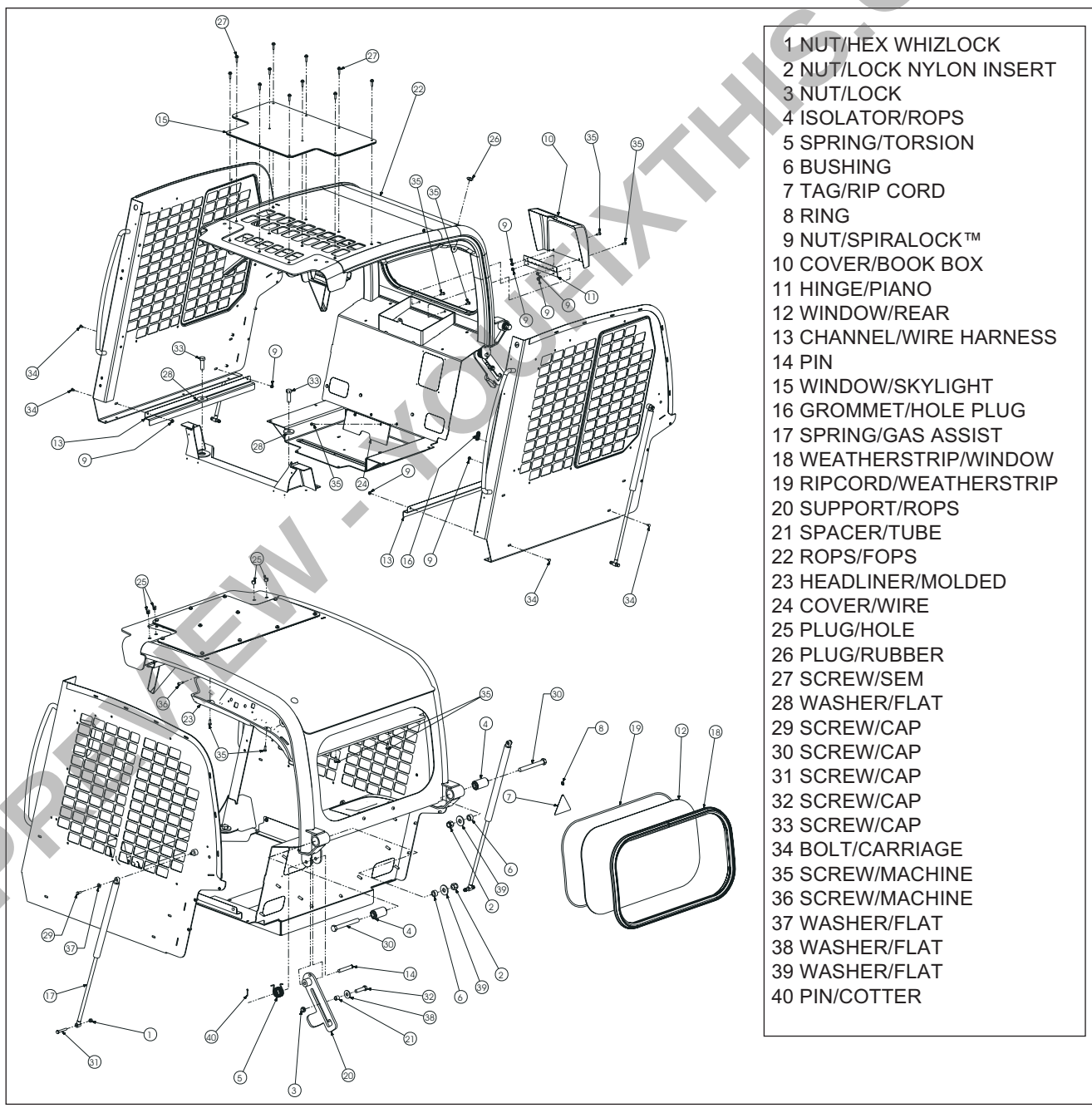
Introduction

Gehl 5640E/6640E and Mustang 2066/76/86 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 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 interlock switches.

