

**GEHL**

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# RS6-34

## Telescopic Handler



























*Serial Number 21541 thru 21700 (with Tier 3 engine)*

*Beginning with Serial Number 21701 (with Interim Tier 4 engine)*



# Operator's Manual

# Indicator and Operation Symbols

					
Read Operator's Manual	Fasten Seat Belt	Parking Brake	Brake Failure	Safety Alert	Hazard Flasher
					
Ignition Off	Ignition ON	Engine Start	Engine Oil Pressure	Engine Oil	Engine Coolant Temperature
					
Starting Aid Injection	Volume Full	Volume Half Full	Volume Empty	Fuel	Diesel Fuel
					
Transmission Oil	Transmission Temperature	Beacon	Turn Signals	Lights	Work Lights
					
Fan	Clutch Disengaged	Clutch Engaged	Crab Steer	2-Wheel Steer	4-Wheel Steer
					
Raise Load	Lower Load	Tilt Rearward	Tilt Forward	Retract Load	Extend Load
					
Brake Fluid	Frame Level Left	Frame Level Right	Wiper/Washer	Horn	Hourmeter
					
Hydraulic Oil	Female Auxiliary Hydraulic Coupler	Male Auxiliary Hydraulic Coupler	Battery	Transmission Temperature	

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## IDENTIFICATION INFORMATION

Write your Gehl Telescopic Handler serial number below.

Refer to the model and serial number when inquiring about parts or service from your Gehl dealer.

<b>MODEL NO.</b>	<b>RS6-34</b>
<b>SERIAL NO.</b>	

The model and serial numbers for this machine are on a decal located inside the operator's station.

# Chapter 1

## INTRODUCTION

The information in this Operator's Manual was written to give the owner/operator assistance in preparing, adjusting, maintaining and servicing of the Telescopic Handler. More important, this manual provides an operating plan for safe and proper use of the machine. Major points of safe operation are detailed in the **SAFETY** chapter of this manual.

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**GEHL Company asks that you read and understand the contents of this manual COMPLETELY and become familiar with the machine before operating it.**

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This Telescopic Handler is primarily intended for use as a material handler. However, it may be equipped with an optional system: the Personnel Work Platform (PWP) System, which is intended for use when lifting personnel. When there is no other practical option available, this machine, when equipped with the PWP System, is approved for use to lift personnel, but only with an approved work platform, with the PWP System activated, and in full compliance with the "Mandatory Work Platform Safety Rules" (see SAFETY chapter).

The use of this Telescopic Handler is subject to certain hazards that cannot be eliminated by mechanical means, but only by the exercise of intelligence, care and common sense. It is therefore 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 the loads.

Throughout this manual information is provided that is set in *italic* type and introduced by the word **IMPORTANT** or **NOTE**. Be sure to read carefully and comply with the message or directive given. Following this information will improve operating or maintenance efficiency, help to avoid breakdowns and damage, and extend the machine's life. A chart of standard hardware torques is located in the back of this manual.

A storage pocket in the back of the seat is provided for storing the Operator's Manual. After using the manual, please return it to the pocket and keep it with the unit at all times! If this machine is resold, Gehl Company recommends that this manual be given to the new owner.

If this machine was purchased "used," or if the owner's address has changed, please provide your Gehl dealer or Gehl Company Service Department with the owner's name and current address, along with the machine model and serial number. This will allow the registered owner information to be updated, so that the owner can be notified directly in case of an important product issue, such as a safety update program.

"Right" and "left" are determined from a position sitting on the seat and facing forward.

The wide Gehl dealership network stands ready to provide any assistance required, including providing genuine Gehl service parts. All parts should be obtained from or ordered through your Gehl dealer. Give complete information about the part, and include the model and serial number of the machine. Record the serial number in the space provided on the previous page, as a handy record for quick reference.

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

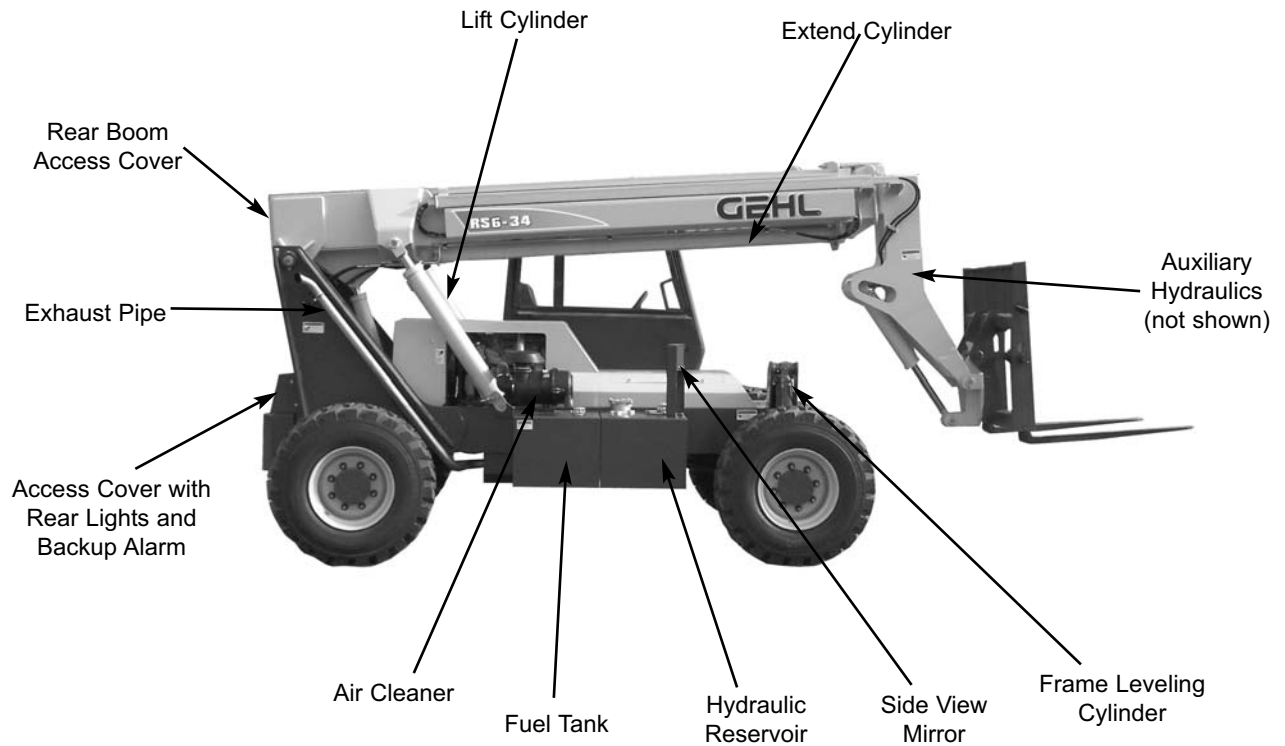
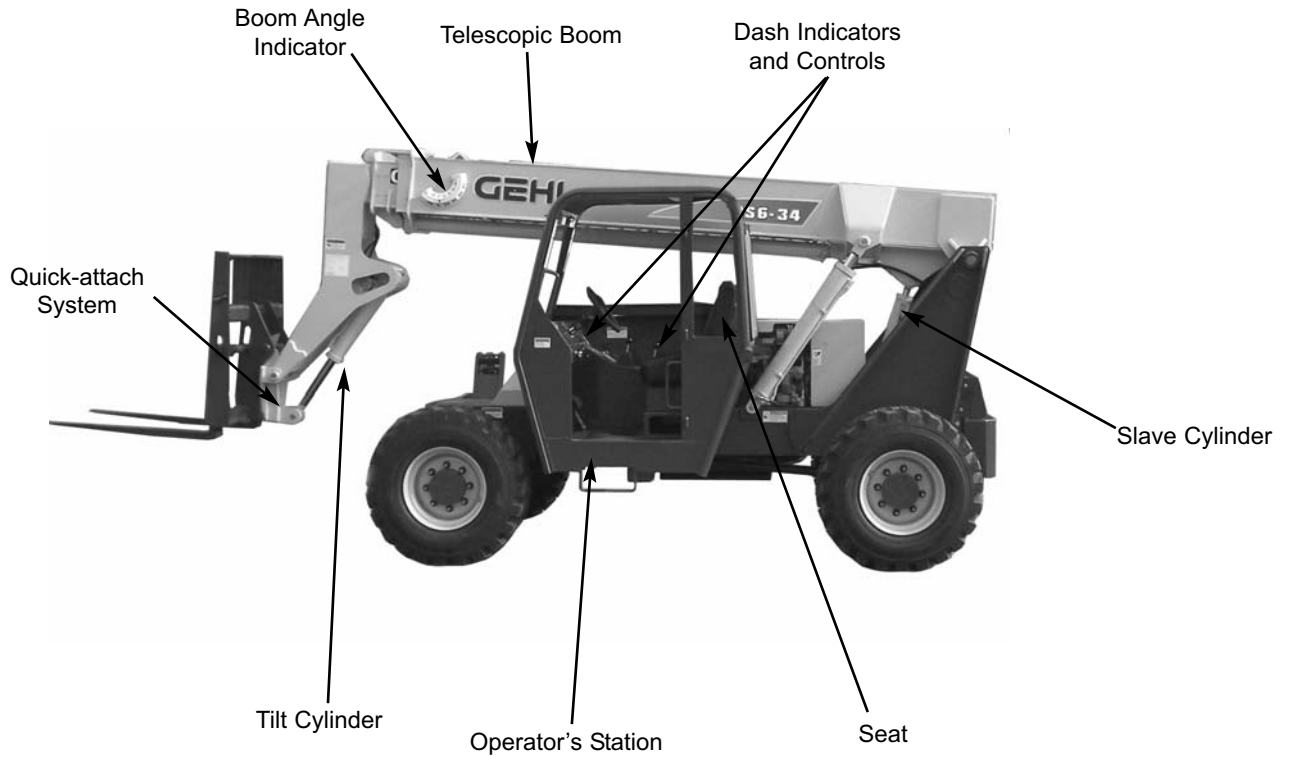
**Gehl Company, in cooperation with the Society of Automotive Engineers, has adopted this**

### Safety Alert Symbol

**to identify potential safety hazards, which, if not properly avoided, could result in injury. When you see this symbol in this manual or on the machine itself, you are reminded to BE ALERT! Your personal safety is involved!**



# Identification



# Chapter 2

## SPECIFICATIONS

### **Lifting Performance**

Maximum lift capacity:  
6000 lbs. (2721 kg)

Maximum lift height:  
34'-3" (10.44 m)

Capacity at maximum lift height:  
4000 lbs. (1820 kg)

Max. forward reach to load center:  
23'-3" (7.09 m)

Capacity at maximum forward reach:  
900 lbs. (408 kg)

Maximum below grade reach:  
24" (610 mm)

Frame leveling:  
10° left/10° right

### **General Dimensions**

Based on standard machine equipped with listed tires, 48" masonry carriage and 48" pallet forks.

Recommended tire type:  
15.00 x 19.5 12-ply  
Inflate to 60 psi (415 kPa)

Overall length, less forks:  
16'-0" (4.88 m)

Overall width:  
7'-10" (2.39 m)

Overall height:  
7'-9" (2.36 m)

Ground clearance: 14" (356 mm)

Wheel base: 9'-2" (2.8 m)

Outside turn radius: 12'-6" (3.81 m)

Machine weight:  
15,100 lbs. (6855 kg)

### **Instrumentation**

Gauges: Fuel level, hourmeter and coolant temperature

Monitoring lights:  
Engine oil pressure, alternator, transmission oil temperature, brake failure

Visual indicators:  
Boom angle, frame angle

### **Steering System**

Steer Valve: Fixed displacement rotary  
Displacement/Rev: 17.9 cu. in. (293 cc)  
System pressure: 2000 psi (138 bar)  
Steer cylinders: 1 per axle  
Steer mode valve:  
3-position, 4-way solenoid with dash-mounted switch actuation  
Steer modes: 2-wheel, 4-wheel, crab

### **Braking System**

Service brakes: Oil-immersed inboard hydraulic wet-disc type; separate front and rear systems;  
Manual foot pedal actuation

Parking brake: Spring-applied, hydraulic-release disc-type in front axle

Actuation is electric switch with engine running, automatic with engine off.

### **Electrical System**

Type: 12-volt, negative ground  
Battery: 950 cold cranking amps  
Circuit protection: Fuse panel  
Backup alarm: 107 dB(A)  
Horn: 111 dB(A)

Standard features:  
Brake lights, rear backup light, neutral start switch

Alternator: 75-amp

### **Service Capacities**

Cooling System: 4.3 gallons (16.3 L)  
50/50 mixture  
Anti-freeze protection: -34°F (-31°C)  
Pressure cap: 16 psi (110 kPa)

Fuel tank: 29 gals. (110 L)  
Hydraulic reservoir and system: 35 gals. (133 L)  
Transmission and cooler: 24 qts. (22.7 L)

Axles:  
Differentials: 9.6 qts. (9 L) ea.  
Hubs: 0.6 qts. (0.5 L) ea.

### **Transmission**

Type: Clark Powershift T12000  
Speeds: 3 fwd / 3 rev

Torque converter:  
Single-stage, dual-phase

Travel Speeds:  
1st gear: 3.6 mph (5.8 km/h)  
2nd gear: 7.9 mph (12.7 km/h)  
3rd gear: 20.2 mph (32.5 km/h)

### **Axles (front and rear)**

Type: Dana  
Drive/steer, open differential, double reduction planetary, full-time four-wheel drive  
Overall ratio: 15.4:1

### **Engine Options**

Features:  
Turbocharged In-line 4-cycle, 4-cylinder, direct-injection diesel fuel system, in-line fuel filter w/water trap, positive pressure lubrication, liquid pressurized cooling system, 20" (508 mm) blower fan, dry dual-element air cleaner, spin-on oil filter.

Machines with s/n 21541 thru 21700:  
John Deere 4045T Tier 3  
276 cu. in. (4523 cc) displacement  
84 hp (63 kW) @ 2400 rpm  
Oil capacity: 15.5 qts. (14.7 L)

Machines beginning with s/n 21701:  
John Deere 4045T Interim Tier 4  
276 cu. in. (4523 cc) displacement  
74 hp (55 kW) @ 2400 rpm  
Oil capacity: 15.5 qts. (14.7 L)

### **Hydraulic System**

Type: Open-center  
Pump: Single-section gear type

Displacement / revolution:  
2.7 cu. in. (44.3 cc)

Flow @ 2500 RPM:  
29 gpm (110 L/min)

Main relief pressure:  
3000 psi (207 bar)

Steer relief pressure:  
2000 psi (138 bar)

Hydraulic filter:  
In-tank return type, 10 micron media, replaceable element.  
Rated flow: 100 gpm (379 L/min)  
Rated pressure: 100 psi (690 kPa)  
By-pass pressure (full flow):  
25 psi (172 kPa)

Hydraulic strainer:  
In-tank suction, 149 micron media, replaceable element.  
Rated flow: 50 gpm (189 L/min)  
By-pass pressure: 3 psi (21 kPa)

# Chapter 3

## CHECKLISTS

### PRE-DELIVERY

The following Checklist is an important reminder of the inspections that **MUST** be made before delivering the Telescopic Handler to the customer. Check off each item after the prescribed action is taken.

√ **Check that:**

- NO parts of machine have 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. Cable connections are tight. Electrolyte at proper level.
- Cylinders, hoses and fittings are not damaged, leaking or loosely secured.
- Oil, fuel and air filters are not damaged, leaking or loosely secured.
- All grease fittings have been properly lubricated and no fittings are missing; see *Lubrication* chapter of this manual.
- Wheel nuts are torqued to 450 ft.-lbs. (610 Nm).
- Tires are inflated to 60 psi (415 kPa) cold.
- Hydraulic system reservoir, engine crankcase, engine coolant, transmission and axles are filled to the proper operating fluid levels.
- All adjustments have been made to comply with the settings given in this manual and in the separate engine manual.
- All guards, shields and decals are in place and securely attached.
- Model and serial numbers for this unit are recorded in space provided on this page and page 1.

**Start the machine and test-run the unit while checking that proper operation is exhibited by all controls.**

√ **Check that:**

- All indicators (lamps, switches, etc.) function properly.
- All hand and foot controls operate properly.
- The PWP System operates properly (if equipped). Refer to *Service and Storage* chapter for the procedure to check the PWP System.
- Boom, Quick-attach™ System with attachment tool and frame level control all function properly.
- No hydraulic system leaks when under pressure.
- Listen for abnormal noises or vibrations; if detected, determine their cause and repair as necessary.

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

\_\_\_\_\_  
Dealership's Name

\_\_\_\_\_  
Dealer Representative's Name

\_\_\_\_\_  
Date Checklist Filled Out

\_\_\_\_\_  
Machine Model #      Machine Serial #      Engine Serial #

### DELIVERY

√ **Check that:**

The following Checklist is a reminder of the important information that **MUST** be passed on to the customer at the time the unit is delivered. Check off each item as it is explained to the customer.

- Review with the customer the contents of this manual and the AEM Safety Manual for the following:
  - The *Index* at the back, for quickly locating topics;
  - The *Safety, Indicators and Controls*, and *Operation and Adjustment* chapters for information regarding safe use of the machine.
  - The *Lubrication* and *Service and Storage* chapters for information regarding proper maintenance of the machine. Explain that regular lubrication and maintenance are required for continued safe operation and long life.
- Give this Operator's Manual and the AEM Safety Manual to the customer and instruct them to be sure to read and completely understand their contents before operating the unit.
- Remind the customer of U.S. OSHA regulation 1910.178 (l), which specifies operator training requirements.
- 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 Company.
- Explain that a copy of the product warranty is included on the inside back cover of this Operator's Manual.

\_\_\_\_\_  
Customer's Signature

\_\_\_\_\_  
Date Delivered

**(Dealer's File Copy - Remove at Perforation)**

**INTENTIONALLY BLANK**

*(To be removed as Dealer's file copy)*



# Chapter 3

## CHECKLISTS

### PRE-DELIVERY

The following Checklist is an important reminder of the inspections that **MUST** be made before delivering the Telescopic Handler to the customer. Check off each item after the prescribed action is taken.

√ **Check that:**

- NO parts of machine have 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. Cable connections are tight. Electrolyte at proper level.
- Cylinders, hoses and fittings are not damaged, leaking or loosely secured.
- Oil, fuel and air filters are not damaged, leaking or loosely secured.
- All grease fittings have been properly lubricated and no fittings are missing; see *Lubrication* chapter of this manual.
- Wheel nuts are torqued to 450 ft.-lbs. (610 Nm).
- Tires are inflated to 60 psi (415 kPa) cold.
- Hydraulic system reservoir, engine crankcase, engine coolant, transmission and axles are filled to the proper operating fluid levels.
- All adjustments have been made to comply with the settings given in this manual and in the separate engine manual.
- All guards, shields and decals are in place and securely attached.
- Model and serial numbers for this unit are recorded in space provided on this page and page 1.

**Start the machine and test-run the unit while checking that proper operation is exhibited by all controls.**

√ **Check that:**

- All indicators (lamps, switches, etc.) function properly.
- All hand and foot controls operate properly.
- The PWP System operates properly (if equipped). Refer to *Service and Storage* chapter for the procedure to check the PWP System.
- Boom, Quick-attach™ System with attachment tool and frame level control all function properly.
- No hydraulic system leaks when under pressure.
- Listen for abnormal noises or vibrations; if detected, determine their cause and repair as necessary.

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

\_\_\_\_\_  
Dealership's Name

\_\_\_\_\_  
Dealer Representative's Name

\_\_\_\_\_  
Date Checklist Filled Out

\_\_\_\_\_  
Machine Model #      Machine Serial #      Engine Serial #

### DELIVERY

√ **Check that:**

The following Checklist is a reminder of the important information that **MUST** be passed on to the customer at the time the unit is delivered. Check off each item as it is explained to the customer.

- Review with the customer the contents of this manual and the AEM Safety Manual for the following:
  - The *Index* at the back, for quickly locating topics;
  - The *Safety, Indicators and Controls*, and *Operation and Adjustment* chapters for information regarding safe use of the machine.
  - The *Lubrication* and *Service and Storage* chapters for information regarding proper maintenance of the machine. Explain that regular lubrication and maintenance are required for continued safe operation and long life.
- Give this Operator's Manual and the AEM Safety Manual to the customer and instruct them to be sure to read and completely understand their contents before operating the unit.
- Remind the customer of U.S. OSHA regulation 1910.178 (l), which specifies operator training requirements.
- 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 Company.
- Explain that a copy of the product warranty is included on the inside back cover of this Operator's Manual.

\_\_\_\_\_  
Customer's Signature

\_\_\_\_\_  
Date Delivered

*(Pages 5 and 6 have been removed at perforation)*

# Chapter 4



# SAFETY



The above Safety Alert Symbol means **ATTENTION! ALWAYS BE ALERT! YOUR SAFETY IS INVOLVED!** It stresses an attitude of safety awareness and can be found throughout this Operator's Manual and on the machine itself.

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**Before operating this equipment, read and study the following safety information. In addition, be sure that everyone who operates or works with this equipment is familiar with these safety precautions.**

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## **DANGER**

**"DANGER" indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.**

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## **WARNING**

**"WARNING" indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.**

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## **CAUTION**

**"CAUTION" indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury. It may also alert to unsafe practices.**

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Gehl Company **ALWAYS** takes the operator's safety into consideration when designing its machinery, and guards exposed moving parts for his/her protection. However, some areas cannot be guarded or shielded in order to assure proper operation. Further, this Operator's Manual, the Safety Manual and decals on the machine warn of additional hazards and should be read and observed closely.

It is the responsibility of the operator to read and understand the Operator's Manual and other information provided and use the correct operating procedures. Machines should be operated only by qualified operators.

**REMEMBER!** It is the owner's responsibility for communicating information on the safe use and proper maintenance of this machine! This includes providing understandable interpretations of these instructions for operators who are not fluent in reading English.

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## **MANDATORY SAFETY SHUTDOWN** **PROCEDURE**

**BEFORE cleaning, adjusting, lubricating or servicing the unit:**

1. **Stop machine on a level surface. (Avoid parking on a slope, but if necessary, park across the slope and block the tires.)**
2. **Fully retract the boom and lower the attachment tool to the ground. Idle engine for gradual cooling.**
3. **Place controls in neutral and apply parking brake.**
4. **Shut off the engine and remove the key.**

**ONLY when you have taken these precautions can you be sure it is safe to proceed. Failure to follow the above procedure could lead to death or serious bodily injury.**

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# SAFETY



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## WARNING

U.S. OSHA regulations require employers in general industry and the construction, shipyard and cargo-handling industries (excepting agricultural operations) to ensure that forklift operators are competent, as demonstrated by successful completion of a training course.

The training course must consist of a combination of formal instruction and practical training, including both forklift-related and workplace-related topics, and evaluation of the operator's performance in the workplace.

All operator training and evaluation is to be conducted by persons who have the knowledge, training and experience to train and evaluate operators.

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## WARNING

U.S. OSHA regulations effective November 8, 2010 (29 CFR Part 1926, Subpart CC - Cranes and Derricks in Construction) include requirements for employers that use powered industrial trucks ("forklifts") configured to hoist (by means of a winch or hook) and move suspended loads horizontally. In particular, this regulation applies to any rough-terrain forklift (e.g., "telescopic handler") equipped with a jib or truss boom with a hook (with or without a winch), or a hook assembly attached to the forks. [Note: This regulation is in addition to the OSHA regulation that requires specific forklift operator training: §1910.178(l).]

When a forklift / telescopic handler is configured and used for hoisting, the employer must ensure that:

1. Forklift, lift equipment and rigging have been inspected (each shift, month and

year) and are in good, safe condition and properly installed.

2. An operator's manual and applicable load charts are on the forklift.
3. Work zone ground conditions can support the equipment and load. Any hazardous conditions in the work area have been identified, and the operator notified.
4. Equipment is being used within its rated capacity and in accordance with the manufacturer's instructions.
5. Operator and crew members have been trained in the safe use and operation of the equipment, including how to avoid electrocution.
6. During use, no part of the equipment, load line or load will be within the minimum clearance distance specified by OSHA [10 feet (3.0 m), and more for lines rated over 50 kV] of any energized power line, and any taglines used are non-conductive.
7. In addition, for lift equipment with a rated capacity greater than 2000 lbs. (907 kg), the employer must ensure that:
  - a.) An accessible fire extinguisher is on the forklift;
  - b.) Monthly and annual inspections are performed and documented, and records retained (three months for monthly, one year for annual);
  - c.) Before November 10, 2014, operators must have had the additional training and qualification / certification required by OSHA regulations §1926.1427 and §1926.1430.

Note: Refer to the full text of the OSHA crane regulation (29 CFR Part 1926, Subpart CC) for a detailed description of the regulatory requirements.



# SAFETY



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## WARNING

**ALWAYS** maintain a safe distance from electric power lines and avoid contact with any electrically charged conductor or gas line. It is not necessary to make direct contact with a power line for power to ground through the structure of the machine. Keep the boom and load at least 10 ft. (3 m) from all power lines. Accidental contact or rupture can result in electrocution or an explosion. Contact the “Call Before You Dig” referral system number at 8-1-1 in the U.S., or 888-258-0808 in the U.S. and Canada, to locate any underground utility lines **BEFORE** starting to dig.

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### Additional Safety Reminders

- User/operator safety practices, as indicated by industry standards, are included in this Operator’s Manual and intended to promote safe operation of the machine. These guidelines do not, of course, preclude the use of good judgment, care and common sense that may be necessary for the particular jobsite conditions.
- It is essential that operators be physically and mentally fit and free of mind-altering drugs and chemicals, and thoroughly trained in the safe operation of the machine. Such training should be presented completely to all new operators and not condensed for those claiming previous experience. Information on operator training is available from several sources, including the manufacturer.
- Some illustrations used in this manual may show doors, guards and shields open or removed for illustration purposes **ONLY**. **BE SURE** that all doors, guards and shields are in their proper operating positions **BEFORE** starting the engine.

### Before Operation Safety Reminders

- Check brakes, steering, and hydraulic system prior to starting operation. Operate all controls to ensure proper operation. Observe all gauges and indica-

tors for proper operation. If any malfunctions are found, correct the cause prior to using the machine.

- **ALWAYS** wear appropriate personal protective equipment for the job and working conditions. Hard hats, goggles, protective shoes, gloves, reflector-type vests, respirators and ear protection are examples of types of equipment that may be required. **DO NOT** wear loose fitting clothing, long hair, jewelry or loose personal items while operating or servicing the machine.
- **ALWAYS** check the job site for terrain hazards, obstructions and people. Remove all objects that do not belong in or on the machine and its equipment.
- Walk around the machine and warn all personnel who may be servicing the machine or who are in the machine path prior to starting. **DO NOT** start until all personnel are clearly away from the machine.
- Gehl telescopic handlers are designed and intended to be used only with Gehl attachments and approved attachments. To avoid possible personal injury, equipment damage and performance problems, use attachments that are approved for use on and within the operating capacity of the machine. Contact your dealer or Gehl Company for information on attachment approval and compatibility with specific machine models. Gehl cannot be responsible if the machine is used with a non-approved attachment.

### Operation Safety Reminders

- Any or all of the following elements may affect the stability of the machine: terrain, engine speed, type of load being carried and placed, improper tire inflation, weight of the attachment tool, and abrupt movement of any control lever. **IF YOU ARE NOT CAREFUL WHILE OPERATING THIS MACHINE, ANY OF THE ABOVE FACTORS COULD CAUSE THE MACHINE TO TIP, AND YOU COULD BE THROWN OUT OF THE OPERATOR’S STATION, WHICH COULD RESULT IN SERIOUS INJURY OR DEATH!**



# SAFETY



- ALWAYS wear the seat belt provided to prevent being thrown from the machine. If you are in an overturn:
  - DO NOT jump!
  - Hold on tight and stay with the machine!
  - Lean away from the fall!
- ALWAYS keep hands, feet and arms inside of the operator's station when operating the machine!
- DO NOT depend on the backup alarm to clear bystanders out of the path of the machine. ALWAYS look in the direction of travel. Look to the rear before backing.
- ALWAYS use the recommended handholds and steps with at least three points of support when getting on and off the machine. Keep steps and platform clean. Face the machine when climbing up and down.
- DO NOT raise or drop a loaded fork or bucket suddenly. Abrupt movements under load can cause serious instability.
- Study the load chart carefully. It shows maximum capacity to be lifted and placed at specific outward and upward distances. ALWAYS be aware of load weights prior to attempting lift and placement with this machine.
- DO NOT exceed the machine's rated operating capacity for the type of attachment tool being used.
- DO NOT allow minors or any unqualified personnel to operate or be near the machine unless properly supervised.
- DO NOT start the engine or operate any controls unless properly seated in the operator's seat!
- DO NOT run the engine in an enclosed area without providing proper ventilation for the exhaust. Exhaust gases contain carbon monoxide, an odorless and deadly gas. Internal combustion engines deplete the oxygen supply within enclosed spaces and may create a serious hazard unless the oxygen is replaced. This includes the atmosphere within the cab when equipped.
- DO NOT leave the operator's station with the boom and attachment tool raised. ALWAYS lower the boom and attachment tool to the ground, shut off the engine and engage the park brake before leaving the operator's station.
- DO NOT drive 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 it is carrying.
- DO NOT turn quickly while traveling on a slope or operate the machine beyond the grade and slope limits noted in the Operation and Adjustments chapter of the Operator's Manual.
- NEVER allow any riders on this machine. This is strictly a single-seat, NO-passenger machine.
- NEVER use as a lift for personnel unless the machine is equipped with the Personnel Work Platform (PWP) System.
- When road travel is required, know and use the signaling devices on the machine. Provide an escort and Slow-Moving Vehicle (SMV) emblem when required.
- If necessary to park on a slope, park across the slope and block the tires.

## Servicing Safety Reminders

- ALWAYS be aware of and avoid pinch point areas on the machine, such as wheels-to-frame, cylinders-to-frame, boom-attachment-tool-to-frame.
- NEVER attempt to by-pass the keyswitch to start the engine. ONLY use the jump-starting procedure detailed in the Service and Storage chapter.
- NEVER use your hands to search for hydraulic fluid leaks. Instead use a piece of paper or cardboard. Escaping fluid under pressure can be invisible and can penetrate the skin, causing serious injury. If any fluid is injected into your skin, see a doctor at once. Injected fluid MUST be surgically removed by a doctor familiar with this type of injury or gangrene may result.



