

DL SERIES **Dynalift**[®]

DL7/DL9/DL11/DL12

Telescopic Handlers

GEHL

Form No.
913287
Revision B
August 2008



Operator's Manual

Indicator and Operation Symbols



Read Operator's Manual



Parking Brake



Horn



Engine Start



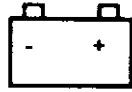
Ignition Switch ON



Safety



Fasten Seat Belt



Battery



Fuse



Engine Air Filter



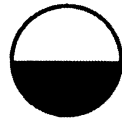
Engine Stop



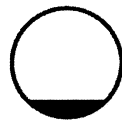
Hazard Flasher



Volume Full



Volume Half Full



Volume Empty



Diesel Fuel



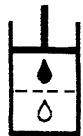
Fuel Low



Head Lights



Transmission Temperature



Hydraulic Oil Filter



Starting Aid Injection



Engine Oil Pressure



Fan



Work Lights



Clutch Engaged



Clutch Disengaged



Low Accumulator Pressure



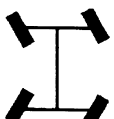
Wiper/Washer



Heater



Beacon



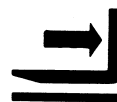
4-Wheel Steer



Raise Load



Tilt Rearward



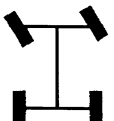
Retract Load



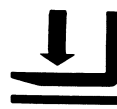
Air Conditioning



Turn Signal



Front Wheel Steer



Lower Load



Tilt Forward



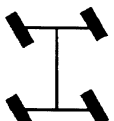
Extend Load



Rear Wheels Alignment



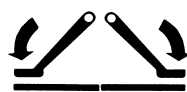
Hourmeter



Crab Steer



Frame Level



Outriggers Down



Outriggers Up



Outrigger (RH Shown)



Engine Coolant Temperature

Table of Contents

Chapter	Description	Page
	International Symbols	Inside Front Cover
1	Introduction	2
2	Specifications	4
3	Checklists	6,7
4	SAFETY	9
5	Indicators and Controls	23
6	Operation and Adjustments	32
7	Lubrication	47
8	Service and Storage	50
9	Decal Locations	67
10	Maintenance	72
	Electrical Schematics	83
	Hydraulic Schematics	87
	Load Zone Charts	89
	Standard Hardware Torque Data	107
	Index	108
	Warranty	Inside Back Cover

IDENTIFICATION INFORMATION

Write your Gehl Dynalift® Telescopic Handler Model and Serial Numbers below.
Refer to these numbers when inquiring about parts or service from your Gehl dealer.

MODEL NO.
DL
SERIAL NO.
GEHL®
WEST BEND, WI 53095 U.S.A.

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.

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

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 and 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.

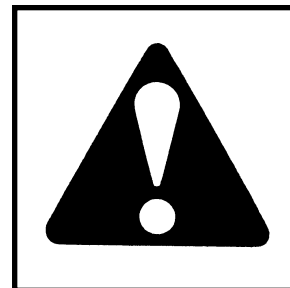
The wide GEHL dealership network stands ready to provide any assistance that may be required, including genuine GEHL service parts. All parts should be obtained from or ordered through your GEHL dealer. Give complete information about the part and include the model and serial number of the machine. Record 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

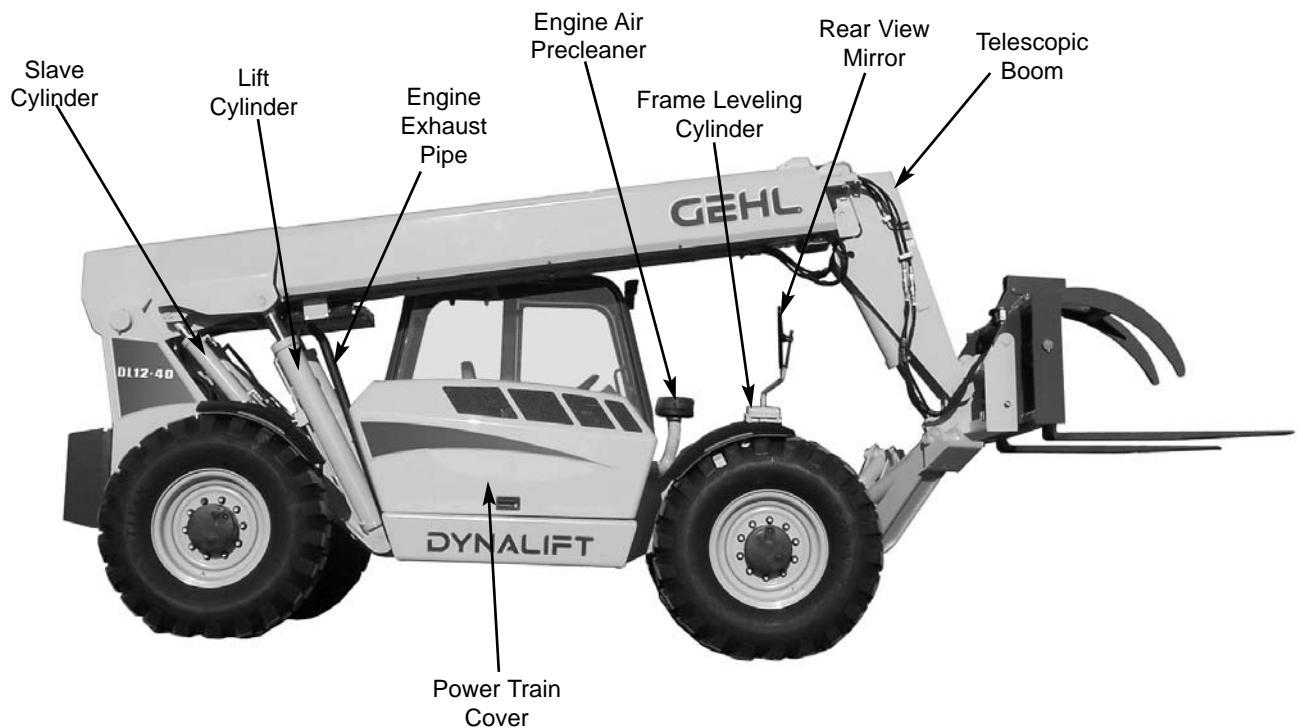
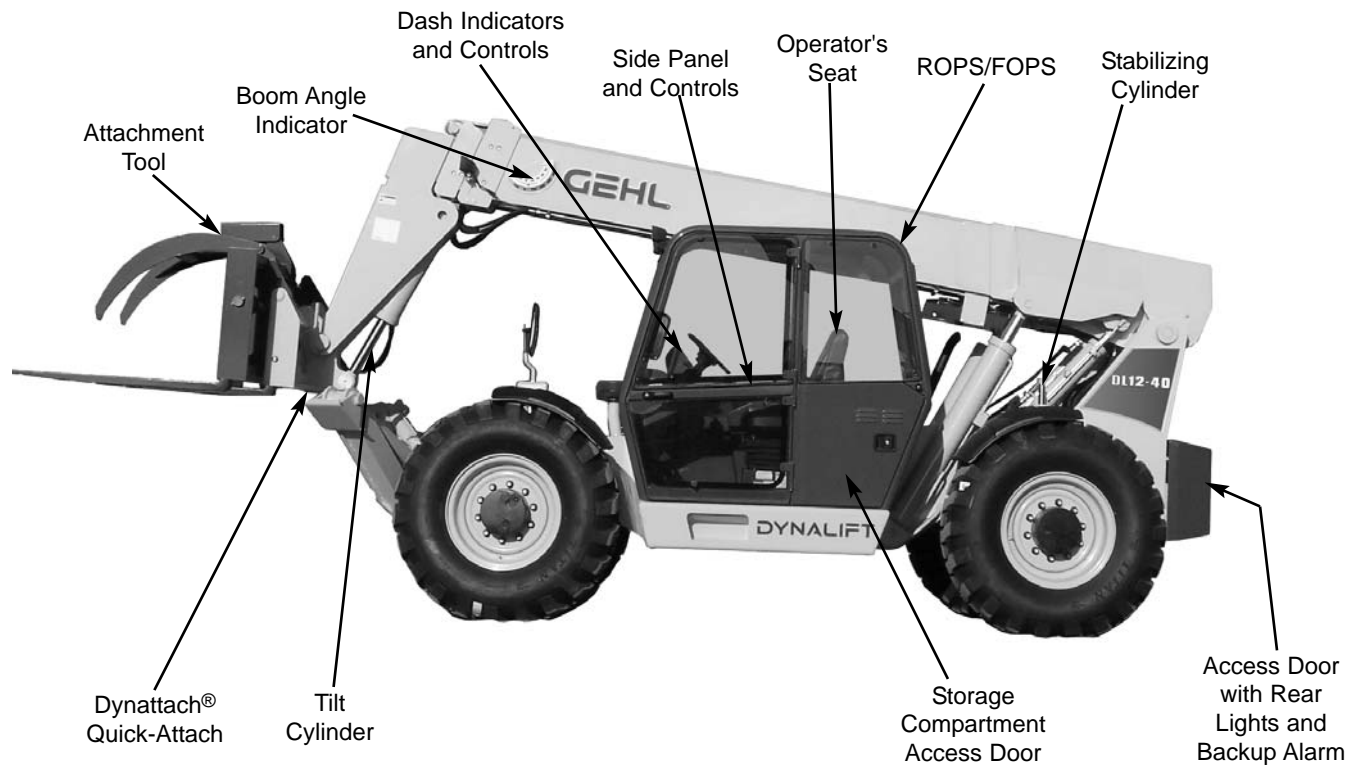
Safety Alert Symbol

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

(DL12-40 Shown)



Chapter 2

SPECIFICATIONS

Lifting Performance

Maximum lift capacity:

DL7-44:	7000 lbs. (3175 kg)
DL9-44:	9000 lbs. (4080 kg)
DL11-44:	11000 lbs. (4990 kg)
DL11-55:	11000 lbs. (4990 kg)
DL12-40:	12000 lbs. (5443 kg)

Maximum lift height:

DL7-44:	44'-4" (13.5 m)
DL9-44:	44'-4" (13.5 m)
DL11-44:	44'-4" (13.5 m)
DL11-55:	55'-5" (16.8 m)
DL11-55 (Low Boom):	55'-1" (16.8 m)
DL12-40:	40'-4" (12.3 m)

Capacity at maximum lift height:

DL7-44:	6000 lbs. (2721 kg)
DL9-44:	7000 lbs. (3171 kg)
DL11-44:	8000 lbs. (3629 kg)
DL11-55 (Outriggers up):	5000 lbs. (2267 kg)
DL11-55 (Outriggers down):	5500 lbs. (2495 kg)
DL11-55 (Low Boom)	
Outriggers up:	5000 lbs. (2267 kg)
DL11-55 (Low Boom)	
Outriggers down:	5500 lbs. (2495 kg)
DL12-40:	10000 lbs. (4535 kg)

Forward reach at max. lift height:

DL7-44:	3'-4" (1016 mm)
DL9-44:	3'-4" (1016 mm)
DL11-44:	3'-4" (1016 mm)
DL11-55:	6'-7" (2007 mm)
DL11-55 (Low Boom):	5'-9" (1753 mm)
DL12-40:	2'-0" (610 mm)

Reach below grade:

DL7-44:	2'-0" (610 mm)
DL9-44:	2'-0" (610 mm)
DL11-44:	2'-0" (610 mm)
DL11-55:	2'-10" (864 mm)
DL11-55 (Low Boom):	2'-2" (660 mm)
DL12-40:	1'-4" (406 mm)

Frame leveling:

10° left/10° right

Loader Performance

Breakout force:

DL7-44:	11000 lbs. (48.9 kN)
DL9-44:	12500 lbs. (55.6 kN)
DL11-44:	14000 lbs. (62.2 kN)
DL12-40:	14000 lbs. (62.2 kN)

Maximum dump height:

DL7-44:	42'-11" (13.1 m)
DL9-44:	42'-11" (13.1 m)
DL11-44:	42'-11" (13.1 m)
DL12-40:	39'-0" (11.9 m)

Maximum reach at max. dump height:

DL7-44:	2'-3" (686 mm)
DL9-44:	2'-3" (686 mm)
DL11-44:	2'-3" (686 mm)
DL12-40:	1'-2" (356 mm)

Dump angle at maximum dump height:

DL7-44, DL9-44, DL11-44,	
DL12-40:	24°

Maximum loadover height:

DL7-44:	44'-2" (13.5 m)
DL9-44:	44'-2" (13.5 m)
DL11-44:	44'-2" (13.5 m)
DL12-40:	40'-3" (12.3 m)

Dump height at 45° dump angle:

DL7-44:	34'-0" (10.4 m)
DL9-44:	34'-0" (10.4 m)
DL11-44:	34'-0" (10.4 m)
DL12-40:	30'-9" (9.4 m)

Maximum reach at 45° dump angle:

DL7-44:	14'-3" (4.3 m)
DL9-44:	14'-3" (4.3 m)
DL11-44:	14'-3" (4.3 m)
DL12-40:	11'-10" (3.6 m)

Rollback at ground level: 30°

Total bucket rotation: 132°

Parallel lift: Standard

General Dimensions

Based on standard machine equipped with listed tires, 48" (1.2 m) masonry carriage and 48" (1.2 m) pallet forks.

Recommended tire type:

DL7: 13.00x24 G2 12-ply
Inflate to 70 psi (480 kPa)
DL9, DL11, and DL12: 14.00x24 G2 12-ply
Inflate to 70 psi (480 kPa)

Overall length, less forks:

DL7-44:	20'-7" (6.3 m)
DL9-44:	20'-7" (6.3 m)
DL11-44:	20'-7" (6.3 m)
DL11-55:	20'-10" (6.3 m)
DL11-55 (Low Boom):	21'-2" (6.5 m)
DL12-40:	19'-4" (5.9 m)

Overall width:

DL7:	8'-1" (2.5 m)
DL9, DL11, DL12:	8'-3" (2.5 m)

Overall height:

DL7:	7'-10" (2.4 m)
DL9, DL11, DL12:	7'-11" (2.4 m)

Ground clearance: 16" (400 mm)

Wheel base: 10'-8" (3.3 m)

Outside turn radius: 12'-2" (3.7 m)

Machine weight:

DL7-44:	23250 lbs. (10546 kg)
DL9-44:	24650 lbs. (11181 kg)
DL11-44:	25400 lbs. (11521 kg)
DL11-55:	28460 lbs. (12909 kg)
DL11-55 (Low Boom):	28460 lbs. (12909 kg)
DL12-40:	25300 lbs. (11475 kg)

Instrumentation

Gauges: Fuel level, engine coolant temperature, engine oil pressure, voltage meter and hourmeter

Monitoring lights:

Oil pressure, coolant temperature, alternator, low fuel, air filter restriction, hydraulic filter restriction, transmission temperature, accumulator charge pressure

Monitoring alarms:

Low accumulator charge

Visual indicators:

Boom angle, boom extension, frame angle

Steering System

Steer valve: Fixed displacement rotary

Displacement/Rev: 20 cu. in. (328 cc)

System pressure: 2500 psi (172 bar)

Steer cylinders: 1 per axle

Steer mode valve:

3-position, 4-way solenoid, dash-mounted switch actuation.

Steer modes: 2-wheel, 4-wheel, crab

Outside turn radius: 12'-2" (3.7 m)

Braking System

Service brakes:

Oil-immersed disc-type,
hydraulic fluid type,
manual foot pedal actuation.

Parking brake:

Spring-applied, hydraulic-release
disc-type on front axle.
Actuation is electric switch with
engine running, automatic with
engine shutdown.

Electrical System

Type: 12-volt DC, negative ground

Alternator: 65A

Battery: 4DLT group,
900 cold-cranking amps

Circuit protection: Fuse panel

Backup alarm: 107 dB(A)

Horn: 111 dB(A)

Standard on all models:

Brake lights, neutral start switch,
master disconnect switch

Service Capacities

Cooling System:

20 qts. (18.9 L)

50/50 mixture

Anti-freeze protection: -34°F (-37°C)

Pressure cap: 16 psi (110 kPa)

Fuel tank: 30 gal. (114 L)

Hydraulic tank and
system: 45 gal. (170 L)

Transmission and cooler: 16 qts. (15 L)

Transfer case: 3 qts. (2.8 L)

Axles: 26.48M

Differentials: 14.8 qts. (14 L)

Hubs: 1.8 qts. (1.7 L)

Transmission

Type: Clark Powershift T16000

Speeds: 4 fwd / 2 rev

Torque converter:

Single-stage, dual-phase

Travel speeds, DL7:

1st gear: 3.2 mph (5.2 km/h)

2nd gear: 6.0 mph (9.7 km/h)

3rd gear: 12.1 mph (19.5 km/h)

4th gear: 22.0 mph (35.4 km/h)

Travel speeds, DL9, DL11, and DL12:

1st gear: 3.3 mph (5.4 km/h)

2nd gear: 6.3 mph (10.2 km/h)

3rd gear: 12.7 mph (20.4 km/h)

4th gear: 22.8 mph (36.7 km/h)

Axles (front and rear)

Type: Carraro

26.48M

Drive/steer, open differential, double
reduction planetary, full-time four
wheel drive

Overall ratio: 23.04:1

Drive Train

Transfer case: Durst with 1.063:1 ratio
and Lord vibration damper

Engine

Turbocharged aspiration:

John Deere 4045T

276 cu. in. (4.5 L) displacement,

115 hp (86 kW) @ 2500 rpm

Oil capacity: 15.5 qts. (14.7 L)

In-line 4-cylinder, 4-cycle,
direct injection diesel fuel system,
in-line fuel filter w/water trap,
positive pressure lubrication,
liquid pressurized cooling system,
dry dual-element air cleaner,
spin-on oil filter.

Hydraulic System

Type: Open-center

Pump: Dual-section gear type

Displacement / revolution:

Front: 1.77 cu. in. (29 cc)

Rear: 2.19 cu. in. (36 cc)

Flow @ 2500 RPM:

Front: 19 gpm (72 L/min)

Rear: 24 gpm (90 L/min)

Main relief pressure: 3000 psi (207 bar)

Aux. relief pressure: 2500 psi (172 bar)

Main control valve:

Parallel, 3-spool sectional,
remote hydraulic actuation

Frame level control valve:

Solenoid type w/ remote switch
actuation

Auxiliary control valve:

Parallel, 1-spool sectional,
remote hydraulic actuation with
joystick switch

Hydraulic filter:

Remote return type, 15-micron
media, replaceable element.
Rated flow: 70 gpm (265 L/min)
Rated pressure: 800 psi (55 bar)
By-pass pressure (full flow):
45 psi (310 kPa)

Hydraulic strainer:

In-tank suction, 149-micron media,
replaceable element.
Rated flow: 50 gpm (189 L/min)
By-pass pressure: 3 psi (20 kPa)

Operator's Station

Rollover Protective Structure (ROPS)

ISO 3471-1994

Falling Object Protective Structure
(FOPS)

Meets ANSI/ITSDF B56.6-2005,
Sec 8.16

ISO 3449-2005

Seatbelt:

Meets SAE J386

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 70 psi (480 kPa) cold.
- ☐ Hydraulic system reservoir, engine crankcase, engine coolant, transfer case, transmission and axles are filled to the proper operating fluid levels.
- ☐ All adjustments have been made to comply with the settings in this manual and in the separate engine manual.
- ☐ All guards, shields and decals are in place and securely attached.
- ☐ Model and serial number for this unit is 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, Dynattach® or Dynacarryer® 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 No. Machine Serial No. Engine Serial No.

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 and for the following:
- ☐ The Index at the back, for quickly locating topics;
- ☐ The Safety, Indicators and Controls, and Operation and Adjustments 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 (I), 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 warranty is included on the inside back cover of this Operator's Manual.

Customer's Signature

Date Delivered

(Pages 7 & 8 - have been removed at perforation)

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 70 psi (480 kPa) cold.
- ☐ Hydraulic system reservoir, engine crankcase, engine coolant, transfer case, transmission and axles are filled to the proper operating fluid levels.
- ☐ All adjustments have been made to comply with the settings in this manual and in the separate engine manual.
- ☐ All guards, shields and decals are in place and securely attached.
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Start the machine and test-run the unit while checking that proper operation is exhibited by all controls.

✓ Check that:

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- ☐ 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, Dynattach® or Dynacarrier® 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 No.

Machine Serial No.

Engine Serial No.

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.

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- ☐ Completely fill out the Owner's Registration, including customer's signature, and return it to the Company.
- ☐ Explain that a copy of the 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)

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(To be removed as Dealer's file copy)

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.

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.



DANGER

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



WARNING

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



CAUTION

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

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 (also available in Spanish) 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 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 interpretation of these instructions for operators who are not fluent in reading English.

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 the 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.



SAFETY



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.



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.

Additional Safety Reminders

- User/operator safety practices, as established 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, 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 indicators 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.



SAFETY



- Walk around the machine and warn all personnel who may be servicing the machine or who are in the machine's path prior to starting. **DO NOT** start until all personnel are clearly away from the machine.

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 BODILY INJURY OR DEATH!**
- **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 charts carefully. They show 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.
- **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 provided.
- **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 this Operator's Manual.
- **NEVER** allow 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) Safety 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 grade, park across the slope and block the tires.



SAFETY



Servicing Safety Reminders

- ALWAYS be aware of and avoid pinch point areas on the machine, such as wheels-to-frame, cylinders-to-frame, and 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.
- ALWAYS wear safety glasses with side shields when striking metal against metal. In addition, it is also 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 the hot engine 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 down 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 in operation to make certain adjustments, place the transmission in neutral, apply the park 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 attachment tool at maximum elevation with the load laterally centered.
- ALWAYS be sure all nameplates, caution 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



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 that the machine be equipped with additional devices (mirrors, rotating beacon, etc.) and be responsible for providing and maintaining such devices.

Personnel Work Platform (PWP) System



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.

The Mandatory Work Platform Safety Rules must be followed to at all times while lifting 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 460, Washington DC 20009; or downloaded from: www.itsdf.org.) The rules apply to the owner, operator and personnel in the work platform.

MANDATORY WORK PLATFORM SAFETY RULES

1. The work platform must comply with ANSI/ITSDF Standard B56.6-2005, Sec. 8.24, "Platforms for Elevating Personnel." (See page 15, "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" switch.
13. Before lifting personnel, the area should be marked to warn others of work by elevated personnel.



SAFETY



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, unless secured by harness and lanyard. 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.
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.



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.

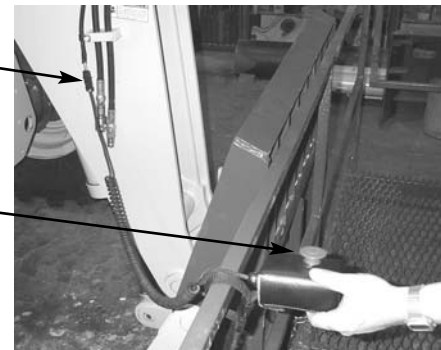
ALWAYS engage the PWP System and follow the Mandatory Work Platform Safety Rules when lifting personnel.

Work Platform System Switch



Electrical Connection

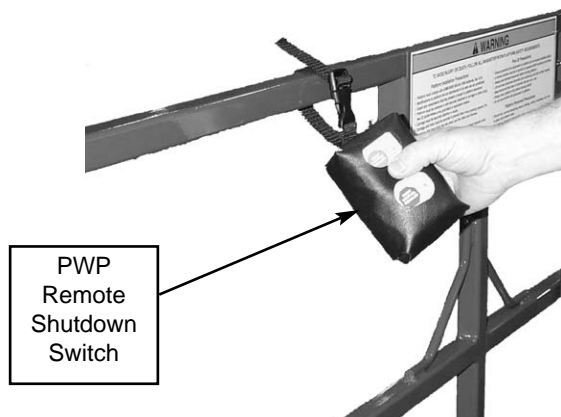
PWP Remote Shutdown Switch



Remote Shutdown Switch With Coiled Wire Connector on 40' and 44' Models



SAFETY



Wireless Remote Shutdown Switch
on 55' Models

Wireless Remote Battery Replacement

1. Remove the four screws from the cover of the wireless remote.
2. Open the cover to gain access to the batteries.
3. Remove the batteries from their holders.
4. Install the replacement batteries in the holder taking care to position the battery terminals as shown in the diagram at the bottom of the battery holder.
5. Replace the cover and install the screws to secure the cover in place.

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 truck, 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.
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.



SAFETY

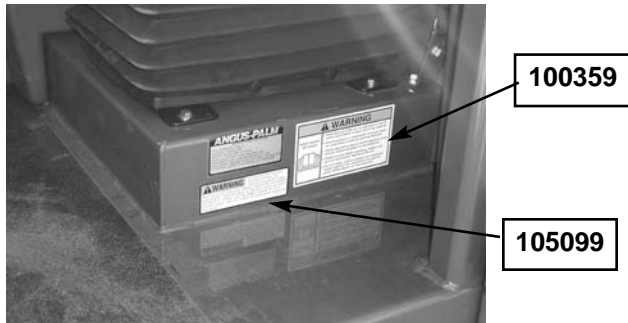
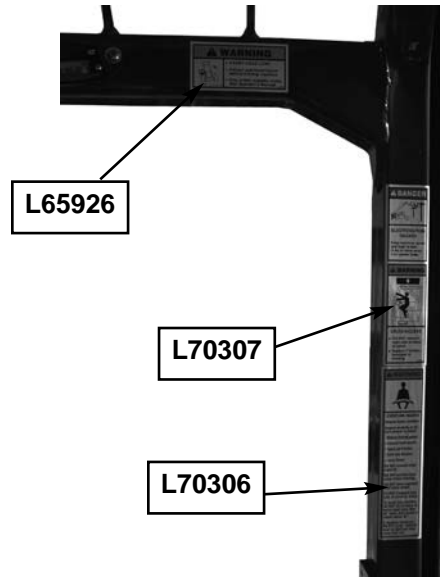


NOTE: *Fall protection should comply with applicable U.S. OSHA regulations: 1910.67 (c)(2)(v) (for General Industry) or 1926.453 (b)(2)(v) (for Construction).*

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



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

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.

DO NOT transport load with jib boom or winch.


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

⚠ WARNING

AVOID INJURY OR DEATH



- Read Operator's Manual (in seat pouch) and all safety signs before using or servicing machine.
- Owner/employer is responsible to ensure users are instructed on safe use and maintenance.
- OSHA regulations require forklift operators to be trained, tested and judged to be competent.
- Check machine before operating. Inspect and service machine per Operator's Manual.
- Do not modify machine without manufacturer's written approval. For information and service parts, contact dealer (or manufacturer).

100359

⚠ WARNING



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

L65926

⚠ WARNING

THE PROTECTION OFFERED BY THIS ROPS/FOPS WILL BE IMPAIRED IF SUBJECTED TO ANY MODIFICATION OR STRUCTURAL DAMAGE AT WHICH TIME REPLACEMENT IS NECESSARY. ROPS/FOPS MUST BE PROPERLY INSTALLED USING FASTENERS OF CORRECT SIZE AND GRADE TORQUED TO THEIR SPECIFIED VALUE. SEAT BELTS MUST BE WORN WHILE OPERATING THIS VEHICLE.

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SAFETY



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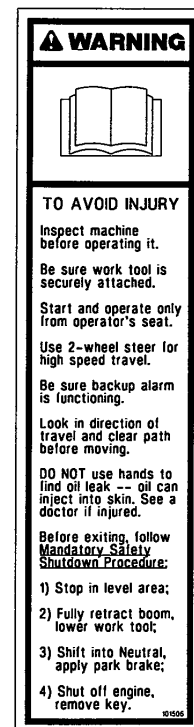
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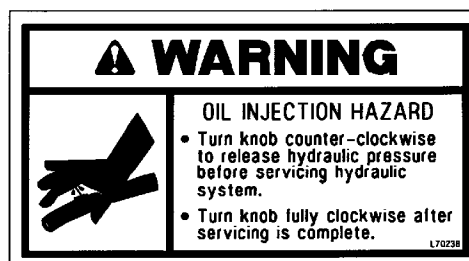
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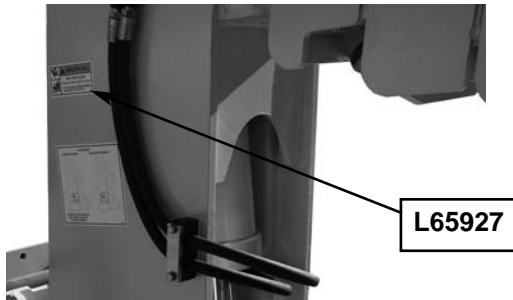
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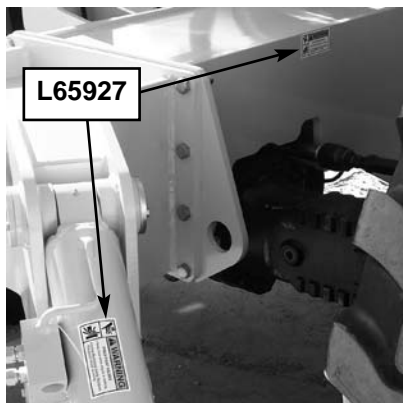
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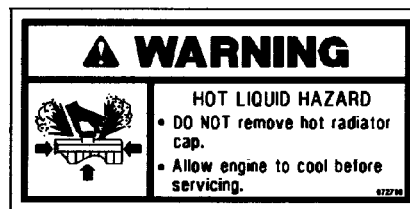
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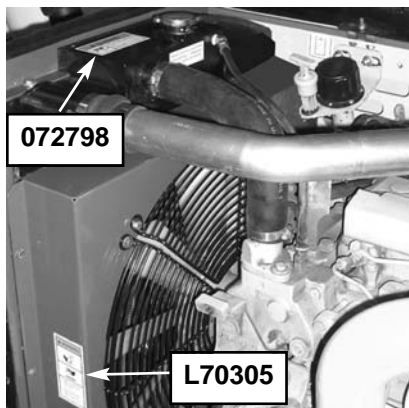
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SAFETY



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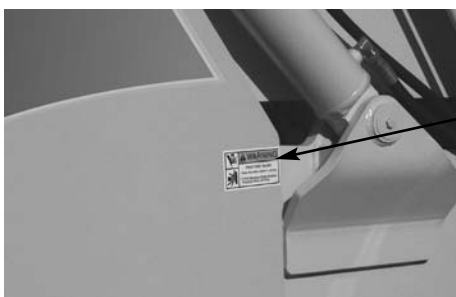
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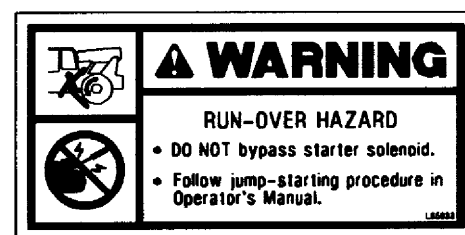
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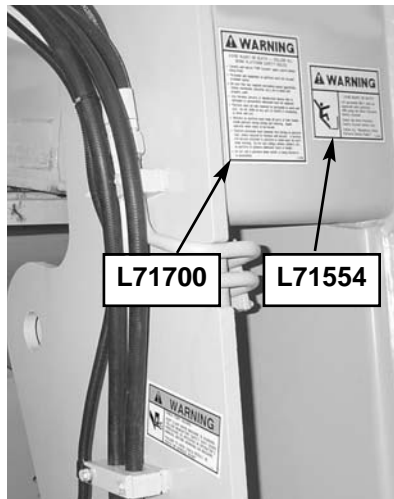
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SAFETY



PWP Safety Decals

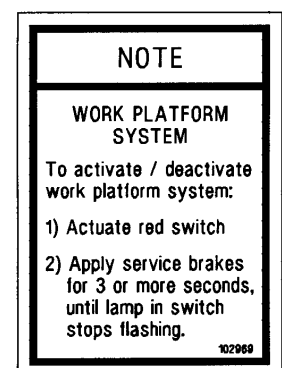
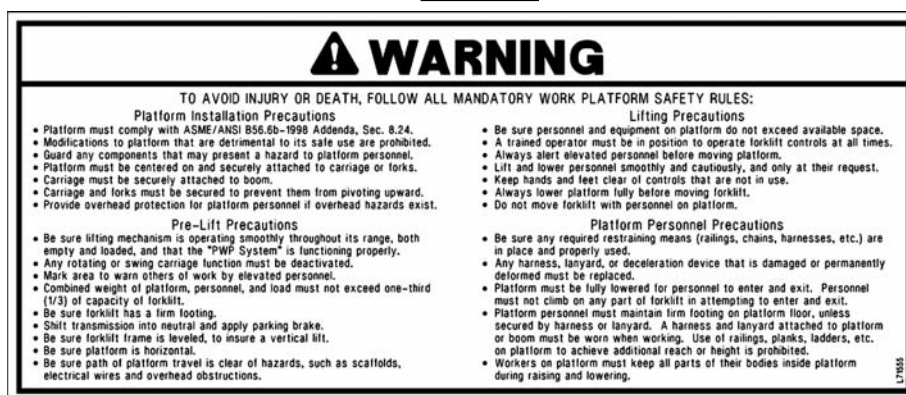


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Chapter 5

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 an unapproved attachment tool.

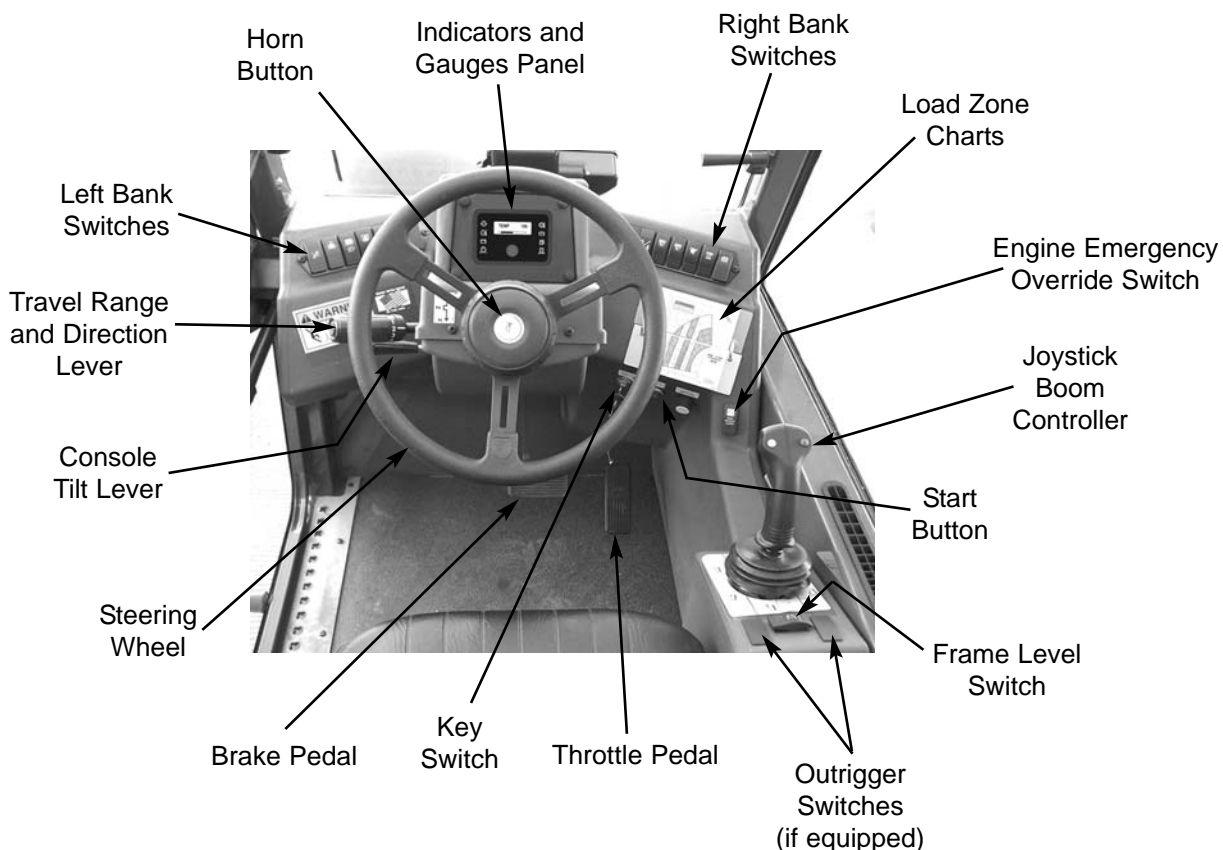
GUARDS AND SHIELDS

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.