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



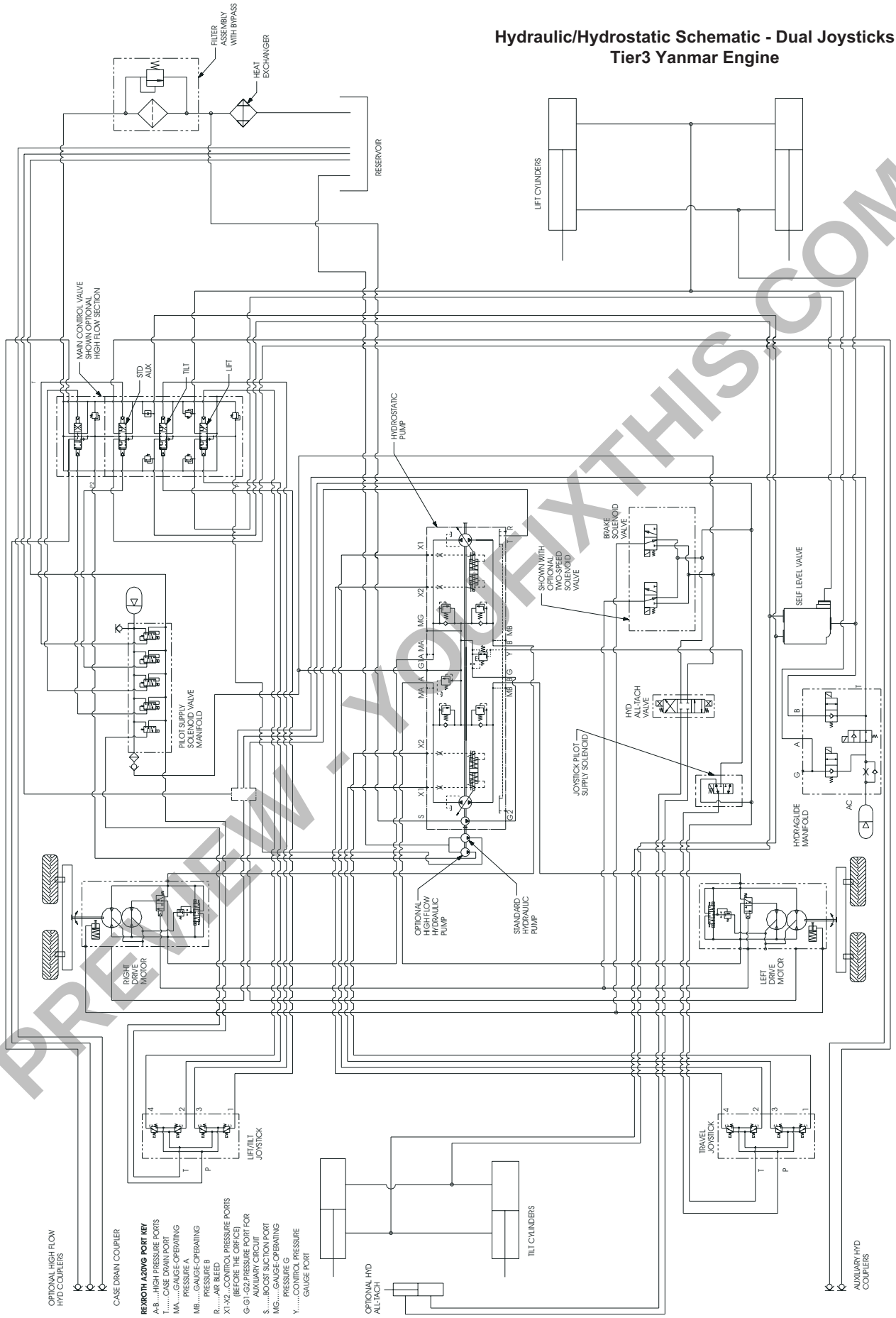
1 NUT/HEX WHIZLOCK
2 NUT/LOCK NYLON INSERT
3 NUT/LOCK
4 ISOLATOR/ROPS
5 SPRING/TORSION
6 BUSHING
7 TAG/RIP CORD
8 RING
9 NUT/SPIRALOCK™
10 COVER/BOOK BOX
11 HINGE/PIANO
12 WINDOW/REAR
13 CHANNEL/WIRE HARNESS
14 PIN
15 WINDOW/SKYLIGHT
16 GROMMET/HOLE PLUG
17 SPRING/GAS ASSIST
18 WEATHERSTRIP/WINDOW
19 RIPCORD/WEATHERSTRIP
20 SUPPORT/ROPS
21 SPACER/TUBE
22 ROPS/FOPS
23 HEADLINER/MOLDED
24 COVER/WIRE
25 PLUG/HOLE
26 PLUG/RUBBER
27 SCREW/SEM
28 WASHER/FLAT
29 SCREW/CAP
30 SCREW/CAP
31 SCREW/CAP
32 SCREW/CAP
33 SCREW/CAP
34 BOLT/CARRIAGE
35 SCREW/MACHINE
36 SCREW/MACHINE
37 WASHER/FLAT
38 WASHER/FLAT
39 WASHER/FLAT
40 PIN/COTTER

