Operation & Safety Manual

Original Instructions
Keep this manual with machine at all times.

Models

3508PS, 3509PS, 3512PS, 3513PS, 4008PS, 4009PS, 4012PS, 4013PS, 4017PS

31200205

Revised
March 31, 2017

An Oshkosh Corporation Company

REVISION LOG

August 10, 2007 - A - Original Issue of Manual

December 12, 2007 - B - Added platform information. Revised pages c, 2-5, 3-2, 3-3, 3-5, 3-8, 3-9, 3-14, 3-16, 3-22, 4-1, 4-3, 5-10, 5-11, 5-30, 6-2, 6-3, 7-18, 7-19, 8-5, 9-1 & 9-4.

March 5, 2008 - C - Revised pages 2-5 & 9-7.

May 16, 2008 - D - Revised pages c, d, 1-4, 1-9, 2-3, 3-2, 3-3, 3-7, 4-4 thru 4-9, 5-4, 5-6, 5-15 & 9-3.

November 16, 2009 - E - Revised covers and page 9-7.

February 26, 2010 - F - Revised pages d, 1-2 thru 1-6, 1-9, 2-1, 2-4 thru 2-9, 3-2 thru 3-8, 3-11, 3-12, 3-14 thru 3-27, 3-29, 4-1 thru 4-12, 5-1 thru 5-46, 6-1, 6-3, 7-1 thru 7-4, 7-10, 7-11, 7-12, 7-14 thru 7-17, 7-19 thru 7-22, 8-2, 8-3 & 9-2 thru 9-5.

August 30, 2010 - G - Revised pages 2-6, 2-7, 3-14, 3-15, 7-4 & 8-1.

November 11, 2010 - H - Revised pages 2-5, 3-14, 3-15 & 3-16.

December 23, 2010 - I - Revised pages 5-2 & 5-3.

August 28, 2012 - J - Revised pages 5-2 & 5-3.

March 31, 2017 - K - Revised pages 5-2, 5-3 & rear cover.

This manual is a very important tool! Keep it with the machine at all times.

The purpose of this manual is to provide owners, users, operators, lessors, and lessees with the precautions and operating procedures essential for the safe and proper machine operation for its intended purpose.

Due to continuous product improvements, JLG Industries, Inc. reserves the right to make specification changes without prior notification. Contact JLG Industries, Inc. for updated information.

Operator Qualifications

The operator of the machine must not operate the machine until this manual has been read, training is accomplished and operation of the machine has been completed under the supervision of an experienced and qualified operator. Operation within the U.S.A. requires training per OSHA 1910.178.

Operators of this equipment must possess a valid, applicable driver's license, be in good physical and mental condition, have normal reflexes and reaction time, good vision and depth perception and normal hearing. Operator must not be using medication which could impair abilities nor be under the influence of alcohol or any other intoxicant during the work shift.

In addition, the operator must read, understand and comply with instructions contained in the following material furnished with the material handler:

- This Operation & Safety Manual
- Telehandler Safety Manual (ANSI only)
- All instructional decals and plates
- Any optional equipment instructions furnished

The operator must also read, understand and comply with all applicable Employer, Industry and Governmental rules, standards and regulations.

Modifications

Any modification to this machine must be approved by JLG.

This product must comply with all safety related bulletins. Contact JLG Industries, Inc. or the local authorized JLG representative for information regarding safety-related bulletins which may have been issued for this product.

JLG Industries, Inc. sends safety related bulletins to the owner of record of this machine. Contact JLG Industries, Inc. to ensure that the current owner records are updated and accurate.

JLG Industries, Inc. must be notified immediately in all instances where JLG products have been involved in an accident involving bodily injury or death of personnel or when damage has occurred to personal property or the JLG product.

FOR:

- Accident Reporting and Product Safety Publications
- Current Owner Updates
- Questions Regarding Product Applications and Safety
- Standards and Regulations Compliance Information
- Questions Regarding Product Modifications

CONTACT:

Product Safety and Reliability Department
JLG Industries, Inc.
13224 Fountainhead Plaza
Hagerstown, MD 21742
USA

or Your Local JLG Office
(Addresses on back cover)

In USA:
Toll Free: 1-877-JLG-SAFE (1-877-554-7233)

Outside USA:
Phone: +1-717-485-6591

E-mail:
ProductSafety@JLG.com

Other Publications Available

Service Manual.....31200206

Illustrated Parts Manual.....31200204

Load Management Indicator System Operation & Safety Manual (if equipped).....Contact JLG

Platform for 3513PS, 4013PS & 4017PS Operation & Safety Manual (if equipped for platform) .....Contact JLG

Note: *The following standards may be referenced in this manual:*
ANSI is compliant to ANSI/ITSDF B56.6
AUS is compliant to AS 1418.19
CE is compliant to EN1459
Refer to the machine Serial Number Plate to identify the applicable compliance standard.

TABLE OF CONTENTS

Section 3 - Controls and Indicators

Section 4 - Operation

Section 5 - Attachments and Hitches

Section 6 - Emergency Procedures

Section 7 - Lubrication and Maintenance

Section 8 - Additional Checks

SECTION 1 - GENERAL SAFETY PRACTICES

1.1 HAZARD CLASSIFICATION SYSTEM

Safety Alert System and Safety Signal Words

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

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

CAUTION indicates a potentiality hazardous situation which, if not avoided, may result in minor or moderate injury.

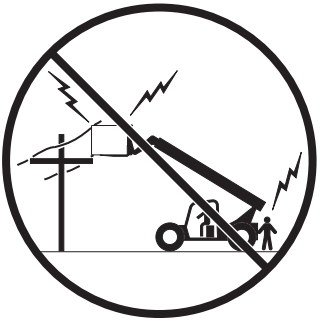
1.2 GENERAL PRECAUTIONS

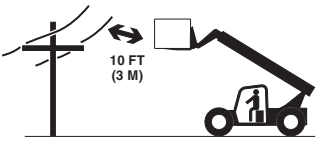
WARNING

Before operation, read and understand this manual. Failure to comply with the safety precautions listed in this manual could result in machine damage, property damage, personal injury or death.

1.3 OPERATION SAFETY

Electrical Hazards





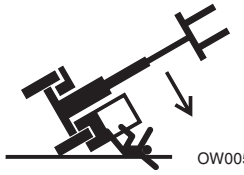
OW0040

- This machine is not insulated and does not provide protection from contact or being near electrical current.
- **NEVER** operate the telehandler in an area where overhead power lines, overhead or underground cables, or other power sources may exist without ensuring the appropriate power or utility company de-energizes the lines.
- Always check for power lines before raising the boom.
- Follow employer, local and governmental regulations for clearance from powerlines.

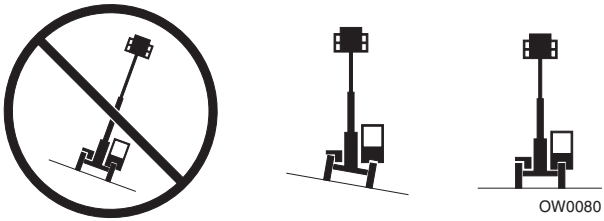
Tip Over Hazard

General

- For additional load requirements, refer to the appropriate capacity chart.

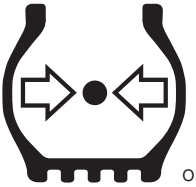


- Never use an attachment without the appropriate JLG approved capacity chart installed on the telehandler.
- Understand how to properly use the capacity charts located in cab.
- **DO NOT** exceed rated lift capacity.
- Be sure that the ground conditions are able to support the machine.



- **DO NOT** raise boom unless frame is level (0 degrees), unless otherwise noted on capacity chart.

- **DO NOT** level machine with boom/attachment above 1,2 m (4 ft).
  (AUS - **DO NOT** level machine with load more than 300 mm (11.8 in) above ground surface.)


OH2291

- **MAINTAIN proper tire pressure** at all times. If proper tire pressures are not maintained, this machine could tip over.
- Refer to manufacturer's specifications for proper fill ratio and pressure requirements for tires equipped with ballast.


OH20911

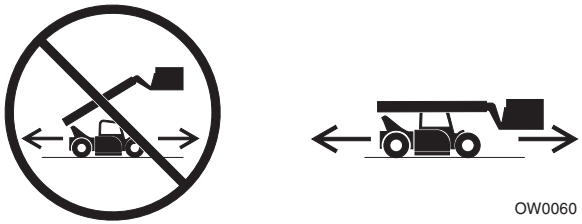
- Always wear the seat belt.
- Keep head, arms, hands, legs and all other body parts inside operator's cab at all times.


OH2221

If the telehandler starts to tip over:

- **DO NOT** JUMP
- BRACE YOURSELF and STAY WITH THE MACHINE
- KEEP YOUR SEAT BELT FASTENED
- HOLD ON FIRMLY
- LEAN AWAY FROM THE POINT OF IMPACT

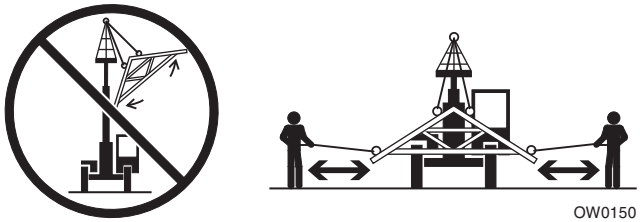
Non-Suspended Load



OW0060

- **DO NOT** drive with boom raised.

Suspended Load



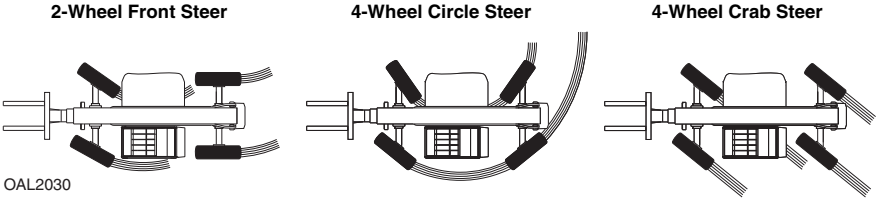
OW0150

- Tether suspended loads to restrict movement.
- Weight of all rigging (slings, etc.) must be included as part of load.
- Beware of wind. Wind can cause a suspended load to swing and cause dangerous side loads - even with tag lines.
- **DO NOT** attempt to use telehandler frame-leveling to compensate for load swing.
- Keep heavy part of load closest to attachment.
- Never drag the load; lift vertically.

  When driving with a suspended load:

  - Start, travel, turn and stop slowly to prevent load from swinging.
  - **DO NOT** extend boom.
  - **DO NOT** raise the load more than 300 mm (11.8 in) above ground surface or the boom more than 45°.
  - **DO NOT** exceed walking speed.

Travel Hazard



- Steering characteristics differ between steer modes. Identify the steer mode settings of the telehandler being operated.
- **DO NOT** change steer modes while traveling. Steer modes must be changed while telehandler is stationary.
- Visually verify proper wheel alignment after each steer mode change.
- Ensure that adequate clearance is provided for both rear tail swing and front fork swing.
- Look out for and avoid other personnel, machinery and vehicles in the area. Use a spotter if you DO NOT have a clear view.
- Before moving be sure of a clear path and sound horn.
- When driving, retract boom and keep boom/attachment as low as possible while maintaining visibility of mirrors and maximum visibility of path of travel.
- Always look in the direction of travel.
- Always check boom clearances carefully before driving underneath overhead obstructions. Position attachment/load to clear obstacles.
- When driving in high speed, use only front wheel steer (if steering modes are selectable).

Load Falling Hazard

OW0130

- Never suspend load from forks or other parts of carriage.
- **DO NOT** burn or drill holes in fork(s).
- Forks must be centered under load and spaced apart as far as possible.

Lifting Personnel

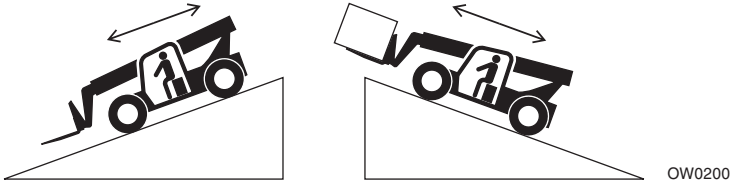
OW0170

- When lifting personnel, **USE ONLY** a JLG approved personnel work platform, with proper capacity chart displayed in the cab.

OW0190

- **DO NOT** drive machine from cab when personnel are in platform.

Driving Hazards on Slopes

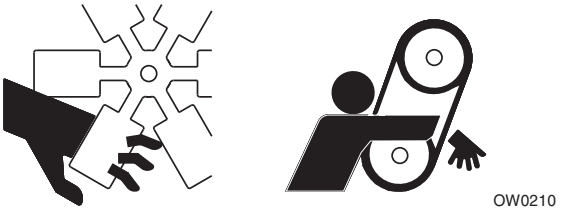


To maintain sufficient traction and braking capabilities, travel on slopes as follows:

- When unloaded, the rear of the machine is the “heavy end.” Drive with forks pointed downhill.
- When loaded, the front of the machine is the “heavy end.” Drive with the forks pointed uphill.
- For additional travel requirements, refer to the appropriate capacity chart.
- To avoid overspeeding the engine and drivetrain when driving down slopes, downshift to a lower gear and use the service brake as necessary to maintain a slow speed. **DO NOT shift into neutral and coast downhill**.
- Avoid excessively steep slopes or unstable surfaces. To avoid tip over **DO NOT** drive across excessively steep slopes under *any* circumstances.
- Avoid turning on a slope. Never engage “inching” or shift to “Neutral” when going downhill.
- **DO NOT** park on a slope.

Pinch Points and Crush Hazards

Stay clear of pinch points and rotating parts on the telehandler.



OW0210

- Stay clear of moving parts while engine is running.

OW0220

- Keep clear of steering tires and frame or other objects.

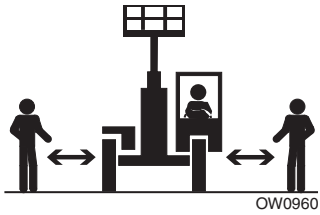
OW0230

- Keep clear from under boom.

- Keep clear of boom holes.

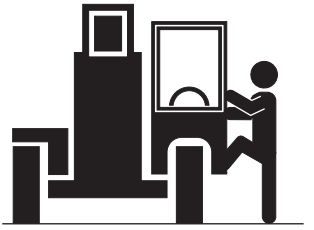
- Keep arms and hands clear of attachment tilt cylinder.

- Keep hands and fingers clear of carriage and forks.



- Keep others away while operating.

Fall Hazard


OW0280

- Enter using the proper hand holds and steps provided. Always maintain 3-point contact when mounting or dismounting. Never grab control levers or steering wheel when mounting or dismounting the machine.
- **DO NOT** get off the machine until the shutdown procedure on page 4-3 has been performed.


OW0290

- **DO NOT** carry riders. Riders could fall off machine causing death or serious injury.

Chemical Hazards

Exhaust Fumes

- **DO NOT** operate machine in an enclosed area without proper ventilation.
- **DO NOT** operate the machine in hazardous environments unless approved for that purpose by JLG and site owner. Sparks from the electrical system and the engine exhaust can cause an explosion.
- If spark arrestors are required, ensure they are in place and in good working order.

Flammable Fuel

OW0300

- **DO NOT** fill the fuel tank or service the fuel system near an open flame, sparks or smoking materials. Engine fuel is flammable and can cause a fire and/or explosion.

Hydraulic Fluid

OW0950

- **DO NOT** attempt to repair or tighten any hydraulic hoses or fittings while the engine is running or when the hydraulic system is under pressure.
- Stop engine and relieve trapped pressure. Fluid in the hydraulic system is under enough pressure that it can penetrate the skin.
- **DO NOT** use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks. Wear gloves to protect hands from spraying fluid.

This Page Intentionally Left Blank

SECTION 2 - PRE-OPERATION AND INSPECTION

2.1 PRE-OPERATION CHECK AND INSPECTION

Note: *Complete all required maintenance before operating unit.*

⚠ WARNING

FALL HAZARD. Use extreme caution when checking items beyond your normal reach. Use an approved ladder.

The pre-operation check and inspection, performed at beginning of each work shift or at each change of operator, should include the following:

1. **Cleanliness** - Check all surfaces for leakage (oil, fuel or battery fluid) or foreign objects. Report any leakage to the proper maintenance personnel.
2. **Structure** - Inspect the machine structure for dents, damage, weld or parent metal cracks or other discrepancies.

PARENT METAL CRACK **WELD CRACK**

3. **Safety Decals** - Ensure all safety decals are legible and in place. Clean or replace as required. See page 2-3 for details.
4. **Operation and Safety Manuals** - Operation & Safety Manual located in cab manual holder.
5. **Walk-Around Inspection** - See page 2-6 for details.
6. **Fluid Levels** - Check fluids, including fuel, brake fluid, hydraulic oil, engine oil, transmission fluid and coolant. When adding fluids, refer to Section 7 - Lubrication and Maintenance and Section 9 - Specifications to determine proper type and intervals. Before removing filler caps or fill plugs, wipe all dirt and grease away from the ports. If dirt enters these ports, it can severely reduce component life.
7. **Attachments/Accessories** - Ensure correct capacity charts are installed on the telehandler. If provided, reference the Operation & Safety Manual of each attachment or accessory installed for specific inspection, operation and maintenance instructions.

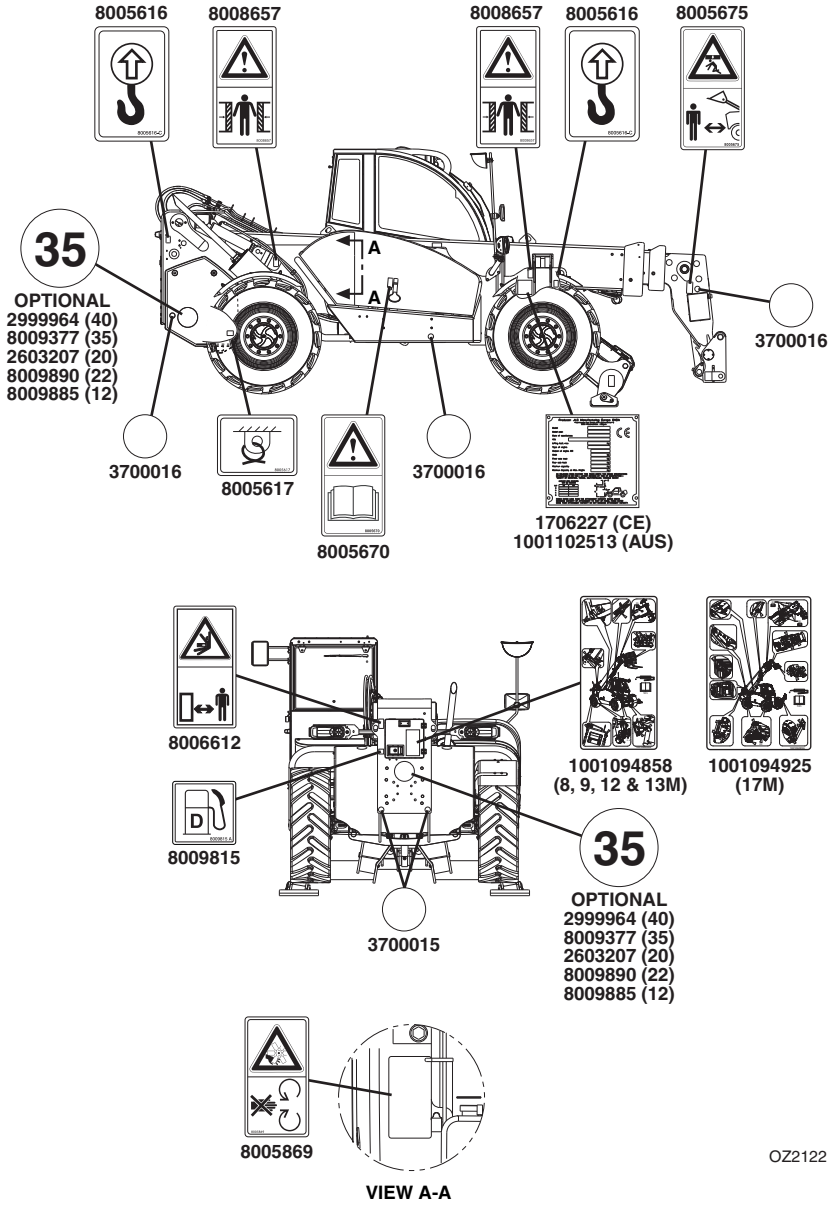
8. **Operational Check** - Once the walk-around inspection is complete, perform a warm-up and operational check (see page 2-8) of all systems in an area free of overhead and ground level obstructions. See Section 3 - Controls and Indicators for more specific operating instructions.

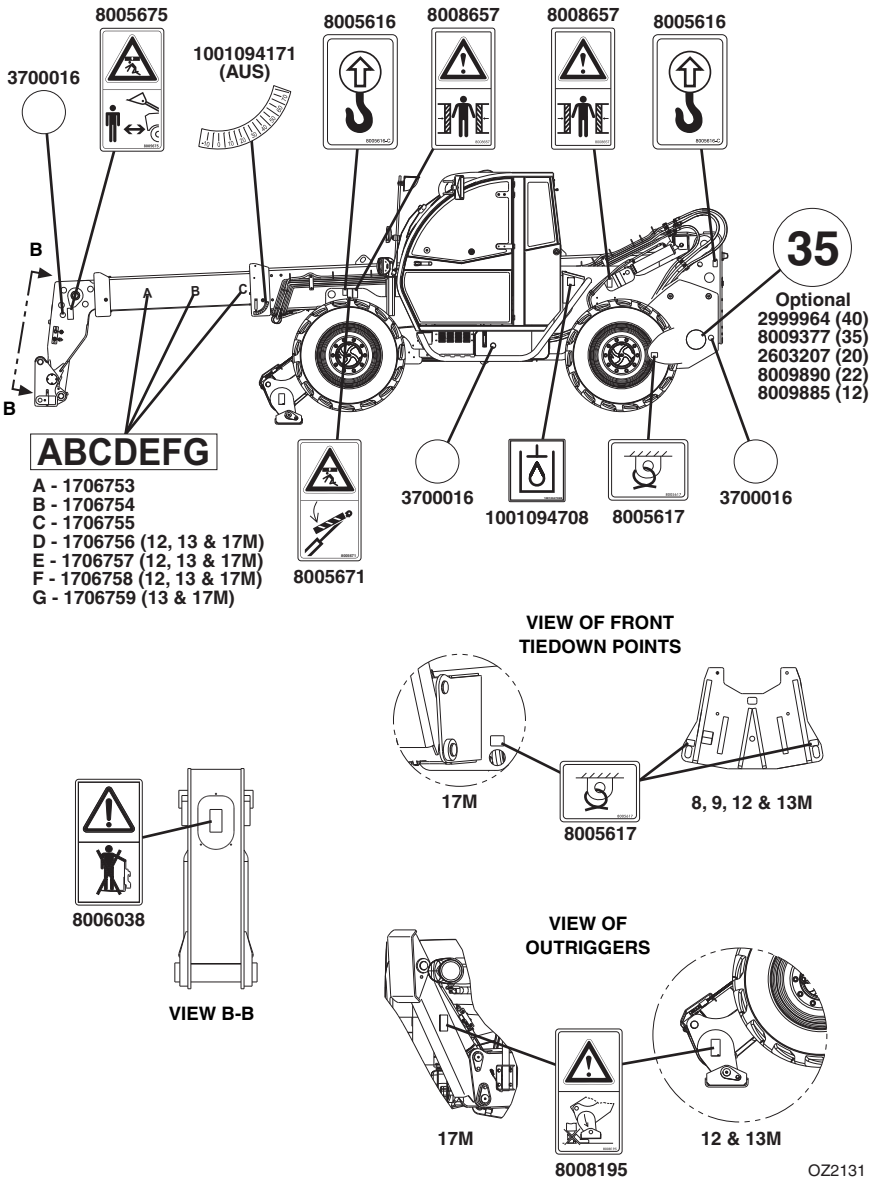
⚠ WARNING

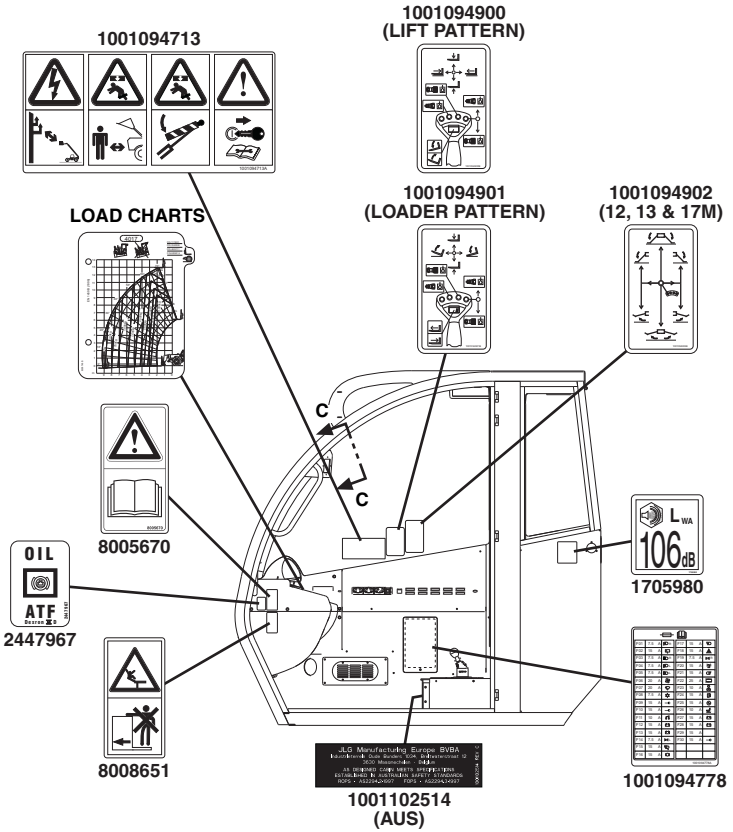
If telehandler does not operate properly, immediately bring machine to a stop, lower boom and attachment to ground and stop the engine. Determine cause and correct before continued use.

