

Form No.  
906931  
English

# **GE 502/GE 602 Crawler Excavator**



## **OPERATOR'S MANUAL**

**GEHL®**

## **GEHL Warranty**

**GEHL COMPANY**, hereinafter referred to as Gehl, warrants new Gehl equipment to the Original Retail Purchaser to be free from defects in material and workmanship for a period of twelve (12) months from the Warranty Start Date.

### **GEHL WARRANTY SERVICE INCLUDES:**

Genuine Gehl parts and labor costs required to repair or replace equipment at the selling dealer's business location.

**GEHL MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED (INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE), EXCEPT AS EXPRESSLY STATED IN THIS WARRANTY STATEMENT.**

### **GEHL WARRANTY SERVICE DOES NOT INCLUDE:**

1. Transportation to selling dealer's business location or, at the option of the Original Retail Purchaser, the cost of a service call.
2. Used equipment.
3. Components covered by their own non-Gehl warranties, such as tires, trade accessories and engines.
4. Normal maintenance service and expendable, high wear items.
5. Repairs or adjustments caused by: improper use; failure to follow recommended maintenance procedures; use of unauthorized attachments; accident or other casualty.
6. Liability for incidental or consequential damages of any type, including, but not limited to lost profits or expenses of acquiring replacement equipment.

No agent, employee or representative of Gehl has any authority to bind Gehl to any warranty except as specifically set forth herein. Any of these limitations excluded by local law shall be deemed deleted from this warranty; all other terms will continue to apply.

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# GENERAL INFORMATION

## INTRODUCTION

The information in this Operator's Manual was written to give the owner/operator assistance in preparing, adjusting, maintaining and servicing the Crawler Excavator. More importantly, this manual provides an operating plan for safe and proper use of the machine. Major points of safe operation are detailed in Section 2—Safety Information.

The GEHL® Company asks that you read and understand the contents of this manual **COMPLETELY** and become familiar with your new machine **BEFORE** attempting to operate it. Consult your GEHL Dealer to obtain extra manuals, or manuals in other languages.

Throughout this manual, information is provided which is set in *italic* type and introduced by the word **NOTE** or **IMPORTANT**. Be sure to read carefully and comply with the message. Following this information will improve your operating and maintenance efficiency, help you to avoid breakdown and damage, and extend the machine's life.

Do not use this machine for any application or purpose other than those described in this manual. If the machine is to be used with special attachments or equipment other than those approved by Gehl, consult your GEHL Dealer. Any person making unauthorized modifications is responsible for the consequences.

The use of this equipment 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.

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 equipment and the handling of loads. It is recommended that the operator be capable of obtaining a valid motor vehicle operator's license.

GEHL Company reserves the right to make changes and improvements in the design and construction of any part without incurring the obligation to install such changes on any unit previously delivered.

Our Dealer network stands by to provide you with any assistance you may require, including genuine GEHL service parts. All service parts should be obtained from your GEHL Dealer. Give complete information about the part and include the model and serial number of your machine. Record the serial number in the space provided on this page, as a handy reference.

Purchased From: \_\_\_\_\_

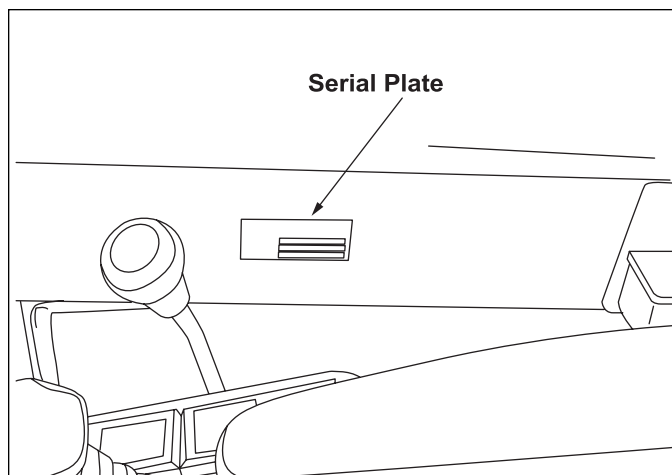
Date of Purchase: \_\_\_\_\_

Model No.: \_\_\_\_\_

Serial No.: \_\_\_\_\_

### SERIAL NUMBER LOCATION

The serial plate is located on the inside cab wall next to the throttle lever (Figure 1-1).

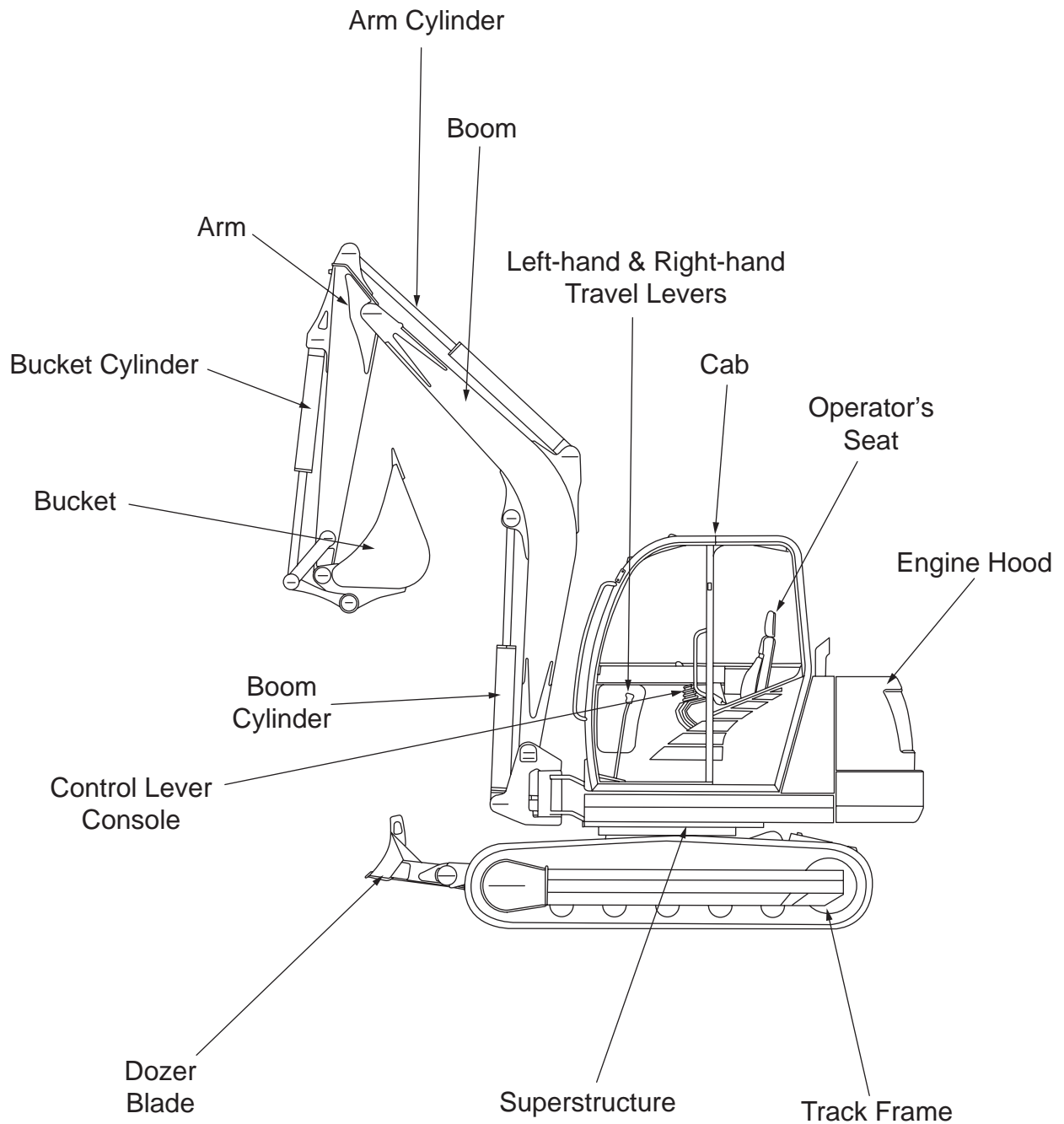


**Figure 1-1. Serial Number Location**

**NOTE:** All references to Left-hand or Right-hand are determined from sitting in the operator's seat and facing forward.

**IMPORTANT!** Keep these instructions with the machine for future reference.  
If the machine changes ownership, be sure this manual accompanies the equipment.

# MACHINE IDENTIFICATION



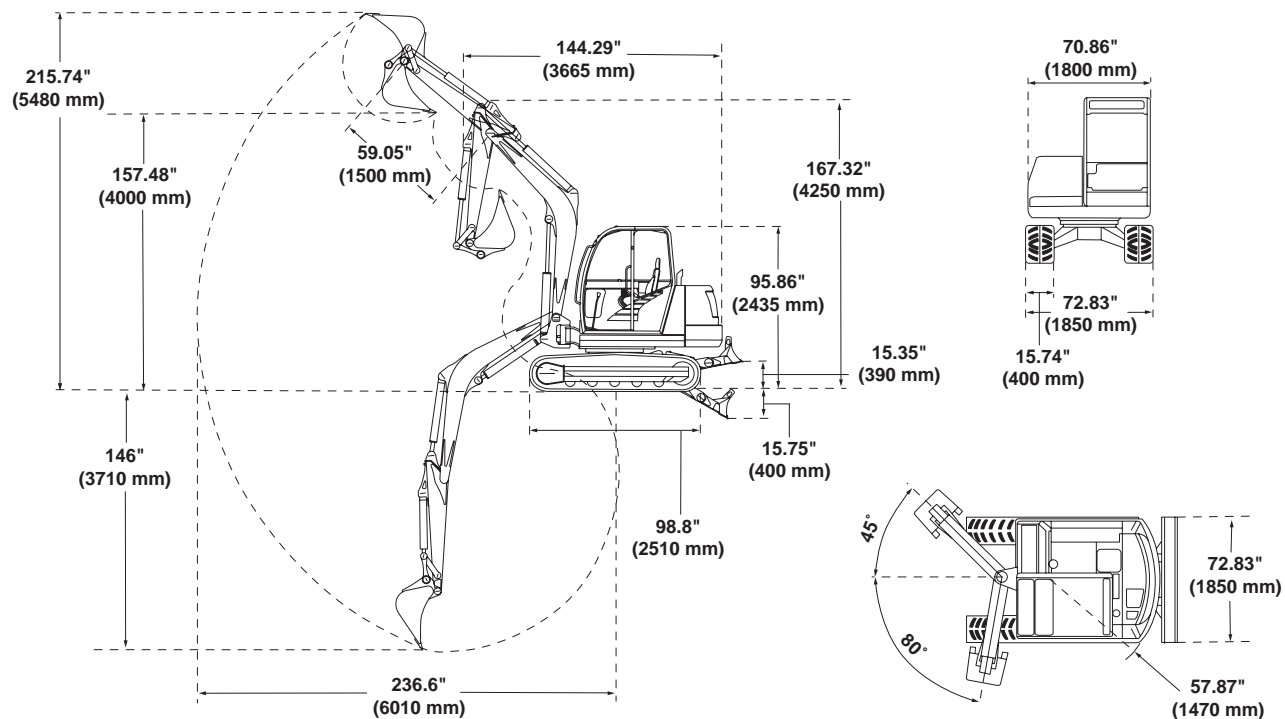
# SPECIFICATIONS

	GE 502	GE 602
<b>ENGINE</b> Make Model Type Displacement Rated Power Output  Battery Fuel Tank	Yanmar 4TNE88-NSW-Diesel 4-Cyl. Water-Cooled 134 cu. in. (2190 cc) 40 hp (30 kW) @ 2500 rpm 12V (88 Ah) 14.5 gal. (55 L)	Yanmar 4TNE98-NSR-Diesel 4-Cyl. Water-Cooled 202 cu. in. (3318 cc) 64 hp (47.5 kW) @ 2300 rpm 12V (88 Ah) 19.8 gal. (75 L)
<b>HYDRAULIC SYSTEM</b> Pumps  Flow Rate  Working Pressure Swing System Pressure Oil Cooler Hydraulic Tank	Double Variable Cap. & One Gear Pump 14 gpm (52 L/min) 14 gpm (52 L/min) 8 gpm (31 L/min) 3343 psi (230 bar) 2616 psi (180 bar) Standard 26.4 gal. (100 L)	Double Variable Cap. & One Gear Pump 17 gpm (64 L/min) 17 gpm (64 L/min) 13 gpm (48 L/min) 3561 psi (245 bar) 2616 psi (180 bar) Standard 31.7 gal. (120 L)
<b>UNDER CARRIAGE &amp; SLEWING SYSTEM</b> Travel Speed-Dual  Ground Clearance Slew Speed Gradability Rubber Track Width Number of Track Rollers Average Ground Pressure	1.6 mph (2.5 km/h) 2.8 mph (4.5 km/h) 13 in. (335 mm) 9 rpm 30° (= 58%) 16 in. (400 mm) 5 each side 3.84 psi (26.5 kPa)	1.9 mph (3.0 km/h) 3.4 mph (5.5 km/h) 13 in. (335 mm) 10 rpm 30° (= 58%) 16 in. (400 mm) 5 each side 4.27 psi (29.4 kPa)
<b>DOZER BLADE</b> Width Height Maximum Lift Above Ground Below Ground	73 in. (1850 mm) 17 in. (425 mm) 15 in. (381 mm) 16 in. (400 mm)	73 in. (1850 mm) 17 in. (425 mm) 16 in. (400 mm) 17 in. (432 mm)
<b>BUCKET (STANDARD)</b> Width Capacity	19.7 in. (500 mm) 4.5 cu. ft. (130 L)	19.7 in. (500 mm) 4.5 cu. ft. (130 L)
<b>NOISE LEVEL</b> Power Sound Pressure Sound	94 dB(A) 80 dB(A)	96 dB(A) 78 dB(A)

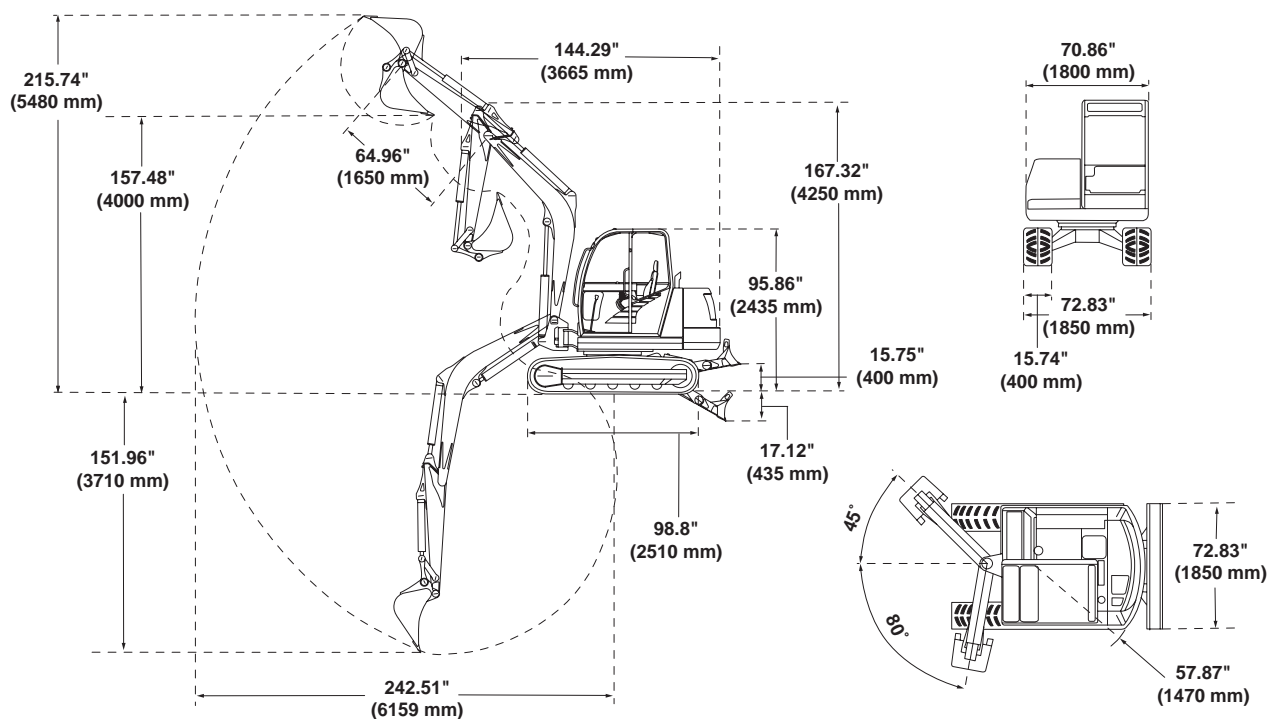
## SPECIFICATIONS (continued)

	GE 502	GE 602
<b>GENERAL SPECIFICATIONS</b>		
Operating Weight w/Cab (SAE)	10,395 lbs. (4960 kg)	12,566 lbs. (5700 kg)
Height	96 in. (2435 mm)	96 in. (2435 mm)
Width	73 in. (1850 mm)	73 in. (1850 mm)
Length	12 ft. (3665 mm)	12.5 ft. (3800 mm)
Transport Length	19.7 ft. (6000 mm)	20.2 ft. (6150 mm)
Max. Digging Depth w/Std. Arm	146.1 in. (3710 mm)	152 in. (3860 mm)
Max. Digging Depth w/Long Arm	157.9 in. (4010 mm)	163.8 in. (4160 mm)
Max. Digging Height w/Std. Arm	215.7 in. (5480 mm)	219.7 in. (5580 mm)
Max. Digging Height w/Long Arm	223.6 in. (5680 mm)	227.6 in. (5780 mm)
Max. Dump Height w/Std. Arm	157.5 in. (4000 mm)	161.2 in. (4095 mm)
Max. Dump Height w/Long Arm	165.4 in. (4200 mm)	169.1 in. (4295 mm)
Max. Digging Radius w/Std. Arm	236.6 in. (6010 mm)	242.5 in. (6160 mm)
Max. Digging Radius w/Long Arm	247.6 in. (6290 mm)	254.3 in. (6460 mm)
Bucket Dig Force	7540 lbs. (3420 kg)	8025 lbs. (3640 kg)
Min. Tail Swing Radius	57.9 in. (1470 mm)	62.6 in. (1590 mm)
Min. Front Swing Radius	74 in. (1880 mm)	75.6 in. (1920 mm)
Swing Angle-Right/Left	80° / 45°	80° / 45°
Standard Arm	59.1 in. (1500 mm)	65 in. (1650 mm)
Optional Long Arm	70.9 in. (1800 mm)	76.8 in. (1950 mm)

### Model GE 502 (w/optional long arm)



### Model GE 602 (w/optional long arm)



# CHECKLISTS

## Pre-Delivery Checklist

The following checklist is an important reminder of valuable information and inspections which **MUST** be made before delivering the machine to the customer. Check off each item after prescribed action is taken.