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

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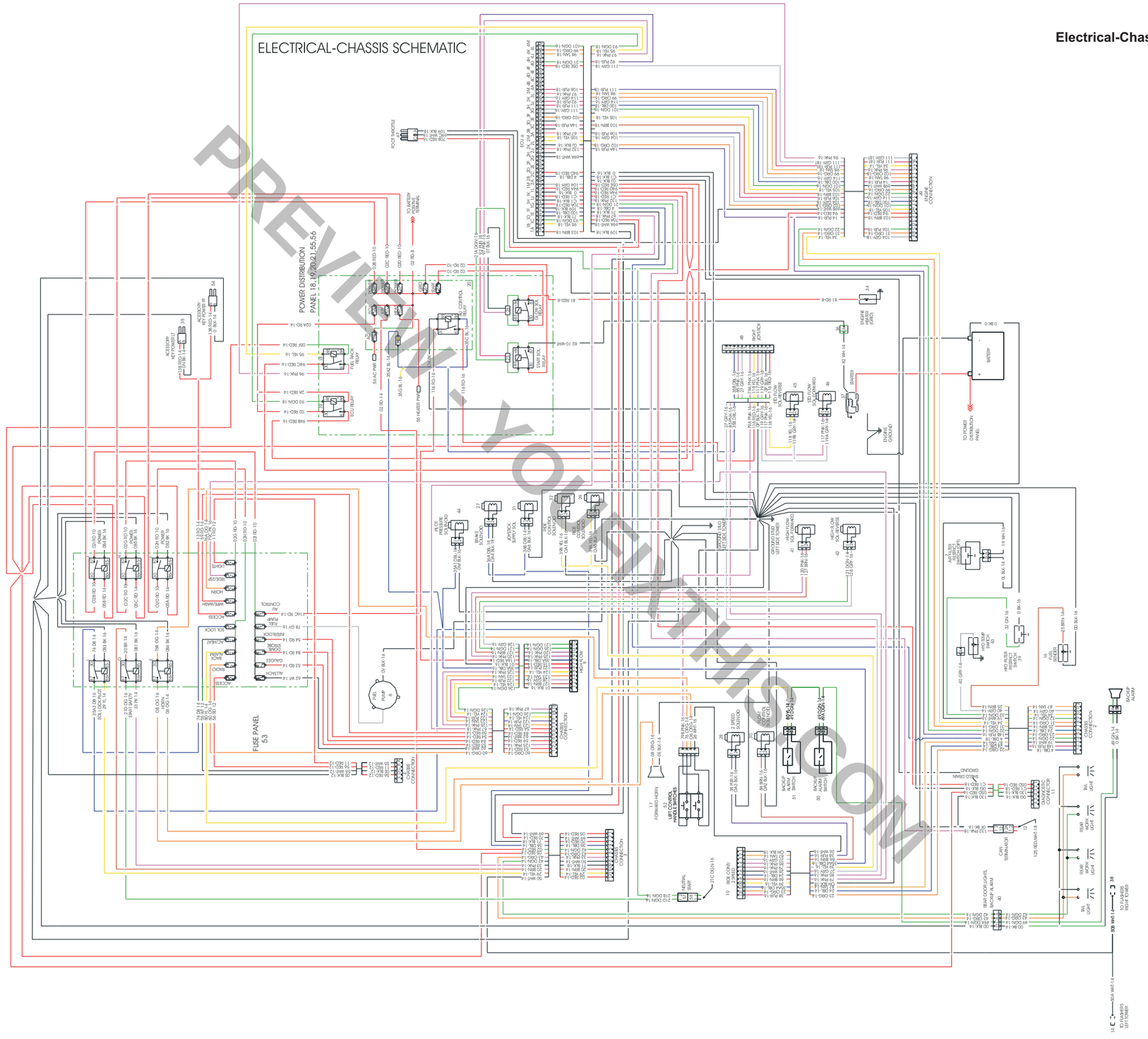
Hydraulic/Hydrostatic Schematic - Dual Joysticks
Tier3 Yanmar Engine