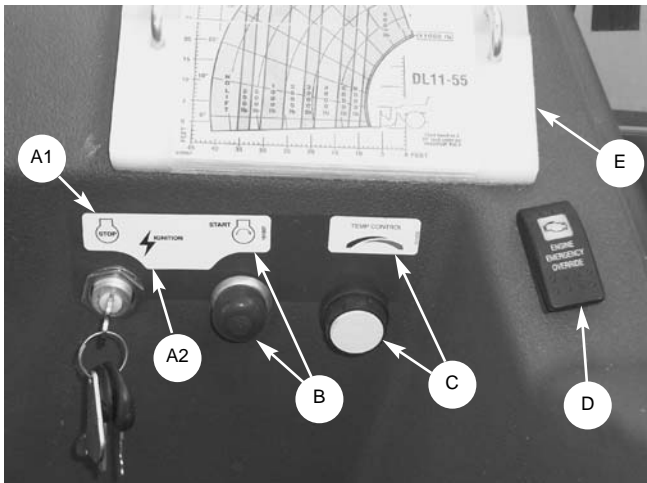
WARNING

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 Compartment Indicators and Controls Locations

DASH AREA



Key Switch, Start Button, Temp Control and Engine Fault Shutdown Override Switch

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

A2 - Keyswitch 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.

B - Start Pushbutton: With keyswitch in the ON position, press the start button to activate the starter. Release it as soon as the engine starts.

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.

C - Temperature Control Knob: This knob is used to adjust the temperature inside the cab when the heater or air conditioner is in use.

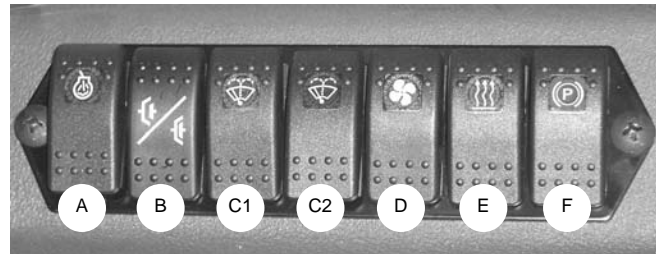
D - Engine Fault Shutdown Override Switch: This switch is located to the far right of the dash, below the load zone charts. Pressing the shutdown override switch will override an engine shutdown signal.

This switch must be pressed within 30 seconds to prevent undesired shutdown of engine. The switch can be overridden for 30 seconds at a time to move the machine to a safe location and to lower the boom to the ground. If the engine shuts down, the ignition switch must be turned off and then back on before the engine can be restarted.

NOTE: Holding the switch continuously "ON" will not reset the 30-second timer.

E - 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.

Right Bank Switches



Right Bank Switches

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

A - Cold Starting Option: This switch activates the injection of an ether agent for faster engine start in cold weather.

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

In the OFF position, the clutch mechanism in the transmission remains engaged when applying the brakes. In the ON position, the clutch mechanism is disengaged while applying the brakes.

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

C1 and C2 - Wiper/Washer: The windshield and top window of the operator's station are each equipped with a wiper and washer mechanism. Switch "C1" operates the wiper and washer on the windshield; switch "C2" operates the wiper and washer on the top window.

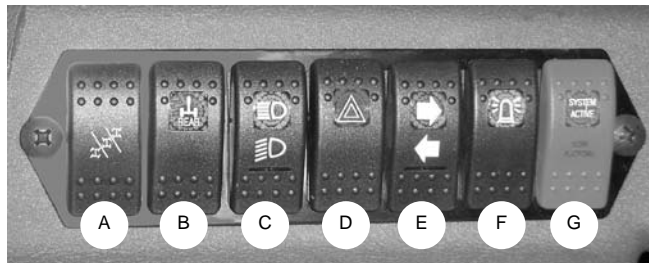
D - Fan Speed: This switch increases and decreases circulation of heated or cooled air throughout the operator's station interior.

E - Heater/AC or Heater: This switch will be either the Heater switch shown or the Heater/AC switch. Pressing the top of the Heater or Heater/AC switch activates the cab heater. Pressing the bottom of the Heater switch turns off the heater. Pressing the bottom of the Heater/AC switch activates the cab air condi-

ioneer. Return the Heater/AC switch to the center position to turn the heater and air conditioner off.

F - Parking Brake: When the machine is shut off, this switch should be depressed to activate the park brake mechanism in the front axle.

Left Bank Switches



Left Bank Switches

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

A - Steer Select: Use “2-wheel mode” for higher speed travel. Use “4-wheel mode” for making tighter turns, usually on jobsite. Use “crab mode” when a small amount of side shift is needed for picking or placing loads. Any mode can be used in forward or reverse travel.

NOTE: *The rear wheels are not self-centering. Use the axle alignment switch to determine when the rear wheels are tracking straight. To obtain the proper steer function selected and better machine tracking, make sure all wheels are in a straight-ahead position before changing the steer mode.*

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

B - Axle Align: Allows the operator to check for straight tracking of the rear wheels. When activated, a green lamp lights on the switch to indicate straight tracking.

C - Lights Option: Work lights can be added to the operator station and boom to provide illumination for forward travel and work operations.

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

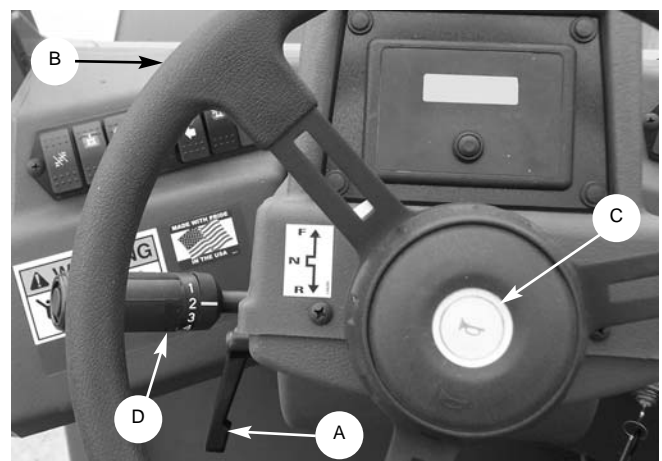
E - Turn Signal Option: This switch is used to indicate the direction of a turn. Depress the right arrow for right turn, depress the left arrow for a left turn.

F - Beacon: When a beacon 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.

G - Personnel Work Platform: This switch is used to activate the Personnel Work Platform (PWP) Safety System. It is a red switch located in the farthest right slot of the left side switch bank. When activated, an amber lamp lights on the switch.

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

Adjustable Steering Console



A - Position Adjust: This console can be adjusted so the steering wheel is placed in a comfortable operating position. Loosen the quick release handle on the left side of the console and re-position the steering wheel. Tighten the quick release handle to lock in place.

B - Steering: The power steering motor is designed to give effortless steering with no shock reaction from the axle wheels to the steering wheel. Turn the steering wheel to the right or left to turn the machine in the direction of wheel turn action.

C - Horn Button: With the keyswitch on, press the center of the steering wheel to activate the horn.

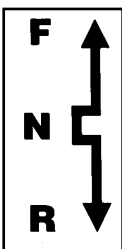
D - Travel Lever: Located on the left side of the console, this lever is used to change travel direction (forward or reverse) and the speed of travel around the jobsite or on a road.

Travel Direction: The selector MUST be in “N” (NEUTRAL) position before the engine can be started.

Position “F” (FORWARD)

Position “N” (NEUTRAL)

Position “R” (REVERSE)



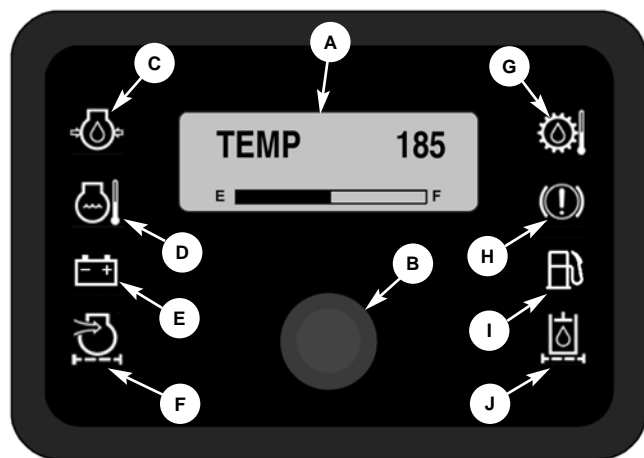
NOTE: Backup alarm automatically sounds with travel lever in Reverse.

IMPORTANT: Care should be taken when down-shifting or reversing, because damage to the transmission can occur if shifting is forced or attempted at too high a speed. Allow engine speed to slow before down shifting or changing direction.

D - Speed Range: Twist counter-clockwise or clockwise to change the transmission speed between low and travel range.

Position “4”	TRAVEL RANGE
Position “3”	UPPER RANGE
Position “2”	MEDIUM RANGE
Position “1”	LOW RANGE

Instrumentation



Instrumentation and Indicator Lamps

A - Gauge Display Panel: This panel alternately displays engine oil pressure, engine coolant temperature, fuel level, hour meter, voltmeter and 250-hour maintenance reminder. By pressing button “B,” the display will change to display a different function.

B - Scroll Button: Pressing this button changes the function displayed in the gauge display panel.

A1 - Fuel Level Gauge: The fuel level is displayed at all times in the lower portion of the display. It indicates the amount of fuel remaining in the fuel tank.

A2 - Engine Coolant Temperature: Press button “B” until “TEMP” is displayed. It indicates the temperature of the engine coolant. Under normal conditions, this should indicate approximately 185°F (85°C).

A3 - Engine Oil Pressure: Press button “B” until “OIL” is displayed. It indicates the engine lubricating oil pressure.

A4 - Voltmeter: Press button “B” until “VOLTS” is displayed. It indicates the voltage output from the alternator.

A5 - Hourmeter: Press button “B” until “HRS” is displayed. It indicates the total operating time of the machine and should be used for keeping the maintenance log.

A6 - Maintenance Reminder: After every 250 hours a reminder will display: “ROUTINE MAINTENANCE IS REQUIRED CHECK OPERATOR’S MANUAL.” Perform the required maintenance, and then clear the message by pressing and holding button “B” until the message is cleared.

NOTE: The maintenance reminder message must display at least 3 minutes before it can be cleared by pressing and holding Button “B”.

Indicators Lamps

C - Engine Oil Pressure Lamp: This lamp indicates whether or not there is sufficient engine lubricating oil pressure. During normal operation, with the engine running, this lamp should be off. During starting and when the ignition is on but 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 or near the FULL mark on the dipstick.

D - Coolant Temperature Lamp: This lamp indicates if the temperature of the engine coolant is too high.

IMPORTANT: If this lamp comes on during normal operation with the engine running, STOP the engine as soon as possible and check the engine

cooling system.

E - Alternator Lamp: 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.

F - Air Cleaner Restriction Lamp: If this lamp comes on, the air cleaner should be checked for a clogged inlet or filter element.

G - Transmission Oil Temperature Lamp: This lamp indicates whether the transmission oil is at the proper temperature. During normal operation this lamp should be off.

IMPORTANT: *If the temperature lamp comes on during normal operation, a problem may exist in the transmission system. Stop the machine as soon as possible and investigate the cause of the problem!*

H - Accumulator Charge Lamp: When the operating pressure is too low, this lamp will come on. A low pressure indication requires recharging the accumulator.

I - Low Fuel Lamp: This lamp indicates a low fuel situation. When it first comes on, there is approximately 2.5 gals. (9.5 L) of fuel remaining. The fuel tank should be filled as soon as possible.

J - Hydraulic Oil Filter Lamp: If this lamp comes on, it indicates that the filter element should be checked for possible replacement.

RIGHT SIDE PANEL

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

A - Frame Leveling Switch: This switch is located on the right side panel behind the boom control joystick. The machine may be tilted slowly 10° to the left or right to level the frame and boom in relation to the ground.

B1 and B2 - Outrigger Option Switches: This option is used to provide greater stability for specific applications. Press the left “B1” switch forward to lower the left outrigger. Press the right “B2” switch forward to lower the



right outrigger. To raise the outriggers, press both switches rearward.



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.



WARNING

Be sure NO persons or equipment are located where the outrigger pads will be positioned.

DO NOT travel with the outriggers extended.

Adequate clearance is required for the retracted outriggers when traveling through doorways or along narrow pathways.

DO NOT attempt to use the outriggers as a hydraulic jack for maintenance, or to level frame, or for other similar uses.

Failure to heed could result in death or serious injury.

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

The boom inner section nose has an attachment-carrying device. The Dynattach® attachment bracket is used for framing and masonry attachment tools. The Dynacarrier® attachment bracket is used for special material handling attachment tools.

Both devices are “self-leveling,” meaning that when the operator tilts the attachment to a desired angle, that angle will be maintained as the boom is raised or lowered, extended or retracted, until a new angle is set.

This machine is equipped with one of two types of boom joystick control handles. The following illustrations and instructions detail the operation of each joystick handle type.

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 brake pedal fully depressed before raising or extending the boom.

NEVER exceed the specified lift or reach capacities of the machine. Serious machine damage and personal injury may result. Refer to the load zone charts in the operator's station or this manual.

If a boom circuit hose should break with the boom up, with or without a load, shut down the machine following the **MANDATORY SAFETY SHUTDOWN PROCEDURE** page 9. **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. **DO NOT** use to transport loads around the job-site. This can cause the load to swing, resulting in either the load dropping or the machine tipping over.

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 zone chart rating for winch applications.

DO NOT tilt the truss boom back more than 45° from horizontal. **DO NOT** attempt to use the 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.

Joystick with Two Buttons:

This joystick handle is equipped with one yellow button and one blue button on the upper rear of the handle. Pressing the left yellow button activates the attachment tilt function. Pressing the right blue button activates the auxiliary hydraulic function.



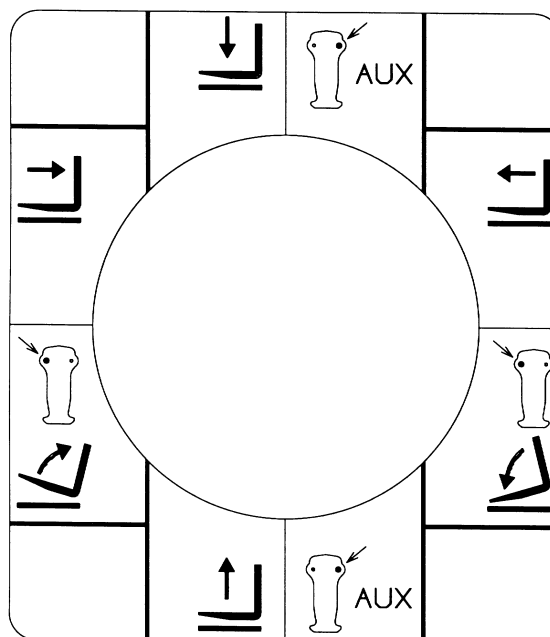
To extend the boom, move the joystick right; to retract the boom, move the joystick left. To raise the boom, move the joystick rearward; to lower the boom, move the joystick forward.

To tilt the attachment tool, press and hold the left yellow button, and then move the joystick handle left to tilt the attachment up, or move the joystick handle right to tilt the attachment down.

To operate the auxiliary attachment hydraulics, press and hold the right blue button on the joystick handle, and then move the joystick handle forward or rearward.

WARNING

When tilting the attachment or operating the auxiliary hydraulics with a two button type of joystick handle, to avoid any unexpected action be sure the joystick is at the “neutral” position before pressing the button.



Two-Button Joystick Function Illustration

Joystick with Four Buttons:

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 controls the function speed of both the attachment tilt and auxiliary hydraulics.



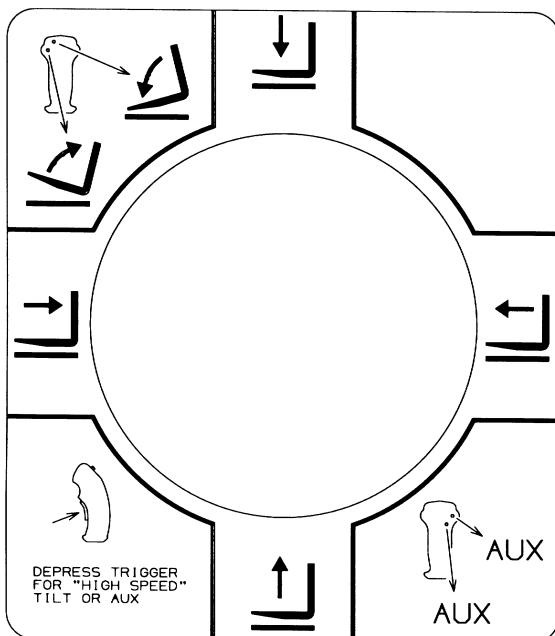
To extend the boom, move the joystick right; to retract the boom, move the joystick left. To raise the boom, move the joystick rearward; to lower the boom, move the joystick forward.

To tilt the attachment tool up, press and hold the lower yellow button on the left side of the joystick handle, and pull on the trigger. To tilt the attachment tool down, press and hold the upper yellow button on the left side of the joystick handle while pulling on the trigger on the front side of the joystick handle.

To operate the auxiliary hydraulics, press and hold either the upper or lower blue button on the right side of the joystick handle while pulling on the trigger.

Pulling on the trigger increases the speed of the attachment tilt and auxiliary hydraulic functions.

NOTE: With the four-button joystick, the handle does not need to be moved to operate the tilt or auxiliary hydraulic functions.



Four-Button Joystick Function Illustration

Speed Control Knobs: The four-button joystick handle also incorporates a manually-adjusted speed control to allow changing factory-set speeds. This speed adjustment is accomplished through the adjustment of the pilot pressure apply valves located in the rear compartment of the machine.

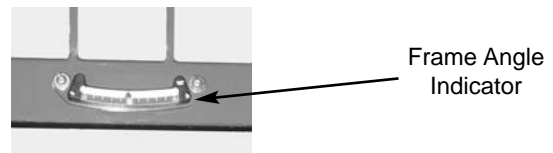
If the machine is equipped with auxiliary hydraulics, there will be two pilot pressure apply valves, each having two speed-control knobs. The upper pilot valve controls the auxiliary hydraulics, and the lower pilot valve controls the attachment tilt function. On the attachment tilt pilot valve, the left 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 used with the auxiliary hydraulics. See illustration on the next page.

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.

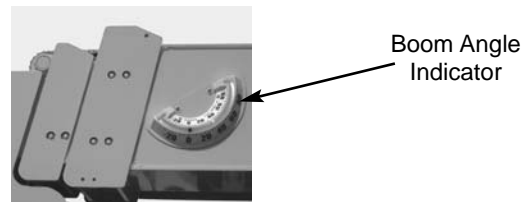
NOTE: There is a locking knob located behind each adjusting knob, which must be loosened before the adjusting knob can be turned. After adjustment has been made, tighten the locking knob to maintain the selected speed.

FUNCTION INDICATORS

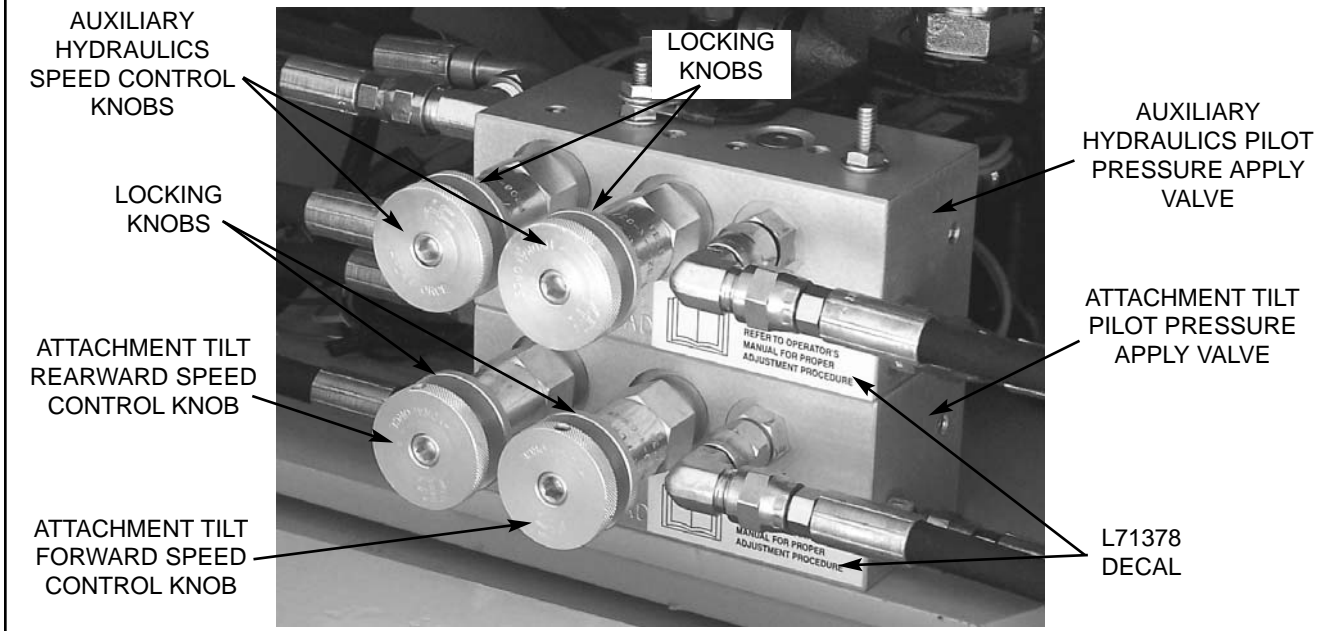
Frame Angle Indicator: Located in front of the operator on the ROPS upper crossmember. Position of the ball shows when the frame is level relative to a sloping ground surface.



Boom Angle Indicator: Mounted on the left side of the outer boom, the position of the ball in the Boom Angle Indicator, shows the angle of the boom relative to the ground surface.



Attachment and Auxiliary Hydraulics Pilot-Pressure Apply Valves



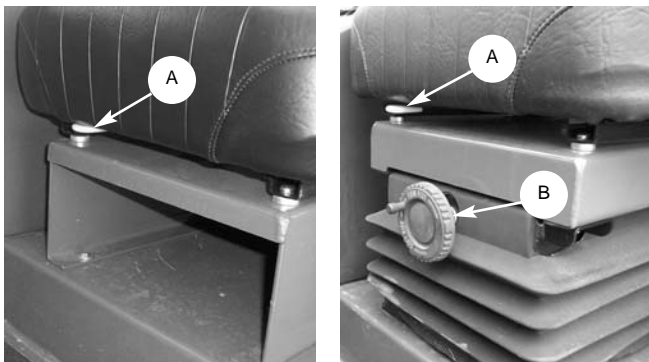
FLOOR AND SEAT

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

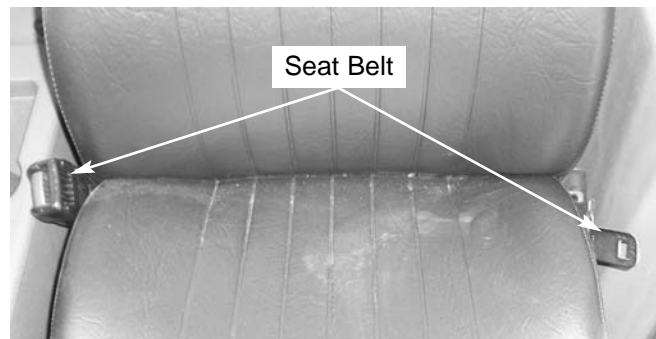
Service Brake Pedal: Pressing this pedal activates the internal braking mechanism on both wheels of the front axle.

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 "A" under the front of the seat actuates the adjustment mechanism.

Suspension Seat Option: In addition to the "A" latch handle for forward and rearward adjustment, this seat has a knob "B" under the front of the seat to adjust the suspension. Turn the knob to the right for a softer ride, and to the left for a firmer ride.



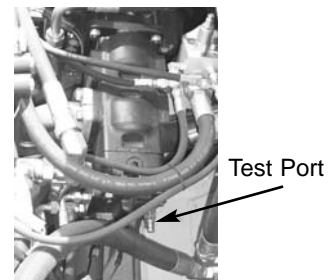
Seat Belt: This machine has a retractable seat belt. Grasp the belt on the left side of the seat pulling the belt over your lap and insert the belt into the buckle on the right side of the seat until you hear it lock in place.



SERVICE AND SAFETY FEATURES

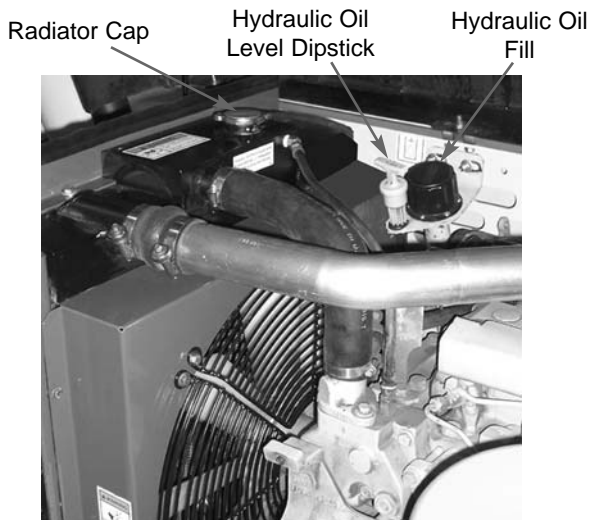
The following indicators are for fluid level and pressure checks.

Hydraulic Test Port: A test port located at the rear of the pump, for installing a test gauge to check hydraulic and steering system pressures.

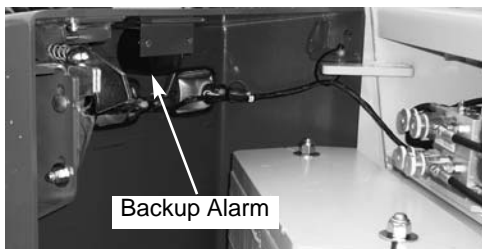


Hydraulic Reservoir Oil Level and Fill Cap: The dipstick is located alongside the fill cap on the rear wall of the powertrain compartment.

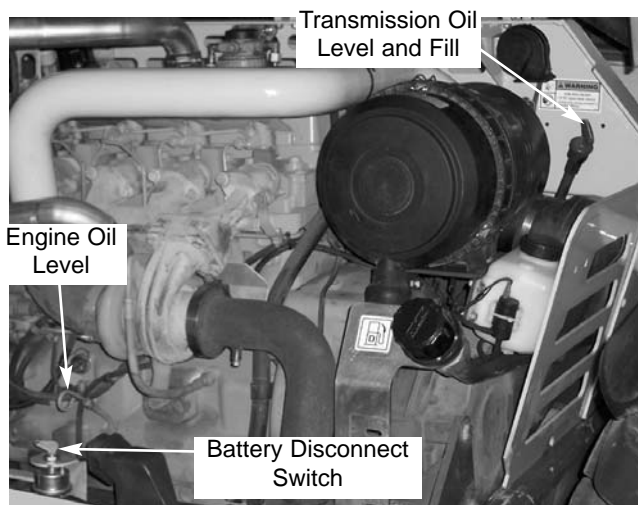
Coolant Level: The coolant can be checked and added through the radiator cap in the engine/power train compartment.



Backup Alarm: Located inside the rear frame cover, the backup alarm produces a loud warning sound whenever the transmission is in reverse.



Transmission Oil Level and Fill Cap: The combination dipstick/fill tube is located toward the front wall of the powertrain compartment.



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

Battery Disconnect Switch: The battery can be disconnected from the electrical system by turning the switch key to the OFF position.

Fuse and Relay Box: This box is located on the front inside wall of the storage compartment behind the operator's compartment. A decal provides a quick reference guide for troubleshooting electrical functions.



Side Rear View Mirror: This mirror is located on top of the frame leveling cylinder mount. It provides the operator with a view of the area on the right side and behind the machine.

Locking Powertrain Covers: To tilt back the mid-frame access cover and the powertrain cover, pull out the lock mechanism handle and tilt up. Two gas-charged springs help tilt back each cover, and keep them raised.

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



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.

ENGINE BREAK-IN

Your 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

Every Pre-start Inspection must include more than checking the fuel and oil levels. It is the operator’s responsibility to inspect the machine before the start of each workday. It is also 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.”

The Pre-start Inspection and Daily Maintenance Handbook provided with your Telescopic Handler can be used as a guide for the “Walk-Around Inspection.”

BEFORE STARTING ENGINE

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

STARTING THE ENGINE

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 the machine, and wait until everyone is clear.



ALWAYS fasten the seatbelt BEFORE starting the engine. Leave the park brake applied until the engine is running and you are ready to operate the machine.

The following procedure is recommended for starting the engine:

1. Grasp the hand holds 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. Adjust the position of the steering wheel tilt console to provide comfortable handling.
5. Turn the keyswitch to “ON” position and press the start button. If the button is released before the engine starts, turn the keyswitch to “OFF” position, and allow the starter to stop before attempting to start the engine again.

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

6. After the engine starts, allow a 1-2 minute warm-up time before attempting to operate the controls.
7. Check that indicators are in their normal operating condition.
8. 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-start procedure.

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 tires.
2. Fully retract the boom and lower the attachment to the ground. Idle the engine for gradual cooling.
3. Place controls in neutral. Set the parking brake switch to “ON.”
4. Turn the keyswitch key to the “OFF” position. Remove the key.
5. Unfasten the seatbelt, and grasp the hand holds while climbing out of the operator’s compartment.

FIRST TIME OPERATION

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



CAUTION

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 a speed range and in Forward or Reverse. Turn off the parking brake switch and move slowly, while testing the steering and brakes. Stop and operate all boom functions and frame leveling controls, checking for smooth responses.

Apply the service brakes, 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.

ENGINE SHUTDOWN PROTECTION

The engine is equipped with a WARNING and SHUTDOWN feature that warns users of low engine oil pressure and of high engine coolant temperature. If the problem is not corrected, the engine power will be reduced automatically, or the engine will shut down.

Engine Oil Pressure

There are two low oil pressure protection features: Low Oil Pressure WARNING, and Low Oil Pressure SHUTDOWN.

At the Low Oil Pressure WARNING set-point, the warning lamp in the engine override switch will flash, and a slow engine power derate will begin. But if the oil pressure rises above the Low Oil Pressure WARNING set-point, power will slowly increase until the engine is back to full power. The lamp will continue to flash until the power has returned to normal, even if the fault condition has been corrected and the recovery is in process.

At the Low Oil Pressure SHUTDOWN set-point, the warning lamp in the engine override switch will light continuously, and a fast engine power derate will begin. If the oil pressure does not rise above the SHUTDOWN set-point within 30 seconds, the engine will shut down. However, if the oil pressure rises above the Low Oil Pressure SHUTDOWN set-point within 30 seconds, then the power derate speed will revert to the Low Oil Pressure WARNING speed of reaction.

Engine Coolant Temperature

There are two coolant temperature protection features: High Coolant Temperature WARNING, and High Coolant Temperature SHUTDOWN.

At the High Coolant Temperature WARNING set-point, the warning lamp in the engine override switch will flash, and a slow engine power derate will begin. But if the coolant temperature drops below the High Coolant Temperature WARNING set-point, the power will increase slowly until the engine is back to full power. The lamp will continue to flash until the power has returned to normal, even if the fault condition has been corrected and the recovery is in process.

At the High Coolant Temperature SHUTDOWN set-point, the warning lamp in the engine override switch will light continuously, and a fast engine power derate will begin. If the coolant temperature does not drop below the SHUTDOWN set-point within 30 seconds, the engine will shut down. However, if the coolant temperature drops below the High Coolant Temperature SHUTDOWN set-point within 30 seconds, then the power derate speed will revert to the High Coolant Temperature WARNING reaction speed.

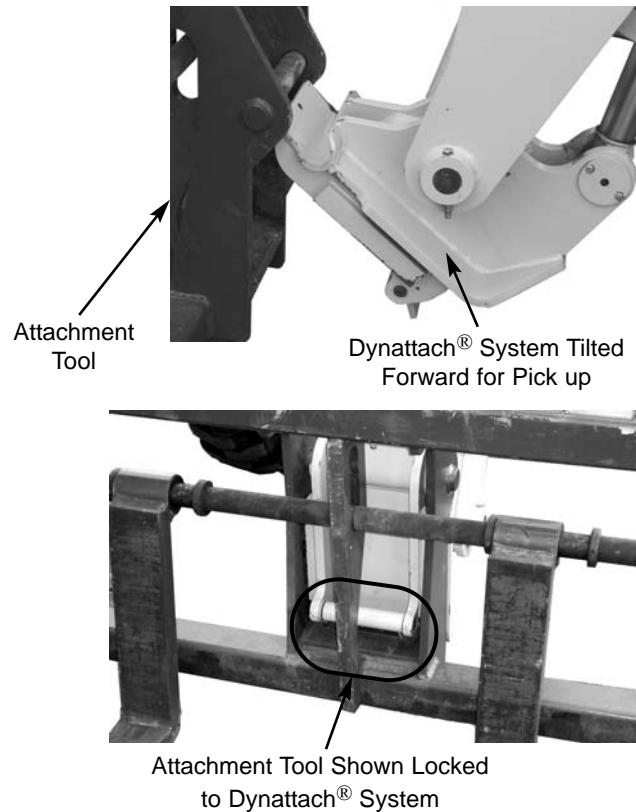
PARKING BRAKE

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 axle is the primary means for 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 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 two types of Gehl attachment devices: 1.) the Dynattach® quick-attach system, which has a quick-release hookup and locking mechanism for mounting framing and masonry type attachment tools to the boom nose, and 2.) the Dynacarrier® quick-attach system, which has a quick-release locking mechanism that uses a single lock lever control for attaching and detaching material handling type attachment tools.

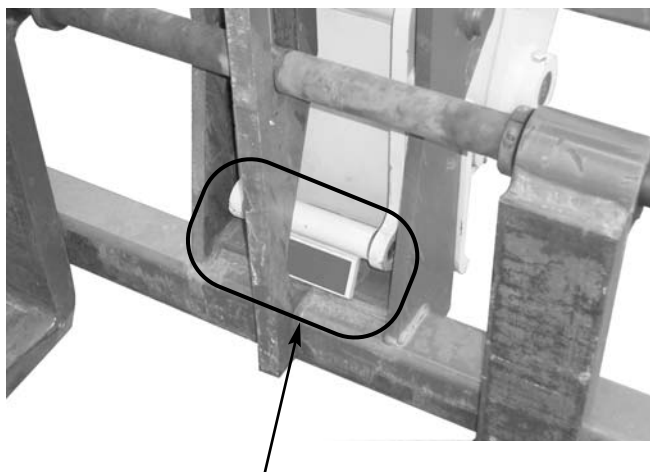


Dynattach® System Attaching Detail

Attaching-Dynattach® Quick-attach System

To pick up an attachment tool, proceed as follows:

1. Raise the boom slightly and extend it 2 or 3 feet (600 to 900 mm) for better visibility. 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 Dynattach System.
5. For an attachment tool with auxiliary hydraulics, connect hoses to the quick-connect connectors on the boom nose.



Attachment Tool Shown
Unlocked for Release from
Dynattach® System

Dynattach® System Detaching Detail

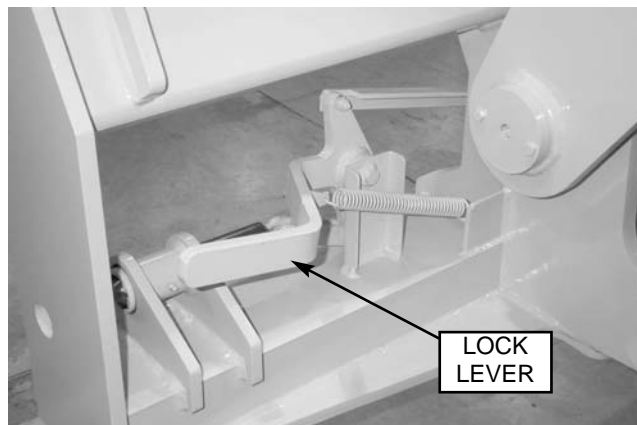
Detaching-Dynattach® Quick-attach System

To detach the attachment tool, proceed as follows:

1. Raise the boom slightly and extend it 2 or 3 feet (600 to 900 mm) for better visibility. Lower the boom until the attachment tool is approximately 12" (300 mm) off the ground.
2. Roll back the carrier as far as it will go. When the carrier is rolled back completely, perform the **MANDATORY SAFETY SHUTDOWN PROCEDURE** (Safety chapter p. 9).
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 that it is in position to re-lock onto the next attachment tool.
4. Tilt the tool carrier 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.