### ✓ CHECK THAT:

- ☐ Unit has NOT been damaged in shipment. Check for such things as dents and loose or missing parts; correct or replace components as required.
- ☐ Battery is securely mounted and NOT cracked. Make sure cable connections are tight.
- ☐ Cylinders, hoses and fittings are not damaged, leaking or loosely connected.
- ☐ Filters are not damaged, leaking or loosely secured.
- ☐ Machine is properly lubricated and no grease fittings are missing or damaged.
- ☐ Hydraulic system reservoir, engine crankcase and drive chaincases are filled to their proper levels.
- ☐ All adjustments are made to comply with settings given in *Section 4—Maintenance* of this manual.
- ☐ All guards, shields and decals are in place and secured.
- ☐ Model and serial numbers for this unit are recorded in the space provided on this page and on page 1-1.

**IMPORTANT:** *Start the engine and test run the unit while checking that all controls operate properly.*

### ✓ CHECK THAT:

- ☐ Drive controls and boom/arm/bucket/swing/pivot controls operate properly and are not damaged or binding.
- ☐ Drive controls are properly adjusted for a correct neutral position.
- ☐ The parking and travelling gear brake, along with the blocking devices, are automatically activated with unit stationary (no pilot control pressure).
- ☐ All hydraulic functions are NOT operational with the left-hand control console in the pivoted rearward position.

I acknowledge that pre-delivery procedures were performed on this unit as outlined on this page.

Dealership Name

Dealer Representative Name

Date Checklist Filled Out

Model & Serial Number

## Delivery Checklist

The following checklist is an important reminder of valuable information that **MUST** be passed on to the customer at the time of delivery. Check off each item as you explain it to the customer.

### ✓ EXPLAIN:

- ☐ The Safety Information and Operation chapters of this manual, regarding the safe operation of this machine.
- ☐ The Maintenance and Troubleshooting chapters for information regarding the proper maintenance of this machine. Explain that regular lubrication and maintenance is required for continued safe operation and long machine life.
- ☐ Give the Operator's Manual to the customer and instruct the customer to read and completely understand the contents before operating the unit.
- ☐ Explain that the customer **MUST** consult the engine manual (provided) for related specifications, operating adjustments and maintenance instructions.
- ☐ Completely fill out the Owner's Registration, including customer's signature and return it to the Gehl Company.

Customer's Signature

Date Delivered

**Retain for Customer Records**

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Customer's Signature

Date Delivered

**Retain for Dealer's Records**

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# SAFETY INFORMATION

## GENERAL SAFETY INFORMATION

### Safety Symbols & Terminology



The GEHL® Company, in cooperation with the Society of Automotive Engineers, has adopted this Safety Alert Symbol to pinpoint precautions which, if NOT properly followed, can create a safety hazard. This symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!** It stresses an attitude of “Heads Up For Safety” and can be found throughout this Operator’s Manual and on the machine.

Before you operate this equipment, read and study the following safety information. In addition, make sure that every individual who operates or works with this equipment, whether family member or employee, is familiar with these safety precautions.

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.

The following safety words and symbols are used throughout the manual and on the machine to warn of dangerous situations.

### **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.

### Safety Reminders

- Some illustrations 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 the engine to operate the machine.
- To ensure safe operation, replace damaged or worn-out parts with genuine Gehl service parts.
- Gehl units 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 unit is used with non-approved attachments.
- The terrain, engine speed, load carried, and abrupt control movements can affect machine stability. **If misused, any of the above factors can cause the machine to tip, throwing the operator forward or out of the unit, causing death of serious injury.** Therefore, **ALWAYS** wear the seatbelt when operating the equipment. Operate the controls smoothly and gradually at an appropriate engine speed which matches the operating conditions.
- For additional stability when operating on inclines or ramps, **ALWAYS** travel with the bucket and blade towards the top of the incline.
- \* DO NOT raise or lower a loaded bucket suddenly. Abrupt movements under load can cause serious instability.
- NEVER attempt to bypass the keyswitch to start the engine. Use only the jump-starting procedure detailed in the *Maintenance* section of this manual.
- 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 can penetrate the skin and cause serious injury. If any fluid is injected into your skin, see a doctor at once. Injected fluid **MUST** be surgically removed by a doctor or gangrene may result.
- Do not operate too close to an excavation or ditch. **BE SURE** that the surrounding ground has adequate strength to support the weight of the machine and the load.
- DO NOT smoke or have any spark producing equipment in the area while filling the fuel tank or while working on the fuel or hydraulic systems.

### Safety Reminders (continued)

- When driving on or across roads, the machine must be equipped according to the road/traffic laws, and these laws must be observed.
- Adapt working speed to local visibility.
- The driving speed must be adapted to the road and ground conditions.
- Particular attention is required when working on slopes. Angle of inclination of machine for all directions of travel: for brief operation (2-3 minutes)—maximum of 30°; for continuous operation—maximum of 25°.
- Unauthorized personnel must not start-up the machine.
- No one but the operator must be on the machine when in use. **PASSENGERS PROHIBITED!**
- Use the towing bracket provided for towing the machine.
- The operating area, steps, and grips must be free of oil, dirt, ice and unsecured objects.
- The proper working condition of the lighting system must be checked before and while working in darkness.
- Always keep the windshield and windows clean. Poor visibility can cause accidents.
- Operate the machine from the operator's seat only. Wear seatbelt which is provided.
- Control the machine cautiously and gradually until you are fully familiar with all the controls and handling.
- Pay attention to all movements of machines and machines in the working area.
- Personnel must not be in the working area. Never operate equipment above people.
- Always wear appropriate protective clothing: hard hat, work gloves, strong work shoes, reflective clothing.
- Make sure you have sufficient knowledge of the working area; location of utility lines (water, gas, electric, etc.) and load bearing capacity of the ground.
- Before working in the area of utility lines, contact the proper authority to determine the measures required for safety.
- Never dig underneath the machine. Support walls properly when excavating or working in, or close to, trenches.
- Never drive long distances with the working equipment fully raised. Lowering the working equipment produces improved visibility and improved weight distribution.
- Never drive across the incline on sloping ground. Extreme caution is required when working across an incline or changing direction.
- Never use the weight of the machine to obtain more force when excavating. There is a risk overturning.
- Before starting up the machine or setting it in motion, warn any personnel in the area.
- Attach a clearly visible, legible **OUT OF SERVICE** sign when repair and adjustments are being performed on the machine.
- Unless necessary for servicing the engine, the engine hood must not be opened while the engine is running.
- Be familiar with the machine safety devices.
- The machine is not to be used to lift equipment or transport personnel.
- The excavator arm is not a ramming tool. Never attempt to use the working equipment to drive piles or similar items into the ground, or to flatten the ground.
- Never excavate while the machine is travelling. Never move the machine to dig. Never slew with lowered working equipment and never move the machine when the working equipment is resting on the ground.

### Fire Prevention

The machine has several components that operate at high temperature under normal operating conditions, primarily the engine and exhaust systems. Also, the electrical system, if not properly maintained or is damaged, can arc or produce sparks. These conditions make it extremely important to avoid conditions where explosive dust or gasses can be ignited by arcs, sparks or heat.

The machine must be cleaned on a regular basis to avoid the buildup of flammable debris such as leaves, straw, etc. Accumulated debris, particularly in the engine compartment, poses a fire hazard.

The spark arrestor muffler is designed to control the emission of hot particles from the engine and exhaust system, but the muffler system still gets hot during operation. For this reason, it is extremely important not to operate the machine in an area where explosive dust or gasses can contact the hot exhaust.

- Do not use the machine where explosive gasses or dust can be ignited by arcs, sparks, hot components or exhaust gasses.
- The operator cab, engine compartment and engine cooling system must be inspected every day and cleaned if necessary to remove any flammable debris.

- Check all electrical wiring and connections for damage. Keep the battery terminals clean and tight. Repair or replace any damaged parts.
- Check fuel and hydraulic tubes, hoses and fittings for damage and leakage. Tighten or replace any parts that show leakage. Always clean fluid spills.
- Always clean the machine before performing any welding. Cover rubber hoses, battery and all other flammable parts. Keep a fire extinguisher near the machine when welding.
- Stop the engine and let it cool before adding fuel.

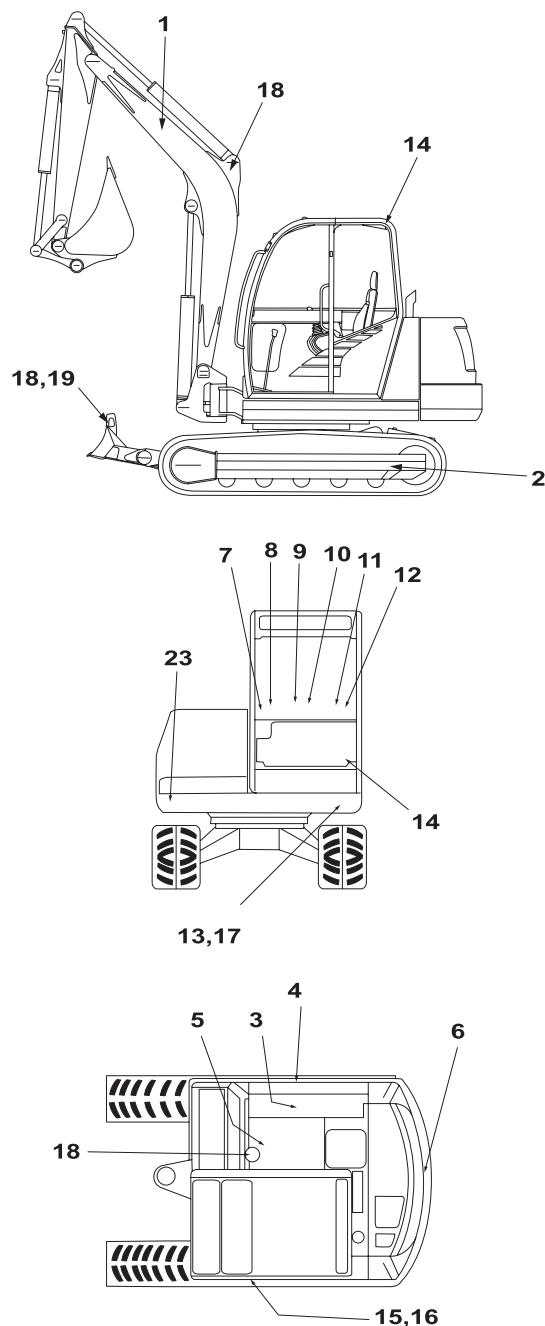
### Mandatory Safety Shutdown Procedure

Before leaving the vehicle:

1. Lower the working equipment to the ground and support it securely.
2. Reduce throttle and turn off the engine.
3. Lock out controls by raising left control console.
4. Remove the ignition key and take it with you.

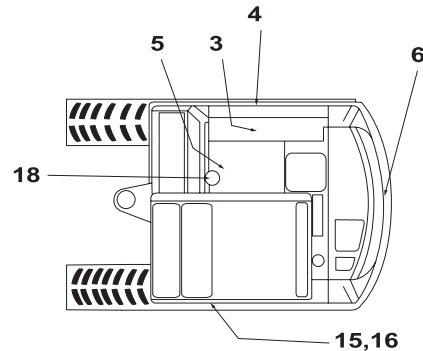
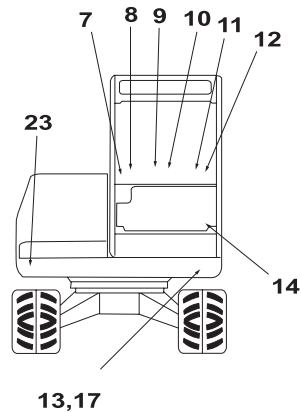
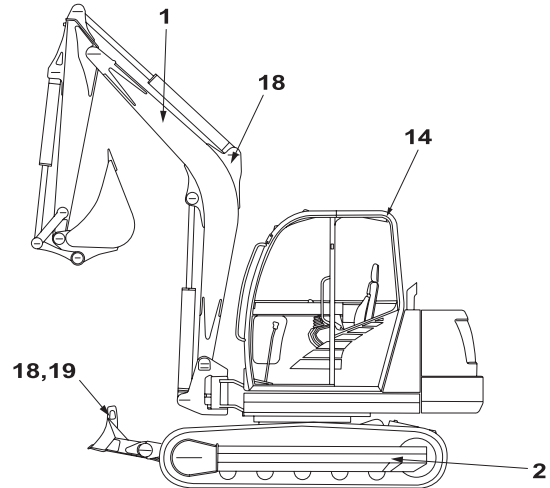
## SAFETY DECAL & STICKER LOCATIONS

1. **WARNING: Danger zone. Keep away! (both sides of the boom)**
2. **Direction arrow (left and right on track frames)**
3. **Hydraulic Oil**
4. **WARNING—Hydraulic reservoir under pressure**
5. **Diesel**
6. **WARNING: Do not open when engine is running**
7. **Lower boom, raise boom, close bucket, open bucket (on windshield)**
8. **Lower dozer blade, raise dozer blade (on windshield)**
9. **Travel right, forward, reverse (on windshield)**
10. **Travel left, forward, reverse (on windshield)**
11. **Bucket arm out, bucket arm in, superstructure left, superstructure right (on windshield)**
12. **Environmental symbol (blue angel) (on windshield)**
13. **Nameplate**
14. **Warning. TO AVOID INJURY: Read the Operator's Manual before using the machine. Be sure all user's are instructed on safe use and maintenance. Service the machine per the manual. Contact dealer (or manufacturer) for information and service parts.**
15. **L<sub>WA</sub> 96**
16. **L<sub>PA</sub> 78**
17. **CE symbol**
18. **Lifting point for lifting the excavator (left and right on boom and dozer blade)**
19. **Tie down point (left and right on dozer blade and chassis)**