# SAFETY



- ALWAYS wear safety glasses with side shields when striking metal against metal. In addition, it is recommended that a softer (chip-resistant) material be used to cushion the blow. Failure to heed could lead to serious injury to the eyes or other parts of the body.
- DO NOT refill the fuel tank when the engine is hot. Allow engine to cool down before refilling to prevent hot engine parts from igniting the fuel if it should spill or splash.
- DO NOT smoke while filling the fuel tank, while working on the fuel or hydraulic systems, or while working around the battery.
- DO NOT fill the fuel tank completely. Allow room for expansion. Maintain control of the fuel filler nozzle when filling the tank. Use the correct fuel grade for the operating season.
- NEVER use fuel for cleaning purposes.
- DO NOT remove the radiator cap after the engine has reached operating temperature or if it is overheated. At operating temperatures, the engine coolant will be extremely hot and under pressure. ALWAYS wait for the engine to cool before attempting to relieve pressure and remove the radiator cap. Failure to heed this warning could result in severe burns.
- DO NOT loosen or disconnect any hydraulic lines, hoses or fittings without first relieving hydraulic circuit pressure. Also, be careful not to touch any hydraulic components that have been in recent operation, because they can be extremely hot and can burn you!
- Avoid lubrication or mechanical adjustments with the machine in motion or the engine operating. If the engine must be running to make certain adjustments, place the transmission in neutral, apply the parking brake, place the equipment in a safe position, securely block the tires and use extreme caution.
- To ensure continued safe operation, replace damaged or worn-out parts with genuine Gehl service parts before using this equipment.

## Modifications, Nameplates, Markings and Capacities

- Modifications and additions that affect capacity or safe operation shall not be performed without the manufacturer's prior written approval. Where such authorization is granted, any applicable markings are to be changed accordingly.
- All attachment tools MUST be marked to identify the attachment tool and the total capacity with the attachment tool at maximum elevation with the load laterally centered.
- ALWAYS be sure all nameplates, warnings and instruction markings are in place and legible. Local government regulations may require specific decals, which then become the responsibility of the owner or user to provide.

## Safety Guards and Warning Devices

- This machine is fitted with a Roll-Over Protective Structure (ROPS) and Falling Object Protective Structure (FOPS) in accordance with industry standards. It is intended to offer protection to the operator from falling objects, and in case of an overturn, but it cannot protect against every possible hazard. Therefore it should not be considered a substitute for good judgment and safe practices in operating the machine. If the ROPS / FOPS structure is damaged, it must be replaced to restore the protection it provides.
- This machine is equipped with a horn and backup alarm. The user must determine if operating conditions require the machine to be equipped with additional devices (mirrors, rotating beacon, etc.) and be responsible for providing and maintaining such devices.

## Personnel Work Platform (PWP) System

The Mandatory Work Platform Safety Rules must be adhered to at all times while elevating personnel. These rules are based on ANSI/ITSDF Standard B56.6-2005, "Safety Standard for Rough Terrain Forklift Trucks." (A copy of this and related standards can be obtained from the Industrial Truck Standards Development Foundation, 1750 K Street NW, Suite



# SAFETY



460, Washington DC 20009; or downloaded from: [www.itsdf.org](http://www.itsdf.org).) The rules apply to the owner, operator and the personnel in the work platform.

---

## WARNING

**The machine must not be used to lift or carry personnel, or be fitted with any form of personnel work platform unless fitted with the optional PWP System.**

**If fitted with the PWP System, the Mandatory Work Platform Safety Rules must be followed at all times while lifting personnel.**

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### MANDATORY WORK PLATFORM SAFETY RULES

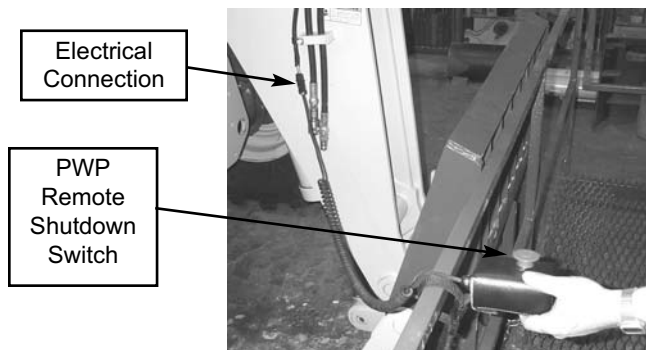
1. The work platform must comply with ANSI/ITSDF B56.6-2005, Sec. 8.24, "Platforms for Elevating Personnel." (See page 14, "Work Platform Design Requirements.")
2. The platform must be securely attached to the carriage or forks, and the carriage securely attached to the boom.
3. The carriage and forks must be secured to prevent them from pivoting upward.
4. If the machine is equipped with a rotating or swinging carriage, the rotation or swing must be deactivated. (This occurs automatically when the "PWP System" is switched on.)
5. Personnel on the platform must be provided protection from any moving parts on the forklift that may present a hazard.
6. If overhead hazards exist for platform personnel, overhead protection must be provided.
7. Be sure that the lifting mechanism is operating smoothly throughout its entire range, both empty and loaded, and that any lift-limiting devices and latches are functional.
8. Be sure that the frame is level, to ensure a vertical lift.
9. Be sure the platform is horizontal before lifting.
10. Be sure that the forklift has a firm footing.
11. Be sure that any required restraining means (railings, chains, harnesses, etc.) are in place and properly used.
12. Before lifting personnel, shift the transmission into Neutral, apply the parking brake, and activate the "PWP System" mode switch.
13. Before lifting personnel, the area should be marked to warn others of work by elevated personnel.
14. Be sure the path of platform travel is clear of hazards, such as scaffolds, electrical wires and overhead obstructions.
15. The operator must keep hands and feet clear of controls that are not in use.
16. Personnel must be lifted and lowered smoothly and cautiously, and only at their request.
17. The platform must be lowered fully before moving the forklift. Do not drive the forklift with personnel on the platform.
18. Elevated personnel must always be alerted before raising or lowering the platform.
19. A trained operator must be in position to operate the forklift and boom controls at all times.
20. The combined weight of the platform, personnel and load must not exceed one-third of the material-handling capacity of the forklift.
21. Platform personnel must maintain firm footing on the platform floor. A harness is to be worn and a lanyard attached to the platform or boom when working from an elevated work platform, in accordance with OSHA regulations. Use of railings, planks, ladders, etc. on platform for the purpose of achieving additional reach or height is prohibited.
22. Workers on the platform must keep all parts of their bodies inside the work platform during raising and lowering.
23. Be sure that the personnel and equipment on the platform do not exceed the available space.



# SAFETY



- 24. The platform must be fully lowered for personnel to enter and exit. Personnel must not climb on any part of the forklift in attempting to enter and exit.
- 25. Any harness, body belt, lanyard, or deceleration device that has sustained permanent deformation or is otherwise damaged must be replaced.
- 26. Modifications to the platform that are detrimental to its safe use are prohibited.



Remote Shutdown Switch with Coiled Wire Connector

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## WARNING

Use **ONLY** an approved work platform for elevating personnel.

**NEVER** move the machine with the work platform in a raised position or with personnel on board.

**NEVER** tilt the platform forward, rearward, or to the side with personnel aboard.

**ALWAYS** engage the PWP System and follow the Mandatory Work Platform Safety Rules when elevating personnel.

Work Platform System Switch



### Work Platform Design Requirements (Per ANSI/ITSDF B56.6-2005, Sec. 8.24)

1. A platform floor having a slip-resistant surface located not more than 8 inches (200 mm) above the normal load-supporting surface of the forks.
2. Floor dimensions, which shall not exceed two times the load center distance of 24 inches (610 mm) listed on the forklift nameplate, measured parallel to the longitudinal center plane of the forklift, nor have a width greater than the overall width of the forklift [measured across the load-bearing tires] plus 10 inches (250 mm) on either side. Minimum space for each person on the platform shall not be less than 18 inches (450 mm) in either direction.
3. A 4 inch (100 mm) minimum height toe plate, which may be omitted at the access opening.
4. An overhead protective device, when requested by the user.
5. Protection for personnel in their normal working position on the platform from moving parts of the forklift that may present a hazard.
6. Information prominently indicated on the platform:
  - a. maximum work load including personnel and equipment, and
  - b. weight of empty platform.





# SAFETY



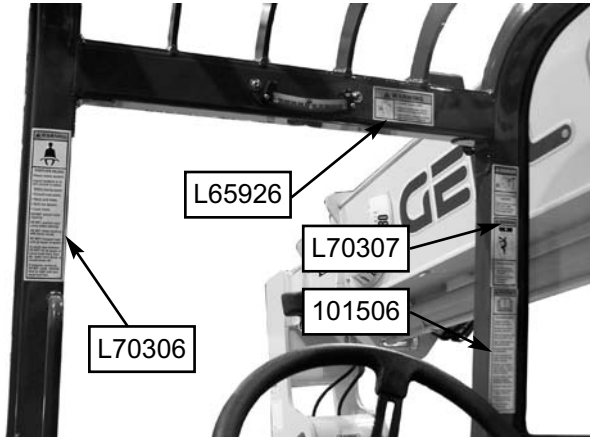
7. Means so that the platform can only be centered laterally on the forklift, and retained against the vertical face of the forks, carriage or lifting mechanism.
8. A means to securely attach the platform to the lifting mechanism, and to prevent the platform from inadvertently pivoting.
9. Restraining means such as a guardrail or a means for securing personnel such as a body harness and lanyard. A guardrail or similar structure shall have a nominal height to the platform floor of 42 inches (1066 mm) around its upper periphery and include a midrail. It may be hinged, removable, or of chains, and used to provide an access opening, if proper positioning is easily accomplished and a secure condition is discernable. Such restraining means shall be capable of withstanding a concentrated horizontal force of 200 lbs. (890 N) applied at the point of least resistance without permanent deformation. A body harness and lanyard is to have an attachment point provided overhead for freedom of movement, and its length is to limit free-fall to 5 feet (1500 mm) measured from the point of attachment to the operator. The complete system shall be capable of withstanding three consecutive drop tests to simulate a 250-pound (113 kg) person falling 6 feet (1800 mm) without allowing the test weight to fall free to the ground. A deceleration device may be included.

**NOTE:** *Fall protection should comply with applicable U.S. OSHA regulations: 1910.67 (c)(2)(v) (for General Industry) or 1926.453 (b)(2)(v) (for Construction).*

10. Lanyards, when provided, shall be arranged so as not to cause a tripping hazard.
11. Body harnesses, when provided, should have a width of at least 1.75 inches (44 mm).
12. Structural safety factor-All load-supporting structural elements of the work platform shall have a structural safety factor of not less than 2-to-1 based on the minimum yield strength of the materials used.




# SAFETY



L70306

**WARNING**



**OVERTURN HAZARD**

Always fasten seatbelt.

Inspect worksite to be sure ground is stable.

**Before raising boom:**

- Consult load charts,
- Apply park brake,
- Shift into Neutral,
- Level frame.

DO NOT exceed rated capacity.

DO NOT position load using frame leveling.

DO NOT move machine with boom raised.

Move suspended loads with extreme caution.

To avoid rear overturn, DO NOT tilt jib boom or winch back more than 45° when main boom is raised above 45°.

If machine overturns, DO NOT jump. Instead, hold on tight and lean away from fall.

L70306

L70307

**DANGER**



**ELECTROCUTION HAZARD**

Keep machine, boom and load 10 feet (3 m) or more away from power lines.

**WARNING**



**CRUSH HAZARD**

- DO NOT remove right side window or panel.
- Replace if broken, damaged or missing.

L70307



L65932

**WARNING**



**RUN-OVER HAZARD**

**No riders!**

L65932

L65926

**WARNING**




- **CARRY LOAD LOW!**
- Retract and lower boom before moving machine.
- Stay within stability limits. See Operator's Manual.

L65926

101506

**WARNING**



**TO AVOID INJURY**

Inspect machine before operating it.

Be sure work tool is securely attached.

Start and operate only from operator's seat.

Use 2-wheel steer for high speed travel.

Be sure backup alarm is functioning.

Look in direction of travel and clear path before moving.

DO NOT use hands to find oil leak -- oil can inject into skin. See a doctor if injured.

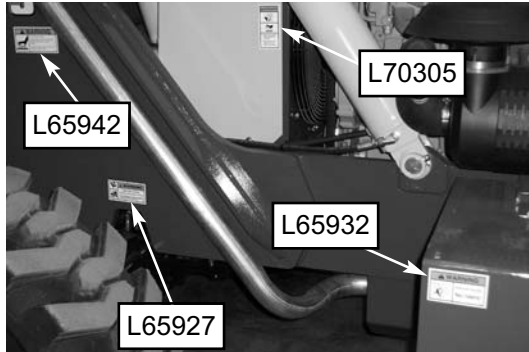
Before exiting, follow Mandatory Safety Shutdown Procedure:

- 1) Stop in level area;
- 2) Fully retract boom, lower work tool;
- 3) Shift into Neutral, apply park brake;
- 4) Shut off engine, remove key.

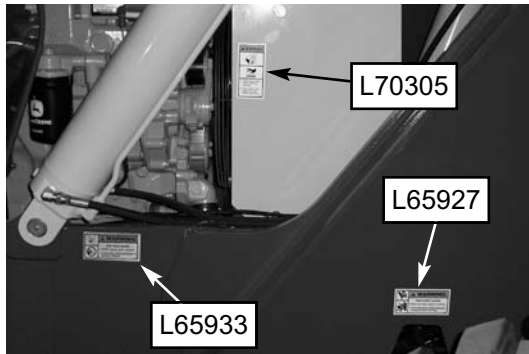
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# SAFETY



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L70305



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L65932



L65927





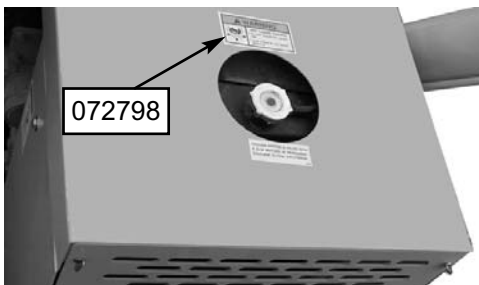
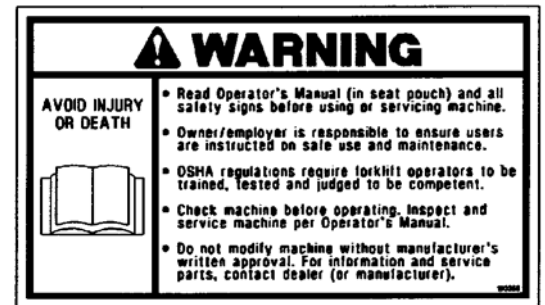
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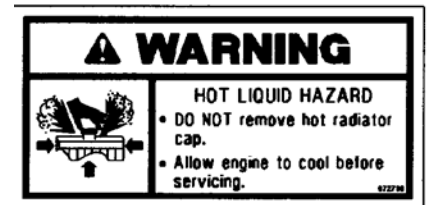
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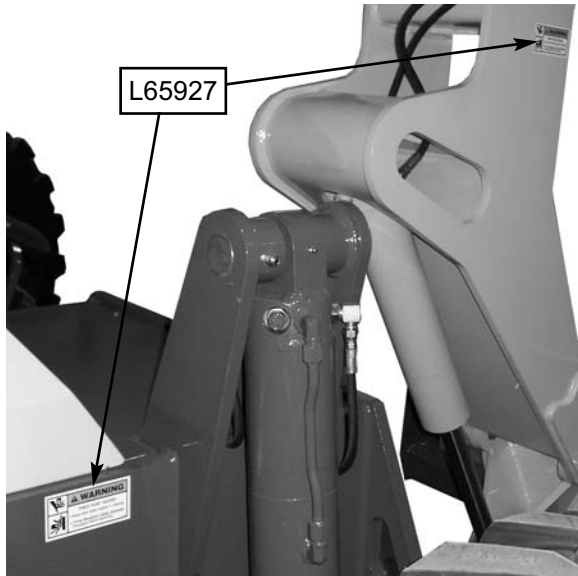


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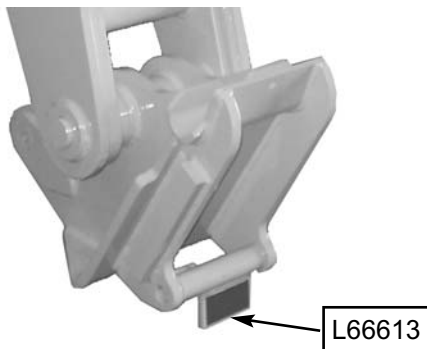




# SAFETY



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L66613



L65928

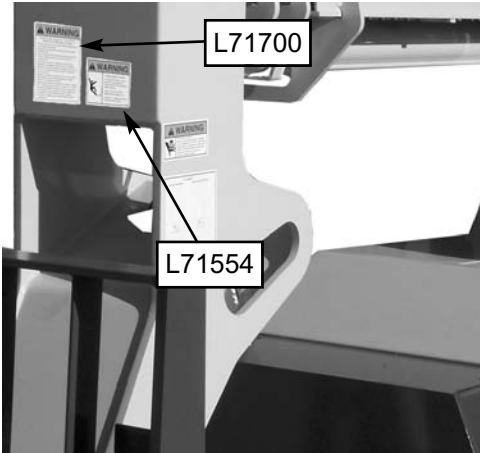




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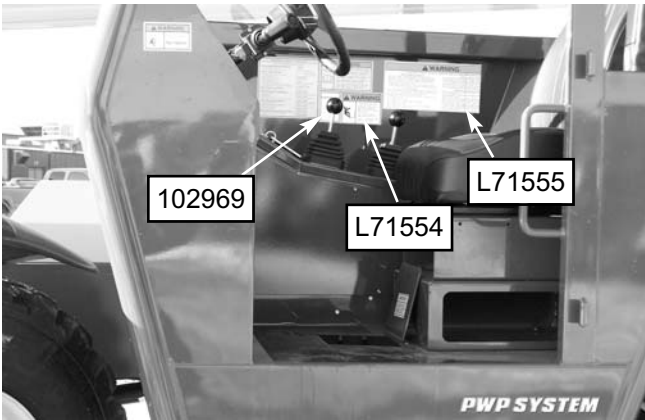


## PWP Safety Decals



L71700

	<b>WARNING</b>
<p><b>AVOID INJURY OR DEATH -- FOLLOW ALL WORK PLATFORM SAFETY RULES:</b></p> <ul style="list-style-type: none"> <li>• Connect and secure "PWP System" upper control before being lifted.</li> <li>• Personnel and equipment on platform must not exceed available space.</li> <li>• Be sure that any required restraining means (guardrails, chains, harnesses, lanyards, etc.) are in place and properly used.</li> <li>• Any harness, lanyard, or deceleration device that is damaged or permanently deformed must be replaced.</li> <li>• Platform must be fully lowered for personnel to enter and exit. Do not climb on any part of forklift in attempting to enter and exit.</li> <li>• Workers on platform must keep all parts of their bodies inside platform during raising and lowering. Signal operator when ready to be moved.</li> <li>• Platform personnel must maintain firm footing on platform floor, unless secured by harness and lanyard. A harness and lanyard attached to platform or boom must be worn when working. Do not use railings, planks, ladders, etc. on platform to achieve additional reach or height.</li> <li>• Do not ride in platform when forklift is being moved or re-positioned.</li> </ul>	
<small>L71700</small>	



L71554

	<b>WARNING</b>
	<p style="text-align: center;"><b>FALL HAZARD</b></p> <ul style="list-style-type: none"> <li>• Lift personnel <b>ONLY</b> with an approved work platform, using the Work Platform Safety System.</li> <li>• Check the Work Platform Safety System before use.</li> <li>• Follow <b>ALL Mandatory Work Platform Safety Rules.</b></li> </ul>
<small>L71554</small>	

L71555

	<b>WARNING</b>
<p><b>TO AVOID INJURY OR DEATH, FOLLOW ALL MANDATORY WORK PLATFORM SAFETY RULES:</b></p>	
<p><b>Platform Installation Precautions</b></p> <ul style="list-style-type: none"> <li>• Platform must comply with ASME/ANSI B56.5b-1998 Addenda, Sec. 8.24.</li> <li>• Modifications to platform that are detrimental to its safe use are prohibited.</li> <li>• Guard any components that may present a hazard to platform personnel.</li> <li>• Platform must be centered on and securely attached to carriage or forks.</li> <li>• Carriage must be securely attached to boom.</li> <li>• Carriage and forks must be secured to prevent them from pivoting upward.</li> <li>• Provide overhead protection for platform personnel if overhead hazards exist.</li> </ul>	
<p><b>Pre-Lift Precautions</b></p> <ul style="list-style-type: none"> <li>• Be sure lifting mechanism is operating smoothly throughout its range, both empty and loaded, and that the "PWP System" is functioning properly.</li> <li>• Any rotating or swing carriage function must be deactivated.</li> <li>• Mark area to warn others of work by elevated personnel.</li> <li>• Combined weight of platform, personnel, and load must not exceed one-third (1/3) of capacity of forklift.</li> <li>• Be sure forklift has a firm footing.</li> <li>• Shift transmission into neutral and apply parking brake.</li> <li>• Be sure forklift frame is leveled, to insure a vertical lift.</li> <li>• Be sure platform is horizontal.</li> <li>• Be sure path of platform travel is clear of hazards, such as scaffolds, electrical wires and overhead obstructions.</li> </ul>	
<p><b>Lifting Precautions</b></p> <ul style="list-style-type: none"> <li>• Be sure personnel and equipment on platform do not exceed available space.</li> <li>• A trained operator must be in position to operate forklift controls at all times.</li> <li>• Always alert elevated personnel before moving platform.</li> <li>• Lift and lower personnel smoothly and cautiously, and only at their request.</li> <li>• Keep hands and feet clear of controls that are not in use.</li> <li>• Always lower platform fully before moving forklift.</li> <li>• Do not move forklift with personnel on platform.</li> </ul>	
<p><b>Platform Personnel Precautions</b></p> <ul style="list-style-type: none"> <li>• Be sure any required restraining means (railings, chains, harnesses, etc.) are in place and properly used.</li> <li>• Any harness, lanyard, or deceleration device that is damaged or permanently deformed must be replaced.</li> <li>• Platform must be fully lowered for personnel to enter and exit. Personnel must not climb on any part of forklift in attempting to enter and exit.</li> <li>• Platform personnel must maintain firm footing on platform floor, unless secured by harness or lanyard. A harness and lanyard attached to platform or boom must be worn when working. Use of railings, planks, ladders, etc. on platform to achieve additional reach or height is prohibited.</li> <li>• Workers on platform must keep all parts of their bodies inside platform during raising and lowering.</li> </ul>	
<small>L71555</small>	

102969

<b>NOTE</b>
<b>WORK PLATFORM SYSTEM</b>
<p>To activate / deactivate work platform system:</p> <ol style="list-style-type: none"> <li>1) Actuate red switch</li> <li>2) Apply service brakes for 3 or more seconds, until lamp in switch stops flashing.</li> </ol>
<small>102969</small>

# Chapter 5

## INDICATORS AND CONTROLS

### CAUTION

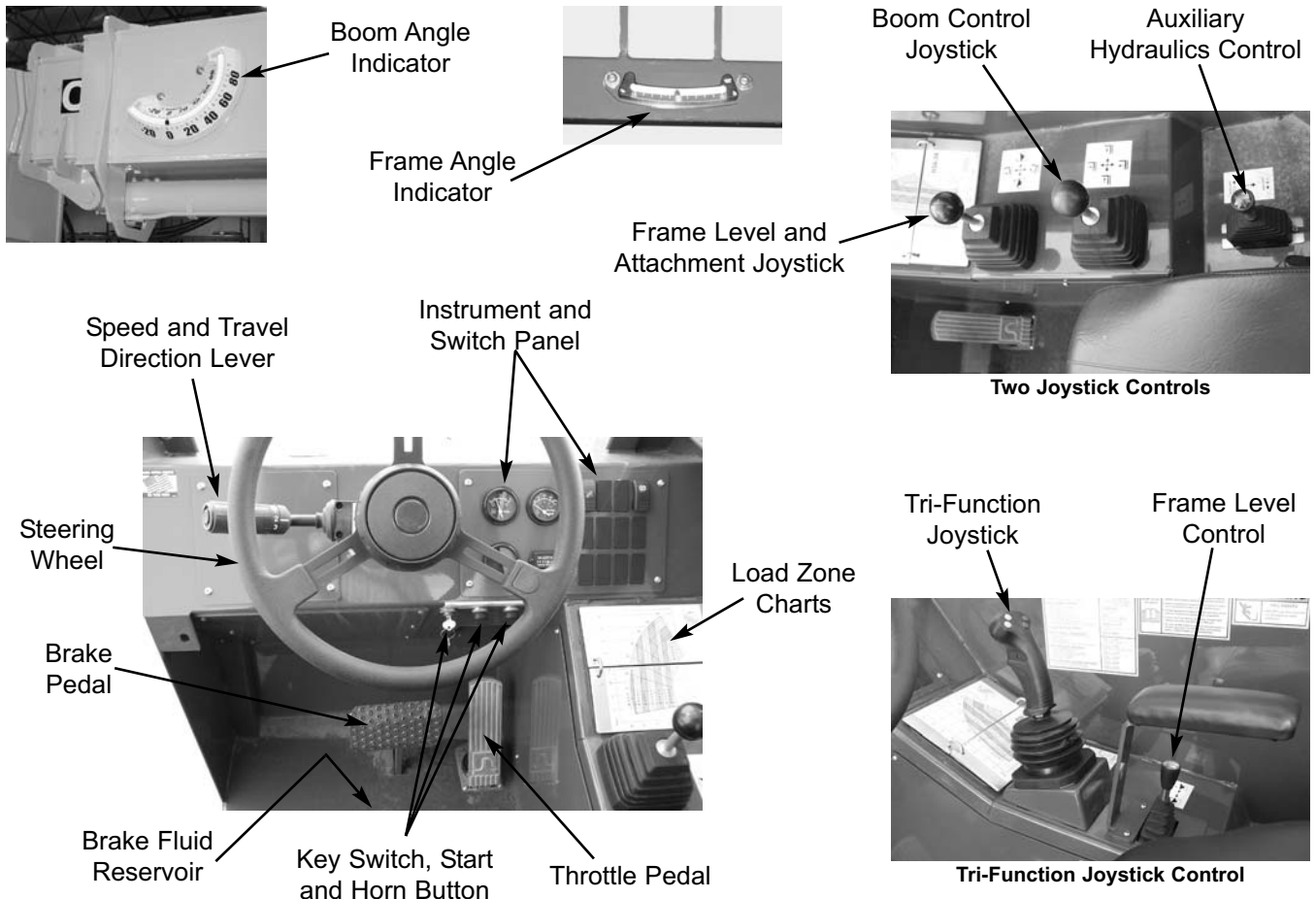
Become familiar with and know how to use **ALL** safety devices and controls on the Telescopic Handler **BEFORE** operating it. Know how to stop the machine operation **BEFORE** operating it. This Gehl machine is designed and intended to be used **ONLY** with a Gehl Company attachment tool, or a Gehl Company approved accessory or referral attachment tool. Gehl Company cannot be responsible for product safety if the machine is used with a non-approved accessory or attachment tool.

### GUARDS AND SHIELDS

Whenever possible and without affecting machine operation, guards and shields are used to protect potentially hazardous areas. In many places, decals are also provided to warn of potential hazards and to display special operating procedures.

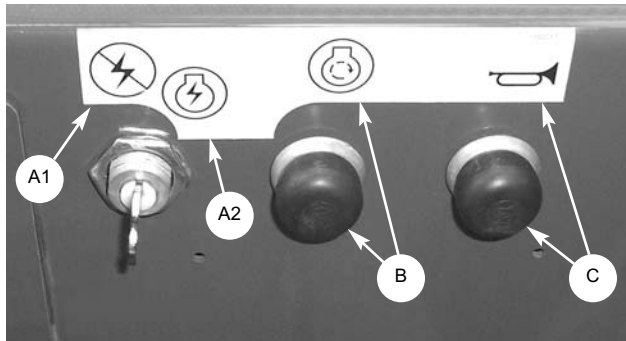
### WARNING

Read and thoroughly understand all safety decals on the Telescopic Handler **BEFORE** operating it. **DO NOT** operate the machine unless all factory-installed guards and shields are properly secured in place.



**Operator's Compartment and Indicators/Controls Locations**

## DASH PANEL AREA



**Ignition Switch, Start and Horn Button**

**A1 - Key Switch OFF:** When the key is vertical in the keyswitch, power is disconnected from the battery to the control and instrument panel electrical circuits. This is the only position in which the key can be inserted and removed.

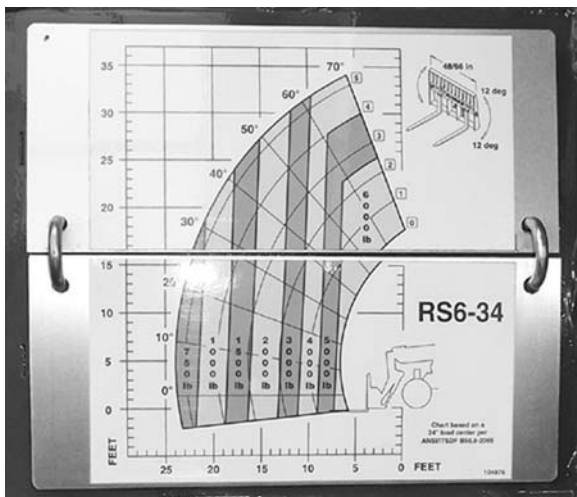
**A2 - Key Switch ON:** When the key is turned one position clockwise from the vertical (OFF) position, power from the battery is supplied to the engine and all control and instrument panel electrical circuits.

**NOTE:** If the engine requires repeated attempts to start, the key *MUST* be returned to the OFF position between starting attempts to prevent battery run down.

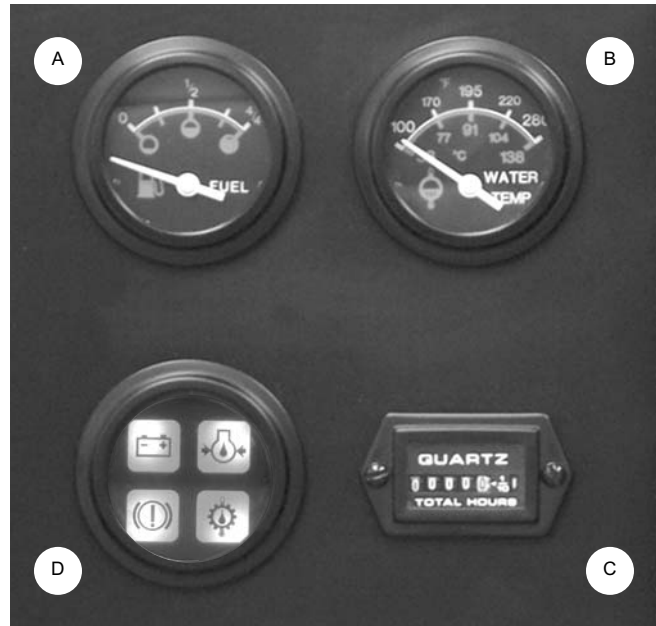
**B - Start Button:** With key switch in the ON position, press the start button to activate the starter. Release it as soon as the engine starts.