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Electrical-Chassis Schematic - Tier3 Yanmar Engine



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Troubleshooting Guide

The following troubleshooting guide lists potential hydrostatic system problems, as well as possible causes and remedies, for Gehl 5640E/6640E and Mustang 2066/76/86 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 or Mustang dealer. Any unauthorized repair will void the warranty.

Problem	Possible Cause	Remedy
No response from the hydrostatic drive or the lift/tilt systems.	Restraint bar or seat switch malfunction.	Check switches.
	Pilot oil solenoid is malfunctioning.	Check electrical connections to solenoid and repair.
	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.
	Blown fuse or relay.	Replace fuse or relay.
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.
	Inadequate pilot supply oil pressure to joystick control.	Check pilot supply oil pressure. Check pilot supply cut-out solenoid.
Drive wheels do not turn in proper direction.	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 the *Hydrostatic System* chapter.

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Diagnostic list

No.	Item	Failure detection conditions	Operation when failure occurs	Action/ condition for recovery	Category	Number of flashes
1	Coolant temperature sensor failure	Sensor voltage is 4.8 V or more, or 0.2 V or less.	Engine runs with a coolant temperature of 30°C.	Correct failure.	Always enable	4
2	Accelerator sensor failure	Sensor voltage is 4.6 V or more, or 0.2 V or less.	[Without optional backup accelerator sensor] Engine runs at 1500 min^{-1}. (Option can change) [With optional backup accelerator sensor] Select backup accelerator sensor: No limitation Backup accelerator sensor failure: Engine runs at 1500 min^{-1}.(Option can change)	Correct failure.	Default to disable	5
3	Speed sensor failure	Engine start signal (E8) is on, but the engine speed is zero.	[With optional backup speed sensor] Backup speed sensor becomes active; speed is limited to 1800 min^{-1}.(Option can change) Backup speed sensor failed: Engine stops. [Without optional backup speed sensor] Engine stops.	Turn key off.	Always enable	6
		Engine speed decreases by 480 min^{-1} or more in 40 ms.				
4	Rack position sensor failure	Correlation between rack actuator output and rack position exceeds threshold upper limit by 0.32 sec. or more.	Engine runs with limited output and speed. (Rack position control is inactive and speed control is active).	Turn key off.	Always enable	7
		Correlation between rack actuator output and rack position exceeds threshold lower limit by 0.16 sec. or more.				
5	Rack actuator failure	Rack actuator current is too high.	Engine stops.	Turn key off.	Always enable	8
		Rack actuator current is too low.				
		Engine accelerates with minimum rack actuator output.				
		Engine stalls while rack position sensor is failed.				
6	Overspeed	Idling engine speed exceeds high idling speed plus 600 min^{-1}.	Engine stops.	Turn key off.	Always enable	9

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Fig. 2-1 The lock pin secures the lift arm support device underneath the left lift arm



Fig. 2-2 Flip lock pin down and grab with finger



Fig. 2-3 Pull ring out of welded post

Lift Arm Support Device

WARNING

BEFORE leaving the 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 skid-steer loaders. Used as a cylinder block, it is intended to 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 anchor on the underside of the lift arm using the lock pin and retainer 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.