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 tool carrier forward. Slowly back the machine until the attachment tool is free from the boom nose.



Dynacarrier® Quick-attach System

Attaching-Dynacarrier® Quick-attach System

To pick up a bucket or material handling carriage tool, proceed as follows:

1. Rotate the lock lever completely to the left (counter-clockwise, as viewed from the operator's station) to fully retract the lock pins.
2. Raise the boom slightly and extend it 2 or 3 feet (600 to 900 mm) for better visibility. Tilt the tool carrier forward.
3. Align the tool carrier squarely with the back of the attachment tool.
4. Slowly extend the tool carrier and tilt it forward until the support pins on each side are in-line with and slightly below the hookup ears on the back side of the attachment tool.
5. Slowly drive the machine forward, and, at the same time, roll the tool carrier back to engage the hookup ears on the attachment tool. Also, establish proper alignment of the carrier lock pins to the attachment tool.
6. Stop forward travel when the hookup ears are engaged, but continue to roll the tool carrier back to pick the attachment tool off the ground. When the tool carrier is rolled back completely, perform the **MANDATORY SAFETY SHUTDOWN PROCEDURE** (Safety chapter p.9).
7. With the engine off, leave the operator's station, and swing the lock lever completely to the right (clockwise, as viewed from the operator's station) to fully engage the lock pins.
8. For an attachment tool with auxiliary hydraulics, connect the hoses to the quick-connect connectors on the boom nose.

WARNING

To prevent unexpected and undesired attachment tool release from the boom carrier, be sure to properly secure the quick-release lock pins by rotating the lock lever all the way to the right or inside.

Modifications, alterations to, or use of attachment tools not authorized by Gehl Company can void the warranty and cause machine damage, and may result in serious personal injury or death.

Detaching-DynacARRIER® Quick-attach System

To detach the attachment tool, proceed as follows:

1. Raise the boom slightly and extend it 2 or 3 feet (600 to 900 mm) for better visibility. Lower the boom until the attachment tool is approximately 12" (300 mm) off the ground.
2. Roll back the tool carrier as far as it will go. When the tool carrier is rolled back completely, perform the **MANDATORY SAFETY SHUTDOWN PROCEDURE** (Safety chapter p. 9).
3. With the engine off, leave the operator's station, and rotate the lock lever completely to the left (counter-clockwise, as viewed from the operator's station) to fully retract the lock pins.
4. If the attachment tool has auxiliary hydraulics, disconnect the hoses from the quick-connects on the boom nose.
5. Start the engine and tilt the tool carrier forward. Slowly back the machine until the attachment tool is free from the boom carrier.

SELF-LEVELING

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

GENERAL MACHINE OPERATION

WARNING

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

Use proper grab handles, **NOT** the steering wheel or control levers as handholds when mounting or 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 for 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. Make sure you know where you will make load pickups, lifts, and turns. Look over the terrain of the jobsite for holes, obstacles, slippery surfaces, soft or deep mud.
6. Check clearances of ramps, doorways and passage ways. 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 shall 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 the directions.

Grade and Slope Precautions

The Telescopic Handler complies with industry stability tests requirements and is stable when properly operated. However, improper operation, faulty maintenance, or poor housekeeping may contribute to a condition of instability and defeat the purpose of the standard.

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.

Handle only loads within the capacity limits of the machine, and that 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 a up or down slope or grade that exceeds 7% or 4° grade.
2. DO NOT travel up or down a grade or slope that exceeds 22% or 12° grade while loaded.
3. DO NOT place or retrieve loads on a side hill with a slope or grade that exceeds 12% or 7° 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 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 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. Avoid turning if possible and use extreme caution on grades, ramps or inclines. Normally travel straight up and down.



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 tool raised just enough to clear the ground.

Traffic Flow Patterns

For safety, know and understand the traffic flow patterns of your jobsite and the Telescopic Handler hand signals. Use signal persons and make sure you can see the signal person and acknowledge the signals given. Refer to the safety hand signal illustrations on the next page.

The backup alarm automatically sounds when the travel lever is in Reverse. Care should be taken when down shifting or reversing because damage to the transmission can occur if shifting is forced or attempted while traveling.

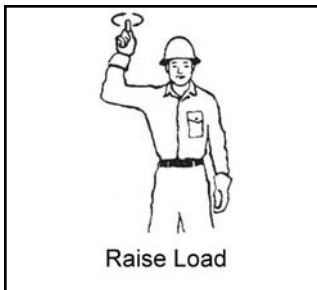
When ramps must be used in transporting loads with the machine, the following shall be the minimum widths for safe travel:

- Compacted dirt, gravel, etc. - 12 ft. (3.6 m)
- Woodboard, concrete, etc. - 10 ft. (3 m)

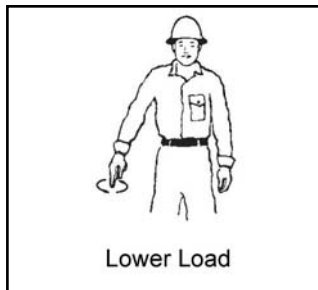
Permanent aisles, roadways, passageways, floors and ramps should be marked or defined in some fashion. Permanent or temporary protrusion of loads, equipment, material and construction facilities into the usual operating area should be guarded, clearly and distinctively marked, or clearly visible.

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

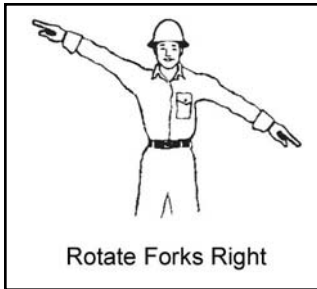
Safety Hand Signals



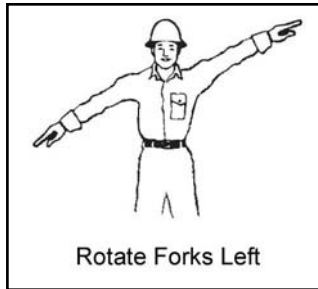
Raise Load



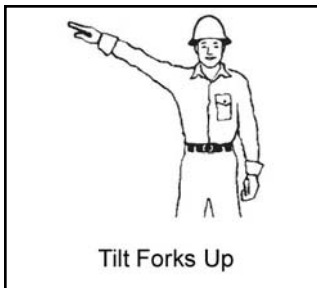
Lower Load



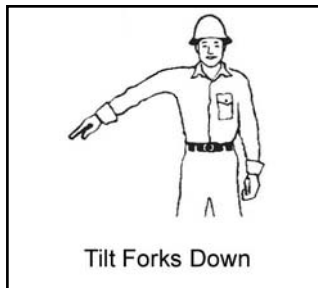
Rotate Forks Right



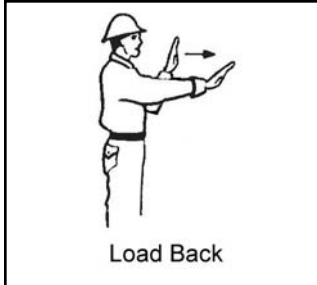
Rotate Forks Left



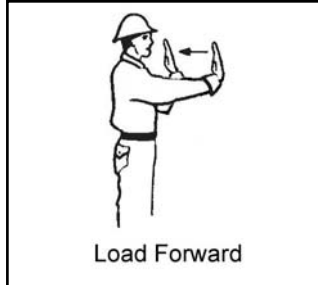
Tilt Forks Up



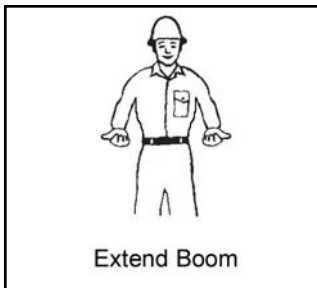
Tilt Forks Down



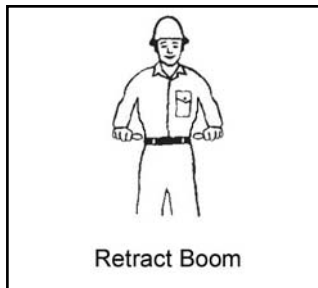
Load Back



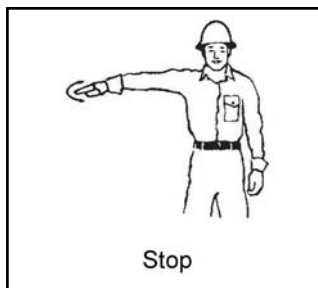
Load Forward



Extend Boom



Retract Boom



Stop

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

Provision 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 means should be used to prevent movement during loading and unloading.

DO NOT move railroad cars or 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 attempt to work 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 amount away from neutral. Then, after movement has started, the control can be eased to full movement. Use the same feathering technique to stop the motion.

WARNING

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

The Mandatory Work Platform Safety Rules must be adhered to at all times while elevating personnel.

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 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.

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 tip 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. 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.

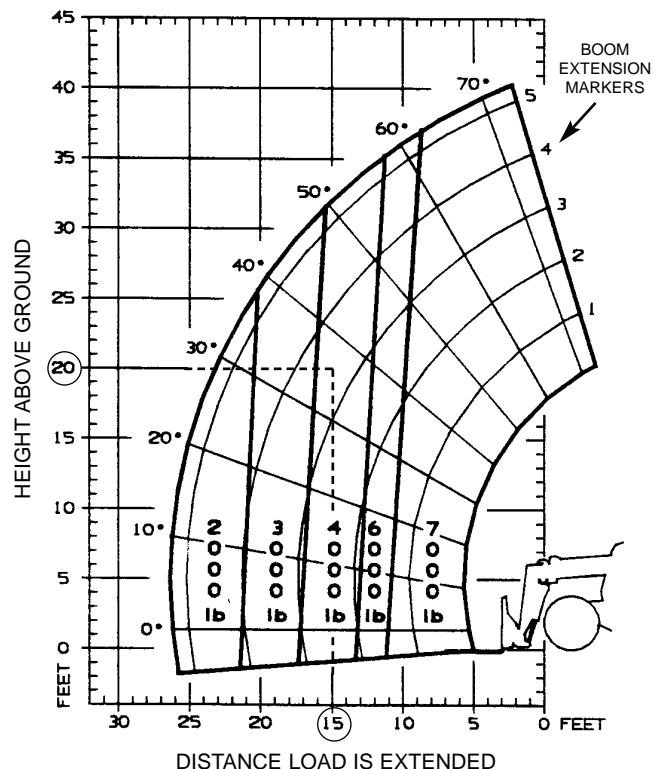
Load Capacity and Reach

The machine has flip-charts in the operator’s station that provide, at a glance, the 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 this 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 without outriggers, wants to raise a 3000 lb. load 20 feet high, and can only get to within 15 feet of the load placement point. Can this be done within the capacity of the machine?



Typical Load Zone Chart

Analysis: See “Typical Load Zone Chart” above.

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 up to a 4000 lb. load can be placed in that zone.

During placement, the operator should observe when the arc reference number “4” on the boom is visible and stop. The operator knows the maximum safe extension distance with the 4000 lb. load has been reached.

WARNING

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

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 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 squarely and slowly 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 the view, have a helper direct the operator. Maintain ground speed consistent with ground conditions and which 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 gears 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 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 tip or fall.

2. Set the parking brake, hold the service brake pedal in fully applied position 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. Continue the feathering technique and 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.

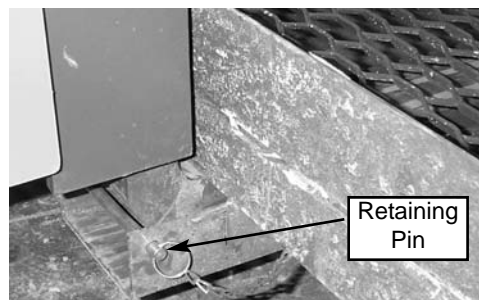
Installing a Personnel Work Platform (PWP)

WARNING

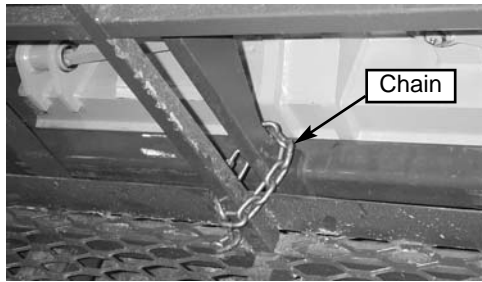
The machine must not be used to lift or carry personnel or be fitted with any form of personnel work platform unless fitted with the optional PWP System.

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.



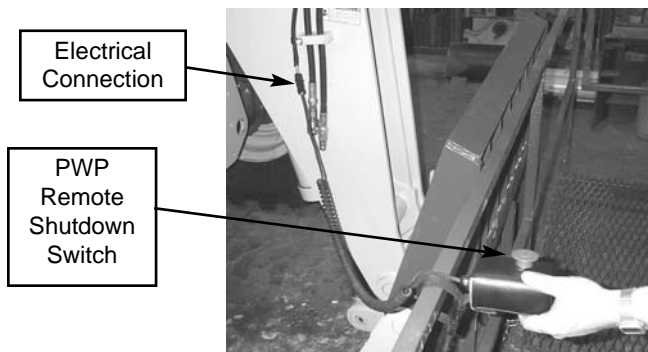
3. Secure the forks from pivoting upward in case the PWP is lowered onto an obstruction. This can be accomplished by using the chain supplied with the PWP, to secure the lower portion of the PWP to the bottom of the carriage, as shown.



! WARNING

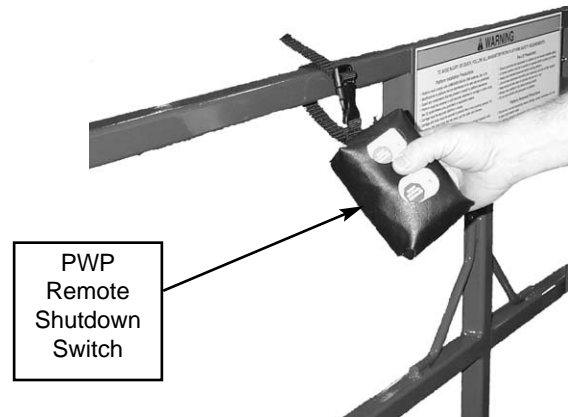
The PWP must meet ANSI/ITSDF B56.6-2005, Section 8.24. (See page 15 in the Safety chapter for PWP design requirements.) If the PWP being used does not offer means to secure the PWP to the forks and to secure the forks from pivoting, as shown in steps 2 and 3, then an alternate method must be used.

4. On 40' and 44' models, 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 on 40' and 44' Models

5. On the 55' model, the remote shutdown switch is wireless-operated. Secure the remote shutdown switch to the PWP using the strap attached to the switch, as shown.



Wireless Remote Shutdown Switch on 55' Model

6. Secure the lanyard from the body harness to the PWP (or the boom). Each person in the PWP must have a body harness with a lanyard attached to the PWP (or the boom).

Lifting Personnel

The Telescopic Handler is primarily intended for use as a material handler. It should only be used to lift 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 lift personnel, then use only an approved work platform, lift personnel only with the PWP System activated, and follow the "Mandatory Work Platform Safety Rules" (Safety chapter p. 13).

If the Telescopic Handler is equipped with a PWP System and is to be used for lifting personnel, the system must be activated, by the "PWP System" mode switch, which is located in the left switch bank. 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 54 for PWP System checking procedure.)

When the PWP System is active:

- transmission is de-clutched into Neutral,
- parking brake is applied,
- rear axle stabilizer cylinder is locked,
- frame leveling speed is reduced,
- 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 the factory pre-set limits before the boom control joystick will function, and
- For 40' and 44' models, 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 red button will disengage the boom control joystick, and stop all platform movement. The remote shutdown switch box is supplied with a coiled electrical cable, which must be connected to the outlet on the front of the innermost boom section near the carriage. The switch must be accessible to the platform personnel at all times when the platform is to be moved.
- For 55' model, remote shutdown switch is activated, meaning that the switch must be "on" for the boom control joystick to function. Pressing the red button will disengage the boom control joystick and stop all platform movement. The remote shutdown switch box is a wireless remote control, so there is no direct connection to the Telescopic Handler. The switch must be accessible to the platform personnel at all times when the platform is to be moved.

To de-activate the PWP system, apply the service brakes 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!

Stabilizer System

This is an additional safety function while elevating loads for placement. At a pre-determined boom angle, the stabilizer cylinder on the rear axle will lock up. When this happens, the parking brake activates and the frame leveling function slows down. Other than moving the boom and slowly leveling the frame, the machine will not be able to move until the boom is lowered below the pre-determined angle.



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.

The truss boom attachment tool should **ONLY** be used to lift and place loads when the machine is in a stationary position. **DO NOT** use to transport loads around the jobsite. This can cause the load to swing, resulting in either the load dropping or machine tipping over.

SUSPENDED LOADS

DO NOT exceed the Telescopic Handler capacity as equipped for handling suspended loads. Only lift the load vertically and NEVER drag it horizontally. Use tag lines to restrain load swing whenever possible.

The handling of suspended loads by means of the 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. The rigging equipment must be in good condition and comply with U.S. OSHA regulation 1910.184, “Slings,” or 1926.251, “Rigging equipment for material handling.”
2. The rigging equipment must be secured to the forks such that it cannot slip or slide either sideways or fore and aft.
3. The capacity of the fork(s) and the machine (whichever is less) must not be exceeded.
4. The load center must remain at 24” (610 mm) or less.
5. No lifting of material may be done when anyone is on the load, rigging or forks.
6. Multiple pickup points on the load are preferred to prevent the load from rotating, but a single pickup point may be used if one or more tag lines are utilized. And, of course, the load must never be positioned over personnel at any time.

MATERIAL HANDLING BUCKET TOOL APPLICATION

IMPORTANT: *The 55’ model is not intended for ground or material pile engagement. The bucket should be used for light-duty site cleanup only.*

Material Densities

The table on this page lists densities for some common materials that could be carried in a Telescopic Handler bucket tool. The densities listed are average values and intended only as a guide.

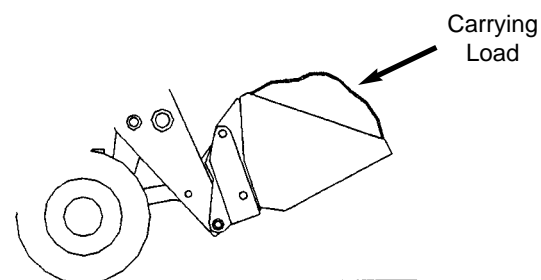
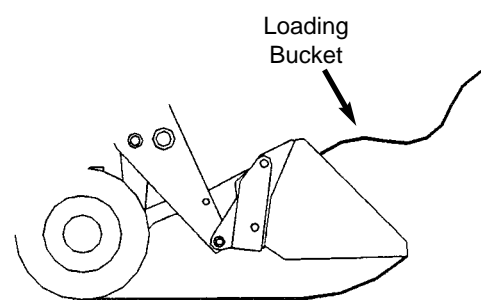
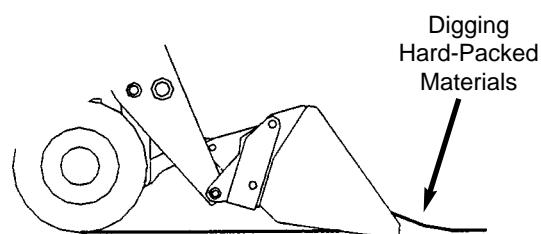
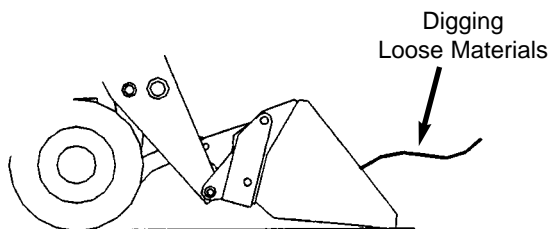
Table of Common Materials & Densities		
Material	Density in (lb/yd ³)	Density in (kg/m ³)
Ashes	945-1350	560-800
Brick-common	3024	1795
Cement	2970	1760
Charcoal	621	370
Clay	2160-2700	1280-1600
Coal	1431-1701	850-1010
Concrete	3105	1840
Cinders	1350	800
Coal-anthracite	2538	1505
Coke	810	480
Earth-dry loam	810	480
Earth-wet loam	1755	1040
Granite	2511-2997	1490-1780
Gravel-dry	1782	1060
Gravel-wet	2430	1440
Gypsum-crushed	3105	1840
Iron Ore	3915	2320
Lime	1620	960
Limestone	2430	1440
Manure-liquid	1755	1040
Manure-solid	1215	720
Peat-solid	1269	755
Phosphate-granular	2430	1440
Potash	1836	1090
Quartz-granular	2970	1760
Salt-dry	2700	1600
Salt-Rock-solid	3645	2160
Sand-dry	2916	1730
Sand-wet	3375	2000
Sand-foundry	2565	1520
Shale-crushed	2430	1440
Slag-crushed	1890	1120
Snow	405-1350	240-800
Sulpha	2565	1520
Taconite	2889	1715

Digging and Loading

Refer to the illustration on the next page. Retract and lower the boom, then tilt the bucket’s cutting edge down into contact with the ground. Drive the bucket into the material. As the engine loads, roll the bucket back slowly and, at the same time, decrease travel speed.

IMPORTANT: *ALWAYS fully retract the boom before driving into material.*

NOTE: *When attempting to fill the bucket while working with most hard-packed materials, it will usually be necessary to raise the boom while rolling back the bucket.*



Digging, Loading and Carrying Material

When the bucket is filled, back the machine away from the material and roll back the bucket before proceeding to the dumping area.

WARNING

DO NOT drive too close to an excavation or ditch. **BE SURE** the surrounding ground has adequate strength to support the weight of the machine and load.

Dumping the Load onto a Pile

Carry the loaded bucket as low as possible until reaching the pile. Slowly stop forward motion, then raise and extend the boom high enough so that the bucket clears the top of the pile. Then slowly move the machine ahead to position the bucket, and dump the material on top of the pile. Empty the bucket. Back the machine away while retracting and lowering the boom, and rolling back the bucket.

Dumping the Load into a Truck

Carry the loaded bucket low and approach the truck or trailer box, square with the side of the box. Stop as close to the side of the box as possible while still allowing clearance for raising and extending the boom. Raise and extend the boom until the bucket clears the top of the box, and slowly position the bucket over the inside of the box. Then tilt the bucket forward. After the material is dumped, slowly back away from the box, and then retract and lower the boom while rolling back the bucket.

Dumping the Load over an Embankment

Carry the loaded bucket as low as possible while slowly traveling toward the dumping area. Stop the machine at the position where the bucket extends half-way over the edge of the embankment. Then tilt the bucket forward, and raise and extend the boom to dump the material. After the material is dumped, slowly back away from the embankment while retracting and lowering the boom, and then rolling back the bucket.

WARNING

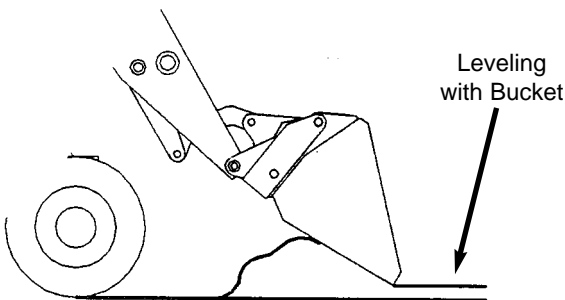
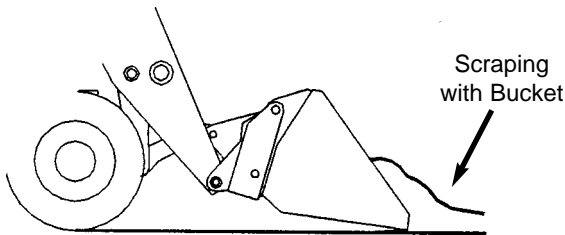
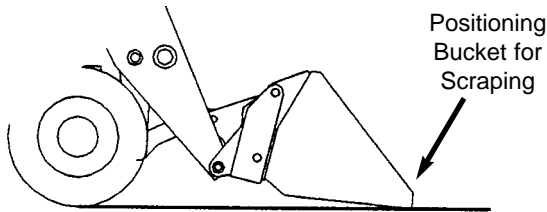
ALWAYS carry a loaded bucket as close to the ground as possible. For additional stability when operating on inclines, **ALWAYS** travel with bucket end of the machine toward the top of the incline.

Scraping with a Bucket

Refer to the illustration on the next page. For scraping, the machine should be operated in the forward direction. First, position the boom retracted and down. Next tilt the bucket cutting edge forward at a slight angle. Then travel slowly forward. With the bucket in this position, material can flow over the cutting edge and collect inside the bucket.

Leveling with a Bucket

First, drive the machine to the outer edge of the area to be leveled. Then, with the boom retracted and down, tilt the bucket forward to place the bucket cutting edge at a 30 to 45 degree angle to the surface being leveled. Next, drive the machine rearward while feathering the boom control joystick, dragging the dirt and, at the same time, leveling it.



Scraping and Leveling with Bucket

ROAD TRAVEL

For short distance highway travel, attach a Slow-Moving Vehicle (SMV) emblem (purchased locally) to the back of the Telescopic Handler. Activate the hazard lights on the machine. 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 dri-

ving on public highways is prohibited, transport the machine using a vehicle of appropriate size and capacity.

TRANSPORTING BETWEEN JOBSITES

When transporting the Telescopic Handler, know the overall height to allow for clearance of obstructions. Remove or tape over the Slow-Moving Vehicle (SMV) emblem if it will be visible to traffic.

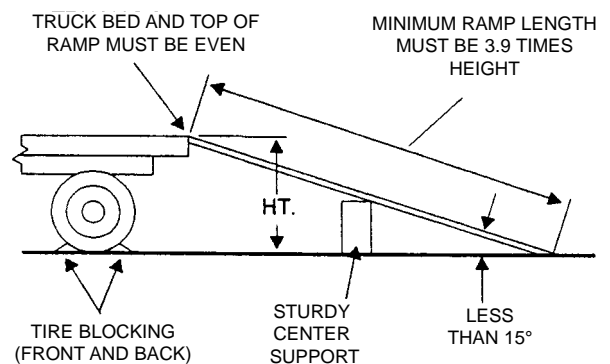
ALWAYS abide by the following recommended procedures and guidelines when using ramps to load the machine onto (or unload it from) a truck or trailer. Failure to heed can result in damage to equipment and serious personal injury or death!

Tie-down slots are provided for inserting chains through to secure the machine while transporting.



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 (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. Tie-down slots are provided on the front and rear sides of the frame structure.

 **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 chains and binders or steel cables, to prevent any movement while transporting.

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.

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 in the event that the machine 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 vehicle 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 that your dealer forward this information to Gehl Company.

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 (SAFETY chapter p. 9)** before lubricating or servicing this equipment.

NOTE: The *MAINTENANCE* chapter 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 types of recommended 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.

GREASING

Refer to the illustration and listing on the next page 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.

Hydraulic System Reservoir



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

Capacity:
45 Gallons (170 Liters)

Transfer Case



Use SAE 40W motor oil.
Capacity:
3 Quarts (2.8 Liters)

All Grease Fittings



Use **No. 2 Lithium-based Grease**

Engine Crankcase Oil



Ambient Temperature

Grade*

-22°F - 104°F (-30°C - 40°C)	SAE 5W-30
-13°F - 104°F (-25°C - 40°C)	SAE 10W-30
-13°F - 122°F (-25°C - 50°C)	SAE 10W-40
-4°F - 122°F (-20°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)

Axle Gear Oil



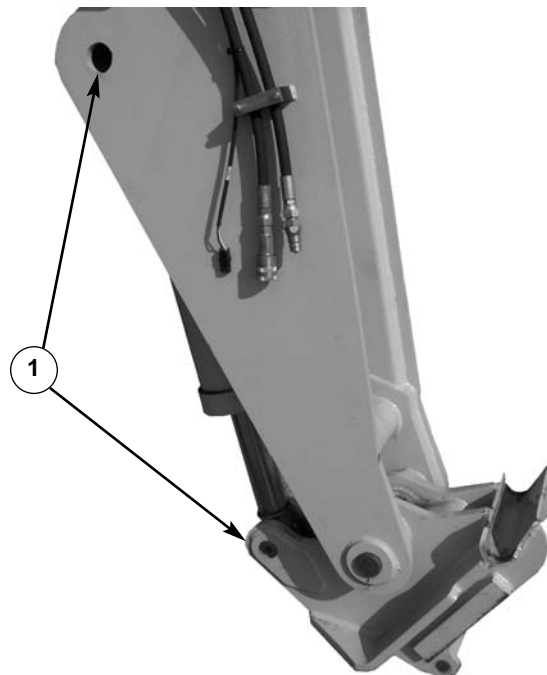
Use API-GL-5 80W-90
Differential Capacity:
12 Quarts (11.3 Liters)
Planetary Capacity (each side):
1.4 Quarts (1.3 Liters)

Transmission Oil



Use Sunco Multi-ATF or equivalent
Capacity:
12 Quarts (11.3 Liters)

FILTER REFERENCE CHART	
TYPE	PART NUMBER
Engine Oil	102173
Engine Fuel	Primary 105794 Secondary 105795
Air Filter	Primary 105070 Safety 105071
Hydraulic Return	L99459
Hydraulic Strainer	L69358
Transmission Oil	L99440

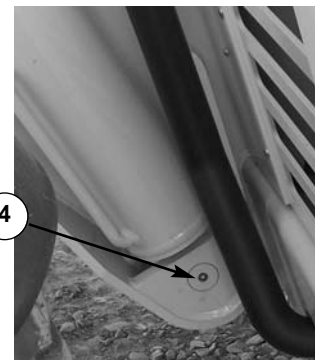
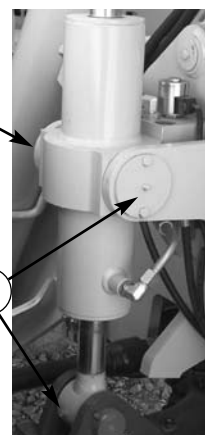
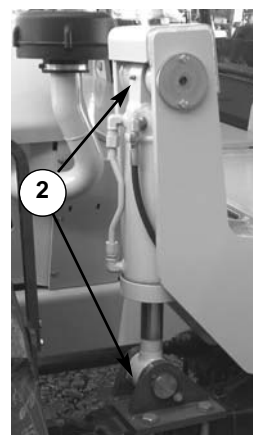
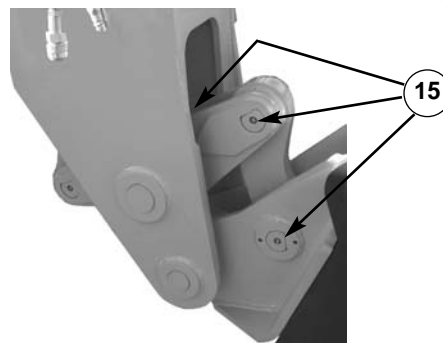


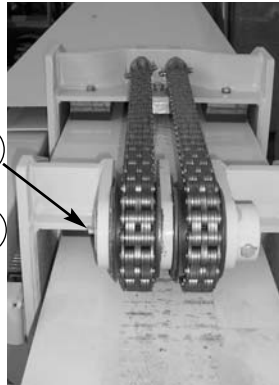
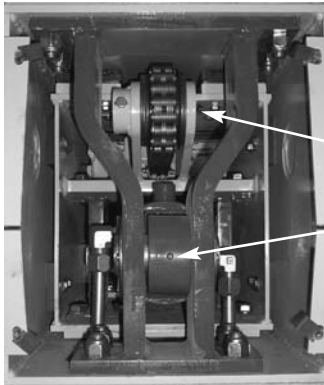
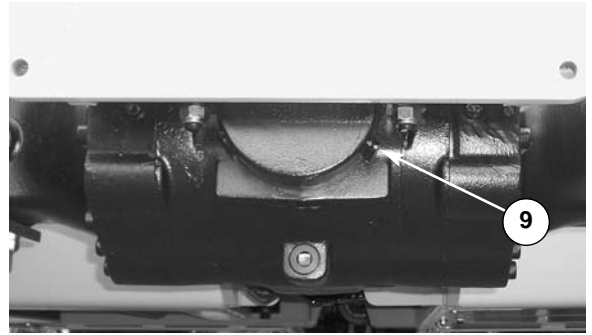
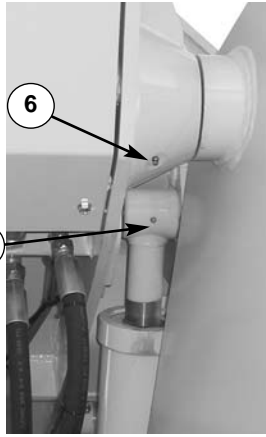
BASIC MACHINE GREASE FITTING LOCATIONS

Every 50 Hours (or weekly)

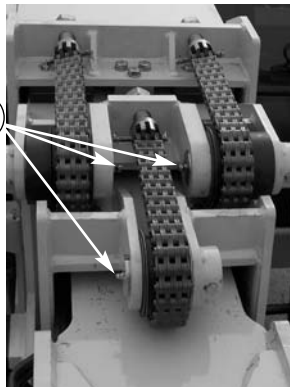
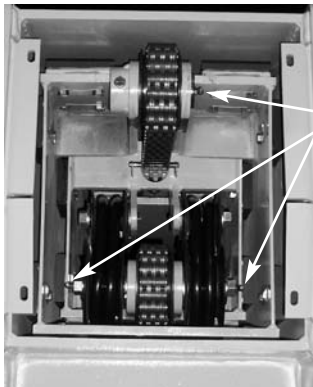
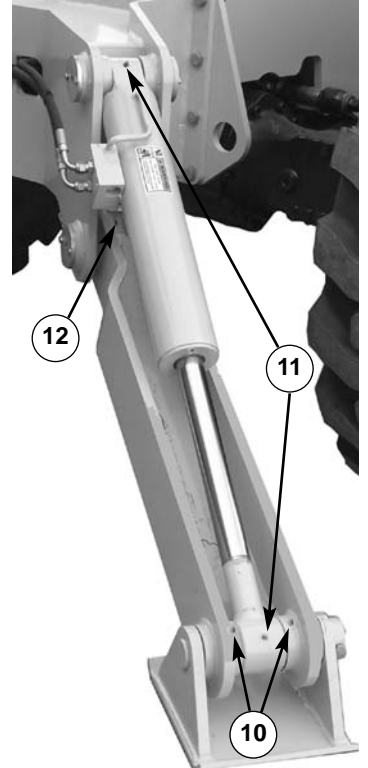
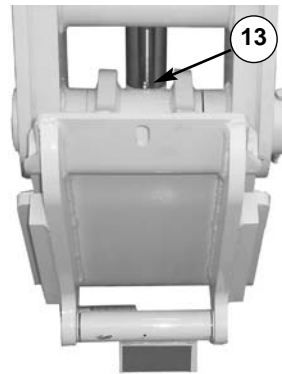
Refer to the illustrations for locations.

1. Tilt Cylinder Pins (2 ea.)
2. Frame Leveling Cylinder Pins (2 ea.)
3. Stabilizing Cylinder Pins (3 ea.)
4. Lift Cylinder Pivot Pins (4 ea.)
5. Slave Cylinder Pivot Pins (4 ea.)
6. Boom Pivot Pins (2 ea.)
7. Extend Cylinder Pivot Pin (1 ea.)
8. Boom Sheave Pins (2 ea.)
9. Axle Pivot Trunnions (4 ea.)
10. Outrigger Pad (2 per pad)
11. Outrigger Cylinder (2 per cylinder)
12. Outrigger Leg Pivot (1 per leg)
13. *For Dynattach® System Only*
Carrier Pivot Pin (1 ea.)
- 13 *For Dynacarrier® System Only*
Carrier Pivot Pin
Attachment Tool Release Pins (3 ea.)
- Not shown
14. Boom Slide Pads (as necessary)
15. Low Boom Tilt Linkage

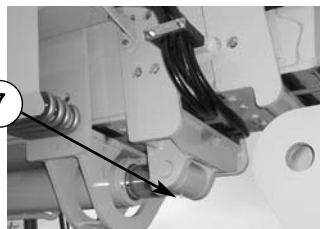
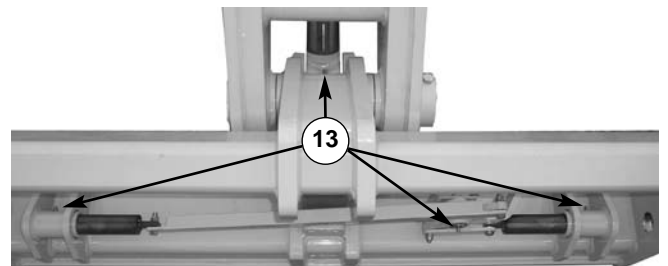




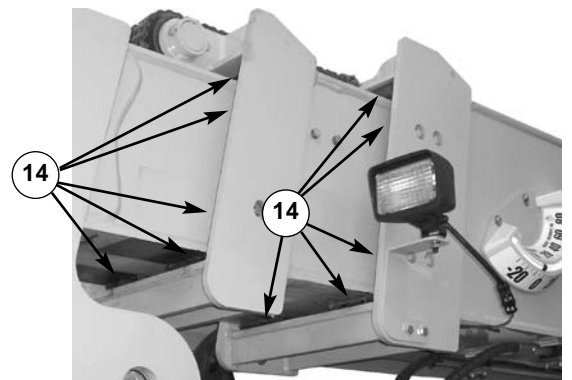
Three-Section Boom



Four-Section Boom



Four-Section Boom



Chapter 8

SERVICE AND STORAGE

GENERAL INFORMATION



BEFORE performing any service on the Telescopic Handler, unless expressly instructed to the contrary, exercise the **MANDATORY SAFETY SHUTDOWN PROCEDURE** (Safety chapter, p. 9). 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 inside the small rear access door 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, don’t overlook simple causes such as an empty fuel tank. Check for leaks and broken connections. Make note of any specific problem 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 attempted 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 together with a transfer case. 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 area of powertrain componentry is suspected of faulty operation, contact your Gehl dealer for further 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 or 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 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. Warranty

repairs can only be done by a Gehl 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 components accessed in each particular area.