**C - Horn Button:** With the key switch ON, press the horn button to activate warning sound.

**Load Zone Charts:** A series of flip charts show lift height and reach limits relative to the load weight being handled with various attachment tools.



**Instrument and Switch Panel**



**Instrument Panel**

**A - Fuel Level Gauge:** The upper left gauge in the instrument panel, it indicates the amount of fuel in the fuel tank.

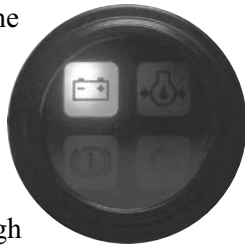
**B - Coolant Temperature Gauge:** The upper right gauge in the instrument panel, it indicates the temperature of the engine coolant. Under normal conditions, this gauge should indicate approximately 185°F (85°C).

**C - Hourmeter:** Located to the right of the lamp cluster gauge, it indicates the total operating time of the machine and should be used for keeping the maintenance log.

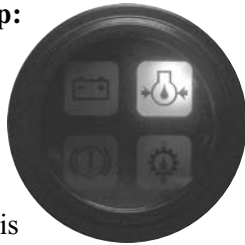
**D - Lamp Cluster Gauge:** The lower left gauge in the instrument panel, it contains four indicator lamps. The functions of these lamps are shown on the next page:



**Alternator Lamp:** Located in the upper left section of the lamp cluster gauge, this lamp indicates the condition of the electrical charging system. During normal operation, this lamp should be off. If the charge rate is too high or too low, this lamp will come on.

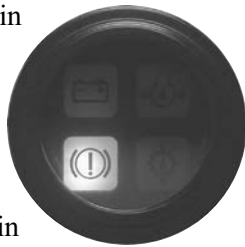


**Engine Oil Pressure Lamp:** Located in the upper right section of the lamp cluster gauge, this lamp indicates whether the engine lubricating oil pressure is sufficient. During normal operation, with the engine running, this lamp should be off. During starting and when the engine is not running, this lamp will be on.



**IMPORTANT:** *If this lamp comes on during normal operation with the engine running, stop the engine immediately! After allowing the oil to drain down for a few minutes, check the engine oil level. Maintain oil level at the FULL mark on the dipstick.*

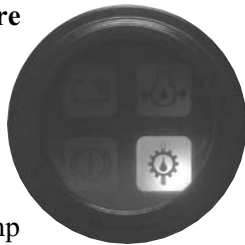
**Brake Failure Lamp:** Located in the lower left section of the lamp cluster gauge, this lamp indicates the condition of the service brake system. The front and rear brakes are on independent systems. If a loss of pressure occurs in either system during normal operation with the brake pedal depressed, this lamp will come on.



Failure in one of the brake systems does not affect the operation of the other system. However, the MANDATORY SAFETY SHUTDOWN PROCEDURE (p. 8) should be followed and any necessary repairs made immediately.

During normal operation this lamp should remain off.

**Transmission Oil Temperature Lamp:** Located in the lower right section of the lamp cluster gauge, this lamp indicates whether or not the transmission oil is at the proper temperature. During normal operation this lamp should be off, indicating that the transmission oil system is at the proper temperature.



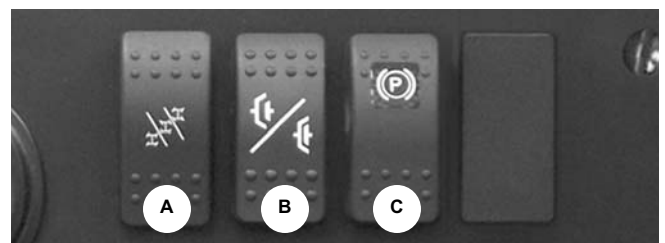
**IMPORTANT:** *If this lamp comes on during normal operation, a problem may exist in the transmission oil system. Stop the machine immediately and investigate the cause of the problem!*



**Switch Panel**

### Top Row Switches

Switches have graphic symbols to indicate function and effect. The following descriptions start with the first switch on the left.



**A - Steering Mode:** This 3-position switch is used to select among the three steering modes. The upper position engages the 4-wheel-steer mode. This mode provides all-wheel steering, used for making tighter turns, usually on a jobsite. The center position engages the 2-wheel-steer mode. This mode provides front-wheel steering only, used for higher speed travel. The lower position engages the crab-steer mode. This mode is used when a small amount of side shift is needed for picking or placing a load.

**NOTE:** *The rear wheels are not self-centering. Make sure all wheels are in a straight-ahead position before changing the steering mode.*

Any of the steering modes can be used in forward and reverse travel. The operator should learn to anticipate changes in machine movement if the steering mode must be changed.

**B - Clutch Cutout:** When activated, this switch allows faster engine acceleration and more power to the hydraulic system, without power to the drive axles, while the service brake pedal is pressed.

In the “OFF” position, the clutch mechanism of the transmission remains engaged when the brakes are applied. In the “ON” position, the clutch mechanism is disengaged when the brakes are applied.

Normal brake force will hold the machine in position while accelerating the engine to power hydraulic control functions during load placement.

**C - Parking Brake:** When the machine is parked, this switch should be pressed to actuate the parking brake mechanism in the front axle.

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## **WARNING**

### **UNATTENDED MACHINE HAZARD**

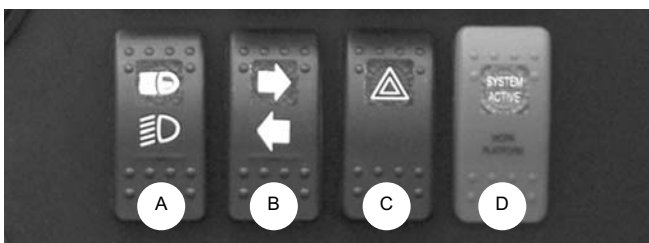
**Activate parking brake switch and lower attachment tool to ground before leaving machine. An unattended machine can move or roll and cause death or serious injury to operator or bystanders.**

**Periodically check the parking brake operation to maintain adequate holding power. Always be sure the parking brake switch is off when resuming machine operation.**

---

### **Middle Row Switches**

Switches have graphic symbols to indicate function and effect. The following descriptions start with the first switch on the left.



**NOTE:** *Some switches are optional and may not be on machine.*

**A - Head Lights/Work Lights:** Pressing the top of the switch will illuminate the lights mounted on the top of the operator’s station and the red tail lights, for use in forward travel operations. Pressing the bottom of the switch will illuminate the lights at the end of the boom in addition to the lights on the operator’s station, for additional lighting in working operations.

**B - Turn Signal:** This switch is used to indicate the direction of a turn with the tail lights. Press the right arrow for a right turn; press the left arrow for a left turn. Return the switch to the center position after the turn is completed.

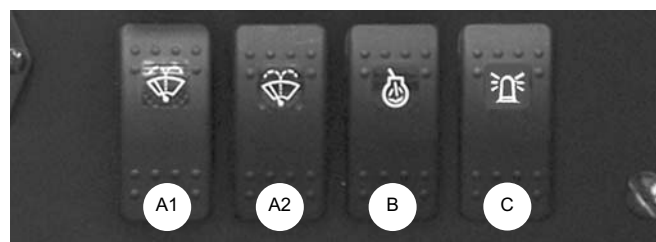
**C - Hazard:** This switch can be activated to make the tail lights flash on and off in case the machine is stalled or temporarily stopped in a traffic area on the road or jobsite.

**D - Personnel Work Platform:** This is a red switch used to activate the Personnel Work Platform (PWP) System. When activated, an amber lamp in the switch will be on.

**NOTE:** *This lamp will flash on and off, indicating that the system is not yet fully functional, until the brakes are held on for three or more seconds.*

### **Bottom Row Switches**

Switches have graphic symbols to indicate function and effect. The following descriptions start with the first switch on the left.



**NOTE:** *Some switches are optional and may not be on machine.*

**A1 and A2 - Wiper/Washer:** The windshield and top window of the operator’s station are each equipped with a wiper and washer mechanism. Switch “A1” operates the wiper and washer on the windshield; switch “A2” operates the wiper and washer on the top window.

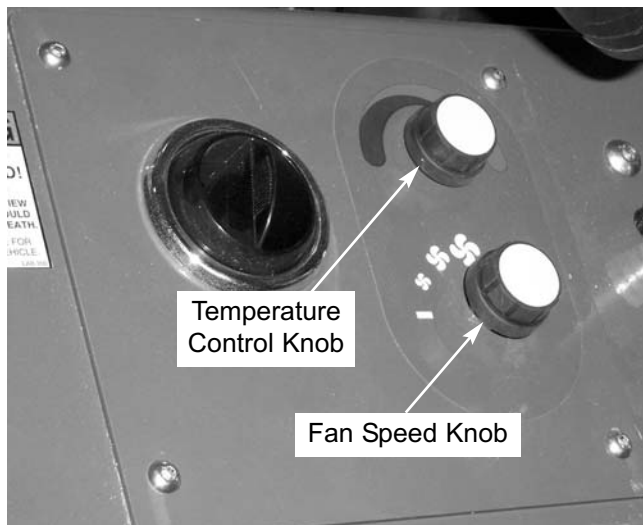
**B - Cold Starting:** This switch activates the injection of ether starting fluid, used for engine starting in cold weather.

**C - Strobe Light:** When a strobe light is installed on the machine, activating this switch will produce a strobe light on and off flashing, for working in conditions that may obscure view of the machine.

## Heater Controls

**Temperature Control:** This is the upper knob located to the left of the steering wheel. This knob is used to adjust the temperature output of the heater. Turning the knob clockwise will increase the temperature output of the cab heater.

**Fan Speed:** This knob is located below the temperature control knob. Rotating the knob clockwise will increase the fan speed for increased air circulation.



## Travel Lever

Located on the left side of the steering wheel column, this lever is used to change travel direction (forward or reverse) and speed.



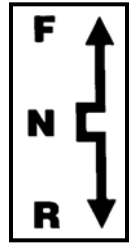
**Travel Direction:** The lever **MUST** be in "N" (Neutral) position before the starter will engage to start the engine.

**NOTE:** Backup alarm automatically sounds with travel lever in "R" (Reverse).

Position "F" (Forward)

Position "N" (Neutral)

Position "R" (Reverse)



**Speed Range:** Twisting the lever end clockwise or counter-clockwise will change the transmission speed between low, medium and travel ranges.

Position "3" (Travel Range)

Position "2" (Medium Range)

Position "1" (Low Range)

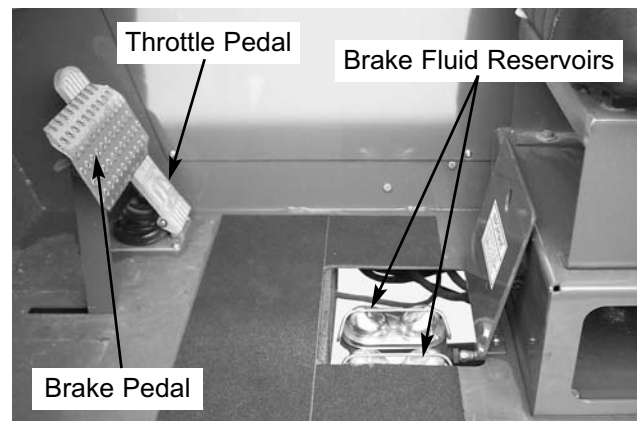
**IMPORTANT:** Care should be taken when downshifting or changing direction, because damage to the transmission can occur if shifting is forced or attempted at too high a speed. Allow engine speed to slow before any downshift or directional change is attempted.

## Steering

Turn the steering wheel to the right or left to turn the machine in that direction. The power steering system is designed to provide low-effort steering without shock reaction from the tires to the steering wheel.

## FLOOR AND SEAT AREA

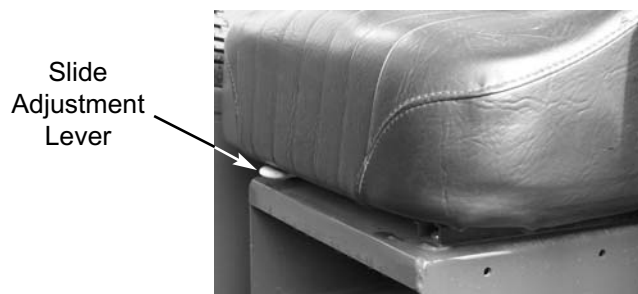
**Throttle Pedal:** This pedal, operated by the right foot, controls the engine speed to match power requirements. Pushing down on the pedal increases engine speed; letting up on the pedal decreases engine speed.



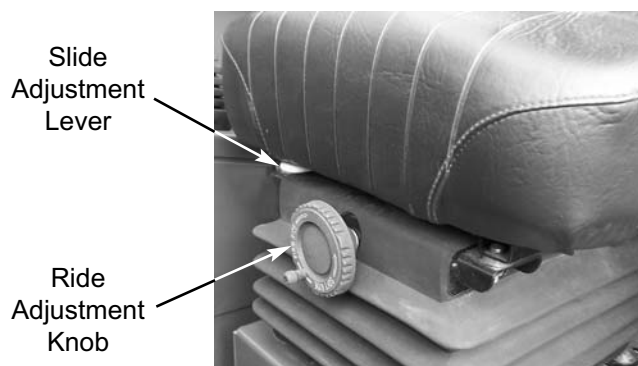
**Service Brake Pedal:** Pressing this pedal activates inboard hydraulic wet-disc-type brakes on all four wheels. Separate front and rear brake systems allow bringing the machine to a safe stop if either system loses pressure.

**Brake Fluid Reservoirs:** Located under the hinged cover on the cab floor directly in front of the seat.

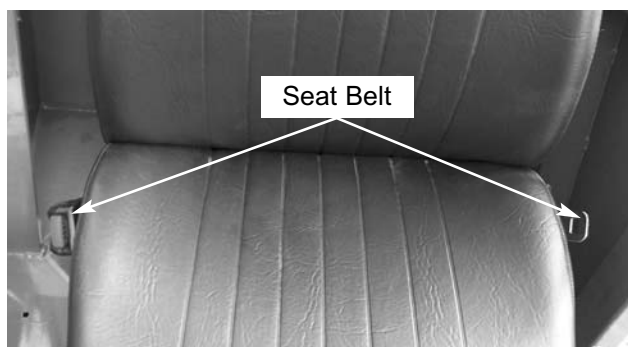
**Seat Positioning:** The seat is mounted on rails for forward and rearward repositioning, for comfort and to accommodate the operator's size. A spring-loaded latch handle under the front of the seat actuates the adjustment mechanism.



**Suspension Seat Option:** This option is available for additional operator comfort. It is adjustable for a soft or firm ride.



**Seat Belt:** This machine has a retractable seat belt. Grasp the belt on the left side of the seat, pull the belt over your lap, and insert the belt into the buckle on the right side of the seat until you hear it lock in place.



## RIGHT SIDE PANEL

These controls and indicators are used to position the frame, boom and attachment. Graphic symbols on the side panel indicate the control actions and effect.

---

### **WARNING**

**Use extreme caution when raising or extending the boom. The Telescopic Handler MUST be level. Loaded or empty, the machine can tip over if it is not level.**

**ALWAYS** place the transmission in neutral, apply the parking brake and keep the service brakes fully applied before raising or extending the boom.

**NEVER** exceed the specified lift and reach capacities of the machine, or serious machine damage and personal injury may result. Refer to the load charts at the operator's station or this manual.

**If a boom circuit hose fails with the boom up, with or without a load, shut down the machine following the MANDATORY SAFETY SHUT-DOWN PROCEDURE. DO NOT** attempt repairs. Instead, call your Gehl dealer for assistance.

The truss boom and winch attachment tools should **ONLY** be used to lift and place loads when the machine is in a stationary position. Transporting suspended loads must **ALWAYS** be done slowly and cautiously, with the boom and load as low as possible. Use taglines to restrict loads from swinging, to avoid overturn.

**NEVER** use winch for lifting or moving personnel. **NEVER** exceed the maximum rated capacity of the winch (3000 lbs./1360 kg) or exceed the load chart rating for winch applications.

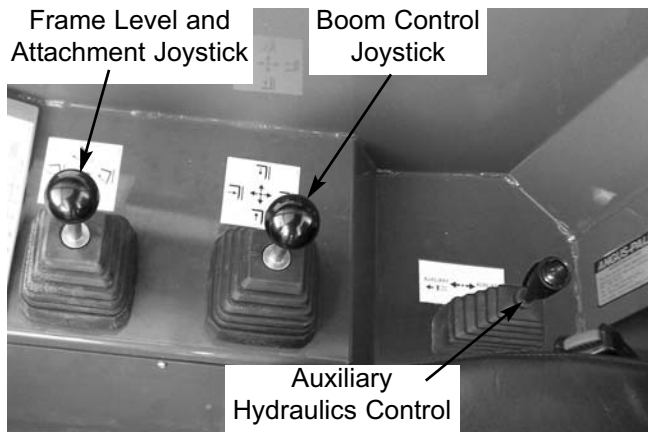
**DO NOT** tilt the truss boom back more than 45° from horizontal. **DO NOT** attempt to use the optional rotating carriage as a load leveling function. **ALWAYS** level the frame prior to raising a load.

**Failure to heed could result in death or serious injury.**

---

This machine is equipped with one of two types of boom and attachment joystick control configurations, either a two-joystick configuration, or a single tri-function joystick.

### Two-Joystick Configuration



**Two-Joystick Configuration**

**Frame Level/Attachment Tilt Joystick:** The machine may be tilted slowly as much as 10° to the left or right to level the frame and boom in relation to the ground. Move the joystick handle to the left to tilt to the left; move the joystick handle to the right to tilt to the right.

## **WARNING**

**DO NOT level the frame with the boom raised or extended. Level the frame ONLY while stopped, with the boom fully retracted and the attachment raised just enough to clear the ground.**

To tilt the attachment tool up, move the joystick handle rearward. To tilt the attachment tool down, move the joystick handle forward.

After the operator tilts the attachment tool to a desired angle, that angle will be maintained as the boom is raised and lowered, extended and retracted, until a new angle is set.

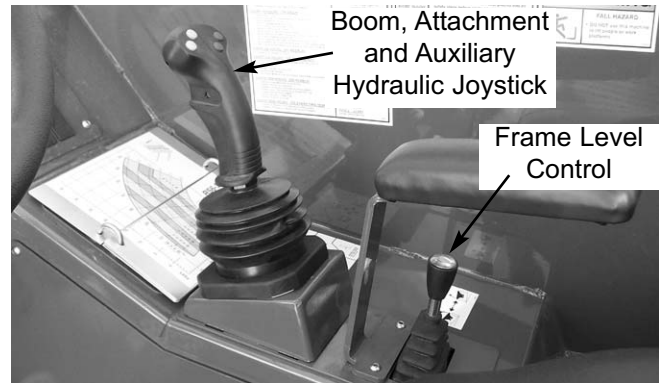
**Boom Control Joystick:** This machine has a hydraulic-type boom with telescopic sections. The sections extend by means of a hydraulic cylinder and chain system inside the boom, sequenced for uniform extension of each section.

To extend the boom, move the joystick handle to the right; to retract the boom, move the joystick handle to

the left. To raise the boom, move the joystick handle rearward; to lower the boom, move the joystick handle forward.

**Auxiliary Hydraulics Control:** This two-position lever is for attachment tools that require additional hydraulics.

### Tri-Function Joystick Configuration



**Single Tri-Function Joystick Configuration**

**Tri-Function Joystick:** This joystick handle is equipped with two yellow buttons and two blue buttons on the upper rear of the handle, and a trigger switch on the front of the handle. The yellow buttons operate the attachment tilt. The blue buttons operate the auxiliary hydraulics. The trigger switch increases the function speed of both the attachment tilt and auxiliary hydraulics.

To extend the boom, move the joystick to the right; to retract the boom, move the joystick to the left. To raise the boom, move the joystick rearward; to lower the boom, move the joystick forward.

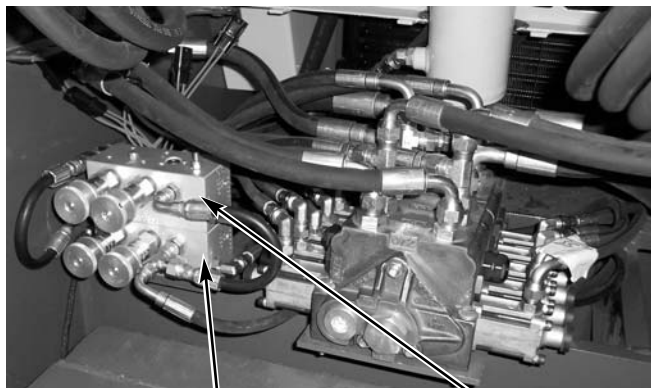
To tilt the attachment tool up, depress and hold the lower yellow button on the left side of the joystick handle; to tilt the attachment tool down, depress and hold the upper yellow button on the left side of the joystick handle.

To operate the auxiliary attachment hydraulics, depress and hold either the upper or lower blue button on the right side of the joystick handle. The upper blue button will cause the reverse effect of the lower blue button.

Depressing and holding the trigger on the front side of the joystick handle will increase the speed of the attachment tilt and auxiliary hydraulic functions.

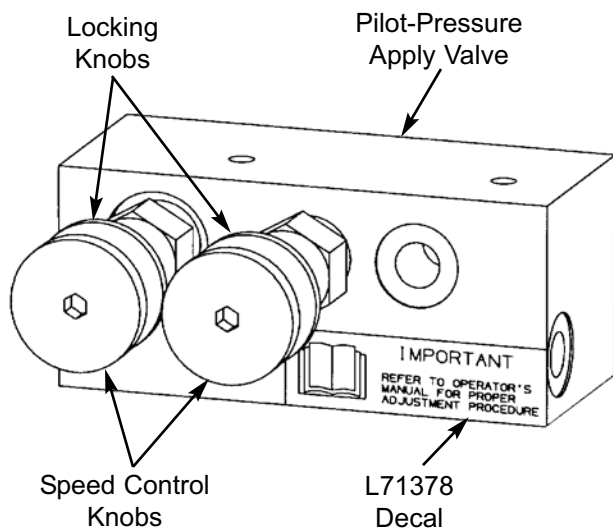
**NOTE:** *The joystick handle does not need to be moved to operate the tilt or auxiliary hydraulic functions.*

**Speed Control Knobs:** The tri-function joystick incorporates a manually adjusted speed control. Speed adjustment is accomplished through the manual adjustment of pilot-pressure apply valves located next to the main valve at the rear of the machine.



Attachment Tilt Pilot-Pressure Apply Valve

Auxiliary Hydraulics Pilot-Pressure Apply Valve



Locking Knobs

Pilot-Pressure Apply Valve

Speed Control Knobs

L71378 Decal

If the machine is equipped with auxiliary hydraulics, there will be two pilot-pressure apply valves, each having two speed-control knobs. The top pilot valve controls the auxiliary hydraulics, and the lower pilot valve controls the attachment tilt function. On the attachment tilt pilot valve, the left knob controls the attachment tilt-back speed, and the right knob controls the attachment tilt-forward speed. On the auxiliary hydraulic pilot valve, the function of the knobs will depend on the type of attachment requiring auxiliary hydraulics.

Turning a knob clockwise will increase the speed of its associated function. Turning a knob counter-clockwise will decrease the speed of its associated function.

**NOTE:** There is a locking knob located forward of the adjusting knob, which must be loosened before the adjusting knob can be turned. After adjustment has been made, tighten the locking knob to maintain the selected speed.

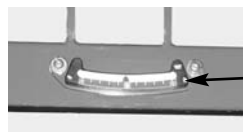
**Frame Level Control:** This control is located to the rear of the tri-function joystick. The machine may be tilted slowly as much as 10° to the left or right to level the frame and boom in relation to the ground.

## WARNING

**DO NOT** level the frame with the boom raised or extended. Level the frame **ONLY** while stopped, with the boom fully retracted and the attachment raised just enough to clear the ground.

## FUNCTION INDICATORS

**Frame Angle Indicator:** Located in front of the operator on the ROPS upper cross tube, the position of the ball indicates when the frame is level relative to a sloping ground surface.



Frame Angle Indicator

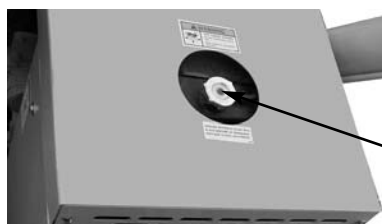
**Boom Angle Indicator:** Mounted on the left side of the outer boom, the movement of a ball indicates the angle of boom elevation relative to the ground.



Boom Angle Indicator

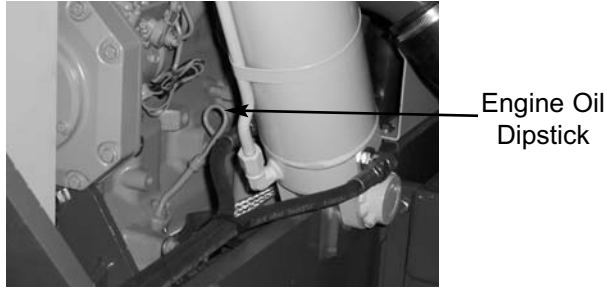
## SERVICE AND SAFETY FEATURES

**Coolant Level:** The radiator cap is located under the opening toward the rear of the main hood section.



Radiator Cap

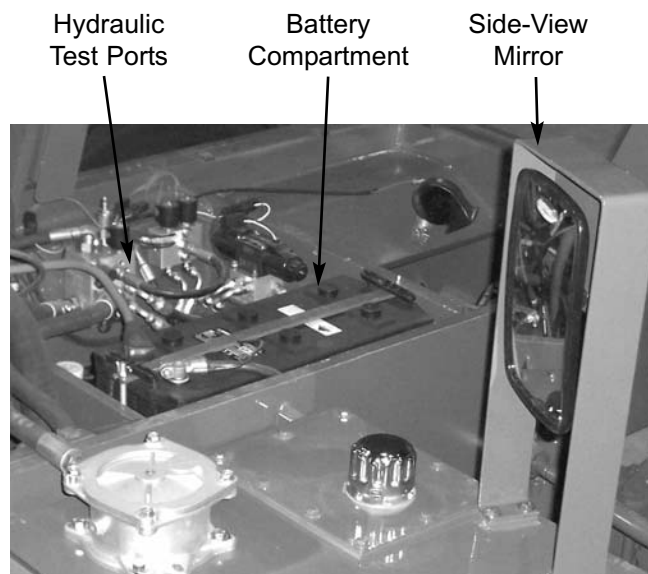
**Engine Oil Level:** The dipstick is located on the right side of the engine.



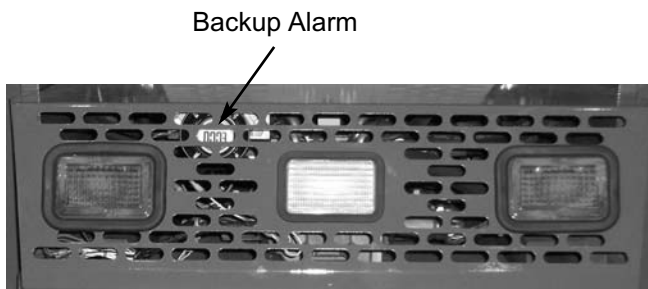
**Hydraulic Pressure Test Ports:** A gauge can be attached to these ports to check main valve, joystick and steering pressures.

**Side-View Mirror:** Located on the front outside corner of the fuel tank, this mirror provides the operator with a view toward the rear of the machine.

**Battery Compartment:** The battery is located under the access cover on the front hood section.

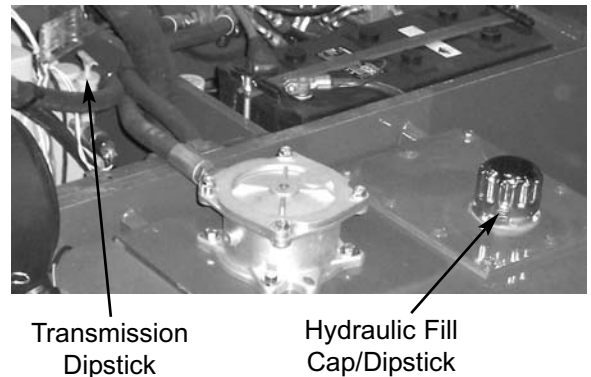


**Backup Alarm:** Located inside the rear frame cover, this alarm produces a loud warning sound when the machine is in reverse.



**Transmission Oil Level:** The dipstick is located under the access cover on the front hood section.

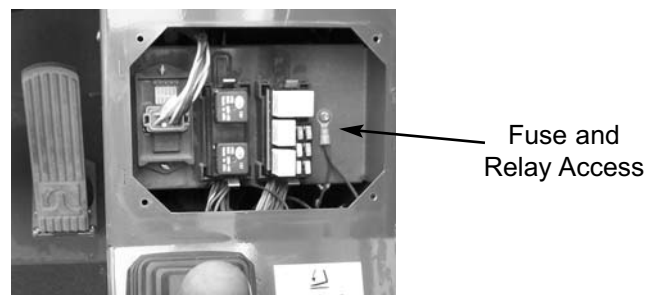
**Hydraulic Reservoir Oil Level and Fill Cap:** The dipstick on the fill cap of the reservoir indicates the level of the hydraulic oil in the reservoir.



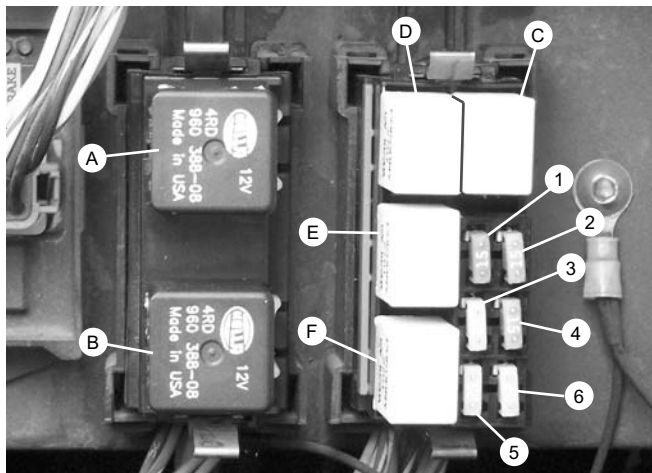
**Air Filter Restriction Indicator:** Located in the rubber connector at the rear of the air cleaner, it indicates when the air cleaner needs service. If the clear portion of the indicator is red, the air cleaner should be checked for a clogged filter element.



**Fuse and Relay Access Compartment:** This compartment is located under the load chart panel. Remove the four screws to gain access to the fuses and relays.