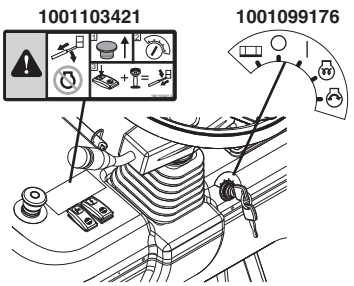
2.2 SAFETY DECALS

Ensure all **DANGER**, **WARNING**, **CAUTION** and instructional decals and proper capacity charts are legible and in place. Clean and replace as required.

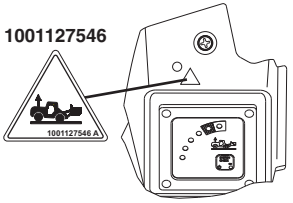



8005675
3700016
1001094171
(AUS)
8005616
8008657
8008657
8005616
B
A
B
C
B
35
Optional
2999964 (40)
8009377 (35)
2603207 (20)
8009890 (22)
8009885 (12)
ABCDEFG
A - 1706753
B - 1706754
C - 1706755
D - 1706756 (12, 13 & 17M)
E - 1706757 (12, 13 & 17M)
F - 1706758 (12, 13 & 17M)
G - 1706759 (13 & 17M)
8005671
3700016
1001094708
8005617
3700016
VIEW OF FRONT
TIEDOWN POINTS
17M
8005617
8, 9, 12 & 13M
8006038
VIEW B-B
VIEW OF
OUTRIGGERS
17M
8008195
12 & 13M
OZ2131

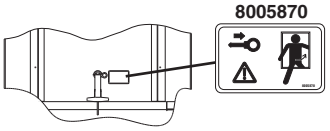




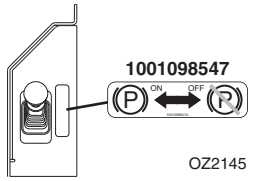
IF EQUIPPED FOR PLATFORM



VIEW C-C
(8 & 9M S/N 1160005993 & AFTER
INCLUDING 1160005949 & 1160005950)

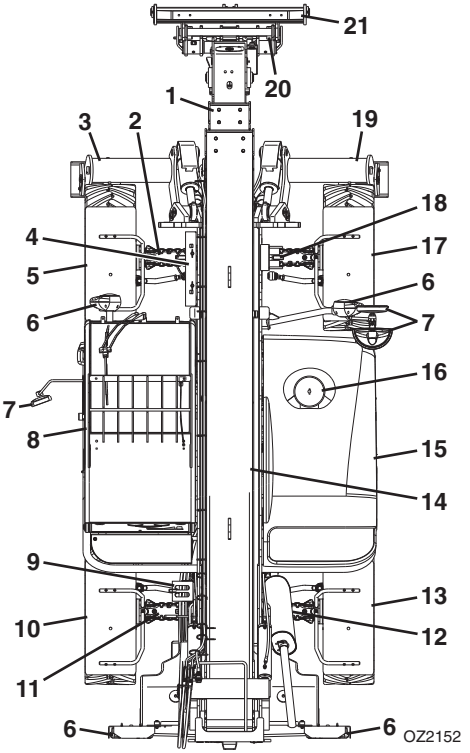


VIEW OF
REAR WINDOW



VIEW OF PARK
BRAKE LEVER (17M)

2.3 WALK-AROUND INSPECTION



Begin your walk-around inspection at item 1, as noted below. Continue to your right (counterclockwise when viewed from top) checking each item in sequence.

INSPECTION NOTE: On all components, make sure there are no loose or missing parts, that they are securely fastened and no visible leaks or excessive wear exists in addition to any other criteria mentioned. Inspect all structural members including attachment for cracks, excessive corrosion and other damage.

1. Boom Sections and Lift, Tilt, Extend/Retract, Compensating (Slave) Cylinders -
   - Check front, top, side and rear wear pads for presence of grease.
   - Pivot pins secure; hydraulic hoses undamaged, not leaking.
2. Front Axle - Steer cylinders undamaged, not leaking; pivot pins secure (if equipped); hydraulic hoses undamaged, not leaking.
3. Left Outrigger (if equipped) - Pins secure; hydraulic hoses and cylinder undamaged, not leaking.
4. Boom Prop (if equipped) - See inspection note.
5. Wheel/Tire Assembly - Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.

6. Work Lights (if equipped) - Clean and undamaged.
7. Mirrors - Clean and undamaged.
8. Cab and Electrical -
   - General appearance; no visible damage.
   - Frame level indicator(s) and window glass undamaged and clean.
   - Gauges, switches, joystick, foot controls and horn operational.
   - Check seat belt for damage, replace belt if frayed or cut webbing, damaged buckles or loose mounting hardware.
9. Wheel Chock (if equipped) - See inspection note.
10. Wheel/Tire Assembly - Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.
11. Rear Axle - Steer cylinders undamaged, not leaking; pivot pins secure; hydraulic hoses undamaged, not leaking.
12. LSI Sensor - See inspection note.
13. Wheel/Tire Assembly - Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.
14. Boom Sensor (8, 9, 12 & 13M S/N 1160005993 & After including 1160005949 & 1160005950), (17M S/N 1160005937 & After excluding 1160005952, 1160005960, 1160005963, 1160005966 & 1160005978) - See inspection note.
15. Engine Compartment -
   - Drive belts, check condition and replace as required.
   - Engine mounts - See inspection note.
   - Air cleaner element condition indicator, check for clogged condition. Replace element as required.
   - Main control valve - See inspection note.
   - Battery cables tight, no visible damage or corrosion.
   - Engine cover closed and properly secured.
16. Air Precleaner - Check and clean as required.
17. Wheel/Tire Assembly - Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.
18. Frame Level Cylinder (if equipped) - Pins secure; hydraulic hoses undamaged, not leaking.
19. Right Outrigger (if equipped) - Pins secure; hydraulic hoses and cylinder undamaged, not leaking.
20. Platform Recognition Sensor (AUS - if equipped for platform): See inspection note.
21. Attachment - Properly installed, see *"Attachment Installation"* on page 5-13.

2.4 WARM-UP AND OPERATIONAL CHECKS

Warm-Up Check

During warm-up period, check:

1. Heater, defroster and windshield wiper (if equipped).
2. Check all lighting systems (if equipped) for proper operation.
3. Adjust mirror(s) for maximum visibility.

⚠ WARNING

CUT/CRUSH/BURN HAZARD. Keep covers closed while engine is running except when checking transmission oil level.

Operational Check

When engine warms, perform an operational check:

1. Service brake and parking brake operation.
2. Forward and reverse travel.
3. Each gear.
4. Steering in both directions with engine at low idle (steering lock to lock will not be reached). Check in each steering mode
5. Horn and back-up alarm. Must be audible from inside operators cab with engine running.
6. All joystick functions - operate smoothly and correctly.
7. Perform any additional checks described in Section 8.

2.5 OPERATOR CAB

The telehandler is equipped with an enclosed ROPS/FOPS cab.

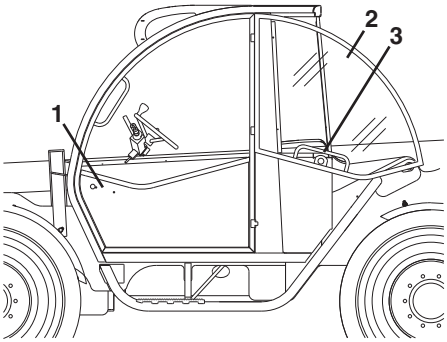
⚠ WARNING

CRUSH HAZARD. Never operate telehandler unless the overhead guard and cab structure are in good condition. Any modification to this machine must be approved by JLG to assure compliance with ROPS/FOPS certification for this cab/machine configuration. If damaged, the **CAB CANNOT BE REPAIRED**. It must be **REPLACED**.

2.6 WINDOWS

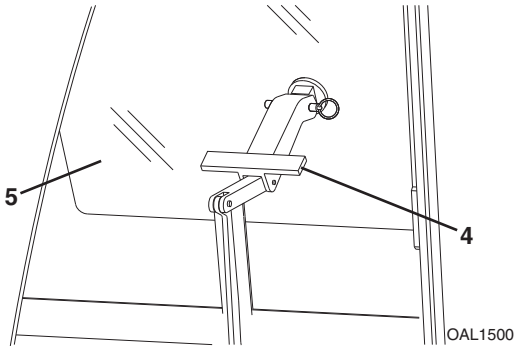
Keep all windows clean and unobstructed.

Cab Door Window



- Cab door (**1**) must be closed during operation.
- During operation the cab door window (**2**) must either be latched open or closed.
- Open the cab door window and secure it in the latch.
- Press the release button (**3**) inside the cab to unlatch the window.

Rear Window



- Lift lever (**4**) and push to open the rear window (**5**).
- Lift lever and pull to close.

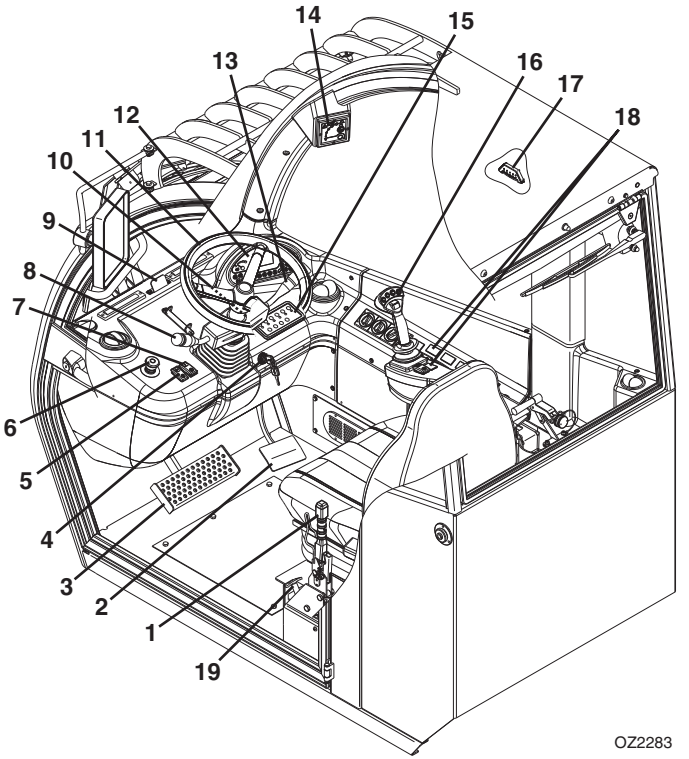
SECTION 3 - CONTROLS AND INDICATORS

3.1 GENERAL

This section provides the necessary information needed to understand control functions.

Note: *The manufacturer has no direct control over machine application and operation. The user and operator are responsible for conforming with good safety practices.*

3.2 CONTROLS



1. Park Brake: See page 3-11.
2. Accelerator Pedal: Pressing down the pedal increases engine and hydraulic speed.
3. Service Brake Pedal: The further the pedal is depressed, the slower the travel speed.
4. Ignition Switch: Key Activated. See page 3-10.
5. Hydraulic Quick Attach Switch (if equipped): Used in conjuction with the joystick to hydraulically lock or unlock an attachment.
6. Power/Emergency Stop Switch (if equipped for platform): Push down to shut off power and stop engine.
7. Auxiliary Power Switch (if equipped for platform): Depress back of switch and hold in place to engage auxiliary power. See *"Emergency Lowering of Boom If Equipped for Platform"* on page 6-3.
8. Transmission Control Lever: See page 3-12.

9. Frame Level Indicator: Enables operator to determine the left to right level condition of the telehandler.

10. Steering Column Adjuster: See page 3-17.

11. Steering Wheel: Turning the steering wheel to the left or right steers the machine in the corresponding direction. Three steering modes are available. See *"Steer Modes"* on page 3-26.

12. Instrument Panel: See page 3-4.

13. Accessory Control Lever: See page 3-24.

14. LSI Indicator: See page 3-14.

15. Keypad: See page 3-8.

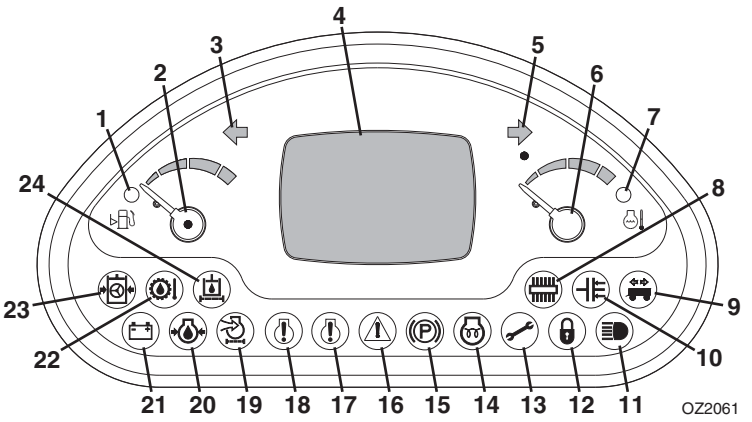
16. Joystick: See page 3-18.

17. Longitudinal Level Indicator (AUS): Enables the operator to determine the front to back level condition of the telehandler.

18. Armrest and Right Hand Console: See page 3-22.

19. Hydraulic Hitch Safety Hook Release (8 & 9M, if equipped): Pull to release safety hooks on hydraulic hitch. See page 5-48 for control instructions.

Instrument Panel



1. Low Fuel Indicator: Illuminates and buzzer sounds briefly when fuel level is low.
2. Fuel Gauge: Indicates amount of fuel in fuel tank.
3. Left Turn Signal Indicator: Illuminates when left turn signal is active.
4. Display Screen: See page 3-6.
5. Right Turn Signal Indicator: Illuminates when right turn signal is active.
6. Engine Temperature Gauge: Indicates engine operating temperature.
7. Engine Temperature Warning Indicator: Illuminates and buzzer sounds when engine temperature is too high.
8. Continuous Auxiliary Hydraulics Indicator: Illuminates when continuous auxiliary hydraulics are active.
9. Trailer Turn Signal Indicator: Illuminates when trailer turn signal is activated.
10. Clutch Lock Indicator: Illuminates when clutch lock feature is engaged.
11. High Beam Indicator: Illuminates when high beam lights are on.
12. Anti Theft Indicator: Illuminates and buzzer sounds briefly at start-up when anti theft feature is active. Enter anti theft code, see page 3-25.
13. Maintenance Indicator: Illuminates and buzzer sounds briefly when maintenance is required.
14. Engine Preheat Indicator: With ignition key in position II, illuminates until start temperature is reached. At temperatures below 0° C (32° F), do not start until indicator goes out.
15. Park Brake Indicator: Illuminates when park brake is applied. See page 3-11.

16. System Distress Indicator: Illuminates and buzzer sounds when critical machine and engine faults exist.

17. Engine Fault Critical Indicator: Illuminates and buzzer sounds when a critical engine fault exists.

18. Engine Fault Warning Indicator: Illuminates and buzzer sounds when engine is operating outside the normal range.

19. Air Filter Restriction Indicator: Illuminates and buzzer sounds briefly when air filter(s) require maintenance.

20. Engine Oil Pressure Indicator: Illuminates and buzzer sounds when engine oil pressure is too low.

21. Battery Charge Indicator: Illuminates when battery is at low charge or charging system is not functioning properly.

22. Transmission Oil Temperature Indicator: Illuminates and buzzer sounds when transmission oil temperature is too high.

23. Steering Pressure Indicator: Illuminates and buzzer sounds when steering pressure is too low.

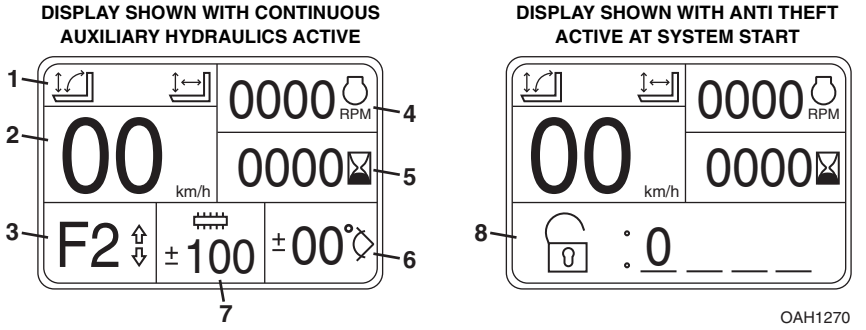
24. Hydraulic Filter Restriction Indicator: Illuminates and buzzer sounds briefly when hydraulic filter requires maintenance.

⚠ WARNING

EQUIPMENT DAMAGE. When the engine fault, system distress or a red indicator illuminates (except park brake), immediately bring machine to a stop, lower boom and attachment to ground and stop the engine. Determine cause and correct before continued use.

Note: *All indicators (except high beam and turn signals) perform a bulb check at system start up.*

Display Screen



1. Joystick Mode: Displays current joystick mode. Joystick mode can be changed by the machine owner in Operator Tools Menu (level 2 password required). See Service Manual for information.

a. Loader Joystick Pattern - Displays loader joystick pattern icon on left when active. See page 3-20.

b. Lift Joystick Pattern - Displays lift joystick pattern icon on right when active. See page 3-18.

2. Speed and Power to Platform:

c. Speed (if equipped) - Telehandler travel speed displayed in kilometers per hour (km/h) or miles per hour (m/h).

d. Transfer Power to Platform (if equipped for platform) - Assists with transferring power to platform. Refer to the Platform for 3513PS, 4013PS, 4017PS Operation & Safety Manual.

3. Driving Direction and Gear: Displays current driving condition.

a. Direction - Forward (F), Neutral (N) or Reverse (R).

b. Gear - First (1), Second (2), Third (3) or Fourth (4).

4. Engine Speed: Displays engine speed in revolutions per minute (rpm).

5. Operating Hours: Displays total hours of telehandler operation.

6. Boom Angle: Displays boom angle in degrees. 0 degrees indicates horizontal.

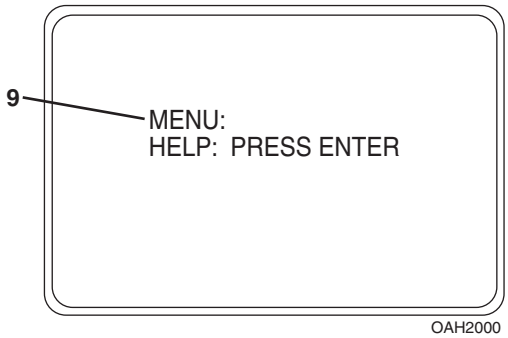
7. Continuous Auxiliary Hydraulics, Steering Mode Change and Platform Status:

a. Continuous Auxiliary Hydraulics - Displays flow value (-100% to +100%) when continuous auxiliary hydraulics is activated. See Section 5 - Attachments and Hitches for details.

b. Steering Mode Change - Assists with steering mode change. See *"Steer Modes"* on page 3-26 for details.

c. Platform Status (if equipped for platform) - Displays status when platform is installed.

8. Anti Theft Code Entry: If active, the four digit code must be entered after system start. See *"Anti Theft"* on page 3-25 for details.



9. Menus: Menus display fault codes and other machine information while allowing modification of some operating parameters. Depress and hold the C and OK buttons on the keypad to access menus.

a. Help - Displays active fault code. Depress OK button again and use keypad arrows to cycle through the last 25 fault codes. Active faults are denoted with an asterisk.

b. Operator Tools - Speed, Temperature and Oil Pressure units and Steering Alignment Mode can be modified by the operator. Customer or Service level access code required to modify additional items.

- Machine Speed - Select units (km/h or m/h) to be displayed.
- Engine Temperature - Select units (Celsius or Fahrenheit) to be displayed.
- Steering Alignment Mode - Select mode (manual or all wheel assisted) to be used when changing steering modes, see page 3-26.

c. Personalities - View performance parameters. Customer or Service level access code required to modify parameters.

d. Access Level - Code entry determines access level.

- Operator (Level 3) - No code required.
- Customer (Level 2) - See Service Manual for information.
- Service (Level 1) - Manufacturer service representative only.

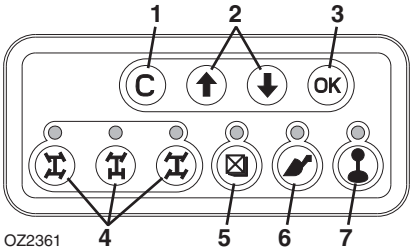
e. Diagnostics - View diagnostic information.

f. System Test - Performs test of all system inputs and outputs.

g. Machine Setup - View machine configurations. Service level access code required to modify configurations.

h. Calibrations - Customer or Service level access code required.

Keypad



1. C (Clear or escape): Use in conjuction with display screen. Returns user interface one level during navigation. If at top level menu, depress and hold for one second to exit.
2. Up/Down Arrows: Use in conjuction with display screen. Navigate menu selections and change adjustable values.
3. OK (Enter): Use in conjuction with display screen. Confirms user interface inputs.
4. Steer Mode: Three steer modes available: 4-Wheel Circle Steer, 2-Wheel Front Steer and 4-Wheel Crab Steer. Illuminated LED indicates current steer mode. See page 3-26.

   Note: *If machine is shut-down during steer mode change, it must be completed at restart.*
5. LSI Override: Momentarily disables the automatic function cut-out. LED flashes while activated. Depress and hold up to 30 seconds while operating joystick to momentarily disable the automatic function cut-out.

⚠ WARNING

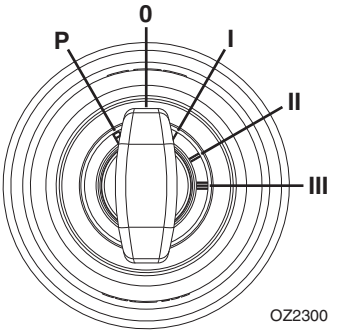
TIP OVER HAZARD. Exceeding lift capacity of the telehandler could damage the equipment and/or cause tip over.

6. Bucket Mode: LED lit while activated. Increases response to boom functions.
7. Joystick Function: LED lit while activated. Boom, auxiliary hydraulics and outrigger functions are enabled. Deactivate this function before traveling on public roads. See *"Road Operation (CE)"* on page 4-10.

Note: *All LEDs perform a bulb check at system start up.*

This Page Intentionally Left Blank

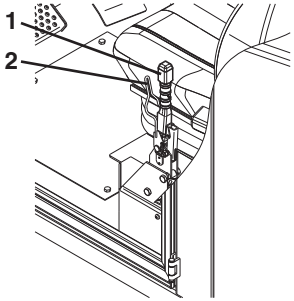
Ignition



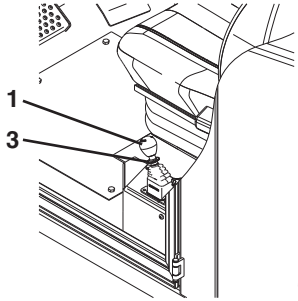
- Position **0** - Engine off.
- Position **I** - Voltage available for all electrical functions.
- Position **II** - Engine preheat at temperatures below 0° C (32° F). Wait to start engine until preheat indicator on instrument panel goes out.
- Position **III** - Engine start. In the event the engine does not start, rotate key to position 0 then back to position III to re-engage the starter.
- Position **P** (if equipped for platform) - Power transferred to platform.

Note: *Key is removable in the 0 and P positions.*

Park Brake



8, 9, 12 & 13M



17M

OZ2290

The park brake lever (**1**) controls the application and release of the park brake.

- Pull lever back to apply park brake.
- Squeeze release (**2**) or lift detent ring (**3**) and push lever forward to release park brake.

⚠ WARNING

MACHINE ROLL-AWAY HAZARD. Always move park brake switch to "ON" position, lower boom to ground and stop engine before leaving cab.

⚠ WARNING

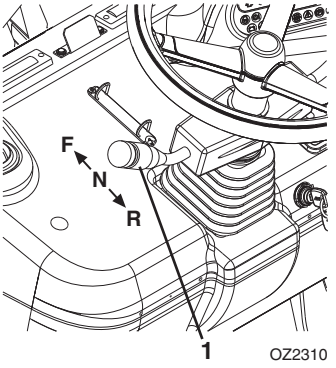
CRUSH HAZARD. Applying park brake while traveling will cause unit to stop abruptly and could cause load loss. To stop the machine in an emergency, apply the park brake. 17M Only - Turning engine off also applies the park brake.