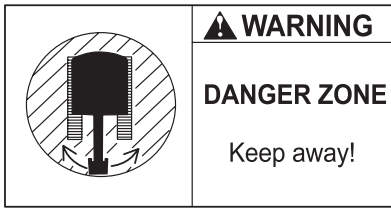


# SAFETY DECAL & STICKER LOCATIONS

20. **WARNING: TO AVOID INJURY:**  
Load and transport unit properly. Inspect job-site for hazards.  
Operate only from operator's seat. Fasten seat-belt.  
Keep people out of DANGER ZONE.  
Operate within stability limit of machine. **DO NOT OVERLOAD.** Use only approved attachments.
21. **WARNING: Mandatory Safety Shutdown Procedure:**
  1. Lower all equipment to ground.
  2. Reduce throttle; shut off engine.
  3. Lock out controls before exiting.
  4. Remove key and take it with you.
22. **WARNING: TO AVOID INJURY:** Always hold handle when closing front window. When opening window, be sure to lock both sides.
23. **WARNING: TO AVOID INJURY OR DEATH:** Do not loosen lubricator more than 2 turns. Do not loosen parts other than lubricator. Grease is under high pressure.
24. Lubrication hours
25. Engine cover release latch
26. Valve cover release latch
27. Throttle speed
28. Hydraulic Breaker



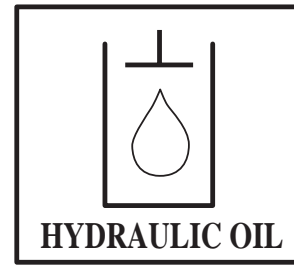
# SAFETY DECALS



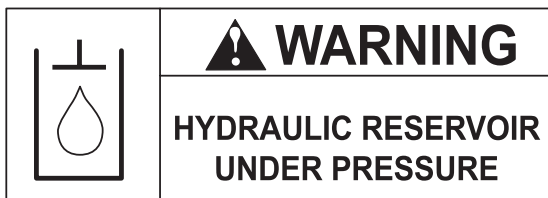
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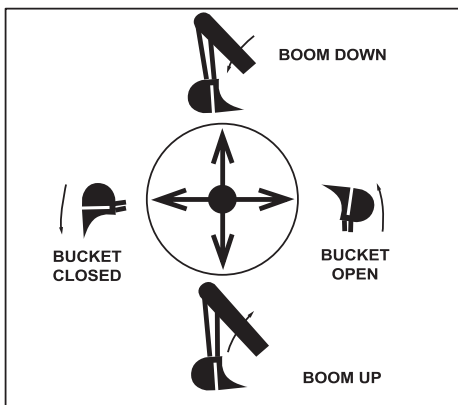
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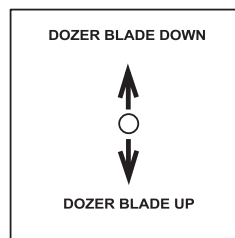
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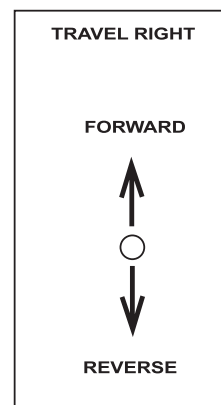
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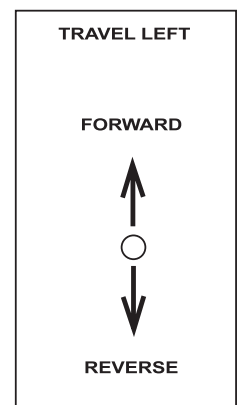
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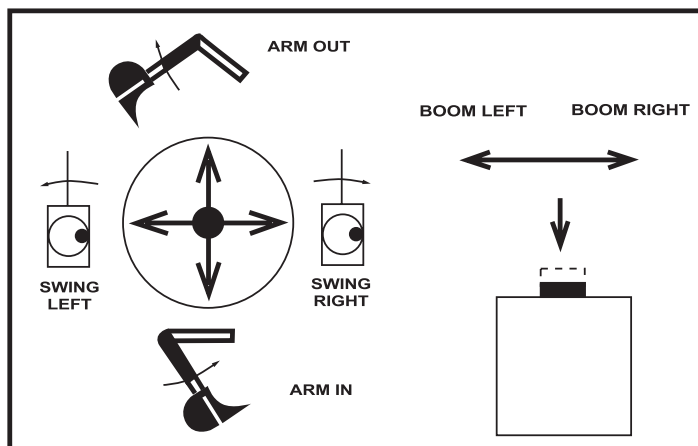
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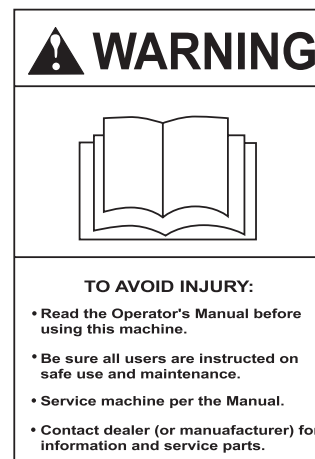
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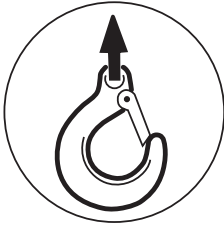


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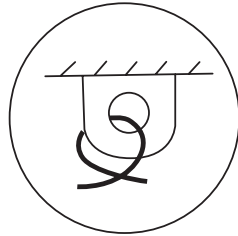


14

## SAFETY DECALS (continued)



18



19

1. 	2. 	<b>WARNING</b>  <b>TO AVOID INJURY:</b> 1. Load and transport unit properly. Inspect job-site for hazards. 2. Operate only from operator's seat. Fasten seatbelt. 3. Keep people out of DANGER ZONE. 4. Operate within stability limit of machine. <b>DO NOT OVERLOAD.</b> Use only approved attachments.
3. 	4. 	

20

1. 	2. 	<b>WARNING</b>  <b>MANDATORY SAFETY SHUTDOWN PROCEDURE:</b> 1. Lower all equipment to ground. 2. Reduce throttle; shut off engine. 3. Lock out controls before exiting. 4. Remove key and take it with you.
3. 	4. 	

21

	<b>WARNING</b>  <b>TO AVOID INJURY:</b> • ALWAYS hold handle when closing front window. • When opening window be sure to lock both sides
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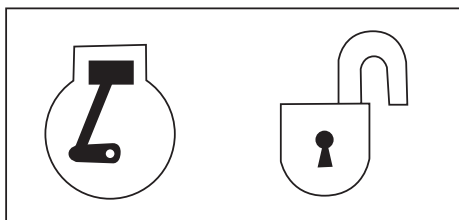
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	<b>WARNING</b>  <b>AVOID INJURY OR DEATH</b> Do not loosen lubricator more than 2 turns Do not loosen parts other than lubricator. Grease is under high pressure.
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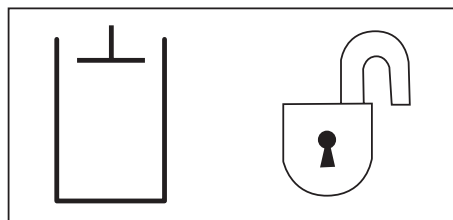
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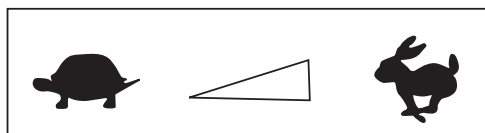
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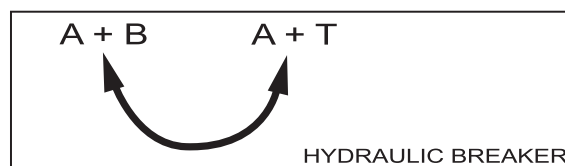
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28

# OPERATION

## GENERAL INFORMATION

### **WARNING**

Make sure you are familiar with all safety devices and controls before operating the machine. Know how to stop before starting. This GEHL® Company machine is designed for use only with GEHL® Company approved accessories or referral attachments. The GEHL® Company cannot be responsible for operator safety if the unit is used with non-approved attachments.

### **WARNING**

Instructions are necessary before operating the machine. Read and understand this entire manual. Follow warnings and instructions for operation and maintenance. Check for correct function after adjustments or maintenance. Failure to follow instructions can result in injury or death.

### **WARNING**

Read and thoroughly understand all safety decals before operating the machine. DO NOT operate the machine unless all factory installed guards and shields are in place.

#### Guards & Shields

Whenever possible, guards and shields are used to protect potentially hazardous areas on the machine. In many places, decals are also provided to warn of potential dangers and/or to display special operating procedures (see *Safety Decals Locations* in Section 2).

The operator's seat left-hand console must be raised in order to exit the cab. In the raised position, the left-hand console locks out all hydraulic functions of the machine (Figure 3-1).

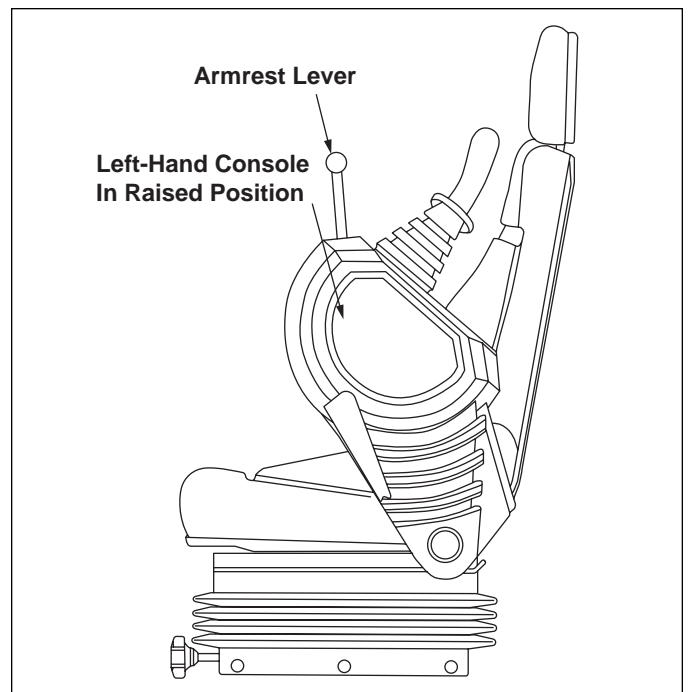
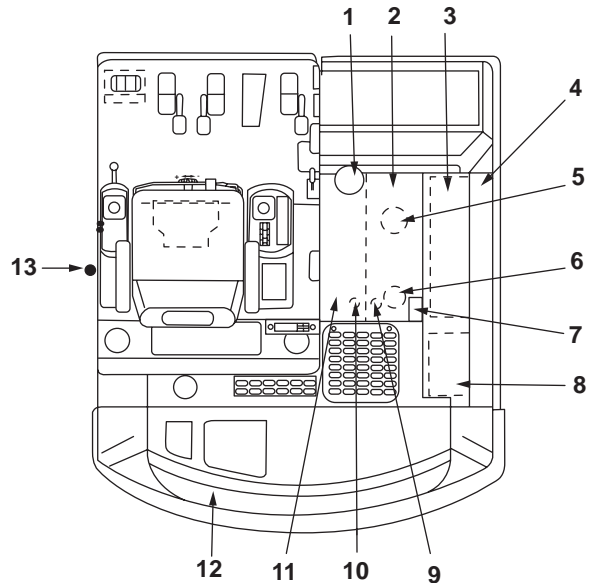


Figure 3-1. Left-Hand Console Raised

# OPERATOR CONTROLS

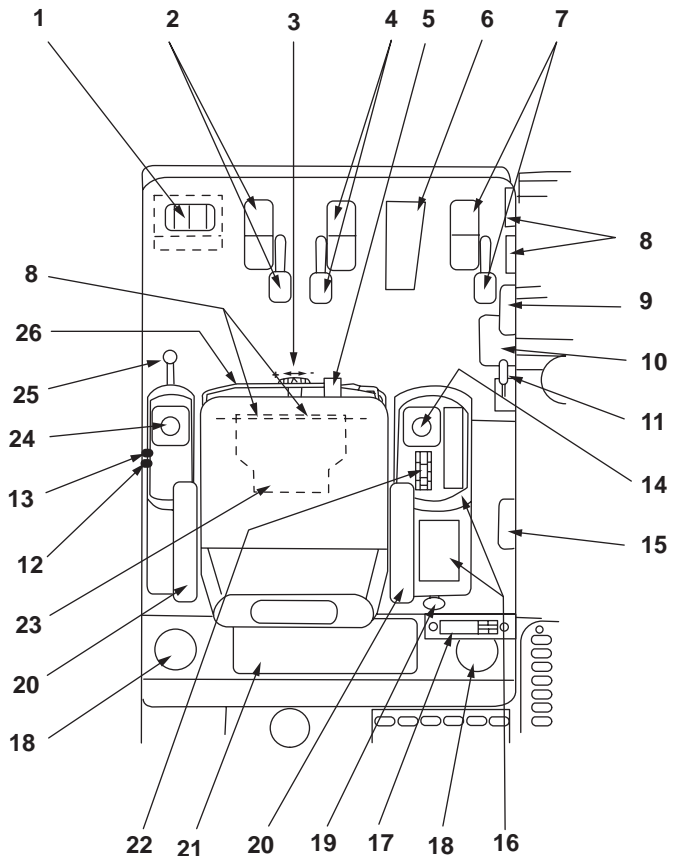
## Outer Cab Layout

1. Fuel Filler
2. Hydraulic Reservoir
3. Hydraulic Valves
4. Diesel Pump (Option)
5. Hydraulic Oil Filler
6. Hydraulic Oil Filter
7. Hydraulic Oil Sight Gauge
8. Battery
9. Hydraulic Reservoir Drain
10. Fuel Tank Drain
11. Fuel Tank
12. Engine Hood
13. Door Latches—Engine and Hydraulic Valves Compartment



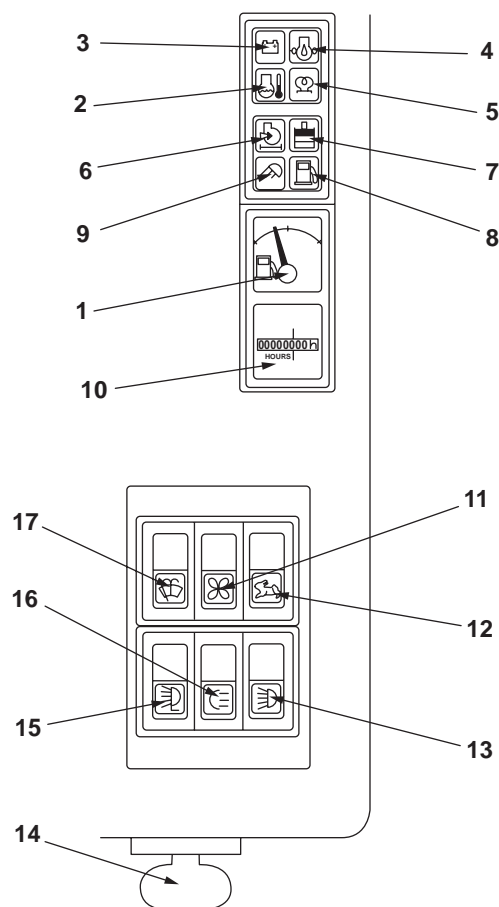
## Inner Cab Layout

1. Auxiliary Hydraulics Pedal
2. Left-Hand Travel Lever w/Foot Pedal
3. Seat Suspension Adjustment Lever
4. Right-Hand Travel Lever w/Foot Pedal
5. Seat Adjustment Lever
6. Footrest
7. Dozer Blade Control Lever w/Foot Pedal
8. Ventilation Controls
9. Cab Light
10. Windshield Washer Reservoir
11. Throttle Lever
12. Valve Cover Latch Lever
13. Engine Cover Latch Lever
14. Right-Hand Control Lever for Boom, Bucket Cylinder and Horn
15. Ashtray
16. Console Controls (see next page)
17. Radio (optional)
18. Stereo Speaker
19. Ignition Key Switch
20. Armrest
21. Storage Shelf
22. Fuse Panel (see next page)
23. Heater
24. Left-Hand Control Lever for Rotating/Slewing Bucket Arm; Control Button for Boom Swing when used with Auxiliary Hydraulics Pedal (#1)
25. Armrest Lever (for folding back the armrest which disables the hydraulic controls)
26. Seat and Console Adjustment Lever



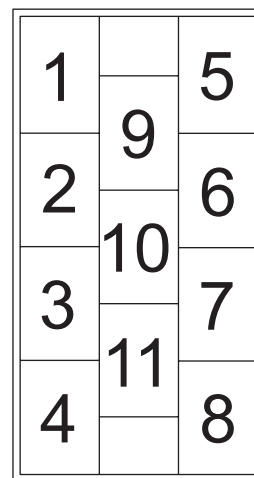
## Console Controls Layout

1. Fuel Level Gauge
2. Coolant Temperature Indicator
3. Battery Voltage Indicator
4. Engine Oil Pressure Indicator
5. Glow Plug Indicator
6. Engine Air Filter Indicator
7. Hydraulic Oil Level Indicator
8. Low Fuel Indicator
9. Work Lights ON Indicator
10. Hour Meter
11. Heater Control
12. 2-Speed Travel Switch
13. Light Switch—Cab Front Work Light
14. Ignition Key Switch
15. Light Switch—Boom Work Light
16. Light Switch—Rear Work Light (optional)



## Fuse Panel

1. Overdrive (Tilt Switch and Drive Lever) (7.5 Amp)
2. Windshield Wiper and Washer (7.5 Amp)
3. Turn Engine Off (Stop Solenoid) (3.0 Amp)
4. Switch Lighting, Instrument Panel and Lighting (7.5 Amp)
5. Front Work Lights (15 Amp)
6. Heating, Horn (15 Amp)
7. Safety (turning) Light, Free (10 Amp)
8. Cabin Lighting, Socket, Radio (Optional) (10 Amp)
9. Alternator, Starter (10 Amp)
10. Fuel Pump, Free (15 Amp)
11. Changeover Valve, Safety Solenoid Valve (10 Amp)



# OPERATOR CONTROLS (continued)

## WARNING

Levers and controls should return to neutral position when released. Be sure the levers and controls are in the neutral (middle) position before starting the engine. Operate lever controls gradually and smoothly. Excessive speed and quick handle movements without regard for conditions and circumstances is hazardous and could cause an accident.