**Fuses and Relays Functions:** Refer to the illustration and following description for the fuse and relay functions.



**FUSES:**

1. 15 AMP fuse: Ignition Switch, Horn, Brake Lights, and Backup Alarm.
2. 15 AMP fuse: Transmission, Park Brake, PWP, Steer Select, and Injector Pump.
3. 15 AMP fuse: Lights, Ether, and Clutch Cutout.
4. 25 AMP fuse: Heater and Gauges.
5. 25 AMP fuse: Top Wiper Motor.
6. 25 AMP fuse: Front Wiper Motor.

**RELAYS:**

- A. 20 AMP change-over relay: Ignition.
- B. 20 AMP change-over relay: Park Brake.
- C. 20 AMP relay: Front Wiper.
- D. 20 AMP relay: Bulb Check.
- E. 20 AMP relay: Lights.
- F. 20 AMP relay: Top Wiper.

**ATTACHMENT TOOLS**

Gehl Company offers a range of attachment tools to meet various lifting and material-handling applications. Contact your Gehl dealer for specifications and ordering information.

**ACCESSORIES**

Gehl also offers a range of special accessories for this machine. Contact your Gehl dealer for specifications and ordering information.

**NOTE:** *All accessories are field-installed unless otherwise noted. Information and parts for installing accessories are provided by your Gehl Telescopic Handler dealer or Gehl Company.*



# Chapter 6

## OPERATION AND ADJUSTMENTS

### GENERAL INFORMATION

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#### CAUTION

**BEFORE starting the engine and operating the Telescopic Handler, review and comply with ALL safety recommendations in the SAFETY chapter of this manual. Know how to STOP the machine before starting it. Also, BE SURE to fasten and properly adjust the seatbelt.**

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### ENGINE BREAK-IN

A new engine does not require extensive “break-in.” However, for the first 100 hours of operation: Allow the engine to idle for a few minutes after every cold start, DO NOT idle the engine for long periods of time, DO NOT operate the engine at maximum power for long periods of time, and check the oil level frequently, and replenish as necessary with the oil specified in the engine manual.

John Deere engines use a “break-in” oil for the first 100 hours of operation. After the first 100 hours of operation, change the oil and replace the oil filter. Consult the *Lubrication* chapter or the engine manual for the type of oil to use in the engine. Refer to the *Service and Storage* chapter for the proper service intervals.

### PRE-START INSPECTION

It is the operator’s responsibility to inspect the machine before the start of each workday. Every pre-start inspection must include more than checking the fuel and oil levels. It is a good practice to personally inspect any machine you are assigned to use, even if it has already been checked and put into service by other personnel.

The most efficient method of checking a machine is by conducting a “Walk-Around Inspection.”

Before mounting the operator’s compartment, walk completely around the machine to be sure no one is under, on, or close to it. Let others in the area know

you are going to start up. Wait until everyone is clear of the machine before starting it..

### BEFORE STARTING ENGINE

Before starting the engine and running the machine, refer to the *Indicators and Controls* chapter and become familiar with the various operating controls, indicators and safety features.

### STARTING THE ENGINE

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#### WARNING

**ALWAYS fasten your seat belt BEFORE starting the engine. Leave the parking brake applied until the engine is running and you are ready to operate the machine.**

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The following procedure is recommended for starting the engine:

1. Grasp the handholds and step up into the operator’s compartment.
2. Adjust the seat and fasten the seatbelt.
3. Check that all controls are in their “neutral” positions, except the parking brake switch, which should be in the “ON” position.
4. Turn the key switch to the “ON” position and press the start button. If the button is released before the engine starts, turn the key switch to the “OFF” position and allow the starter to stop before attempting to start again.

**IMPORTANT:** *Crank the starter until the engine starts. If the engine fails to start within 30 seconds, return the key to the “OFF” position, wait two minutes, and try to start the engine. Cranking the engine for longer than 30 seconds will result in premature failure of the starter.*

5. After the engine starts, allow a sufficient warm-up time before operating the controls.
6. Check that indicators are in their normal operating conditions.

7. Verify that there are no fuel, oil or engine coolant leaks, and no abnormal noises or vibrations.

## COLD STARTING PROCEDURES

The engine is equipped with a block heater. This block heater or other starting aid is required for starting in temperatures below 32°F (0°C). See your Gehl dealer for additional starting aids.

For proper use of starting aids, check the instructions in the engine manual.

If the battery becomes discharged and has insufficient power to start the engine, jumper cables can be used for starting assistance. Refer to the jump starting instructions in the *Service and Storage* chapter of this manual for safe jump starting procedures.

## STOPPING

The following procedure is the recommended sequence for stopping the machine:

1. Bring the machine to a stop on a level surface. Avoid parking on a slope, but if necessary park across the slope and block the wheels.
2. Fully retract the boom and lower the attachment to the ground. Idle the engine for gradual cooling.
3. Place controls in neutral. Apply the parking brake.
4. Turn the ignition switch key to the “OFF” position. Remove the key.
5. Unfasten the seatbelt, and grasp the handholds while climbing out of the operator’s compartment.

## FIRST TIME OPERATION

Make sure the engine is warm, and then go through the following procedures:



**Be sure the area being used for test-running is clear of spectators and obstructions. Initially, operate the machine with an empty attachment tool.**

---

Place the travel lever in Forward or Reverse and select a speed range. Switch off the parking brake and move ahead slowly, while testing the steering and brakes. Stop and operate all boom, attachment tool functions and frame leveling controls, checking for smooth response.

Apply the service brakes, stop the machine and move the travel lever to the opposite direction (forward or reverse).

Shifting to the next higher gear may be done at any engine speed while the machine is in motion.

DO NOT overspeed the engine when down-shifting. Allow the machine to slow down before shifting to the next lower gear.

## PARKING BRAKE

**NOTE:** *The parking brake mechanism within the front axle is not designed for, and not intended to be used as, the primary means of stopping movement of the machine. Hydraulic braking provided through the service brakes within the axles is the primary means for stopping movement. The axle-by-axle split brake system is the secondary means of stopping movement.*

The proper sequence for correct machine operation is to always engage the parking brake switch before shutting off the engine; and to disengage the parking brake ONLY after the engine is running. In an emergency however, if it becomes necessary to stop movement, activate the parking brake switch to “ON.”

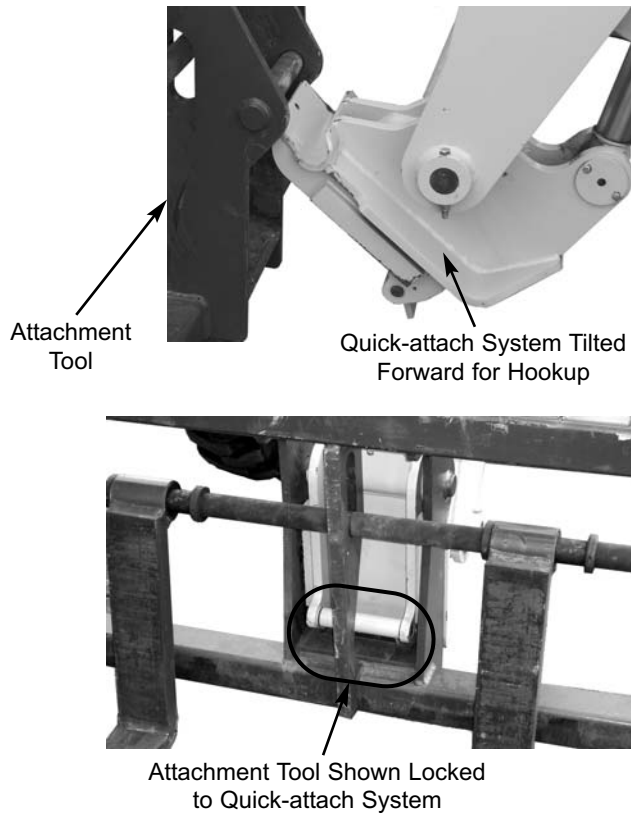
## CHANGING ATTACHMENT TOOLS

The Telescopic Handler boom nose will accept Gehl Quick-attach™ System attachment tools. The Quick-attach™ System has a quick-release hookup and locking mechanism for mounting framing-type or masonry-type attachment tools to the boom nose.

### Attaching

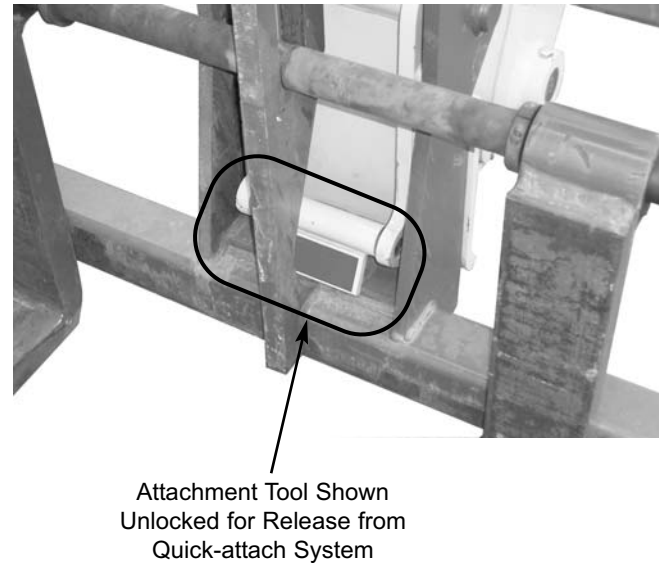
To pick up an attachment tool, proceed as follows:

1. Raise the boom slightly, extend it two to three feet (600 to 900 mm) for better visibility, and tilt the tool carrier forward.
2. Align the tool carrier squarely with the back of the attachment tool.
3. Slowly extend the tool carrier and lower the hooks under the attachment tool hookup bar.
4. Tilt the tool carrier back so that the lock plate engages the attachment tool. This secures the attachment tool to the Quick-attach™ System.
5. For an attachment tool with auxiliary hydraulics, connect the hoses to the quick-disconnect connectors on the boom nose.



**NOTE:** One side of the lock plate has a bright red decal to indicate the unlocked position.

5. If the attachment tool has auxiliary hydraulics, disconnect the hoses from the quick-disconnects on the boom nose.
6. Start the engine and roll the Quick-attach™ System forward. Slowly back the machine until the attachment tool is free from the boom nose.



### Quick-attach™ System Attaching Detail Detaching

To detach the attachment tool, proceed as follows:

1. Raise the boom slightly and extend it two to three feet (600 to 900 mm) for better visibility. Lower the boom until the attachment tool is approximately 12" (0.3 m) off the ground.
2. Tilt the carrier rearward as far as it will go. Once the carrier is tilted back all the way, perform the Mandatory Safety Shutdown Procedure (*Safety* chapter, page 8).
3. With the engine off, leave the operator's station and manually raise the lock spring and flip the lock plate up and outward at least 180° so it is in position to re-lock onto the next attachment tool.
4. Tilt the Quick-attach™ System forward to allow the attachment tool to roll out, then lower the boom so that the hook ears clear the hookup bar on the attachment tool.

### Quick-attach™ System Detaching Detail



## WARNING

**Modifications, alterations to, or use of attachment tools not authorized by Gehl (or the manufacturer) in writing can void warranty and cause machine damage and/or serious personal injury or death.**

### SELF-LEVELING

The machine is equipped with a hydraulic self-leveling feature. This feature is designed to keep the attachment tool level while the boom is being raised.

## GENERAL MACHINE OPERATION

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**Exhaust fumes can kill. Ensure proper ventilation when starting indoors or in enclosed areas.**

**Use proper hand-holds, NOT the steering wheel or control levers as handholds when mounting and dismounting.**

**NEVER operate the machine with safety guards or covers removed.**

**Over-inflated tires can explode and cause injury or death. Tire repairs MUST be made only by authorized personnel using proper tools and equipment.**

---

Check the Telescopic Handler to be sure all systems are in good operating condition. Perform the following steps before starting the machine the first time each day:

1. Check the engine oil, coolant, transmission oil and hydraulic oil levels.
2. Make sure weekly lubrication has been done.
3. Visually inspect for leaks, broken or malfunctioning parts. Make sure all caps, covers and safety shields are in place.
4. Check tires for cuts, bulges, nails, correct pressure, loose wheel nuts, etc.
5. Inspect the work area. Be sure you know where you will make load pickups, placements, lifts, and turns. Look over the terrain of the jobsite for holes, obstacles, slippery surfaces, and soft or deep mud.
6. Check clearances of ramps, doorways and passageways. Check overhead clearances if you will travel and place loads near power or telephone lines.

If the machine is found to be in need of repair or in any way unsafe, or contributes to an unsafe condition, the matter must be reported immediately to the user's designated authority. The machine should NOT be operated until it has been restored to a safe operating condition.

Operate the travel controls gradually and smoothly when starting, stopping, turning and reversing direction.

## Grade and Slope Precautions

The Telescopic Handler complies with industry stability test requirements and is stable when properly operated. However, improper operation, faulty maintenance, and poor housekeeping can contribute to a condition of instability.

The amount of forward and rearward tilt to be used is governed by the application. Although use of maximum rearward tilt is allowable under certain conditions, such as traveling with the load fully lowered, the stability of the machine, as determined by the industry standard tests, does not encompass consideration for excessive tilt at high elevations, or the handling of off-center loads.

Only handle loads within the capacity limits of the machine, and which are stable and safely arranged. When attachments are used, extra care should be taken in securing, manipulating, positioning and transporting the load.

## Grade Limits

**NOTE:** *Grade limits are based on ANSI/ITSDF standard B56.6-2005.*

The telescopic handler meets or exceeds the safety standard (ANSI/ITSDF B56.6) stability limits for rough terrain forklifts. The stability tipping limits cover specific, controlled test conditions, which are extremes, and which are not intended to be achieved during normal worksite operations. The following specifications are provided only as information to the operator, and must not be used as a guideline for operating the telescopic handler. For safe operation, always follow the instructions and warnings provided in this manual.

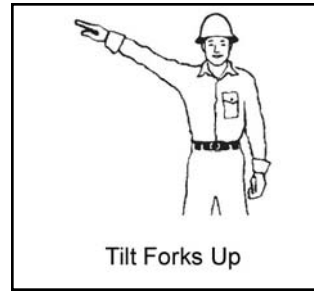
1. DO NOT place or retrieve loads on an up or down slope or grade that exceeds 7% or 4°.
2. DO NOT travel up or down a grade or slope that exceeds 22% or 12° while loaded.
3. DO NOT place or retrieve loads on a side hill with a slope or grade that exceeds 12% or 7°. Regardless of the terrain or position of the wheels, the **FRAME MUST BE LEVEL**, as indicated by the frame angle indicator on the ROPS/FOPS crossmember.

4. DO NOT travel across a side hill that exceeds 18% or 10° grade. Regardless of the terrain or position of the wheels, the **FRAME MUST BE LEVEL**, as indicated by the frame angle indicator on the ROPS/FOPS crossmember. The attachment tool **MUST** be maintained at the “carry” position with the boom fully retracted, and attachment tool at minimum ground clearance.

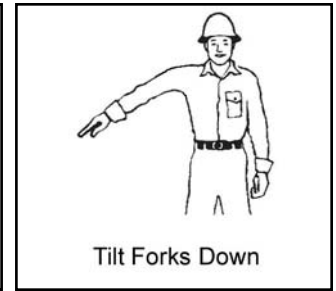
When ascending or descending grades in excess of 5% or 3°, the machine should be driven with the load upgrade. An unloaded machine should be operated on all forward grades with the load handling attachment tool downgrade, tilted back if applicable, and raised only as far as necessary to clear the road surface.

On grades, ramps and inclines, use extreme caution and avoid turning if possible. Normally travel straight up and down the slope.

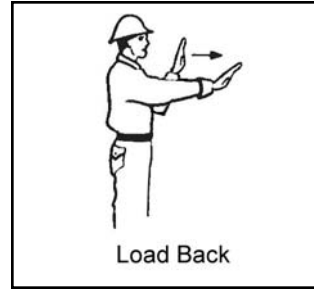
### Safety Hand Signals Continued



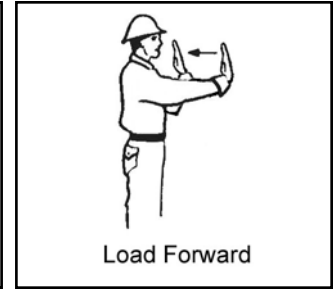
Tilt Forks Up



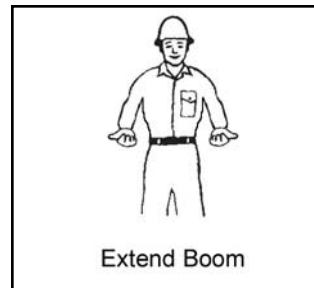
Tilt Forks Down



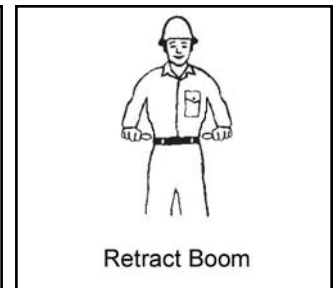
Load Back



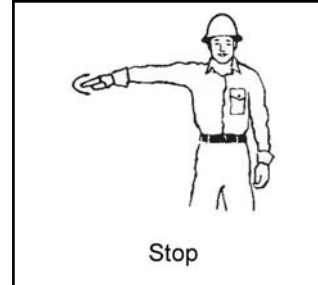
Load Forward



Extend Boom



Retract Boom



Stop

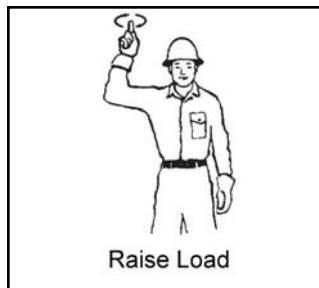
## WARNING

**DO NOT level the frame with the boom raised or extended. Only level the frame while stopped, and with the boom fully retracted, and the attachment tool raised just enough to clear the ground.**

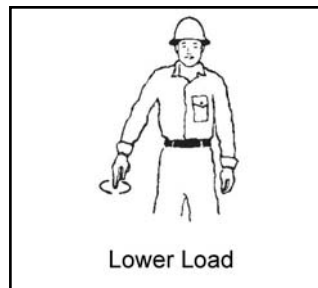
### Traffic Flow Patterns

Know and understand the traffic flow patterns of your jobsite. Know all Telescopic Handler hand signals for safety. Utilize signal persons and be sure you can see the signal person and acknowledge the signals given.

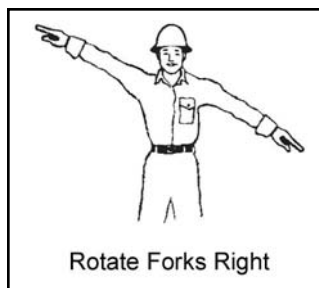
### Safety Hand Signals



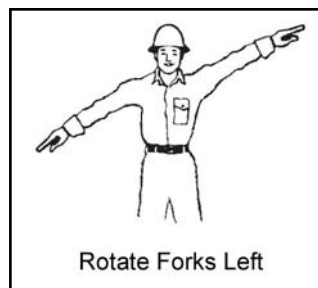
Raise Load



Lower Load



Rotate Forks Right



Rotate Forks Left

When ramps must be used in transporting loads with the machine, the following shall be the minimum widths for safe travel:

Compacted dirt, gravel, etc.	12 ft. (3.6 m)
Woodboard, concrete, etc.	10 ft. (3.0 m)

Permanent aisles, roadways, passageways, floors and ramps should be marked or defined in some fashion. Permanent or temporary protrusion of loads, equipment, material and construction facilities into the usual operating area should be guarded, clearly and distinctively marked, or clearly visible.

Maintain a safe distance from the edge of ramps, platforms and other similar working surfaces.

Controlled lighting of adequate intensity should be provided in operating areas. Where operating conditions dictate, the operator/user is responsible for having the machine equipped with lights.

Provisions should be made to prevent trucks, semi-trailers and railroad cars from being moved during loading and unloading. Wheel stops, parking brakes, or other positive holding means should be used to prevent movement during loading and unloading.

DO NOT move railroad cars and trailers with the Telescopic Handler.

DO NOT use the boom and attachment for leverage to push the machine out of mud.

**IMPORTANT:** *DO NOT lower boom at high engine speed when attachment tool is at maximum rearward tilt. Damage to slave cylinders may result.*

## GENERAL LOAD HANDLING

NEVER operate controls except from the operator's seat. NEVER jerk or use fast movements. Avoid sudden stops, starts and changes in direction.

Operation of the hydraulic system depends on engine speed and the distance the controls are moved. When operating these controls it is important to develop a technique called "feathering." Feathering the control means starting the desired motion by moving the control a small distance away from neutral. Then, after movement has started, the control can be eased to full travel. Use the same feathering technique to slow and stop the motion.

---

## WARNING

**Excessive speed can be hazardous. ALWAYS exercise caution and good judgement while operating the machine.**

**ALWAYS maintain a safe distance from electric power lines and avoid contact with any electrically charged conductor and gas line. It is not necessary to make direct contact with a power line for power to ground through the structure of the machine. Keep the boom and load at least 10 ft. (3 m) from all power lines. Accidental contact with a power line or rupture of a gas line can result in electrocution or an explosion. Contact the "Call Before You**

**Dig" referral system number at 8-1-1 in the U.S., or 888-258-0808 in the U.S. and Canada, to locate any underground utility lines BEFORE starting to dig.**

**Keep all body parts inside the operator's station while operating the machine. BE SURE of clearance for the attachment tool when turning, working around buildings, etc.**

**Turning corners too fast can tip the machine, or cause a load to slide off the attachment. Sudden slowing or stopping of the machine may cause the load to fall off the attachment tool.**

**Be certain you can control both speed and direction before moving. Always place the machine in neutral and set the parking brake before raising or extending the boom. NEVER drive the machine up to someone standing in front of the load.**

**NEVER leave the operator's station without first lowering the attachment tool to the ground. Then set the parking brake, place controls in neutral, shut off engine and remove the key. AVOID parking the machine on a slope, but if necessary, park across the slope and block the tires.**

---

## Load Capacity and Reach

The machine has flip-charts in the operator's station that provide, at a glance, the load capacity limits at various positions of attachment tool extension and elevation. A set of the load zone charts is reproduced at the end of this manual for reference.

A typical load zone chart is shown on the next page. The scale on the left indicates height in feet above the ground level. The scale on the bottom shows the distance in feet from the front of the machine. The arc lines noted by the numbers "1" through "5" correspond with the position extension markers on the operator side of the intermediate boom section.

The following example illustrates proper use of the load zone charts for the Telescopic Handler:

**Example:** The operator, using a standard carriage attachment tool, wants to raise a 2000 lb. load 20 feet high, and can only get to within 15 feet of the load placement point. Can it be done within the capacity of the machine?

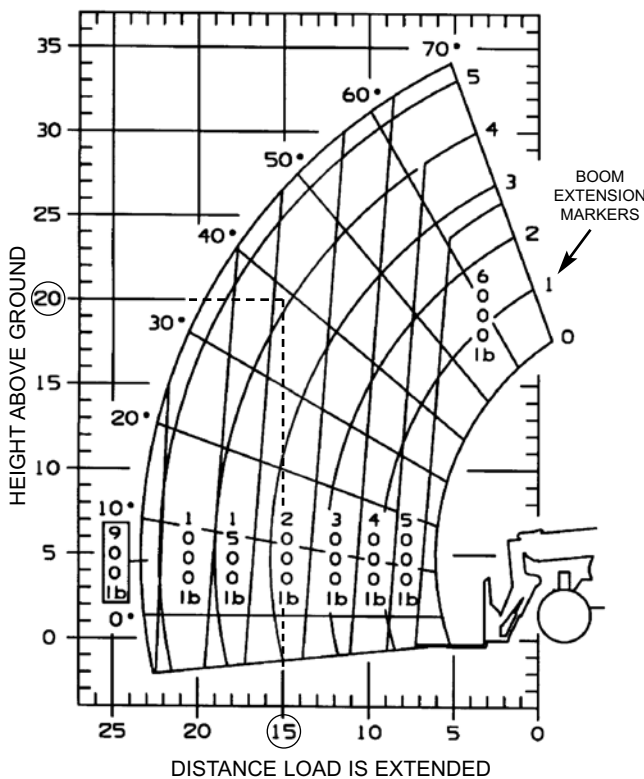
**Analysis:** See “Typical Load Zone Chart” below.

Projecting up from the 15-foot reach mark on the horizontal axis to intersect a line through the 20-foot height mark on the vertical axis shows that a load up to 2000 lb. can be placed in that zone.

During placement, the operator should observe when the boom extension mark number “4” on the boom is visible and stop further extension. The operator knows the maximum safe extension distance with the 2000 lb. load has been reached.

## WARNING

**NEVER** exceed the rated operating capacity of the Telescopic Handler as shown on the load zone charts.



**Typical Load Zone Chart**

## LIFTING ATTACHMENT TOOL APPLICATIONS

### Picking Up the Load

Inspect the load before picking it up. If it appears unstable, DO NOT attempt to move it. DO NOT attempt lifting double-tiered loads, or straddling side-by-side pallets with one on each fork. NEVER add extra unauthorized counterweights to the machine.

## WARNING

**Operating conditions such as slopes or soft ground can reduce the machine’s safe operating capacity. Exceeding the capacity when raising or extending the boom will cause the machine to tip forward.**

Approach the load slowly and squarely with the machine straight and level. Adjust the space between forks, if necessary. Engage the load equally on the forks until the load touches the carriage backrest. Tilt the forks back to position the load for travel.

### Carrying the Load

If the load obstructs your view, get someone to direct you. Maintain ground speeds consistent with ground conditions and that permit stopping in a safe manner.

## WARNING

**NEVER** travel with the boom above the carry position (attachment tool should be at minimum ground clearance). Boom should be fully retracted.

Use lower gear when traveling down an incline. NEVER coast with the transmission in neutral. Travel up and down grades slowly.

**DO NOT** operate the machine on a slope or grade that exceeds 22% or 12°.

### Load Elevation and Placement

For ground level load placement, be sure the area under the load and around the machine is clear of equipment and personnel. Lower the load to the ground, tilt the forks to the horizontal position, and then carefully back away to disengage the forks from the load.

For elevated or overhead placement, bring the machine as close as possible to the landing point, and then:

1. Level the machine BEFORE raising the load. Use extreme caution for high placement. Be sure personnel are clear of the area where the load or the machine could fall or tip.
2. Set the parking brake, hold the service brake pedal fully applied and slowly raise the load, maintaining a slight rearward tilt to cradle the load.
3. As the load approaches the desired height, feather the boom control at minimum speed until the load is slightly higher than the landing point.
4. Continuing the feathering technique, lower the load into place.
5. Free the forks from the load by alternately retracting and raising the boom. If this process is not possible, very slowly and carefully reverse the telescopic handler to free the forks from the load.
6. Lower the forks to travel height.

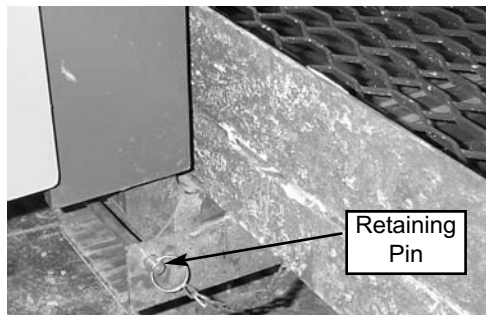
### Installing a Personnel Work Platform (PWP)

## WARNING

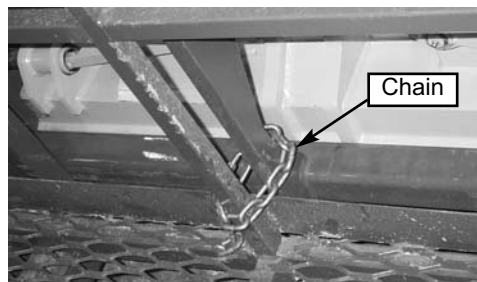
**The machine must not be used to lift or carry personnel or be fitted with any form of personnel work platform unless fitted with the optional PWP System.**

**If fitted with the PWP System, the Mandatory Work Platform Safety Rules (p. 13) must be followed at all times while lifting personnel.**

1. Center the forks on the carriage, spaced apart to match the distance required to engage the PWP.
2. After the forks are fully engaged in the PWP, secure the PWP to the forks. This can be accomplished by means of a retaining pin behind the heel of the forks, as shown.



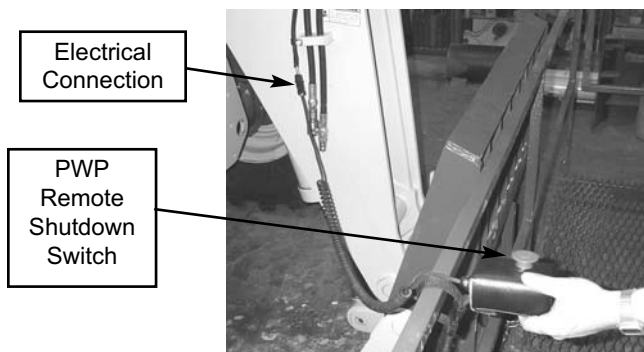
3. Secure the forks from pivoting upward in case the PWP is lowered onto an obstruction. This can be accomplished by using the chain supplied with the PWP to secure the lower portion of the PWP to the bottom of the carriage, as shown below.



## WARNING

**The PWP must meet ANSI/ITSDF B56.6-2005, Section 8.24. (See page 14 in the Safety chapter for PWP design requirements.) If the PWP being used does not offer means to secure the PWP to the forks and to secure the forks from pivoting, as shown in steps 2 and 3, then an alternate method must be used.**

4. Connect the coiled wire from the remote shutdown switch to the connector on the end of the boom. Secure the remote shutdown switch to the PWP using the strap attached to the switch, as shown below.



Remote Shutdown Switch with Coiled Wire Connector

5. Secure the lanyard from the body harness to the PWP or the boom. Each person in the PWP should have a body harness with a lanyard attached to the PWP.



## Elevating Personnel

The Telescopic Handler is primarily intended for use as a material handler. It should only be used to elevate personnel if it is equipped with the (optional) PWP System when there is no other practical option. If this machine is to be used to elevate personnel, then use only an approved work platform, lift personnel only with the PWP System activated, and follow the "Mandatory Work Platform Safety Rules" (p. 13 Safety chapter).

If the Telescopic Handler is equipped with a PWP System and is to be used for elevating personnel, the system must be activated, by using the "PWP System" mode switch, which is located in the instrument and switch panel. To activate the system, press the top of the PWP rocker switch, apply and hold the service brakes on for three or more seconds. The system is activated when the lamp in the PWP rocker switch is on continuously.