Parking Procedure

1. Using service brake, stop telehandler in an appropriate parking area.
2. Follow *"Shut-Down Procedure"* on page 4-3.

Transmission Control Lever

Direction of Travel Selection



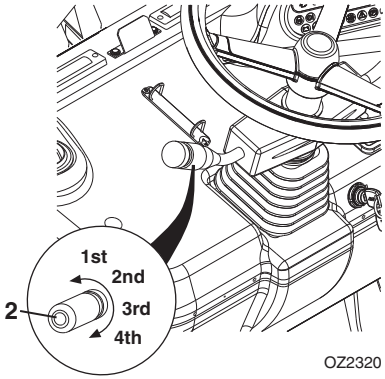
Transmission control lever (**1**) engages forward or reverse travel.

- Push lever forward for forward travel; pull lever rearward for reverse travel. Move lever to centered position for Neutral.
- Forward or reverse travel can be selected while in any gear.
- When traveling in reverse, the back-up alarm will automatically sound.
- Drive in reverse and turn only at slow rates of speed.
- If clutch lock switch is activated (see page 3-22), do not increase engine speed with the transmission in forward or reverse and the service brake depressed in an attempt to get quicker hydraulic performances. This could cause unexpected machine movement.

⚠ WARNING

TIP OVER/CRUSH HAZARD. Bring telehandler to a complete stop before shifting transmission control lever. A sudden change in direction of travel could reduce stability and/or cause load to shift or fall.

Gear Selection



Gear selection is located on the twist grip handle (**2**) of transmission control lever.

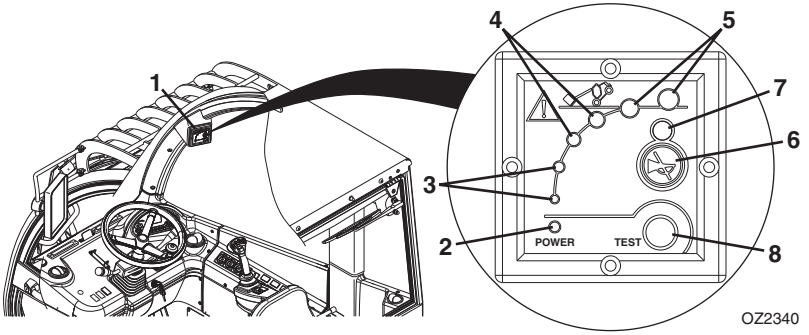
- Twist hand grip to select gear.
- Select the appropriate gear for the task being performed. **Use a lower gear when transporting a load**. Use a higher gear only when driving unloaded for longer distances.
- Slow down prior to downshifting. **Do not downshift more than one gear at a time.**

Load Stability Indicator (LSI)

⚠ WARNING

TIP OVER HAZARD. The LSI considers only longitudinal stability limitations, observe all operating parameters. Failure to follow operating parameters of the telehandler could damage the equipment and/or cause tip over.

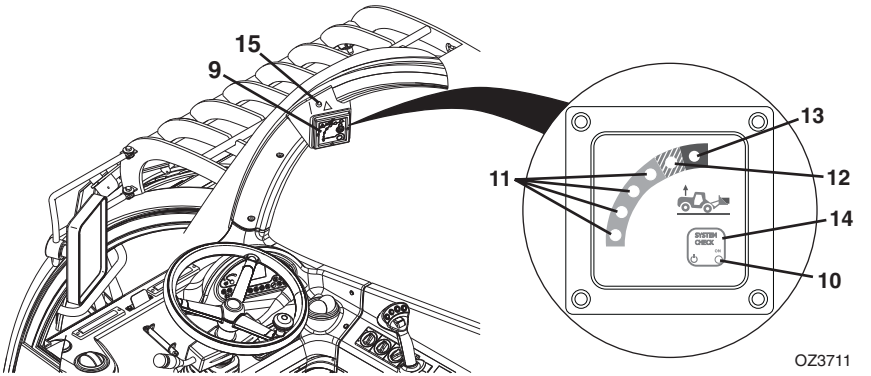
8, 9, 12 & 13M Before S/N 1160005993 excluding 1160005949 & 1160005950
17M Before S/N 1160005937 including 1160005952, 1160005960, 1160005963, 1160005966 & 1160005978



The LSI (**1**) provides visual and audible indication of forward stability limitations when machine is static on firm, level surface.

- Green LED (**2**) will illuminate when LSI power is on.
- When approaching forward stability limitations LEDs progressively illuminate, green (**3**), then yellow (**4**) and finally red (**5**).
- The warning buzzer sounds as the first red LED illuminates.
- As the telehandler reaches forward stability limitations and the second red LED illuminates, the automatic function cut-out is activated. Certain functions are disabled (i.e. boom lift, extend, etc). Retract boom to re-enable functions.
- Press button (**6**) to disable the warning buzzer. When disabled, yellow LED (**7**) will illuminate. If last red LED illuminates, disable button is overridden and warning buzzer sounds.
- Test LSI (**8**) at the beginning of each work shift. See Section 8 - Additional Checks.

8, 9, 12 & 13M S/N 1160005993 & After including 1160005949 & 1160005950
17M S/N 1160005937 & After excluding 1160005952, 1160005960, 1160005963, 1160005966 & 1160005978



The LSI (**9**) provides visual and audible indication of forward stability limitations when machine is static on firm, level surface.

- Green LED (**10**) will illuminate when LSI power is on.
- When approaching forward stability limitations LEDs progressively illuminate, green (**11**), then orange (**12**) and finally red (**13**).
- If the red LED illuminates the warning buzzer also sounds.

The LSI has two modes:

Active Mode (8, 9, 12, 13 & 17M)

- As the telehandler reaches forward stability limitations and the red LED (**13**) illuminates, the automatic function cut-out is activated. All boom, frame level and outrigger functions are disabled except for boom retract (CE & AUS) and boom lift (CE). Retract boom to re-enable functions.
- In some instances the LSI system may slow down or stop boom functions if operated close to forward stability limitations. When LEDs begin to flash, certain functions can not be operated. Retract boom and/or return the joystick to neutral position for a short period to allow system to reset and LEDs to stop flashing before proceeding with operation.

Passive Mode (8 & 9M)

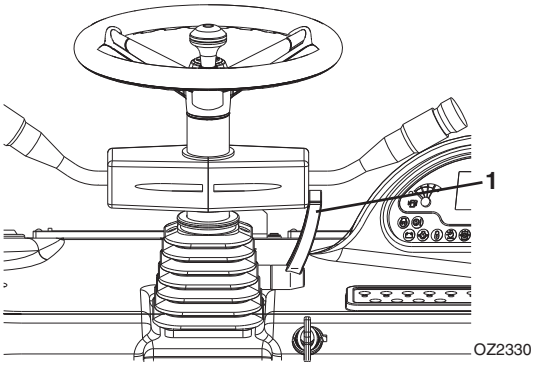
- The orange LED (**15**) illuminates when either of the following occurs:
  - The boom is fully retracted.
  - The park brake is not applied and transmission control lever is in the forward or reverse position.
- When approaching forward stability limitations, visual and audible indication is provided and the automatic function cut-out and/or slow down feature is disabled.

- Travel in accordance with the requirements set forth in Section 1 - General Safety Practices.
- Test LSI (**14**) at the beginning of each work shift. See Section 8 - Additional Checks.
- When placing a load, ensure axles are not fully steered in either direction.

⚠ WARNING

TIP OVER HAZARD. If the green, orange and red LEDs flash and warning buzzer sounds, retract and lower boom immediately. Determine cause and correct before continued use.

Steering Column Adjuster



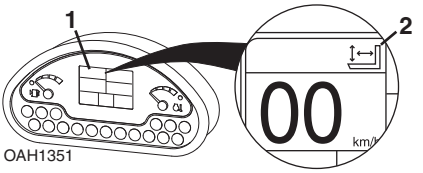
- Follow *"Shut-Down Procedure"* on page 4-3.
- Turn lever (**1**) counterclockwise to unlock.
- Place steering column in desired position.
- Turn lever clockwise to lock.

⚠ WARNING

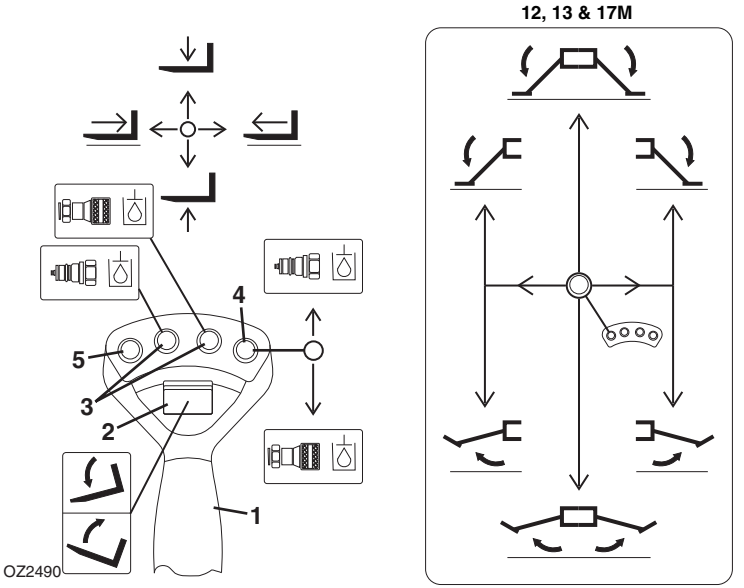
TIP OVER/CRUSH HAZARD. Bring telehandler to a complete stop before shifting transmission control lever. A sudden change in direction of travel could reduce stability and/or cause load to shift or fall.

Joystick

Lift Joystick Pattern



Verify the lift joystick pattern icon (**2**) is active on the display (**1**) and the joystick decal located inside the cab matches the machine controls.



The joystick (**1**) controls the boom, attachment, auxiliary hydraulics and outrigger functions.

Boom Functions

- Move the joystick back to lift boom; move joystick forward to lower boom; move joystick right to extend boom; move joystick left to retract boom.
- The speed of boom functions depends upon the amount of joystick travel in corresponding direction. Increasing engine speed will also increase function speed.
- For two simultaneous boom functions, move the joystick between quadrants. For example; moving the joystick forward and to the left will lower and retract boom simultaneously.

⚠ WARNING

TIP OVER/CRUSH HAZARD. Rapid, jerky operation of controls will cause rapid, jerky movement of the load. Such movements could cause the load to shift or fall or could cause the machine to tip over.

Attachment Functions

Attachment tilt is controlled by the roller switch (**2**).

- Push the roller switch up to tilt attachment down; push the roller switch down to tilt attachment up.

Auxiliary Hydraulic Functions

Auxiliary Hydraulics buttons (**3 & 4**) control functions of attachments that require hydraulic supply for operation. Buttons (**3**) can be used simultaneously with normal boom attachment functions. Button (**4**) must be used independently of boom lift/lower functions. See Section 5 - Attachments and Hitches for approved attachments and control instructions.

Outrigger Functions (12, 13 & 17M)

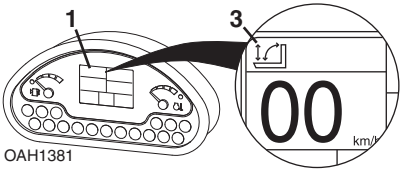
Button (**5**) controls both outriggers.

- Press and hold the button; move the joystick forward to lower both outriggers; move the joystick back to raise both outriggers.
- Press and hold the button; move the joystick left then forward to lower the left outrigger; move the joystick left then back to raise the left outrigger.
- Press and hold the button; move the joystick right then forward to lower the right outrigger; move the joystick right then back to raise the right outrigger.
- Outriggers operable with boom below 20 degrees. If equipped with boom retracted switch, outriggers operable with boom below 20 degrees or with boom fully retracted and between 20 and 55 degrees.

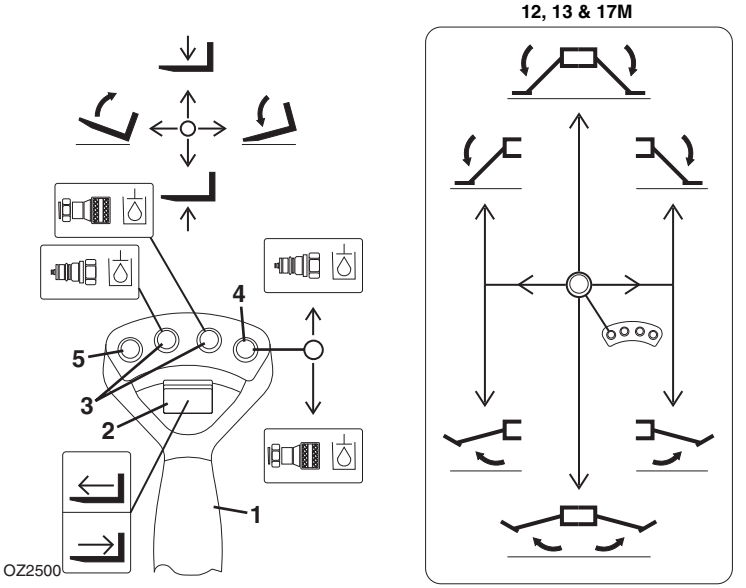
⚠ WARNING

TIP OVER HAZARD. Outriggers increase stability and load capacity only if they are used properly. Using outriggers on soft surfaces could cause telehandler to tip over. Always ensure surface can support telehandler and load.

Loader Joystick Pattern



Verify the loader joystick pattern icon (**3**) is active on the display (**1**) and the joystick decal located inside the cab matches the machine controls.



The joystick (**1**) controls the boom, attachment, auxiliary hydraulics and outrigger functions.

Boom Functions

- Move the joystick back to lift boom; move joystick forward to lower boom.
- Extend/retract is controlled by the roller switch (**2**). Push roller switch up to extend boom; push roller switch down to retract boom.
- The speed of boom functions depends upon the amount of joystick travel in corresponding direction. Increasing engine speed will also increase function speed.
- For two simultaneous boom functions, move the joystick between quadrants. For example; moving the joystick forward and to the left will lower boom and tilt attachment up simultaneously.

⚠ WARNING

TIP OVER/CRUSH HAZARD. Rapid, jerky operation of controls will cause rapid, jerky movement of the load. Such movements could cause the load to shift or fall or could cause the machine to tip over.

Attachment Functions

Attachment tilt is controlled by the joystick.

- Move joystick right to tilt down; move joystick left to tilt up.

Auxiliary Hydraulic Functions

Auxiliary Hydraulics buttons (**3 & 4**) control functions of attachments that require hydraulic supply for operation. Buttons (**3**) can be used simultaneously with normal boom attachment functions. Button (**4**) must be used independently of boom lift/lower functions. See Section 5 - Attachments and Hitches for approved attachments and control instructions.

Outrigger Functions (12, 13 & 17M)

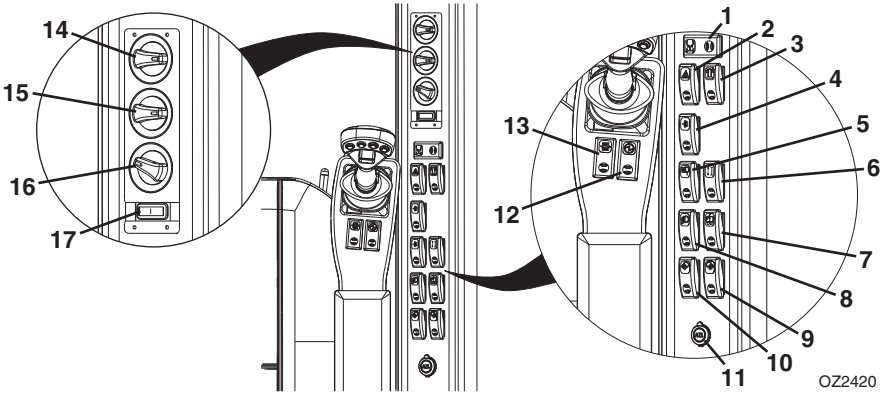
Button (**5**) controls both outriggers.

- Press and hold the button; move the joystick forward to lower both outriggers; move the joystick back to raise both outriggers.
- Press and hold the button; move the joystick left then forward to lower the left outrigger; move the joystick left then back to raise the left outrigger.
- Press and hold the button; move the joystick right then forward to lower the right outrigger; move the joystick right then back to raise the right outrigger.
- Outriggers operable with boom below 20 degrees. If equipped with boom retracted switch, outriggers operable with boom below 20 degrees or with boom fully retracted and between 20 and 55 degrees.

⚠ WARNING

TIP OVER HAZARD. Outriggers increase stability and load capacity only if they are used properly. Using outriggers on soft surfaces could cause telehandler to tip over. Always ensure surface can support telehandler and load.

Armrest and Right Hand Console



1. Frame Level Switch (if equipped): Controls the left to right frame level. Depress right side of switch to rotate frame right; depress left side of switch to rotate frame left. Frame level operable with boom below 20 degrees. If equipped with boom retracted switch, frame level operable with boom below 20 degrees or with boom fully retracted and between 20 and 55 degrees.
2. Hazard Light Switch: On/Off switch.
3. Beacon Light Switch (if equipped): On/Off switch. Place magnetic base of beacon on cab roof. Power supplied by 12V receptacle at rear left of cab roof.
4. Clutch Lock Switch: Depress front of switch to activate and keep transmission engaged while depressing service brake. Depress back of switch to deactivate system and have transmission disengage while depressing service brake.
5. Boom Work Lights Switch (if equipped): On/Off switch.
6. Front/Rear Auxiliary Hydraulics Switch: Depress front of switch to activate front auxiliary hydraulics. Depress back of switch to activate rear auxiliary hydraulics.
7. Rear Wiper Switch: On/Off switch.
8. Driving Lights Switch (if equipped): On/Off switch.
9. Rear Work Lights Switch (if equipped): On/Off switch.
10. Front Work Lights Switch (if equipped): On/Off switch.
11. Power Outlet: 12V receptacle.
12. Auxiliary Electrics (if equipped): On/Off switch. Depress button to activate auxiliary electric feature. See Section 5 - Attachments and Hitches for approved attachments and control instructions.

13. Continuous Auxiliary Hydraulics Switch:

a. Depress and release front of switch for continuous operation of hydraulic powered attachments. Set continuous auxiliary hydraulic level (-100% to 100%) within 10 seconds using the keypad up/down arrow buttons (see page 3-8). See Section 5 - Attachments and Hitches for approved attachments and control instructions.

b. Relieves auxiliary hydraulic circuit pressure. See page 5-20.

Heater and Air Conditioning Controls

14. Fan Speed Switch: Adjustable rotary switch.

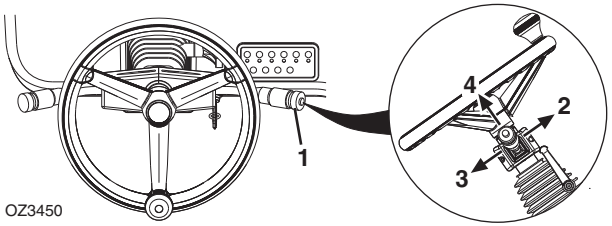
15. Recycle/Fresh Air Switch (if equipped): Adjustable rotary switch.

16. Temperature Control Switch: Adjustable rotary switch.

17. Air Conditioning Switch (if equipped): On/Off switch.

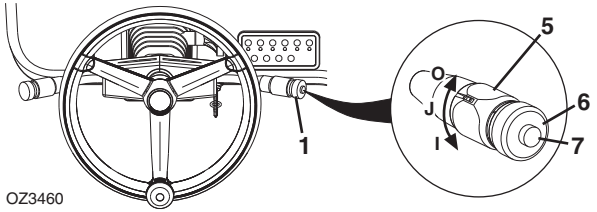
Accessory Control Lever

Turn Signals and Low/High Beam Headlights



- Push accessory control lever (**1**) forward (**2**) to activate left turn signal.
- Pull lever backward (**3**) to activate right turn signal.
- The lever must be manually returned to the center position to deactivate either turn signal. The lever will not cancel automatically after a turn.
- Pull lever up (**4**) to switch between low and high beam headlights.

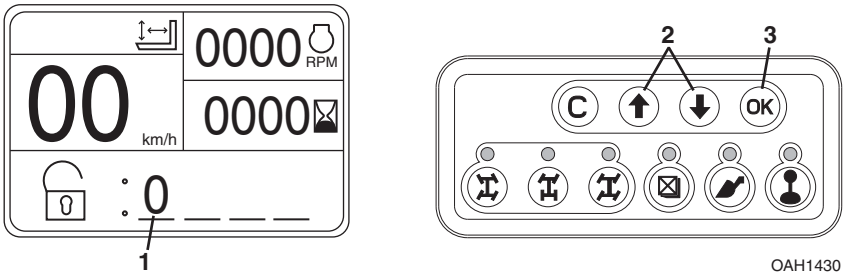
Front Windshield Wiper and Horn



- Rotate hand grip (**5**) to activate front windshield wiper, **O** - Off, **J** - Continuous or **I** - Fast
- Depress end of lever (**6**) to activate windshield wiper fluid.
- Depress button (**7**) to sound horn.

3.3 ANTI THEFT

Machines with the anti theft feature active require entering a numeric code before operation to prevent unauthorized use. Code entry is accomplished using the display and keypad.

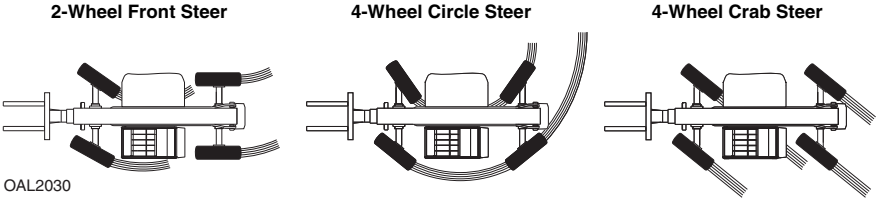


1. Turn ignition switch to position I. If anti theft is active, the display (**1**) will prompt the operator for a numeric code.
2. Use the up/down arrow buttons (**2**) to select the first digit.
3. Depress OK button (**3**) to confirm and move to the next digit.
4. Continue until the code is complete.
5. If an incorrect code is entered, the buzzer will sound briefly and the display will prompt the operator again for the numeric code.
6. If the correct code is entered, normal start up can continue.

Note: *If the anti theft feature is active and the current access code is not known, it may be viewed or changed by the machine owner in Operator Tools Menu (level 2 password required). See Service Manual for information.*

3.4 STEER MODES

Three steer modes are available for operator use.

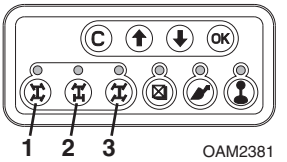


Note: *2-Wheel Front Steer mode is required for travel on public roads.*

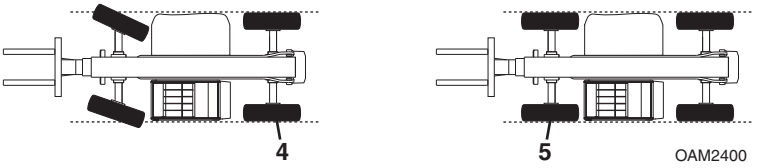
Manual Steering Alignment Mode Change

If manual steering alignment mode is active under the Operator Tools menu (see page 3-7), use the following procedure for steer mode change.

Note: *Steer mode will change immediately after selection.*



1. Bring machine to a stop using service brake. If front steer mode (**2**) is active and rear wheels are aligned, go directly to step 4.

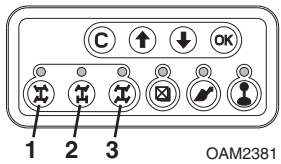


2. With circle steer (**1**) or crab steer (**3**) mode active, turn the steering wheel until the left rear wheel (**4**) is aligned with the side of the machine.
3. Select front steer mode (**2**).
4. Turn the steering wheel until the left front wheel (**5**) is aligned with the side of the machine.
5. Wheels are now aligned. Select desired steer mode.

All Wheel Assisted Steering Alignment Mode Change

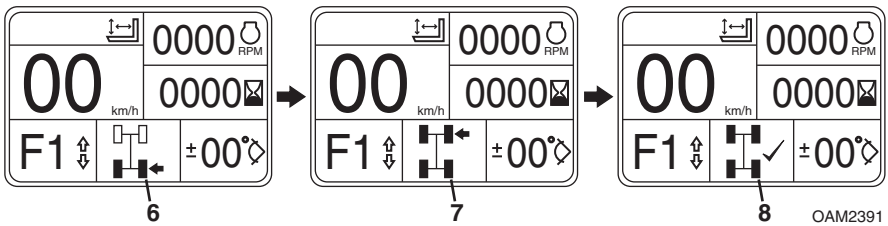
If all wheel assisted steering alignment mode is active under the Operator Tools menu (see page 3-7), use the following procedure for steer mode change.