### Travel Controls

*NOTE: Moving the handles equally in the same direction will result in travelling straight forward or straight backward.*

#### FORWARD TRAVEL

Push both levers (Figure 3-2) straight forward, slowly the same distance.

#### REVERSE TRAVEL

Pull both levers straight backward, slowly the same distance.

#### TURNING DURING TRAVEL

Move one lever farther than the other one. To turn left while moving forward, move the right lever farther forward; to turn right while moving forward, move the left lever farther forward.

#### PIVOTING

Move the levers in opposite directions to pivot the machine on its axis. To pivot left, move the right lever farther forward while pulling the left lever to the rear; to pivot right, move the left lever forward while pulling the right lever to the rear.

### Excavating Controls

The boom and bucket are controlled by the right- and left-hand levers on the seat consoles (Figure 3-3).

The superstructure or “house” is slewed by moving the left-hand lever left or right (Figure 3-4).

The bucket can be slewed without moving the cab by pressing the auxiliary hydraulics pedal left or right (Figure 3-5) while pressing the boom swing switch on the left-hand control lever.

The boom and bucket are moved using the right-hand control lever. The button located on the right-hand lever sounds the horn (Figure 3-3).

The dozer is controlled by the dozer lever (Figure 3-2).

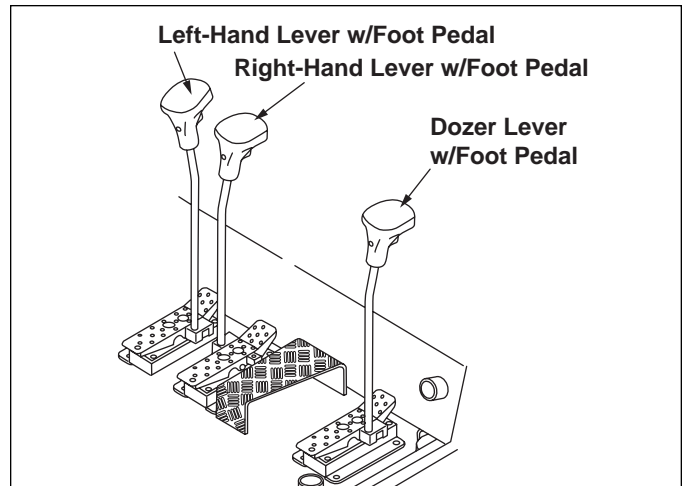


Figure 3-2. Travel Controls

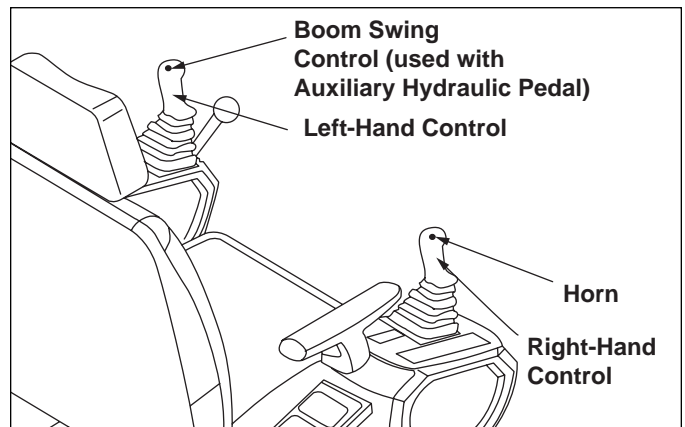


Figure 3-3. Boom & Bucket Controls

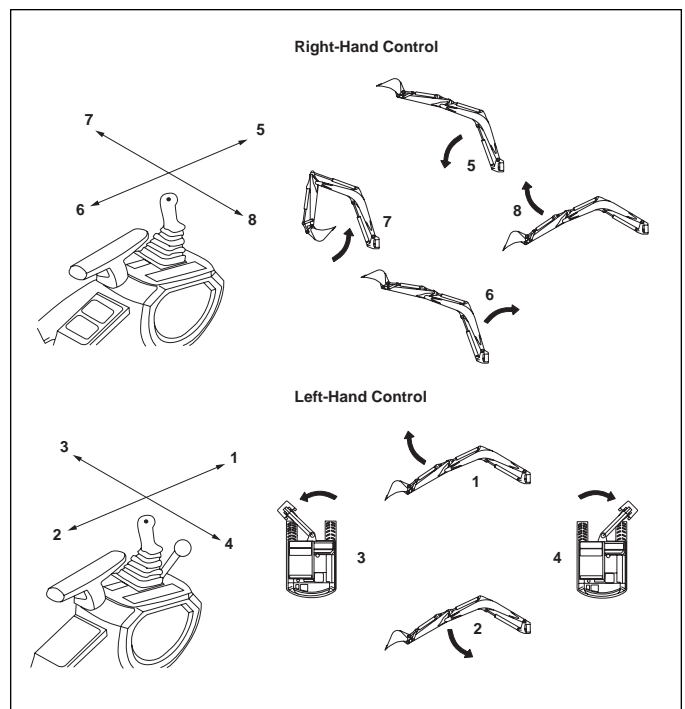


Figure 3-4. Boom and Bucket Controls

### LEFT-HAND CONTROL LEVER (FIGURE 3-3)

1. Move the left-hand lever forward to move bucket arm away from the machine.
2. Move the left-hand lever to the rear to move the arm towards the machine.
3. Move the left-hand lever to the left to slew superstructure to the left.
4. Move the left-hand lever to the right to slew superstructure to the right.

### RIGHT-HAND CONTROL LEVER (FIGURE 3-4)

5. Move the right-hand lever forward to lower the boom.
6. Move the right-hand lever to the rear to raise the boom.
7. Move the right-hand lever to the left to close the bucket (bucket moves up and to the front).
8. Move the right-hand lever to the right to open the bucket (bucket moves down and to the rear).

### AUXILIARY HYDRAULICS PEDAL (FIGURE 3-5)

Lift the protective shield, then depress the pedal left or right while depressing the switch located on top of the left-hand control lever to slew only the bucket (superstructure will remain stationary).

### DOZER BLADE

The dozer blade is raised and lowered by the dozer lever w/foot pedal (Figure 3-2). Push the lever forward to lower the blade; pull the lever to the rear to raise the dozer blade.

### Console Controls (Figure 3-6)

#### 1. FUEL LEVEL GAUGE

The fuel gauge shows the level of fuel in the tank.

#### 2. COOLANT TEMPERATURE INDICATOR

Indicator light comes on when coolant temperature is too high.

#### 3. BATTERY VOLTAGE INDICATOR

Indicator light comes on when battery voltage is too low.

#### 4. ENGINE OIL PRESSURE INDICATOR

During normal operation, this indicator light should remain off. The indicator will light if the engine oil pressure drops too low. If this occurs, shut off the engine IMMEDIATELY and determine the cause of the pressure drop.

#### 5. GLOW PLUG INDICATOR

Indicator light comes on when the ignition key is turned on. Indicator will go out when glow plugs have heated sufficiently to start the engine.

#### 6. ENGINE AIR FILTER INDICATOR

Indicator light comes on when engine air filter is too dirty.

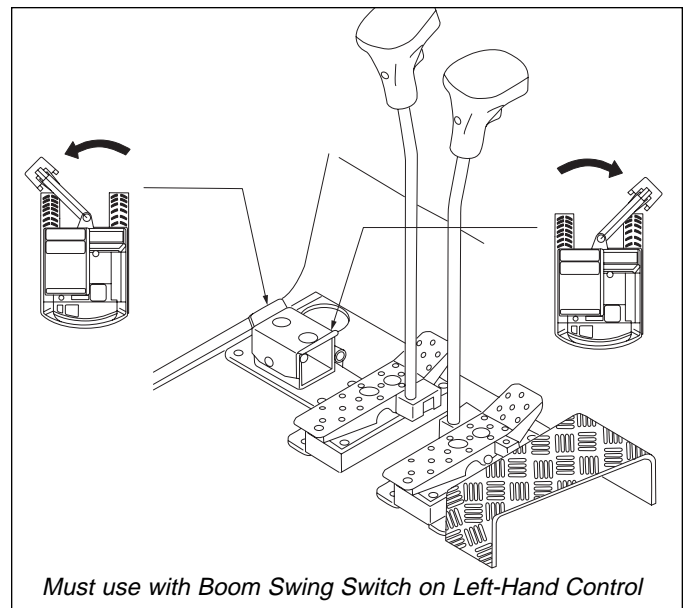


Figure 3-5. Auxiliary Hydraulics Pedal

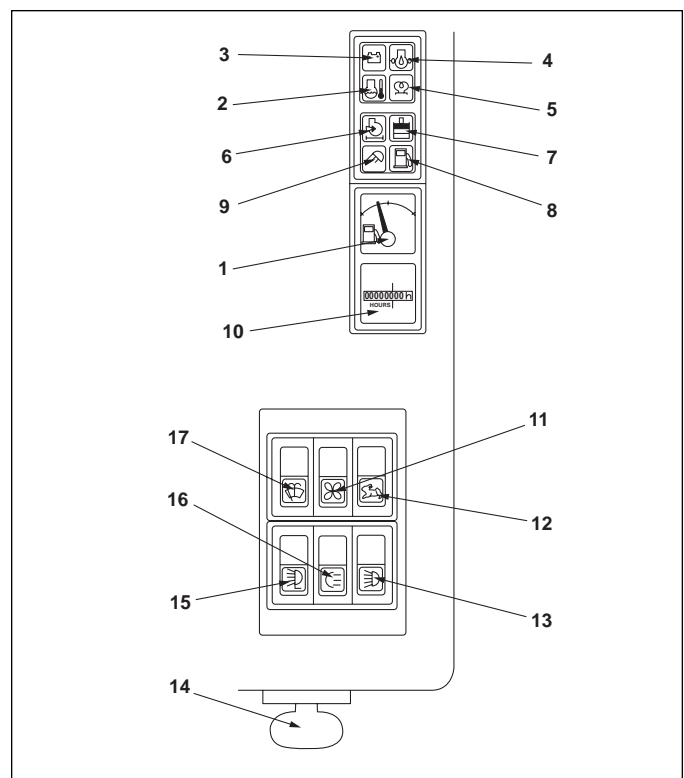


Figure 3-6. Console Controls

#### 7. HYDRAULIC OIL LEVEL INDICATOR

Indicator light comes on when hydraulic oil level is too low. Shut off engine and add oil.

#### 8. LOW FUEL INDICATOR

Indicator light comes on when fuel level is too low.

#### 9. WORK LIGHTS INDICATOR

Indicator light comes on when work lights are turned on.

# OPERATOR CONTROLS (continued)

## Console Controls (continued) (Figure 3-6)

### 10. HOUR METER

Indicates total operating hours of the machine. Use the hour meter to log maintenance time in the log located in *Section 4—Maintenance*.

### 11. HEATER CONTROL SWITCH

Turns on the cab heater and controls the fan speed.

### 12. 2-SPEED TRAVEL CONTROL SWITCH

Turn the switch on to engage a higher travel speed. With switch on, machine can only move straight forward or rearward. It will not steer to either side.

### 13. CAB FRONT WORKING LIGHT SWITCH

Turns the working light on the front of the cab on and off. The switch has two positions; the first position operates the low beam; the second position operates the high beam.

### 14. IGNITION KEYSWITCH

With the key in the OFF (vertical) position, power from the battery is disconnected to the controls and console. This is the only position that the key can be inserted or removed from the switch.

With the key turned one position clockwise (RUN) from the vertical position, power from the battery is supplied to all controls and electrical circuits.

With the key turned fully clockwise (START) and held in position, the electric starter energizes and starts the engine when the glow plug indicator goes out. Release the key after the engine starts.

**NOTE:** The key must always be returned to the OFF position between attempts to start the engine in order to activate the glow plug system.

### 15. BOOM WORKING LIGHT SWITCH

Turns the boom working light on and off.

### 16. REAR WORKING LIGHT SWITCH (Optional)

Turns the optional rear working light on and off.

### 17. WINDSHIELD WIPER SWITCH

Pushing the switch to the first position turns the windshield wiper on. Pushing and holding the switch in the second position activates the washer fluid pump.

## Operator's Seat Adjustment Controls

**NOTE:** The operator's seat left-hand console must be raised in order to exit the cab. In the raised position, the left-hand console locks out all hydraulic functions of the machine (Figure 3-7).

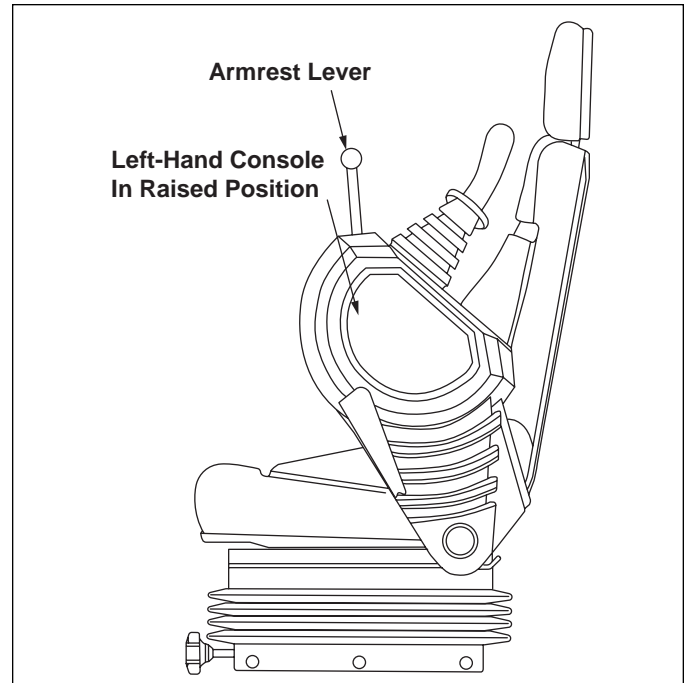


Figure 3-7. Operator's Seat with Left-Hand Console Raised

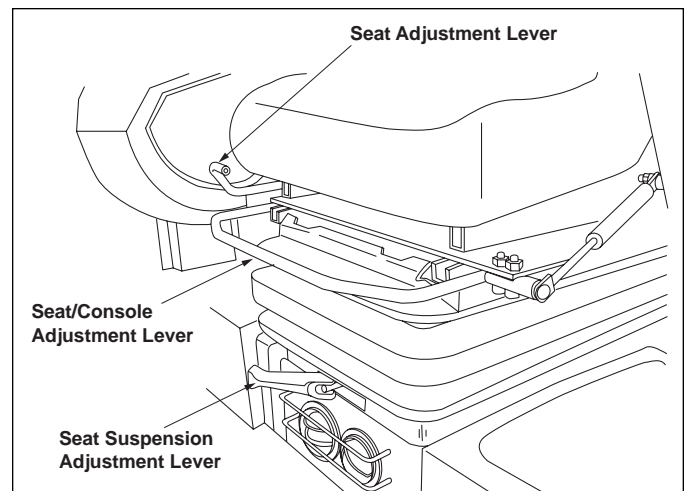


Figure 3-8. Operator's Seat Adjustment Controls

### SEAT SUSPENSION ADJUSTMENT LEVER

Turn the lever (Figure 3-8) to adjust the seat suspension for the operator's weight. An indicator on the front of the seat base shows the weight adjustment.

### SEAT/CONSOLE ADJUSTMENT LEVER

The seat/console lever (Figure 3-8) allows the operator to move the seat and console forward or rearward as a unit.