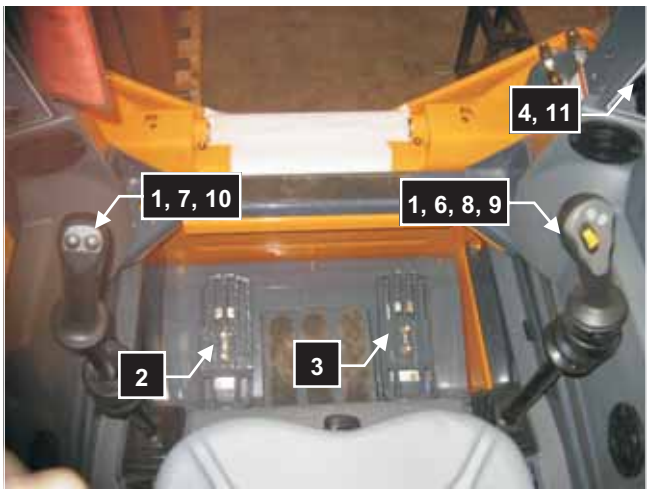
Lift Arm Support Device Engagement

1. Lower lift arm until contact with loader frame.
2. Turn the keyswitch to the OFF position to stop the engine.
3. Leave operator's compartment. Flip lock pin ring down and pull out of welded post to release its locking mechanism. Allow support device to come down into contact with lift cylinder. **Figs. 2-1, 2-2 and 2-3**
4. Return to the operator's compartment and restart the engine.
5. Use lift control to raise lift arm until lift arm support device drops over the end of the lift cylinder and around cylinder rod. Slowly lower lift arm until free end of support device contacts top end of lift cylinder. **Fig. 2-4**
6. Make sure the support device is secure against the base end of the lift cylinder. Then, stop the loader engine, remove the key and leave the operator's compartment.

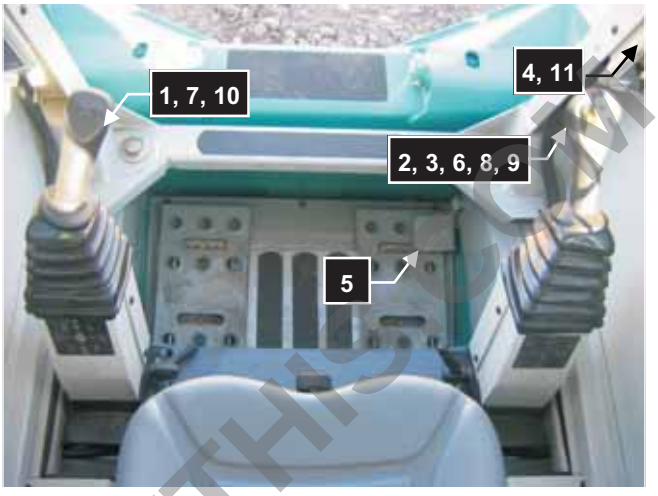
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Hand/Foot Controls