1. Bring machine to a stop using service brake.



2. Select desired steer mode: circle steer (**1**), front steer (**2**) or crab steer (**3**).

Note: *Selected steer mode LED will flash and display will show steering alignment screens until the change is complete. After steering alignment is complete, steer mode LED will illuminate solid.*



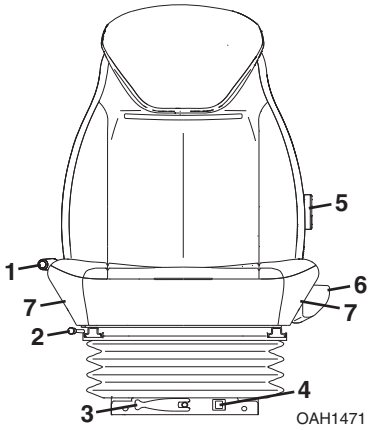
3. Turn the steering wheel until the rear wheels are centered (**6**). This step will be skipped if changing from front steer mode and rear wheels are already centered.
4. Turn the steering wheel until the front wheels are centered (**7**). This step will be skipped if changing to front steer mode.
5. Wheels are now aligned and steer mode change is complete (**8**).

3.5 OPERATOR SEAT

Adjustments

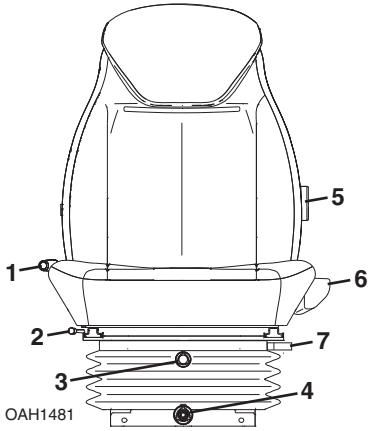
Prior to starting the engine adjust seat for position and comfort.

Mechanical Suspension Seat



1. Backrest: Use handle to adjust backrest angle.
2. Fore/Aft: Use handle to move seat fore and aft.
3. Suspension: Use handle to adjust suspension to the appropriate weight setting.
4. Weight: Displays current weight setting.
5. Lumbar Support: Use knob to adjust lumbar support.
6. Seat Belt: Always fasten seat belt during operation.
7. Height: Pull up on both sides of seat to adjust height.

Pneumatic Suspension Seat



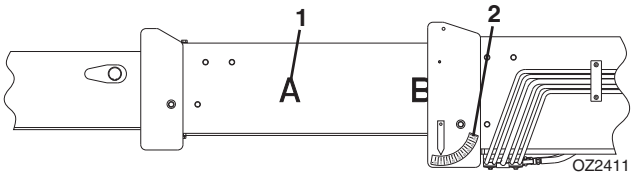
1. Backrest Angle: Use handle to adjust backrest angle.
2. Fore/Aft: Use handle to move seat fore and aft.
3. Suspension: Use knob to adjust suspension to the appropriate weight setting.
4. Height: Use knob to adjust height to the appropriate setting.
5. Lumbar Support: Use knob to adjust lumbar support.
6. Seat Belt: Always fasten seat belt during operation.
7. Fore/Aft Isolator: Use handle to lock or unlock.

Seat Belt

Fasten seat belt as follows:

1. Grasp both free ends of the belt making certain that belt webbing is not twisted or entangled.
2. With back straight in the seat, couple the retractable end (male end) of the belt into the receptacle (buckle) end of the belt.
3. With belt buckle positioned as low on the body as possible, pull the retractable end of the belt away from the buckle until it is tight across the lap.
4. To release belt latch, depress red button on the buckle and pull free end from buckle.

3.6 BOOM INDICATORS



Boom Extension

- The boom extension indicators (**1**) are located on the left side of the boom. Use these indicators to determine boom extension when using the capacity chart (see *"Use of the Capacity Chart"* on page 5-7).

Boom Angle (AUS)

- The boom angle indicator (**2**) is located on the left side of the boom. Use this indicator to determine boom angle when using the capacity chart (see *"Use of the Capacity Chart"* on page 5-7).

This Page Intentionally Left Blank

SECTION 4 - OPERATION

4.1 ENGINE

Starting the Engine

This machine can be operated under normal conditions in temperatures of -18°C to 45°C (0°F to 113°F). Consult JLG for operation outside this range or under abnormal conditions.

1. Make sure all controls are in “Neutral” and all electrical components (lights, heater, defroster, etc.) are turned off. Set parking brake.
2. If equipped for platform, pull the power/emergency stop switch up.
3. Turn ignition switch to position I. If active, enter anti theft code.
4. Turn ignition switch to position II. If the temperature is below 0° C (32° F), wait for preheat indicator on instrument panel to go out.
5. Turn ignition switch to position III to engage starting motor. Release key immediately when engine starts. If engine fails to start within 20 seconds, release key and allow starting motor to cool for a few minutes before trying again.
6. After engine starts, observe engine oil pressure indicator. If indicator remains on for more than five seconds, stop engine and determine cause before restarting engine.
7. Warm up engine at approximately 1/2 throttle.

Note: *Engine will not start unless transmission control lever is in “Neutral” and park brake is applied.*

⚠ WARNING

UNEXPECTED MOVEMENT HAZARD. Always ensure that transmission control lever is in neutral and the service brake is applied before releasing park brake. Releasing park brake in either forward or reverse could cause the machine to move abruptly.

⚠ WARNING

ENGINE EXPLOSION. Do not spray ether into air intake for cold weather starting.

Battery Boosted Starting

If battery-boost starting (jump-start) is necessary, proceed as follows:

- Never allow vehicles to touch.
- Ensure boosting vehicle engine is running.
- Connect the positive (+) jumper cable to positive (+) post of discharged battery.
- Connect the opposite end of positive (+) jumper cable to positive (+) post of booster battery.
- Connect the negative (-) jumper cable to negative (-) post on booster battery.
- Connect opposite end of negative (-) jumper cable to ground point on machine away from discharged battery.
- Follow standard starting procedures.
- Remove cables in reverse order after machine has started.

⚠ WARNING

BATTERY EXPLOSION HAZARD. Never jump start or charge a frozen battery as it could explode. Keep sparks, flames and lighted smoking materials away from the battery. Lead acid batteries generate explosive gases when charging. Wear safety glasses.

Normal Engine Operation

- Observe instrument panel and display frequently to be sure all systems are functioning properly.
- **Be alert for unusual noises or vibration.** When an unusual condition is noticed, park machine in safe position and perform shut-down procedure. Report condition to your supervisor or maintenance personnel.
- **Avoid prolonged idling.** If the engine is not being used, turn it off.

Shut-Down Procedure

When parking the telehandler, park in a safe location on flat level ground and away from other equipment and/or traffic lanes.

1. Apply the park brake.
2. Shift the transmission to “Neutral.”
3. Lower forks or attachment to the ground.
4. Operate engine at low idle for 3 to 5 minutes. **DO NOT over rev engine.**
5. Shut off engine and remove ignition key.
6. Push power/emergency stop switch down (if equipped for platform).
7. Exit telehandler properly.
8. Turn off electrical master switch (if equipped).
9. Block wheels (if necessary).

4.2 OPERATING WITH A NON-SUSPENDED LOAD

Lift Load Safely

- You must know the weight and load center of every load you lift. If you are not sure of the weight and load center, check with your supervisor or with the supplier of the material.

⚠ WARNING

TIP OVER HAZARD. Exceeding lift capacity of the telehandler could damage the equipment and/or cause tip over.

- Know the rated load capacities (refer to Section 5 - Attachments and Hitches) of the telehandler to determine the operating range in which you can safely lift, transport and place a load.

Picking Up a Load

- Note the conditions of the terrain. Adjust travel speed and reduce amount of load if conditions warrant.
- Avoid lifting double-tiered loads.
- Make sure load is clear of any adjacent obstacles.
- Adjust spacing of forks so they engage the pallet or load at maximum width. See *"Adjusting/Moving Forks"* on page 5-21.
- Approach load slowly and squarely with fork tips straight and level. **NEVER** attempt to lift a load with just one fork.
- **NEVER** operate telehandler without a proper and legible capacity chart in the operator cab for the telehandler/attachment combination you are using.

Transporting a Load

- After engaging the load and resting it against the backrest, tilt the load back to position it for travel. Travel in accordance with the requirements set forth in Section 1 - General Safety Practices and Section 5 - Attachments and Hitches.

Leveling Procedure

1. Position machine in best location to lift or place load.
2. Apply parking brake and move transmission control lever to NEUTRAL.
3. Observe level indicator(s) to determine whether machine must be leveled prior to lifting load.
4. Move boom/attachment to 1,2 m (4 ft) off ground.
   (AUS - Move boom so forks are no more than 300 mm (11.8 in) above ground surface.)

Important things to remember:

- Never raise the boom/attachment more than 1,2 m (4 ft) above ground unless telehandler is level.
  (AUS - Never raise the forks more than 300 mm (11.8 in) above ground surface unless telehandler is level.)
- The combination of frame leveling and load could cause the telehandler to tip over.

Placing a Load

Before placing any load be sure that:

- The landing point can safely support the weight of the load.
- The landing point is level; front to back and side to side.
- Use the capacity chart to determine safe boom extension range. See *"Use of the Capacity Chart"* on page 5-7.
- Align forks at the level load is to be placed, then extend boom slowly until load is just above area where it is to be placed.
- Lower the boom until the load rests in position and the forks are free to retract.

Disengaging a Load

Once the load has been placed safely at the landing point, proceed as follows:

1. With the forks free from the weight of the load, the boom can be retracted and/or the telehandler can be backed away from under the load if surface will not change level condition of telehandler.
2. Lower the carriage.
3. The telehandler can now be driven from the landing location to continue work.

4.3 OPERATING WITH A SUSPENDED LOAD

Lift Load Safely

- You must know the weight and load center of every load you lift. If you are not sure of the weight and load center, check with your supervisor or with the supplier of the material.

⚠ WARNING

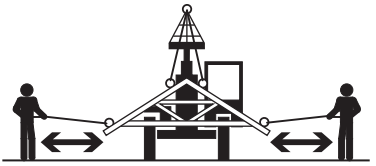
TIP OVER HAZARD. Exceeding lift capacity of the telehandler could damage the equipment and/or cause tip.

- Know the rated load capacities (refer to Section 5 - Attachments and Hitches) of the telehandler to determine the operating range in which you can safely lift, transport and place a load.

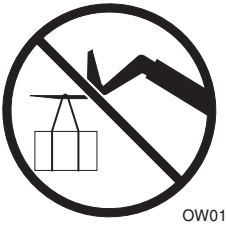
Picking Up a Suspended Load

- Note the conditions of the terrain. Adjust travel speed and reduce amount of load if conditions warrant.
- Avoid lifting double-tiered loads.
- Make sure load is clear of any adjacent obstacles.
- **NEVER** operate telehandler without a proper and legible capacity chart in the operator cab for the telehandler/attachment combination you are using.
- Only use approved lifting devices rated for the lifting of the load.
- Identify the proper lifting points of the load, taking into consideration the center of gravity and load stability.
- Ensure to always properly tether loads to restrict movement.
- Refer to *"Use of the Capacity Chart"* on page 5-7 for proper lifting guidelines in addition to the appropriate capacity chart in the operator cab.

Transporting a Suspended Load



OZ3160



OW0130

- Travel in accordance with the requirements set forth in Section 1 - General Safety Practices and Section 5 - Attachments and Hitches.
- For additional requirements, refer to the appropriate capacity chart in the operator cab.

Important things to remember:

- Ensure the boom is fully retracted.
- Never raise the load more than 300 mm (11.8 in) above ground surface or the boom more than 45°.
- The combination of frame leveling and load could cause the telehandler to tip over.
- The guide persons and operator must remain in constant communication (verbal or hand) and be in visual contact with the operator at all times.
- Never place the guide persons between the suspended load and the telehandler.
- Only transport the load at walking speed (0.4 m/s) or less.

Leveling Procedure

1. Position machine in best location to lift or place load.
2. Apply parking brake and move transmission control lever to NEUTRAL.
3. Observe level indicator(s) to determine whether machine must be leveled prior to lifting load.
4. Move boom so load is no more than 300 mm (11.8 in) above ground surface and/or boom is raised no more than 45°.

Placing a Suspended Load

Before placing any load be sure that:

- The landing point can safely support the weight of the load.
- The landing point is level; front to back and side to side.
- Use the capacity chart to determine safe boom extension range. See *"Use of the Capacity Chart"* on page 5-7.
- Align load at the level load is to be placed, then position boom slowly until load is just above area where it is to be placed.
- Ensure that the guide persons and operator remain in constant communication (verbal or hand) when placing the load.

Disengaging a Suspended Load

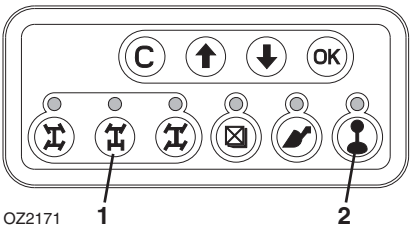
- Never place the guide persons between the suspended load and the telehandler.
- Once at the destination of the load, ensure to bring the telehandler to a complete stop and apply the park brake prior to disengagement of the lifting devices and the tethers.

4.4 ROAD OPERATION (CE)

1. Preparation
   a. Remove load from attachment.
   b. Remove any large amounts of dirt from machine.
   c. Check lights and mirrors and adjust if necessary.

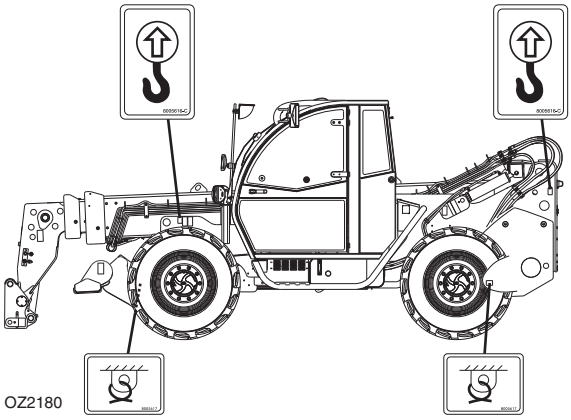
Note: *Be sure to follow all local and federal/provincial traffic regulations.*

2. Lower boom. Front edge of attachment should be approximately 30-40 cm (12-16 in) above the ground.
3. Fully tilt attachment back.
4. Place protective shield over front bucket edge: remove or reposition carriage forks toward the machine and secure to the carriage.



5. Depress button (**2**) to deactivate joystick function and disable all joystick controlled functions. Joystick function LED will go out.
6. Deactivating the joystick function automatically changes steer mode to front wheel steering (**1**). See *"Steer Modes"* on page 3-26 for details.
7. Machine is now ready for road operation.

4.5 LOADING AND SECURING FOR TRANSPORT



Tiedown

1. If equipped, level the telehandler prior to loading.
2. Using a spotter, load the telehandler with boom as low as possible.
3. Once loaded, apply parking brake and lower boom until boom or attachment is resting on deck. Move all controls to “Neutral,” stop engine and remove ignition key.
4. Secure machine to deck by passing chains through the designated tiedown points as shown in the figure.
5. Do not tiedown front of boom.

Note: *The user assumes all responsibility for choosing the proper method of transportation and tie-down devices, making sure the equipment used is capable of supporting the weight of the vehicle being transported and that all manufacturer’s instructions and warnings, regulations and safety rules of their employer and all local and federal/provincial laws are followed.*

⚠ WARNING

TELEHANDLER SLIDE HAZARD. Before loading telehandler for transport, make sure deck, ramps and telehandler wheels are free of mud, snow and ice. Failure to do so could cause telehandler to slide.

Lifting

- When lifting machine, it is very important that the lifting device and equipment is attached only to designated lifting points. If machine is not equipped with lifting lugs contact JLG Product Safety for information.
- Make adjustments to the lifting device and equipment to ensure the machine will be level when elevated. The machine must remain level at all times while being lifted.
- Ensure that the lifting device and equipment is adequately rated and suitable for the intended purpose. See Section 9 - Specifications for machine weight or weigh machine.
- Remove all loose items from machine prior to lifting.
- Lift machine with smooth, even motion. Set machine down gently. Avoid quick or sudden motions that could cause shock loads to machine and/or lifting devices.

SECTION 5 - ATTACHMENTS AND HITCHES

5.1 APPROVED ATTACHMENTS

To determine if an attachment is approved for use on the specific telehandler you are using, perform the following prior to installation.

- The attachment model/option number on the attachment identification plate must match the attachment number on a capacity chart located in the operator cab.
- The model on the capacity chart must match the model telehandler being used.
- The load center of the fork (if equipped) must match the load center as indicated on the capacity chart.
- Hydraulically powered attachments must only be used on machines equipped with auxiliary hydraulics.

If any of the above conditions are not met, do not use the attachment. The telehandler may not be equipped with the proper capacity chart or the attachment may not be approved for the model telehandler being used. Contact JLG or the local distributor for further information.

5.2 UNAPPROVED ATTACHMENTS

Do not use unapproved attachments for the following reasons:

- Range and capacity limitations for “will fit,” homemade, altered, or other non-approved attachments cannot be established.
- An overextended or overloaded telehandler can tip over with little or no warning and cause serious injury or death to the operator and/or those working nearby.
- The ability of a non-approved attachment to perform its intended function safely cannot be assured.

⚠ WARNING

Use only approved attachments. Attachments which have not been approved for use with your telehandler could cause machine damage or an accident.

5.3 JLG SUPPLIED ATTACHMENTS

3508PS, 3509PS, 3512PS, 4008PS, 4009PS & 4012PS

Attachment	Part Number	Applicable Standard			
		3508PS 4008PS	3509PS 4009PS		3512PS 4012PS
		CE	CE	AUS	CE
Carriage, 1185 mm	1170028	X	X	X	X
Carriage, 1185 mm	1001107333	X	X		X
Carriage, 1185 mm	1001107581			X	
Side Shift Carriage, 1200 mm	1170002	X	X		X
Fork, 50x100x1200 mm	2340030	X	X	X	X
Fork, Narrow 50x100x1200 mm	2340041	X	X	X	X
Fork, 50x100x1200 mm	1001100911	X	X		X
Fork, 60x100x1200 mm	1001107586			X	
Fork Extension, 50x100 mm	1001112559	X	X	X	X
Fork Extension, 60x100 mm	1001112560			X	
Bucket, 0,51 m^3	1001145722			X	
Bucket, 0,9 m^3	0930015	X	X	X	X
Bucket, 1,0 m^3	1001145724			X	
Bucket, 1,8 m^3	0930016	X	X	X	X
Bucket, 2,0 m^3	1001145725			X	
Bucket with Teeth, 0,8 m^3	4805670				X
Bucket with Teeth, 1,0 m^3	4802100	X	X	X	X
Bucket, Multi-Purpose, 1,0 m^3	0930003	X	X	X	X
Bucket, Multi-Purpose	1001128891			X	
	1001145723			X	
Bucket, Grapple, 0,8 m^3	0930004	X	X	X	
Fork Mounted Concrete Bucket, 500L	0240158	X	X		X
Concrete Bucket Mixer, 500 L	1001106930		X		X
Truss Boom, 3,4 m	0240063	X	X		X
Truss Boom, 3,6 m	0240110	X	X		X
Truss Boom, 2,0 m	1001101442			X	
	1001175721			X	
Fork Mounted Hook	2700118	X	X		X

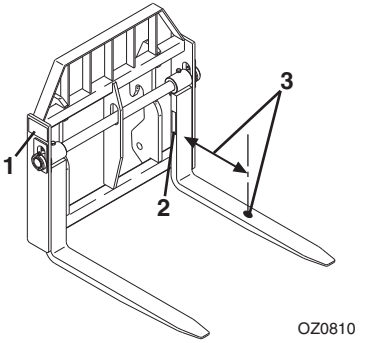
3513PS, 4013PS & 4017PS

Attachment	Part Number	Applicable Standard				Quick Attach	
		3513PS 4013PS		4017PS			
		CE	AUS	CE	AUS	JLG	Manitou
Carriage, 1185 mm	1170028	X	X	X	X	X	
Carriage, 1185 mm	1001107333	X		X		X	
Carriage, 1185 mm	1001107581		X		X	X	
Carriage, 1200 mm	1001102553	X		X			X
Side Shift Carriage, 1200 mm	1170002	X		X		X	
Fork Positioning Carriage, 1225 mm	1001091313	X		X		X	
Fork, 50x100x1200 mm	2340030	X	X	X	X	X	
Fork, Narrow 50x100x1200 mm	2340041	X	X	X	X	X	
Fork, 50x100x1200 mm	1001100911	X		X		X	
Fork, 60x100x1200 mm	1001107586		X		X	X	
Fork Extension, 50x100 mm	1001112559	X	X	X	X	X	
Fork Extension, 60x100 mm	1001112560		X		X	X	
Bucket, 0.51 m^3	1001145722		X		X	X	
Bucket, 0,9 m^3	0930015	X	X	X	X	X	
Bucket, 1,0 m^3	1001145724		X		X	X	
Bucket, 1,8 m^3	0930016	X	X	X	X	X	
Bucket, 2,0 m^3	1001145725		X		X	X	
Bucket with Teeth, 0,8 m^3	4805670	X		X		X	
Bucket with Teeth, 1,0 m^3	4802100	X	X	X	X	X	
Bucket, Multi-Purpose, 1,0 m^3	0930003	X	X	X	X	X	
Bucket, Multi-Purpose	1001128891		X		X	X	
	1001145723		X		X	X	
Fork Mounted Concrete Bucket, 500L	0240158	X		X		X	
Concrete Bucket Mixer, 500 L	1001106930	X		X		X	
Truss Boom, 3,4 m	0240063	X		X		X	
Truss Boom, 3,6 m	0240110	X		X		X	
Truss Boom, 2,0 m	1001101442		X		X	X	
	1001175721		X		X	X	
Fork Mounted Hook	2700118	X		X		X	
Quick Attach Mounted Hook	1170058	X		X		X	
Platform, 1,8 m	1001097353	X		X		X	
	1001112107	X		X		X	
	1001114460		X		X	X	

Attachment	Part Number	Applicable Standard				Quick Attach	
		3513PS 4013PS		4017PS			
		CE	AUS	CE	AUS	JLG	Manitou
Platform, 4,5 m	1001097355	X		X		X	
	1001112108	X		X		X	
	1001114462		X		X	X	

This Page Intentionally Left Blank

5.4 TELEHANDLER/ATTACHMENT/FORK CAPACITY



Prior to installing the attachment verify it is approved and the telehandler is equipped with the proper capacity chart. See *"Approved Attachments"* on page 5-1.

To determine the maximum capacity of the telehandler and attachment, use the smallest of the following capacities:

- Capacity stamped on the attachment identification plate (**1**).
- Fork capacities and load centers are stamped on the side of each fork (**2**) (if equipped). This rating specifies the maximum load capacity that the individual fork can safely carry at the maximum load center (**3**). Total attachment capacity is multiplied by the number of forks on the attachment (if equipped), up to the maximum capacity of the attachment.
- Maximum capacity as indicated on the proper capacity chart. See *"Approved Attachments"* on page 5-1.
- When the load rating of the telehandler differs from the capacity of the forks or attachment, the lower value becomes the overall load capacity.

Use the proper capacity chart to determine maximum capacity at various machine configurations. Lifting and placing a load may require use of more than one capacity chart based on machine configuration.

Other than block forks, all forks should be used in matched pairs, block forks used in matched sets.

⚠ WARNING

Never use an attachment without the appropriate JLG approved capacity chart installed on the telehandler.

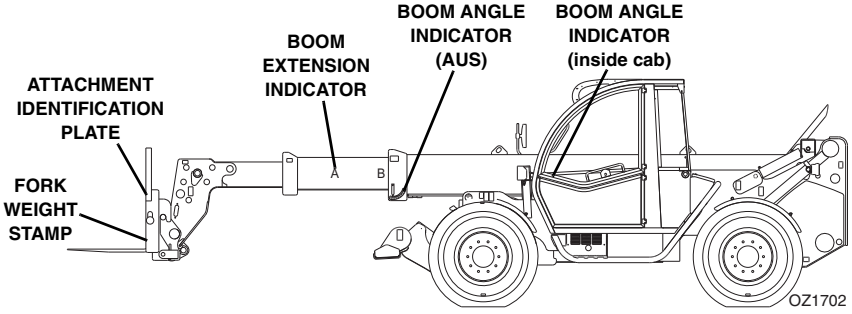
5.5 USE OF THE CAPACITY CHART

To properly use the capacity chart (see page 5-8), the operator must first determine and/or have the following:

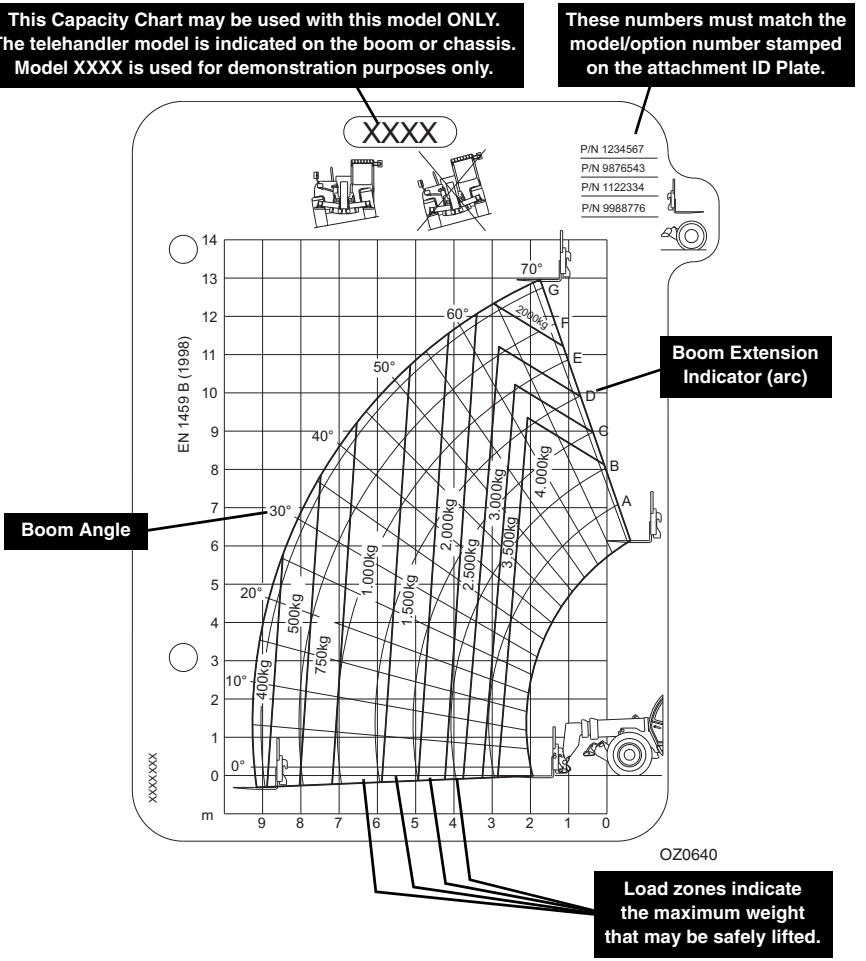
1. An approved attachment. See *"Approved Attachments"* on page 5-1.
2. The proper Capacity Chart.
3. Weight of the load being lifted.
4. Load placement information:
   a. HEIGHT where the load is to be placed.
   b. DISTANCE from the front tires of the telehandler where the load is to be placed.
5. On the capacity chart, find the line for the height and follow it over to the distance.
6. The number in the load zone where the two cross is the maximum capacity for this lift. If the two cross at a division between zones, the smaller number must be used.