### SEAT ADJUSTMENT LEVER

The seat adjustment lever (Figure 3-8) allows the operator to move the seat only (without console) forward or rearward.

## Ventilation

### WINDSHIELD

The windshield can be opened for ventilation. Turn the latch (Figure 3-9) located at the upper corners of the windshield. Grasp the handles and pull the windshield up until latches lock in position.

To close the windshield, turn the latches then lower the windshield until the latches lock in position.

### SIDE WINDOW

The side window can be opened for ventilation. Squeeze the latch (Figure 3-10) located on the window, then slide window to desired position and release latch.

### VENTS

There are two side vents located underneath the side window (Figure 3-10). Open the slats for better ventilation.

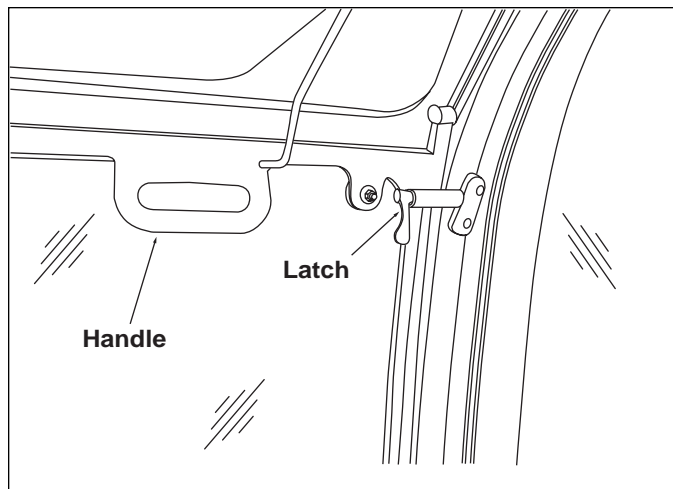


Figure 3-9. Windshield

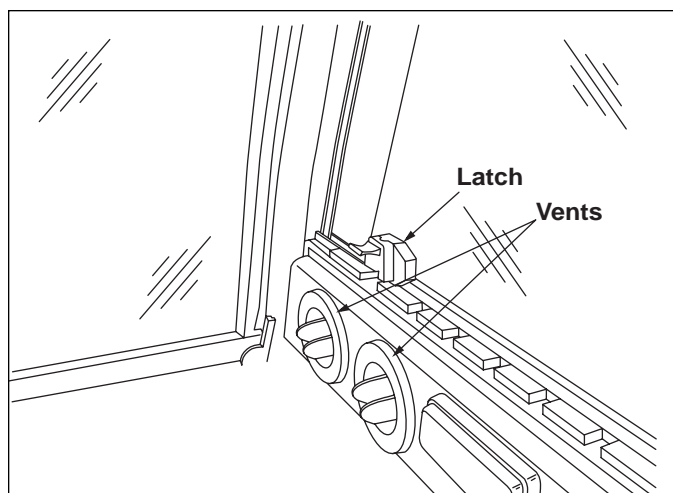


Figure 3-10. Side Window

## Cab Latches

### CAB DOOR LATCH

When fully opened, the cab door will lock in position to the side of the cab. To release the latch, pull the black knob located on the right side of the door jamb.

### ENGINE AND HYDRAULIC VALVE COVER LATCHES

The engine cover and hydraulic valve cover latches are located just inside the door next to the operator's seat (Figure 3-11).

To unlock a cover, pull the respective latch handle. The cover can then be opened.

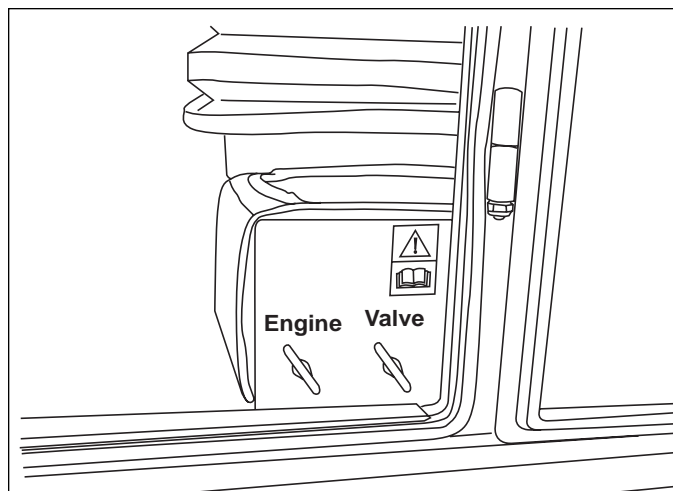


Figure 3-11. Engine and Valve Cover Latches

# MACHINE OPERATION

## WARNING

Instructions are necessary before operating or servicing the machine. Read this entire manual and all decals on the machine. Follow all warnings and instructions. Failure to follow all instructions can cause injury or death.

### Checklist Before Operation

Check the following items before each day of operation:

- Seat belt and mounting hardware.
- Decals. Replace as required.
- Air cleaner and intake hoses. Clear any obstructions.
- Engine coolant level and system for leaks.
- Clean engine area of any flammable materials.
- Check engine oil level and fill if required.
- Check hydraulic system for leaks and check hydraulic fluid level.

## DANGER

See the list of recommended lubricants in *Section 4—Maintenance* for proper grade of engine oil and hydraulic oil. Only use oils of specified on the list or serious injury or death could occur.

- Check all pivot points for proper operation.
- Check track tension.
- Check for broken and loose parts, and repair.
- Check fuel tank.

**IMPORTANT:** Never operate machine until fuel tank is empty or fuel system must be bled of air. Always fill tank after use.

## WARNING

Do not use ether with glow plugs (preheat) systems. Explosion can result which can cause injury or damage.

### Starting/Stopping the Engine

#### SAFETY DEVICES

When the machine is stationary (no pilot control pressure), the parking and travelling gear brake along with the blocking devices, are automatically activated.

All hydraulic functions are inoperable with the operator's seat left-hand console in the raised position.

The brakes and blocking devices are not released until a travel lever or control lever is operated.

#### NORMAL STARTING/STOPPING PROCEDURE

1. Adjust the operator's seat to desired settings.
2. Be sure all levers and controls are in neutral positions.
3. Insert ignition key into switch and turn clockwise to the first position. Indicators for oil pressure and battery voltage will light.
4. Turn the key fully clockwise and hold in position until glow plug indicator goes out (approximately 10 seconds when engine is cold).
5. When engine starts, release the key.
6. Allow engine to warm-up for approximately 5 minutes to warm the hydraulic fluid.
7. Turn the key fully counterclockwise to turn the engine off.

**IMPORTANT:** Do not engage the starter motor for longer than 10 seconds at each starting attempt. If the engine does not start, wait 30 seconds, turn the key fully off, then attempt to start the engine again.

## WARNING

When an engine is running in an enclosed area, fresh air must be added to avoid concentration of exhaust fumes. If the machine is stationary, vent the exhaust outside. Exhaust fumes contain odorless, invisible gases which can kill without warning.

Engines have hot parts and hot exhaust gas. Keep flammable materials away from engine.

Do not use machine in atmosphere containing explosive gas.

## Starting/Stopping The Engine (continued)

**IMPORTANT:** Indicator lamps must go out when engine starts. If they do not, turn off the engine **IMMEDIATELY** until cause has been determined and fixed.

### COLD WEATHER STARTING PROCEDURE

1. Install an engine heater.
2. Be sure engine oil is correct type and viscosity for the ambient temperature.
3. Be sure battery is fully charged.
4. Push the throttle lever (Figure 3-12) fully forward.
5. Follow all steps under *Normal Starting Procedure*.
6. As the engine warms up and engine speed increases, move the throttle lever to the idling position.

### NEW MACHINE BREAK-IN PROCEDURE

A new machine requires careful operation during the first 100 hours to properly break-in various parts. If the machine is subjected to hard use during the break-in period, the performance and service life will be reduced.

Perform the following when operating a new machine:

- After starting, let the engine idle for 5 minutes so all the components can warm-up.
- Avoid operation with heavy loads or at high speeds.
- Avoid sudden starting and stopping or abrupt motions.

## Moving the Excavator

1. Set the travel speed using the travel speed switch on the console:  
Slow Speed Maximum = 1.6 mph (2.6 km/h)  
Fast Speed Maximum = 3.7 mph (5.3 km/h)

**NOTE:** If the travel speed switch on the console (Figure 3-6) is in the fast speed position, machine will not turn right or left. It will only go straight forward or rearward.

2. Push or pull the travel levers w/foot pedals to move the machine (Figure 3-13).

Push both levers forward to move forward.

Pull both levers rearward to travel in reverse.

**NOTE:** If the superstructure has been rotated 180° (dozer blade at the rear), travel levers will work in the opposite manner. Pushing levers forward will cause the machine to travel in reverse and pulling levers to the rear will move the machine forward.

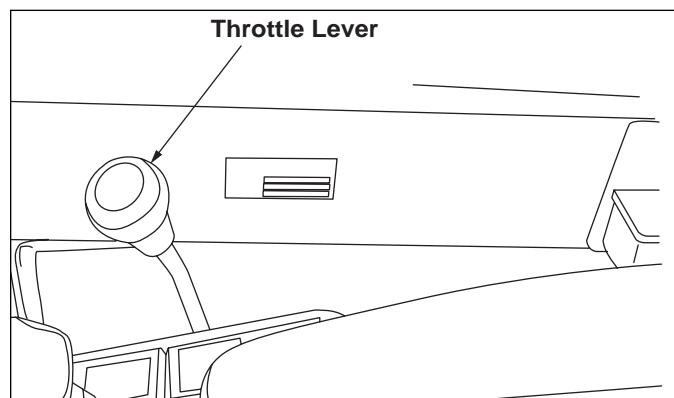


Figure 3-12. Throttle Lever

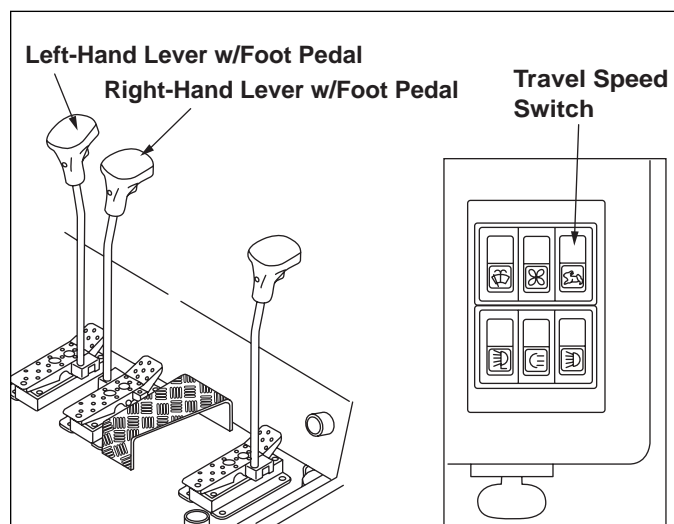


Figure 3-13. Travel Levers & Speed Switch

3. To turn left, pull the left-hand travel lever back and push the right-hand lever forward.

To turn right, pull the right-hand lever back and push the left-hand lever forward.

4. To stop travelling, return levers to neutral (middle) position.

**NOTE:** When released, levers and controls return to the neutral position automatically.

## Mandatory Safety Shutdown Procedure

Before leaving the machine:

1. Lower the working equipment to the ground and support it securely.
2. Reduce throttle and turn off the engine.
3. Lock out controls by raising left control console.
4. Remove the ignition key and take it with you.

# EARTHMOVING

## Operating On Slopes

### **WARNING**

**Do not travel up or across a slope steeper than 15°. Do not travel down a slope steeper than 25°. Keep boom centered while travelling.**

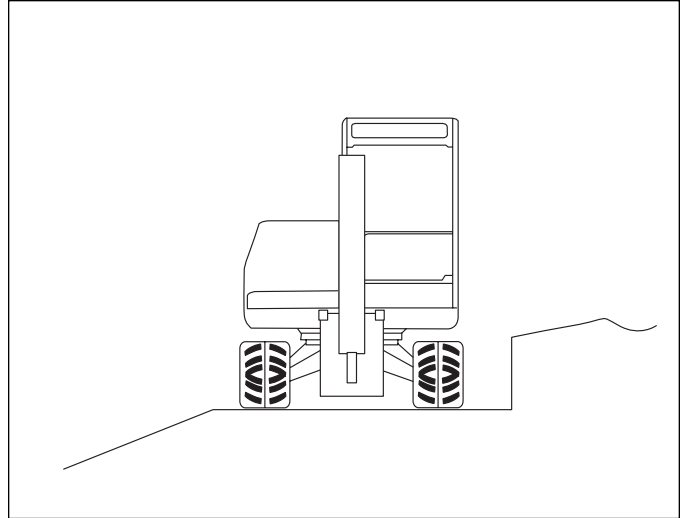
**Keep attachments as low as possible when travelling on slopes or rough terrain.**

Operating on a slope is inherently dangerous. It is recommended to level the work area as shown in Figure 3-14. If this is not possible, use the following guidelines.

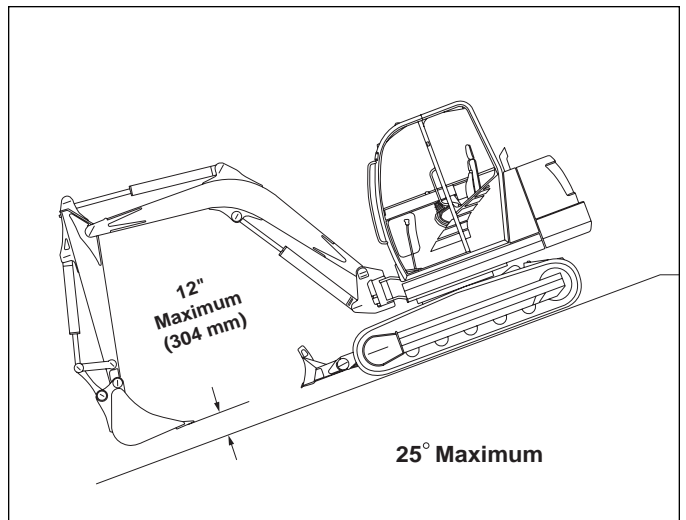
- When going down a slope, control the speed with the travelling levers and the throttle lever.
- When going down grades that exceed 15°, put the machine in the position shown in Figure 3-15. Run the engine slowly.
- Operate as slowly as possible and avoid sudden changes in direction.
- Avoid travelling over objects such as rocks, trees, stumps, etc.
- Stop the machine travel before moving the bucket or dozer controls.
- Slow down the work cycle. Take your time.
- Avoid working with the tracks positioned across the slope. Position the machine with the blade downhill and lowered.
- Avoid swinging or extending the bucket farther than necessary in a downhill direction. When you must swing the bucket downhill, keep the boom low and skid the bucket along the ground.
- When working with the bucket on the uphill side, keep the bucket as close to the ground as possible. Unload far enough away from the trench or hole to prevent the possibility of a cave-in.

## Operating in Water

- Mud and water should be removed from the machine before parking. If possible, park the machine on boards or concrete to prevent the track or undercarriage from freezing to the ground and preventing machine movement.



**Figure 3-14. Levelling the Work Site on a Slope**



**Figure 3-15. Travelling on a Slope Exceeding 15°**

- Do not operate or immerse the machine in water higher than the tracks.
- Properly grease the machine if it has been operated or immersed in water for a period of time.

**IMPORTANT: Never operate machine until fuel tank is empty or fuel system must be bled of air. Always fill tank after use.**

### Excavator Boom Slewing

## WARNING

**Always ensure adequate stability when working with the machine. Particularly when working with equipment slewed to the side. Changing the working equipment alters the stability (weight) of the machine.**

The excavator boom can be slewed 45° to the right and 80° to the left from the basic front position. This allows excavation of trenches along walls, fences, etc.

### Digging

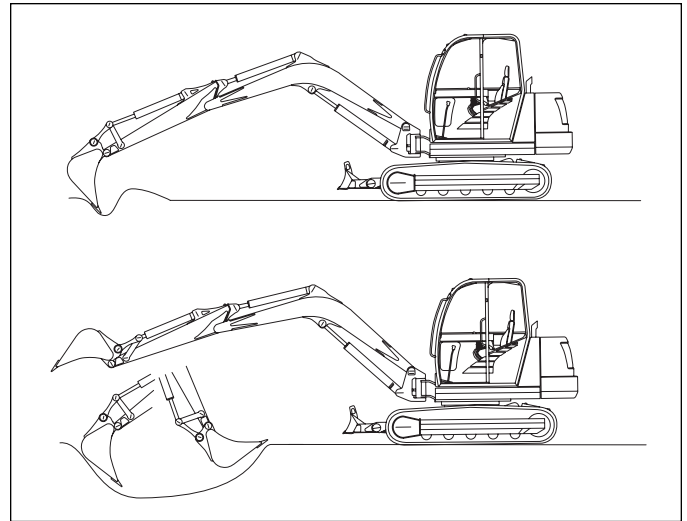
#### OPTIMAL STABILITY WHEN DIGGING

- Use the dozer blade to support the excavator on the ground.
- Never dig under the machine. Support the walls properly when excavating or working close to trenches.