ACCESS TO COMPONENTS CHART

Component	Operator Station	Frame	Mid-Top Cover	Rt. Side Hood
Axle (underside)		●		
Engine				●
Transmission			●	
Transfer Case			●	●
Drive Shafts		●		
Solenoid Valves (rear & middle)		●		
Main Control Valve (rear)		●		
Muffler (underside)				●
Air Cleaner				●
Battery				●
Radiator				●
Brake Valve (dash area)	●			
Travel Controls (dash area)	●			
Boom Controls (right side)	●			
Hydraulic Test Ports (pump)		●		
Hourmeter	●			
Electric Switches (dash area)	●			
Electric Switches (right side)	●			
Hydraulic Pump			●	
Hydraulic Reservoir (underside)	●			
Fuel Tank (underside)	●			
Fuse Box (rear)	●			
Hydraulic Filter (underside)		●		



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. Turn off the master disconnect switch to shut off power from the battery, and 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. Care should be taken to assure that all replacement parts are interchangeable with original parts and of equal quality.

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.

After servicing, check the work performed, no parts left over, etc. Install all guards, covers, and turn on the master disconnect switch and to activate battery power.

Service Every 10 Hours or Daily

CHECKING FUEL TANK LEVEL

The fuel level is shown by the fuel level gauge. 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.

A drain plug is 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 FUEL FILTER

Check the fuel filters (C) and (D) for water or debris. If filter is fitted with a see-through bowl, drain as needed based on a daily visual inspection. See illustration on the next page.

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

- Loosen drain plugs (A) at bottom of fuel filters or bowls, if equipped, two or three turns.
- Loosen air bleed plug (B) two full turns on fuel filter mounting and drain water from bottom until

fuel starts to drain out.

- c. When fuel starts to drain out, tighten drain plugs securely.

After draining water from the fuel filters, the filters must be primed by bleeding all air from the fuel system. Refer to the engine manual for proper fuel bleeding procedures.

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

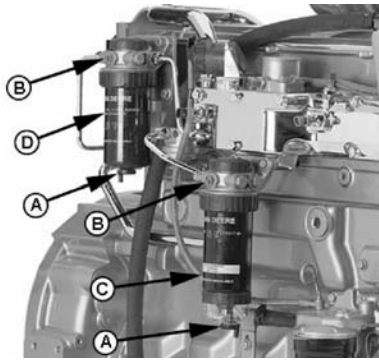
With the machine on level ground, and the engine stopped for ten minutes or more, raise the engine hood and remove the engine dipstick. Wipe it clean, re-insert it and remove to obtain a reading. If the oil level is below the crosshatch pattern on the dipstick, fill with the required amount of oil to 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 TRANSMISSION OIL LEVEL

The machine must be on level ground and the boom lowered and completely retracted. With the engine and transmission at operating temperature, parking brake on, travel lever in Neutral and the engine at low idle, raise the engine hood and remove the dipstick, located by the front wall, and check the oil level. If the oil level is below the ADD mark, fill into the tube with the required amount of oil to bring the level to the FULL mark. See the Lubrication chapter for the type of oil to use.

CHECK RADIATOR COOLANT LEVEL

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 the engine manual for additional information. Replace the radiator cap securely.



WARNING

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.

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

CHECKING HYDRAULIC OIL LEVEL

The machine must be on level ground and the boom lowered and completely retracted. With the engine stopped for ten minutes or more, raise the engine hood. Remove the dipstick located alongside the hydraulic oil fill tube cap. If the oil level is below the ADD mark, fill with the required amount of oil to bring the level to the FULL mark. 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 TIRE PRESSURES

Proper and equal tire pressure should be maintained for all four tires to enhance operating stability and extend tire life.

When installing tires on the machine, be sure that all tires are of the same size and type. **ALWAYS** replace tires with the same size furnished as original equipment. Replacement tires must be purchased locally.

Check the tire pressure “cold.” All 12-ply tires should be inflated to 70 psi (480 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.

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, deflate the assembly, reposition the tire on the rim, relubricate both parts and re-inflate. Inflation pressure beyond 35 psi 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 LUG 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 vibra-

tions or noises? Are any hose or fitting connections leaking? Is the engine exhaust color normal (light grey)?

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 a pending or present performance problem. The control cable should be replaced.

A gradual or sudden decrease in the useable travel is a indication of a pending or present performance problem. The 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.

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

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.

Machine Position

Before beginning the PWP System checking procedures, position the machine as follows:

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,”
 - For 40’ and 44’ models:
Remote shutdown switch plugged in and “Engaged.”
 - For 55’ model:
Remote shutdown switch “Engaged.”

Activation Tests

To test the PWP System activation logic:

1. Start the engine and press the PWP rocker switch “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, which are controlled by the buttons on the joystick handle, should now be disabled. The hydraulic joystick 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 the 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 hydraulic joystick 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 hydraulic joystick 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 keyswitch to “OFF” and wait for the engine to stop. Then turn the keyswitch back to “ON.”
 - The PWP switch lamp and the parking brake switch lamp should both be illuminated.
2. Turn the keyswitch “OFF” and then press the PWP rocker switch to “OFF.” Turn the keyswitch 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 64. Contact your dealer for service information and parts.

Service Every 50 Hours or Weekly

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

100 Hours (New Machine Only)

The following initial oil and filter changes should be made at 100 hours on a new machine. Thereafter these changes should be made 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	(1000 Hours)

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 each oil level check/fill plug, (see illustration). Oil should flow out the hole. If low, fill until oil flows out the hole. When oil overflows, replace the plug, wait 10 to 15 minutes and repeat the check/fill procedure. Continue this process until the differential is full. See the Lubrication chapter of this manual for the proper oil specification. Replace the oil level check/fill plug.



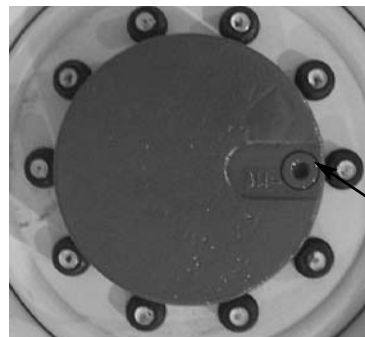
Differential Oil
Check/Fill Plug

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). For checking the level and filling, position the wheel until the plug is horizontal. Remove the check/fill plug. If oil does not run

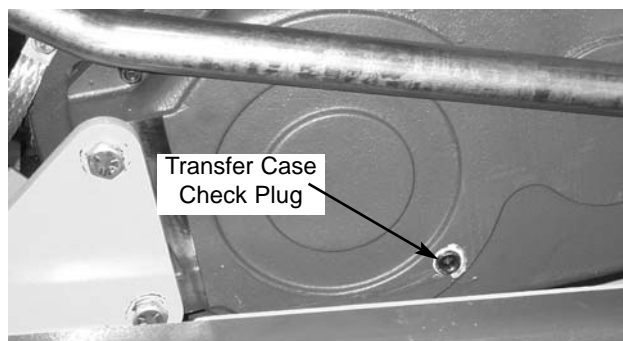
out, add oil until it overflows. Check the other hubs the same way. Refer to the oil specifications in the Lubrication chapter of this manual.



Planetary Oil
Check/Fill Plug in
Check/Fill Position

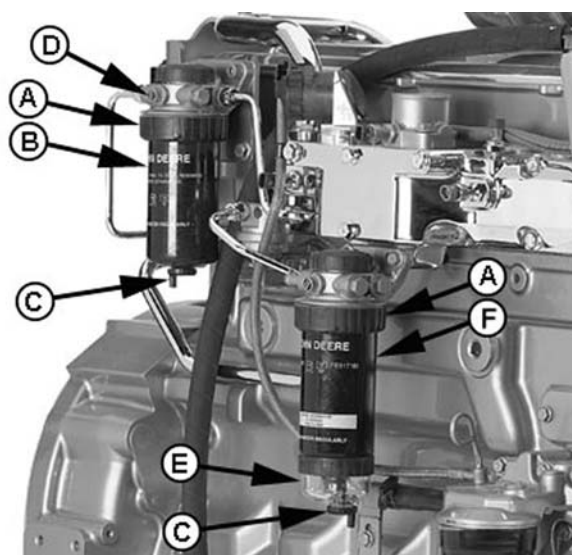
CHECKING TRANSFER CASE OIL LEVEL

Remove the oil level check plug. Oil should flow from the hole. If low, remove the breather cap located on the front side of the transfer case. Fill with the proper oil until oil flows from the check hole. Replace the check plug and the breather cap.



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 if the engine is hot.

1. Thoroughly clean fuel filter assemblies and surrounding areas.
2. Disconnect water sensor wiring.
3. Loosen drain plugs (C) and drain fuel into a suitable container.
4. Firmly grasp the retaining ring (A) and rotate it clockwise 1/4 turn (when viewed from the top). Remove the ring with filter element (B or F).

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

5. 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.*

6. Install new filter elements onto mounting bases. Be sure elements are properly indexed and firmly seated on bases. It may be necessary to rotate filters for correct alignment.

If equipped with water separator bowl (E), remove filter element from separator bowl. Drain and clean the separator bowl. Dry with compressed air. Install bowl onto new element. Tighten securely.

7. Align keys on filter element with slots in filter base.
8. Install retaining ring onto mounting base making certain dust seal is in place on filter base. Hand tighten ring counter-clockwise (about 1/3 turn) until it snap into the detent. DO NOT overtighten retaining ring.

NOTE: *The proper installation is indicated when a "click" is heard and a release of the retaining ring is felt.*

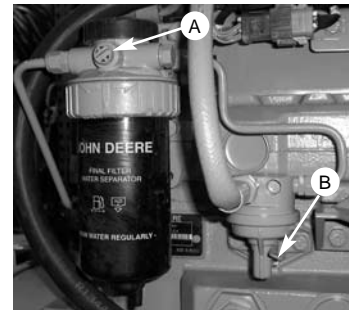
9. Reconnect water sensor wiring.

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 if the engine runs out of fuel, air must be bled from the system. Refer to the following procedure for proper bleeding procedure.

1. Loosen the air bleed vent screw (A) two full turns by hand on the filter base.
2. Operate the fuel supply pump primer Lever (B) 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.

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

Diesel Fuel Injectors

Whenever faulty or plugged fuel injectors are indicated, contact an authorized engine dealer.

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.

Diesel Injection Pump Timing

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

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.*

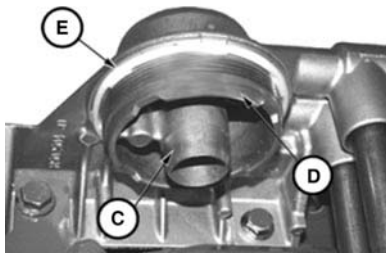
2. The engine oil filter should be changed at every oil change interval. Using a suitable filter wrench, remove and discard the filter.

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 notches 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 as 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. Wash hands after handling battery.

NOTE: *The battery in this machine is warranted by the supplier. See the punch tag on 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 spills.
2. If acid contacts 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 cable 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** make the jumper cable connections 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 being 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 keyswitches on both units to OFF. Be sure that both units are in "Neutral" and NOT touching.
2. Connect one end of the positive (+) jumper cable to the positive (+) battery terminal on the disabled machine first. **DO NOT** allow the jumper's positive (+) 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 negative (-) jumper cable to the jumper battery negative (-) terminal.
4. Make the final negative (-) jumper cable connection to the disabled Telescopic Handler's engine block or frame (ground) — NOT to the discharged battery's negative (-) post. If making the connection to the engine, keep the jumper 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.*

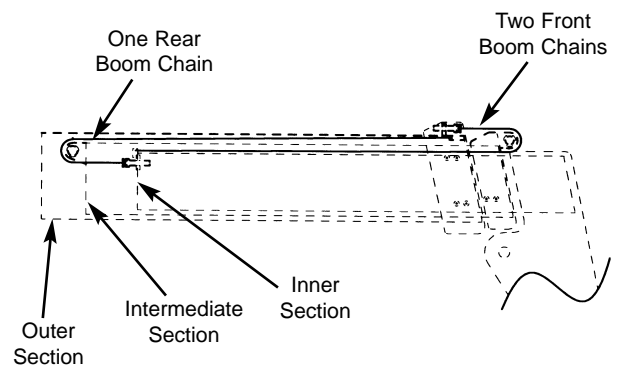
5. Proceed to start the machine. If it does not start immediately, start the jumper vehicle engine to avoid excessive drain on the booster battery.
6. After the machine is started and running smoothly, have the second person remove the jumper cables (negative (-) jumper cable first) from the jumper vehicle battery, and then from the disabled machine while being careful not to short the two cables together.

Allow sufficient time for the alternator to buildup a charge in the battery before attempting to operate 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

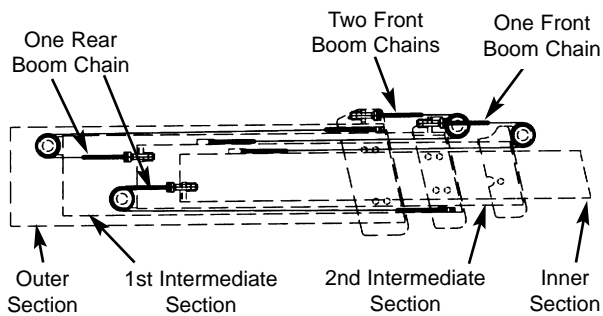
Inspect the leaf chains for wear and proper tension. On the three-section boom, two of the chains are on the top front of the boom. A third chain is accessible from inside the rear of the boom (see three-section boom illustration below).



Chain Hookup Detail Three-Section Boom

On the four-section boom, three chains are on the top front of the boom. A fourth and fifth chains are accessible from the rear of the boom (see four-section boom illustration on next page).

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 12.375" (314 mm) or more, the chain should be replaced. **DO NOT** repair sections of a chain. Replace the complete chain.



Chain Hookup Detail Four-Section Boom

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 chains on the front of the boom to 30 ft.-lbs. (40 Nm). Lubricate with 80W-90 oil.

CHECKING BOOM SLIDE PAD WEAR AND CLEARANCE

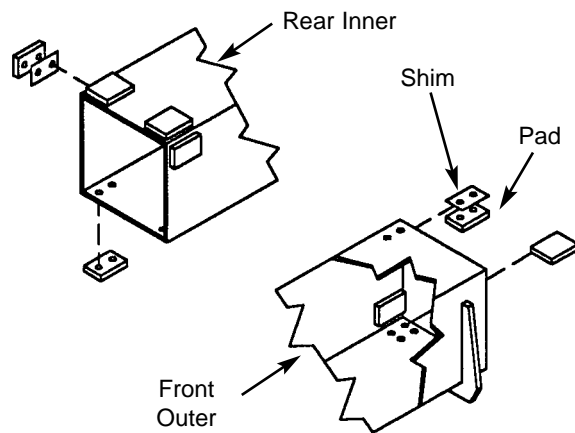
The boom is equipped with special nylon low-friction slide pads between the telescopic sections (see illustration). These are pre-greased and initially worn-in at the factory. Normally greasing is not required, except for maintaining a light film of grease on the pad tracking areas of the boom sections. 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. If a top or side slide pad shows excessive wear, loosen the bolts and insert shims to each side or top and bottom for even distribution of clearance. Re-apply Loctite® thread lock to the bolts and re-torque to 30 ft.-lbs. (40 Nm). Bottom slide pads should be replaced when their 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.



Slide Pad Detail

CHECKING PERSONNEL WORK PLATFORM (PWP) SYSTEM

Follow the procedure for checking the PWP System outlined on pages 54-55.

Service Every 1000 Hours or Yearly

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

CHANGE TRANSMISSION OIL AND FILTER

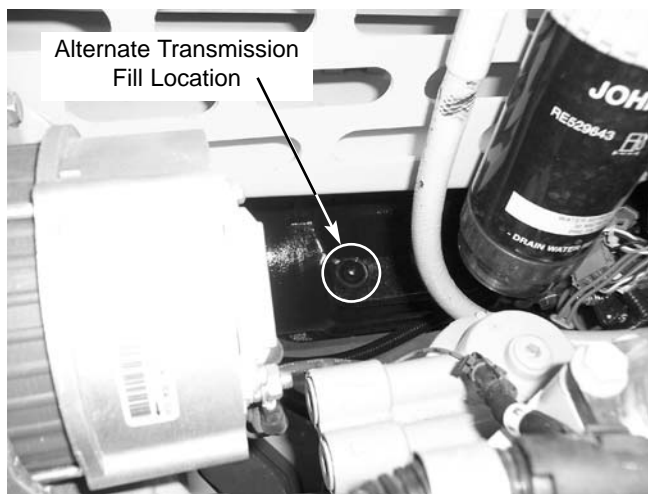
Operate the machine long enough to warm up the transmission oil. Shut off the engine. Access to filter and drain plug is from underneath the machine. Proceed as follows:



1. Remove the drain plug and drain oil. Replace the 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. Spin tighten.
3. Refill the transmission with new oil as shown in the Lubrication chapter of this manual. The transmission can be filled through an alternate location which can be accessed from under the engine cover as shown or from under the center cover on the frame.



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 RADIATOR COOLANT

Drain, flush and refill the cooling system as follows:

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

WARNING

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

1. Loosen the radiator cap to its stop. This will release any system pressure. Remove the cap when all pressure is bled off.
2. Open the radiator drain cock. Remove the water jacket drain plug from the engine block. When all coolant is drained, flush the system with clean fresh water. Allow the flush to drain completely.
3. Replace all drain plugs and tighten the radiator drain cock. Clean the cooling fins in the radiator with water pressure or steam.

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.*

4. Inspect the radiator cap seal before re-installing it. Replace it if it appears to be damaged. The 16 psi (110 kPa) pressure cap and engine thermostat work in conjunction with each other to maintain proper engine cooling.

NOTE: *Check the engine temperature lamp 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 naturally bleeds out of the system.*

CHANGING HYDRAULIC RETURN FILTER

The hydraulic return filter element is a cartridge-type accessible from underneath the chassis. Initial replacement is after the first 100 hours. Unscrew the filter cover and remove. Slide off the old element and discard. Insert the new element onto the housing and replace the cover.

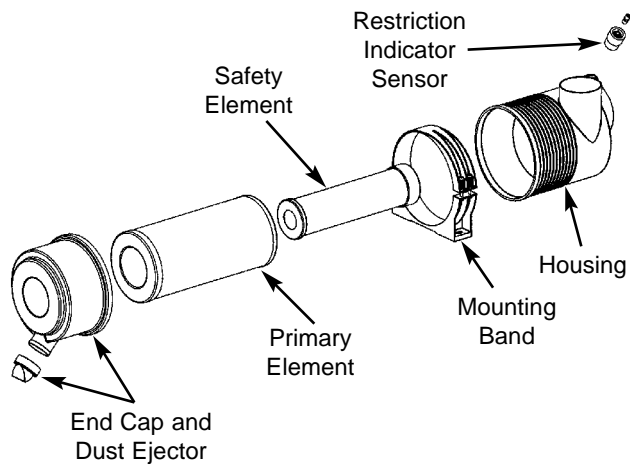


WARNING

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

IMPORTANT: *The hydraulic return filter is equipped with a restriction sensor. If the dash indicator light comes on, the element should be replaced.*

CHANGING AIR FILTER ELEMENT'S



Air Cleaner Assembly

The air cleaner assembly consists of an outer (primary) filter element and an inner (safety) filter element. The air cleaner has a restriction indicator sensor. The dash lamp will indicate when the element should be replaced.

The outer element should be replaced when the restriction indicator lamp is on while the engine is running. 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 lamp, 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 cover. Clean out any dirt in the cover assembly.

Outer Element

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

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

Inner Element

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

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

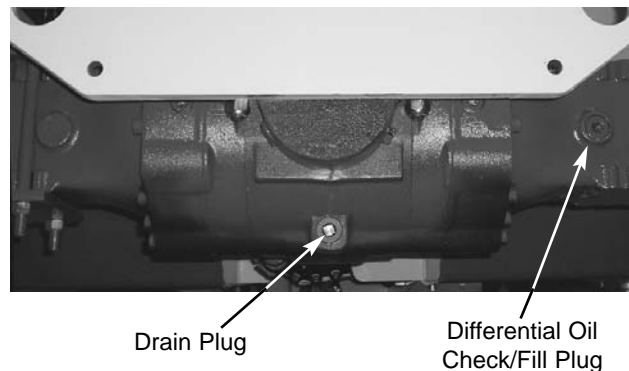
1. Check the inside the housing for any damage that may interfere with the elements.
2. Be sure that the element sealing surfaces are clean.
3. Insert the element(s), making sure that they are seated properly.
4. Secure the cover to the housing with the three clamps.
5. Check the hose connections and make sure they are all clamped and tightened properly.

NOTE: *Keep spare elements on hand to eliminate down time.*

CHANGING AXLE DIFFERENTIAL AND PLANETARY OIL

Differential

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



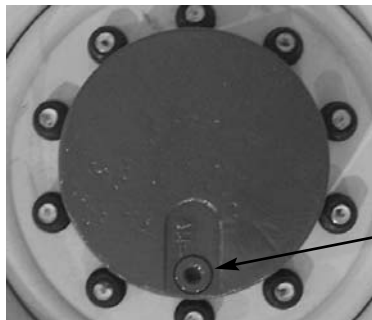
IMPORTANT: *DO NOT discharge oil onto ground. Catch and dispose of per local waste disposal regulations.*

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

Axle Planetary Hubs

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

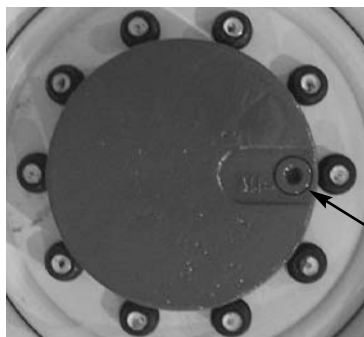
1. Position the wheel until the drain/fill plug points down. This will allow the oil to drain out. Remove the drain/fill plug.



Planetary Oil
Drain/Fill Plug in
Drain Position

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

2. Re-position the hub so the drain/fill plug is horizontal. Fill with fresh oil as specified in the Lubrication chapter. Re-install the drain/fill plug. Repeat this procedure on the other hubs.



Planetary Oil
Drain/Fill Plug in
Fill Position

CHECKING ALTERNATOR AND FAN BELT CONDITION

Refer to the engine manual for proper 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 Every 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. A test port is provided at the hydraulic pump.

Before conducting any pressure checks, check the engine speed. Engine speed must be 950 to 1000 rpm at low idle, and 2690 to 2750 rpm at high idle.



Test Port

Steering Relief Pressure

Plug a 3000 psi (207 bar) oil or liquid-filled gauge in the main/steering test port. Turn the steering full to the right or left. The gauge should read 2500 psi (172 bar).

Checking Main Relief Pressure

With the gauge in the main/steering test port and the boom extended, retract the boom fully. The gauge should read 3000 psi (207 bar).

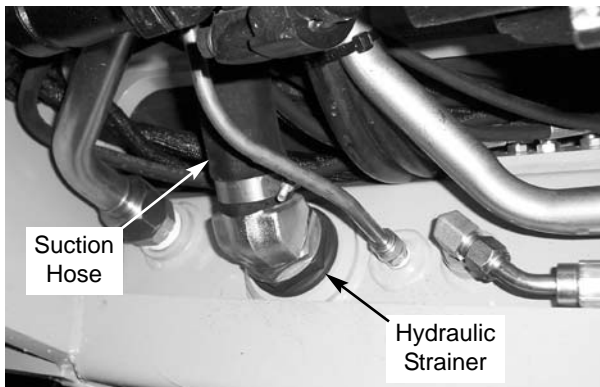
CHANGING HYDRAULIC RESERVOIR OIL AND STRAINER

Clean all dirt and debris from around the area where the hydraulic system suction (large) hose connects to the wall of the reservoir.

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

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

2. Disconnect the suction hose and remove the sump strainer from inside the reservoir. Inspect the strainer. If it has any damage, holes, etc., it should be replaced. Otherwise, wash it clean with an industrial solvent, dry with a rag and coat with fresh hydraulic oil.



3. Flush out the bottom of the tank with clean hydraulic oil. Re-install the drain plug and strainer and reconnect the suction hose.
4. Fill the tank with fresh oil. Follow specifications in Lubrication chapter of this manual.

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.

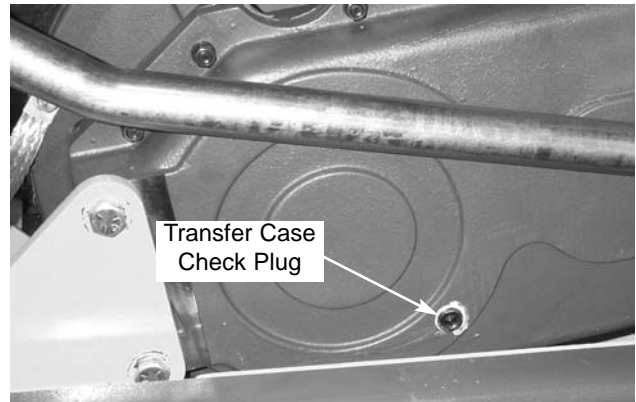
IMPORTANT: *Hydraulic fluid and filters should be replaced any time contamination is present before the normally scheduled change.*

CHANGING TRANSFER CASE OIL

Raise the engine hood for access.

1. Remove the drain plug from underneath to drain oil.

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



2. Remove the breather cap on the front side of the transfer case. Fill with fresh oil until it flows from the check plug hole. Follow specifications in the Lubrication chapter of this manual.

STORING THE MACHINE

If the Telescopic Handler will not be operated for a long period of time, prepare and store it using the following procedures:

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 amount of anti-freeze in it 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 and, before starting the engine, check all fluid levels to make sure they are at the proper level.
2. Start the engine and allow it 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 has a chance to recharge, and then shut it off.

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, re-coat the cylinder rods with grease.*

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 starting and warm-up procedures outlined in the Operation and Adjustments chapter of this manual.

PWP SYSTEM OPERATIONAL TROUBLESHOOTING

Problem	Possible Cause	Remedy
<p>PWP System switch lamp flashes when switch is pressed to "ON."</p> <p>Parking brake did not engage when PWP System switch was pressed to "ON."</p> <p>Carriage tilt and auxiliary functions continue operating when the PWP System switch is pressed to "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><i>40' and 44' models:</i> PWP System remote shutdown switch is not plugged into the connector at the end of the boom.</p> <p><i>55' model:</i> Low or dead batteries in PWP System remote shutdown switch.</p> <p>PWP System level sensor 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>Replace batteries 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



CAUTION

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 locations information is provided to assist in the proper selection and application of new decals, in the event the original decal 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 location.

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 the 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 pre-mask decal, first remove the backing paper to expose the adhesive side of the decal. Then, properly orient and position the decal onto the clean mount-

ing surface. After the decal is firmly applied and smoothly pressed down, peel off the top covering paper.

PAINT FINISH

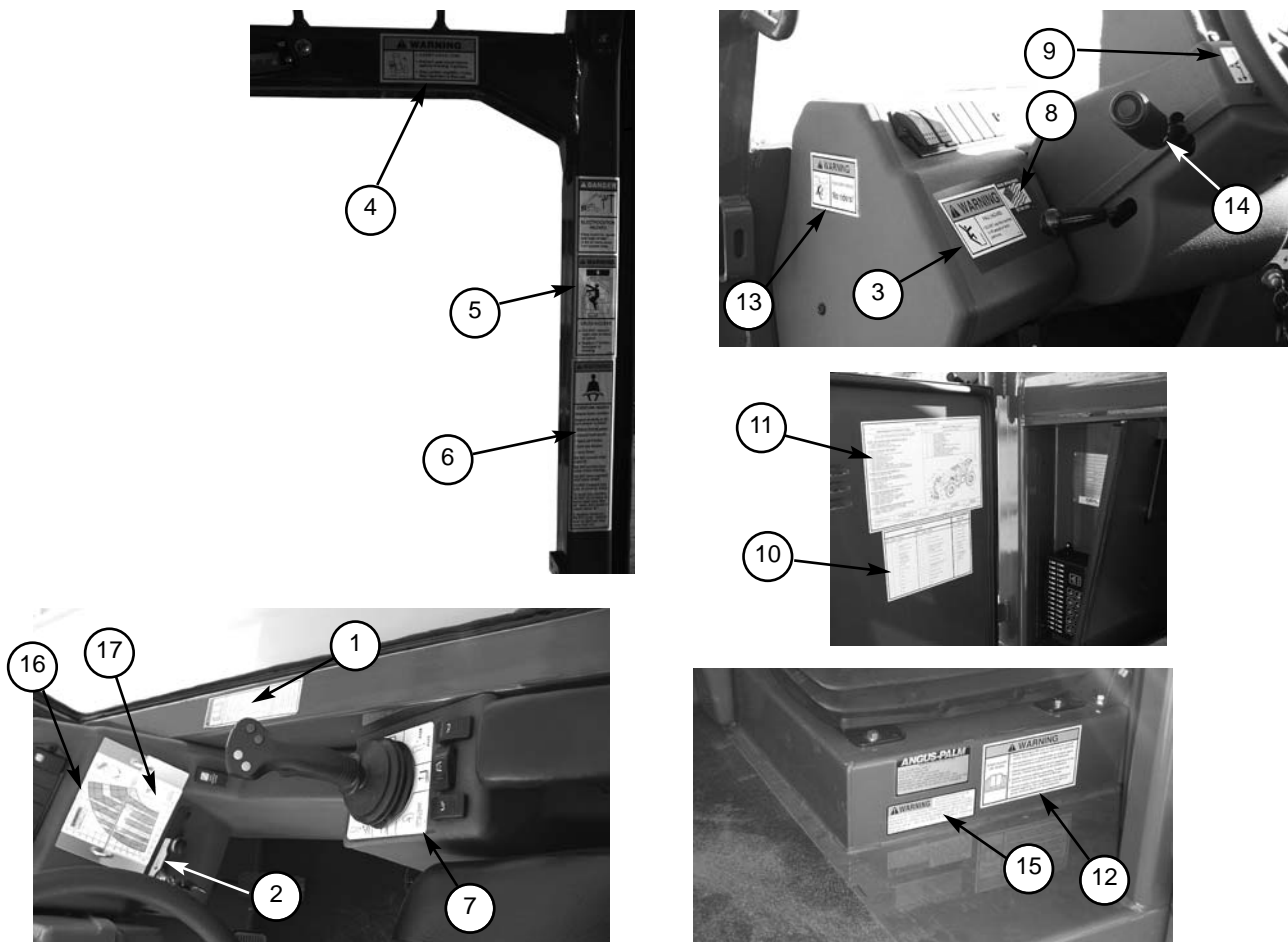
Use this list to order paint for refinishing:

167788	One Gal. Yellow
167789	6 (12-oz. Spray Cans) Yellow
167754	One Gal. Gun-Metal Gray
167753	6 (12-oz. Spray Can) Gun-Metal Gray

Decal Kits

210023	Decal Kit, DL7 w/o PWP
210024	Decal Kit, DL7 w/ PWP
210025	Decal Kit, DL9 w/o PWP
210026	Decal Kit, DL9 w/ PWP
210027	Decal Kit, DL11-44 w/o PWP
210028	Decal Kit, DL11-44 w/ PWP
210029	Decal Kit, DL11-55 w/o PWP
210030	Decal Kit, DL11-55 w/ PWP
210083	Decal Kit, DL11-55 Low Boom w/o PWP
210084	Decal Kit, DL11-55 Low Boom w/ PWP
210031	Decal Kit, DL12 w/o PWP
210032	Decal Kit, DL12 w/ PWP

NOTE: Decals may be purchased in kits or individually.



DECAL LOCATIONS - OPERATOR'S STATION

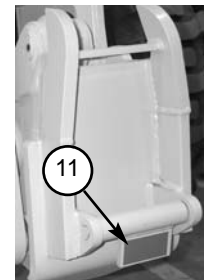
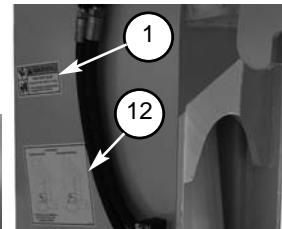
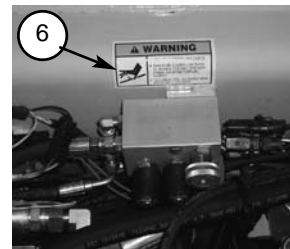
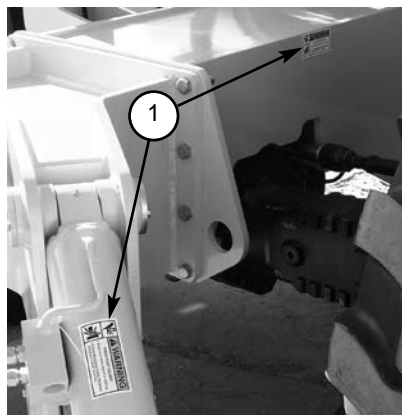
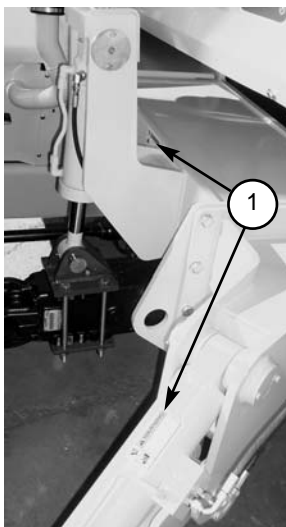
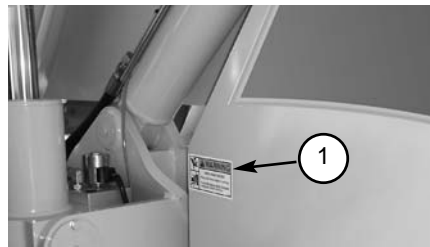
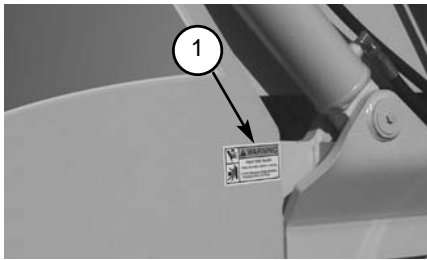
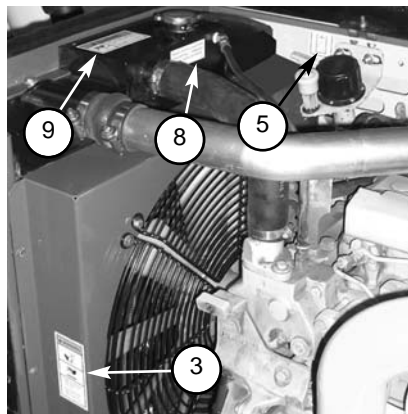
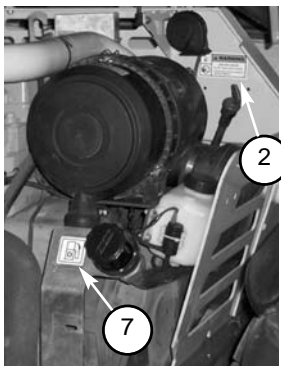
REF. NO.	DESCRIPTION	DL7	DL9	DL11	DL12
01	WARNING - SEAT BELT AND PARK BRAKE	101506	101506	101506	101506
02	IGNITION	101507	101507	101507	101507
03	DANGER - PERSONNEL INJURY <i>(units w/o PWP)</i>	L65928	L65928	L65928	L65928
04	WARNING - CARRY LOAD LOW	093475	093475	093475	093475
05	DANGER - HI-VOLT/MOVING PARTS	L70307	L70307	L70307	L70307
06	WARNING - TILT HAZARD/GENL. OPER.	L70306	L70306	L70306	L70306
07	JOYSTICK CONTROL <i>(dual function w/ two buttons)</i>	L71377	L71377	L71377	L71377
	JOYSTICK CONTROL <i>(tri-function w/ four buttons)</i>	L71332	L71332	L71332	L71332
08	MADE IN USA	140516	140516	140516	140516
09	F-N-R SHIFTER	L68295	L68295	L68295	L68295
10	FUSES/RELAYS REFERENCE	101451	101451	101451	101451
11	MAINTENANCE CHART	L70243	L70243	L70243	L70243
12	OPERATOR MANUAL	100359	100359	100359	100359
13	WARNING - NO RIDERS	L65932	L65932	L65932	L65932
14	SHIFTER 1,2,3,4	L500439	L500439	L500439	L500439
15	ROPS FOPS WARNING	105099	105099	105099	105099
16	LOAD ZONE CHARTS	See Note	See Note	See Note	See Note
17	PWP LOADCHART USAGE <i>(units w/o PWP)</i>	103376	103376	103376	103376

Note: See Load Zone Charts section of this manual for individual load zone chart part numbers.