The number in the load zone must be equal to or greater than the weight of the load to be lifted. Determine the limits of the load zone on the capacity chart and keep within these limits.

Capacity Indicator Locations



Sample Capacity Chart (CE)



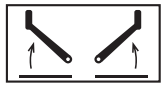
Note: *This is a sample capacity chart* ***only****!* ***DO NOT*** *use this chart, use the one located in your operator cab.*

⚠ WARNING

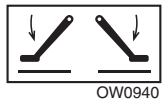
TIP OVER HAZARD. All loads shown on rated capacity chart are based on machine being on firm ground with frame level (see page 4-5); the forks being positioned evenly on carriage; the load being centered on forks; proper size tires being properly inflated; and the telehandler being in good operating condition.

To identify the proper capacity chart on telehandlers equipped with outriggers, refer to the following icons which may be located on the capacity chart.

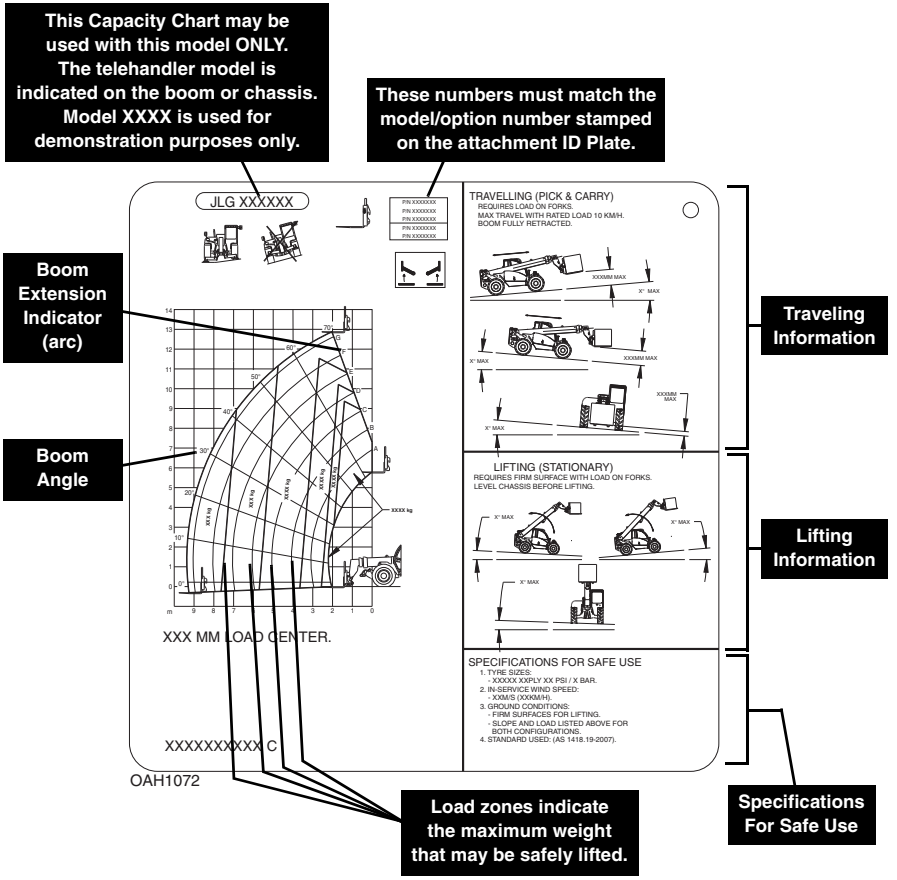
- Use when lifting a load with outriggers up.


OW0930

- Use when lifting a load with outriggers down.


OW0940

Sample Capacity Chart (AUS)



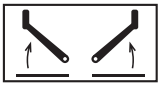
Note: *This is a sample capacity chart* ***only****!* ***DO NOT*** *use this chart, use the one located in your operator cab.*

⚠ WARNING

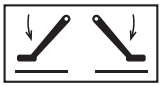
TIP OVER HAZARD. All loads shown on rated capacity chart are based on machine being operated within the parameters indicated on the appropriate load chart; proper size tires being properly inflated; and the telehandler being in good operating condition.

To identify the proper capacity chart on telehandlers equipped with outriggers, refer to the following icons which may be located on the capacity chart.

- Use when lifting a load with outriggers up.


OW0930

- Use when lifting a load with outriggers down.


OW0940

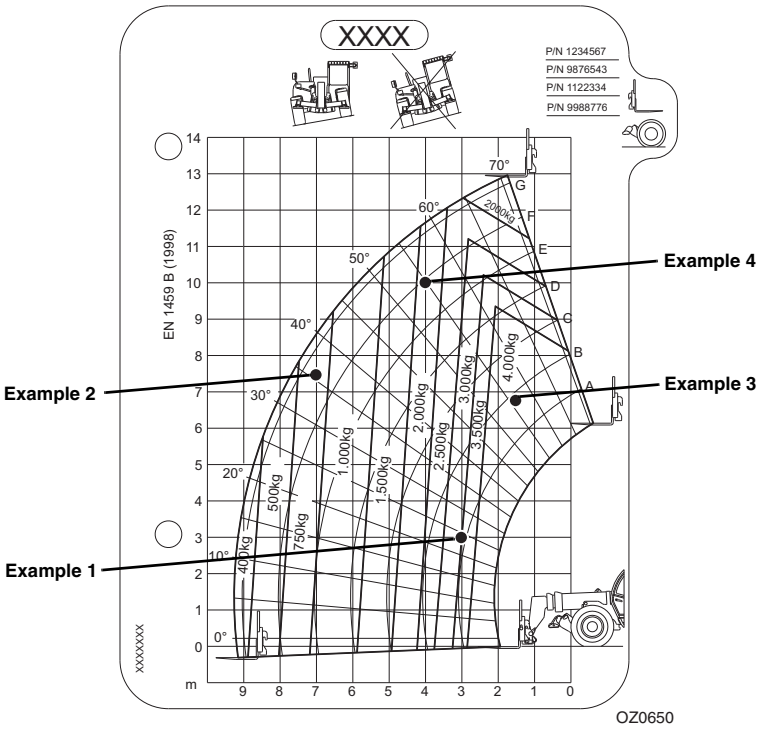
Example

A contractor owns a model xxxx telehandler with a fork carriage. He knows this attachment may be used with his model since:

- The attachment model/option number, matches the attachment number on the capacity chart.
- The capacity chart is clearly marked for model xxxx and corresponds with machine configuration being used.

Below are examples with various conditions the contractor may encounter and whether or not the load may be lifted.

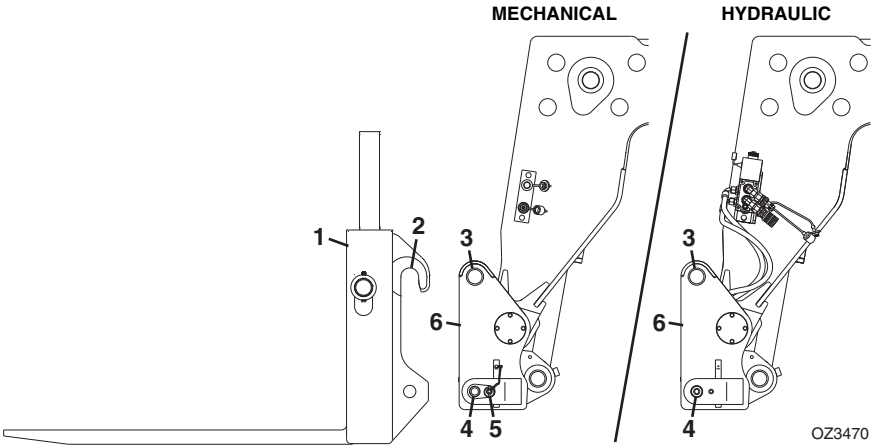
	Load Weight	Distance	Height	OK to Lift
1	3.000 kg (6,614 lbs)	3 m (9.8 ft)	3 m (9.8 ft)	Yes
2	900 kg (1,984 lbs)	7 m (23 ft)	7,5 m (24.6 ft)	NO
3	3.750 kg (8,267 lbs)	1,5 m (4.9 ft)	6,75 m (22.1 ft)	Yes
4	2.500 kg (5,512 lbs)	4 m (13.1 ft)	10 m (32.8 ft)	NO



Note: *This is a sample capacity chart* ***only****!* ***DO NOT*** *use this chart, use the one located in your operator cab.*

5.6 ATTACHMENT INSTALLATION

JLG Quick Attach



1. Attachment
2. Attachment Pin Recess
3. Attachment Pin
4. Lock Pin
5. Retainer Pin (mechanical quick attach)
6. Quick Attach (attachment tilt control in cab, see page 3-18 for details)

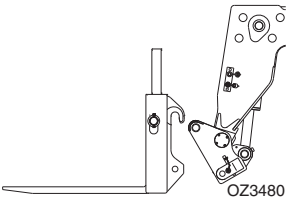
WARNING

CRUSH HAZARD. Always be certain that carriage or attachment is properly positioned on boom and is secured by lock pin and retainer pin. Failure to ensure proper installation could permit carriage/attachment/load to disengage.

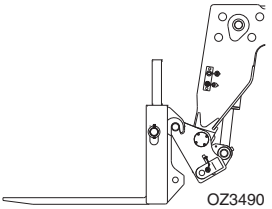
Mechanical Quick Attach

This installation procedure is designed for one-person operation. Prior to exiting cab, perform *"Shut-Down Procedure"* on page 4-3.

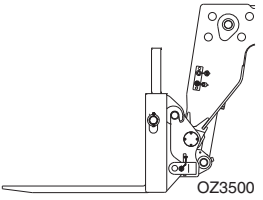
1. Tilt quick attach forward to provide clearance. Check to be sure lock pin is out.



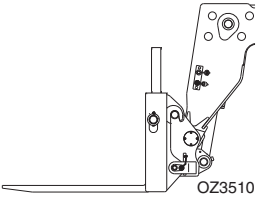
2. Align attachment pin with recess in attachment. Raise boom slightly to engage attachment pin in recess.



3. Tilt quick attach back to engage attachment.



4. Insert lock pin and secure with retainer pin.

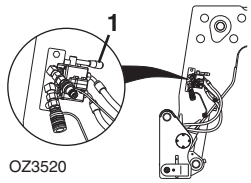


5. If attachment is equipped, connect auxiliary hydraulic hoses. See *"Hydraulic Operated Attachment"* on page 5-20.

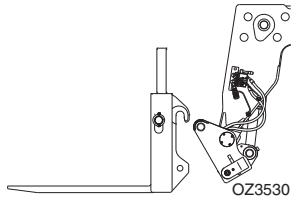
Manual Hydraulic Quick Attach

This installation procedure is designed for one-person operation. Prior to exiting cab, perform *"Shut-Down Procedure"* on page 4-3.

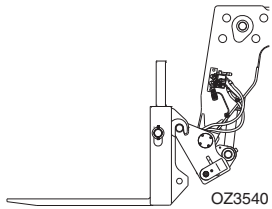
1. Turn auxiliary hydraulic valve handle (**1**) back, toward the operator cab, to enable hydraulic quick attach function.



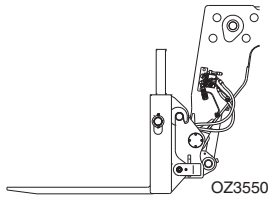
2. Tilt quick attach forward to provide clearance. Check to be sure lock pin is disengaged.



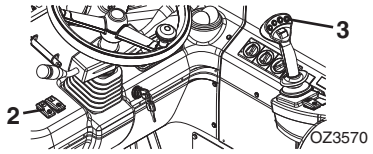
3. Align attachment pin with recess in attachment. Raise boom slightly to engage attachment pin in recess.



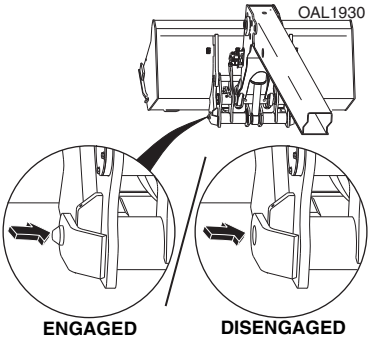
4. Tilt quick attach back to engage attachment.



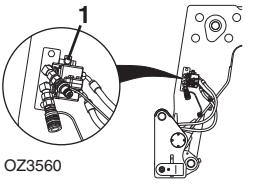
5. Press and hold switch (**2**) and button (**3**), at the same time move joystick forward to engage lock pin or move joystick back to disengage lock pin.



6. Raise boom to eye level and visually check that the lock pin protrudes through the hole. If the pin does not protrude through the hole, place the attachment on the ground and return to step 2.



7. Turn auxiliary hydraulic valve handle (**1**) forward, away from the operator cab, to enable attachment auxiliary hydraulics function.

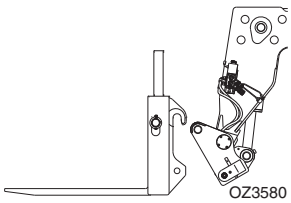


8. If attachment is equipped, connect auxiliary hydraulic hoses. See *"Hydraulic Operated Attachment"* on page 5-20.

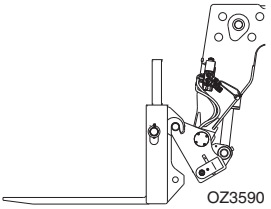
Hydraulic Quick Attach

This installation procedure is designed for one-person operation.

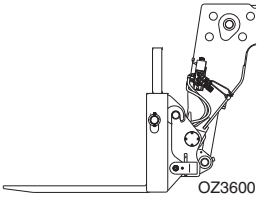
1. Tilt quick attach forward to provide clearance. Check to be sure lock pin is disengaged.



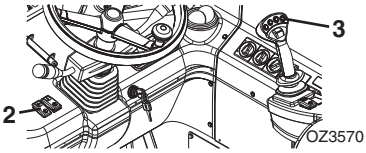
2. Align attachment pin with recess in attachment. Raise boom slightly to engage attachment pin in recess.



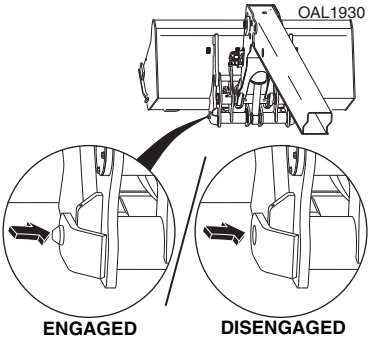
3. Tilt quick attach back to engage attachment.



4. Press and hold switch (**2**) and button (**3**), at the same time move joystick forward to engage lock pin or move joystick back to disengage lock pin.

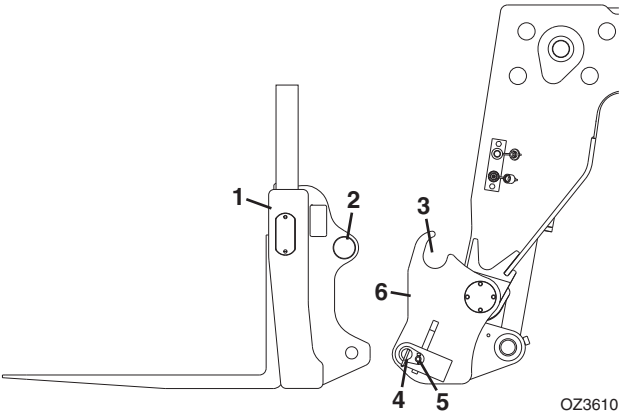


5. Raise boom to eye level and visually check that the lock pin protrudes through the hole. If the pin does not protrude through the hole, place the attachment on the ground and return to step 2.



6. If attachment is equipped, connect auxiliary hydraulic hoses. See *"Hydraulic Operated Attachment"* on page 5-20.

Manitou Quick Attach



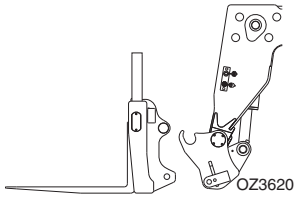
1. Attachment
2. Attachment Pin
3. Attachment Pin Recess
4. Lock Pin
5. Retainer Pin (mechanical quick attach)
6. Manitou Quick Attach (attachment tilt control in cab, see page 3-18 for details)

⚠ WARNING

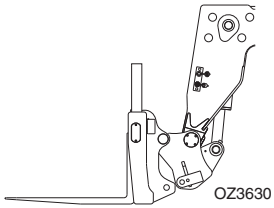
CRUSH HAZARD. Always be certain that carriage or attachment is properly positioned on boom and is secured by lock pin and retainer pin. Failure to ensure proper installation could permit carriage/attachment/load to disengage.

This installation procedure is designed for one-person operation. Prior to exiting cab, perform *"Shut-Down Procedure"* on page 4-3.

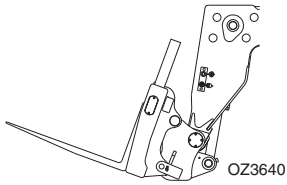
1. Tilt quick attach forward to provide clearance. Check to be sure lock pin is out.



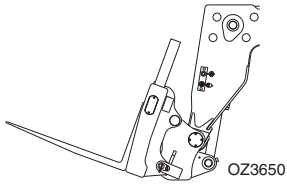
2. Align attachment pin recess with attachment pin. Raise boom slightly to engage attachment pin in recess.



3. Tilt quick attach back to engage attachment.

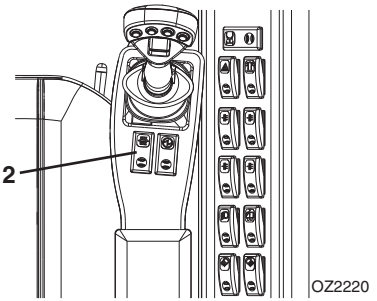


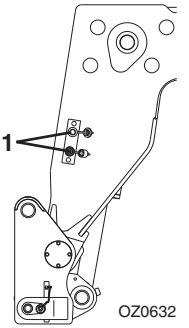
4. Insert lock pin and secure with retainer pin.



5. If attachment is equipped, connect auxiliary hydraulic hoses. See *"Hydraulic Operated Attachment"* on page 5-20.

Hydraulic Operated Attachment



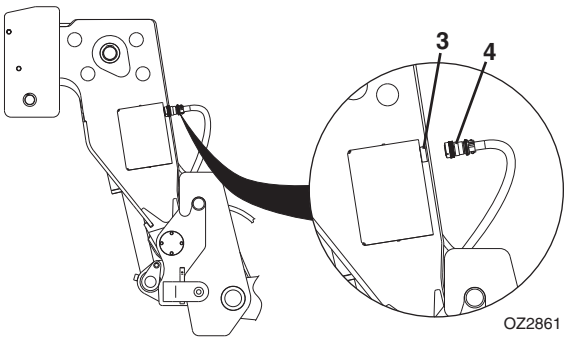


1. Install attachment (see page 5-13 or 5-18).
2. Lower attachment to ground.
3. Quickly depress and release continuous auxiliary hydraulics switch (**1**) twice. Depress again and hold to relieve pressure at both auxiliary fittings (**2**).

Note: *Depressing of auxiliary hydraulics switch three times must be accomplished within two seconds. If buzzer sounds or continuous auxiliary hydraulics indicator illuminates, repeat step 3.*

4. Perform *"Shut-Down Procedure"* on page 4-3.
5. Connect attachment hoses to both auxiliary fittings.

Platform Attachment (If Equipped)



1. Install platform (see page 5-13) and connect hydraulic lines (see above).
2. With the park brake applied and engine off, remove connector cover (**3**) and connect electric cable (**4**) from the platform.

5.7 ADJUSTING/MOVING FORKS

Carriages may have different locations where forks can be positioned. Two different methods can be used for repositioning, depending upon the carriage structure.

Note: *Apply a light coating of appropriate lubricant to ease sliding of forks or fork bar.*

To slide forks:

1. Ensure attachment is properly installed. Refer to *"Attachment Installation"* page 5-13.
2. Elevate attachment to approximately 1,5 m (5 ft) and tilt carriage forward until fork heel is free from attachment.
3. Stand at the side of the carriage. To slide fork toward the center of the carriage, push the fork near the fork eye. To slide fork toward the edge of the carriage, pull the fork near the fork eye. To avoid pinching, do not place fingers or thumb between the fork and carriage structure.

If removing fork bar is necessary:

1. Rest forks on ground.
2. Remove fork bar.
3. Reposition forks.
4. Reinstall the fork bar and fork bar retaining mechanism(s).

5.8 ATTACHMENT OPERATION

- Capacities and range limits for the telehandler change depending on the attachment in use.
- Separate attachment instructions must be kept in Manual Holder in cab with this Operation & Safety Manual. An additional copy must be kept with the attachment if it is equipped with a manual holder.

Note: *Operations described within this section reference the Lift joystick pattern. Refer to page 3-20 if utilizing the Loader joystick pattern.*

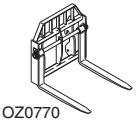
NOTICE

EQUIPMENT DAMAGE. Some attachments may contact the front tires or machine structure when the boom is retracted and the attachment is rotated. Improper use of attachment may result in attachment or machine structural damage.

NOTICE

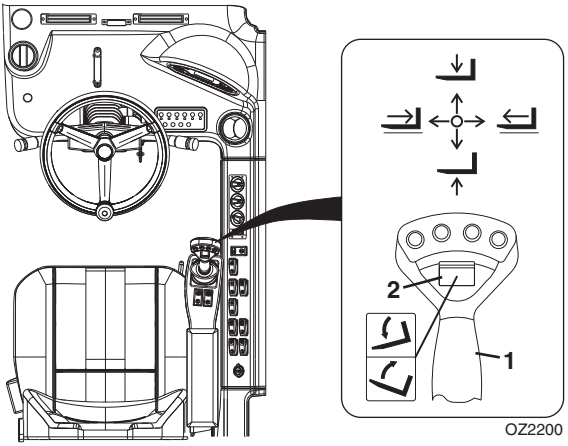
EQUIPMENT DAMAGE. Avoid contact with any structure or object when lifting a load. Maintain clearance around boom structure and load. Failure to maintain clearance may result in attachment or machine structural damage.

Carriage w/Forks


OZ0770

Use Carriage Capacity Chart

To determine maximum capacity, refer to *“”* on page 5-5.



OZ2200

The joystick (**1**) controls movement of the boom.

The attachment tilt roller switch (**2**) controls carriage tilt.

- Push roller switch down to tilt up.
- Push roller switch up to tilt down.

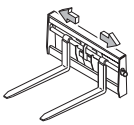
Installation Procedure:

- Refer to *“Attachment Installation”* on page 5-13.

Equipment Damage Precautions:

- Do not use forks as a lever to pry material. Excessive prying forces could damage forks or machine structure.
- Do not attempt to lift loads that are attached or connected to another object.