## WARNING

**Always ensure adequate stability when working near trenches. Be aware of conditions that could cause the earth to collapse resulting in risk of injury or death.**

- To obtain maximum digging performance, avoid fully extending the excavator arm. Excavate using long, flat pulling movements of the arm (Figure 3-16).



**Figure 3-16. Proper Excavating**

### Grading

- The boom must be fully raised and the bucket tilted in (up) when grading.
- When grading, the material may be pushed away to the front or the side.
- Raise the dozer blade slightly if excessive resistance occurs.

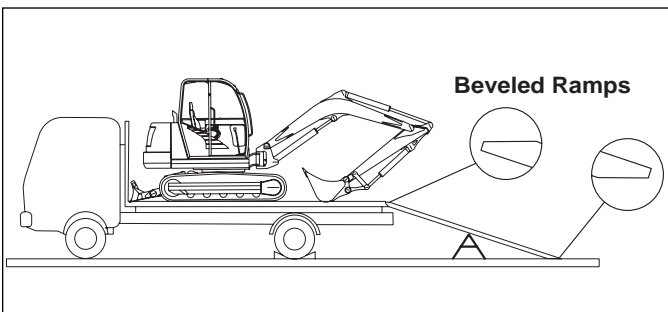
# TRANSPORTING

## Loading Machine for Transport

- Use only transport machines that are in proper working order and are approved for use on public roads.
- When using ramps to load machine onto the transport machine:
  - Do not exceed an incline of 18°.
  - Ramp width must be at least 1½ times the width of the track.
  - Clean dirt, mud, ice and snow from the ramps and tracks.
- Use metal loading ramps with a slip-resistant surface.

**NOTE:** *The ends of the ramps should be beveled to prevent damage to the rubber tracks (Figure 3-17).*

- Attach ramps securely to the transport machine to prevent them from slipping off during loading.
- Load the machine on solid, even ground.
- When loading, apply the transport machine parking brake and chock the wheels.
- Determine the direction of the track movement (blade facing forward) before moving the machine onto the ramps.
- After the machine is on the transport machine, lower the dozer blade and the bucket onto the loading surface (Figure 3-17). Turn off the engine.
- Lock the cab.
- Place chocks under machine tracks and secure machine to prevent slipping, overturning and moving on the transport machine.
- Use the points on the excavator indicated by decals for tie down.



**Figure 3-17. Transporting the Machine**

## Lifting Machine

### CAUTION

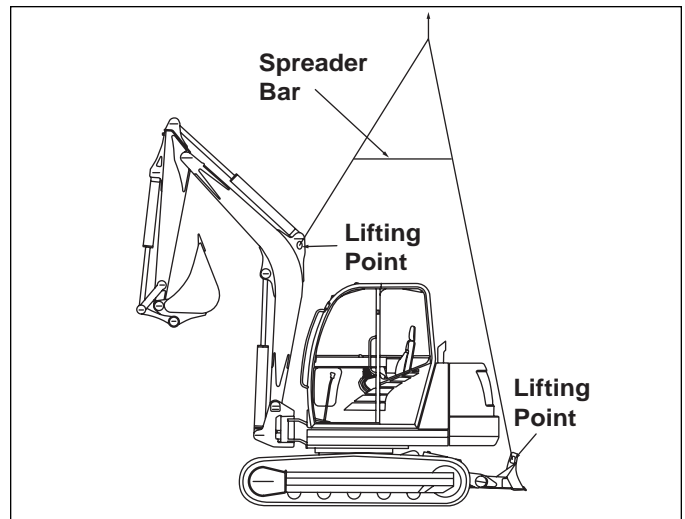
**Use lifting device with sufficient capacity for the weight of the machine plus any attachments.**

**Maintain center of gravity and balance when lifting.**

**Do not swing boom or cab.**

**Never lift machine with operator aboard.**

- Secure the lifting fixture sling to the lifting points on the machine (Figure 3-18).
- Install spreader bar above the cab to prevent lifting fixture from rubbing on the machine.
- Do not exceed rated load capacity.



**Figure 3-18. Machine Tie Down Points**

# MAINTENANCE

## GENERAL INFORMATION

### **WARNING**

Instructions are necessary before operating and servicing the machine. Read and understand this entire manual. Follow warnings and instructions for operation and maintenance. Check for correct function after adjustments or maintenance. Failure to follow instructions can result in injury or death.

### **WARNING**

Be sure you are familiar with all safety devices and controls before operating or servicing the machine. Know how to stop before starting. This GEHL® Company machine is designed for use only with GEHL® Company approved accessories or referral attachments. The GEHL® Company cannot be responsible for operator safety if the unit is used with non-approved attachments.

### **WARNING**

Read and thoroughly understand all safety decals before operating the machine. DO NOT operate the machine unless all factory installed guards and shields are in place.



### **CALIFORNIA PROPOSITION 65 WARNING**

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

### **WARNING**

Hydraulic reservoir is under pressure. Avoid contact with leaking hydraulic fluid or diesel fuel under pressure. It can penetrate the skin or eyes.

#### Care and Servicing

- Care and servicing have a significant influence on the readiness for operation and service life of the machine.
- For additional servicing work regarding the engine, see the engine manual provided with the machine.
- Use of lubricants which do not correspond to the manufacturer's recommendations may invalidate warranty claims.
- More frequent servicing, other than the recommended intervals, may be required under extreme operating conditions.
- Always dispose of waste lubricating oils and hydraulic fluids according to local regulations or take to a recycling center for proper disposal. DO NOT pour fluids onto the ground or down a drain.

#### Maintenance Safety

- Never service the machine without reading the applicable instructions.
- Always lower bucket and dozer blade to the ground before performing any maintenance.
- Use correct procedures to lift and support the machine. Always lift the blade fully before installing jackstands.
- Cleaning and maintenance are required daily.
- Keep engine cover and valve cover closed except for service. Close and latch covers before operating the machine.
- Be sure to have area properly ventilated when grinding or welding parts. Wear dust mask.
- Vent exhaust to outside when engine must be run for service. Exhaust system must be tightly sealed. Exhaust fumes can kill without warning.
- Never modify equipment or add attachments not approved by Gehl Company.
- Stop engine and let cool, then clean engine of any flammable materials before checking fluid levels.

# GENERAL INFORMATION (continued)

Maintenance Safety (continued)
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- Never service or adjust machine with the engine running unless service procedure calls for the engine to be running.
- Avoid contact with leaking hydraulic fluid or diesel fuel under pressure. It can penetrate the skin or eyes. 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 can penetrate the skin and cause serious injury. If any fluid is injected into your skin, see a doctor at once. Injected fluid MUST be surgically removed by a doctor or gangrene may result.
- The operating pressure settings of the hydraulic system should only be set by trained, qualified personnel. If malfunctions are caused by unauthorized alteration of operating pressure settings, all warranty responsibilities on the part of the manufacturer are automatically invalidated.
- Never fill fuel tank with engine running, while smoking or when near open flame.
- Keep body, jewelry and clothing away from moving parts, electrical contacts, hot parts and exhaust.
- Wear eye protection when servicing the machine.
- Lead acid batteries produce flammable and explosive gas. Keep arcs, sparks, flames and lighted tobacco away from batteries.
- Batteries contain acid which burns eyes and skin on contact. Wear protective clothing. If acid contacts body, flush well with water. For eye contact, flush well with water and get immediate medical attention.

# MAINTENANCE SCHEDULE

**IMPORTANT:** Maintenance work must be done at regular intervals. Failure to perform scheduled maintenance work will result in excessive wear and early machine failures. The following service schedule is a recommended guide for servicing the machine.

Engine							
Service Activity	Daily	Weekly	Every 50 Hours	Every 125-250 Hours	Every 500 Hours	Every 1000 Hours	Annually
Clean air filter	✓				✓		✓
Check oil level	✓						
Check fuel level	✓						
Check for leakage	✓						
Perform visual check	✓						
Check engine oil	✓						
Check coolant	✓						
Check engine mounting bolts		✓					
Check V-belt condition and tension		✓					
Clean cooler fins		✓					
Check fuel filter		✓					
Check exhaust system			✓				
Change engine oil and filter			✓*	✓			✓
Change fuel filter				✓			✓
Check engine speed regulation				✓			
Check valve clearance					✓		
Check cooling system and hoses					✓		
Check electrical connections					✓		
Check pre-glow system					✓		
Check coolant thermostat					✓		
Check generator & starter						✓	
Clean fuel tank						✓	
Check water pump						✓	

\* First change only.

## MAINTENANCE SCHEDULE (continued)

Hydraulic System							
Service Activity	Daily	Weekly	Every 50 Hours	Every 125-250 Hours	Every 500 Hours	Every 1000 Hours	Annually
Check hydraulic oil level	✓						
Check system for leakage	✓						
Check hydraulic pump bolts		✓					
Clean cooler fins		✓					
Change filter		✓*					
Change hydraulic oil		✓*			✓		✓
Check filter				✓			
Check hydraulic oil				✓		✓	✓
Check primary & secondary pressure limiting valves					✓		
Check breather filter & filling strainer						✓	

\* First change only.

Electrical System							
Service Activity	Daily	Weekly	Every 50 Hours	Every 125-250 Hours	Every 500 Hours	Every 1000 Hours	Annually
Check indicator lights	✓						
Check system function		✓					
Check connections			✓				

Travelling Gear							
Service Activity	Daily	Weekly	Every 50 Hours	Every 125-250 Hours	Every 500 Hours	Every 1000 Hours	Annually
Check track after work shift	✓						
Check track tension		✓					
Check bearing play of track rollers, track carrier rollers & front idlers.			✓				

Travelling Gear Unit							
Service Activity	Daily	Weekly	Every 50 Hours	Every 125-250 Hours	Every 500 Hours	Every 1000 Hours	Annually
Check for leakage		✓					
Change final drive gear oil					✓*	✓	✓

\* First change only.

Gear Ring							
Service Activity	Daily	Weekly	Every 50 Hours	Every 125-250 Hours	Every 500 Hours	Every 1000 Hours	Annually
Change gear ring					✓		
Check bearing system		✓					✓

Cab Heating System							
Service Activity	Daily	Weekly	Every 50 Hours	Every 125-250 Hours	Every 500 Hours	Every 1000 Hours	Annually
Check fan	✓						
Check function	✓						
Check heating circuit for leaks	✓						
Check seals	✓						

Bucket, Boom & Dozer Blade							
Service Activity	Daily	Weekly	Every 50 Hours	Every 125-250 Hours	Every 500 Hours	Every 1000 Hours	Annually
Lubricate all points	✓						
Check bucket teeth for wear	✓						
Check pin fastening	✓						
Check line fastenings	✓						
Check piston rods	✓						
Check hydraulic cylinder under load						✓	
Check bearing play				✓			

# MAINTENANCE SCHEDULE (continued)

General							
Service Activity	Daily	Weekly	Every 50 Hours	Every 125-250 Hours	Every 500 Hours	Every 1000 Hours	Annually
Check hydraulic system	✓						
Check bolts	✓						
Check lights	✓						
Check windshield wiper system		✓					
Check for leaks	✓						

## LUBRICATION

Lubrication Points
<p><b>Green Caps</b>—lubricate weekly (points marked with a “W”)</p> <p><b>Blue Caps</b>—lubricate daily</p> <p>Superstructure bearing system (W)</p>

## Recommended Lubricants

### ENGINE OIL

BP Vanellus FE, APISF-CD + SAE 10W 40

### HYDRAULIC OIL

BP Energol SHF 46

### SLEWING RING

- Gearing: BP Energrease OG
- Ball Bearing: BP Energrease L 21 M

### TRAVELLING GEAR UNIT

Gearoil EP 90 API GL 4

### SLEWING GEAR UNIT

Gearoil EP 90 API GL 4

### EXCAVATOR ARM

BP Energrease L 21 M

Gleitmo 805 (for initial lubrication of pins and tension bushings)

### ALL LUBRICATION POINTS

BP Energrease L 21 M

### RANGES OF APPLICATIONS

1. from -77°F to +104°F (-25°C to +40°C)  
outside temperature
2. from -59°F to +104°F (-15°C to +40°C)  
outside temperature

**NOTE:** All listed greases are suitable for -77°F to +104°F (-25°C to +40°C).

## ENGINE

**NOTE:** Be sure to read the engine manual supplied with this machine.

### Checking Engine Oil Level

**IMPORTANT:** See the lubricant list for engine oil grade. Only use engine oil specified, or of equivalent quality and grade, or damage to the engine could occur.

The machine must be on a level surface and the engine turned off.

1. Run the engine until it is at operating temperature, then turn the engine off.
2. Pull the engine cover latch lever (Figure 4-1) and raise the engine cover.
3. Check the engine oil level using the dipstick located on rear of the engine (Figure 4-2).
4. Add oil if required.

**NOTE:** The marks on the dipstick indicate the minimum and maximum oil levels.

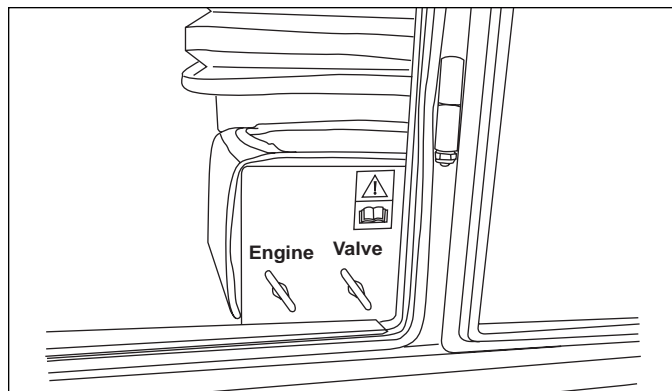


Figure 4-1. Engine Cover Latch Lever

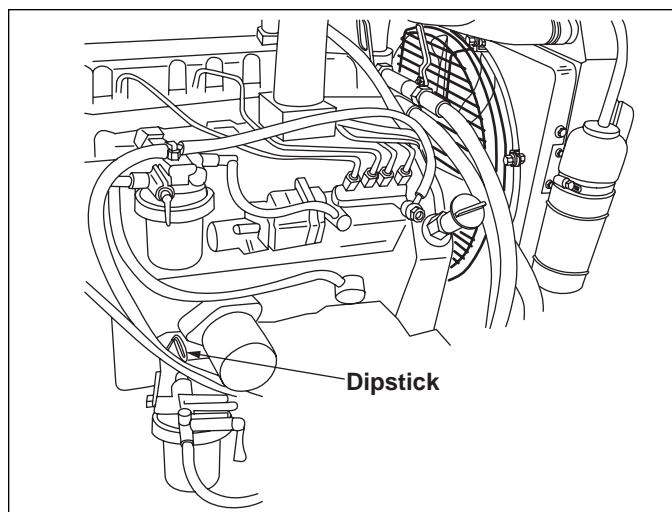


Figure 4-2. Engine Oil Dipstick

# ENGINE (continued)

## Changing Engine Oil & Filter

1. Place the machine on a level surface. Run the engine until it is at operating temperature, then turn the engine off.
2. Pull the engine cover latch lever (Figure 4-1) and raise the engine cover.
3. Remove the drain plug from the oil pan underneath the engine and allow oil to drain into a container.
4. Remove the oil filter using a filter wrench.
5. Clean the filter housing surface. Put a film of clean oil on the filter gasket. Install the new filter with gasket and hand tighten.
6. Reinstall the drain plug.
7. Remove the oil fill cap from the engine (Figure 4-3). Pour in new oil. Crankcase capacity is 6.1 qts. (5.7 L). Reinstall oil fill cap.
8. Start the engine and let it run for several minutes. Stop the engine and check for leaks at the oil filter and oil drain plug.
9. Check the oil level again and add oil if necessary.