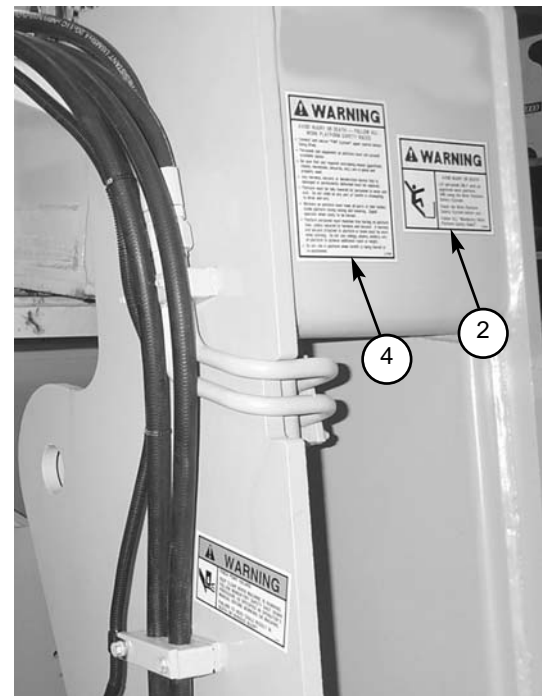
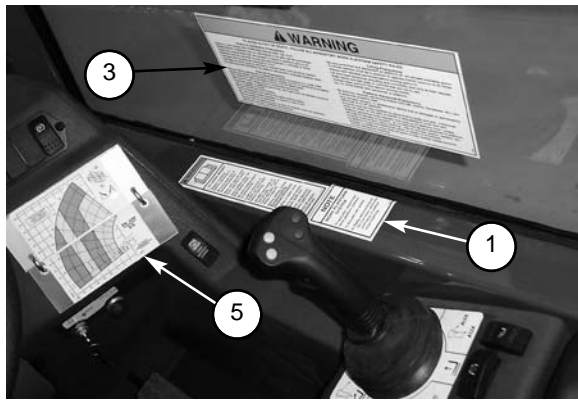
DECAL LOCATIONS - FRAME and BOOM

REF. NO.	DESCRIPTION	DL7	DL9	DL11	DL12
01	GEHL, 6.75"	184069	184069	184069	184069
02	GEHL, 8.00"	102025	102025	102025	102025
03	DL7-44 (Left Side)	105671	---	---	---
	DL9-44 (Left Side)	---	105673	---	---
	DL11-44 (Left Side)	---	---	105675	---
	DL11-55 (Left Side)	---	---	105677	---
	DL12-40 (Left Side)	---	---	---	105679
04	HALF ZONE MARKER (5 ea. DL12, 6 ea. all others)	L62583	L62583	L62583	L62583
05	"1" EXTENSION MARK (1 ea.)	L67719	L67719	L67719	L67719
	"2" EXTENSION MARK (1 ea.)	L67720	L67720	L67720	L67720
	"3" EXTENSION MARK (1 ea.)	L67721	L67721	L67721	L67721
	"4" EXTENSION MARK (1 ea.)	L67722	L67722	L67722	L67722
	"5" EXTENSION MARK (1 ea.)	L67723	L67723	L67723	L67723
06	DYNALIFT, 3-1/4"	103357	103357	103357	103357
07	DYNALIFT, 4-1/2"	103358	103358	103358	103358
08	DL7-44 (Right Side)	105670	---	---	---
	DL9-44 (Right Side)	---	105672	---	---
	DL11-44 (Right Side)	---	---	105674	---
	DL11-55 (Right Side)	---	---	105676	---
	DL12-40 (Right Side)	---	---	---	105678
09	DL Hood Swoosh	105680	105680	105680	105680
10	Gehl, 3.75"	184043	184043	184043	184043



DECAL LOCATIONS - FRAME and BOOM

REF. NO.	DESCRIPTION	DL7	DL9	DL11	DL12
1	WARNING - PINCH POINT	L65927	L65927	L65927	L65927
2	DANGER - JUMPSTART	L65933	L65933	L65933	L65933
3	DANGER - HANDS OUT	L70305	L70305	L70305	L70305
4	GEHL, 5.00"	102027	102027	102027	102027
5	HYDRAULIC OIL	072794	072794	072794	072794
6	ACCUMULATOR DISCHARGE	L70238	L70238	L70238	L70238
7	DIESEL FUEL	072797	072797	072797	072797
8	ANTI-FREEZE	056859	056859	056859	056859
9	COOLANT UNDER PRESSURE	072798	072798	072798	072798
10	PERSONNEL INJURY	L65928	L65928	L65928	L65928
11	DYNATTACH UNLOCKED	L66613	L66613	L66613	L66613
12	DYNATTACH DIAGRAM	L65937	L65937	L65937	L65937



DECAL LOCATIONS - PWP EQUIPPED UNITS

REF. NO.	DESCRIPTION	DL7	DL9	DL11	DL12
1	PWP SWITCH INSTRUCTION	102969	102969	102969	102969
2	PERSONNEL LIFT	L71554	L71554	L71554	L71554
3	WORK PLATFORM RULES	L71555	L71555	L71555	L71555
4	PERSONNEL LIFT SAFETY RULES	L71700	L71700	L71700	L71700
5	PWP LOAD ZONE CHART	See Note	See Note	See Note	See Note
6	PWP SYSTEM	103028	103028	103028	103028

Note: See Load Zone Charts section of this manual for individual PWP load zone chart part numbers.

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 may be found in the Service and Storage chapter. A Maintenance Log follows the Maintenance Interval Chart for recording the service procedures performed. Recording the 10 Hour (or Daily) service intervals would be impractical and therefore is 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 than normal service.*

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 Radiator Coolant Level	●			
Check Engine Oil Level	●			
Check Hydraulic Oil Level	●			
Check Tire Pressures	●			
Check Instruments Operation	●			
Check General Machine Operation and Condition	●			
Check Personnel Work Platform System	●			
Check Wheel Nut Torque	● ¹			
Check Transmission Oil Level	●	●		
Lubricate Weekly Grease Points		●		
Change Engine Oil and Filter			● ²	
Change Transmission Oil and Filter			● ²	
Change Hydraulic Return Filter Element			● ²	
Check Axle Differential and Planetary Oil Levels				●
Check Transfer Case Oil				●
Change Fuel Filter				●
Check Battery				●
Change Engine Oil and Filter				●
Check and Torque Boom Leaf Chains				●
<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>				

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	●		
Check Personnel Work Platform System	●		
Change Transmission Oil and Filter		●	
Check Alternator and Fan Belt Condition		●	
Change Radiator Coolant		●	
Change Hydraulic Return Filter Element		●	
Change Primary Air Filter Element		●	
Change Axle Differential and Planetary Oil		●	
Check Exhaust System		●	
Check Hydraulic System Relief Pressures			●
Change Hydraulic Reservoir Oil and Strainer			●
Change Transfer Case Oil			●

MAINTENANCE LOG

[illegible]

MAINTENANCE LOG

[illegible]

MAINTENANCE LOG

[illegible]

MAINTENANCE LOG

[illegible]

DISPLAYING OF ENGINE DIAGNOSTIC TROUBLE CODES (DTCs)

ENGINE DIAGNOSTIC TROUBLE CODES (DTCs)

Engine diagnostic trouble codes are displayed in the instrument display panel.

Stored and active diagnostic trouble codes are displayed as a two-part code: Suspect Parameter Number (SPN) and Failure Mode Identifier (FMI), as shown on the following table.

The first part is a six-digit Suspect Parameter Number (SPN) followed by a two-digit Failure Mode Identifier (FMI). To determine the exact type of failure, both parts (SPN and FMI) of the code are needed.

The SPN identifies the system or the component that has the failure; for example, SPN 000110 indicates a failure in the engine coolant temperature circuit.

The FMI identifies the type of failure that has occurred; for example, FMI 03 indicates a value above normal. Combining SPN 000110 with FMI 03 means the engine coolant temperature input voltage is too high.

Always contact your servicing engine dealer for help in correcting diagnostic trouble codes which are displayed for your engine.

The fault code listing in the following tables are in ascending SPN/FMI codes.

NOTE: *Not all of these codes are used on all engine applications.*

NOTE: *If corrective actions below do not solve the engine fault, contact your servicing engine dealer.*

SPN	FMI	Description of Fault	Corrective Action
000028	03	Throttle #3 Voltage Out of Range, High	Check Sensor and Wiring Check Sensor and Wiring Contact Servicing Dealer
	04	Throttle #3 Voltage Out of Range, Low	
	14	Throttle #3 Voltage Out of Range	
000029	03	Throttle #2 Voltage Out of Range, High	Check Sensor and Wiring Check Sensor and Wiring Contact Servicing Dealer
	04	Throttle #2 Voltage Out of Range, Low	
	14	Throttle #2 Voltage Out of Range	
000091	03	Throttle Voltage Out of Range, High	Check Switch and Wiring Check Switch and Wiring Check Sensor and Wiring
	04	Throttle Voltage Out of Range, Low	
	14	Throttle Voltage Out of Range	
000094	03	Fuel Pressure Voltage Out of Range, High	Check Sensor and Wiring Check Sensor and Wiring
	04	Fuel Pressure Voltage Out of Range, Low	
000097	03	Water in Fuel Voltage Out of Range, High	Check Sensor and Wiring Check Sensor and Wiring Stop and Drain Water Separator
	04	Water in Fuel Voltage Out of Range, Low	
	16	Water in Fuel Detected	
000100	01	Engine Oil Pressure Low - Most Severe	Check Oil Level Check Sensor and Wiring Check Sensor and Wiring Check Oil Level Contact Servicing Dealer
	03	Engine Oil Pressure Voltage Out of Range, High	
	04	Engine Oil Pressure Voltage Out of Range, Low	
	18	Engine Oil Pressure Low - Moderately Severe	
	31	Oil Pressure Detected with Zero Engine Speed	
000102	02	Manifold Air Press. Sensor In-Range Failure	Contact Servicing Dealer Contact Servicing Dealer Contact Servicing Dealer
	03	Manifold Air Press. Voltage Out of Range, High	
	04	Manifold Air Press. Voltage Out of Range, Low	

SPN	FMI	Description of Fault	Corrective Action
000103	00	Turbocharger Speed High - Most Severe	Contact Servicing Dealer
	02	Turbocharger Speed Data Incorrect	Contact Servicing Dealer
	05	Turbocharger Harness Open Circuit	Contact Servicing Dealer
	06	Turbocharger Harness Shorted to Ground	Contact Servicing Dealer
	08	Turbocharger Speed Signal In-Range Failure	Contact Servicing Dealer
	31	Turbocharger Speed Signal Missing	Contact Servicing Dealer
000105	00	Exhaust Gas Recirculation Air Temperature High - Most Severe	Check Air Cleaner, Aftercooler or Ambient Temperature
	03	Exhaust Gas Recirculation Air Temperature Input Voltage Out of Range, High	Check Sensor and Wiring
	04	Exhaust Gas Recirculation Air Temperature Input Voltage Out of Range, Low	Check Sensor and Wiring
	15	Exhaust Gas Recirculation Air Temperature High - Least Severe	Check Air Cleaner, Aftercooler or Ambient Temperature
	16	Exhaust Gas Recirculation Air Temperature High - Moderately Severe	Check Air Cleaner, Aftercooler or Ambient Temperature
000108	02	Barometric Air Pressure Sensor Signal Invalid	Contact Servicing Dealer
	31	Barometric Air Pressure Sensor Signal Invalid	Contact Servicing Dealer
000110	00	Engine Coolant Temperature High - Most Severe	Check Cooling System, Reduce Power
	03	Engine Coolant Temperature Input Voltage Out of Range, High	Check Sensor and Wiring
	04	Engine Coolant Temperature Input Voltage Out of Range, Low	Check Sensor and Wiring
	15	Engine Coolant Temperature High - Least Severe	Check Cooling System, Reduce Power
	16	Engine Coolant Temperature High - Moderately Severe	Check Cooling System, Reduce Power
	17	Engine Coolant Temperature Low - Least Severe	Check Cooling System
000111	01	Coolant Level Low	Check Operator's Manual
000157	03	Fuel Rail Pressure Voltage Out of Range, High	Contact Servicing Dealer
	04	Fuel Rail Pressure Voltage Out of Range, Low	Contact Servicing Dealer
	10	Fuel Rail Pressure Drops too Fast	Contact Servicing Dealer
	17	Fuel Rail Pressure Not Developed	Contact Servicing Dealer
000158	17	Keyswitch Circuit Problem	Contact Servicing Dealer
000174	00	Fuel Temperature High - Most Severe	Add Fuel
	03	Fuel Temperature Voltage Out of Range, High	Check Sensor and Wiring
	04	Fuel Temperature Voltage Out of Range, Low	Check Sensor and Wiring
	16	Fuel Temperature High - Moderately Severe	Add Fuel
000189	00	Engine Speed Derate	Check Fault Codes or Contact Servicing Dealer
000190	00	Engine Speed High - Most Severe	Reduce Engine Speed
	16	Engine Speed High - Moderately Severe	Reduce Engine Speed

SPN	FMI	Description of Fault	Corrective Action
000412	00	Exhaust Gas Recirculation Temperature Input Voltage High - Most Severe	Contact Servicing Dealer
	03	Exhaust Gas Recirculation Temperature Voltage Out of Range, High	Contact Servicing Dealer
	04	Exhaust Gas Recirculation Temperature Voltage Out of Range, Low	Contact Servicing Dealer
	16	Exhaust Gas Recirculation Temperature - Moderately Severe	Contact Servicing Dealer
000611	03	Electronic Injector Wiring Shorted to Power Source	Check Wiring
	04	Electronic Injector Wiring Shorted to Ground	Check Wiring
000620	03	5V Sensor Supply Voltage Out of Range, Hig	Check Wiring
	04	5V Sensor Supply Voltage Out of Range, Low	Check Wiring
000627	01	Electronic Injector Supply Voltage Low	Check Battery Voltage and Wiring
	16	ECU Power Supply Voltage High	Contact Servicing Dealer
	18	ECU Power Supply Voltage Low	Contact Servicing Dealer
000628	12	ECU Programming Error	Contact Servicing Dealer
000629	12	ECU Programming Error	Contact Servicing Dealer
	13	ECU Error	Contact Service Dealer
000636	02	Engine Position Sensor Noise	Check Sensor and Wiring
	05	Engine Position Sensor Current Low or Open Circuit	Contact Servicing Dealer
	06	Engine Position Sensor Current High or Grounded Circuit	Contact Servicing Dealer
	08	Engine Position Sensor Input Missing	Check Sensor and Wiring
000637	10	Engine Position Sensor Pattern Error	Check Sensor and Wiring
	02	Timing (Crank) Position Sensor Noise	Check Sensor and Wiring
	05	Timing (Crank) Position Sensor Current Low or Open Circuit	Contact Servicing Dealer
	06	Timing (Crank) Position Sensor Current High or Grounded Circuit	Contact Servicing Dealer
000640	07	Crank/Camshaft Positions Out of Sync	Check Sensor and Wiring
	08	Crank Position Input Missing	Check Sensor and Wiring
	10	Crank Position Input Pattern Error	Check Sensor and Wiring
000640	31	External Engine Protection Signal Not Recognized	Engine External Protection Unknown. Check Installation
000641	04	Turbocharger Actuator Disabled	Contact Servicing Dealer
	05	Turbocharger Actuator Current Low or Open Circuit	Contact Servicing Dealer
	12	Turbocharger Actuator Communication Error	Contact Servicing Dealer
	13	Turbocharger Learn Error	Contact Servicing Dealer
	16	Turbocharger Temperature High - Moderately Severe	Contact Servicing Dealer

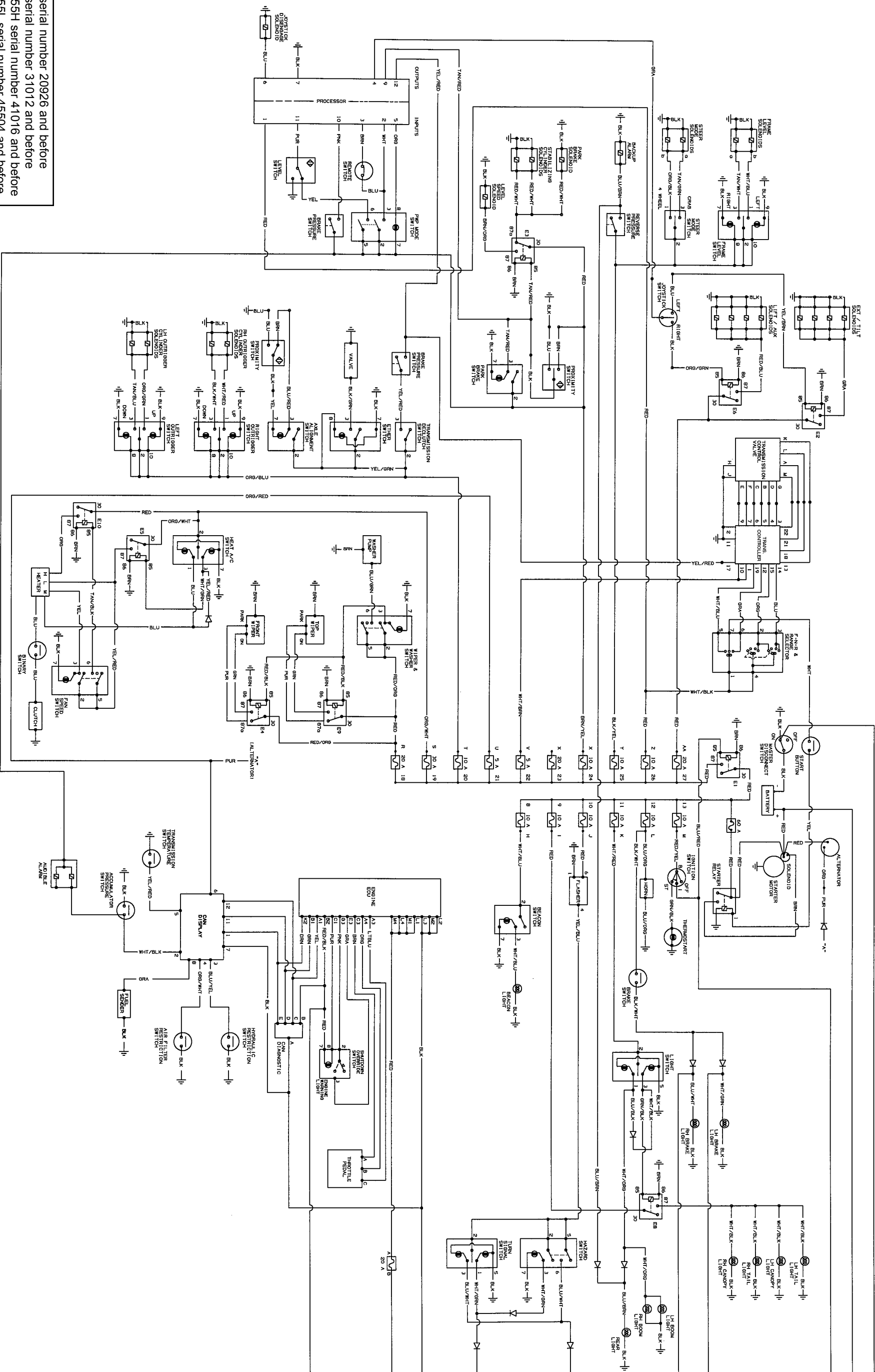
SPN	FMI	Description of Fault	Corrective Action
000651	02	Cylinder #1 Injector Part Number Not Recognized	Contact Servicing Dealer
	05	Cylinder #1 Electronic Injector Circuit Open	Check Injector Wiring or Injector Solenoid
	06	Cylinder #1 Electronic Injector Circuit Shorted	Check Injector Wiring or Injector Solenoid
	07	Cylinder #1 Electronic Injector Fuel Flow Low	Injector Failed or Flow Limiter Closed
	13	Cylinder #1 Injector QR Code String Error	Contact Servicing Dealer
000652	02	Cylinder #2 Injector Part Number Not Recognized	Contact Servicing Dealer
	05	Cylinder #2 Electronic Injector Circuit Open	Check Injector Wiring or Injector Solenoid
	06	Cylinder #2 Electronic Injector Circuit Shorted	Check Injector Wiring or Injector Solenoid
	07	Cylinder #2 Electronic Injector Fuel Flow Low	Injector Failed or Flow Limiter Closed
	13	Cylinder #2 Injector QR Code String Error	Contact Servicing Dealer
000653	02	Cylinder #3 Injector Part Number Not Recognized	Contact Servicing Dealer
	05	Cylinder #3 Electronic Injector Circuit Open	Check Injector Wiring or Injector Solenoid
	06	Cylinder #3 Electronic Injector Circuit Shorted	Check Injector Wiring or Injector Solenoid
	07	Cylinder #3 Electronic Injector Fuel Flow Low	Injector Failed or Flow Limiter Closed
	13	Cylinder #3 Injector QR Code String Error	Contact Servicing Dealer
000654	02	Cylinder #4 Injector Part Number Not Recognized	Contact Servicing Dealer
	05	Cylinder #4 Electronic Injector Circuit Open	Check Injector Wiring or Injector Solenoid
	06	Cylinder #4 Electronic Injector Circuit Shorted	Check Injector Wiring or Injector Solenoid
	07	Cylinder #4 Electronic Injector Fuel Flow Low	Injector Failed or Flow Limiter Closed
	13	Cylinder #4 Injector QR Code String Error	Contact Servicing Dealer
000676	03	Glow Plug Relay Voltage High	Check Relay and Wiring
	04	Glow Plug Relay Voltage Low	Check Relay and Wiring
000898	09	Vehicle Speed or Torque Message Invalid	Contact Servicing Dealer
000970	31	Engine Shutdown Signal	Non-Engine Fault. Check Other Shutdown Devices
000971	31	Engine Derate Signal	Non-Engine Fault. Check Other Shutdown Devices
001079	03	Sensor Supply Voltage 3 Out of Range, High	Check Wiring
	04	Sensor Supply Voltage 3 Out of Range, Low	Check Wiring

SPN	FMI	Description of Fault	Corrective Action
001080	03 of Range, High	Fuel Rail Pressure Sensor Supply Voltage 2 Out	Check Wiring
	04 of Range, Low	Fuel Rail Pressure Sensor Supply Voltage 2 Out	Check Wiring
001109	31	Engine Protection System Approaching Shutdown	Check Fault Codes
001110	31	Engine Protection System Shutdown Engine	Check Fault Codes
001136	00	ECU Temperature High - Most Severe	Contact Servicing Dealer
	16	ECU Temperature High - Moderately Severe	Contact Servicing Dealer
001172	03	Turbo Compressor Inlet Temperature Input Voltage Out of Range, High	Contact Servicing Dealer
	04	Turbo Compressor Inlet Temperature Input Voltage Out of Range, Low	Contact Servicing Dealer
	16	Turbo Compressor Inlet Temperature High - Moderately Severe	Contact Servicing Dealer
001180	00	Turbo Turbine Inlet Temperature High - Most Severe	Contact Servicing Dealer
	16	Turbo Turbine Inlet Temperature High - Moderately Severe	Contact Servicing Dealer
001209	02	Exhaust Pressure Incorrect	Contact Servicing Dealer
	03	Exhaust Pressure Sensor Voltage Out of Range, High	Contact Servicing Dealer
	04	Exhaust Pressure Sensor Voltage Out of Range, Low	Contact Servicing Dealer
001347	03	Fuel Pump Pressurizing Assembly #1 Sensor Voltage High	Contact Servicing Dealer
	05	Fuel Pump Pressurizing Assembly #1 Sensor Circuit Open, Shorted to Ground or Overloaded	Check Pump Wiring
	07	Fuel Pump Asy #1 Rail Press. Control Mismatch	Check Fuel Filter and Lines
001569	31	Engine Protection Derate	Check Fault Codes
002630	00	Exhaust Gas Recirculation Fresh Air Temperature High - Most Severe	Contact Servicing Dealer
	03	Exhaust Gas Recirculation Fresh Air Temperature Voltage Out of Range, High	Contact Servicing Dealer
	04	Exhaust Gas Recirculation Fresh Air Temperature Voltage Out of Range, Low	Contact Servicing Dealer
	15	Exhaust Gas Recirculation Fresh Air Temperature High - Least Severe	Contact Servicing Dealer
	16	Exhaust Gas Recirculation Fresh Air Temperature High - Moderately Severe	Contact Servicing Dealer

SPN	FMI	Description of Fault	Corrective Action
002659	02	Exhaust Gas Recirculation Flow/Temperature Mismatch	Contact Servicing Dealer
	15	Exhaust Gas Recirculation Flow Rate Above Normal	Contact Servicing Dealer
	17	Exhaust Gas Recirculation Flow Rate Below Normal	Contact Servicing Dealer
002790	16	Turbocharger Compressor Outlet Temperature High - Most Severe	Contact Servicing Dealer
002791	02	Exhaust Gas Recirculation Valve Sensor Voltage Mismatch	Contact Servicing Dealer
	03	Exhaust Gas Recirculation Valve Sensor Voltage Out of Range, High	Contact Servicing Dealer
	04	Exhaust Gas Recirculation Valve Sensor Voltage Out of Range, Low	Contact Servicing Dealer
	05	Exhaust Gas Recirculation Valve Current Low or Open Circuit	Contact Servicing Dealer
	06	Exhaust Gas Recirculation Valve Current High or Grounded Circuit	Contact Servicing Dealer
	07	Exhaust Gas Recirculation Valve Not Responding or Out of Adjustment	Contact Servicing Dealer
	13	Exhaust Gas Recirculation Valve Out of Calibration	Contact Servicing Dealer
	14	Exhaust Gas Recirculation Valve Off	Contact Servicing Dealer
	31	Exhaust Gas Recirculation Valve Position Error	Contact Servicing Dealer
002795	07	Turbocharger Actuator Not Responding or Out of Adjustment	Contact Servicing Dealer
	12	Turbocharger Actuator Bad Intelligent Device or Component	Contact Servicing Dealer
523222	03	Sensor Supply Voltage #5 Out of Range, High	Contact Servicing Dealer
	04	Sensor Supply Voltage #5 Out of Range, Low	Contact Servicing Dealer
523229	03	Sensor Supply Voltage #4 Out of Range, High	Contact Servicing Dealer
	04	Sensor Supply Voltage #4 Out of Range, Low	Contact Servicing Dealer

Electrical Schematic w/ 2-Button Joystick

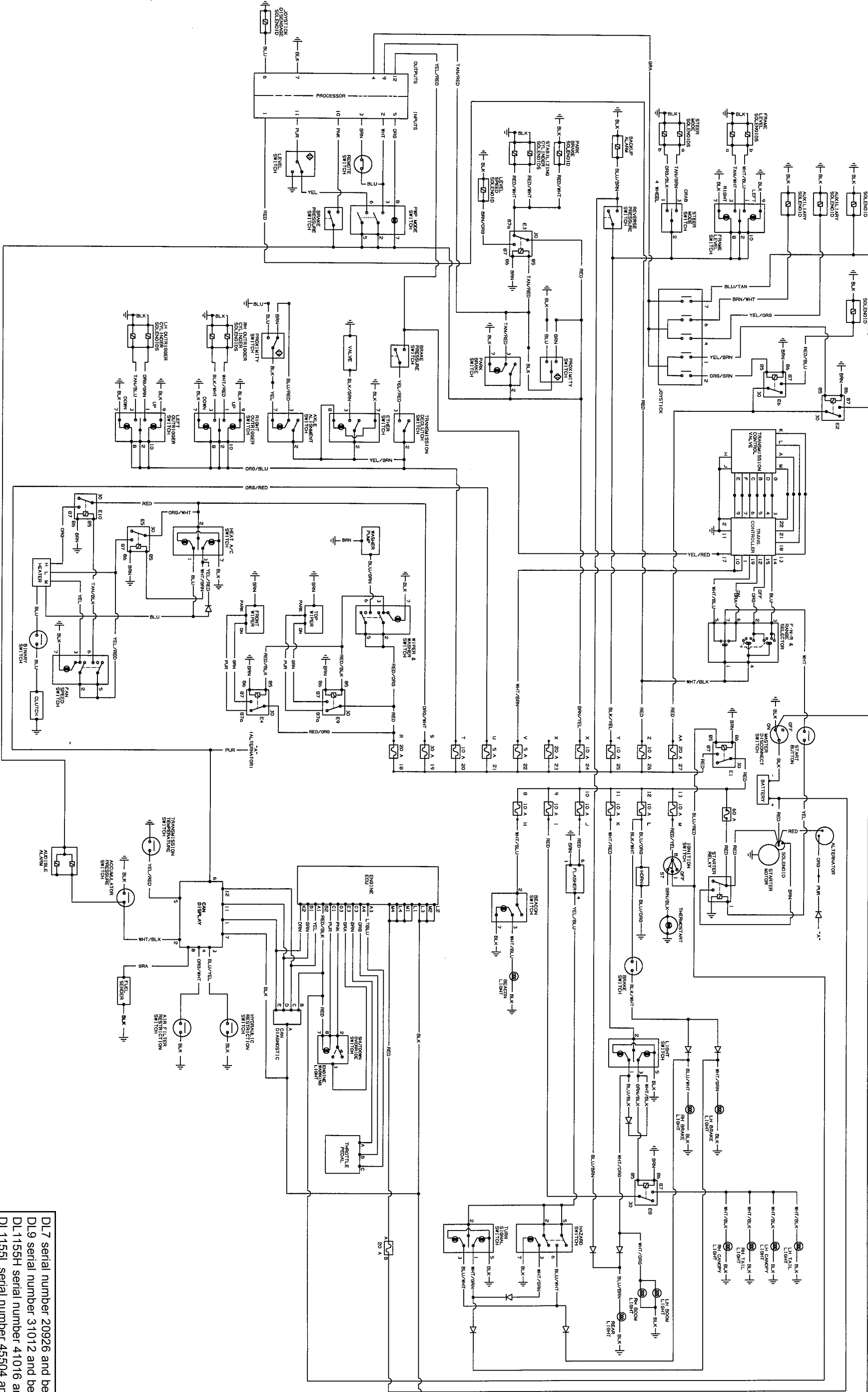
See serial break information at the bottom of the page.



DL7 serial number 20926 and before
DL9 serial number 31012 and before
DL1155H serial number 41016 and before
DL1155L serial number 45504 and before

Electrical Schematic w/ 4-Button Joystick

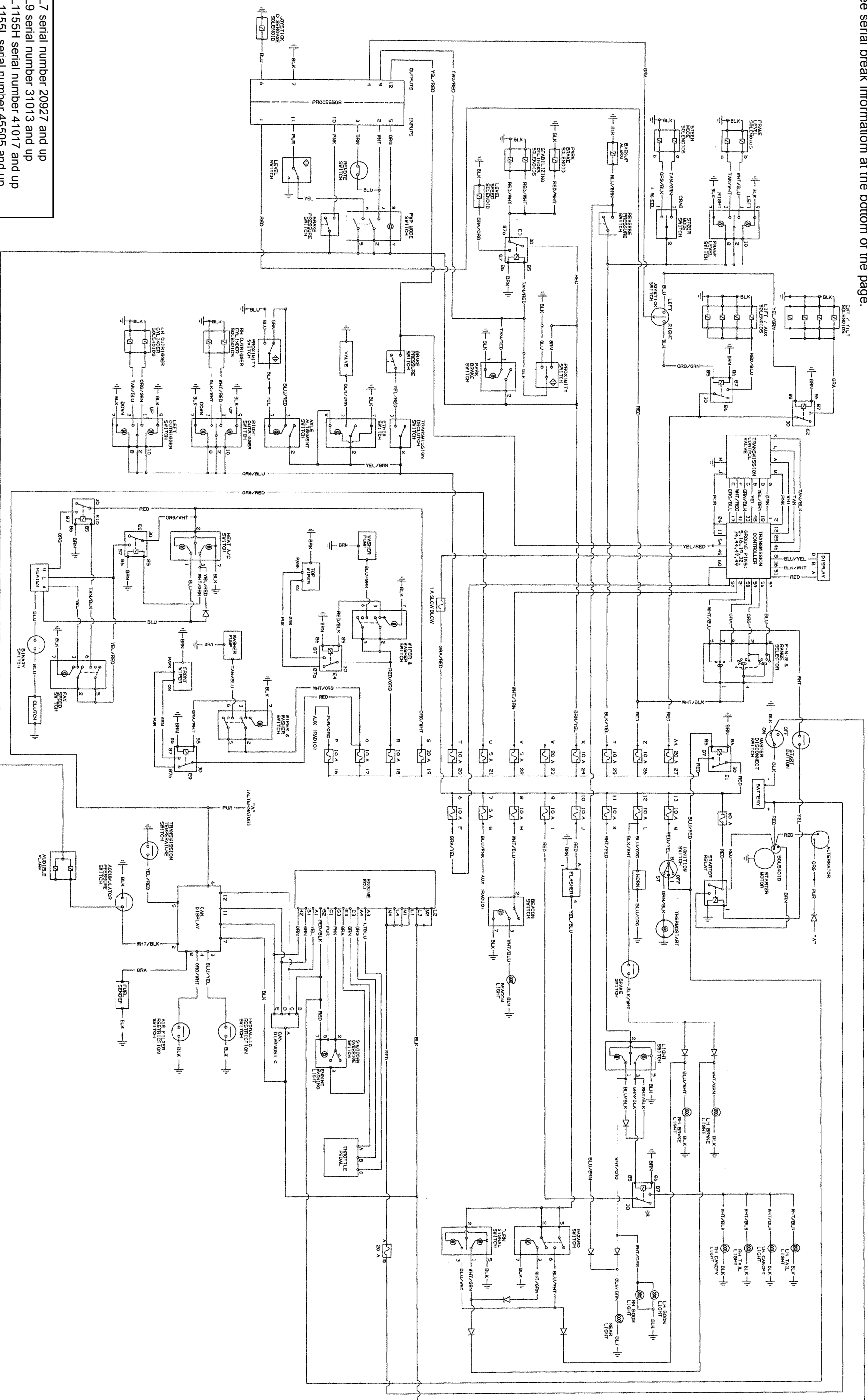
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DL7 serial number 20926 and before
DL9 serial number 31012 and before
DL1155H serial number 41016 and before
DL1155L serial number 45504 and before

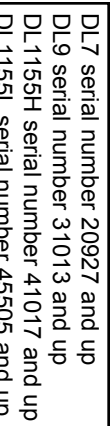
Electrical Schematic w/ 2-Button Joystick

See serial break information at the bottom of the page.