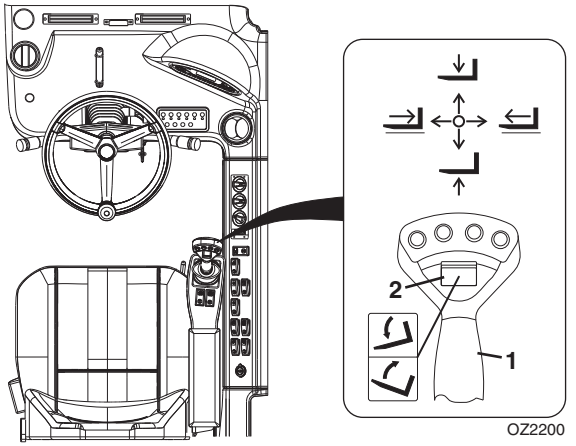
Side Shift Carriage



OAL1540

Use Side Shift Carriage Capacity Chart

To determine maximum capacity, refer to *“” on page 5-5.*

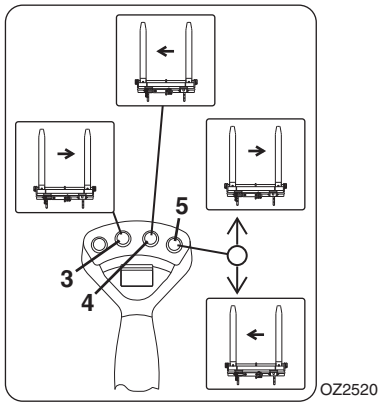


OZ2200

The joystick (**1**) controls movement of the boom.

The attachment tilt roller switch (**2**) controls carriage tilt.

- Push roller switch down to tilt up.
- Push roller switch up to tilt down.



OZ2520

To Side Shift:

- Press and hold button (**3**) to shift forks right or press and hold button (**4**) to shift forks left.

OR

- While pressing and holding button (**5**), move joystick forward to shift forks right or move joystick back to shift forks left.

Installation Procedure:

- Refer to *"Attachment Installation"* on page 5-13.

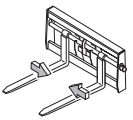
WARNING

CRUSH HAZARD. Do not use side shift to push or pull objects or load. Failure to comply could cause object or load to fall.

Equipment Damage Precautions:

- Do not use forks as a lever to pry material. Excessive prying forces could damage forks or machine structure.
- Do not attempt to lift loads that are attached or connected to another object.

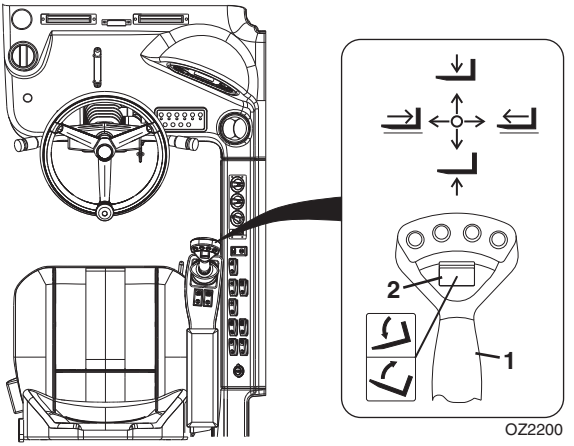
Fork Positioning Carriage



OZ3670

Use Fork Positioning Carriage Load Chart

To determine maximum capacity, refer to *“” on page 5-5.*

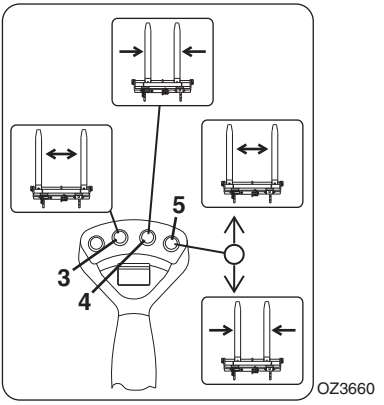


OZ2200

The joystick (**1**) controls movement of the boom.

The attachment tilt roller switch (**2**) controls carriage tilt.

- Push roller switch down to tilt up.
- Push roller switch up to tilt down.



OZ3660

To Fork Position:

- Press and hold button (**3**) to shift forks out or press and hold button (**4**) to shift forks in.

OR

- While pressing and holding button (**5**), move joystick forward to shift forks out or move joystick back to shift forks in.

Installation Procedure:

- Refer to *"Attachment Installation"* on page 5-13.

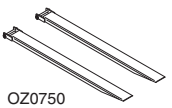
⚠ WARNING

CRUSH HAZARD. Do not use fork positioning to push or pull objects or load. Failure to comply could cause object or load to fall.

Equipment Damage Precautions:

- Do not use forks as a lever to pry material. Excessive prying forces could damage forks or machine structure.
- Do not attempt to lift loads that are attached or connected to another object.

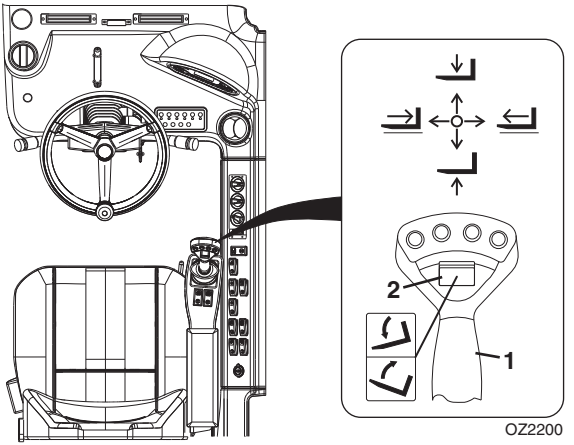
Fork Extension


OZ0750

Use Appropriate Carriage Capacity Chart

To determine maximum capacity of the carriage, refer to *“”* on page 5-5.

Note: *The maximum capacity of the carriage when equipped with fork extensions may be reduced to the capacity indicated on the fork extensions. If the load exceeds the capacity of the fork extension contact JLG to obtain forks and/or fork extensions of the proper load rating and length.*



OZ2200

The joystick (**1**) controls movement of the boom.

The attachment tilt roller switch (**2**) controls carriage tilt.

- Push roller switch down to tilt up.
- Push roller switch up to tilt down.

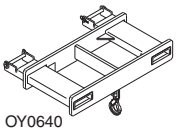
Installation Procedure:

- Ensure carriage is properly installed. Refer to *“Attachment Installation”* on page 5-13.
- Ensure length and cross section of the parent fork arm is equal to or exceeds the parent fork arm blade length stamped into the fork extension.
- Secure the fork extensions to the forks by sliding the fork extension onto the parent fork and install the retaining pin behind the vertical shank of the fork.

Equipment Damage Precautions

- The heavy part of the load must be against the carriage backrest.
- Do not allow load center of gravity to be in front of tip of the supporting fork.
- Do not pick up a load or pry materials with the tip of a fork extensions.

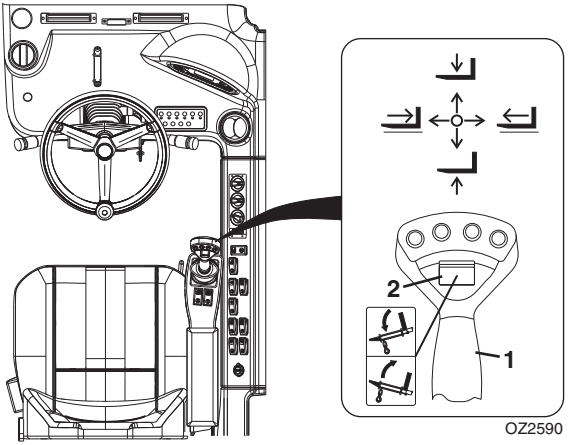
Fork Mounted Hook


OY0640

Use Fork Mounted Hook Capacity Chart

To determine maximum capacity, refer to *“”* on page 5-5.

Suspend loads in accordance with requirements set forth in Section 1 - General Safety Practices.



OZ2590

The joystick (**1**) controls movement of the boom.

The attachment tilt roller switch (**2**) controls fork mounted hook tilt.

- Push roller switch down to tilt up.
- Push roller switch up to tilt down.

Installation Procedure:

- Ensure carriage is properly installed. Refer to *“Attachment Installation”* on page 5-13.
- Secure the fork mounted hook to the forks by sliding the fork mounted hook onto the parent forks and install the retaining pin behind the vertical shank of the fork.

Operation:

- Pallet or lumber forks of an appropriate load rating must be used. Do not use with cubing or block forks.
- Weight of rigging must be included as part of total load being lifted.
- Do not use with mast carriage attachment.
- Do not use fork mounted hook with attachments capable of rotating (i.e. side tilt and swing carriages) without disabling the rotation feature(s).

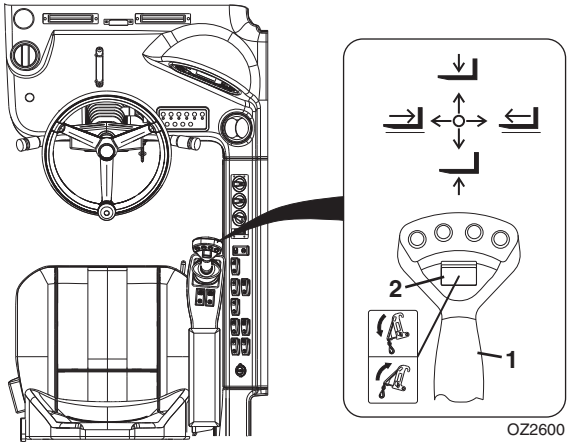
Quick Attach Mounted Hook


OAL1510

Use Quick Attach Mounted Hook Capacity Chart

To determine maximum capacity, refer to *“”* on page 5-5.

Suspend loads in accordance with requirements set forth in Section 1 - General Safety Practices.



OZ2600

The joystick (**1**) controls movement of the boom.

The attachment tilt roller switch (**2**) controls quick attach mounted hook tilt.

- Push roller switch down to tilt up.
- Push roller switch up to tilt down.

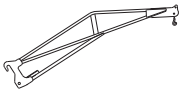
Installation Procedure:

- Refer to *“Attachment Installation”* on page 5-13.

Operation:

- Weight of rigging must be included as part of total load being lifted.

Truss Boom

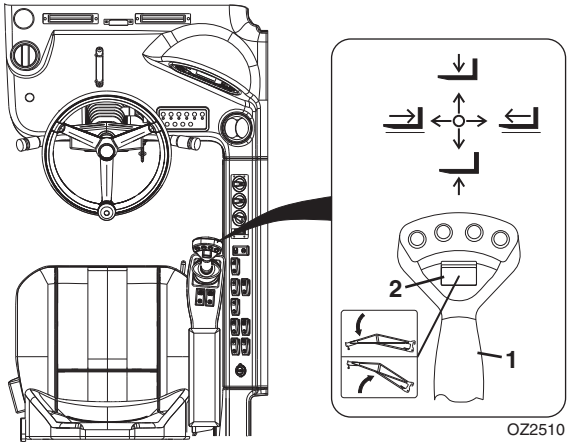


OZ0780

Use Appropriate Truss Boom Capacity Chart

To determine maximum capacity, refer to *“”* on page 5-5.

Suspend loads in accordance with requirements set forth in Section 1 - General Safety Practices.



OZ2510

The joystick (**1**) controls movement of the boom.

The attachment tilt roller switch (**2**) controls truss boom tilt.

- Push roller switch down to tilt up.
- Push roller switch up to tilt down.

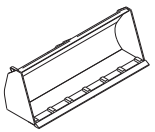
Installation Procedure:

- Refer to *“Attachment Installation”* on page 5-13.

Operation:

- Weight of rigging must be included as part of total load being lifted.

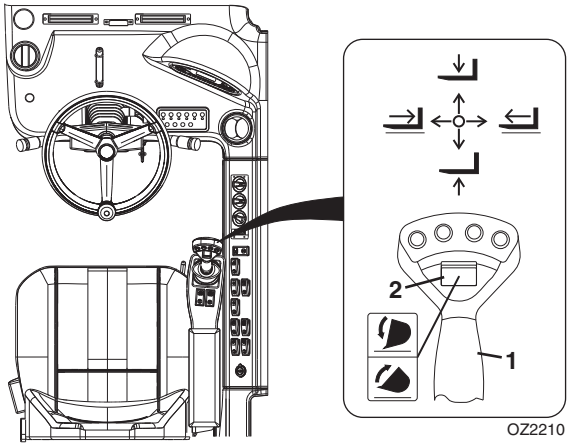
Bucket



OZ0730

Use Appropriate Bucket Capacity Chart

To determine maximum capacity, refer to *“”* on page 5-5.



OZ2210

The joystick (**1**) controls movement of the boom.

The attachment tilt roller switch (**2**) controls bucket tilt.

- Push roller switch down to tilt up.
- Push roller switch up to tilt down.

Installation Procedure:

- Refer to *“Attachment Installation”* on page 5-13.

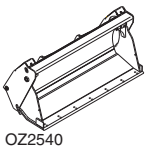
Operation:

- Raise or lower boom to appropriate height for loading material from stockpile.
- Align telehandler with face of stockpile and drive slowly and smoothly into pile to load bucket.
- Tilt bucket up far enough to retain load and back away from pile.
- Travel in accordance with requirements set forth in Section 1 - General Safety Practices.
- Tilt bucket down to dump load.

Equipment Damage Precautions

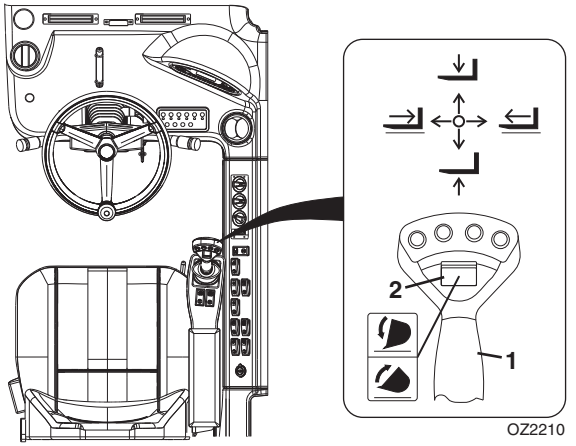
- Except for lifting or dumping a load, the boom must be fully retracted for all bucket operations.
- Do not corner-load bucket. Distribute material evenly within the bucket. Bucket capacity charts are for evenly distributed loads only.
- Do not use bucket as a lever to pry material. Excessive prying forces could damage bucket or machine structure.
- Do not attempt to load material which is hard or frozen. This could cause severe damage to quick attach or machine structure.
- Do not use bucket for "back dragging." This could cause severe damage to quick attach.

Multi-Purpose Bucket


OZ2540

Use Appropriate Bucket Capacity Chart

To determine maximum capacity, refer to *“”* on page 5-5.

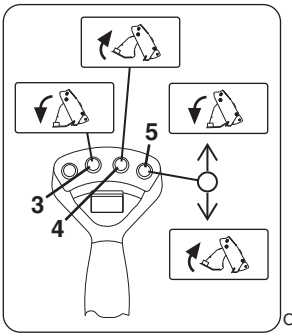


OZ2210

The joystick (**1**) controls movement of the boom.

The attachment tilt roller switch (**2**) controls bucket tilt.

- Push roller switch down to tilt up.
- Push roller switch up to tilt down.



OZ2550

To open/close bucket:

Press and hold button (**3**) to close bucket or press and hold button (**4**) to open bucket.

OR

While pressing and holding button (**5**), move joystick forward to close bucket or move joystick back to open bucket.

Installation Procedure:

- Refer to *"Attachment Installation"* on page 5-13.

Operation:

- Raise or lower boom to appropriate height and close bucket for loading material from stockpile.
- Align telehandler with face of stockpile and drive slowly and smoothly into pile to load bucket.
- Tilt bucket up far enough to retain load and back away from pile.
- Travel in accordance with requirements set forth in Section 1 - General Safety Practices.
- Open bucket or tilt bucket down to dump load.

Equipment Damage Precautions

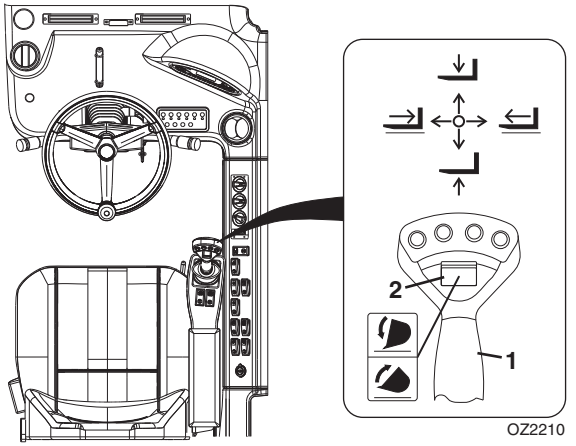
- Except for lifting or dumping a load, the boom must be fully retracted for all bucket operations.
- Do not corner-load bucket. Distribute material evenly within the bucket. Bucket capacity charts are for evenly distributed loads only.
- Do not use bucket as a lever to pry material. Excessive prying forces could damage bucket or machine structure.
- Do not attempt to load material which is hard or frozen. This could cause severe damage to quick attach or machine structure.
- Do not use bucket for "back dragging." This could cause severe damage to quick attach.

Grapple Bucket

OZ1450

Use Appropriate Bucket Capacity Chart

To determine maximum capacity, refer to *“”* on page 5-5.

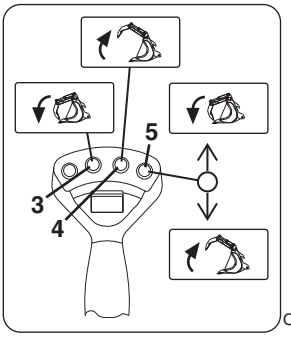


OZ2210

The joystick (**1**) controls movement of the boom.

The attachment tilt roller switch (**2**) controls bucket tilt.

- Push roller switch down to tilt up.
- Push roller switch up to tilt down.



OZ2530

To Open/Close Grapple:

Press and hold button (**3**) to close grapple or press and hold button (**4**) to open grapple.

OR

While pressing and holding button (**5**), move joystick forward to close grapple or move joystick back to open grapple.

Installation Procedure:

- Refer to *"Attachment Installation"* on page 5-13.

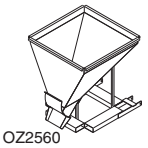
Operation:

- Raise or lower boom to appropriate height and open grapple for loading material from stockpile.
- Align telehandler with face of stockpile and drive slowly and smoothly into pile to load bucket.
- Tilt bucket up far enough to retain load, close grapple and back away from pile.
- Travel in accordance with requirements set forth in Section 1 - General Safety Practices.
- Open grapple and tilt bucket down to dump load.

Equipment Damage Precautions

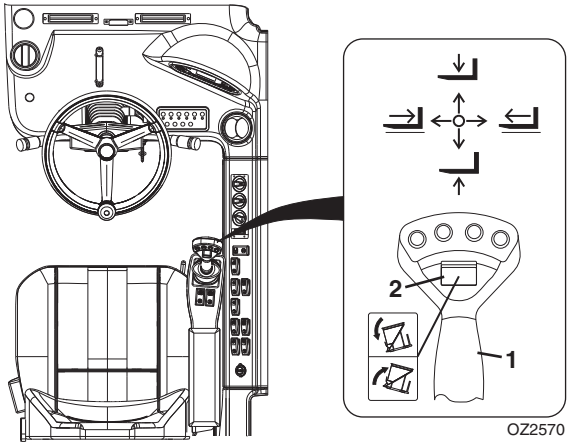
- Except for lifting or dumping a load, the boom must be fully retracted for all bucket operations.
- Do not corner-load bucket. Distribute material evenly within the bucket. Bucket capacity charts are for evenly distributed loads only.
- Do not use bucket as a lever to pry material. Excessive prying forces could damage bucket or machine structure.
- Do not attempt to load material which is hard or frozen. This could cause severe damage to quick attach or machine structure.
- Do not use bucket for "back dragging." This could cause severe damage to quick attach.

Concrete Bucket - Fork Mounted


OZ2560

Use Appropriate Carriage Capacity Chart

To determine maximum capacity, refer to *“”* on page 5-5.

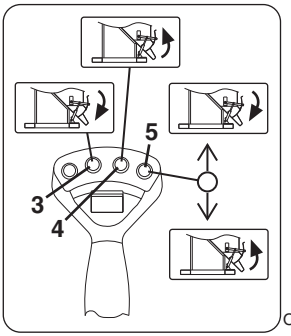


OZ2570

The joystick (**1**) controls movement of the boom.

The attachment tilt roller switch (**2**) controls bucket tilt.

- Push roller switch down to tilt up.
- Push roller switch up to tilt down.



OZ2580

To open/close bucket gate:

Press and hold button (**3**) to close bucket gate or press and hold button (**4**) to open bucket gate.

OR

While pressing and holding button (**5**), move joystick forward to close bucket gate or move joystick back to open bucket gate.

Installation Procedure:

- Ensure carriage is properly installed. Refer to *"Attachment Installation"* on page 5-13.
- Secure the concrete bucket to the forks by sliding the concrete bucket onto the parent forks and install the retaining pin behind the vertical shank of the fork.

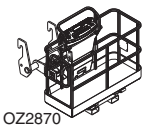
Operation:

- Close bucket gate, level bucket and fully retract and lower boom to load material.
- Distribute material evenly within the bucket. Bucket capacity charts are for evenly distributed loads only.
- Load center will vary depending on the amount of material in the bucket. Always ensure compliance with the capacity chart.
- Travel in accordance with requirements set forth in Section 1 - General Safety Practices.
- Position bucket and open bucket gate to release load.

Equipment Damage Precautions

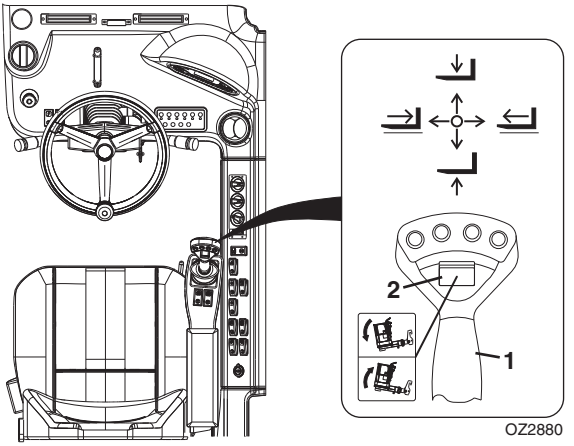
- Transport the concrete bucket as low as practical at a slow speed and without rapid side to side movement.

Platform


OZ2870

Use Platform Capacity Chart

To determine maximum capacity, refer to capacity decal on platform.



OZ2880

The joystick (**1**) controls movement of the boom.

The attachment tilt roller switch (**2**) controls platform tilt.

- Push roller switch down to tilt up.
- Push roller switch up to tilt down.

Installation Procedure:

- Refer to *"Attachment Installation"* on page 5-13.

Operation from Cab

- The platform is to be only used on machines specifically designed to accept the platform. Refer to the Platform for 3513PS, 4013PS & 4017PS Operation & Safety Manual.
- Machine travel is limited to first gear.
- Function speeds are reduced.
- Boom can only be raised up to 10 degrees.

5.9 HITCHES (3508PS, 4008PS, 3509PS & 4009PS)

Machines may be equipped with various types of hitches.

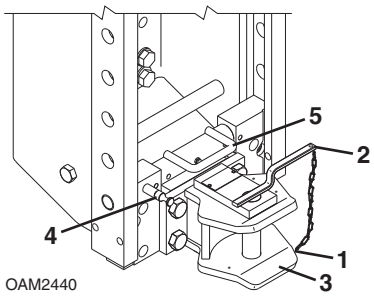
Maximum towing capacity shall be the smallest of the telehandler and hitch capacities. Refer to local governmental regulations for additional towing requirements and/or restrictions.

Note: *Ensure hitch is in lowest position when towing trailer. Speed and/or load may need reduced if traveling on ground which is not level.*

If not previously installed, secure hitch to machine with hardware supplied with installation.

Pin Hitch - CUNA C (Italy)

Maximum combined weight of trailer and load..... 6000 kg (13 225 lb)
Maximum vertical weight at hitch interface..... 1500 kg (3305 lb)



Connecting trailer for towing:

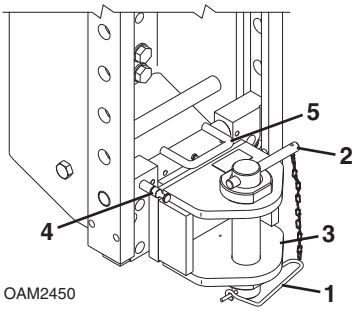
1. Remove safety pin (**1**) and pull pin (**2**) from hitch (**3**).
2. Align machine and tow eye of trailer.
3. Place pin through hitch and tow eye. Secure pin with safety pin.
4. If equipped, connect trailer harness to trailer plug.

Adjusting Hitch Height:

1. Pull lock pin (**4**) and lift handle (**5**) to release locking mechanism.
2. Move hitch to desired height.
3. Lower handle. When locking mechanism engages, lock pin will return to locked position

Pin Hitch - CUNA D2 (Italy)

Maximum combined weight of trailer and load ..... 12 000 kg (26 450 lb)
Maximum vertical weight at hitch interface..... 2000 kg (4400 lb)



Connecting trailer for towing:

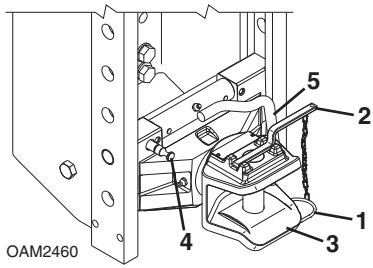
1. Remove safety pin (**1**) and pull pin (**2**) from hitch (**3**).
2. Align machine and tow eye of trailer.
3. Place pin through hitch and tow eye. Secure pin with safety pin.
4. If equipped, connect trailer harness to trailer plug.