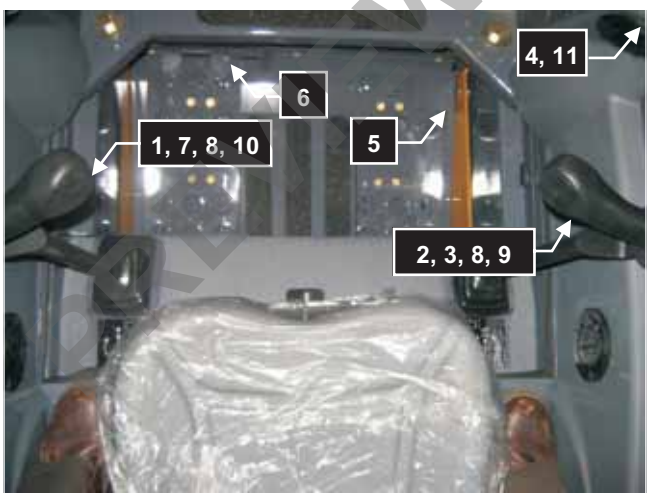


Dual Joystick Controls

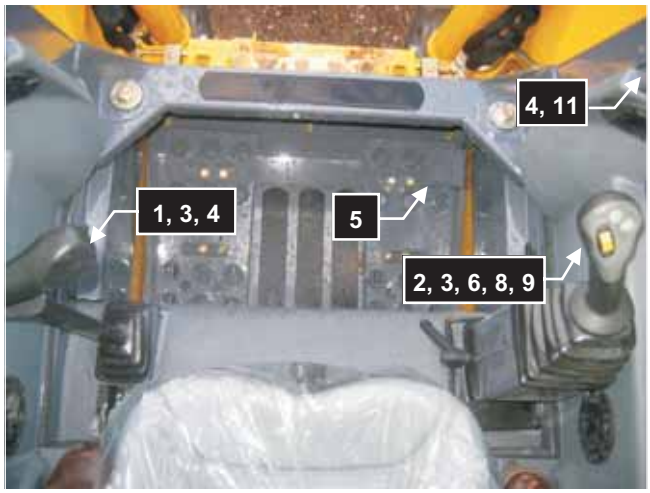


1 - Drive Control
2 - Lift Control
3 - Tilt Control
4 - Hand Throttle
5 - Foot Throttle
6 - Standard Auxiliary Hydraulics Control
7 - Two-Speed Button Switch (optional)
8 - Hydraglide™ Ride Control Switch
9 - Float Control Switch
10 - Horn Button Switch
11 - High-Flow Auxiliary Hydraulics Control

T-Bar Controls



T-Bar/Joystick Controls



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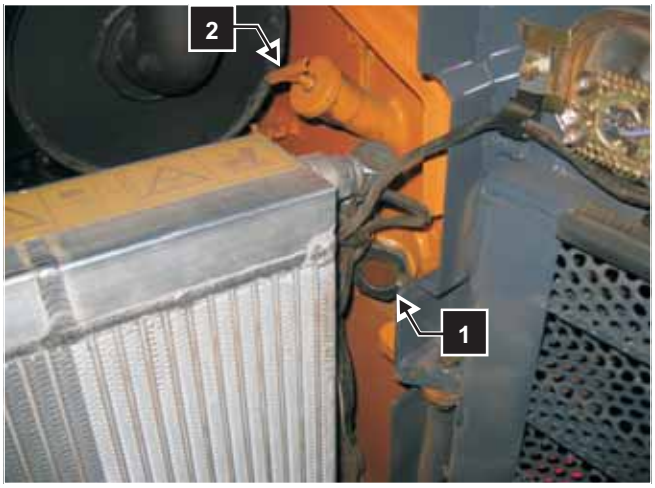


Fig. 3-1 Hydraulic oil level indicator (1) and hydraulic oil fill (2)



Fig. 3-2 Hydraulic oil drain plug located behind the right rear tire

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 early failure. Loader and engine operation depends 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.

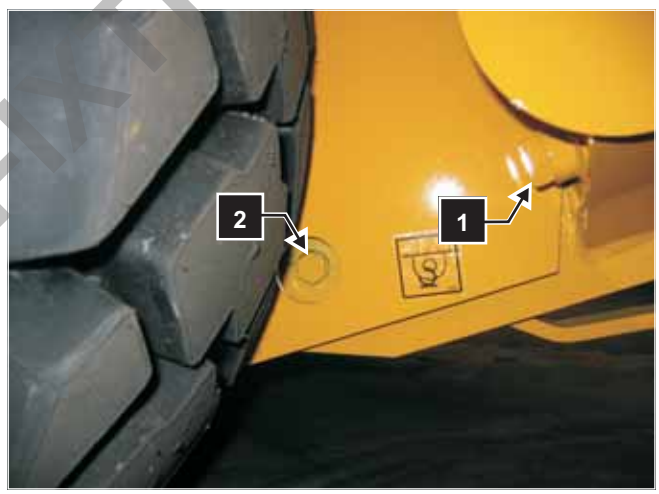


Fig. 3-3 Fuel tank drain (1) and remote engine oil drain (2) located behind the left rear tire

Hydraulic System Reservoir	Chaincases	Grease Fittings	Crankcase Oil (Diesel Engine)
Use a Mobil DTE 15M, or Petro-Canada Premium HVI60, or equivalent that contains anti-rust, anti-foam, and anti-oxidation additives & conforms to ISO VG46 or ISO VG48. Capacity: 16 Gallons (61 L)	Use hydraulic system oil or SAE grade 15W-40 motor oil. Capacity (each side): 9.0 Quarts (8,5 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/CG-4 Capacity: 11.8 Quarts (11,2 L)

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