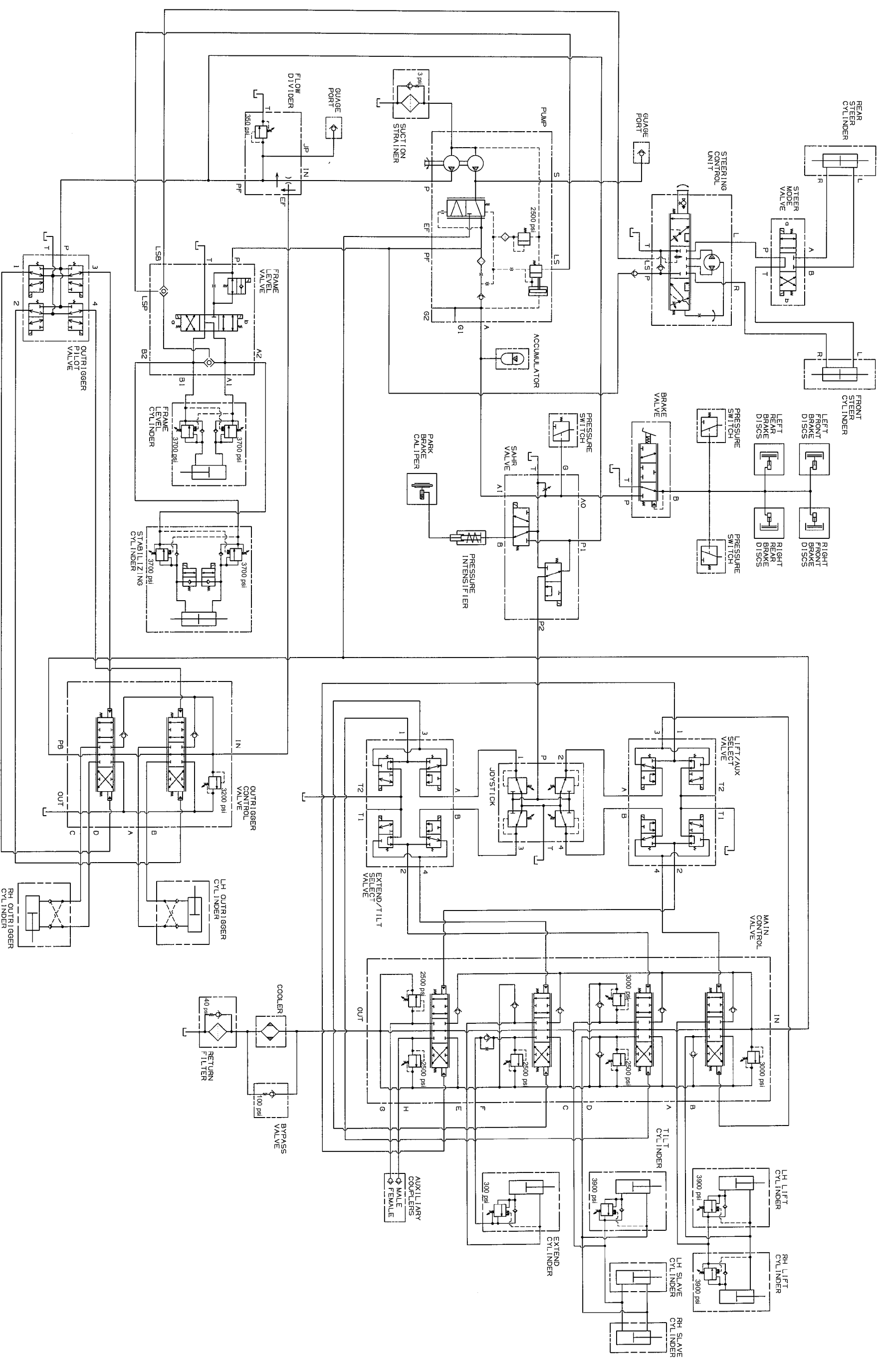


DL7 serial number 20927 and up
DL9 serial number 31013 and up
DL1155H serial number 41017 and up
DL1155L serial number 45505 and up

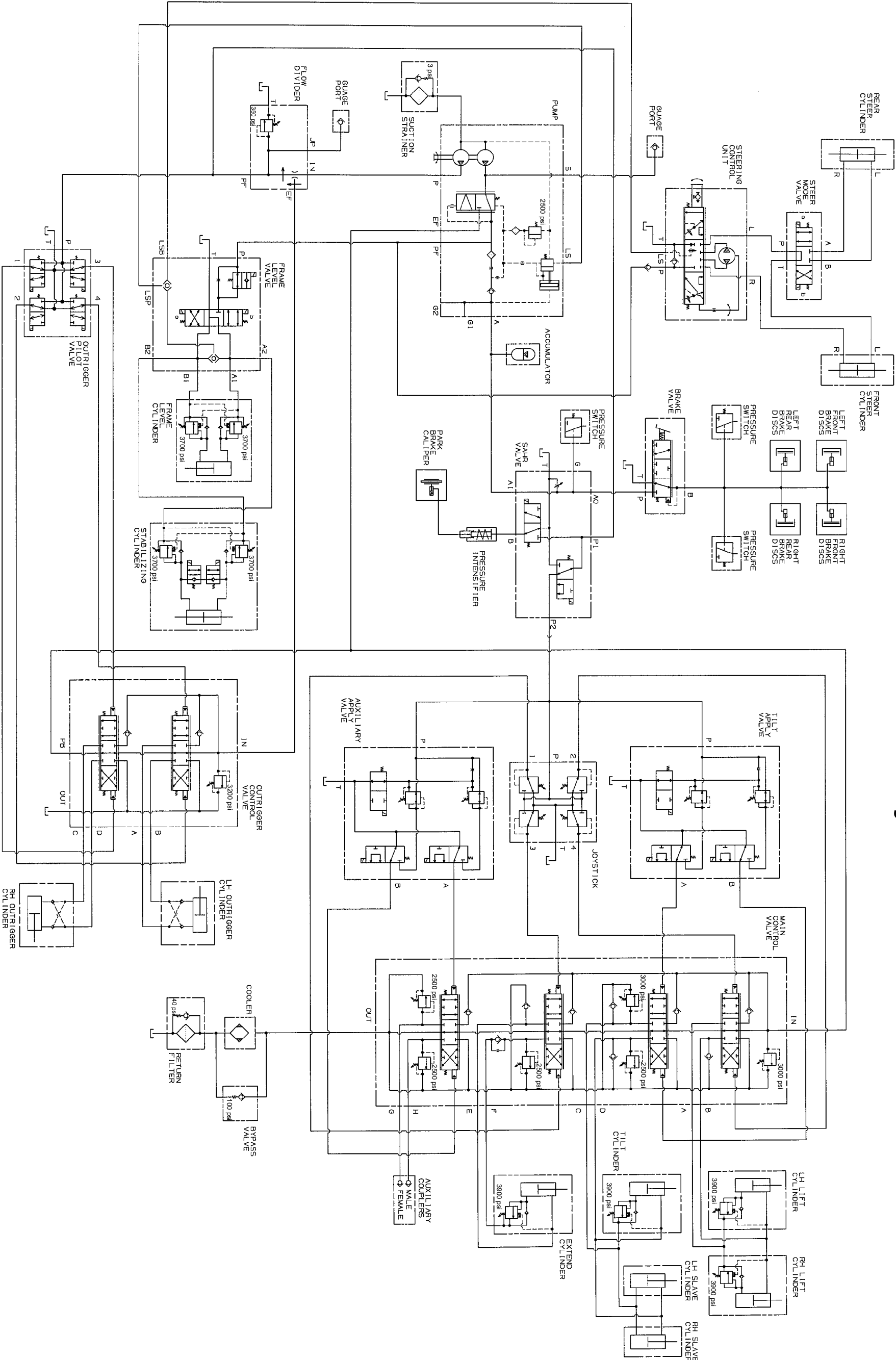
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Hydraulic Schematic with 2-Button Joystick



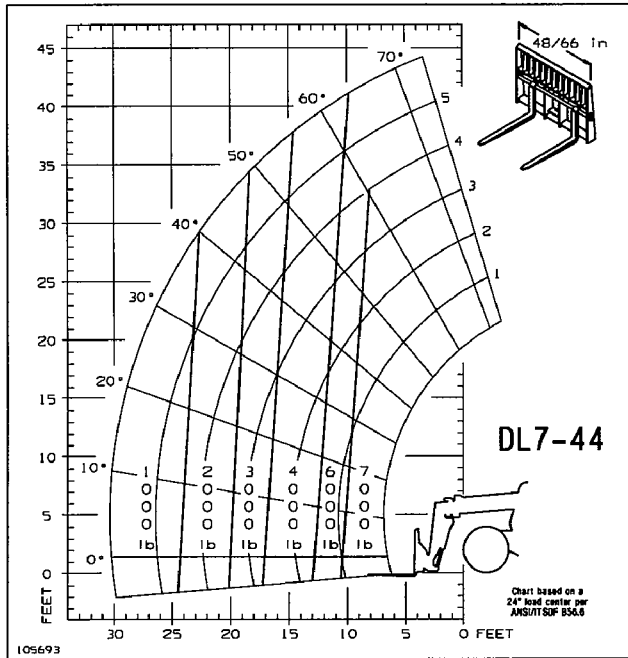
Hydraulic Schematic with 4-Button Joystick