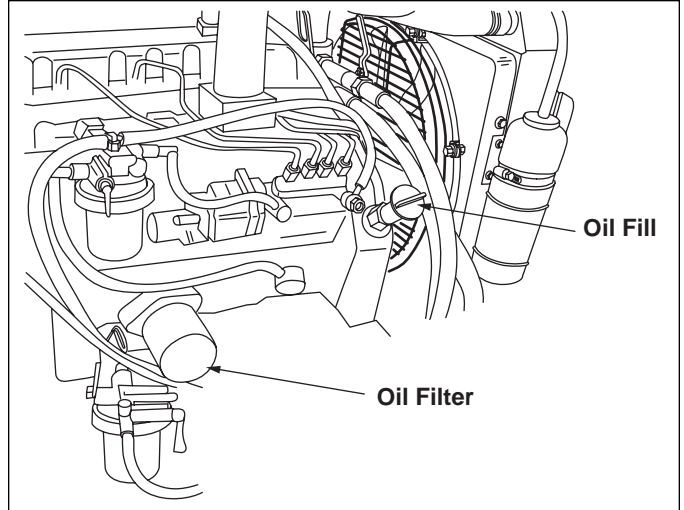


Figure 4-3. Engine Oil Fill and Filter

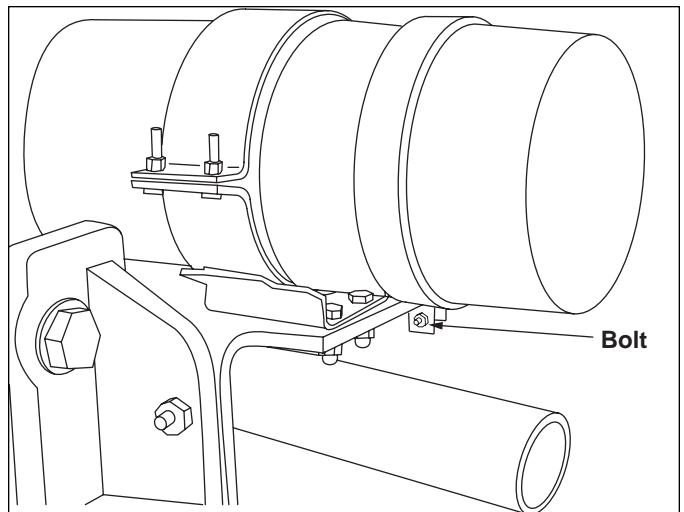


Figure 4-4. Engine Air Filter

## Air Cleaner Service

1. The air cleaner is located under the valve cover. Pull the valve cover latch lever (Figure 4-1) and raise the valve cover.
2. Turn the air cleaner cover bolt (Figure 4-4) to remove the air cleaner cover and gasket.
3. Remove the wingnut (Figure 4-5) and remove air cleaner element.
4. Clean air cleaner element with compressed air (Figure 4-5) (300-450 kPa).
5. Reinstall air cleaner element, wingnut, gasket, and air cleaner cover. Tighten cover bolt.
6. Close valve cover.

**IMPORTANT:** Do not knock the element against solid object to remove dust. The element may become distorted and damaged.

**Do not operate engine without the air cleaner element installed or damage to the engine could occur.**

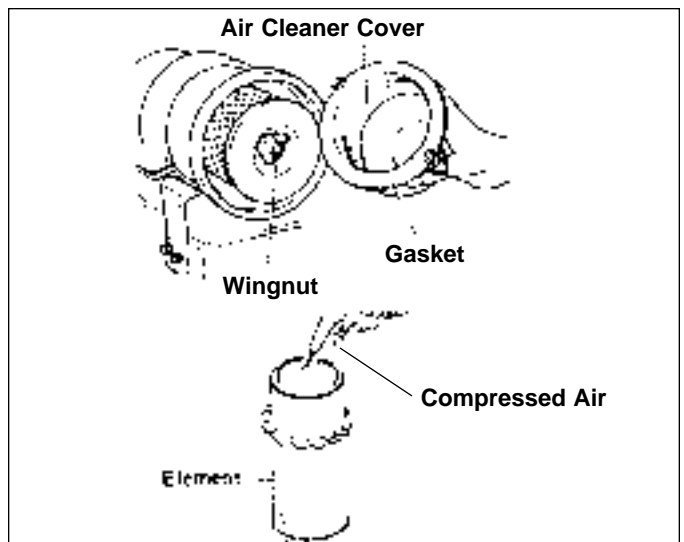


Figure 4-5. Servicing Engine Air Filter

# FUEL SYSTEM

## Filling the Fuel Tank

### **WARNING**

**Stop and cool the engine before adding fuel. NO SMOKING! Failure to obey warnings can cause an explosion or fire.**

The fuel level in the tank is indicated by the fuel gauge on the console (Figure 4-6).

**NOTE:** When the fuel level reaches 2.5 gal. (2.3 L) the low fuel indicator light (Figure 4-6) will come on to alert the operator.

To fill the tank, remove the fuel filler cover located on top of the valve cover. Fill using diesel fuel with a cetane rating of over 45. Re-install fuel cap.

**NOTE:** Never allow fuel tank to run dry or it will be necessary to purge the fuel system of air.

### **WARNING**

**Always clean up spilled fuel or oil. Keep heat, flames, sparks or lighted tobacco away from fuel and oil. Failure to use care around combustibles can cause explosion or fire, which can result in injury or death.**

## Fuel Filter

Unscrew the clear plastic housing (Figure 4-9) to change the filter element and clean dirt from the housing. Clean around the filter housing. Put oil on the seal of the new filter element. Install the fuel filter and hand tighten.

The fuel system must be purged of air after changing the fuel filter, or if the fuel tank has been run dry.

## Purging Air from the Fuel System

1. Turn the fuel filter valve (Figure 4-7) to the open position (vertical).
2. While operating the priming lever on the fuel injector pump, loosen the air bleeding screw (A, Figure 4-8) on the fuel filter. When fuel starts flowing from the bleeder valve (A) without any air, tighten the bleeder screw (A).
3. Repeat step 2 for bleeder screws B, C, D and E (Figure 4-8).

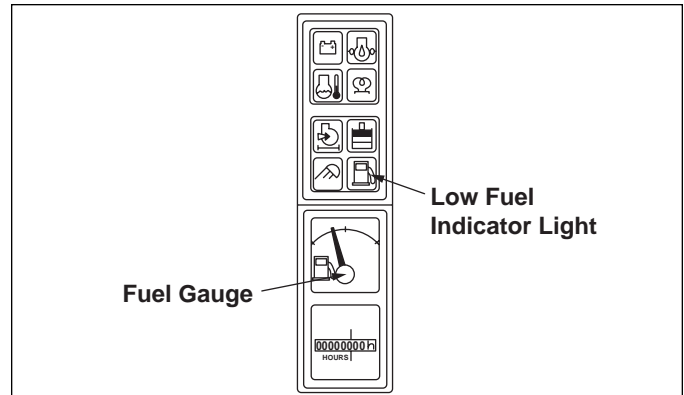


Figure 4-6. Fuel Gauge and Low Fuel Indicator

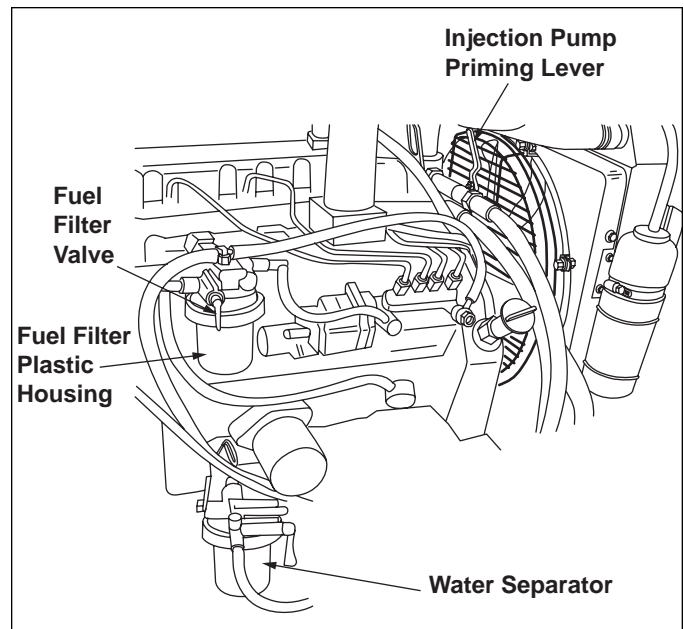


Figure 4-7. Fuel Filter

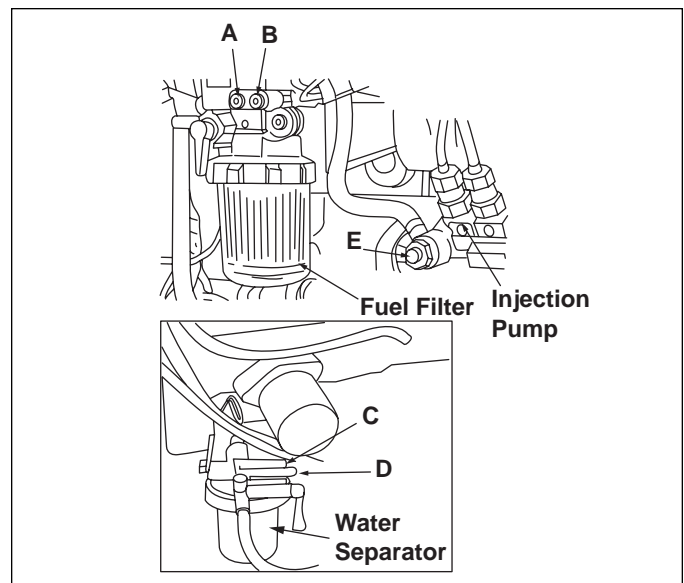


Figure 4-8. Bleeding Air from Fuel System

# COOLANT SYSTEM

## Checking Coolant Level

1. Pull the engine cover latch lever (Figure 4-1) and raise the engine cover.
2. Check the coolant level in the expansion reservoir (Figure 4-9).
3. If low, slowly remove cap and fill reservoir to FULL line.

## WARNING

Engine must be cold. Be careful to avoid burns when removing the cap. Keep face away from cap. Cover cap with a cloth, turn cap slowly to release pressure.

Refer to the engine manual for correct coolant mixture for your engine.

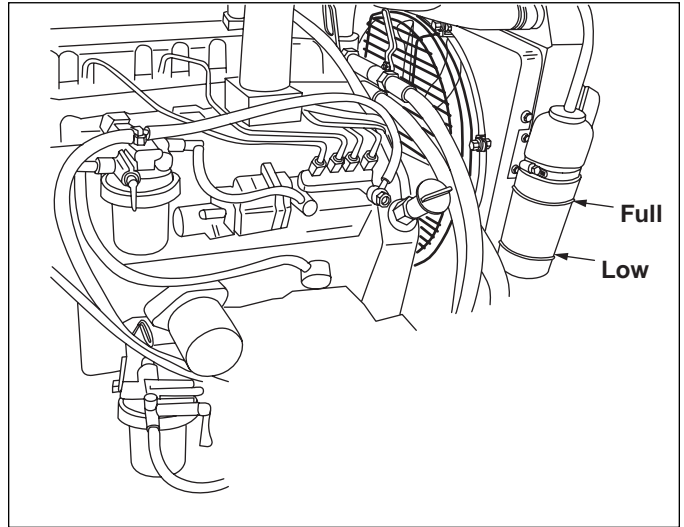


Figure 4-9. Checking Coolant Level

# ELECTRICAL SYSTEM

## Fuses

The fuse panel is located on the right arm console (Figure 4-10).

To replace a fuse, remove the panel cover and pull the old fuse from the socket. Install a new fuse and re-install the fuse panel cover.

Refer to page 3-3 in Section 3 for fuse identification.

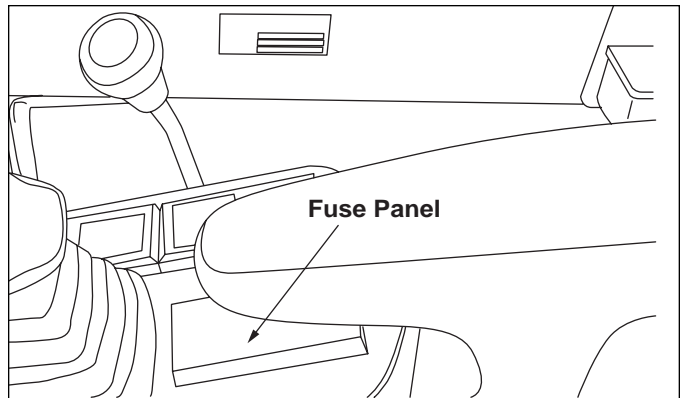


Figure 4-10. Fuse Panel

## Battery

## WARNING

Batteries contain acid which burns eyes and skin on contact. Wear safety goggles and protective clothing to keep acid off body.

In case of acid contact, wash immediately with water for several minutes. In case of eye contact, get medical attention immediately.

The battery is located under the valve cover. To access the battery, pull the valve cover latch lever (Figure 4-1) and open the valve cover.

The battery cables must be clean and tight. Remove any acid or corrosion from the battery and cables using a sodium bicarbonate and water solution. Cover the battery terminals and cable ends with battery saver grease.

The battery is maintenance-free and requires no other service.

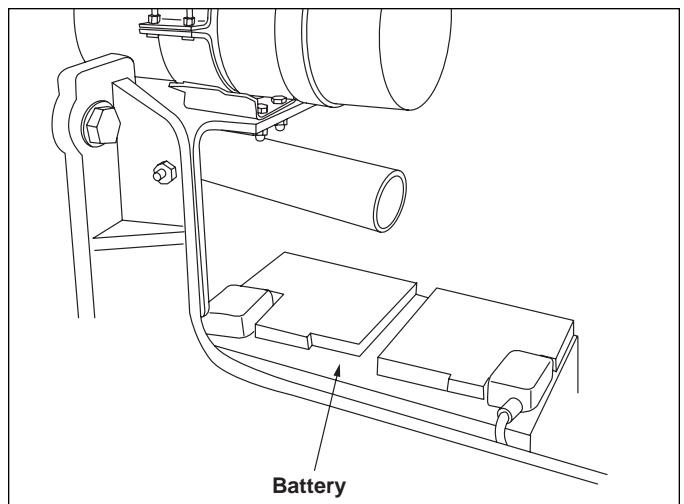


Figure 4-11. Battery

## **WARNING**

Keep arcs, sparks, flames and lighted tobacco away from batteries. When jump starting from booster battery, make final connection (negative) at engine frame.

**DO NOT** jump start or charge a frozen battery. Warm battery to 60°F (16°C) before connecting to a charger. Unplug charger before connecting or disconnecting cables to battery.

**Battery gas can explode and cause serious injury.**

**IMPORTANT:** When jump starting from another machine, be sure the second machine is not running while using the glow plugs. High voltage spikes from a running machine can burn out the glow plugs.

**IMPORTANT:** Damage to the alternator can occur if:

- Engine is operated with battery cables disconnected.
- Battery cables are connected when using a fast charger or when welding on the machine. Remove both cables from the battery.
- Extra battery cables (booster cables) are incorrectly connected.

Be very careful when jump starting the machine. Booster battery must be 12 volt.

1. Turn ignition key to the off position.
2. Pull the valve cover latch lever (Figure 4-1) and open the valve cover.
3. Connect one end of the cable to the positive (+) terminal on the booster battery. Connect the other end of the same cable to the positive (+) terminal on the machine battery.
4. Connect one end of the second cable to the negative (-) terminal on the booster battery. Connect the other end of the same cable to the machine frame.
5. Start the machine engine. Once the engine is running, remove the cable connected to the frame first. Disconnect the other cable from the machine battery positive (+) terminal.

# HYDRAULIC SYSTEM

## **WARNING**

Hydraulic reservoir is under pressure. Avoid contact with leaking hydraulic fluid or diesel fuel under pressure. It can penetrate the skin or eyes and cause severe injury.

### Checking Hydraulic Oil Level

1. Position the machine on a level surface.
2. Fully extend the bucket and boom. Lower bucket and dozer blade to the ground (Figure 4-12). Turn off the machine.
3. Pull the valve cover latch lever (Figure 4-1) and open the valve cover to expose the hydraulic oil level indicator (Figure 4-12).
4. Check the hydraulic oil level indicator (Figure 4-12). Oil level should be between black and red marks on sight glass. If hydraulic oil is required, proceed to step 5.
5. Remove access panel located on top of valve cover (Figure 4-13) to expose the hydraulic oil cap.
6. Slowly open the cap to relieve pressure.
7. Add hydraulic oil until oil level is between red and black marks on indicator (Figure 4-12).
8. Re-install hydraulic tank cap and tighten securely.
9. Start engine and let idle for a few minutes to build up pressure.
10. Check hydraulic functions. Recheck hydraulic oil level.
11. Reinstall access panel.

### Changing Hydraulic Oil

1. Position the machine on a level surface.
2. Fully extend the bucket and boom. Lower bucket and dozer blade to the ground (Figure 4-12). Turn off the machine.
3. Remove access panel located on top of valve cover (Figure 4-13) to expose the hydraulic oil cap.
4. Slowly open the cap to relieve pressure (Figure 4-14). Remove cap and clean strainer of any debris.