---

### **WARNING**

**ALWAYS check the PWP System for proper operation prior to use. (See page 50 for PWP System checking procedure.)**

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When the PWP System is active:

- transmission is de-clutched into Neutral,
- parking brake is applied,
- auxiliary hydraulic and carriage tilt and swing functions are disabled,
- machine inclination sensor is activated, with the result that the Telescopic Handler must be level laterally (side-to-side) and longitudinally (front-to-back) to within the factory pre-set limits before the boom control joystick will function, and
- remote shutdown switch is activated, meaning that the switch must be connected and in the "on" position for the boom control joystick to function. Pressing the shutdown switch will disengage the boom control joystick, and stop all platform movement. The remote shutdown switch box is supplied with a coiled electrical cable that must be connected to the outlet on the front of the innermost boom section near the carriage. The switch must be accessible by the platform personnel at all times when the platform is to be moved.

To de-activate the PWP System, apply and hold the service brakes on for three or more seconds, and press

the bottom of the PWP System rocker switch. The system is de-activated when the lamp in the PWP System rocker switch is off.

**NOTE:** *If the lamp in the PWP system rocker switch is flashing, apply the service brakes until the lamp goes off.*

---

### **WARNING**

**In an emergency, if the platform worker has activated the remote shut-off switch and then is not able to re-activate the switch, such as if the worker fainted, then the Telescopic Handler operator is permitted to turn off the PWP System to regain control of the boom functions, in order to lower the work platform and come to the aid of the worker. But, understand this is only permitted in case of an emergency. Otherwise, the PWP System must be used at all times when there are workers on the platform. This is the only exception!**

---

---

### **WARNING**

**The machine becomes less stable as the load is raised higher.**

**NEVER use frame leveling to position an elevated load. Always lower the load to the ground and reposition the machine.**

**If a hydraulic boom circuit hose should break with the boom up, shut down the machine. DO NOT attempt to bring down the boom or make repairs. Call your Gehl dealer immediately.**

**As lift height increases, depth perception decreases. High elevation placement may require a signal person to guide the operator.**

**DO NOT ram the lift cylinders to the end of the stroke. The resulting jolt could spill the load.**

**A jib or truss boom should ONLY be used to lift and place loads when the machine is stationary and the frame is level. Transporting suspended loads must ALWAYS be done slowly and cautiously, with the boom and load as low as possible. Use taglines to restrict loads from swinging, to avoid overturn.**

---

## SUSPENDED LOADS

The handling of suspended loads by means of a truss boom or other similar device can introduce dynamic forces affecting the stability of the machine that are not considered in the stability criteria of industry test standards. Grades and sudden starts, stops and turns can cause the load to swing and create a hazard.

### Guidelines for “Free Rigging / Suspended Loads”

1. DO NOT exceed the rated capacity of the telescopic handler as equipped for handling suspended loads. The weight of the rigging must be included as part of the load.
2. During transport, the length of the rigging between the attachment and load should be as short as possible to reduce booms height and movement. DO NOT raise the load more than 12 inches (305 mm) above the ground, or raise the boom more than 45 degrees.
3. Only lift the load vertically – NEVER drag it horizontally.
4. Use multiple pickup points on the load when possible. Use taglines to restrain the load from swinging and rotating.
5. Start, travel, turn and stop SLOWLY to prevent the load from swinging. DO NOT exceed walking speed.
6. Inspect rigging before use. Rigging must be in good condition and in the U.S. comply with OSHA regulation §1910.184, “Slings,” or §1926.251, “Rigging equipment for material handling.”
7. Rigging equipment attached to the forks must be secured such that it cannot move either sideways or fore and aft. The load center must not exceed 24 inches (610 mm).
8. DO NOT lift the load with anyone on the load, rigging or lift equipment, and NEVER lift the load over personnel.
9. Beware of the wind, which can cause suspended loads to swing, even with taglines.
10. DO NOT attempt to use frame-leveling to compensate for load swing.

## ROAD TRAVEL

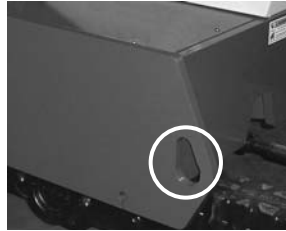
For short distance highway travel, attach a Slow-Moving Vehicle (SMV) emblem (purchased locally) to the rear of the Telescopic Handler. For highway operation, obtain and install an amber flashing beacon.

**NOTE:** ALWAYS follow ALL state and local regulations regarding the operation of equipment on or across public highways. Whenever there is an appreciable distance between jobsites, or if driving on public highway is prohibited, transport the machine using a vehicle of appropriate size and capacity.

### TRANSPORTING BETWEEN JOBSITES

ALWAYS abide by the following recommended procedures and guidelines when using ramps to load the machine onto (and unload it from) a truck or trailer. Failure to heed can result in damage to equipment and serious personal injury or death!

Tie-down eyes are provided for inserting chains through to secure the machine during transporting.



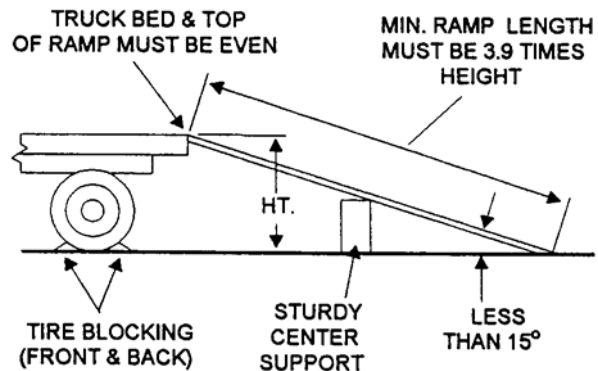
Front Tie-Down



Rear Tie-Down

### Loading Machine Using Ramps

**NOTE:** A matched pair of ramps is required.



#### Ramp Placement

1. The ramps MUST be of sufficient strength to support the machine. The use of strong steel ramps is recommended, as well as center supporting blocks.

2. The ramps **MUST** be firmly attached to the truck or trailer bed with **NO** step between the bed and the ramps.
3. The incline of the ramps **MUST** be less than 15 degrees. For a four-foot high truck bed, ramp length must be at least 16 feet (4.9 m) long.
4. Ramp width **MUST** be at least 1-1/2 times the tire width.
5. Block the front and rear of the tires on the truck or trailer. Engage the parking brake.
6. Position the machine with the boom facing toward the front of the truck or trailer so that it is straight in line with the ramps.
7. Slowly (at the lowest engine speed possible) and carefully drive the machine up the ramps.
8. Secure the machine to the bed of the truck or trailer with tie-down chains/cables.

### **Unloading Machine Using Ramps**

**NOTE:** *A matched pair of ramps is required.*

Repeat steps 1 through 5 and proceed as follows to unload the machine:

6. Remove the tie-down chains/cables.
7. If necessary, adjust the machine so that the wheels are in line and centered with the ramps.
8. Slowly (at the lowest engine speed possible) and carefully drive the machine down the ramps.

---

 **WARNING**

**NEVER** adjust travel direction (even slightly) while traveling on the ramps. Instead, back down off the ramps, and then realign the machine with the ramps.

---

---

 **WARNING**

**NEVER** transport the machine with the boom raised or extended. **BE SURE** to secure the machine to the truck or trailer bed using chain and binders or steel cables, to prevent any movement while transporting.

---

## **THEFT DETERRENTS**

Gehl Company has recorded all major component part numbers and serial numbers. Users should take as many of the following actions as possible to discourage theft, to aid in the recovery of the machine in the event it is stolen, and to reduce vandalism:

1. Remove keys from unattended machines.
2. Attach, secure, and lock all anti-vandalism and anti-theft devices on the machine.
3. Lock doors of cabs when not in use.
4. Inspect the gates and fences of the equipment storage yard. If possible, keep machines in well-lighted areas. Ask the local law enforcement agency to make frequent checks around the storage and work sites, especially at night, during weekends, and on holidays.
5. Report any theft to your dealer and insurance company. Provide the model and serial numbers. Request your dealer to forward this information to Gehl Company.

**INTENTIONALLY BLANK**

# Chapter 7

## LUBRICATION

### GENERAL INFORMATION

#### **WARNING**



**NEVER** lubricate or service this unit when any part of the machine is in motion. **ALWAYS** exercise the **MANDATORY SAFETY SHUT-DOWN PROCEDURE** (p. 8, **SAFETY** chapter) before lubricating or servicing this equipment.

**NOTE:** *The Maintenance chapter (Chapter 10) in this manual has provisions for recording the dates and hourmeter readings after lubrication or other service has been performed; use those spaces to keep a log for maintaining a current service interval record. Proper routine lubrication is an important factor in preventing excessive part wear and early failure.*

### LUBRICANTS

The chart on this page lists the locations, temperature ranges and recommended types of lubricants to be used when servicing the machine. Refer to the separate engine manual for additional information regarding recommended engine lubricants, quantities and grades required.

**NOTE:** *Refer to Operator Services topic in the Service and Storage chapter of this manual for detailed information regarding periodic checking and replenishing of lubricants.*

<b>All Grease Fittings</b>	
Use No. 2 lithium-based grease	
<b>Brake System</b>	
Use Multi-ATF Dexron® III or equivalent	

#### Hydraulic System Reservoir

Use Mobil DTE 15M, or an equivalent that contains anti-rust, anti-foam and anti-oxidation additives and conforms to ISO VG46/VG32.

**Capacity: 35 gallons (133 liters)**

#### Engine Crankcase Oil

Ambient Temperature	Grade*
-22°F - 104°F (-30°C - 40°C)	SAE 5W-30
-40°F - 122°F (-40°C - 50°C)	SAE 0W-40
-13°F - 104°F (-25°C - 40°C)	SAE 10W-30
-13°F - 122°F (-25°C - 50°C)	SAE 10W-40
5°F - 122°F (-15°C - 50°C)	SAE 15W-40

\*API Service Classification: CJ-4/CI-4 PLUS/CI-4

\*API Service Classification for first 100 hours on new or rebuilt John Deere engines: CE, CD, or CC

**Capacity: 15.5 quarts (14.7 liters)**

#### Diesel Fuel

**84 hp Tier 3 Engine:** Use only low sulfur (LSD) or ultra low sulfur (ULSD) diesel fuel. Sulfur content of 1000 PPM or below specified to EN590 or ASTM D975 is strongly recommended.

**74 hp IT4 Engine:** Use only ultra low sulfur (ULSD) diesel fuel with a maximum of 15 PPM sulfur content specified to EN590 or ASTM D975.

#### Axle Gear Oil

MobilFluid® 424 (recommended)  
API GL4/GL5 80W with Wet Brake Additive  
(Gehl Wet Brake Additive part number L71456)

**Differential capacity: 9.6 quarts (9.0 liters)**

**Planetary capacity: 0.6 quarts each (0.5 liters)**

#### Transmission Oil

Use Multi-ATF Dexron® III or equivalent

**Capacity: 24 quarts (23 liters)**

# REPLACEMENT FILTER CHART

ENGINE TYPE	AIR FILTER	FUEL FILTER	ENGINE OIL	HYDRAULIC		TRANS. OIL
				FILTER	STRAINER	
JOHN DEERE	Primary 137498	211040	102173	L97489	L49327	L99184
	Safety 137501					

## GREASING

Refer to the illustrations and listings for fitting locations. Wipe dirt from the fittings before greasing them to prevent contamination. Replace any missing or damaged fittings. To minimize dirt build-up, avoid excessive greasing.

## BASIC MACHINE GREASE FITTINGS LOCATIONS

Every 50 Hours (or weekly)

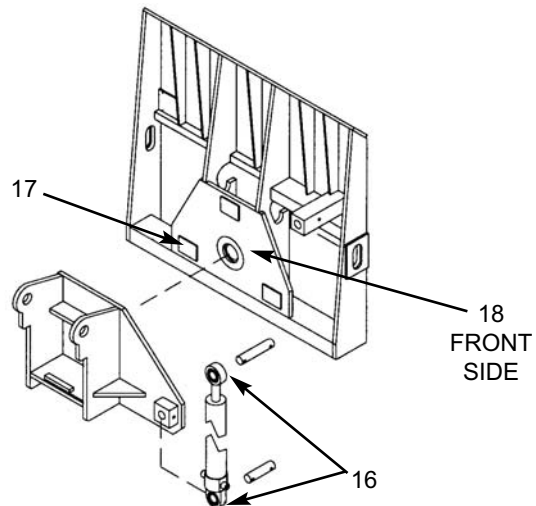
Refer to the illustration on the facing page for locations.

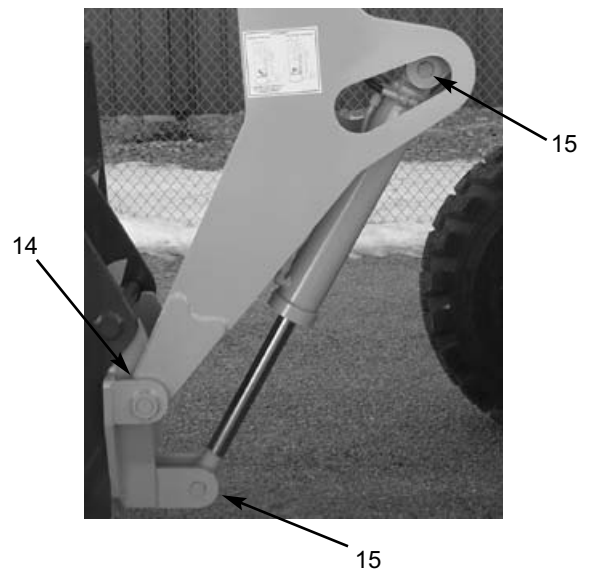
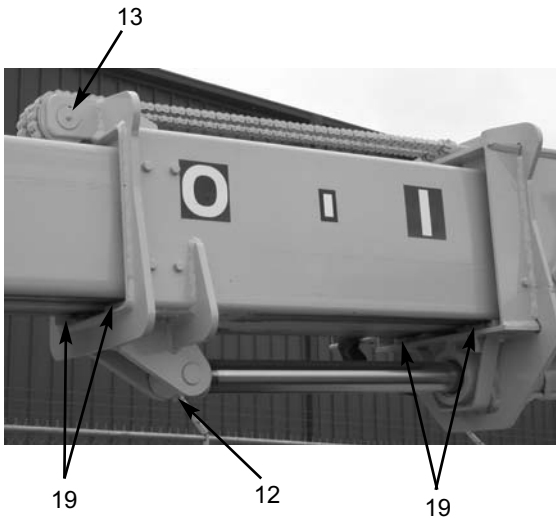
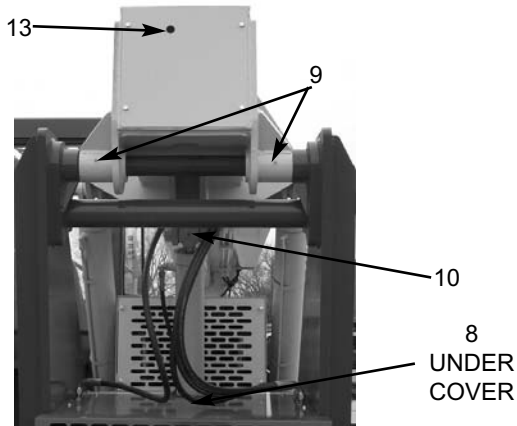
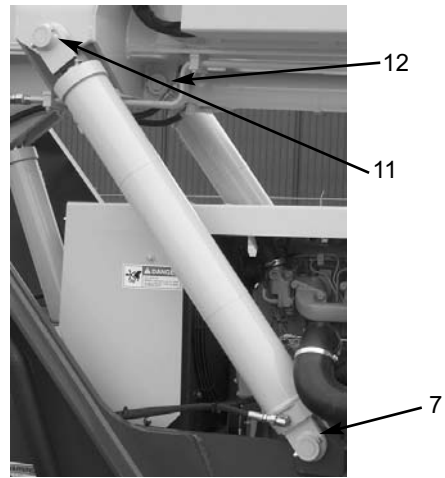
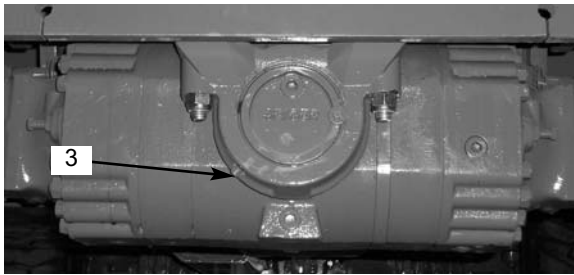
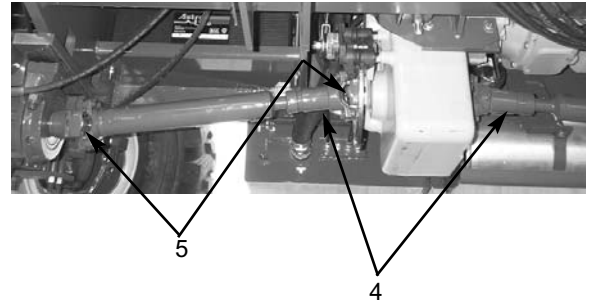
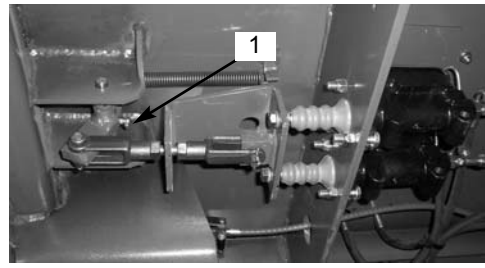
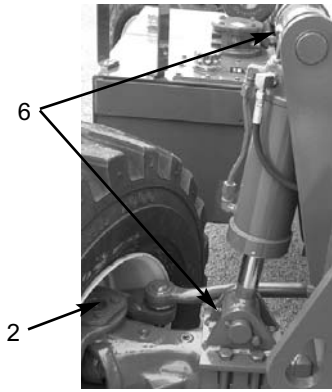
### CHASSIS AREA

- 1 Brake foot pedal linkage . . . . .1
- 2 Wheel spindle pins (per axle) . . . . .4
- 3 Axle-to-frame pivot pins (per axle) . . . . .2
- 4 Drive shaft, slip joint (per shaft) . . . . .1
- 5 Drive shaft, u-joint (per shaft) . . . . .2
- 6 Level cylinder pivot pins . . . . .2
- 7 Base end, lift cylinder pivot pins . . . . .2
- 8 Base end, slave cylinder pivot pins . . . . .2

### BOOM AREA

- 9 Boom-to-frame-upright pivot pins . . . . .2
- 10 Rod end, slave cylinder pivot pins . . . . .2
- 11 Rod end, lift cylinder pins . . . . .2
- 12 Extend cylinder pivot pins . . . . .2
- 13 Chain sheave pins . . . . .2
- 14 Quickattach-to-boom-nose pivot pins . . . . .2
- 15 Tilt cylinder pivot pins . . . . .2
- 16 Rotate cylinder pivot pins . . . . .2
- 17 Rotate carriage wear pads . . . . .3
- 18 Rotate pivot bearing . . . . .1
- 19 Boom slide pads - as required, front and rear





**Grease Fittings Locations**

# Chapter 8

## SERVICE AND STORAGE

### GENERAL INFORMATION

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#### **WARNING**

**BEFORE** performing any service on the Telescopic Handler, unless expressly instructed to the contrary, exercise the **MANDATORY SAFETY SHUTDOWN PROCEDURE** (p. 8, Safety chapter). After service has been performed, **BE SURE** to restore all guards, shields and covers to their original positions **BEFORE** resuming machine operation.

---

**NOTE:** All service routines, with the exception of those described under the “Dealer Services” topic, are owner-operator responsibilities. All operator services described under the subtopics are also referred to on a decal located on the inside right side panel of the operator’s station. Refer to the Lubrication chapter of this manual for lubrication information.

**NOTE:** This Service and Storage chapter details procedures to follow for making routine maintenance checks, adjustments and replacements. The majority of the procedures are also referred to in the Maintenance chapter of this manual. For engine-related adjustments and servicing procedures, refer to the engine manual provided.

### PRECAUTIONS

DO NOT perform any maintenance or repair without the owner’s prior authorization. Allow only trained personnel to service the machine.

Warranty repairs can only be done by a Gehl dealer. Dealers know what portions of the machine are covered under the terms of the Gehl Warranty and what portions are covered by other vendor warranties.

When a problem occurs, do not overlook simple causes such as an empty fuel tank. Check for leaks and broken connections. Make note of any specific symptoms, noises, etc. and contact your local Gehl dealer.

**IMPORTANT:** Always dispose of waste lubricating oils, anti-freeze and hydraulic fluids according to local regulations or take them to a recycling center for disposal. **DO NOT** pour them onto the ground or into a drain.

### DEALER SERVICES

The following areas of internal components service replacement and operating adjustments should only be performed by (or under the direction of) an authorized Gehl Telescopic Handler dealer.

**IMPORTANT:** **DO NOT** service or repair major components, unless authorized to do so by your Gehl dealer. Any unauthorized repair will void the warranty.

### POWERTRAIN COMPONENTS

The engine and transmission are coupled directly to each other. All service routines related to the internal components are precise and critical to proper powertrain operation. The axle differential and planetary ends are also sophisticated assemblies that require special know-how and tools for servicing.

**IMPORTANT:** If any powertrain components are suspected of faulty operation, contact your Gehl dealer for assistance.

### HYDRAULIC SYSTEM COMPONENTS

Valves, pumps, motors and cylinders are sophisticated assemblies, which require special know-how and tools for servicing. All cylinders are appropriately designed with particular strokes, diameters, checks and hose connection provisions unique to the machine application requirements. A hydraulic schematic (located at the back of this manual) can be used as a guide for service reference, as required.



# WARNING

**Tilt, lift, extend and leveling cylinders have counterbalance valves. These valves keep hydraulic fluid from entering and exiting the cylinders while not being used, and are under extremely high pressure. Before removing any of these valves, it is REQUIRED to call the your Gehl Service Department. Failure to do so may result in serious injury or death.**

Internal service on any of these components should only be performed by (or under the direction of) an authorized Gehl Telescopic Handler dealer.

## ELECTRICAL COMPONENTS

An electrical system schematic is provided, which includes instrumentation, electrical components and switch connections. It is located at the back of this manual and can be used as a guide for service reference, as required.

## OPERATOR SERVICES

Some of the operator-related services will require access to components located inside the superstructure, under shields, hoods and covers. The chart on this page notes the components accessed in each particular area.

**ACCESS TO COMPONENTS CHART**

Component	Operator's Station	Frame	Front Cover	Mid-Rear Hood
Axle (underside) Engine Transmission (center area)		●	●	●
Drive Shafts (underside) Main Control Valve (rear) Muffler (underside)		● ● ●		
Air Cleaner (top fuel tank) Battery Radiator		● ●		●
Brake Valve (underside) Travel Controls (dash area) Boom Controls (right side)	● ● ●			
Hydraulic Test Ports Hourmeter (dash) Switches/Indicators (dash)	● ●		●	
Hydraulic Pump Hydraulic Filter (Reservoir) Misc. Hydraulic Valves		●	● ●	
Heater (lower front)	●			

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## WARNING

**DO NOT smoke or allow any open flames in the area while checking or servicing hydraulic, battery or fuel systems; all contain highly flammable liquids or explosive gases, which can cause an explosion or fire if ignited.**

**Wear a face shield when disassembling spring-loaded components or working with battery acid. Wear a helmet or goggles with special lenses when welding or cutting with a torch.**

**When working beneath a raised machine, always use blocks, jack-stands or other rigid and stable supports. Wear appropriate protective clothing, gloves, and shoes. Keep feet, clothing, hands and hair away from moving parts.**

**Always wear safety glasses or goggles for eye protection from electric arcs from shorts, fluids under pressure, and flying debris or loose material when the engine is running or tools are used for grinding or pounding.**

**NEVER weld on bucket, forks, boom, support frame or ROPS/FOPS without the consent of the manufacturer. These components may be made with metals that require special welding techniques, or with designs that do not allow weld repairs. NEVER cut or weld on fuel lines or tanks.**

**If repair welding is ever required, BE SURE to attach the ground (-) cable from the welder as close as possible to the area to be repaired. Also, remove positive (+) battery terminal connection before welding.**

---

Choose a clean, level work area. Be sure there is sufficient room, clearances, and adequate ventilation. Clean the walking and working surfaces. Remove oil, grease and water to eliminate slippery areas. Use sand or oil absorbing compound, as necessary, while servicing the Telescopic Handler.

Before starting inspection and repair, move the machine onto a level surface, shut down engine, and release all hydraulic pressure. Always block the boom securely, or lower it to full ground contact. Place all controls in neutral.

Block the tires. Remove the ignition key. Remove only

guards or covers that provide needed access. Wipe away excess grease and oil.

Excessively worn or damaged parts can fail and cause injury or death. Replace any cracked or damaged parts. Use only genuine Gehl parts for service.

Use care not to damage machined and polished surfaces. Clean or replace all plates and decals that are damaged or painted over and cannot be read.

---

## WARNING

**NEVER leave guards off or access doors open when the machine is unattended. Keep bystanders away if access doors are open.**

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After servicing, check the work performed, that no parts are left over, etc. Install all guards and covers.

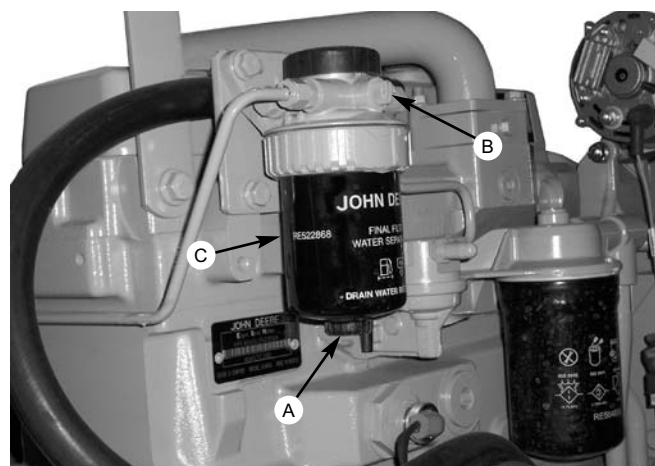
### Service Every 10 Hours or Daily

## CHECKING FUEL TANK LEVEL

The fuel level is shown by the fuel level gauge on the instrument panel. After operation each day, the fuel tank should be filled to prevent water from condensing in the tank. To fill, remove the filler cap and add fuel. See the *Lubrication* chapter for the diesel fuel requirements.

## CHECKING FUEL FILTER

**NOTE:** *The fuel filter will require occasional replacement to maintain a clean and adequate fuel flow for maximum engine horsepower. The frequency of filter replacement will be determined by the cleanliness of available fuel, the care used in storing fuel supplies, and the operating conditions in which the machine is used.*



Check the fuel filter (C) for water and debris.

**IMPORTANT:** Drain water into a suitable container and dispose of properly.

1. Loosen two or three turns drain plug (A) at bottom of fuel filter.
2. Loosen air bleed plug (B) two full turns on fuel filter mounting and drain water from bottom until fuel starts to drain out.
3. When fuel starts to drain out, tighten drain plug securely.

After draining water from the fuel filter, the filter must be primed by bleeding all air from the fuel system. Refer to the fuel bleeding procedure on page 53.

A drain plug is also provided in the bottom of the fuel tank for removing condensation and other foreign materials. Open the plug and allow water and fuel to drain into a container until only clear fuel is flowing from the tank.

## CHECKING ENGINE OIL LEVEL

With the machine on level ground, and the engine stopped for ten minutes or more, remove the engine oil dipstick. Wipe it clean, re-insert it and remove to obtain a reading. If the oil level is below the crosshatch pattern on the dipstick, fill with the required amount of oil to bring the level to within the crosshatch pattern. Oil levels anywhere within the crosshatch are considered full. See the *Lubrication* chapter for the type of oil to use.

## CHECKING RADIATOR COOLANT LEVEL



**DO NOT remove the radiator cap when the engine is running hot or overheated. Coolant is extremely hot and under pressure and it can burn your skin. Allow sufficient time for the radiator to cool BEFORE relieving the pressure and removing the radiator cap.**

With the machine on level ground, remove the radiator cap. If the coolant level is below the filler neck, add a low-silicate ethylene glycol based coolant mixed with quality water and supplemental coolant additives (SCAs) suitable for heavy-duty diesel engines. See your engine manual for additional information. Replace the radiator cap securely.

**NOTE:** If the engine is operated with a loose radiator cap, the pressure bypass will not work and the engine will run hot.

## CHECKING TRANSMISSION OIL LEVEL

The machine must be on level ground. With the engine and transmission at operating temperature, parking brake on, transmission in neutral and engine speed at low idle, remove the access cover to the transmission and hydraulic pump. Remove the dipstick and check the oil level. Add the required amount of oil to bring the level to the FULL mark. See the *Lubrication* chapter for the type of oil to use.

## CHECKING HYDRAULIC OIL LEVEL

The machine must be on level ground with boom lowered and completely retracted. The fluid **MUST** be cool when checking the reservoir level, to reduce the possibility of overfilling the hydraulic system.

Locate the filler cap next to the side-view mirror on the right side of the machine. Remove the filler cap and check the level on the dipstick. Oil levels anywhere between the mark on the dipstick and the bottom of the dipstick is considered full. If the oil does not register on the dipstick, fill with the required type of oil to bring the level to within the FULL area. See the *Lubrication* chapter for the type of oil to use.

**IMPORTANT:** Be careful when removing the reservoir filler cap so that no dirt or other foreign matter enters the hydraulic system. **DO NOT OVERFILL.**

## CHECKING BRAKE RESERVOIR LEVELS

Flip up the cover on the cab floor in front of the seat. Remove both reservoir covers to check the fluid levels. If low, fill to the proper level with the correct fluid. See the *Lubrication* chapter for the type of fluid to use.

## CHECKING TIRE PRESSURES

To ensure proper operating stability and extend tire life, proper and equal tire pressure should be maintained in all four tires.

Check tire pressures “cold.” Inflate as necessary per the chart below:

15.00 x 19.5 - 12 PR: 60 psi (415 kPa)

**NOTE:** *If the tires have been filled with water or calcium chloride for ballast, a calcium chloride tire pressure gauge MUST be used to check the tire pressure.*

To ensure proper load carrying capability, original equipment tires comply with the specifications published in the *Tire and Rim Association Yearbook*. Replacement tires **MUST** meet the same specifications. When replacing tires, be sure all tires are of the same type, quality and load rating, and the same size as the original equipment. When removing tires, follow industry safety practices. Deflate completely prior to removal. After assembly of the tire on the rim, use a safety cage or restraining device while inflating.