Adjusting Hitch Height:

1. Pull lock pin (**4**) and lift handle (**5**) to release locking mechanism.
2. Move hitch to desired height.
3. Lower handle. When locking mechanism engages, lock pin will return to locked position

Pin Hitch

Maximum combined weight of trailer and load ..... 12 000 kg (26 450 lb)
Maximum vertical weight at hitch interface..... 2500 kg (5500 lb)



Connecting trailer for towing:

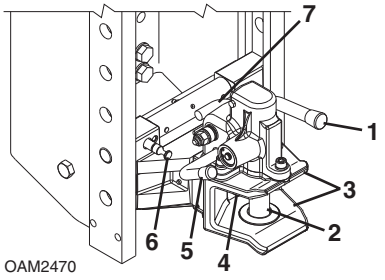
1. Remove safety pin (**1**) and pull pin (**2**) from hitch (**3**).
2. Align machine and tow eye of trailer.
3. Place pin through hitch and tow eye. Secure pin with safety pin.
4. If equipped, connect trailer harness to trailer plug.

Adjusting Hitch Height:

1. Pull lock pin (**4**) and lift handle (**5**) to release locking mechanism.
2. Move hitch to desired height.
3. Lower handle. When locking mechanism engages, lock pin will return to locked position

Auto Hitch

Maximum combined weight of trailer and load ..... 12 000 kg (26 450 lb)
Maximum vertical weight at hitch interface..... 2500 kg (5500 lb)



Connecting trailer for towing:

1. Rotate lever (**1**) until pin (**2**) fully retracts.
2. Align hitch mouth (**3**) and tow eye of trailer.
3. Reverse machine toward trailer.
4. After the tow eye contacts trigger (**4**), the pin and lever will be released.
5. If equipped, connect trailer harness to trailer plug.

Note: *Use lever (**5**) to lower pin (**2**) after disconnecting from trailer.*

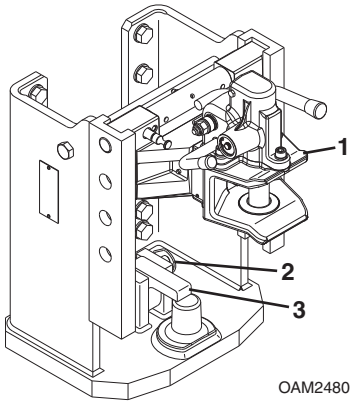
Adjusting Hitch Height:

1. Pull lock pin (**6**) and lift handle (**7**) to release locking mechanism.
2. Move hitch to desired height.
3. Lower handle. When locking mechanism engages, lock pin will return to locked position

Piton Frame and Auto Hitch

Maximum combined weight of trailer and load ..... 12 000 kg (26 450 lb)
Maximum vertical weight at hitch interface..... 2500 kg (5500 lb)

Note: *See page 5-46 for Auto Hitch information.*

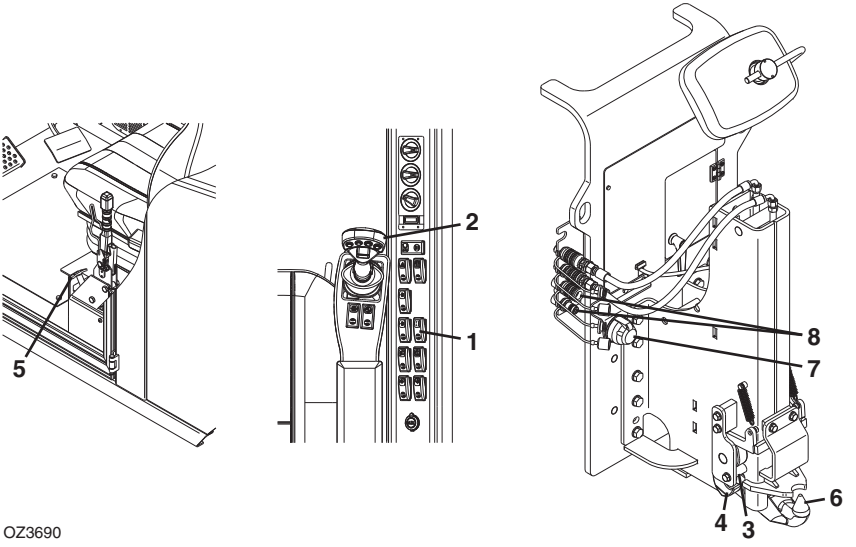


Connecting trailer for towing:

1. Raise Auto Hitch (**1**) to highest position.
2. Remove safety pin (**2**) and lift locking latch (**3**).
3. Insert safety pin to hold locking latch in the up position.
4. Align machine and tow eye of trailer.
5. Remove safety pin and lower locking latch. Secure locking latch with safety pin.
6. If equipped, connect trailer harness to trailer plug.

Hydraulic Hitch

Maximum combined weight of trailer and load ..... 12 000 kg (26 450 lb)
Maximum vertical weight at hitch interface..... 2000 kg (4400 lb)



OZ3690

Connecting trailer for towing:

1. Depress back of auxiliary hydraulic switch (**1**) to enable rear auxiliary hydraulics. Move joystick (**2**) forward to raise hitch safety posts (**3**) off safety hooks (**4**).
2. Pull safety hook release (**5**).
3. Move joystick back to lower the hitch (**6**) to the required height.
4. Reverse machine until the hitch is under the center of the tow eye.
5. Move joystick forward to raise hitch until the safety hooks are engaged.
6. Move joystick back to lower hitch safety posts onto safety hooks.
7. If equipped, connect trailer harness to trailer plug (**7**).
8. If equipped, connect trailer brake line to trailer coupling (**8**).
9. Depress front of auxiliary hydraulic switch (**1**) to enable front auxiliary hydraulics.

SECTION 6 - EMERGENCY PROCEDURES

6.1 TOWING A DISABLED PRODUCT

The following information assumes the telehandler cannot be moved under its own power.

- Before moving the telehandler, read all of the following information to understand options available. Then select the appropriate method.
- Machine mounted retrieval devices provide suitable means to attach a tow rope, chain or tow bar only in the event the telehandler becomes stuck or disabled. Retrieval devices are not intended for trailer towing applications.
- The steering system permits manual steering if engine or power assist feature fails; however, **steering will be slow and will require much greater force.**
- **DO NOT** attempt to tow a telehandler that is loaded or the boom/attachment is raised above 1,2 m (4 ft).

Moving Short Distances

- If it is only necessary to move telehandler a short distance, less than 30 m (100 ft), it is permissible to use a vehicle of sufficient capacity to tow the unit with no previous preparation.

Moving Longer Distances

- If the telehandler must be moved longer distances, it must be loaded onto a trailer of sufficient capacity.

Contact your local Authorized Distributor for specific instructions if neither of these methods are applicable.

6.2 EMERGENCY LOWERING OF BOOM

In the event of total loss of engine power or hydraulic pump failure with an elevated load, the situation must be properly evaluated and dealt with on an individual basis. **Contact JLG Industries or the local Authorized Distributor for specific instructions.**

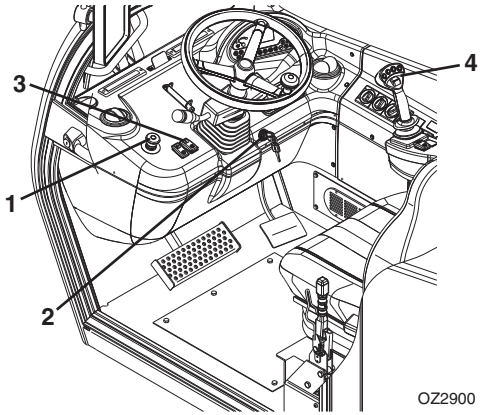
Secure the telehandler using the following procedures:

1. Clear the area around telehandler of all personnel.
2. Apply the parking brake. Place the transmission control lever in “NEUTRAL”.
3. Block all four wheels.
4. Section off a large area under the boom with string or tape to restrict any personnel from entering this area.

6.3 EMERGENCY LOWERING OF BOOM IF EQUIPPED FOR PLATFORM

Auxiliary Power System

In case of an emergency or engine failure an auxiliary power system is available in the cab.

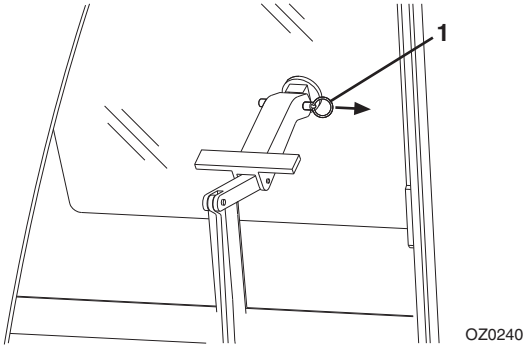


1. Verify the power/emergency stop switch (**1**) is not depressed and the ignition switch (**2**) is in position I.
2. Depress back of auxiliary power switch (**3**) and hold in place to engage auxiliary power system.
3. While holding the switch, operate the boom joystick (**4**) until the attachment is at ground level.
4. Release the auxiliary power switch and depress the emergency stop switch.

⚠ WARNING

TIP OVER HAZARD. To be used for retracting then lowering. Only use the extend or lift functions if necessary and limit their duration. Extending/lifting could damage the equipment and/or cause tip over.

6.4 CAB EMERGENCY EXIT

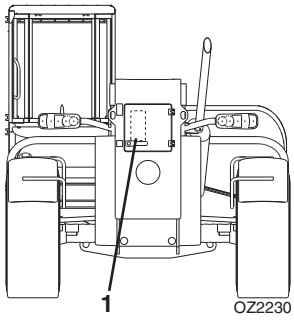


- In an emergency the rear window can be used to exit the telehandler.
- Remove the latch pin (**1**). The window is then free to swing open.

SECTION 7 - LUBRICATION AND MAINTENANCE

7.1 INTRODUCTION

Service the product in accordance with the maintenance schedule on the following pages.



The lubrication decal (**1**) contains general instructions that must be followed to keep this product in good operating condition. The Operation & Safety Manual and Service Manual contain more detailed service information with specific instructions.

Clothing and Safety Gear

- Wear all the protective clothing and personal safety devices issued to you or called for by job conditions.
- **DO NOT** wear loose clothing or jewelry that can get caught on controls or moving parts.

7.2 GENERAL MAINTENANCE INSTRUCTIONS

Prior to performing any service or maintenance on the telehandler, follow the shut-down procedure on page 4-3 unless otherwise instructed. Ensure telehandler is level, for proper fluid readings.

- Clean lubrication fittings before lubricating.
- After greasing telehandler, cycle all functions several times to distribute lubricants. Perform this maintenance procedure without attachment installed.
- Apply a light coating of engine oil to all linkage pivot points.
- Intervals shown are for normal usage and conditions. Adjust intervals for abnormal usage and conditions.
- Drain engine and gear cases after operating when oil is hot.
- Check all lubricant levels when lubricant is cool. For ease of filling hydraulic reservoir, use a funnel with a hose or flexible tube for best results.

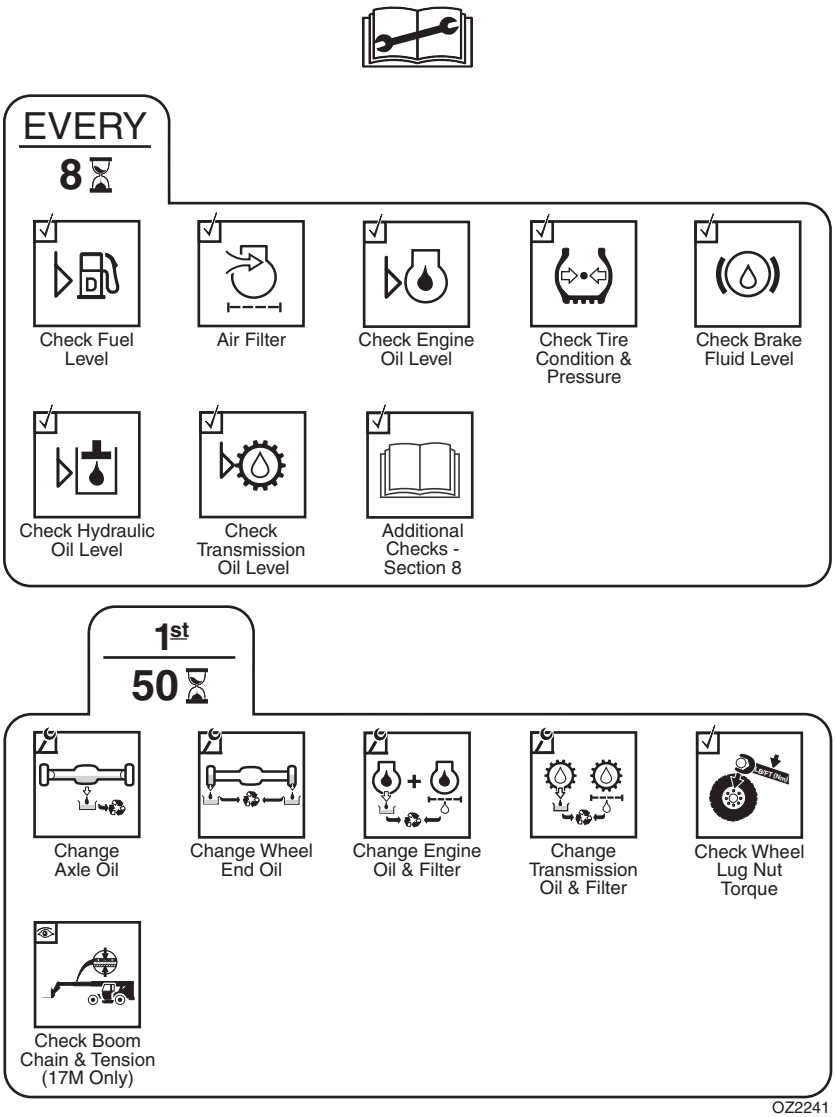
Note: *(17M only) Be certain to check boom chain and tension every 250 hours and adjust as required. Chain damage can occur if chain is not adjusted properly.*

⚠ WARNING

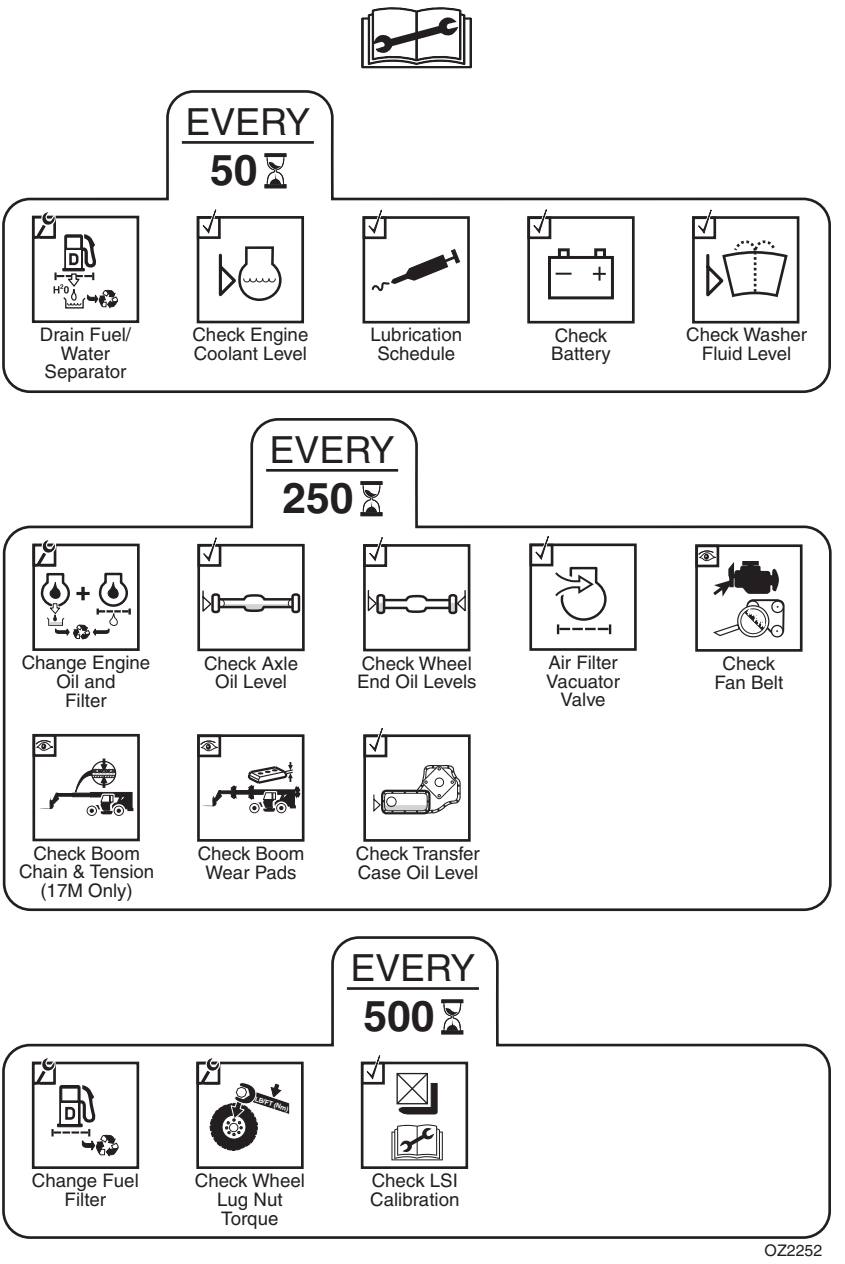
CUT/CRUSH/BURN HAZARD. Do not perform service or maintenance on the machine with the engine running, with the exception of the transmission oil level check.

7.3 SERVICE AND MAINTENANCE SCHEDULES

8 & 1st 50 Hour Maintenance Schedule

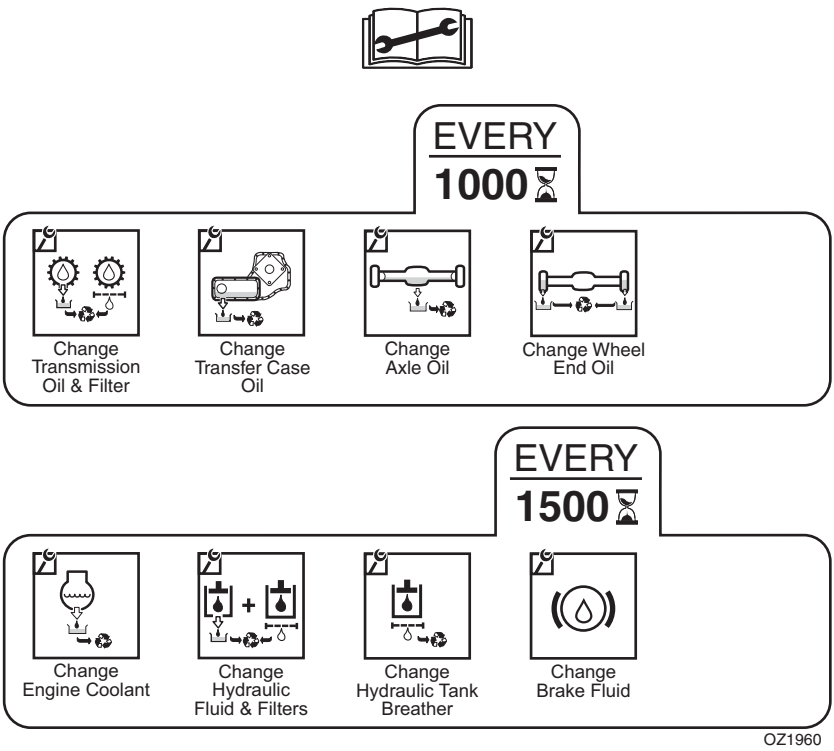


50, 250 & 500 Hour Maintenance Schedule



Note: *Engine oil and filter service interval can be extended, see page 7-14.*

1000 & 1500 Hour Maintenance Schedule

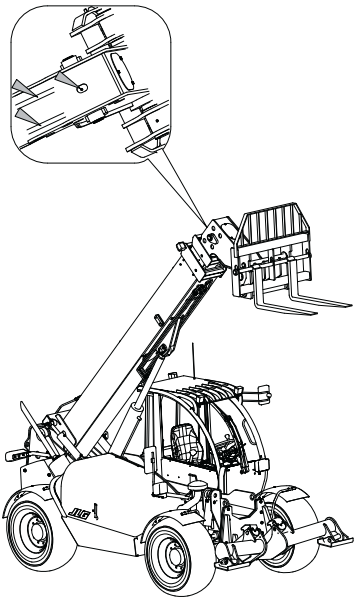


7.4 LUBRICATION SCHEDULES

8 Hour Lubrication Schedule

8, 9, 12 & 13M

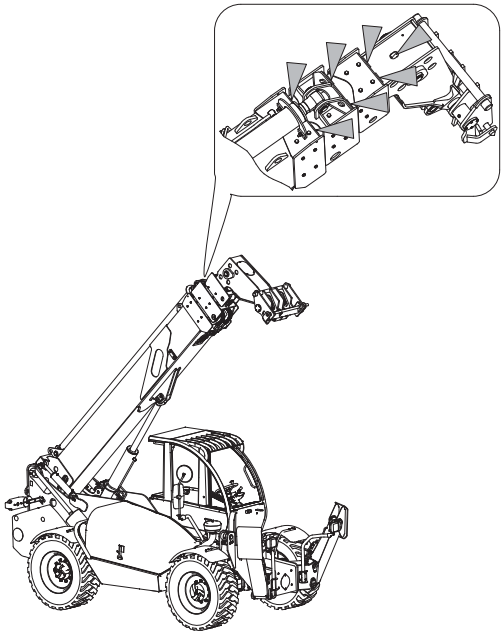
EVERY
8



OZ2260

17M

EVERY
8

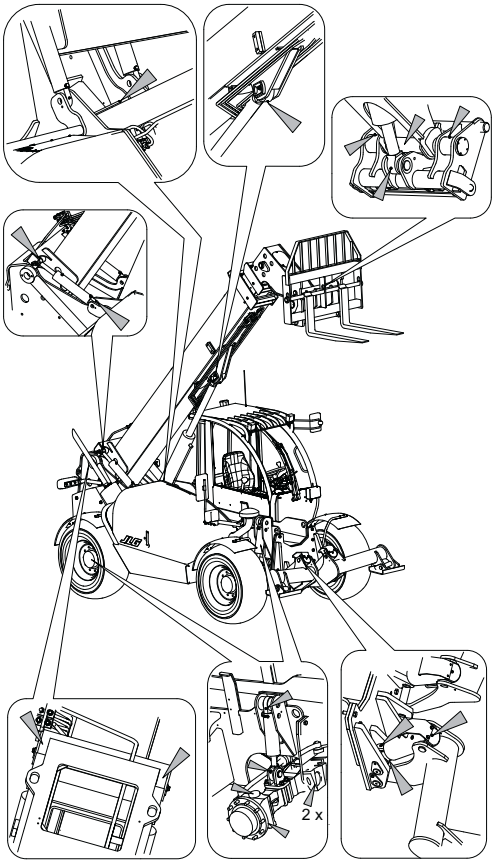


OZ2430

50 Hour Lubrication Schedule

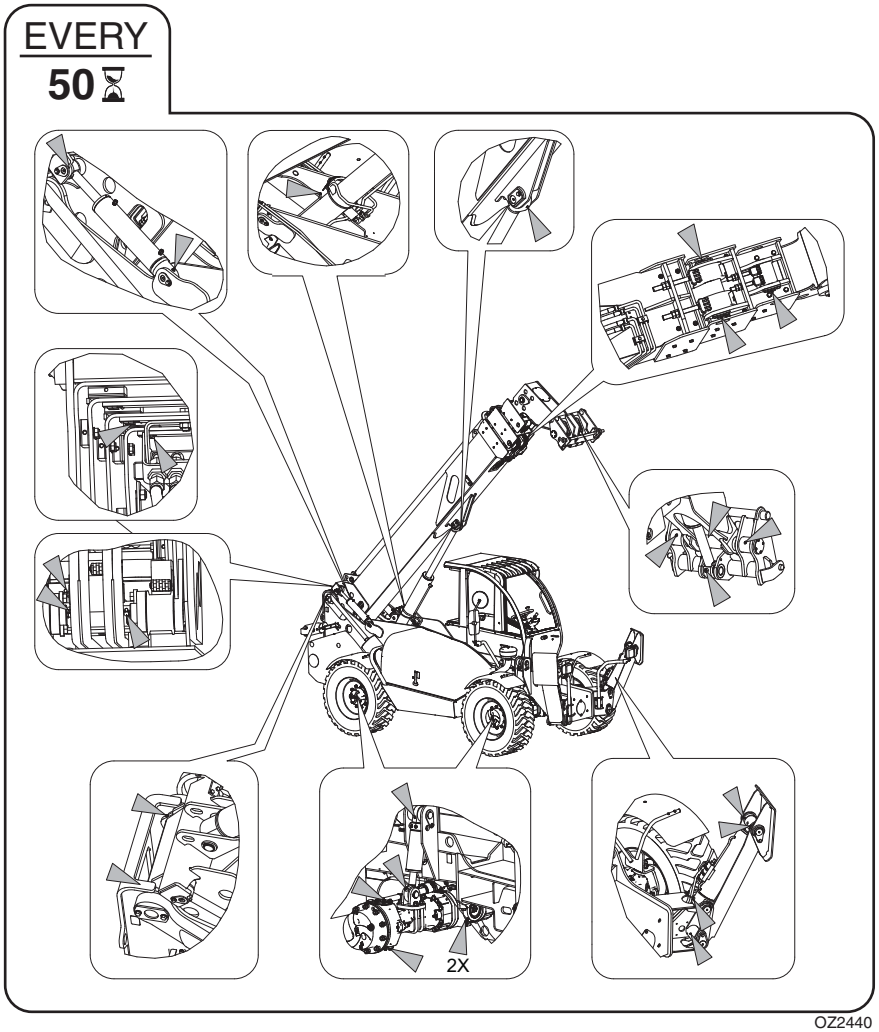
8, 9, 12 & 13M

EVERY
50



OZ2270

17M

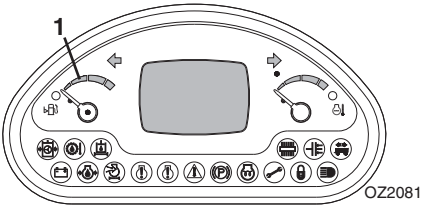


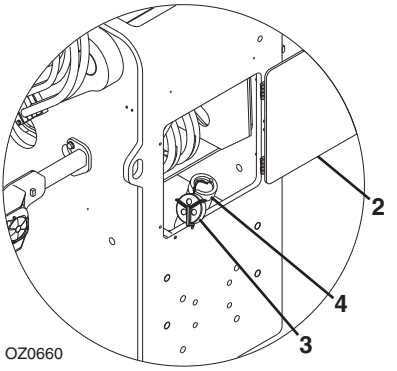
7.5 OPERATOR MAINTENANCE INSTRUCTIONS

Fuel System

A. Fuel Level Check

8 OW1150 OW0990





1. Check fuel gauge (**1**) located on instrument panel in cab.
2. If fuel is low, proceed to fuel source and perform *"Shut-Down Procedure"* on page 4-3.
3. Open rear access door (**2**).
4. Turn fuel tank cap (**3**) to remove from filler neck (**4**).
5. Add diesel fuel as needed.
6. Replace fuel tank cap.
7. Close and secure rear access door.