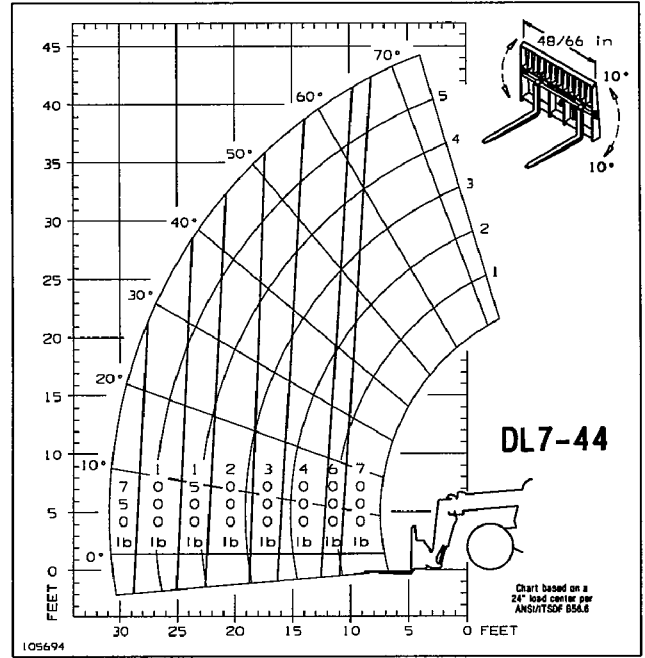
Load Zone Charts

DL7-44

Standard Carriage - Decal 105693

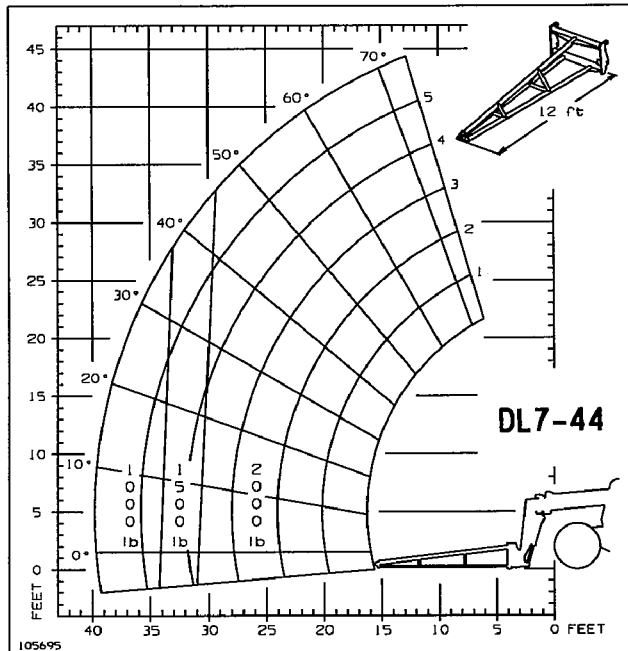


Rotate Carriage - Decal 105694

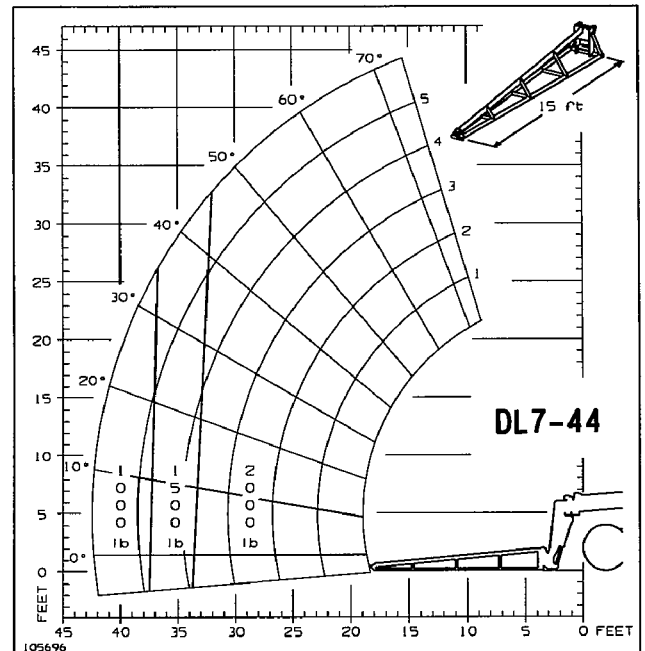


DL7-44

12-Ft. Truss Boom - Decal 105695



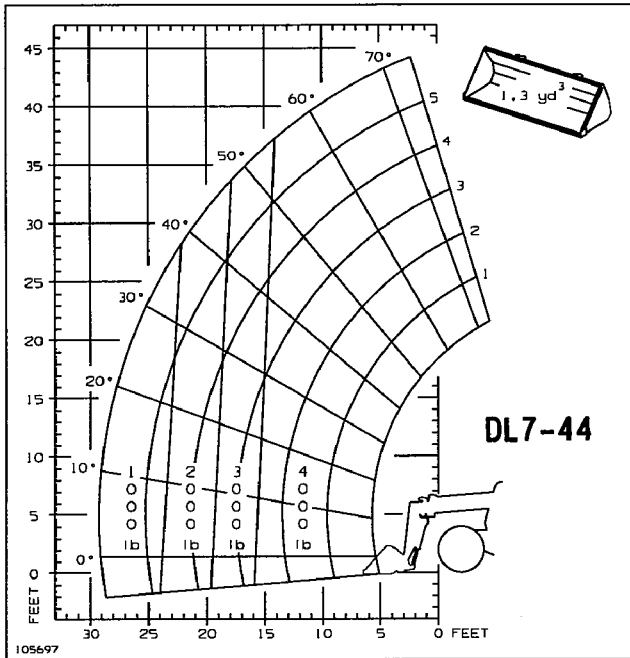
15-Ft. Truss Boom - Decal 105696



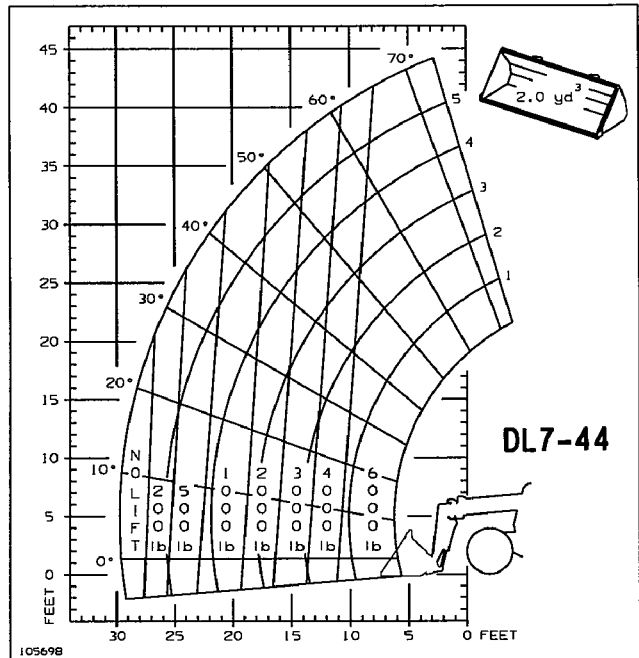
Load Zone Charts

DL7-44

1.3-Cu.-Yd. Bucket - Decal 105697

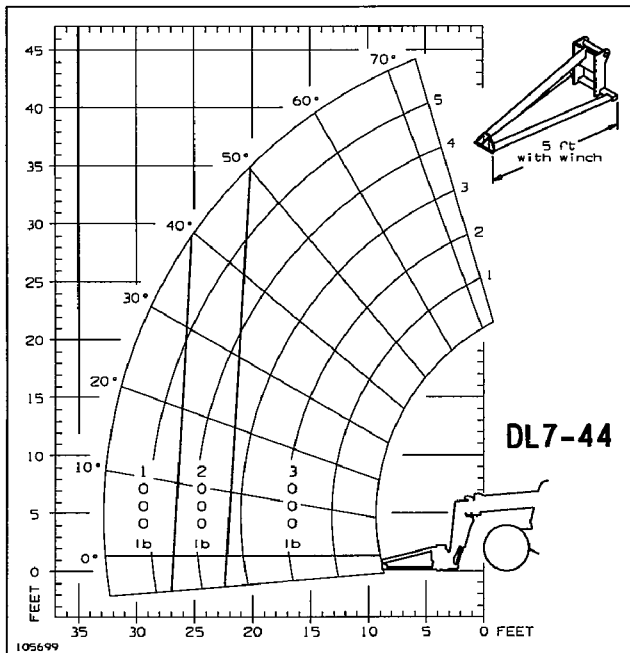


2.0-Cu.-Yd. Bucket - Decal 105698

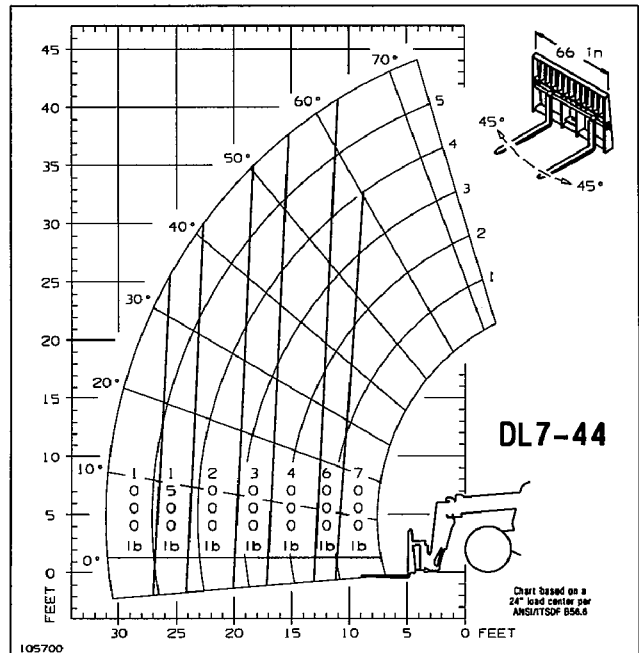


DL7-44

Winch - Decal 105699



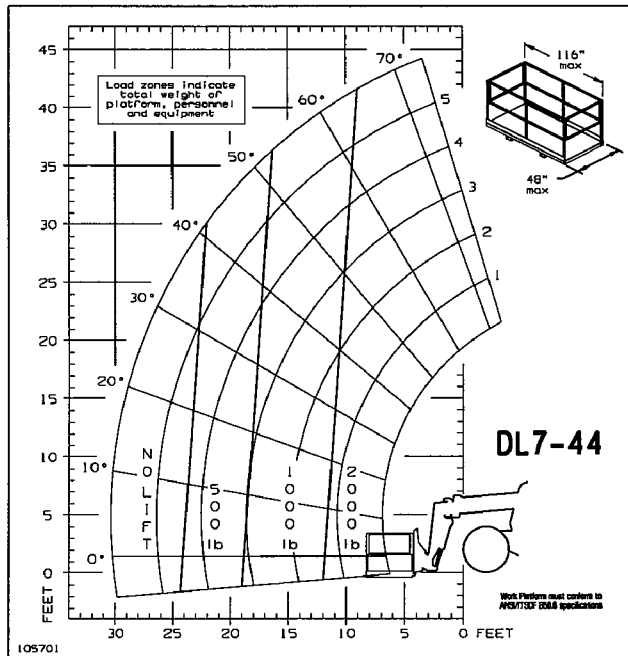
Swing Carriage - Decal 105700



Load Zone Charts

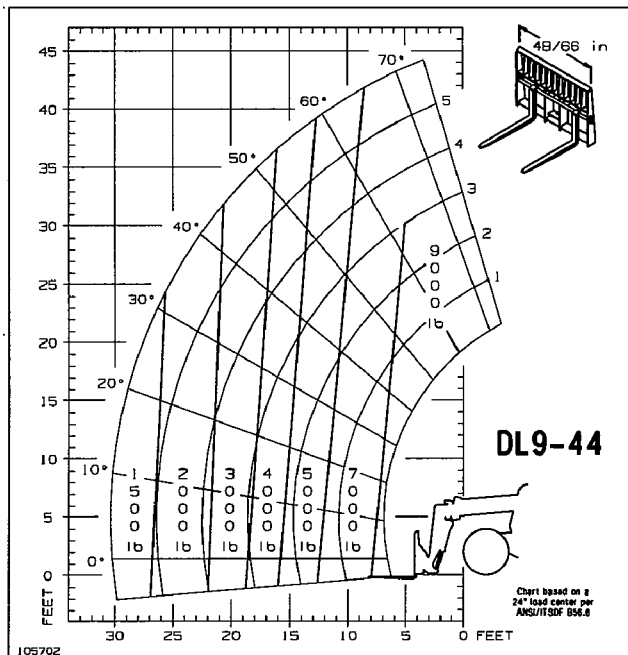
DL7-44

PWP - Decal 105701

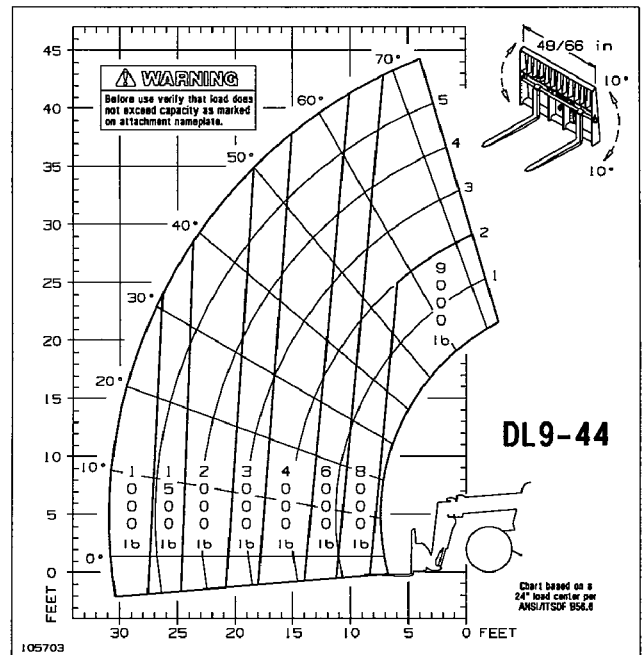


DL9-44

Standard Carriage - Decal 105702



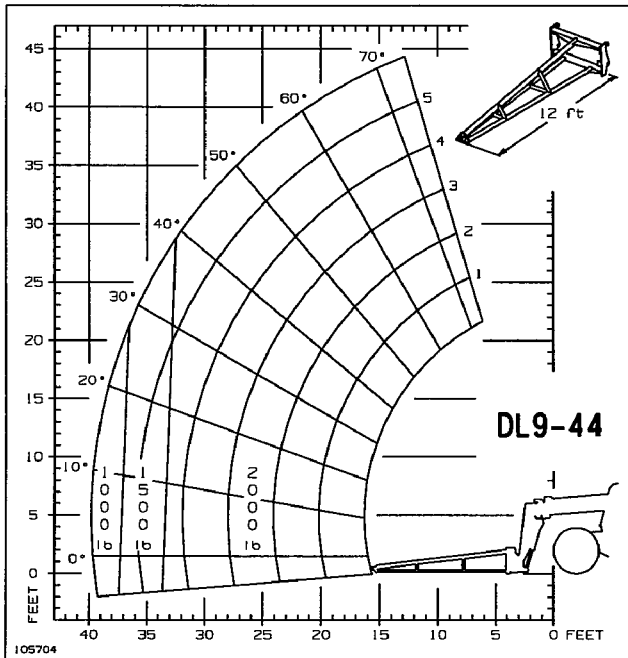
Rotate Carriage - Decal 105703



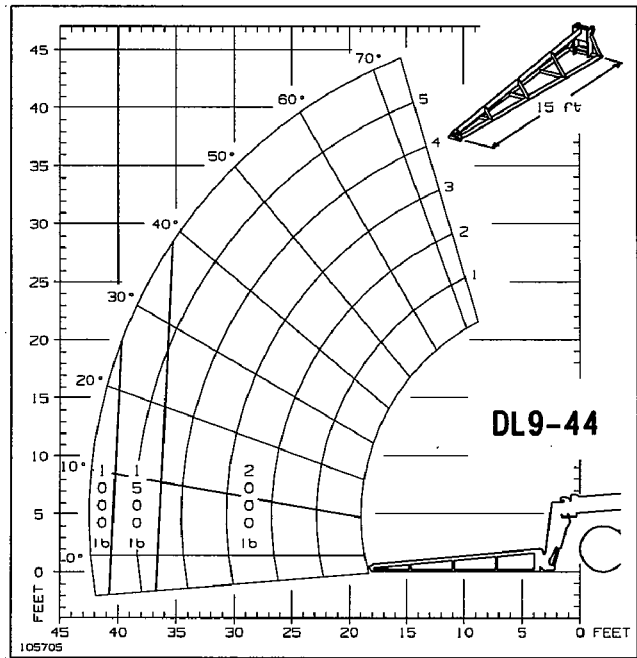
Load Zone Charts

DL9-44

12-Ft. Truss Boom - Decal 105704

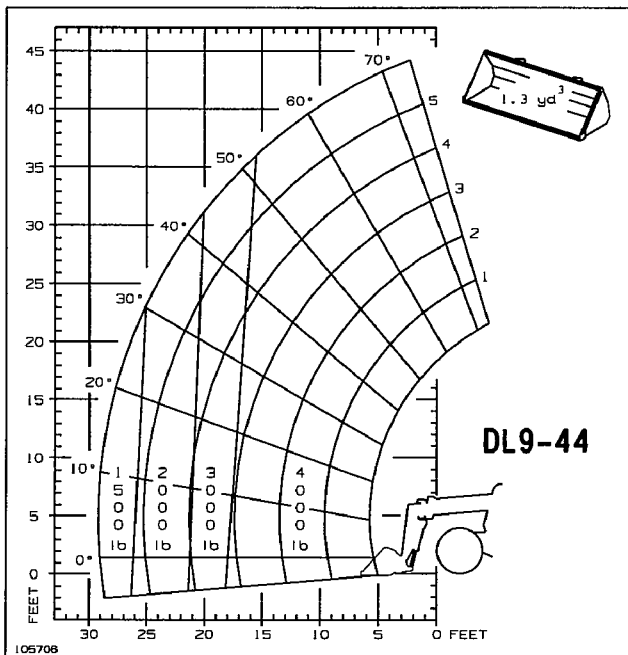


15-Ft. Truss Boom - Decal 105705

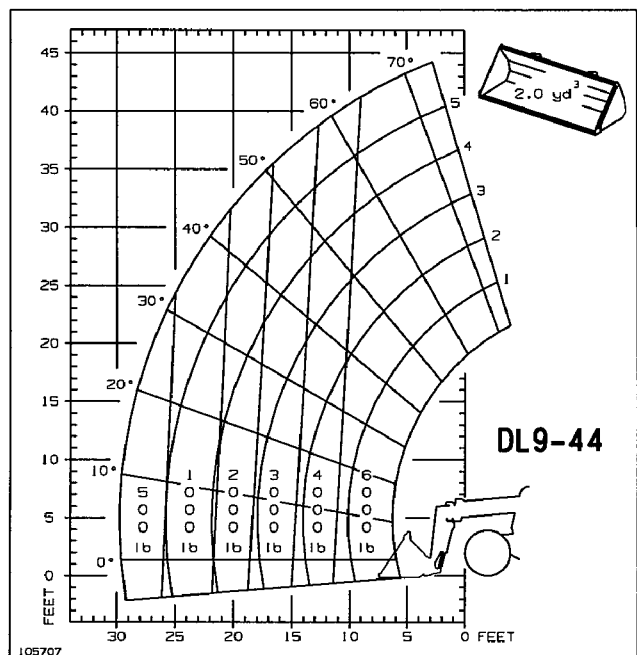


DL9-44

1.3-Cu.-Yd. Bucket - Decal 105706



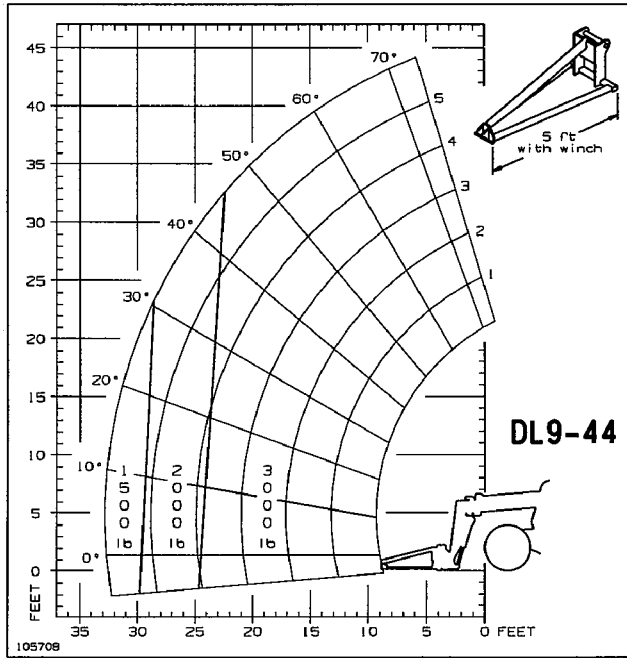
2.0-Cu.-Yd. Bucket - Decal 105707



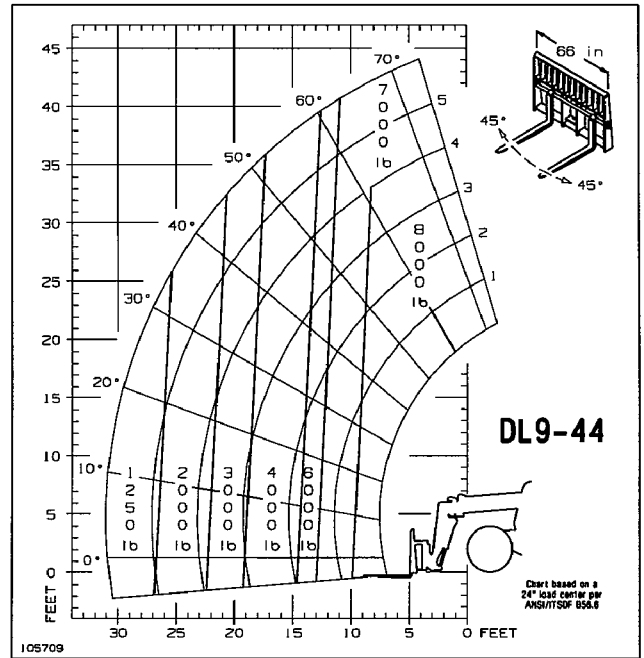
Load Zone Charts

DL9-44

Winch - Decal 105708

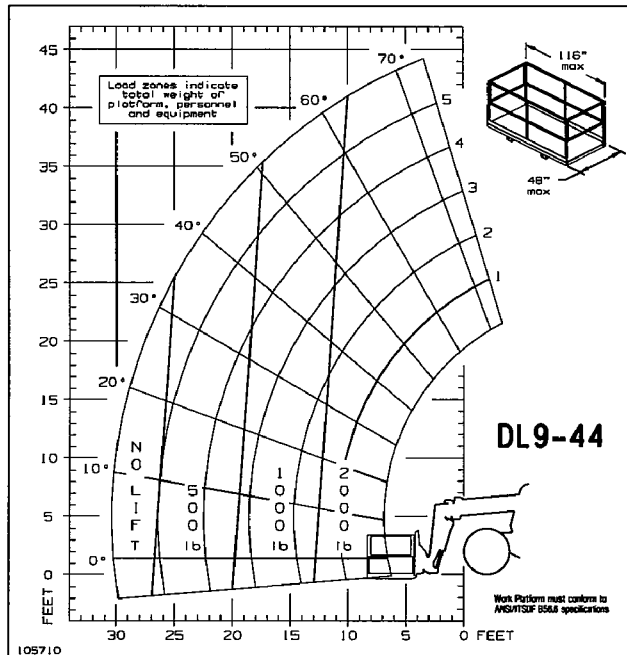


Swing Carriage - Decal 105709



DL9-44

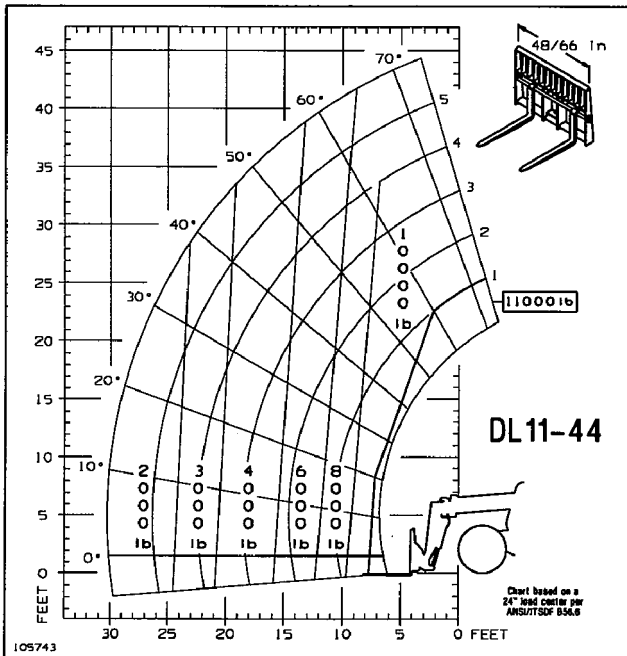
PWP - Decal 105710



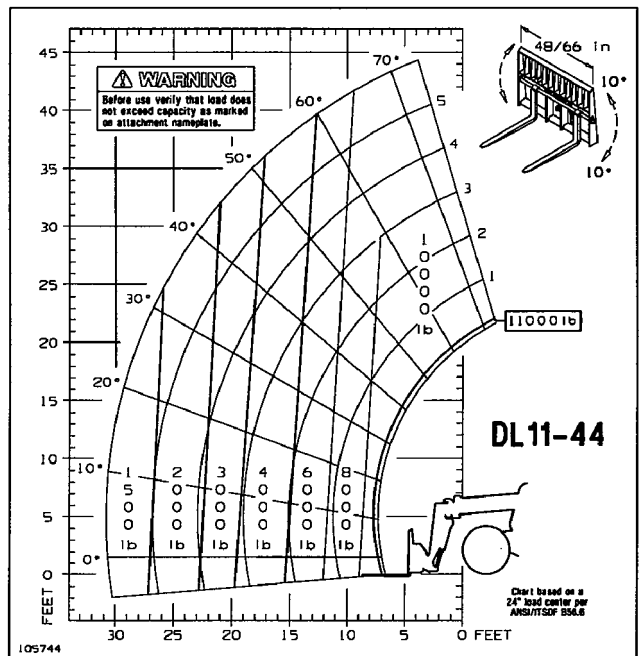
Load Zone Charts

DL11-44

Standard Carriage - Decal 105743

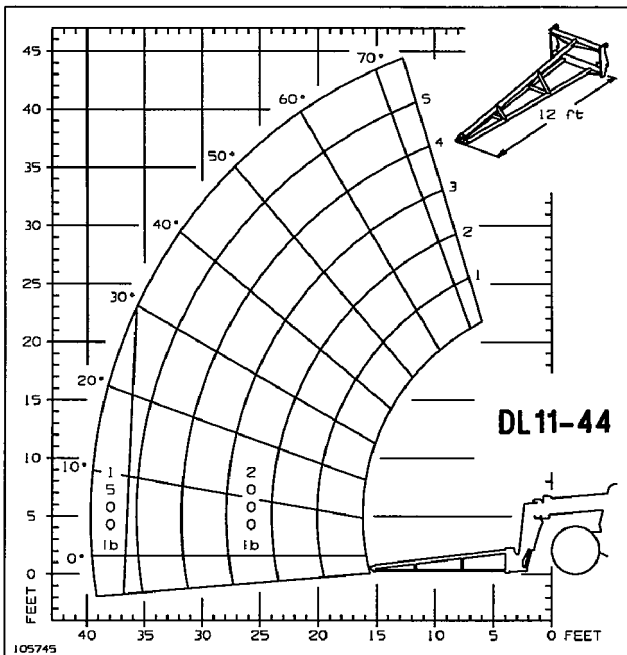


Rotate Carriage - Decal 105744

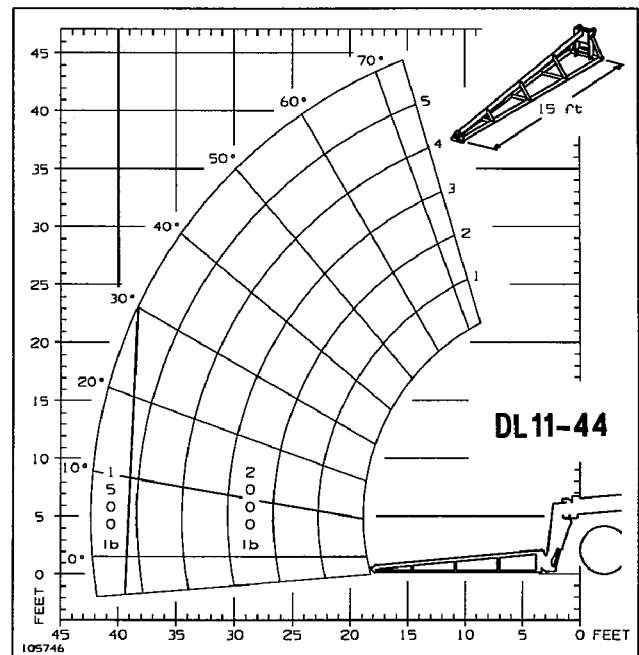


DL11-44

12-Ft. Truss Boom - Decal 105745



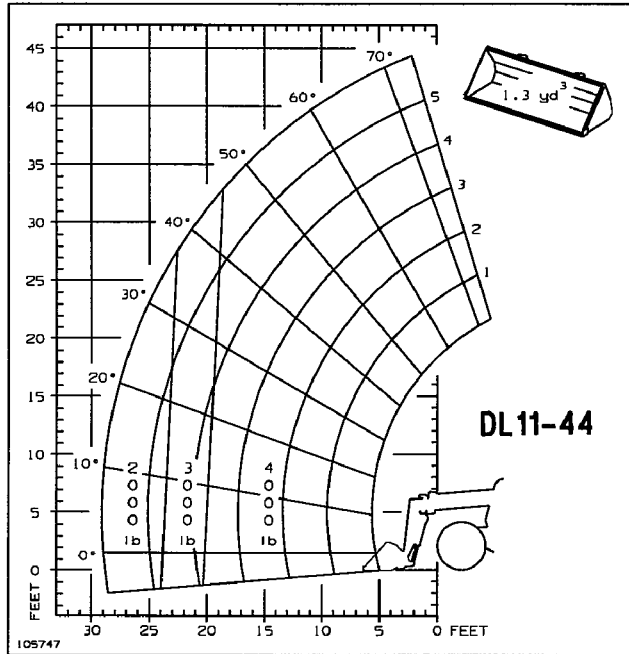
15-Ft. Truss Boom - Decal 105746



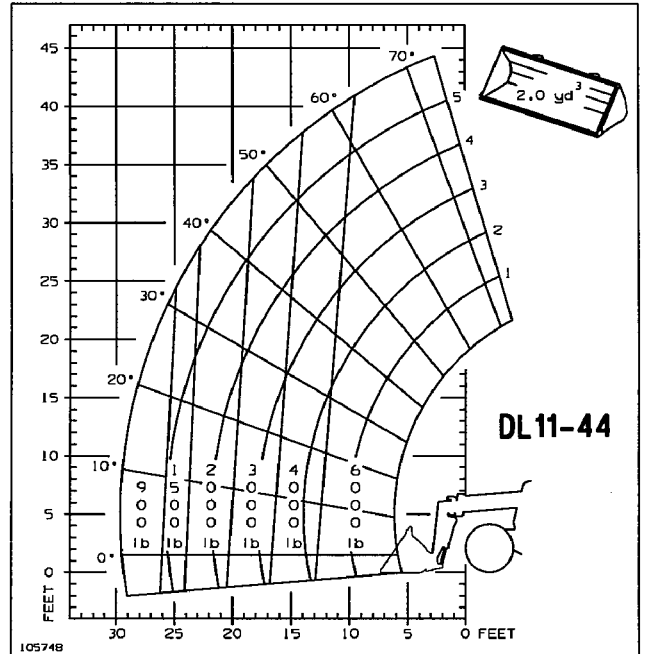
Load Zone Charts

DL11-44

1.3-Cu.-Yd. Bucket - Decal 105747

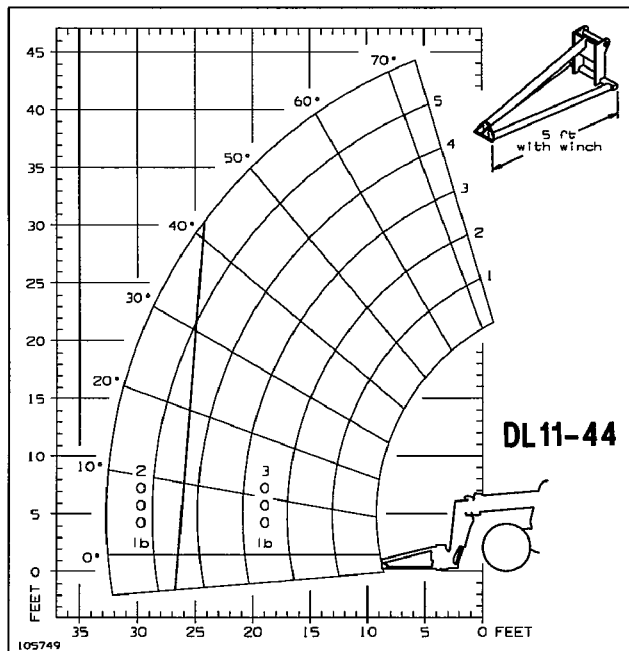


2.5-Cu.-Yd. Bucket - Decal 105748

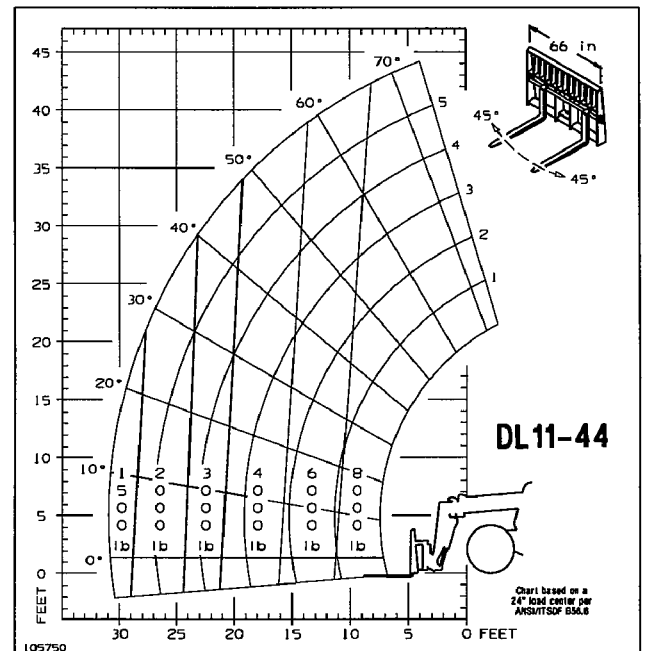


DL11-44

Winch - Decal 105749



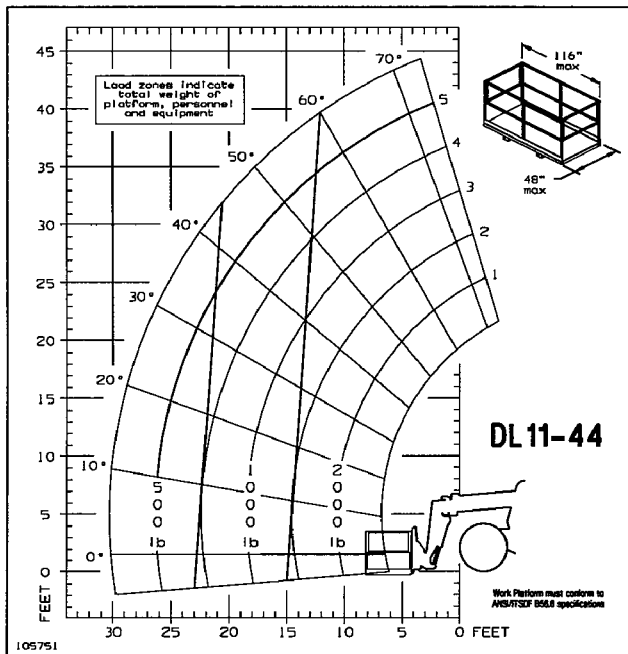
Swing Carriage - Decal 105750



Load Zone Charts

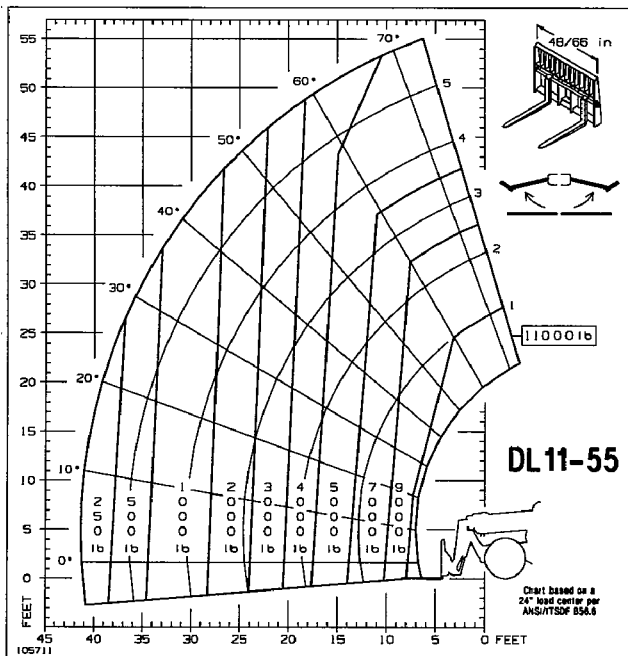
DL11-44

PWP - Decal 105751

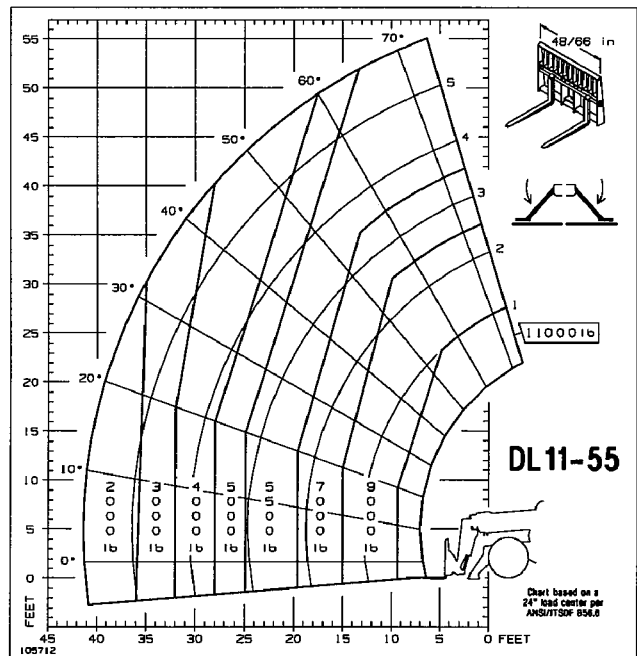


DL11-55

Standard Carriage - Decal 105711
Outriggers Up



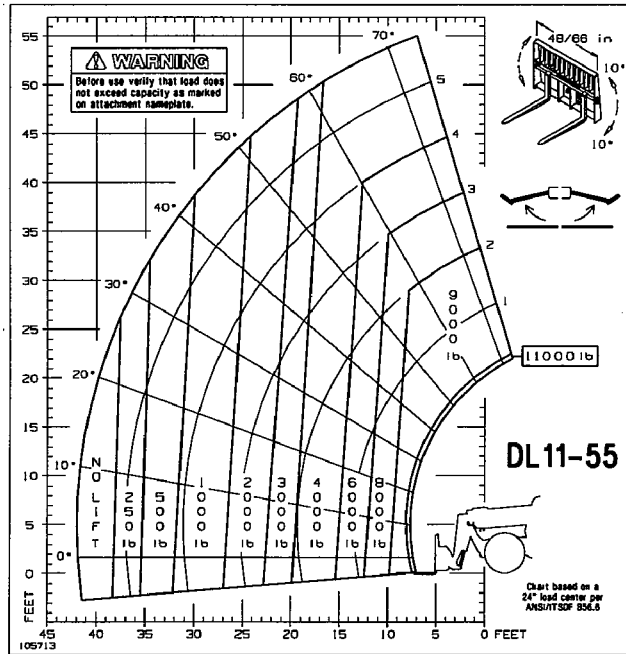
Standard Carriage - Decal 105712
Outriggers Down



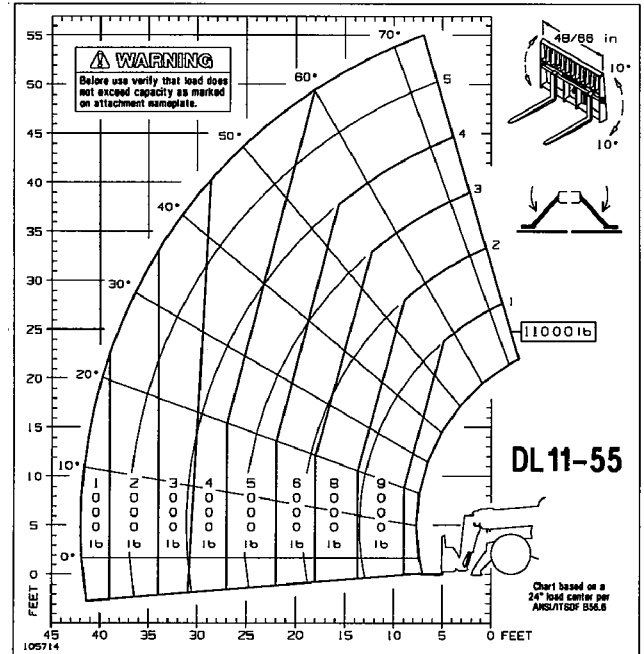
Load Zone Charts

DL11-55

Rotate Carriage - Decal 105713
Outriggers Up

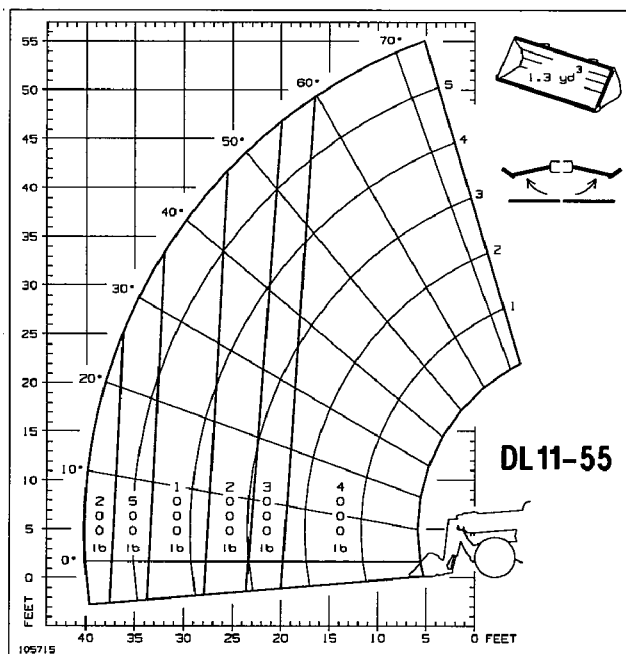


Rotate Carriage - Decal 105714
Outriggers Down

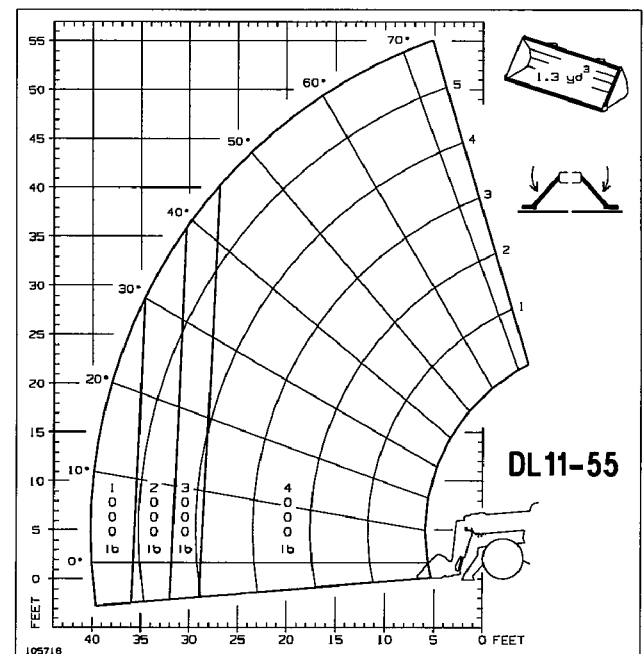


DL11-55

1.3-Cu.-Yd. Bucket - Decal 105715
Outriggers Up



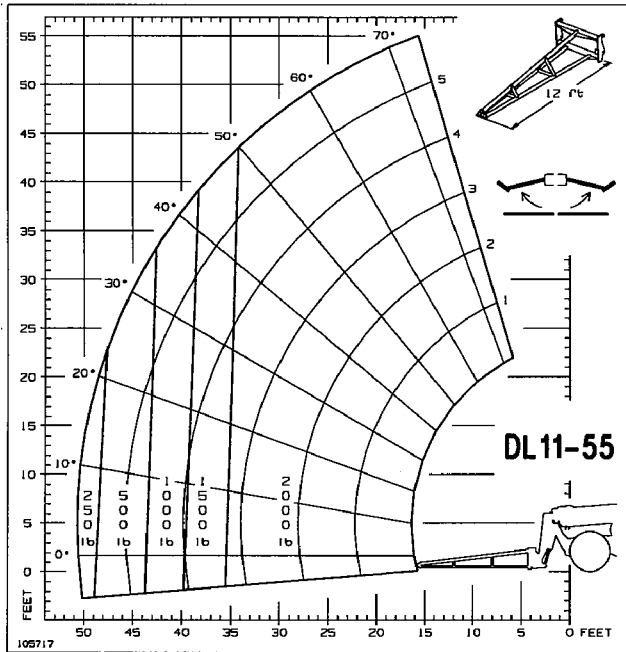
1.3-Cu.-Yd. Bucket - Decal 105716
Outriggers Down



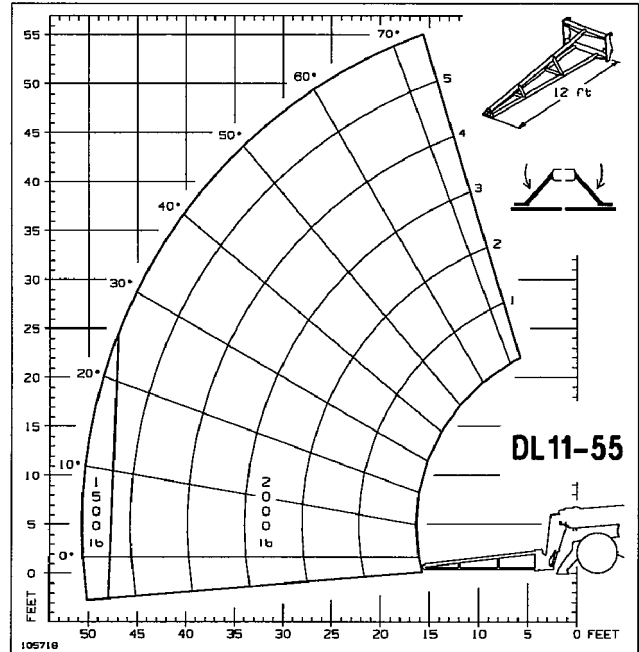
Load Zone Charts

DL11-55

12-Ft. Truss Boom - Decal 105717
Outriggers Up

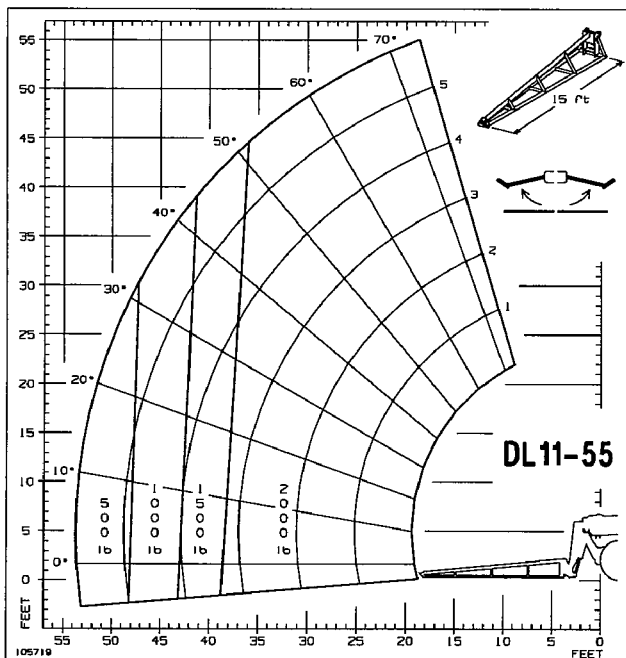


12-Ft. Truss Boom - Decal 105718
Outriggers Down

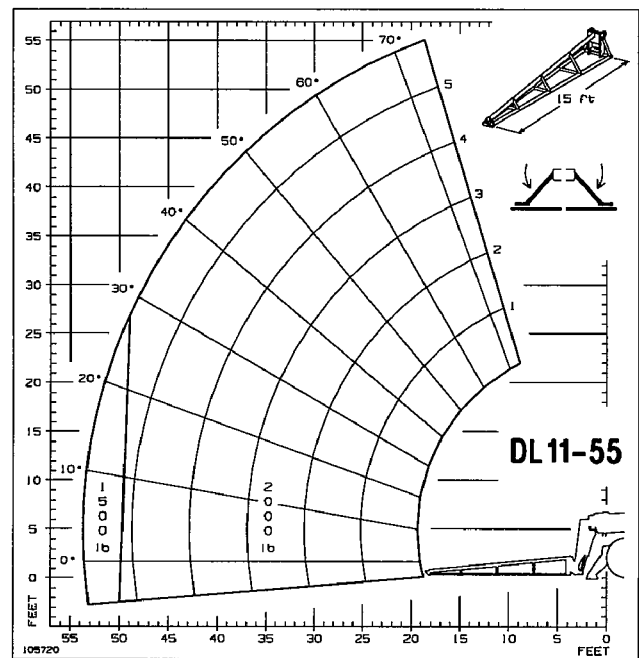


DL11-55

15-Ft. Truss Boom - Decal 105719
Outriggers Up



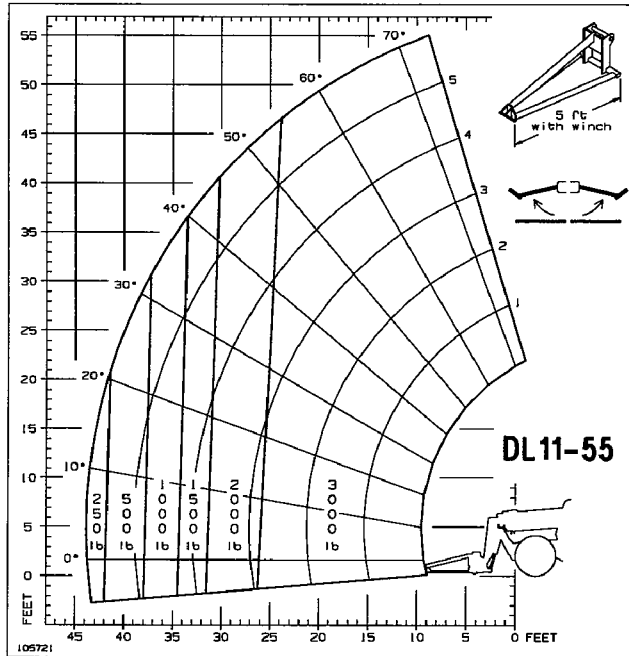
15-Ft. Truss Boom - Decal 105720
Outriggers Down



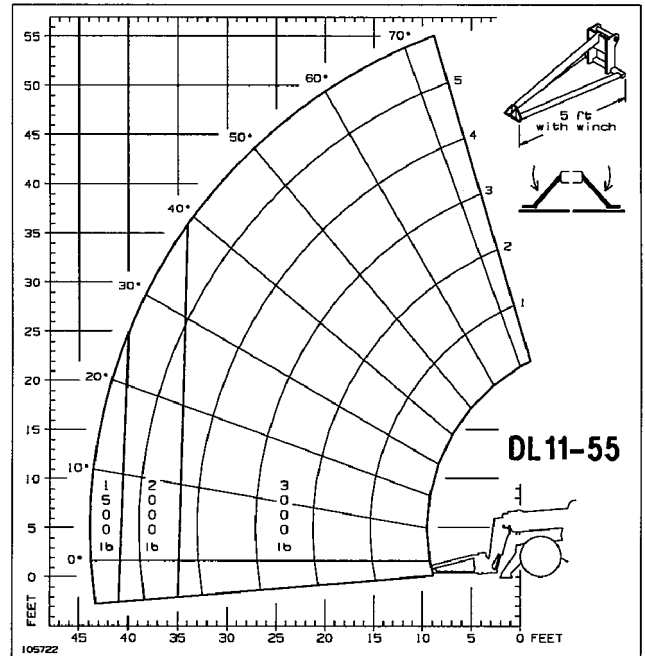
Load Zone Charts

DL11-55

Winch - Decal 105721
Outriggers Up

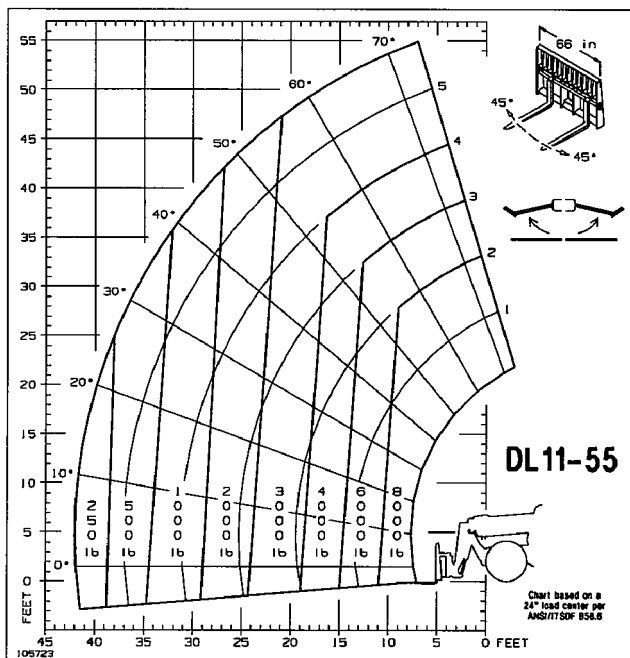


Winch - Decal 105722
Outriggers Down

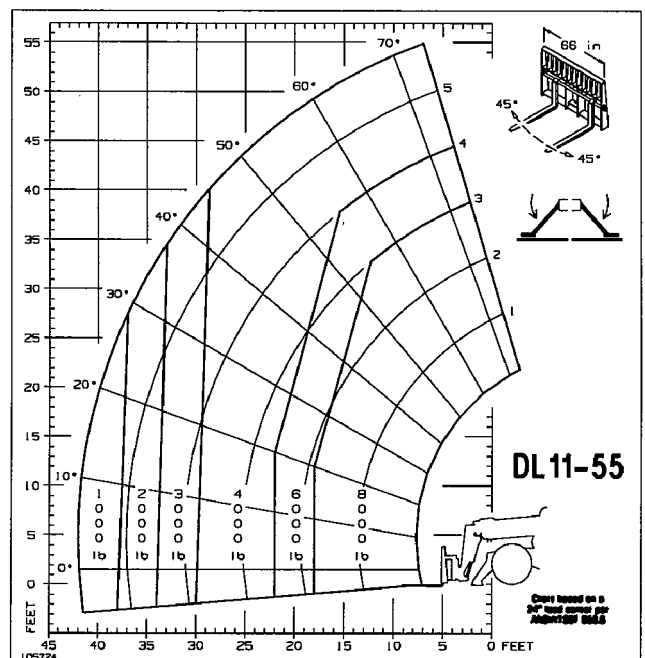


DL11-55

Swing Carriage - Decal 105723
Outriggers Up



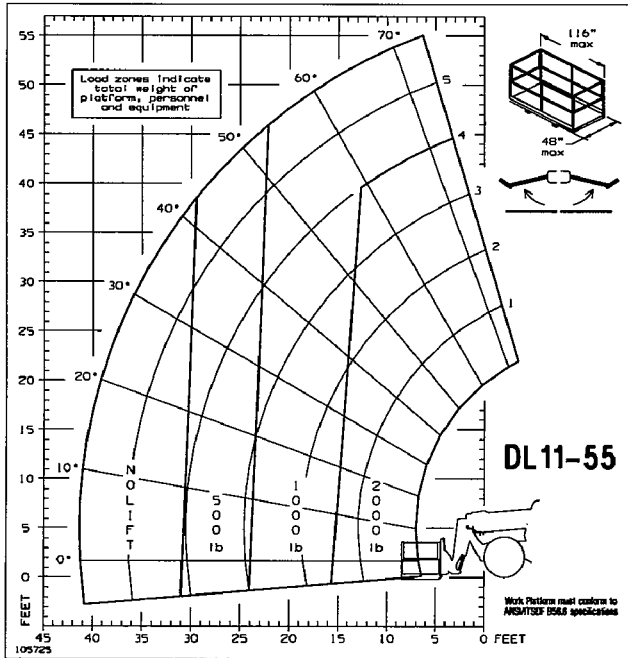
Swing Carriage - Decal 105724
Outriggers Down



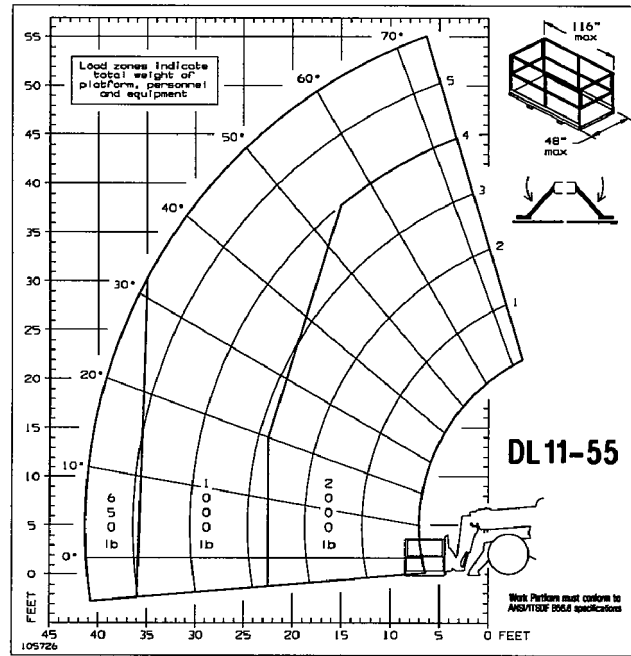
Load Zone Charts

DL11-55

PWP - Decal 105725
Outriggers Up

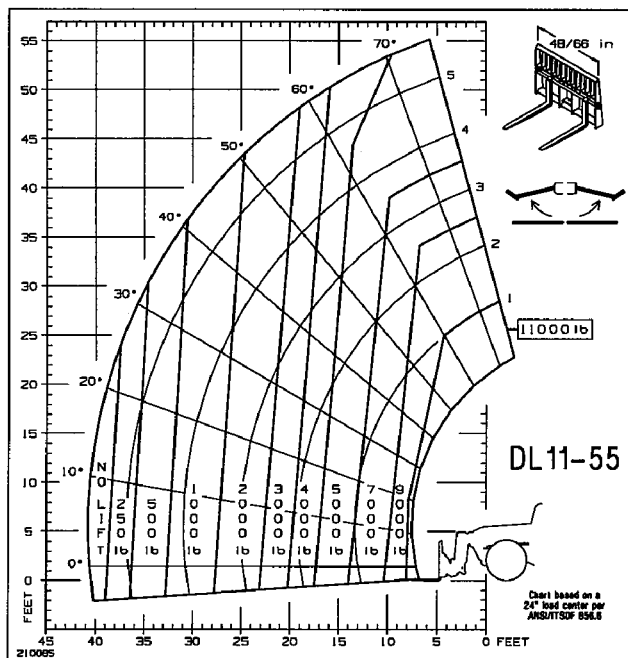


PWP - Decal 105726
Outriggers Down

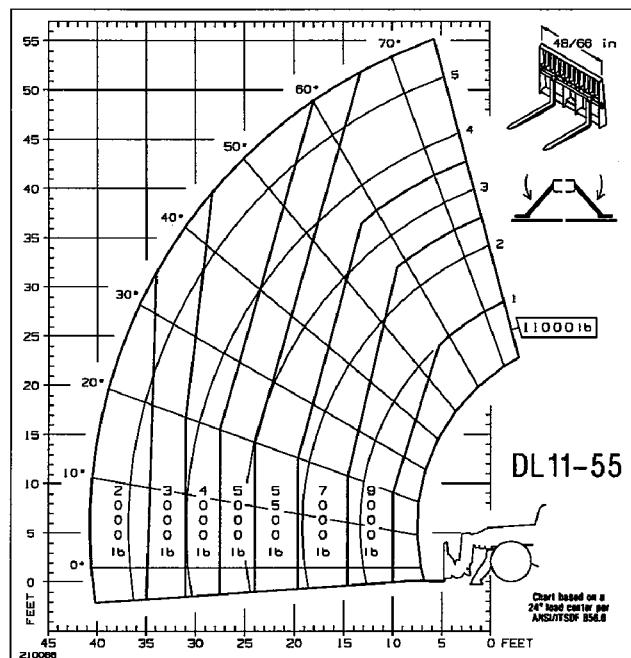


DL11-55 Low Boom

Standard Carriage - Decal 210065
Outriggers Up



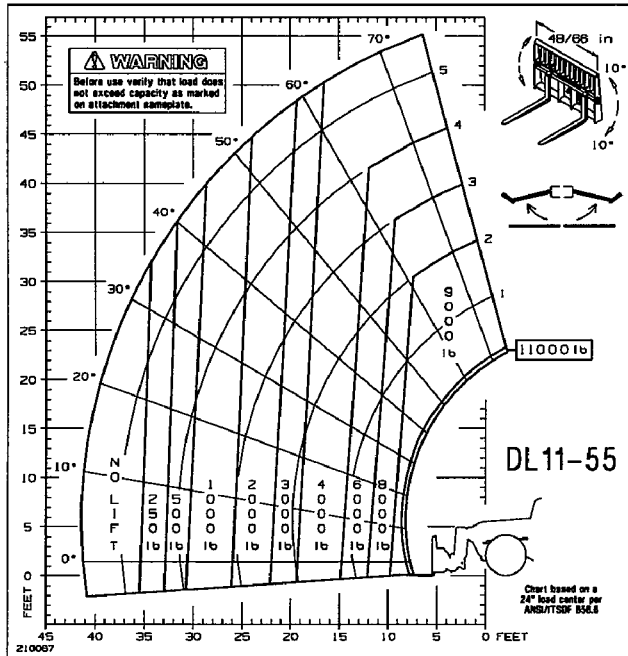
Standard Carriage - Decal 210066
Outriggers Down