---

 **WARNING**

**Inflating or servicing tires can be dangerous. Whenever possible, trained personnel should service and mount tires. To avoid possible death or serious injury, follow these safety precautions:**

1. **BE SURE** the rim is clean and free of rust.
  2. Lubricate both the tire beads and rim flanges with a soap solution. **DO NOT** use oil or grease.
  3. **DO NOT** place fingers on the tire bead or rim during inflation. Use a clip-on tire chuck with a remote hose and gauge, which allows standing clear of the tire while inflating it.
  4. **NEVER** inflate beyond 35 psi (240 kPa) to seat the beads. If the beads have not seated by the time the pressure reaches 35 psi (240 kPa), deflate the assembly, reposition the tire on the rim, relubricate both parts and re-inflate. Inflation pressure beyond 35 psi (240 kPa) with unseated beads may break the bead or rim with explosive force sufficient to cause death or serious injury.
  5. After seating the beads, adjust the inflation pressure to the recommended operating pressure listed.
  6. **DO NOT** weld, braze, or otherwise attempt to repair and use a damaged rim.
- 

## CHECKING WHEEL NUT TORQUE

On new machines, or anytime a wheel has been removed, re-torque wheel nuts until 450 ft.-lbs. (610 Nm) is maintained.

## CHECKING INSTRUMENTS OPERATION

Allow the engine to warm up for about five minutes before beginning operation. Indicator lamps should be off and gauges should register normal readings. Tilt the frame from side to side with the frame leveling control and note the frame angle indicator movement.

## CHECKING GENERAL MACHINE OPERATION AND CONDITION

Are any decals missing or damaged? Are all guards, shields and covers in place? Do all controls function smoothly and properly? Are there any abnormal vibrations or noises? Are any hose or fitting connections leaking? Is the engine exhaust color normal?

---

 **WARNING**

**Manufacturers of push-pull control cables advise taking the following operation and maintenance precautions:**

**Do not adjust the control cable with the engine running.**

**A gradual or sudden increase in the no-load friction (cable disconnected at both ends) of a control cable is an indication of an impending or present performance problem. The control cable should be replaced.**

**A gradual or sudden decrease in the useable travel is a indication of an pending or present performance problem. The control cable should be replaced.**

**Control cables that have moisture inside of them or have frozen should be replaced. Do not apply heat to dry or thaw control cables.**

**Control cables are lubricated for the life of the control cable. Do not remove the seals or lubricate control cables.**

**Control cables are designed to be non-repairable. Do not attempt to repair control cables.**

**Failure to heed could result in death or serious injury.**

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## **CHECKING PERSONNEL WORK PLATFORM (PWP) SYSTEM (if used)**

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### **WARNING**

**If the PWP System fails to operate properly during any of the System checks, DO NOT USE the machine until the cause has been corrected. Contact your dealer (or Gehl Company) for service information and parts.**

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### **Machine Position**

The following must be performed before beginning the PWP System checking procedures:

1. Machine on level surface,
2. Boom fully lowered,
3. Frame level,
4. Transmission in “N” (Neutral),
5. Parking brake switch “OFF,”
6. PWP System switch “OFF,”
7. Remote switch plugged in and “ENGAGED.”

### **Activation Tests**

To test the PWP System activation logic:

1. Start the engine and press the PWP rocker switch to “ON.”
  - The PWP System lamp in the switch should be flashing.
2. Apply the service brakes.
  - The PWP switch lamp should be illuminated continuously after three seconds, indicating that the PWP System has been activated.
  - The parking brake should engage, as indicated by the lamp in the parking brake switch illuminating.

- The carriage tilt and auxiliary functions should now be disabled. The joystick control should continue to function normally for boom raise/lower and extend/retract.

### **Lockout Tests**

To test the transmission and joystick control lockout logic:

1. Shift transmission into “F” (Forward) and increase the engine speed slightly.
  - The transmission should remain de-clutched, allowing the engine to increase speed easily.
  - Return the transmission selector to “N” (Neutral) after the check.
2. Have an assistant move the remote shutdown switch to “Dis-engaged.”
  - The joystick control should now be disabled, so that boom raise/lower and extend/retract will no longer function.
  - Have the assistant move the remote shutdown switch to “Engaged” after the check.
3. Tilt the frame to the right slightly more than two degrees.
  - The joystick control should now be disabled so that boom raise/lower and extend/retract no longer function.
  - Repeat the procedure with the frame tilted to the left.
  - Return the frame to a level position after the checks.

### **De-activation Tests**

To test the PWP System de-activation logic:

1. Turn the key switch to “OFF” and wait for the engine to stop. Then turn the key switch back to “ON.”
  - The PWP switch lamp and the parking brake switch lamp should both be illuminated.
2. Turn the key switch to “OFF” and then turn the PWP rocker switch to “OFF.” Turn the key switch back to “ON.”
  - The PWP switch lamp should be flashing and the parking brake switch lamp should be on continuously.

3. Start the engine and apply the service brakes.
  - The PWP switch lamp and the parking brake switch lamp should go off after approximately three seconds of brake pedal application.

If PWP System fails to perform properly, troubleshoot using the chart on page 61. Contact your dealer for service information and parts.

**Service Every 50 Hours or Weekly**

**LUBRICATE GREASE POINTS**

Refer to the *Lubrication* chapter of this manual for grease fitting locations and other related details.

**100 Hours (New Machine Only)**

The following initial oil and filter changes should be performed at 100 hours on a new machine. Thereafter these changes should be performed at the regular maintenance intervals. Refer to the maintenance schedules for the necessary procedures.

Engine Oil and Filter	(250 Hours)
Transmission Oil and Filter	(1000 Hours)
Hydraulic Return Filter Element	(1000 Hours)

Torque the boom chains after the first 100 hours of operation on new machines or anytime a chain has been replaced. Thereafter the boom chains should be inspected for wear and proper tension at the regular service interval of 250 hours. Refer to the boom chain torquing procedure in the 250 hour service interval.

**Service Every 250 Hours or Quarterly**

**NOTE:** Perform all other service requirements up to this point, as well as the following:

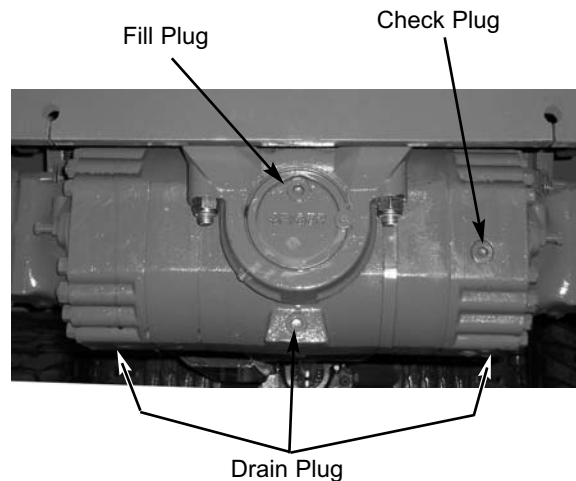
**CHECKING AXLE OIL LEVELS**

**Differentials**

**NOTE:** The Telescopic Handler should be on a level surface for this procedure.

Remove the oil check plug. See illustration below. Oil should flow from the hole. If low, remove the oil fill plug and add oil until it flows from the check hole. Replace the plug, wait 10 to 15 minutes and repeat the fill procedure. Continue this process until the differen-

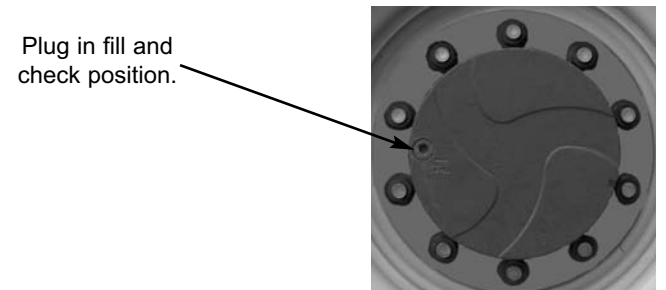
tial is full. See the *Lubrication* chapter for the proper oil specification. Replace the check and fill plugs.



**Planetary Hubs**

**NOTE:** The planetary hubs can be checked without jacking up the machine.

The planetary hubs have one plug each used for filling and draining. See illustration below. For checking the level and filling, position the wheel until the oil level arrow is horizontal. Remove the plug. If oil does not run out, add oil until it overflows. Check the remaining hubs the same way. Refer to the oil specifications found in the *Lubrication* chapter of this manual.

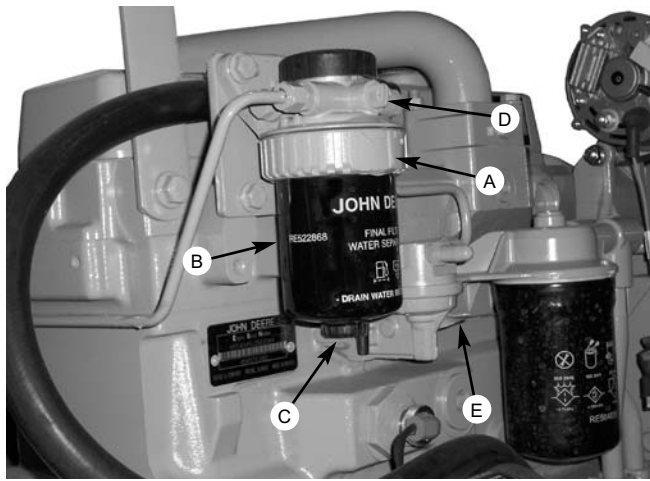


**CHANGING FUEL FILTER**

The frequency of filter replacement will be determined by the cleanliness of available fuel, the care used in storing fuel supplies and the operating conditions in which the machine is used.

**! WARNING**

**NEVER service the fuel system while smoking, while near an open flame, or after the engine has been operated and is hot.**



1. Thoroughly clean fuel filter assembly and surrounding areas.
2. Loosen drain plug (C) and drain fuel into a suitable container.
3. Firmly grasp retaining ring (A) and rotate it clockwise 1/4 turn. Remove ring with the filter element (B).

**NOTE:** *Lifting up on retaining ring (A) as it is rotated helps to get it past raised locators.*

4. Inspect filter mounting base for cleanliness. Clean as required.

**NOTE:** *Raised locators on the fuel filter canister must be indexed properly with slots in mounting base for correct installation.*

5. Install new filter element onto mounting base. Be sure element is properly indexed and firmly seated on base. It may be necessary to rotate filter for correct alignment.
6. Install retaining ring onto mounting base making certain dust seal is in place on filter base. Hand tighten ring counterclockwise (about 1/3 turn) until it snaps into the detent. **DO NOT** overtighten retaining ring.

After fuel filter replacement, bleed the air out of the fuel system by following the fuel bleeding procedure.

### Fuel Bleeding Procedure

When the fuel filter is removed and replaced, or the engine runs out of fuel, air must be bled from the system. Refer to the following procedure for proper bleeding procedures.

1. Loosen the air bleed vent screw (D) two full turns by hand on the filter base.

2. Operate the fuel supply pump primer lever (E) until fuel flows out of the bleed vent screw.
3. Tighten bleed vent screw securely. Continue operating the primer until pumping action is not felt.
4. Start engine and check for leaks.

If the engine will not start, repeat steps 1-4.

---

## **WARNING**

Escaping diesel fuel under pressure can have sufficient force to penetrate the skin. Before applying pressure to the fuel system, **BE SURE** all connections are tight and lines and hoses are not damaged. Use a piece of wood or cardboard to search for suspected leaks. If injured by escaping fuel, see a doctor familiar with this type of injury at once or gangrene may result.

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### Diesel Fuel Injectors

Whenever faulty or plugged injectors are indicated, see your authorized engine dealer.

### Diesel Injection Pump Timing

Whenever injection pump timing, or other injection pump service is indicated, such as by abnormal engine operation, contact your authorized engine dealer.

**NOTE:** *Only an authorized engine dealer can perform warranty service on the engine.*

## CHANGING ENGINE OIL AND FILTER

Change the engine oil and filter using the following procedure:

1. With the engine warm, remove the crankcase drain plug.

**IMPORTANT:** *DO NOT discharge oil onto ground. Catch and dispose of per local waste disposal regulations.*

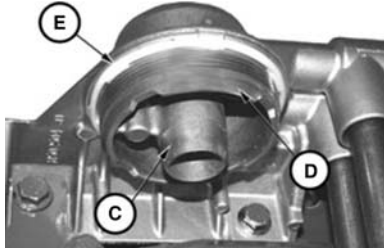
2. The engine oil filter should be changed at every oil change interval. Using a suitable filter wrench, remove and discard the filter.

**IMPORTANT:** *Filtration of oils is critical to proper lubrication. Always change filter with every oil change. Use only genuine OEM engine replacement filters.*

3. Apply a thin coat of clean engine oil to the new oil filter at the inner (A) and outer (B) seals and to the filter threads.



4. Wipe both sealing surfaces of the filter header (C, D) with a clean rag. Ensure keys in the dust seal (E) are properly installed in the slots in the housing. Replace dust seal if damaged.



5. Install and tighten oil filter by hand until firmly against dust seal (E). DO NOT apply an extra 3/4 to 1-1/4 turn after gasket contact is made, as is done with standard filters.
6. Clean and re-install the drain plug.
7. Re-fill the crankcase with new oil. Follow specifications in the *Lubrication* chapter for type and viscosity of new oil.
8. After new oil has been added, run the engine at idle speed until the oil pressure lamp is off. Check for leaks at the filter and drain plug.

## CHECKING THE BATTERY

The battery furnished in the machine is a 12-volt, wet-cell battery.

The top of the battery must always be kept clean. Clean the battery with a brush dipped in an alkaline solution (ammonia or baking soda and water). After the foaming has stopped, flush the top of the battery with clean water. If the terminals and cable connection clamps are corroded or have a buildup, disconnect the cables and clean the terminals and clamps with the same alkaline solution.

**NOTE:** *The battery in the machine is warranted by the supplier. See the punch tag on the top of the battery for warranty information.*

---

## WARNING

Explosive gas is produced while a battery is in use or being charged. Keep flames and sparks away from the battery. Make sure battery is charged in a well-ventilated area.

**NEVER** lay a metal object on top of a battery, because a short circuit can result.

Battery acid is harmful on contact with skin or fabrics. If acid spills, follow these first aid tips:

1. **IMMEDIATELY** remove any clothing on which acid spilled.
2. If acid contacted the skin, rinse the affected area with running water for 10 to 15 minutes.
3. If acid comes in contact with the eyes, flood the eyes with running water for 10 to 15 minutes. See a doctor at once. **NEVER** use any medication or eye drops unless prescribed by the doctor.
4. To neutralize acid spilled on the floor, use one of the following mixtures:
  - a. 1 pound (0.5 kg) of baking soda in 4 quarts (4 liters) of water.
  - b. 1 pint (0.4 liters) of household ammonia in 4 quarts (4 liters) of water.

**Whenever battery is removed from the unit, BE SURE to disconnect the negative (-) battery terminal connection first.**

---

## Jump Starting

If the battery becomes discharged or does not have enough power to start the engine, use jumper cables and the following procedure to jump-start the engine.

**IMPORTANT:** *BE SURE that the jumper battery is also a 12-volt D. C. battery, and the vehicle used for jump starting has a negative-ground electrical system.*



## **WARNING**

The **ONLY** safe method for jump-starting a discharged battery is for **TWO PEOPLE** to perform the following procedure. The second person is needed for removing the jumper cables, so that the operator does not have to leave the operator's compartment while the engine is running. **NEVER** connect the jumper cables directly to the starter solenoid of either engine. **DO NOT** start the engine from any position other than the operator's seat, and then **ONLY** after making sure all controls are in "neutral."

Closely follow the jump-start procedures, in the order listed, to avoid personal injury. In addition, wear safety glasses to protect your eyes, and avoid leaning over the batteries while jump-starting.

**DO NOT** attempt to jump-start the machine if the battery is frozen, because this may cause it to rupture or explode.

1. Turn the key switches on both units to OFF. Be sure that both units are in "Neutral" and NOT touching.
2. Connect one end of the (red) positive (+) jumper cable to the positive (+) battery terminal on the disabled machine first. **DO NOT** allow the positive (+) jumper cable clamps to touch any metal other than the positive (+) battery terminals. Connect the other end of the positive (+) jumper cable to the jumper battery positive (+) terminal.
3. Connect one end of the (black) negative (-) jumper cable to the jumper battery negative (-) terminal.
4. Make the final negative (-) jumper cable connection to the disabled machine's engine block or frame (ground) — NOT to the disabled machine negative battery post. If making the connection to the engine, keep the jumper cable clamp away from the battery, fuel lines, and moving parts.

**NOTE:** *Twist the jumper cable clamps on the battery terminals to ensure a good electrical connection.*

5. Start the engine. If it does not start immediately, start the jumper vehicles engine to avoid excessive drain on the booster battery.
6. After the machine has started and is running

smoothly, have the second person remove the jumper cables (negative (-) jumper cable first) from the jumper vehicle battery, and then from the disabled machine, while being careful not to short the two cables together.

Allow sufficient time for the alternator to build up a charge in the battery before operating the machine or shutting off the engine.

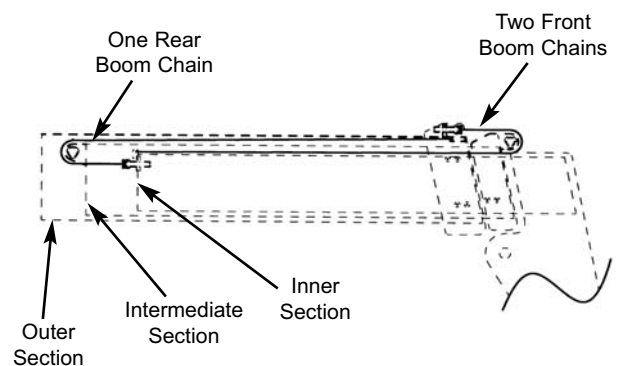
**NOTE:** *If the battery frequently becomes discharged, have the battery checked for possible dead cells, or troubleshoot the electrical system for possible short circuits or damaged wire insulation.*

## **CHECKING AND TORQUING BOOM LEAF CHAINS**

Inspect the leaf chains for wear and proper tension. Two of the chains are on the top front of the boom. A third chain is accessible from inside the rear of the boom (see boom illustration).

Torque the two chains on the front of the three-section boom to 25 ft.-lbs. (34 Nm). Lubricate with 80W-90 oil.

**IMPORTANT:** *On new machines or when chains have been replaced, it is necessary to retorque the front double chain assembly after one hundred (100) hours of operation. Failure to do so may allow the chains to become slack, which can result in a chain jumping off a sheave. If this occurs, it could result in severe damage to the boom assembly.*



### **Chain Hookup Detail**

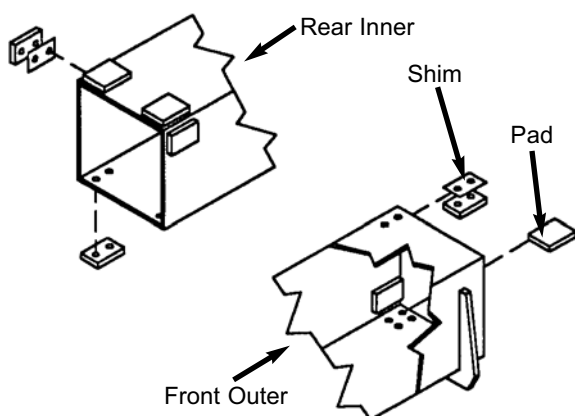
Inspect the leaf chains for wear. Run the boom out slowly to inspect. Conditions to look for include: cracked or broken plates, protruding or turned pins, and excessive wear. With a steel tape, measure 16 links of the strand that flexes over the sheaves. If the section

measures 10.3" (262 mm) or more, the chain should be replaced. DO NOT repair sections of a chain. Replace the complete chain.

Chain anchors and sheaves also require inspection, for worn or broken fingers and worn flanges.

After any chain has been replaced, operate under loaded conditions and re-check the torque. Adjust the chains per the following procedure: Extend the boom to its maximum length, then retract the boom slowly until the chain slack allows the chain to rest on the top of the boom. Torque the two chains on the front of the boom to 25 ft.-lbs. (34 Nm). Lubricate with 80W-90 oil.

## CHECKING BOOM SLIDE PAD WEAR AND CLEARANCE



Slide Pad Detail

The boom is equipped with special nylon low-friction slide pads between the telescopic sections (see illustration). These are pre-greased and initially worn-in at the factory. Normally greasing is not required, except for maintaining a light film of grease on the pad tracking areas of the boom sections. An exception is if a boom section has been replaced.

Visually check for loose pad bolts. The bolts are torqued to 30 ft.-lbs. (40 Nm). If the bolts are re-torqued at any time, Loctite® thread lock must be re-applied to the bolts.

If the boom starts to chatter under load, grease the slide pads and wipe off the excess grease. Maintain a clearance of 1/16" between the top or side slide pads and the boom. Shims can be added to achieve the proper clearance. Loosen the bolts and insert shims until proper clearance is obtained.

**NOTE:** When inserting shims in the side slide pads, be sure to place equal shims on both sides

of the boom for even distribution of clearance.

Re-apply Loctite® 271 (red) thread lock or equivalent to the bolts and re-torque to 30 ft.-lbs. (40 Nm). Bottom slide pads should not be shimmed and should be replaced when the thickness is worn down to 3/8" (9.5 mm).

## WARNING

**Failure to maintain proper slide pad clearance and thickness could cause damage to the boom, resulting in sudden boom failure.**

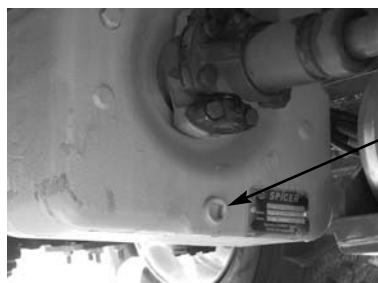
**Service Every 1000 Hours or Yearly**

**NOTE:** Perform all other service requirements up to this point as well as the following:

## CHANGING TRANSMISSION OIL AND FILTER

Operate the machine long enough to warm the transmission oil to 150°-200°F (65°-93°C). Shut off the engine. Access to filter is from under the access cover on the front hood section. Access to the drain plug is from underneath the machine. Proceed as follows:

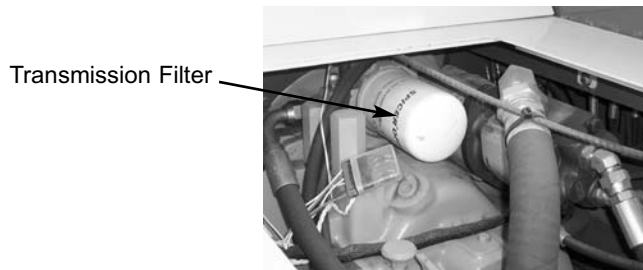
1. Remove the drain plug and drain oil. Replace the drain plug.



Transmission Drain Plug

**IMPORTANT:** DO NOT discharge oil onto ground. Catch and dispose of per local waste disposal regulations.

2. Remove and discard the oil filter. Wipe the sealing surface on the transmission with a clean cloth. Apply a thin coat of clean oil to the new oil filter gasket. Hand tighten.
3. Refill the transmission with new oil as shown in the *Lubrication* chapter of this manual.



**IMPORTANT: DO NOT OVERFILL!** If the oil level is too high, oil foaming, excessively high oil temperature and oil leakage at the seals could result.

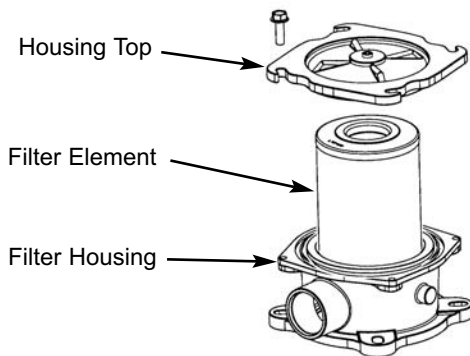
4. Start and run the machine long enough for the oil to circulate and warm slightly. Recheck the level with the dipstick.

## CHANGING HYDRAULIC RETURN FILTER ELEMENT



**Lower the boom to the ground when servicing the hydraulic system.**

The hydraulic return filter element is a cartridge-type accessible from a housing on top of the hydraulic reservoir. Initial replacement is after the first 100 hours. See illustration. Remove the top cover of the housing. Remove the element and discard. Insert the new element into the housing and replace the cover.



### Reservoir Filter Removal

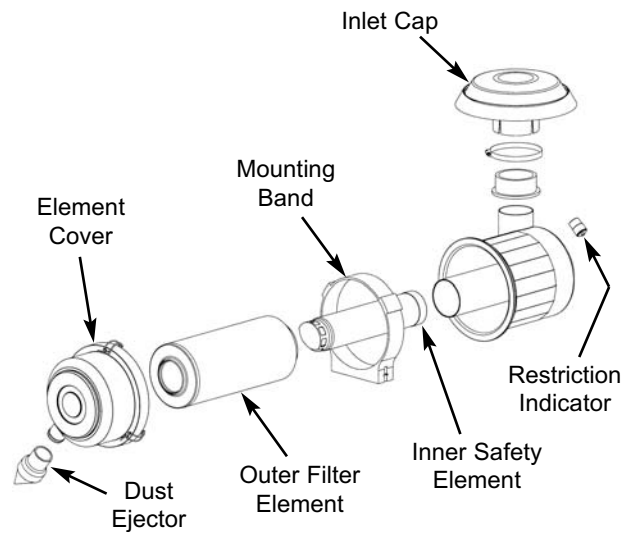
## CHANGING AIR FILTER ELEMENTS

**IMPORTANT:** Failure to follow proper filter servicing instructions could result in catastrophic engine damage.

The air cleaner assembly consists of an outer (primary) filter element and an inner (secondary) filter element.

An air filter restriction indicator for monitoring the condition of the elements is located in the rubber elbow at the rear of the air cleaner. If the air filter becomes restricted, this indicator turns red to warn the operator that the air cleaner requires service. Push the reset button located at the end of the indicator after replacing the element

**NOTE:** Before replacing the filter element(s), push the reset button on the indicator. Start the engine and run at full throttle. If the indicator does not turn red, do not replace the element(s).



### Air Cleaner Assembly

The outer element should be replaced when the restriction indicator turns red. The inner element should be replaced every third time the outer element is replaced, unless the outer element is damaged or the inner element is visibly dirty. Along with a daily check of the restriction indicator, check that the air cleaner intake hose and clamps, and the mounting bracket hardware are properly secure.

Unlatch the three latches on the air cleaner and remove the end cap. Clean out any dirt in the end cap.

### Primary Element

1. Carefully pull the primary (outer) element out of the housing. Never remove the secondary (inner) element unless it is to be replaced.
2. Clean out any dirt in the housing. Leave the secondary element installed during this step to prevent debris from entering the engine intake manifold.
3. Use a trouble light inside the new primary element to inspect for bad spots, pinholes and ruptures. Replace the primary element if any damage is found. The primary element must be replaced if it

is oil- or soot-laden.

**NOTE:** *Cleaning the primary element is not recommended.*

## Secondary Element

**NOTE:** *Replace the secondary element only if it is visibly dirty or if the primary element has been replaced three times.*

Before removing the secondary element from the housing, clean out any dirt in the housing. Leave the secondary element installed during this step to prevent debris from entering the engine intake manifold. Remove the secondary element.

## Reinstallation

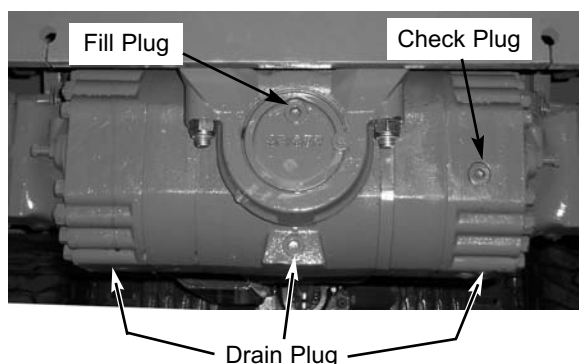
**IMPORTANT:** *NEVER use an element that is damaged. Severe engine wear and eventual failure can result if dirt gets through a hole in the element.*

1. Check inside the housing for any damage that may interfere with the elements.
2. Be sure that the element sealing surfaces are clean.
3. Insert the element(s), making sure that they are seated properly.
4. Secure the end cap to the housing with the three latches.
5. Check the hose connections and make sure they are all clamped and tightened properly.
6. Reset the restriction indicator by pressing the reset button.

## CHANGING AXLE DIFFERENTIAL AND PLANETARY OIL

### Differential

1. Remove the three drain plugs and drain the oil. Replace the drain plugs (see illustration).

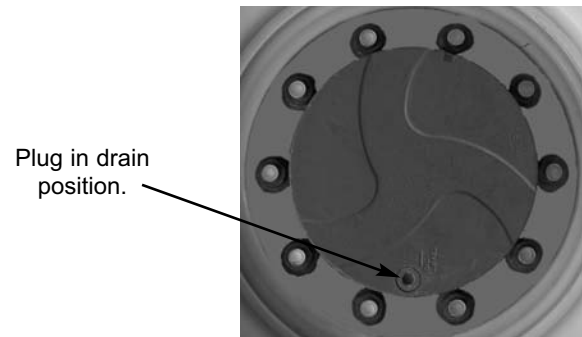


**IMPORTANT:** *DO NOT discharge oil onto ground. Catch and dispose of per local waste disposal regulations.*

2. Remove the check and fill plugs. Fill the differential with oil as specified in the *Lubrication* chapter. When the oil flows out the check hole, replace the plug. Wait 10 to 15 minutes and repeat this process until the axle is full. Repeat this procedure with the other axle.

### Axle Planetary Hubs

The axle hubs have one plug each used for draining and filling (see illustration).



1. Position the wheel until the oil level arrow points down. Remove the drain/fill plug and allow the oil to drain out. Replace the plug.

**IMPORTANT:** *DO NOT discharge oil onto ground. Catch and dispose of per local waste disposal regulations.*

2. Re-position the hub so the oil level arrow is horizontal. Fill with fresh oil as specified in the *Lubrication* chapter. When the oil runs out, install the drain/fill plug. Repeat this procedure on the three remaining hubs.

## CHECKING ALTERNATOR AND FAN BELT CONDITION

Refer to the engine manual for proper fan belt tension adjustment and replacement procedures. If the belt is worn or cut, it should be replaced. Order replacement belts from your Gehl dealer.

## CHECKING EXHAUST SYSTEM

Examine the muffler and tail pipe for possible holes. Re-tighten any loose clamps and make sure the manifold outlet gasket is not leaking.

## Service Every 2000 Hours or Two Years

**NOTE:** Perform all other service requirements up to this point, as well as the following:

### CHECKING HYDRAULIC SYSTEM RELIEF PRESSURES

Pressure settings for relief valves are pre-set at the factory. Three test ports are provided under the front hood access cover.



Test ports under access cover

Before conducting any pressure checks, check the engine speed. Engine speed must be 800 RPM at idle and 2500 to 2550 RPM at high idle.

#### Steering Relief Pressure

Plug a 3000 psi (207 bar) oil- or liquid-filled gauge into the test port labeled "SP." Turn the steering full to the right or left. The gauge should read 2000 psi (138 bar).