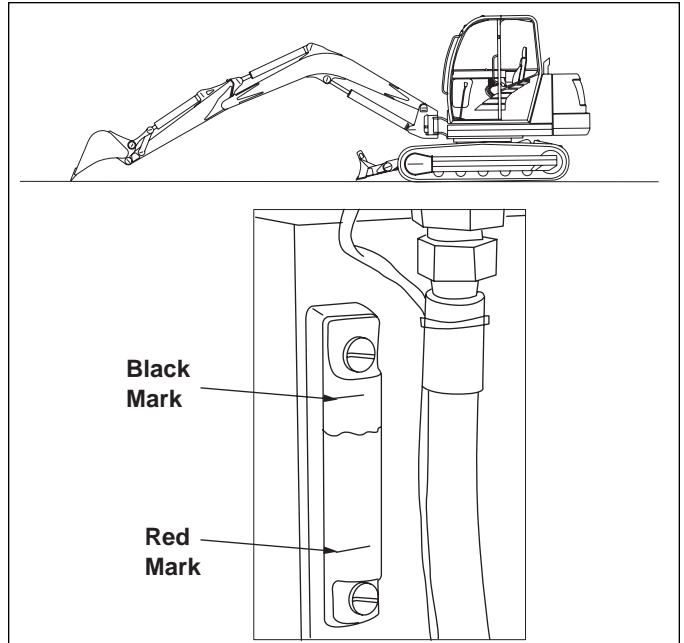


Figure 4-12. Checking Hydraulic Oil Level

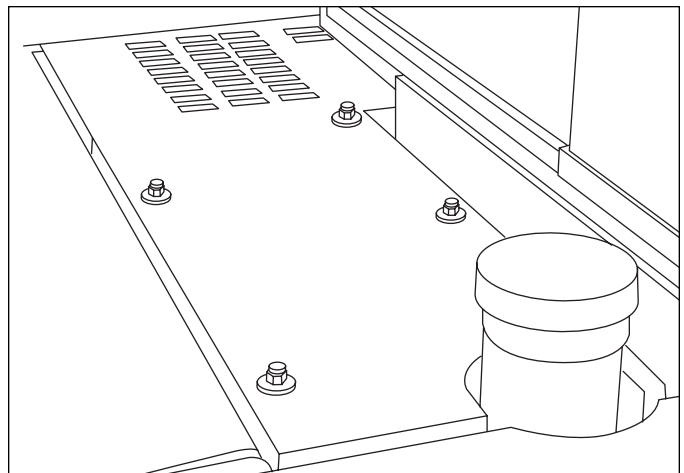


Figure 4-13. Hydraulic Oil Cap Access Panel

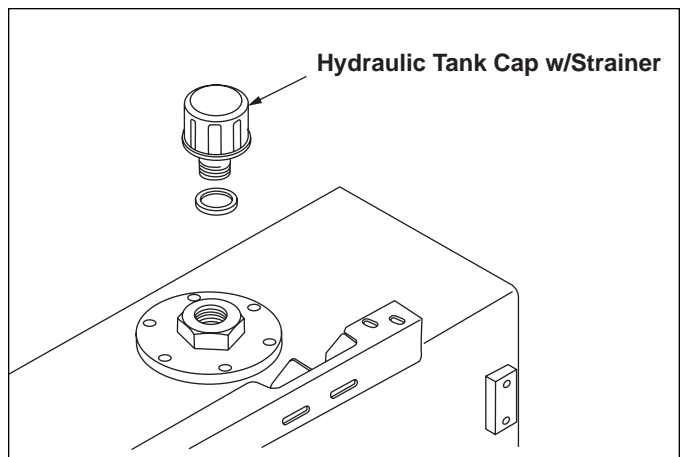
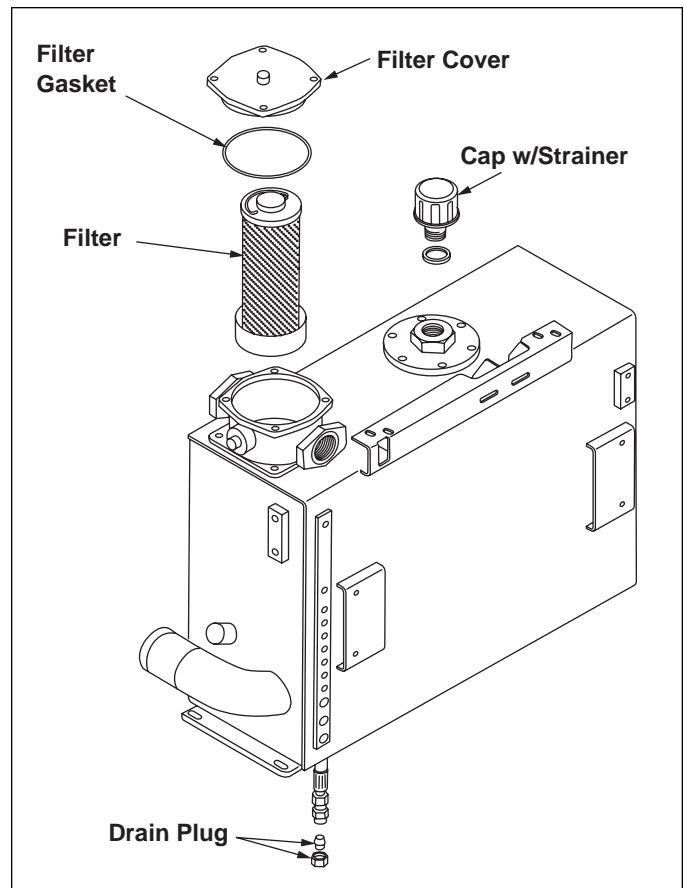


Figure 4-14. Hydraulic Oil Cap w/Strainer

5. Open the drain plug (Figure 4-15) and drain oil into a suitable container. Re-install drain plug and tighten securely.

**IMPORTANT: Always dispose of hydraulic fluids according to local regulations or take to a recycling center for proper disposal. DO NOT pour fluids onto the ground or down a drain.**

6. Remove four bolts and filter cover (Figure 4-15). Remove and discard old filter. Put clean hydraulic fluid on the filter gasket and install gasket and new filter into tank.
7. Reinstall filter cover and bolts.
8. Fill tank with hydraulic oil until oil level is between red and black marks on indicator (Figure 4-12).
9. Re-install hydraulic tank cap and tighten securely.
10. Start engine and let idle for a few minutes to build up pressure.
11. Check hydraulic functions. Recheck hydraulic oil level.
12. Reinstall access panel.



**Figure 4-15. Hydraulic Oil Tank**

# TRACK SYSTEM

## Changing Final Drive Oil

1. Position the machine on a level surface with final drive plugs positioned as shown in POSITION A, Figure 4-16. Turn off the engine.
2. Open both plugs and drain oil into a suitable container. Re-install plugs.
3. Turn the engine on and move the machine slightly until plugs are positioned as shown in POSITION B, Figure 4-16. Turn off the engine.
4. Remove both screw plugs. Pour fresh oil (Gearoil EP 90 API GL 4) into the top hole until oil starts to run out of the bottom hole.
5. Re-install both plugs securely.

**IMPORTANT:** Always dispose of oil according to local regulations or take to a recycling center for proper disposal. DO NOT pour fluids onto the ground or down a drain.

## Adjusting Track Tension

1. Position the machine on a level surface.
2. Use the bucket and dozer blade to lift the unit up until tracks are just clear of the ground. Turn off the engine.
3. Remove the side plate from the left track to expose the adjustment fitting (Figure 4-17).
4. Using a grease gun, pump grease into the fitting until the idler wheel is equidistant as shown in Figure 4-17.

**NOTE:** A grease gun is supplied with machine tool kit.

5. Install side plate.
6. Repeat steps 4 & 5 for right side track.
7. Start the engine. Lower the unit to the ground.

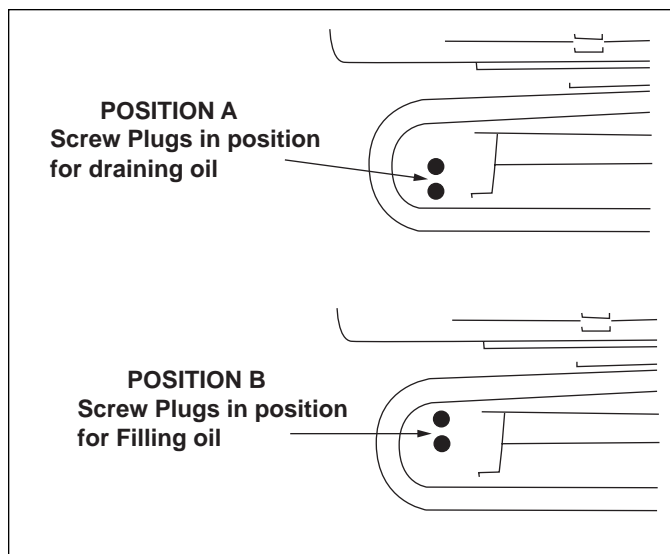


Figure 4-16 Changing Final Drive Oil

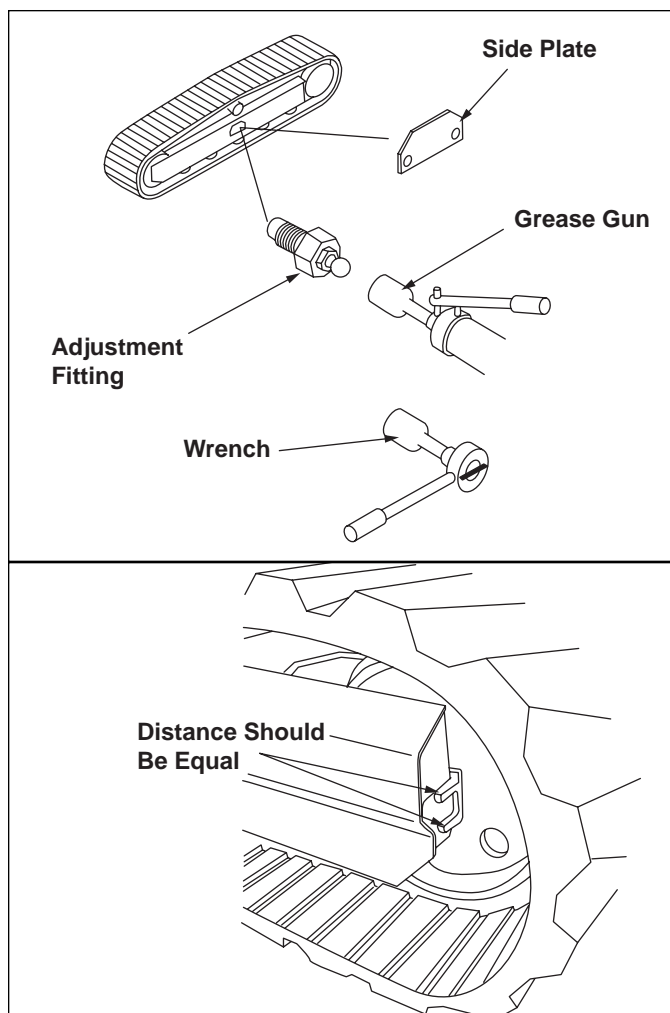


Figure 4-17. Track Adjustment

## MAINTENANCE LOG

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## MAINTENANCE LOG

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# TROUBLESHOOTING

## GENERAL INFORMATION

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### **WARNING**

Make sure you are familiar with all safety devices and controls before operating or servicing the machine. Know how to stop before starting. This GEHL® Company machine is designed for use only with GEHL® Company approved accessories or referral attachments. The GEHL® Company cannot be responsible for operator safety if the unit is used with non-approved attachments.

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### **WARNING**

Instructions are necessary before operating and servicing the machine. Read and understand this entire manual. Follow warnings and instructions for operation and maintenance. Check for correct function after adjustments or maintenance. Failure to follow instructions can result in injury or death.

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### **WARNING**

Read and thoroughly understand all safety decals before operating the machine. **DO NOT** operate the machine unless all factory installed guards and shields are in place.

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### **CALIFORNIA PROPOSITION 65 WARNING**

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

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### **WARNING**

Hydraulic reservoir is under pressure. Avoid contact with leaking hydraulic fluid or diesel fuel under pressure. It can penetrate the skin or eyes.

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## ENGINE

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Engine will not start.	No fuel.	Add fuel to tank.
	Battery power insufficient.	Charge battery or replace if necessary.
	Fuel filter contaminated.	Clean fuel filter.
	Pre-glow system not working.	Replace pre-glow system (contact authorized repair center.).
Insufficient engine power.	Fuel line leakage.	Replace fuel line.
	Air filter contaminated.	Clean air filter.
	Engine not at operating temperature.	Warm up the engine.
	Engine overheated.	Check cooling system.

## INDICATOR LAMPS

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Engine oil pressure indicator light comes on during operation.	Oil pressure too low.	Stop engine immediately. Check oil level and add oil if necessary. If oil level is correct, oil pump may be inoperative.
Water temperature display light comes on during operation.	Oil level too low.	Add oil.
	Coolant level too low.	Add coolant.
	Fan blades rotate too slowly.	Adjust V-belt tension.
	Air filter contaminated.	Clean air filter.
Battery voltage light comes on during operation.	Alternator not charging properly.	Adjust V-belt tension.
Fuel light comes on.	Insufficient fuel.	Add fuel.

## SEALS & HOSES

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Oil or fuel leakage under engine.	Loose hose connections.	Tighten hose connections.
	Seals or hoses damaged.	Change seals or hoses and check engine oil level. Add engine oil if required.
Oil losses from hydraulic system.	Loose hose fittings.	Tighten hose fittings. Check hydraulic oil level. Add hydraulic oil if required.
	Seals, hoses or lines damaged.	Change seals, hoses and/or lines.

## TRAVELLING GEAR








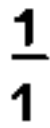

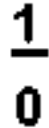
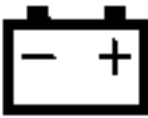


















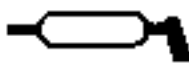







PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Machine will not travel in any direction.	Foreign body jammed in track.	Remove foreign body.
	Gears not operative.	Repair gears (contact authorized repair center).
Machine will not travel straight ahead.	Foreign body jammed in track.	Remove foreign body.
	Track tension unequal.	Adjust track tension.
	Travel valves damaged.	Repair/replace valves (contact authorized repair center).

## BUCKET, BOOM AND DOZER BLADE

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Slewing chassis is difficult or impossible.  Equipment does not work or works only at a low performance level.	Brakes do not release.	Contact authorized repair center.
	Insufficient lubrication.	Lubricate slewing ring hose connections.
	Slewing motor not operating.	Contact authorized repair center.
	Insufficient hydraulic oil.	Fill hydraulic oil reservoir.
	Insufficient engine power.	Contact authorized repair center.
	Coupling or pump damaged.	Contact authorized repair center.
	Pressure limiting valves set too low.	Contact authorized repair center.
	Hydraulic cylinder damaged.	Contact authorized repair center.
	Control valves damaged.	Contact authorized repair center.
Hydraulic cylinders lower too quickly.	Seals contaminated or damaged.	Contact authorized repair center.
	Heavy leakage at control spools.	Contact authorized repair center.
	Secondary cartridges damaged.	Contact authorized repair center.
Hydraulic lines overheat.	Hydraulic oil filter blocked.	Clean or replace filter.
	Insufficient hydraulic oil in oil reservoir.	Fill hydraulic oil reservoir.
	Secondary cartridges set too low.	Contact authorized repair center.
	Cooling system not in working order.	Clean oil cooler.

[illegible]

# INTERNATIONAL SYMBOLS

					
Engine Start	Engine Stop	Power On	Power Off	Work Light	Hazard Flasher
					
Horn	Volume - Full	Volume - Half Full	Volume - Empty	Battery Charge	Fuse
					
Read Operator's Manual	Engine Hourmeter	Diesel Fuel	Hydraulic Reservoir	Parking Brake	Neutral
					
Engine Air Filter	Glow Plug	Engine Oil	Engine Oil Pressure	Engine Oil Level	Engine Oil Temperature
					
Engine Coolant	Hydraulic Oil Temperature	Control Handles	Clockwise Rotation	Counterclockwise Rotation	Grease Lubrication Point
					
Machine Travel - Forward	Machine Travel - Reverse	Seatbelt - Lap Only	Tie-Down	Fast	Slow
					
					Alert



**Gehl Company** 143 Water Street, P.O. Box 179, West Bend, WI 53095-0179 U.S.A.

**California**

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