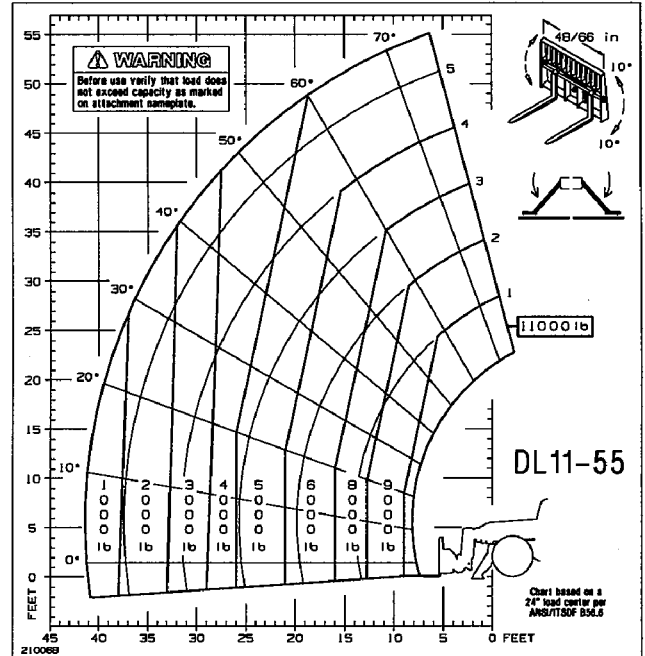
Load Zone Charts

DL11-55 Low Boom

Rotate Carriage - Decal 210067
Outriggers Up

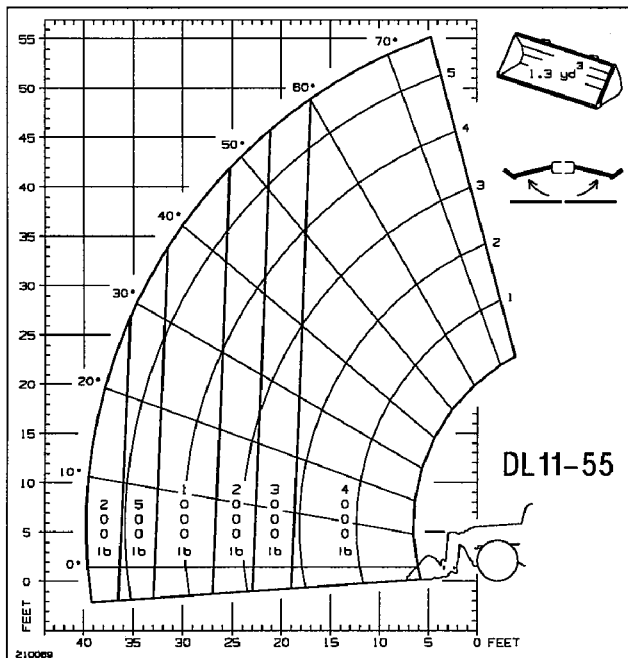


Rotate Carriage - Decal 210068
Outriggers Down

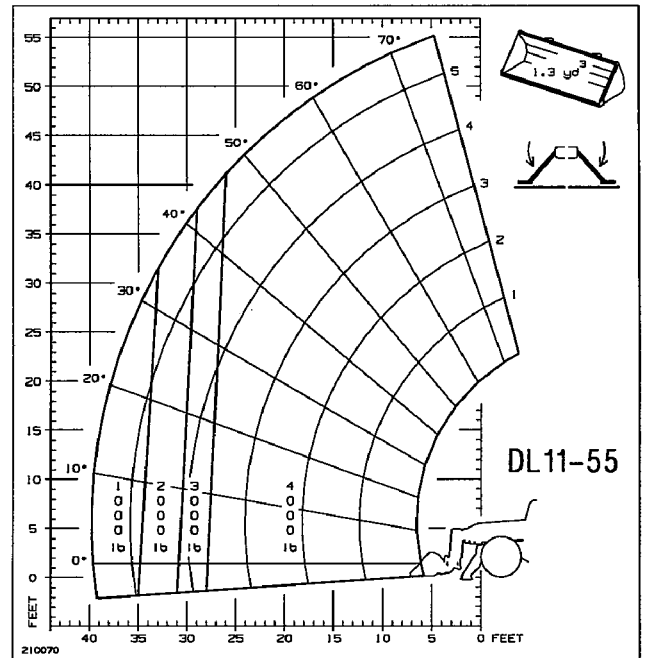


DL11-55 Low Boom

1.3-Cu.-Yd. Bucket - Decal 210069
Outriggers Up



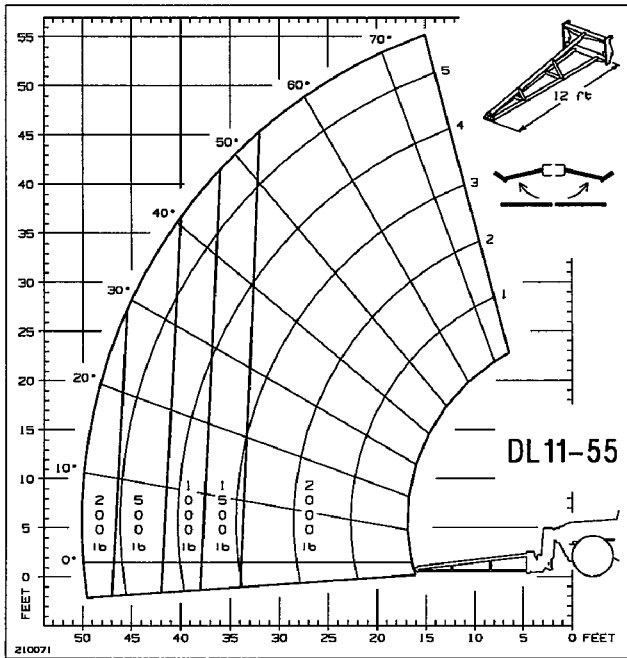
1.3-Cu.-Yd. Bucket - Decal 210070
Outriggers Down



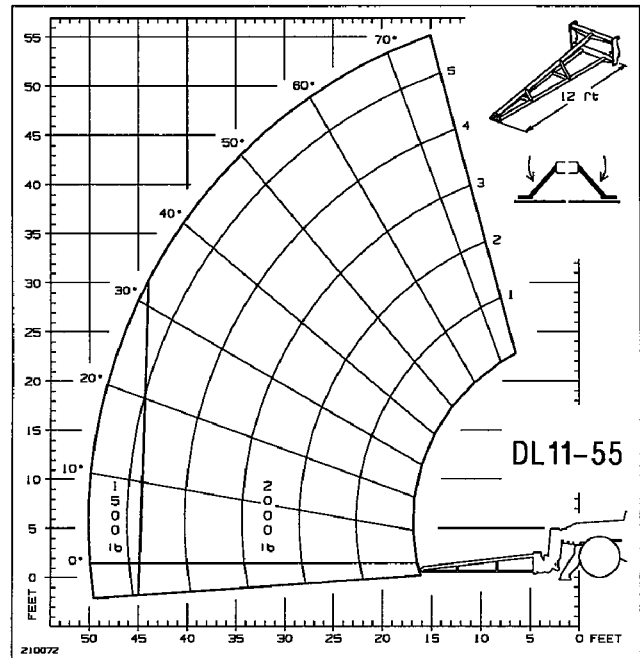
Load Zone Charts

DL11-55 Low Boom

12-Ft. Truss Boom - Decal 210071
Outriggers Up

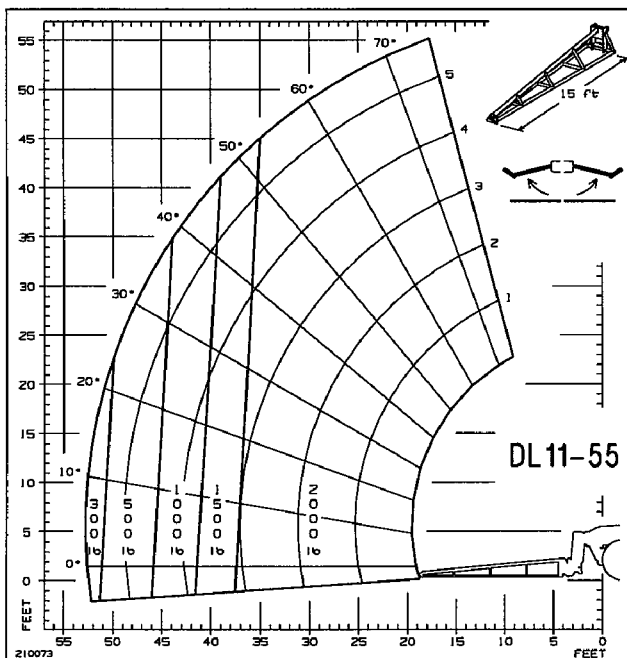


12-Ft. Truss Boom - Decal 210072
Outriggers Down

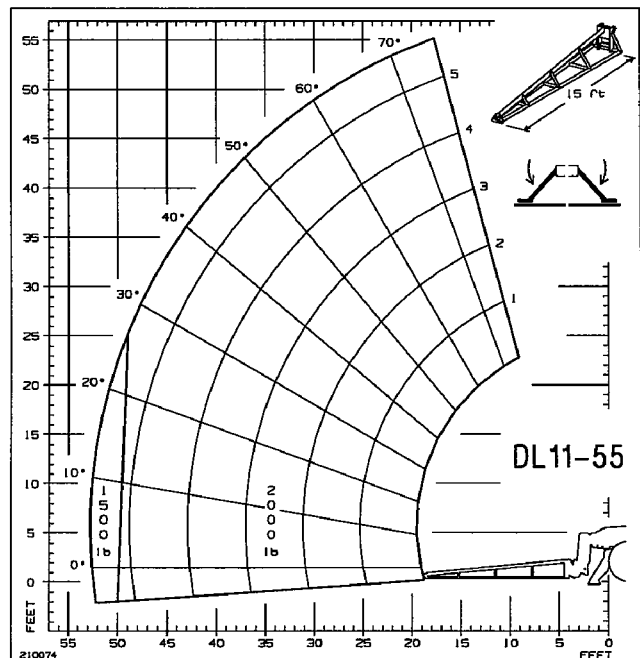


DL11-55 Low Boom

15-Ft. Truss Boom - Decal 210073
Outriggers Up



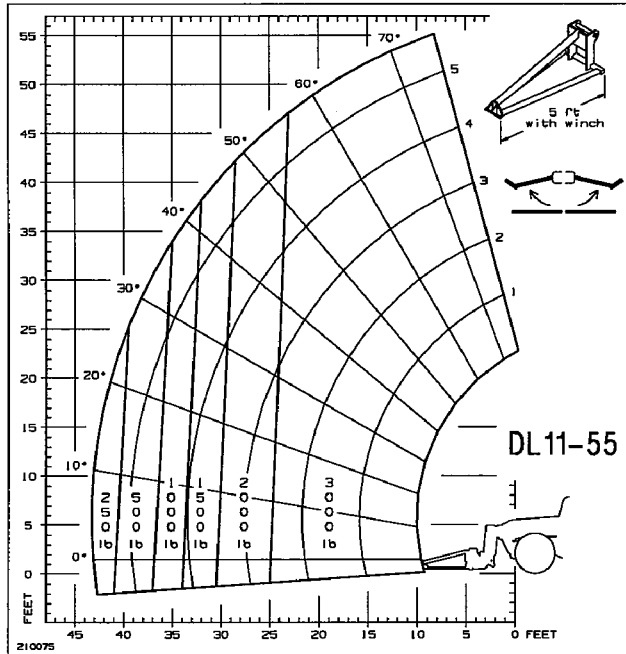
15-Ft. Truss Boom - Decal 210074
Outriggers Down



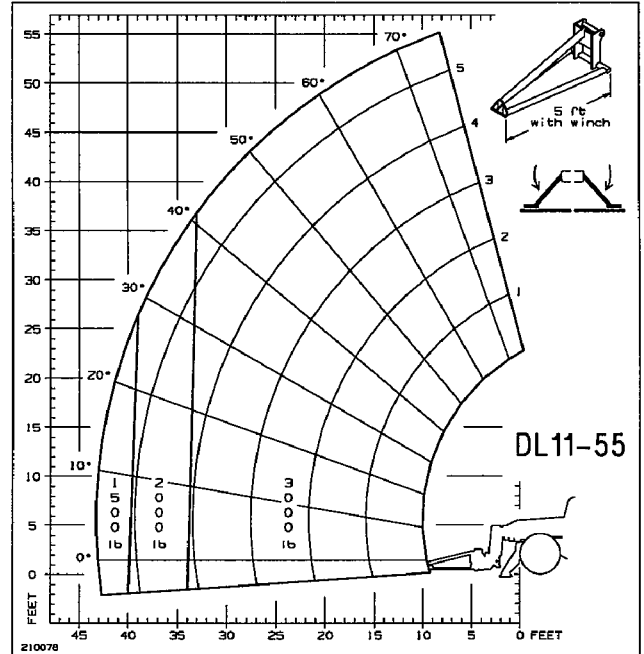
Load Zone Charts

DL11-55 Low Boom

Winch - Decal 210075
Outriggers Up

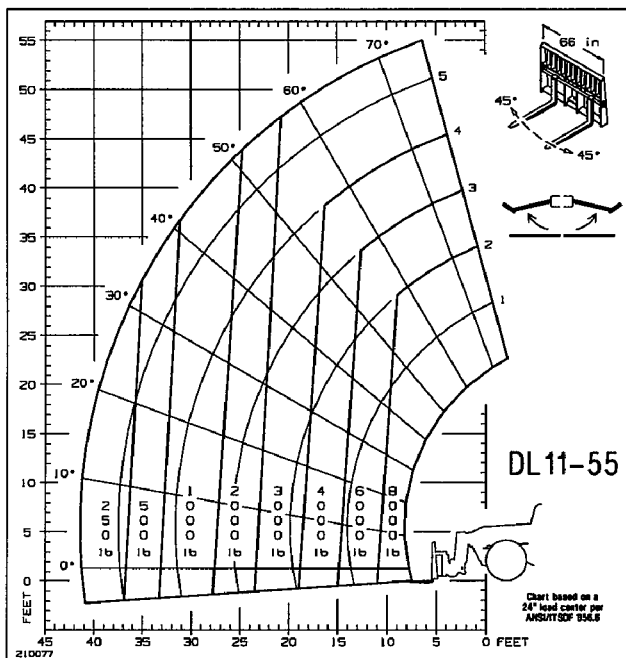


Winch - Decal 210076
Outriggers Down

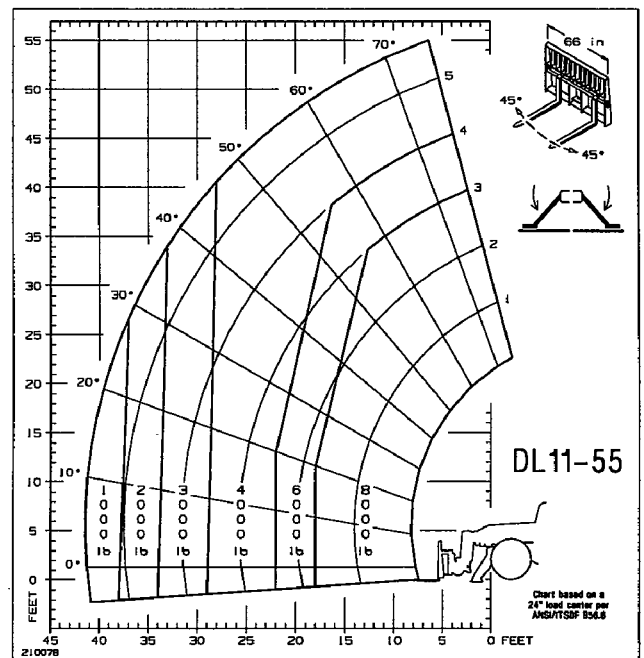


DL11-55 Low Boom

Swing Carriage - Decal 210077
Outriggers Up



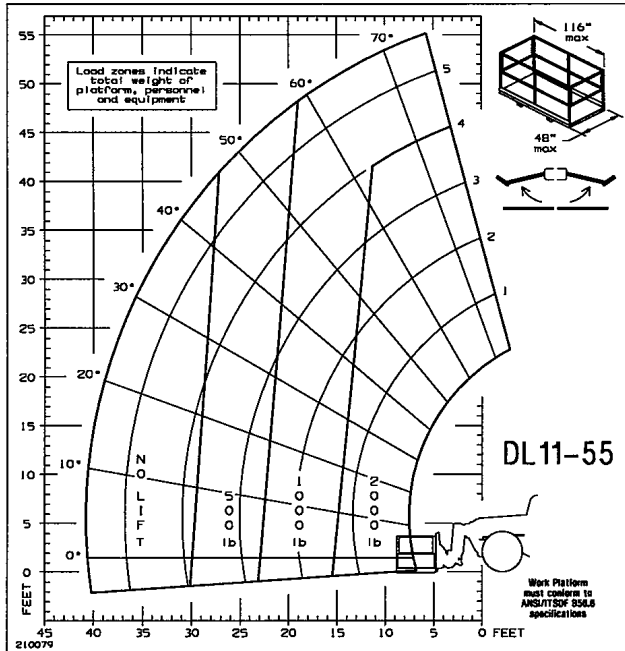
Swing Carriage - Decal 210078
Outriggers Down



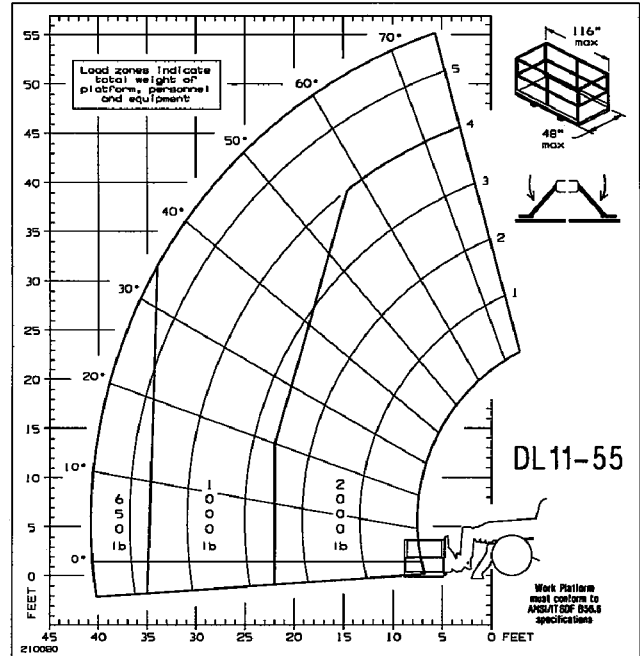
Load Zone Charts

DL11-55 Low Boom

PWP - Decal 210079
Outriggers Up

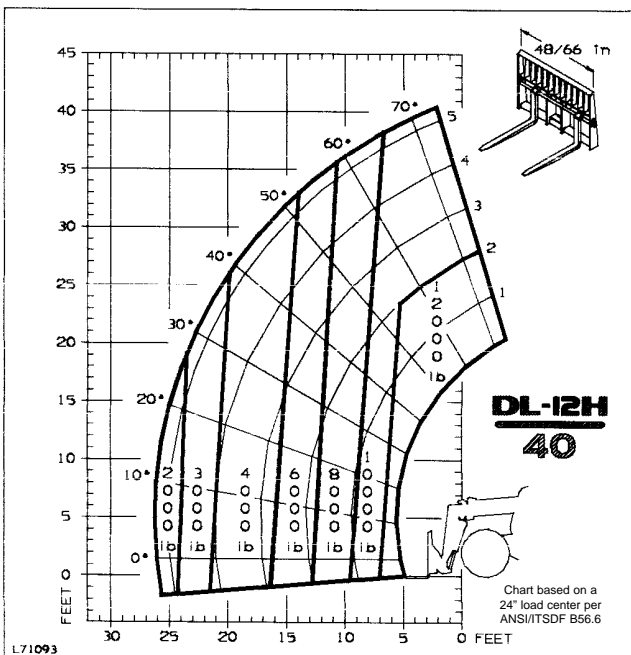


PWP - Decal 210080
Outriggers Down

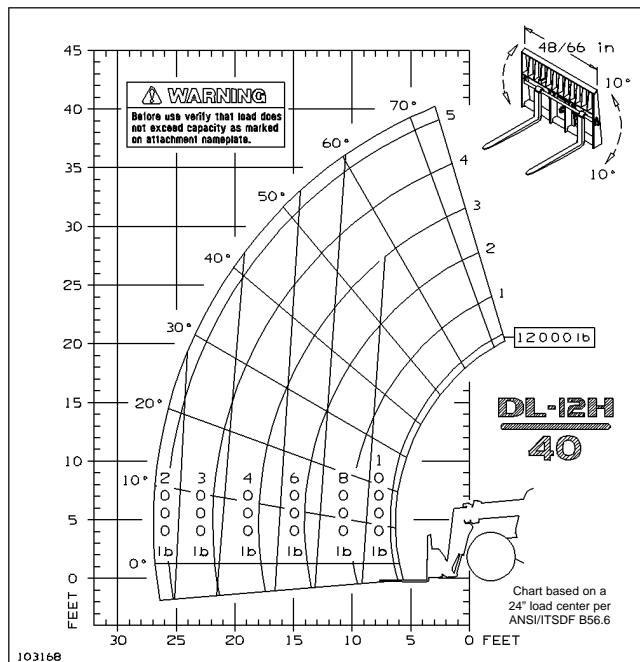


DL12-40

Standard Carriage - Decal L71093



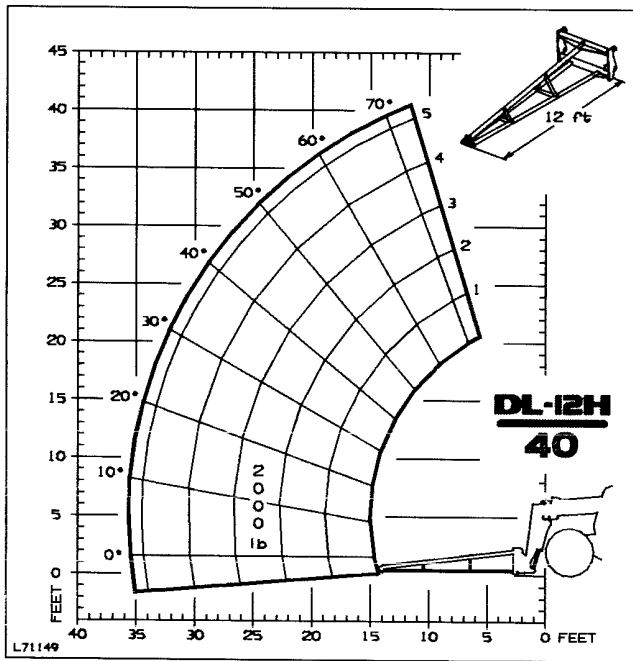
Rotate Carriage - Decal 103168



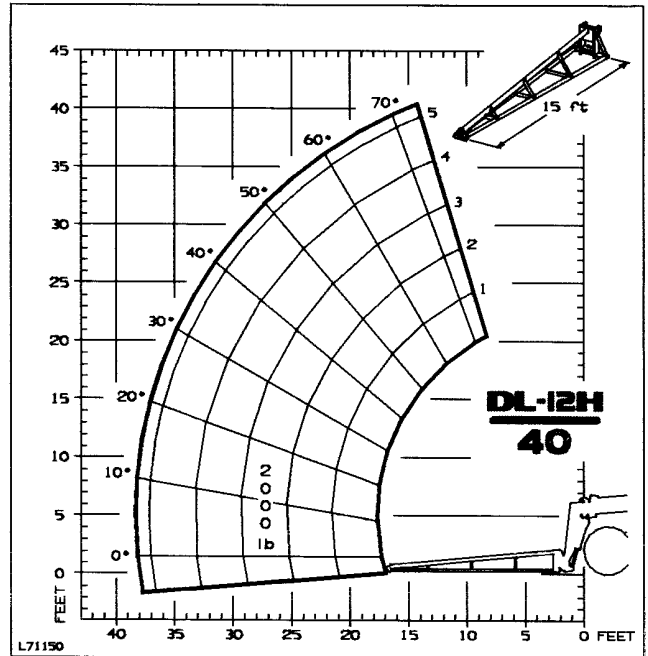
Load Zone Charts

DL12-40

12-Ft. Truss Boom - Decal L71149

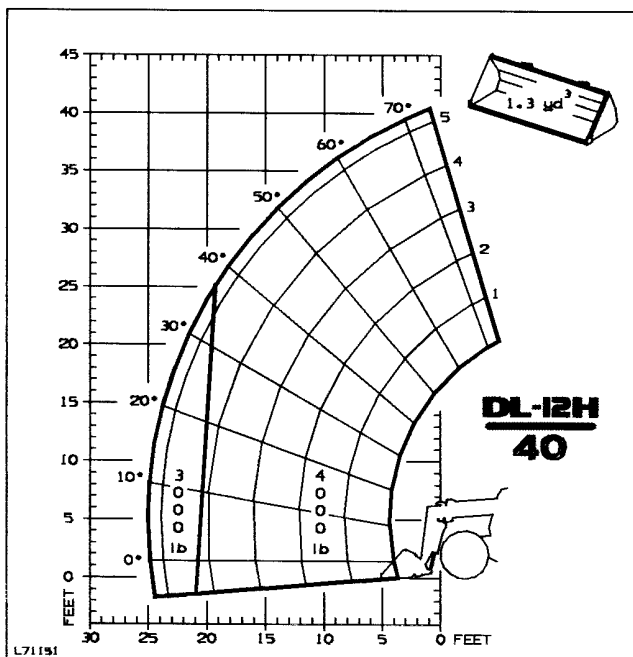


15-Ft. Truss Boom - Decal L71150

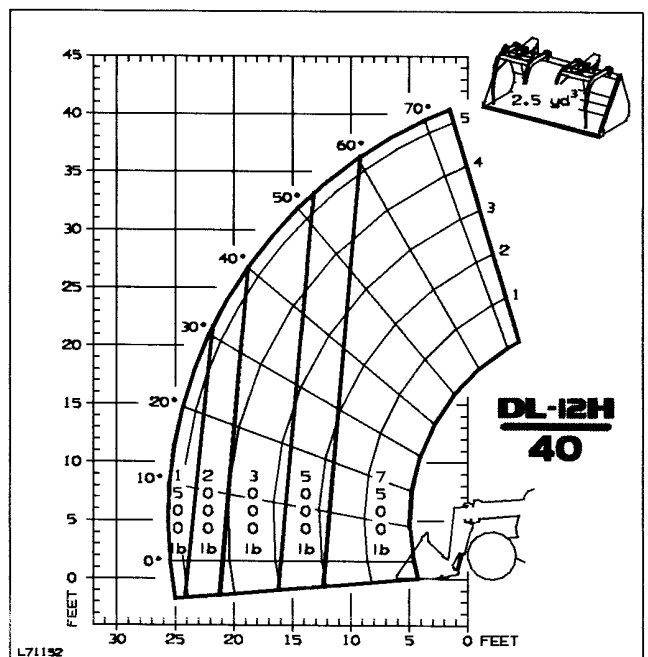


DL12-40

1.3-Cu.-Yd. Bucket - Decal L71151



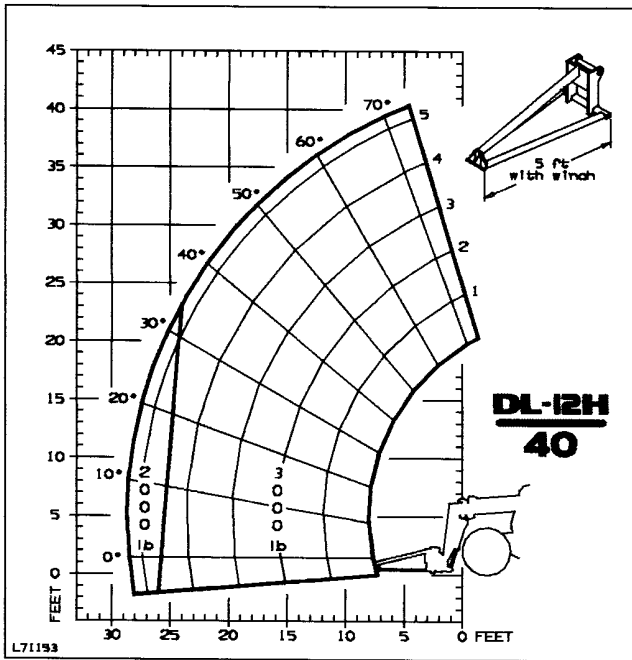
2.5-Cu.-Yd. Bucket - Decal L71152



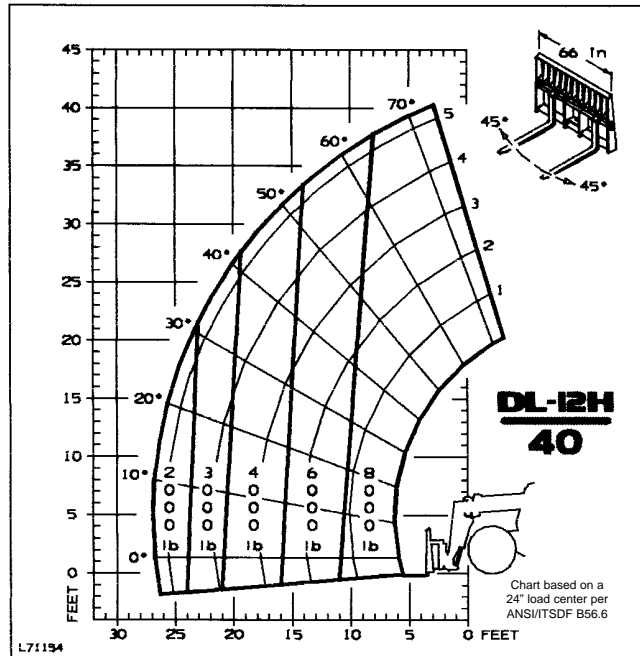
Load Zone Charts

DL12-40

Winch - Decal L71153

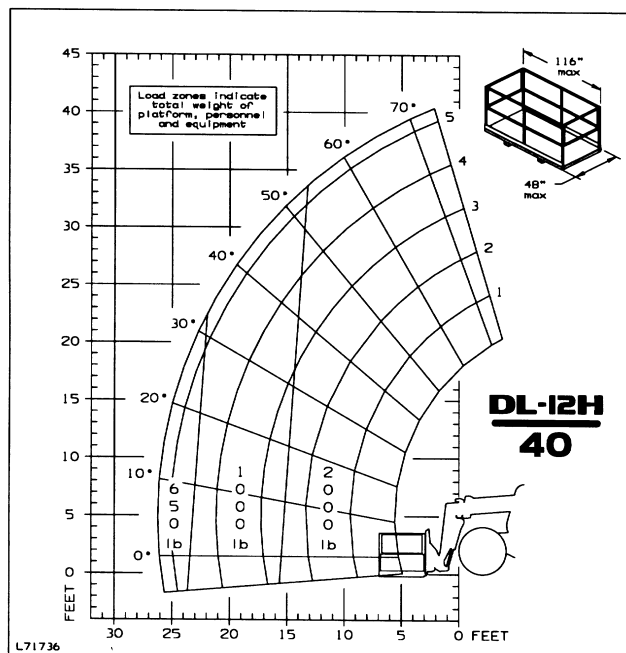


Swing Carriage - Decal L71154






DL12-40




PWP - Decal L71736



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 x 1.355, or lb-in value x 0.113.

Index

A

Access to Components Chart	51
Accessories	31
Adjustments	
Slide Pads Clearance	60
Air Filter	
Changing Elements	62
Operator's Station	
Heater/AC Controls	24
Alternator	
Belt Service	63
Indicator Lamp	27
Anti-freeze - See Radiator	
Attachment Tools	
Applications	39
Changing	34
Operating Methods - See Chapter 6	
Axles	
Alignment Switch	25
Description - See Chapter 2	
Greasing	48
See also Service	
Axle Oil	
Changing	62
Checking Levels	56
Recommended Grades	47

B

Backup Alarm	31
Battery	
Battery Disconnect Switch	31
Charging Lamp	27
Jump Starting	58
Service	58
Boom Travel	
Function Controls	27
Speed Control Knobs	29
Function Indicators	29
Service	59
Bucket Attachment Tool - See Material Handling	

C

Capacities - See Chapter 2	
Carriage Lifting Applications	
Load Capacity and Reach	39
Load Carry, Elevation and Placement	40
Checklists, delivery and pre-delivery	6,7
Controls	
Adjustable Steer Console	25
Dash	24
Right Side Panel	27
Floor and Seat	30
Cylinders	
Servicing	50

D

Dealer Services	50
Decal Locations	68
Decals, applying new	67
Dimensions - See Chapter 2	
Dynattach System	
Attach/Detach Mechanism	34
Dynacarrier System	
Attach/Detach Mechanism	35

E

Electrical Components	
Characteristics - See Chapter 2	
Controls and Indicators - See Chapter 4	
Servicing	51
Engine	
Cold Weather Start Procedures	33
Description - See Chapter 2	
Diagnostic Trouble Codes	77
Oil Pressure Lamp	26
Starting	32
Temperature Lamp	26
Engine Oil	
Changing	58
Checking Level	53
Recommended Grades	47

Engine Shutdown Protection	
Engine Coolant Temperature	34
Engine Oil Pressure	33
Engine Fault Shutdown Override Switch	24
Engine Oil Filter, replacing	58
Exhaust System, checking	63

F

Fan Belt - See Alternator Belt	
Frame Level Control and Indicator	27
Frame Level Indicator	29
Fuel - See Separate Engine Manual	
Fuel Filter	
Checking and Draining	52
Replacing	56
Fuel Gauge	26

G

Grease Fittings	
Locations	48
Types of Grease	47
Guards	23
Grade and Slope Precautions	37
Grade Limits	37

H

Hand Signals	38
Hourmeter	26
Hydraulic Components, servicing	50
Hydraulic Oil	
Changing	63
Checking level	53
Recommended type	47
Hydraulic Maintenance	
Oil Filters, replacing	61
Oil Sump Strainer, replacing	64
Pressure, Checking	63
Hydraulic Pump, servicing	50
Hydraulic Valves, servicing	50

I

Identification Reference	3
Indicators	26
Indicator and Operation Symbols	Inside Front Cover
Introduction	2

L

Light Switch	25
Load Zone Charts	89
Lubrication	
See also Service	
Locations	48
Lubricants	47

M

Main Relief Pressure Check	63
Maintenance	
Recording	73
Scheduled Intervals	72
Mandatory Safety Shutdown Procedure	9
Mandatory Work Platform Safety Rules	13
Material Handling Applications	
Digging and Loading	43
Dumping	44
Leveling	45
Scraping	44

O

Oils - See Lubrication	
Operation	
Load Handling	38
Starting	32
Stopping	33
Travel	45
Operator Services	51
Operator's Manual, storing	2
Outriggers, control	27

P

Parking Brake Switch	25
Paint, refinishing	67
Personnel Work Platform Safety Rules	13
Personnel Work Platform Switch	25
Personnel Work Platform (PWP) System	13
Personnel Work Platform Checking Procedure	54
Pump, delivery rates - See Chapter 2	

R

Radiator	
Checking coolant	.53
Cleaning	.61
Flushing and Refilling	.61
Replacement Filters Chart	.48
Road Travel	.45

S

SAFETY	.9
Schematics	
Electrical	.83
Hydraulic	.87
Seat, operator's	.30
Seat Belt	.30
Service and Safety Features	.30
Service Intervals	
Daily	.52
Weekly	.55
100 hours	.56
250 hours	.56
1000 hours	.60
2000 hours	.63
Shields	.23
Side Rear View Mirror	.31
Specifications	.4
Stabilizing System	.42
Steering - See Controls	
Steering Relief Pressure Check	.63
Storage	.64
Suspended Loads	.43
Free Rigging	.43

T

Tables	
Lubricants	.47
Paint Notice	.67
Material Densities	.43
Theft Deterrents	.46
Torque Specifications	.107
Traffic Flow Patterns	.37
Transfer Case Oil	
Changing	.64
Checking level	.56
Transmission	
Description - See Chapter 2	
Temperature Lamp	.27
Transmission Oil	
Changing	.60
Checking level	.53
Recommended Grades	.47
Transporting	
Loading	.45
Unloading	.46
Troubleshooting, PWP	.66
Travel Speed - See Controls	

W

Warranty	Inside Rear Cover
Water Trap - See Fuel Filter	
Wheel Lug Nuts Torque	.54
Windshield Wiper/Washer Switch	.24
Wireless Remote Battery Replacement	.15
Work Platform Design Requirements	.15

GEHL COMPANY
DL SERIES DYNALIFT TELESCOPIC HANDLER
WARRANTY

GEHL COMPANY, hereinafter referred to as Gehl, warrants new Gehl DL Series Dynalift Telescopic Handlers 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; Drive train (including: transfer case, transmission, drive shafts and axles): 24 months from the Warranty Start Date or 2000 hours, whichever comes first; and Main Frame Structure: Ten (10) years (120 months) from Warranty Start Date.

GEHL WARRANTY SERVICE INCLUDES:

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

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

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.

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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