#### Joystick and Parking Brake Release Pressure

Plug a 1000 psi (70 bar) gauge into the port labeled "JP." With the engine running, the gauge should read 350 psi (24 bar).

#### Main Relief Pressure

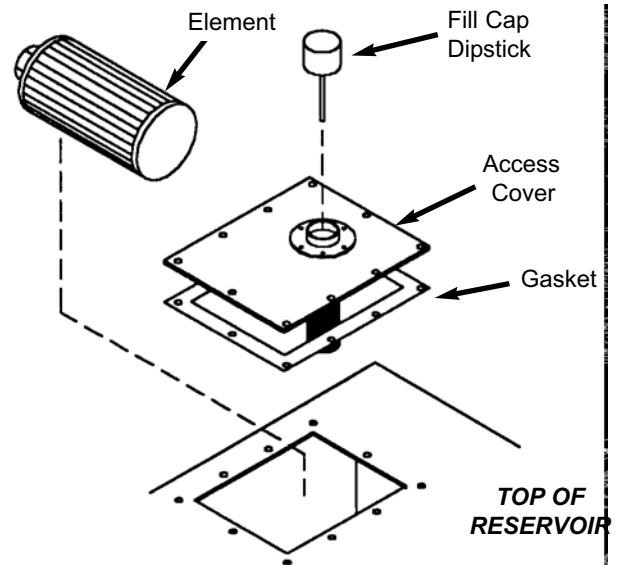
Plug a 3000 psi (207 bar) oil- or liquid-filled gauge into the test port labeled "MP." Fully retract the boom over the relief valve. The gauge should read 3000 psi (207 bar).

### CHANGING HYDRAULIC RESERVOIR OIL AND STRAINER

Clean all dirt and debris from around the top of the reservoir, especially around the access cover. Refer to illustration and use the following procedure:

1. Remove the drain plug and drain oil. Wash or blow off any particles collected on the magnetic drain plug.

**IMPORTANT:** DO NOT discharge oil onto ground. Catch and dispose of per local waste disposal regulations.



#### Hydraulic Reservoir Sump Strainer Removal

2. Remove the access cover and wash the inlet screen with clean solvent. Remove and wash the sump filter strainer from the bottom inside of the reservoir. If the strainer has any damage, holes, etc., it should be replaced.
3. Flush out the bottom of the reservoir with clean hydraulic oil. Re-install all cleaned components and install the access cover on the reservoir with a new gasket. Clean the filter/breather cap.
4. Fill the reservoir with fresh oil. Follow specifications in the *Lubrication* chapter of this manual.

**IMPORTANT:** Hydraulic fluid and filters should be replaced any time contamination is present before the normally scheduled change.

## WARNING

Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin. Before applying pressure to the hydraulic system, be sure all connections are tight and lines and hoses are not damaged. Use a piece of wood or cardboard to search for suspected leaks. If injured by escaping hydraulic oil, see a doctor familiar with this type of injury immediately or gangrene may result.

## CHANGING RADIATOR COOLANT

Drain old coolant, flush the entire cooling system, test thermostats and fill with recommended coolant.



### WARNING

**Remove the radiator cap only when the engine is cool, or painful burns could result.**

**IMPORTANT:** *DO NOT discharge coolant onto ground. Catch and dispose of per local waste disposal regulations.*

Refer to the John Deere engine manual for detailed coolant replacement instructions.

**IMPORTANT:** *Fill the cooling system with a low-silicate ethylene glycol based coolant mixed with quality water and supplemental coolant additives (SCAs) suitable for heavy-duty diesel engines. See the engine manual for additional information.*

**NOTE:** *Check the engine temperature gauge every minute or two after coolant has been changed. Air pockets can form and it may be necessary to refill the cooling system after a short period of use, as the air will naturally bleed out of the system.*

## STORING THE MACHINE

If the Telescopic Handler will not be operated for a period of three months or more, prepare and store it using the following procedure:

**NOTE:** *If the storage area is outdoors or in a harsh environment, the storage procedure should be followed if the Telescopic Handler is to be stored for one month.*

### Before Storage

Perform the following prior to placing the machine in storage:

1. Wash the entire machine.
2. Lubricate all grease fittings as described in the Lubrication chapter of this manual.
3. Change engine oil as outlined in the Service and Storage chapter of this manual.
4. Apply grease to all exposed hydraulic cylinder rod areas.

5. Disconnect the battery cable clamps and cover the battery, or remove the battery from the machine and store it separately.
6. If the ambient temperature (at any time during the storage period) is expected to drop below freezing, make sure the engine coolant is either completely drained from the radiator and engine block or that the concentration of anti-freeze is adequate to keep the coolant from freezing. Refer to the engine manual for anti-freeze recommendations and quantities.

### During Storage

1. About once each month, connect the battery, check all fluid levels to make sure they are at the proper level, and start the engine.

**IMPORTANT:** *If it is desired to operate the hydraulic cylinders at this time, BE SURE to wipe the protective grease (and any adhering dirt) from the cylinder rods prior to starting the engine. After operating, if the machine is to be returned to storage recoat the cylinder rods with grease.*

2. Allow the engine to run until it warms up. Then move the machine a short distance to help relubricate the internal parts. Run the engine until the battery is recharged, and then shut it off.

### After Storage

After removing the machine from storage and BEFORE operating it, perform the following:

1. Change engine oil and filter to remove any condensation and residues.
2. Wipe off grease from cylinder rods.
3. Lubricate ALL grease fittings.
4. Follow the start-up and warm-up procedures outlined in the *Operation and Adjustments* chapter of this manual.

# PWP SYSTEM TROUBLESHOOTING

Problem	Possible Cause	Remedy
<p>PWP System switch lamp flashes when switch is pressed "ON."</p> <p>Parking brake does not engage when the PWP System switch is pressed "ON."</p> <p>Carriage tilt and auxiliary functions continue operating when the PWP System switch is pressed "ON."</p> <p>Transmission does not remain de-clutched when shifted into "Forward or Reverse" when the PWP switch is "ON."</p>	<p>PWP System is not activated.</p>	<p>With PWP System switch "ON," apply service brakes for three seconds until PWP switch lamp is lit continuously.</p>
<p>Boom control functions do not operate.</p>	<p>Machine is not level.</p> <p>PWP System remote shutdown switch is disengaged.</p> <p>PWP System remote shutdown switch is not plugged into the connector at the end of the boom.</p> <p>PWP System angle sensor is unplugged or faulty.</p>	<p>Level the machine.</p> <p>Engage the PWP System remote shutdown switch.</p> <p>Plug in and engage the PWP System remote shutdown switch.</p> <p>Contact your Gehl dealer for assistance.</p>
<p>PWP System switch lamp flashes when switch is turned "OFF."</p> <p>Parking brake switch lamp stays "ON" when PWP System switch is "OFF."</p>	<p>PWP System is not de-activated.</p>	<p>With engine running, apply service brakes for three seconds until PWP switch lamp goes off.</p>

# Chapter 9

## DECAL LOCATIONS

### GENERAL INFORMATION



**ALWAYS** read and follow the safety precautions and information shown on decals. If any decals are damaged or unreadable, or if the unit is repainted, the decals must be replaced. If repainting, **BE SURE** that all decals that apply to your machine are affixed in their proper locations

Decal location information is provided to assist in the proper selection and application of new decals, in the event the original decals become damaged or the machine is repainted.

For correct replacement of decals, compare the location photographs to the machine before starting to refinish the unit. Check off each required decal using the illustration reference number to find the part number, description and quantity in the list. Refer to the appropriate illustration for replacement locations.

If there is a decal on a part that is being replaced, be sure that the decal is applied to the replacement part.

**NOTE:** Refer to the Safety chapter of this manual for specific information provided on the various safety decals.

### NEW DECAL APPLICATION

Before applying the new decals, surfaces must be free from dirt, dust, grease and other foreign material. To apply a solid-formed decal, remove the smaller portion of the decal backing paper and apply this part of the exposed adhesive backing to the clean surface while maintaining proper position and alignment. Slowly peel off the other portion of the backing paper while applying hand pressure to smooth out decal surface. To apply a die-cut decal, first remove the backing paper. Then, properly orient and position the decal onto the clean mounting surface. After the decal is firmly applied and smoothly pressed down, peel off the top covering paper.

### PAINT FINISH

**Use this list to order paint for refinishing:**

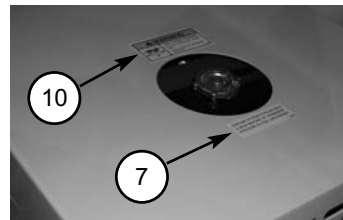
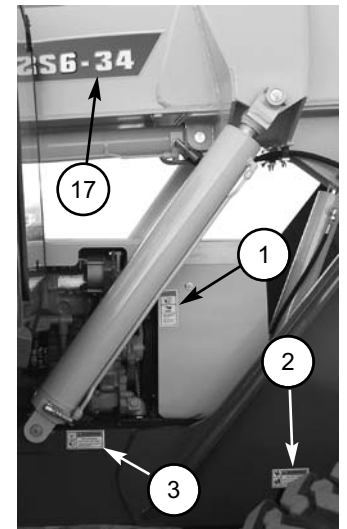
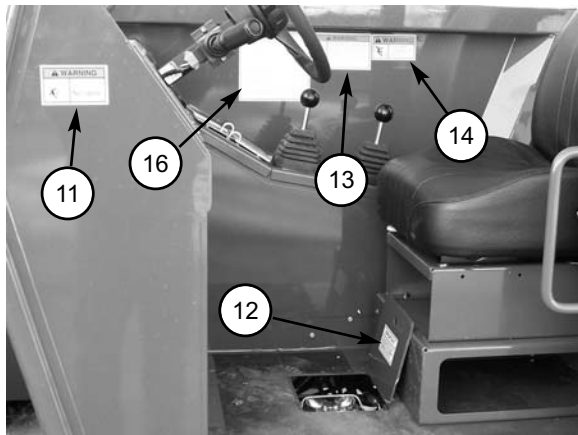
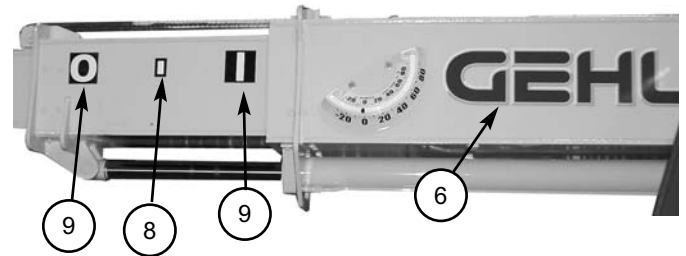
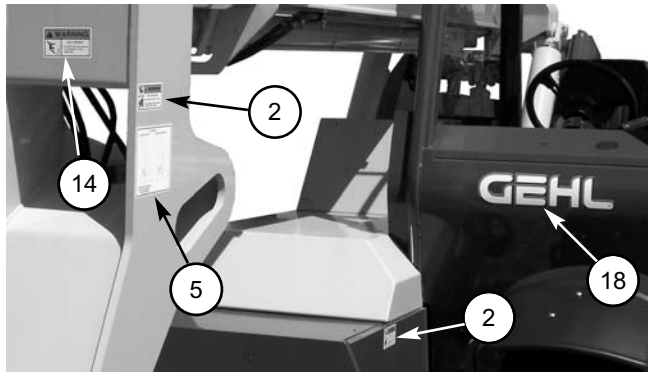
167788	4 (1-qt. Cans) Yellow
167789	6 (12-oz. Spray Cans) Yellow
167754	4 (1-qt. Cans) Gun-Metal Gray
167757	6 (12-oz. Spray Cans) Gun-Metal Gray

### Decal Kits

104916	RS6-34 Telescopic Handler without PWP
104917	RS6-34 Telescopic Handler with PWP

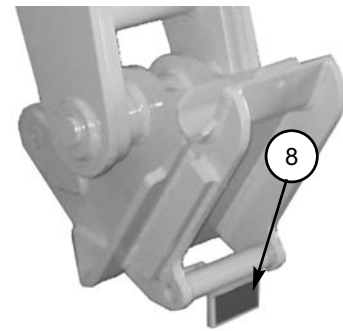
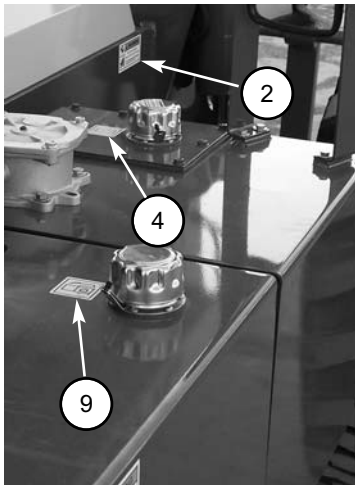
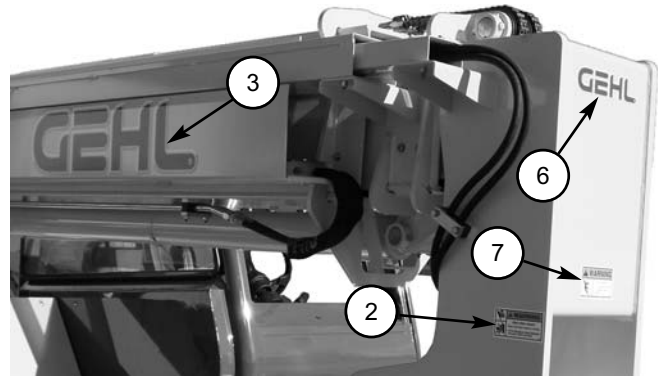
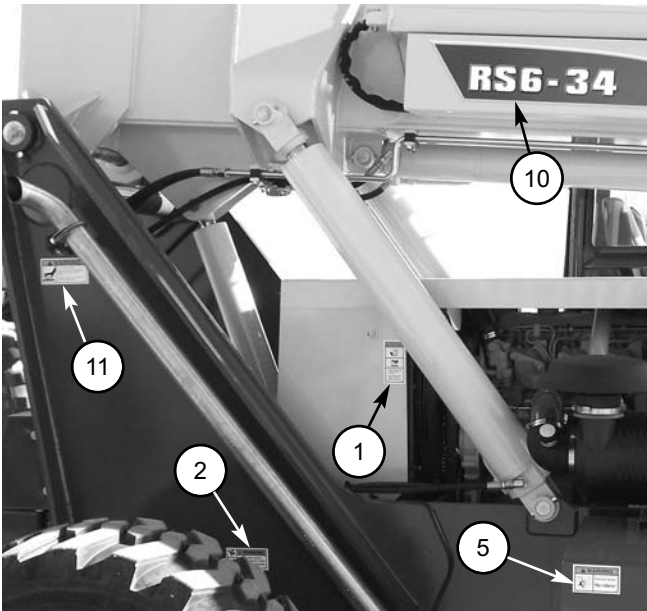
**NOTE:** Decals may be purchased in kits or individually.





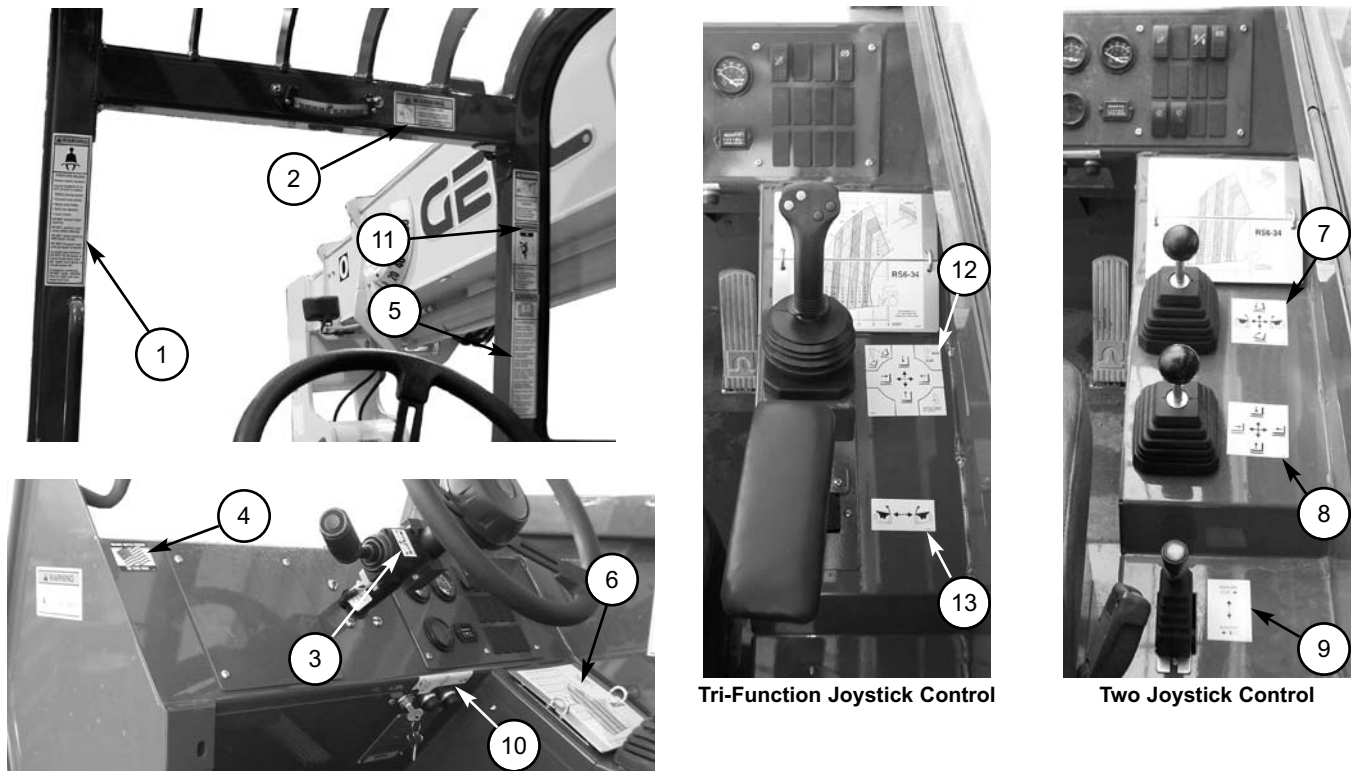
### DECAL LOCATIONS - FRAME AND BOOM

REF. NO.	DESCRIPTION	PART NO.
01	DANGER - HANDS OUT	L70305
02	WARNING - PINCH POINT	L65927
03	WARNING - JUMP START	L65933
04	GEHL, 5.00"	102027
05	QUICK-ATTACH DIAGRAM	L65937
06	GEHL, 6.75"	184069
07	ANTI-FREEZE	056859
08	HALF ZONE MARKER (5 ea.)	L62583
09	NO. "0" EXTENSION MARKER (1 ea.)	L67718
	NO. "1" EXTENSION MARKER (1 ea.)	L67719
10	NO. "2" EXTENSION MARKER (1 ea.)	L67720
	NO. "3" EXTENSION MARKER (1 ea.)	L67721
	NO. "4" EXTENSION MARKER (1 ea.)	L67722
	NO. "5" EXTENSION MARKER (1 ea.)	L67723
	COOLANT UNDER PRESSURE	072798
11	WARNING - NO RIDERS	L65932
12	BRAKE FLUID	L63474
13	OPERATOR MANUAL WARNING	100359
14	DANGER - PERSONNEL INJURY (units without PWP)	L65928
15	CARRY LOAD LOW	L65926
16	LUBE CHART	103229
17	RS6-34 LH	104871
18	GEHL, 3.75"	184043



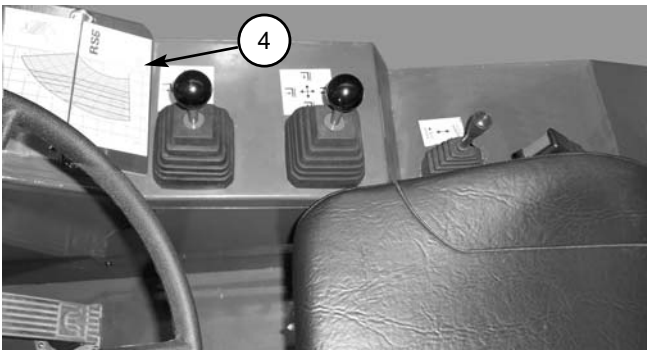
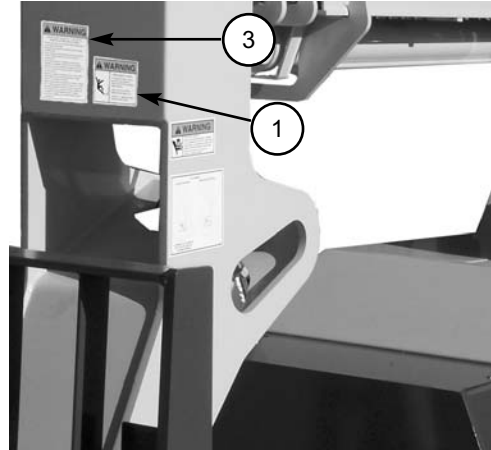
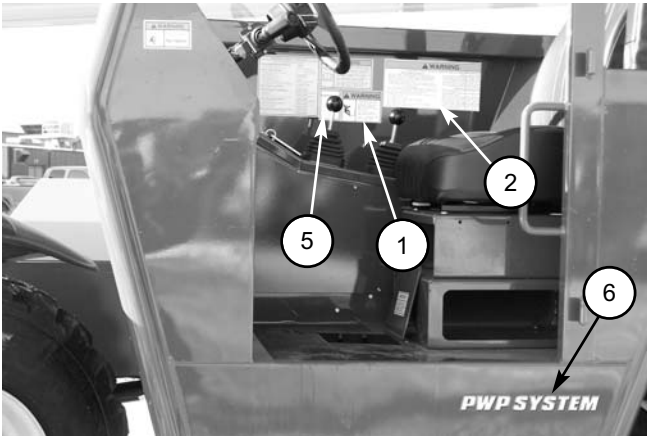
**DECAL LOCATIONS - FRAME AND BOOM**

<b>REL. NO.</b>	<b>DESCRIPTION</b>	<b>PART NO.</b>
01	DANGER - HANDS OUT	L70305
02	WARNING - PINCH POINT	L65927
03	GEHL, 6.75"	184069
04	HYDRAULIC OIL FILL	137632
05	WARNING - NO RIDERS	L65932
06	Gehl 2.00"	102026
07	DANGER - PERSONNEL INJURY ( <i>units without PWP</i> )	L65928
08	QUICK-ATTACH UNLOCKED	L66613
09	DIESEL FUEL	50301416
10	RS6-34, RH	104872
11	HOT SURFACE	L65942



### DECAL LOCATIONS - OPERATOR STATION

REL. NO.	DESCRIPTION	PART NO.
01	WARNING - TILT HAZARD/GENERAL OPERATOR	L70306
02	WARNING - CARRY LOAD LOW	L65926
03	F-N-R SHIFT	L68295
04	MADE IN USA	140516
05	WARNING - PARK BRAKE/SEAT BELT	101506
06	STANDARD CARRIAGE LOAD CHART ROTATING CARRIAGE LOAD CHART BUCKET LOAD CHART TRUSS BOOM LOAD CHART WINCH LOAD CHART PWP LOAD CHART	104875 104876 104877 104878 104879 104880
07	ATTACHMENT TILT/FRAME LEVEL	L63632
08	BOOM CONTROL	L63631
09	AUXILIARY HYDRAULIC CONTROL ( <i>Optional</i> )	102718
10	IGNITION/START/HORN	102717
11	DANGER - HIGH VOLT./MOVING PARTS	L70307
12	JOYSTICK CONTROL	104215
13	FRAME LEVEL	L63311



**DECAL LOCATIONS - PWP EQUIPPED UNITS**

<b>REL. NO.</b>	<b>DESCRIPTION</b>	<b>PART NO.</b>
01	WARNING - PERSONNEL LIFT	L71554
02	WARNING - WORK PLATFORM RULES	L71555
03	PERSONNEL LIFT SAFETY RULES	L71700
04	PWP LOAD CHART	104880
05	PWP SWITCH	102969
06	PWP SYSTEM	103028

# Chapter 10

## MAINTENANCE

This Maintenance Interval Chart was developed to match the *Service and Storage* chapter of this manual. Detailed information on each Service Procedure is in the *Service and Storage* chapter. A Maintenance Log follows the Maintenance Interval Chart for recording the maintenance procedures performed. Recording the 10-Hour (or Daily) service procedures is impractical and is therefore not recommended.

**IMPORTANT:** *Under severe operating conditions, more frequent service than the recommended intervals may be required. Users must decide if the severity of their operation requires more frequent service than normal.*

### MAINTENANCE INTERVAL CHART

SERVICE PROCEDURE	Every 10 Hours (or Daily)	Every 50 Hours (or Weekly)	First 100 Hours	Every 250 Hours (or Quarterly)
Check Fuel Tank Level	●			
Check Fuel Filter (Drain Water If Required)	●			
Check Engine Oil Level	●			
Check Radiator Coolant Level	●			
Check Transmission Oil Level	●			
Check Hydraulic Oil Level	●			
Check Brake Reservoir Level	●			
Check Tire Pressures	●			
Check Wheel Nut Torque	● <sup>1,2</sup>			
Check Instruments Operation	●			
Check General Machine Operation and Condition	●			
Check Personnel Work Platform Safety System	●			
Lubricate Grease Points		●		
Change Engine Oil and Filter			● <sup>2</sup>	
Change Transmission Oil and Filter			● <sup>2</sup>	
Change Hydraulic Oil Filter			● <sup>2</sup>	
Check Axle Oil Levels				●
Change Fuel Filter				●
Change Engine Oil and Filter				●
Check Battery				●
Check and Torque Boom Leaf Chains			● <sup>3</sup>	●
<p><i>1 - On new machines, or when a wheel has been removed, until 450 ft.-lbs. (610 Nm) is maintained.</i></p> <p><i>2 - New machines only.</i></p> <p><i>3 - On new machines or when a chain has been replaced. Chains should be torqued to 25 ft.-lbs. (34 Nm).</i></p>				

## MAINTENANCE INTERVAL CHART (CONT.)

SERVICE PROCEDURE	Every 250 Hours (or Quarterly)	Every 1000 Hours (or Yearly)	Every 2000 Hours (or Two Years)
Check Boom Slide Pads Wear and Clearance	•		
Change Transmission Oil and Filter		•	
Change Hydraulic Return Filter Element		•	
Change Air Filter Element		•	
Change Axle Differential and Planetary Oil		•	
Check Alternator and Fan Belt Condition		•	
Check Exhaust System		•	
Check Hydraulic System Relief Pressures			•
Change Hydraulic Reservoir Oil and Strainer			•
Change Radiator Coolant			•

## MAINTENANCE LOG

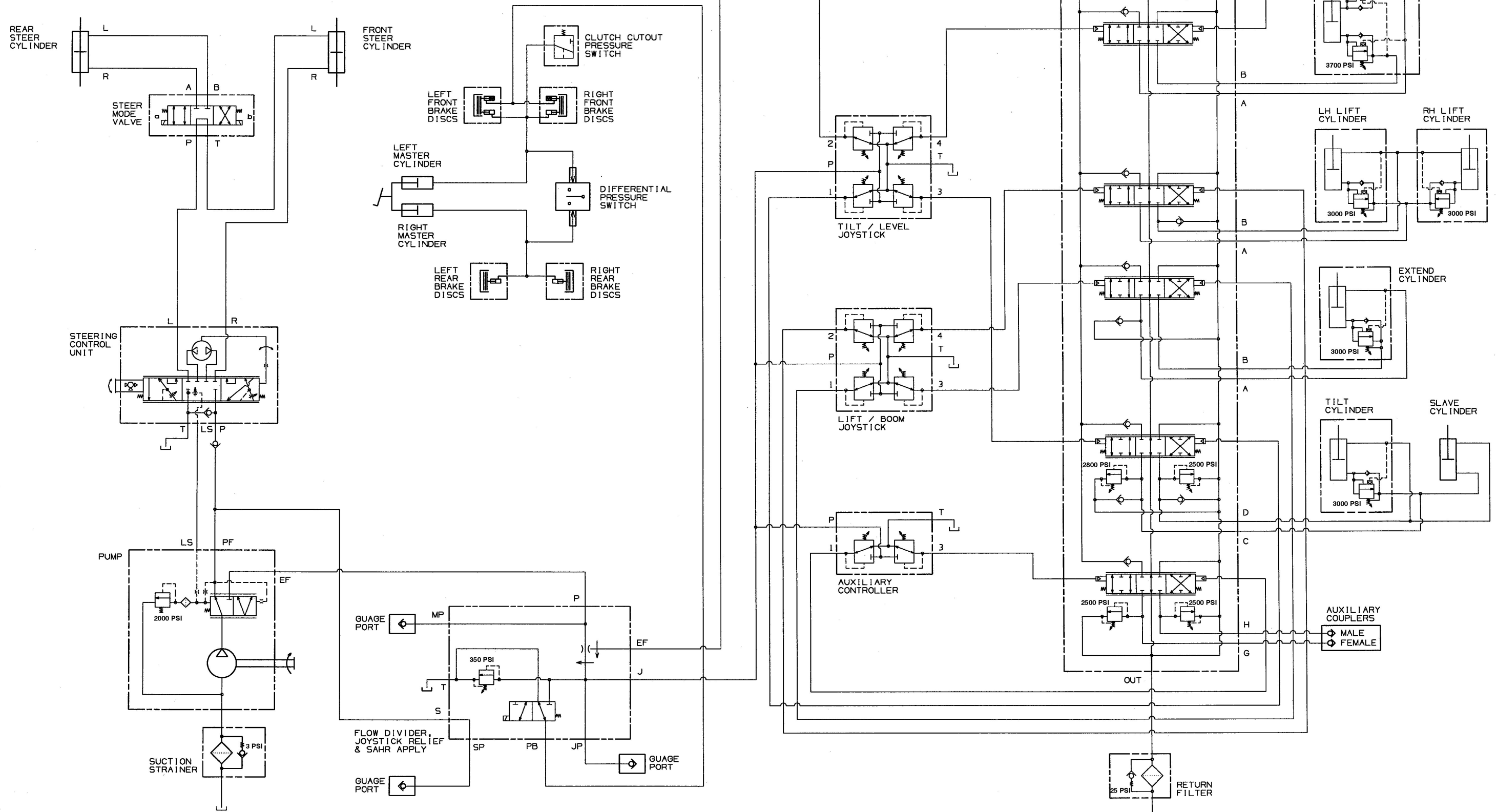
Date	Hours	Service Procedure



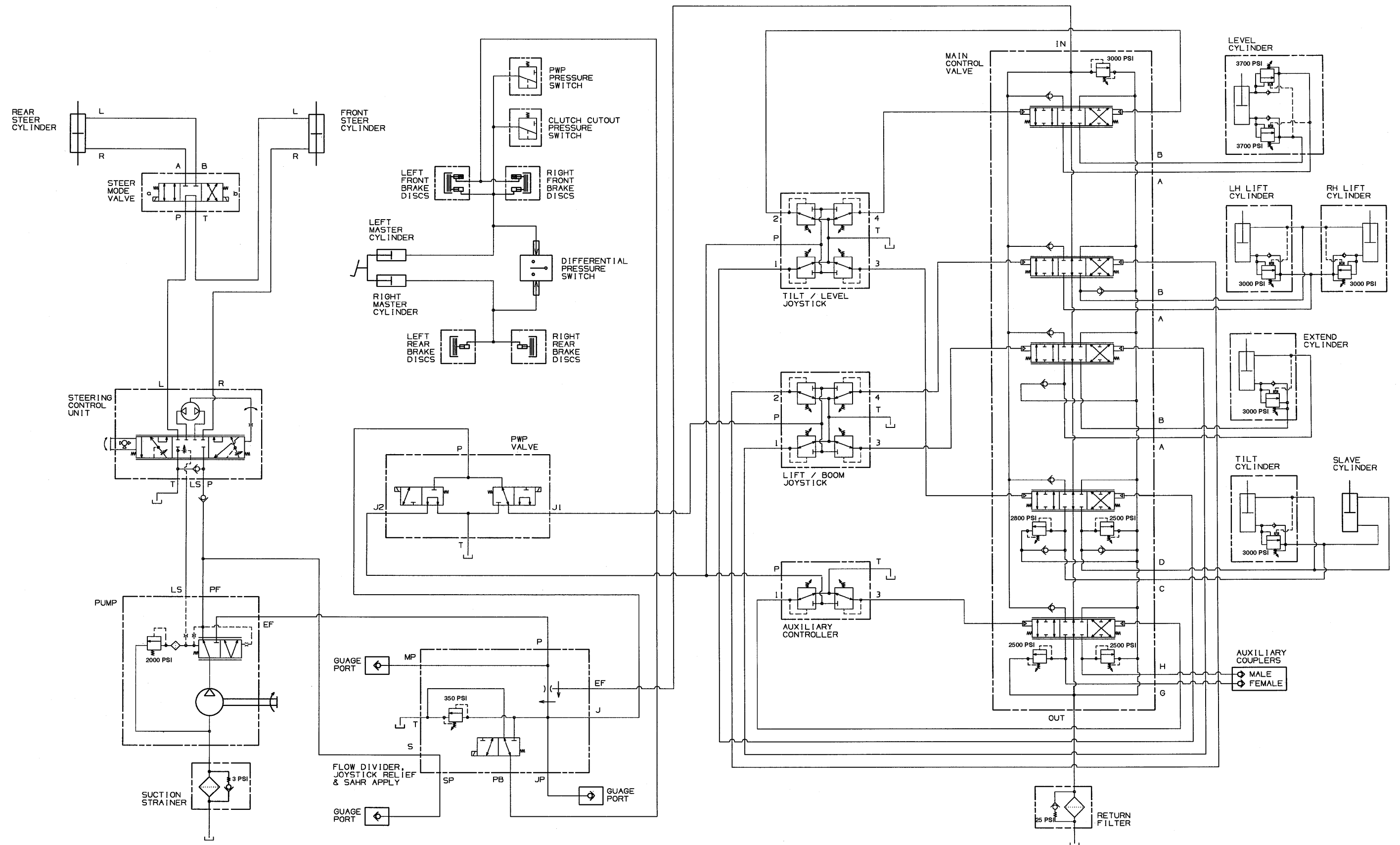




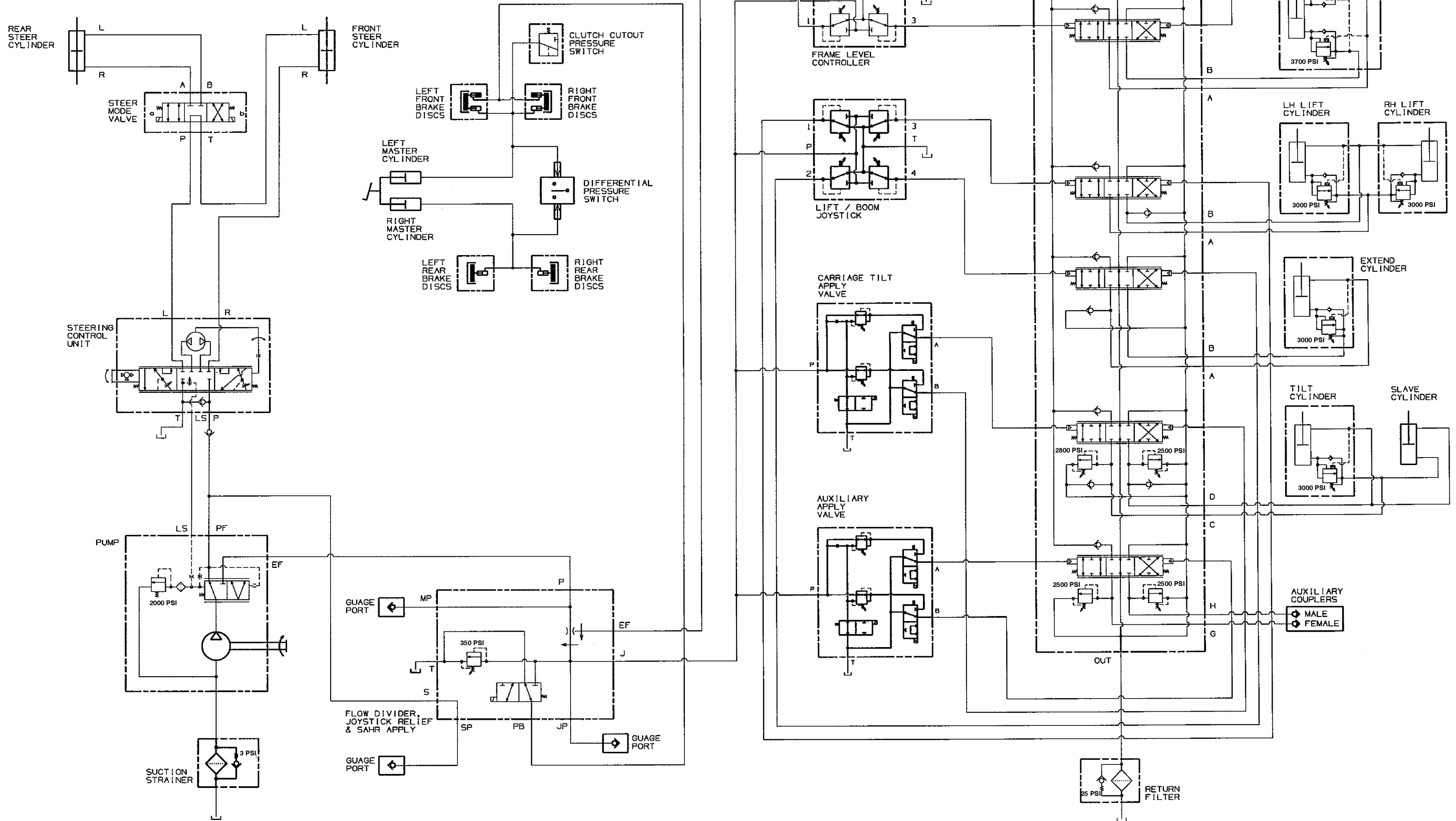
# Hydraulic Schematic for Two-Joystick Controls without PWP



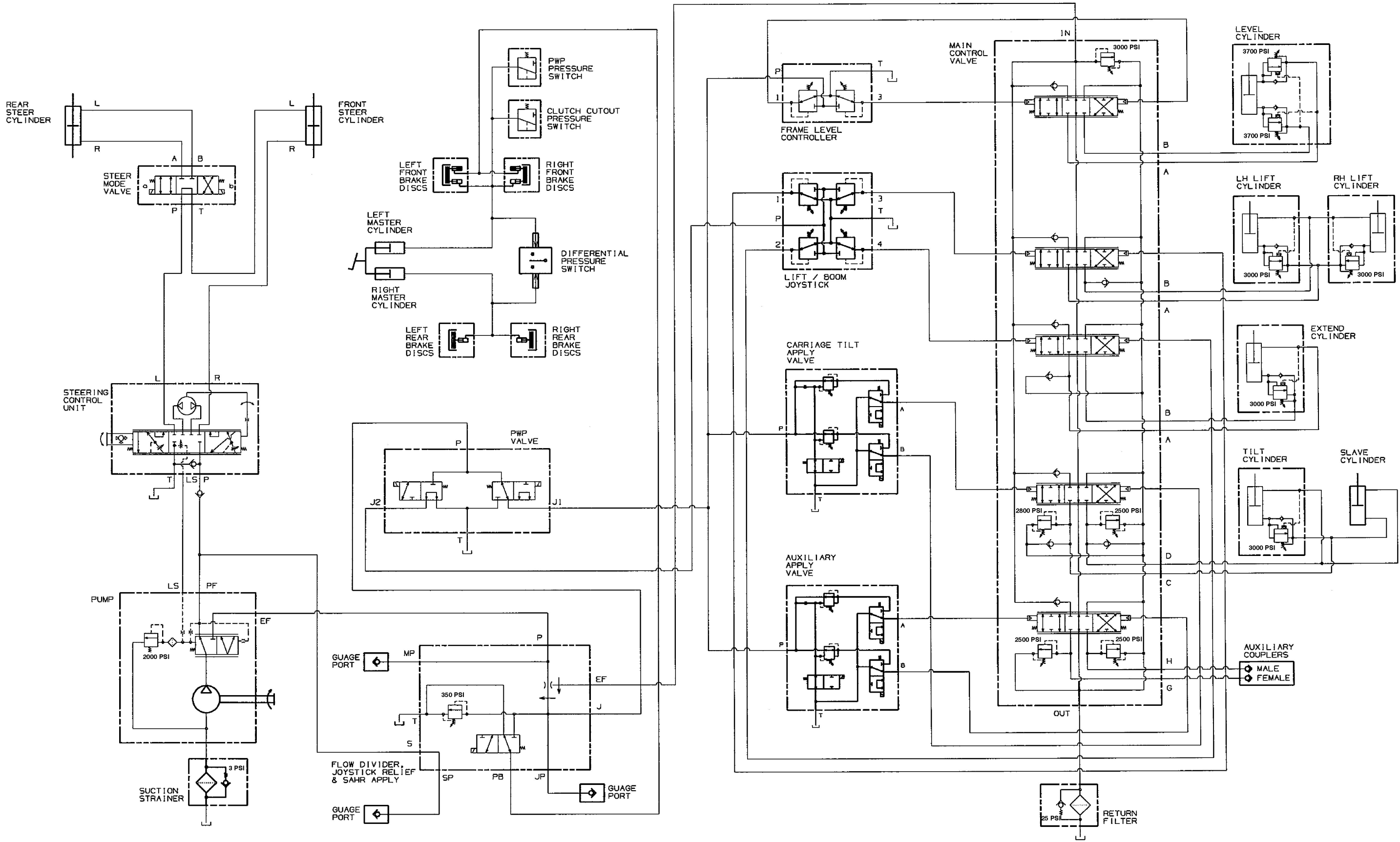
# Hydraulic Schematic for Two-Joystick Controls with PWP



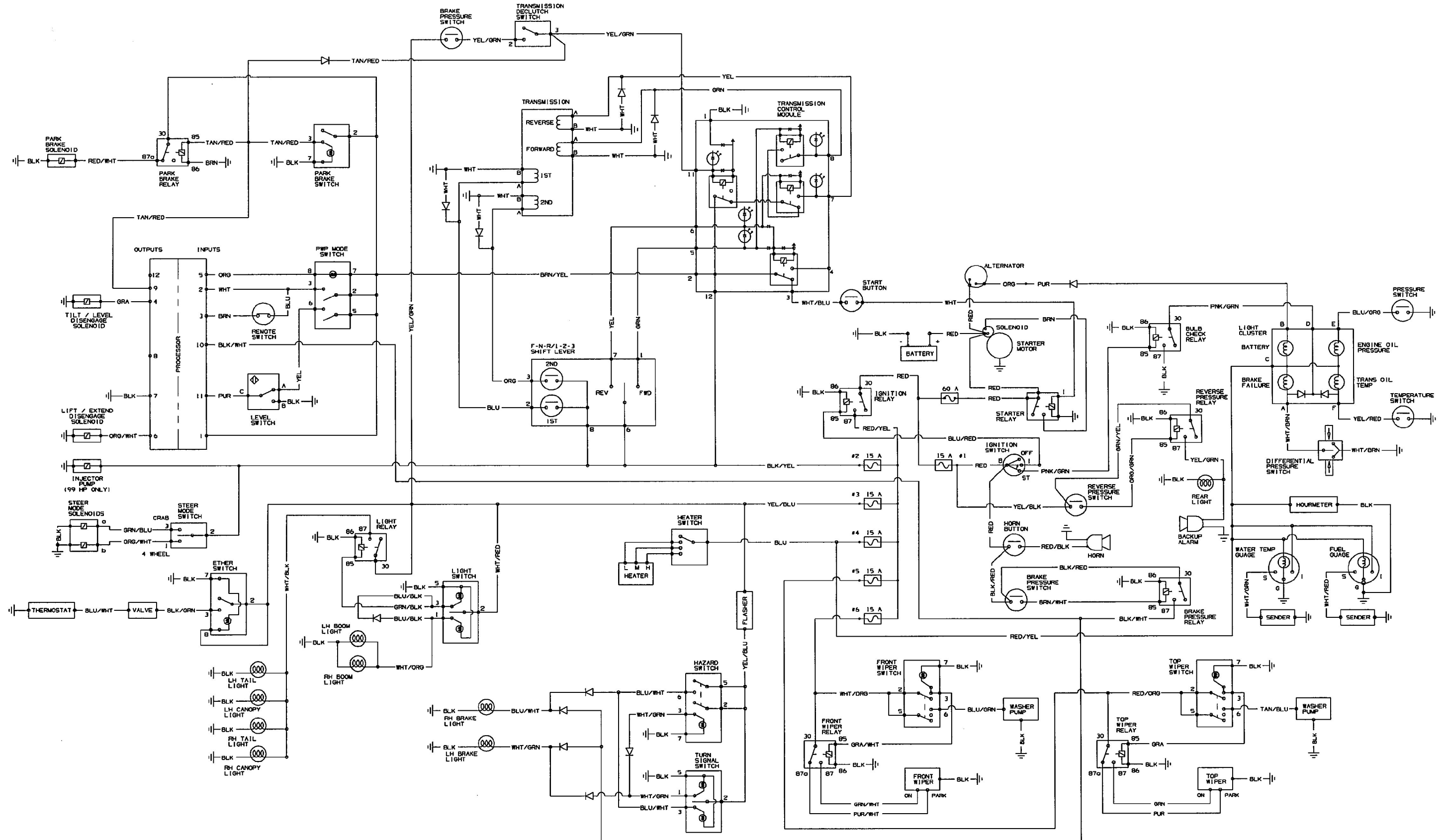
# Hydraulic Schematic for Tri-Function Joystick without PWP



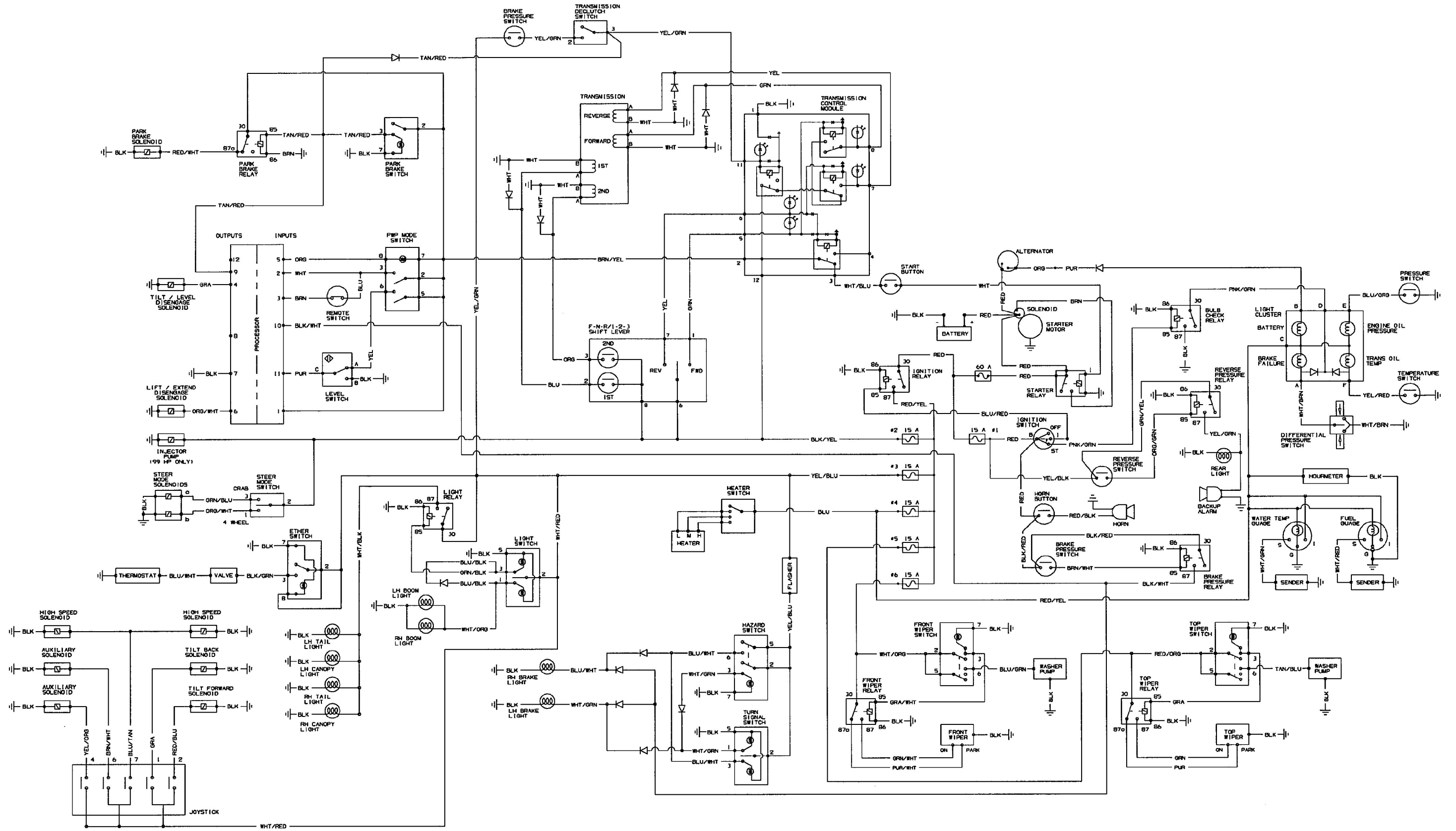
# Hydraulic Schematic for Tri-Function Joystick with PWP



# Electrical Schematic for Two-Joystick Controls

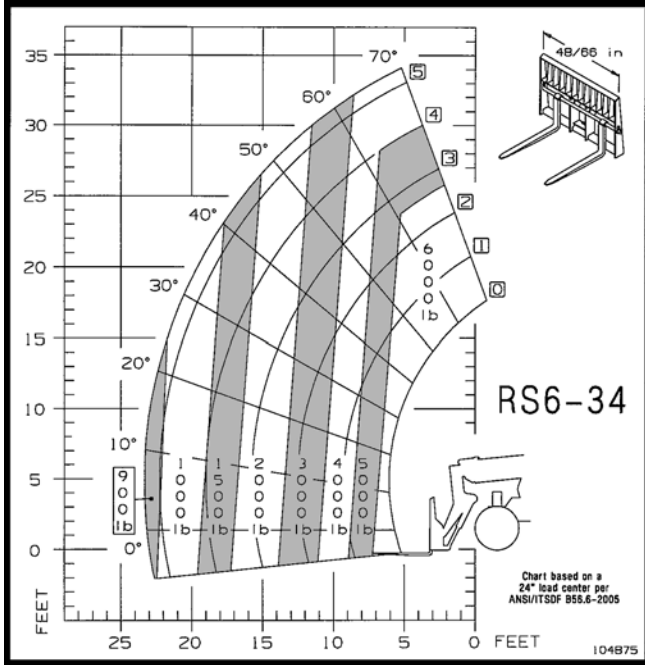


# Electrical Schematic for Tri-Function Joystick

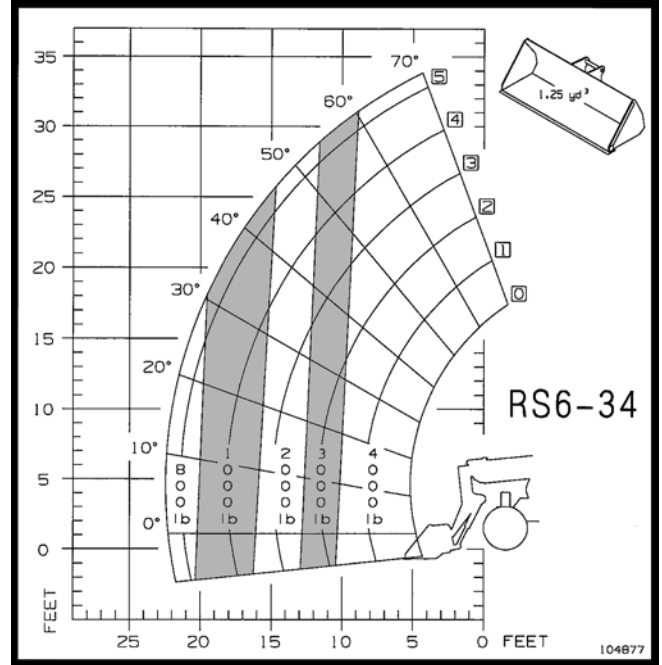


# Load Zone Charts

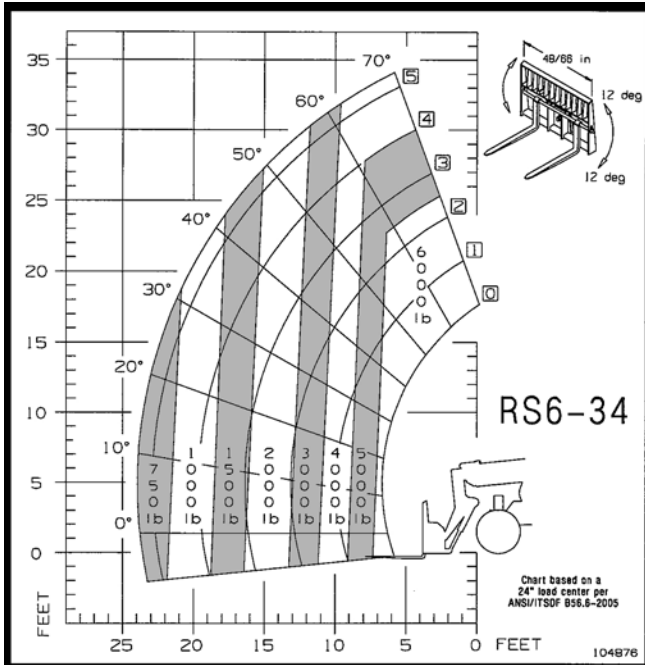
**Decal 104875  
Standard Carriage**



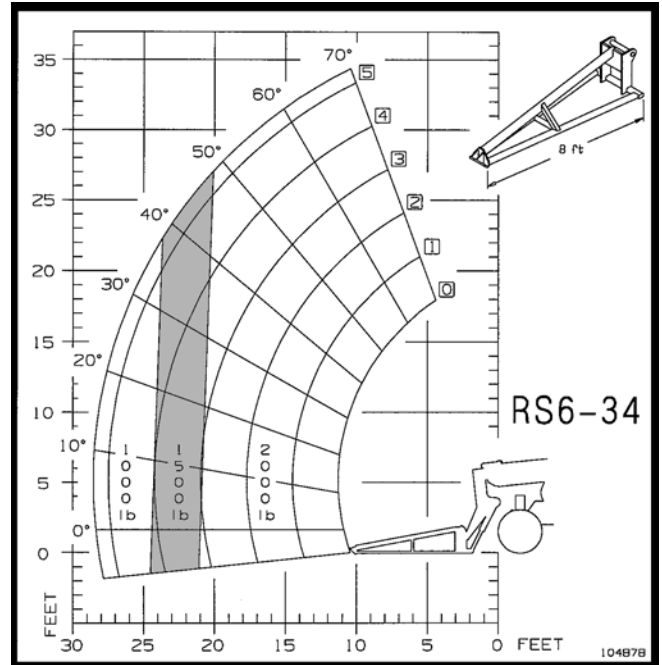
**Decal 104877  
1.3-Cu.-Yd. Bucket**



**Decal 104876  
Rotating Carriage**

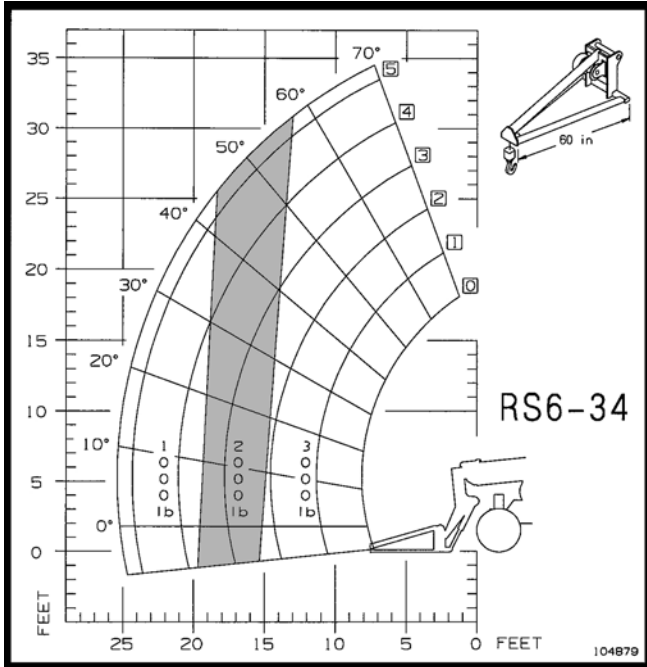


**Decal 104878  
8-Ft. Truss Boom**

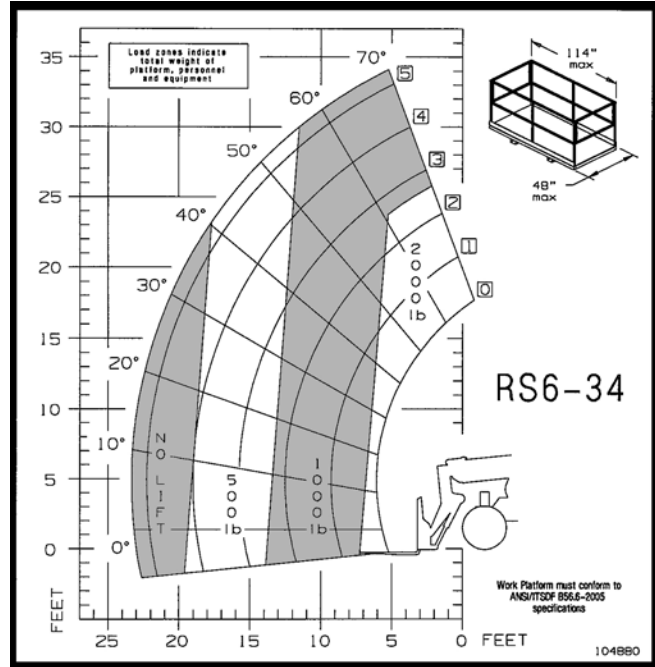


# Load Zone Charts

**Decal 104879  
Winch Boom**






**Decal 104880  
PWP**








# Torque Specifications

Use these torque values when tightening hardware (excluding: locknuts and self-tapping, thread-forming and metal screws) unless otherwise specified.

Unified National Thread	Grade 2 		Grade 5 		Grade 8 	
	Dry	Lubed	Dry	Lubed	Dry	Lubed
8-32	19*	14*	30*	22*	41*	31*
8-36	20*	15*	31*	23*	43*	32*
10-24	27*	21*	43*	32*	60*	45*
10-32	31*	23*	49*	36*	68*	51*
1/4-20	66*	50*	9	75*	12	9
1/4-28	76*	56*	10	86*	14	10
5/16-18	11	9	17	13	25	18
5/16-24	12	9	19	14	25	20
3/8-16	20	15	30	23	45	35
3/8-24	23	17	35	25	50	35
7/16-14	32	24	50	35	70	55
7/16-20	36	27	55	40	80	60
1/2-13	35	35	75	55	110	80
1/2-20	40	40	90	65	120	90
9/16-12	55	55	110	80	150	110
9/16-18	60	60	120	90	170	130
5/8-11	75	75	150	110	220	170
5/8-18	85	85	180	130	240	180
3/4-10	130	130	260	200	380	280
3/4-16	150	150	300	220	420	320
7/8-9	125	125	430	320	600	460
7/8-14	140	140	470	360	660	500
1-8	190	190	640	480	900	680
1-14	210	210	710	530	1000	740

Metric Course Thread	Grade 8.8 		Grade 10.9 		Grade 12.9 	
	Dry	Lubed	Dry	Lubed	Dry	Lubed
M6-1	8	6	11	7	13.5	10*
24M8-1.25	19	14	27	20	32.5	24*
M10-1.5	37.5	28	53	39	64	47
M12-1.75	65	48	91.5	67.5	111.5	82
M14-2	103.5	76.5	145.5	108	176.5	131
M16-2	158.5	117.5	223.5	165.5	271	200

\* All torque values are in lb-ft. except those marked with an \*, which are in lb-in.  
For metric torque value (Nm), multiply lb-ft value x 1.355, or lb-in value x 0.113.

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## **GEHL COMPANY**

### **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.

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**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.**

ANY OF THESE LIMITATIONS EXCLUDED BY LOCAL LAW SHALL BE DEEMED DELETED FROM THIS WARRANTY; ALL OTHER TERMS WILL CONTINUE TO APPLY.

SOME STATES DO NOT PERMIT THE EXCLUSION OR LIMITATION OF THESE WARRANTIES AND YOU MAY HAVE GREATER RIGHTS UNDER YOUR STATE LAW.

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#### **GEHL WARRANTY 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, batteries, 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.



**THIS OPERATOR'S MANUAL IS  
PROVIDED FOR OPERATOR USE**

**DO NOT REMOVE  
FROM THIS MACHINE**

**Do not start, operate or work on this machine until you have carefully read and thoroughly understand the contents of the operator's manual.**

**Failure to follow safety, operating and maintenance instructions could result in serious injury to the operator or bystanders, poor operation, and costly breakdowns.**

**If you have any questions on proper operation, adjustment or maintenance of this machine, contact your dealer or the service department of Gehl Company before starting or continuing operation.**

**California Proposition 65 Warnings**

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

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. **Wash hands after handling battery.**

# **GEHL**®

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