Note: *Replenish diesel fuel at end of each work shift to minimize condensation.*

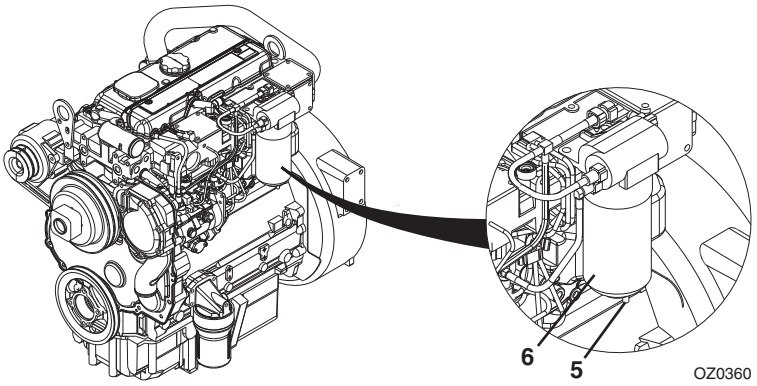
NOTICE

EQUIPMENT DAMAGE. Do not allow machine to run out of fuel during operation. See Engine Operation & Maintenance Manual for details prior to servicing.

B. Drain Fuel/Water Separator

50 OW0980

OW1000



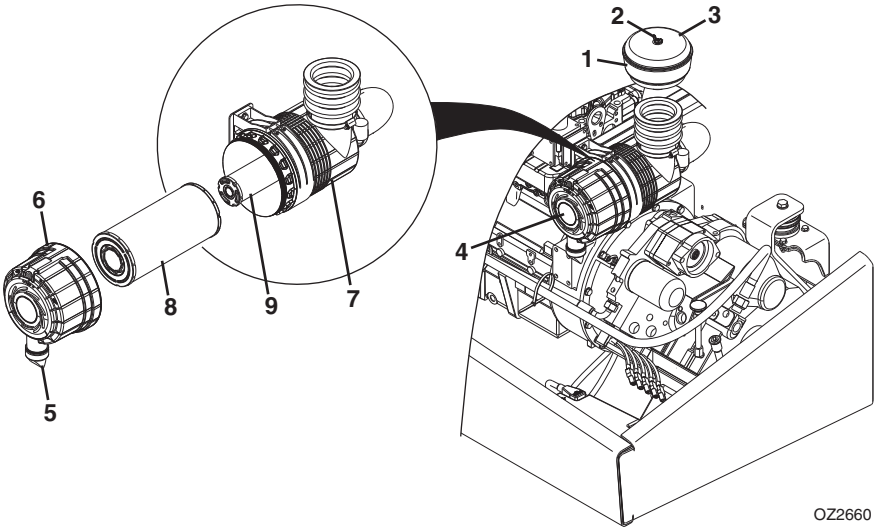
1. Perform *"Shut-Down Procedure"* on page 4-3.
2. Open engine cover.
3. Loosen drain cock (**5**) on underside of fuel filter (**6**) and allow all water to drain into a glass until clear fuel is visible. Tighten drain cock.
4. Close and secure engine cover.

Air Intake System

A. Air Filter Check

8 OW1150

OW1010



1. Perform *"Shut-Down Procedure"* on page 4-3.
2. Locate precleaner (**1**) on top of engine cover, loosen wing nut (**2**) and remove cover (**3**) from precleaner canister.
3. Remove dust from bowl.
4. Replace bowl and secure cover.
5. Open engine cover.
6. Locate air cleaner (**4**) and remove dust from vacuator valve (**5**) by squeezing bottom of valve to allow loose particles to fall out.
7. Close and secure engine cover.

Note: *Only remove canister cover to service the elements as restriction indicator indicates. Excessive access to check an element can lead to premature element failure.*

B. Element Change (as restriction indicator indicates)

If air filter restriction indicator remains on after start up or illuminates while operating machine perform the following:

1. Unlock air cleaner cover (**6**), turn counterclockwise and remove from air cleaner canister (**7**).
2. Remove outer primary element (**8**) and inspect for damage. Damaged elements should not be reused.
3. Thoroughly clean the interior of the air cleaner canister and vacuator valve.
4. Replace inner safety element (**9**) after every third primary element change. If replacing the inner safety element at this time, carefully slide the element out and replace with new element.
5. Slide the new primary element over the inner element making sure the sealing edge is flush with the base of the air cleaner.
6. Position air cleaner cover in place, turn clockwise and lock into position.
7. Close and secure engine cover.

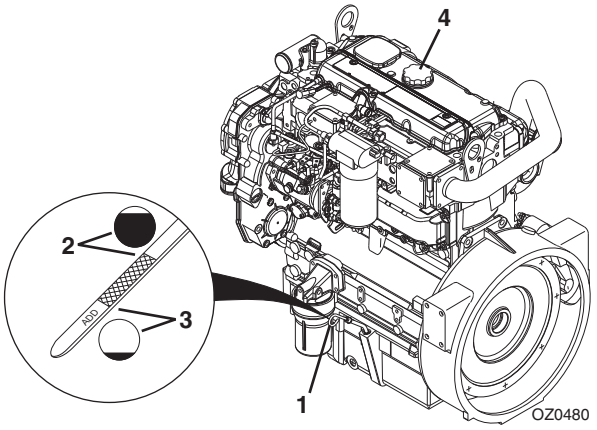
Note: *An inner safety element should never be washed or reused. Always install a new element.*

Engine Oil

A. Engine Oil Level Check

8 OW1150

OW1020



1. Perform *"Shut-Down Procedure"* on page 4-3.
2. Open engine cover.
3. Remove dipstick (**1**) and check oil mark. The oil should be between the full (**2**) and add (**3**) marks within the crosshatched area of the dipstick.
4. Replace dipstick.
5. If oil is low, remove oil fill cap (**4**) and add motor oil to bring oil up to the full mark in the crosshatch area.
6. Replace oil fill cap.
7. Close and secure engine cover.

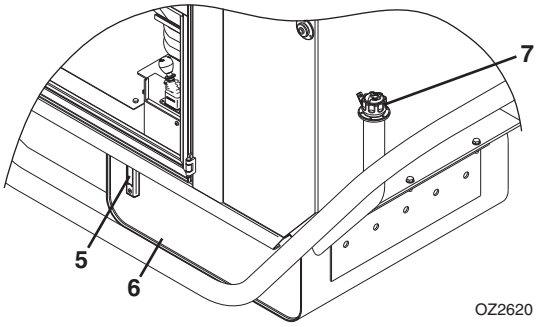
Note: *The service interval for engine oil and filter is 250 hours maximum. If an extended service interval is desired, see the engine manual for specific guidelines for optimizing oil change intervals.*

Hydraulic Oil

A. Hydraulic Oil Level Check

8 OW1150

OW1030



1. Be sure all cylinders are fully retracted and machine is level.
2. Perform *"Shut-Down Procedure"* on page 4-3.
3. Check level of hydraulic oil at the sight gauge (**5**) on the hydraulic tank (**6**). The oil level should be visible in the gauge window.
4. If hydraulic oil is low, remove oil fill cap (**7**) from filler neck. Add hydraulic fluid to bring oil up to the upper mark on the sight gauge.
5. Replace hydraulic oil fill cap.

Tires

A. Tire Air Pressure Check

8 OW1150


OW1040

1. Perform *"Shut-Down Procedure"* on page 4-3.
2. Remove valve stem cap.
3. Check tire pressure.
4. Add air if required.
   8, 9, 12 & 13M
   405/70-24 MPT-01 .....4,0 bar (58 psi)
   405/70-24 MPT-04 .....4,0 bar (58 psi)
   17M
   405/70-24 MPT-01 .....4,5 bar (65 psi)
   405/70-24 MPT-04 .....4,5 bar (65 psi)
5. Replace valve stem cap.

B. Tire Damage

For pneumatic tires, when any cut, rip or tear is discovered that exposes sidewall or tread area cords in the tire, measures be taken to remove the product from service immediately. Arrangements must be made for replacement of the tire or tire assembly.

C. Tire and Wheel Replacement

It is recommended that a replacement tire to be the same size, ply and brand as originally installed. Refer to the appropriate parts manual for ordering information. If not using an approved replacement tire, the replacement tires must have the following characteristics:

- Equal or greater ply/load rating and size of original.
- Tire tread contact width equal or greater than original.
- Wheel diameter, width and offset dimensions equal to the original.
- Approved for the application by the tire manufacturer (including inflation pressure and maximum tire load).

Unless specifically approved by JLG, do not replace a foam filled or ballast filled tire assembly with a pneumatic tire. Due to size variations between tire brands, when selecting and installing a replacement tire ensure both tires on the axle are the same.

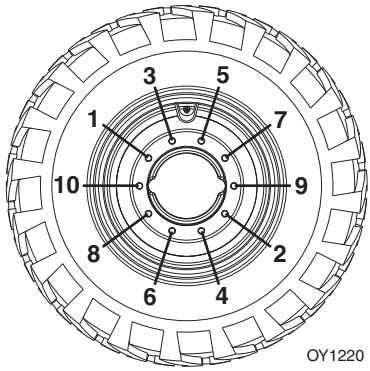
The rims installed have been designed for stability requirements which consist of track width, tire pressure and load capacity. Size changes such as rim width, center piece location, larger or smaller diameter, etc., without written factory recommendations, may result in unsafe condition regarding stability.

E. Wheel Installation

Torque lug nuts after first 50 hours and after each wheel installation.

Note: *If machine is equipped with directional tire assemblies, the wheel and tire assemblies must be installed with the directional tread pattern "arrows" facing in the direction of forward travel.*

1. Start all nuts by hand to prevent cross threading. DO NOT use a lubricant on threads or nuts.
2. Tighten lug nuts in an alternating pattern as indicated in figure. Torque to 550-600 Nm (406-443 lb-ft).



WARNING

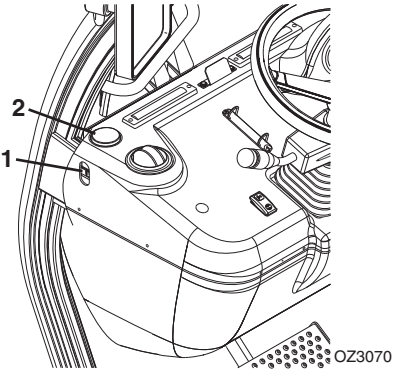
TIP OVER HAZARD. Lug nuts must be installed and maintained at the proper torque to prevent loose wheels, broken studs and possible separation of wheel from the axle.

Brake System

A. Brake Fluid Level Check

8 OW1150

OZ0540



1. Perform *"Shut-Down Procedure"* on page 4-3.
2. The brake fluid level (**1**) should be between the MIN and MAX marks on the reservoir.
3. If brake fluid level is low, add fluid as needed (**2**).

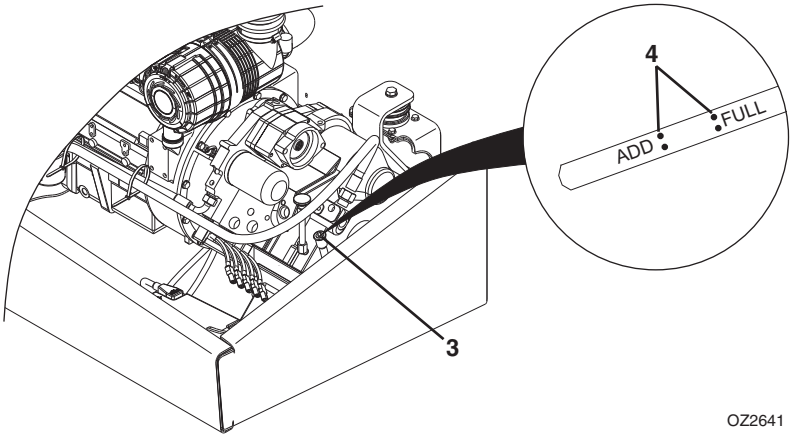
Note: *All other work on the brake system must be performed by qualified personnel.*

Transmission

A. Transmission Oil Level Check

8 OW1150

OW1050

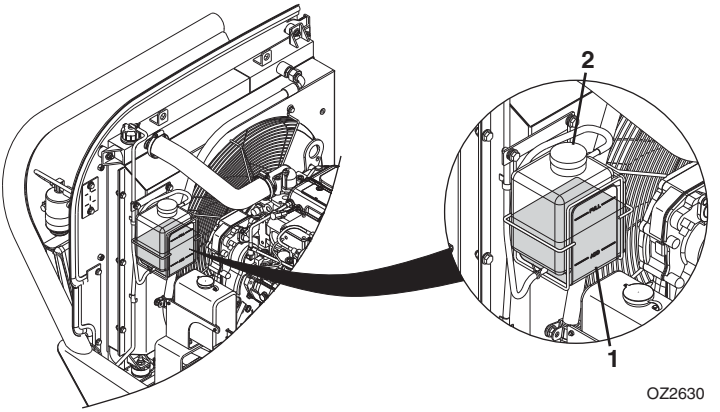


1. Apply park brake, shift transmission to "Neutral" and lower forks or attachment to the ground.
2. Check transmission oil level with engine at idle and oil at normal operating temperature.
3. Open engine cover.
4. Remove the transmission dipstick (**3**) and check oil level. The oil level should be within the "FULL and ADD" marks (**4**).
5. If oil is low, add hydraulic fluid as needed.
6. Replace transmission dipstick.
7. Close and secure engine cover.

Engine Cooling System

A. Engine Coolant Level Check

50 OW0980 OW1070

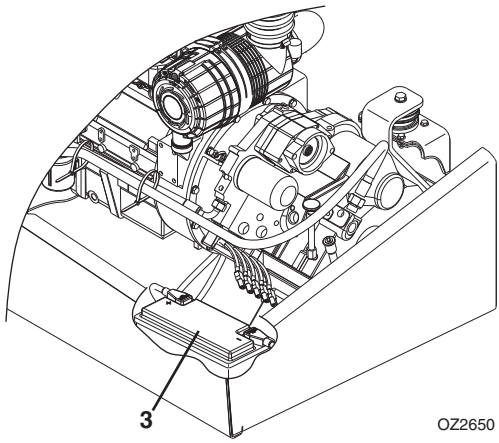


1. Perform *"Shut-Down Procedure"* on page 4-3.
2. Open engine cover.
3. Check coolant level in overflow bottle (**1**). When coolant is hot, bottle should be 1/2 to 3/4 full. When coolant is cool, bottle should be 1/4 to 1/2 full.
4. If coolant is low, remove overflow bottle cap (**2**) and add coolant (50/50 mixture of ethylene glycol and water) as required.
5. Replace overflow bottle cap.
6. Close and secure engine cover.

Battery

A. Battery Check

50 OW0980 OW1080



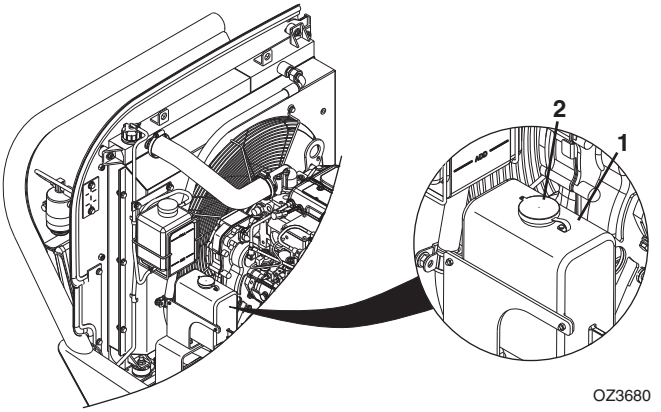
1. Perform *"Shut-Down Procedure"* on page 4-3.
2. Open engine cover.
3. Wearing eye protection, visually inspect the battery (**3**). Check terminals for corrosion. Replace battery if it has a cracked, melted or damaged case.
4. Close and secure engine cover.

Windshield Washer System

A. Windshield Washer Fluid Level Check

50 OW0980

OAL2040



1. Perform *"Shut-Down Procedure"* on page 4-3.
2. Open engine cover.
3. The windshield washer fluid should be visible in the reservoir (**1**).
4. If washer fluid level is low, remove reservoir cap (**2**) and add fluid as needed.
5. Replace reservoir cap.
6. Close and secure engine cover.

SECTION 8 - ADDITIONAL CHECKS

8.1 GENERAL

If any test gives a different result, the system is not functioning properly and the machine must be removed from service and repaired before continued operation.

8.2 LOAD STABILITY INDICATOR TEST

A. Load Stability Indicator Test

OW1150


OZ0840

The Load Stability Indicator (LSI) is intended to continuously monitor the forward stability of the telehandler. To check this feature, perform the following:

8, 9, 12 & 13M Before S/N 1160005993 excluding 1160005949 & 1160005950
17M Before S/N 1160005937 including 1160005952, 1160005960, 1160005963, 1160005966 & 1160005978

1. **Fully retract and level boom, with no load. Do not raise the boom during this test.**
2. Level frame using level in cab (if equipped).
3. Press the test button on the LSI display. This will cause all LEDs to flash on and an audible warning to sound. This indicates that the system is functioning properly.

8, 9, 12 & 13M S/N 1160005993 & After including 1160005949 & 1160005950
17M S/N 1160005937 & After excluding 1160005952, 1160005960, 1160005963, 1160005966 & 1160005978

1. **Fully retract and level boom, with no load. Do not raise the boom during this test.**
2. Level frame using level in cab (if equipped).
3. Press the system check button on the LSI display. This will cause all LEDs to flash on and an audible warning to sound. This indicates that the system is functioning properly.

8.3 BOOM INTERLOCK

A. Boom Interlock System Test

8 OW1150

Boom interlock system operates in two modes. With boom angle below 20 degrees, outrigger and frame level functions are operable. With boom raised above 20 degrees, outriggers and frame level are not operable. To check the system, perform the following:

1. **Test system with machine on a level surface and no load.**
2. Shift transmission to neutral and engage park brake.
3. Ensure outriggers and frame level functions are properly functioning. Lower then raise outriggers. Rotate frame in each direction.
4. Keep outriggers raised and level machine using level in cab.
5. Raise boom above 20 degrees.
6. Attempt to lower outriggers then rotate frame. Neither function should respond.
7. Lower boom fully.

B. Boom Interlock System Test
(if equipped with boom retracted switch)

8 OW1150

Boom interlock system (if equipped with boom retracted switch) operates in three modes. With boom at any extension and angle below 20 degrees, outrigger and frame level functions are operable. With boom fully retracted and raised between 20 and 55 degrees, outriggers and frame level are operable. With boom at any extension and raised above 55 degrees, outriggers and frame level are not operable. To check the system, perform the following:

1. **Test system with machine on a level surface and no load.**
2. Shift transmission to neutral and engage park brake.
3. Ensure outriggers and frame level functions are properly functioning. Lower then raise outriggers. Rotate frame in each direction.
4. Keep outriggers raised and level machine using level in cab.
5. Raise boom to between 20 and 55 degrees and extend approximately 1 m (39 in).
6. Attempt to lower outriggers then rotate frame. Neither function should respond.
7. Fully retract boom and raise above 55 degrees.
8. Attempt to lower outriggers then rotate frame. Neither function should respond.
9. Lower boom fully.

8.4 OUTRIGGER INTERLOCK (4017PS ONLY)

A. Outrigger Interlock System Test

8 OW1150

Outrigger interlock system operates in two modes. With outriggers not engaged, boom angle is limited. With outriggers engaged, boom will raise fully. To check the system, perform the following:

1. **Test system with machine on a level surface and no load.**
2. Shift transmission to neutral and engage park brake.
3. Keep outriggers raised and level machine using level in cab.
4. Raise boom until it stops. Boom angle on display should be 60 degrees.
5. Lower boom fully.
6. Engage outriggers on firm terrain while keeping machine level.
7. Raise boom until it stops. Boom angle on display should be 72 degrees.
8. Lower boom fully.

8.5 AUXILIARY POWER (IF EQUIPPED FOR PLATFORM)

A. Auxiliary Power System Test

8 OW1150


OZ2770

The auxiliary power system is available in case of an emergency or engine failure. To check this feature, perform the following:

1. **Test system with machine on a level surface and no load.**
2. Lower attachment to ground and shut-off engine.
3. Verify the power/emergency stop switch is not depressed and the ignition switch is in position I.
4. Depress back of auxiliary power switch and hold in place to engage auxiliary power system.
5. While holding auxiliary power switch operate each boom joystick function briefly to ensure proper operation
6. Release auxiliary power switch, turn ignition switch to position 0 and depress the power/emergency stop switch.

This Page Intentionally Left Blank

SECTION 9 - SPECIFICATIONS

9.1 PRODUCT SPECIFICATIONS

Fluid and Lubrication Capacities

Engine Crankcase Oil

Capacity with Filter Change .....8,5 L (9.0 qt)

Type of Oil ..... 15W-40 CH

Fuel Tank

Capacity .. ..140 L (37 gal)

Type of Fuel.....#2 Diesel

Cooling System

System Capacity .....20 L (5 gal)

Type of Coolant ..... 50/50 ethylene glycol and water

Hydraulic System

System Capacity
3508PS, 4008PS, 3509PS & 4009PS .....220 L (58 gal)
3512PS, 4012PS, 3513PS, 4013PS & 4017PS .....240 L (63 gal)

Reservoir Capacity to Full Mark .....160 L (42 gal)

Auxiliary Hydraulic Circuit Max Flow .....60 lpm (15.9 gpm)

Type of Oil .....Mobilfluid® 424 Tractor Hydraulic Fluid (ISO 46)

Transmission

Capacity with Filter Change .....12,9 L (13.6 qt)

Type of Oil .....Mobilfluid® 424 Tractor Hydraulic Fluid (ISO 46)

Transfer Case

Capacity .. ..1,4 L (1.5 qt)

Type of Oil .....Mobilfluid® 424 Tractor Hydraulic Fluid (ISO 46)

Brake System

System Capacity .....1,0 L (1.1 qt)

Type of Oil .....Dexron II or III ATF

Axles

Differential Housing Capacity (Front Axle) ..... 8,0 L (8.5 qt)

Differential Housing Capacity (Rear Axle) ..... 7,3 L (7.7 qt)

Wheel End Capacity (Front Axle) ..... 1,9 L (2.0 qt)

Wheel End Capacity (Rear Axle) ..... 1,4 L (1.5 qt)

Type of Fluid ..... Mobilfluid® 424
Shell LS 90
Fuchs Renogear Oil LSA SAE 90
Fuchs Titan Gear 85W-90 LS
Castrol LSC SAE 90
Mobil Lube SHC LS 75W-90 (Full Synthetic)
Mobil 1 SAE 75W-90 LS (E.P.)

Air Conditioning System (if equipped)

System Capacity ..... 2,05 kg (4.5 lb)

Type of Refrigerant ..... R-134a Tetrafluoroethane

Tires

Pressure

3508PS, 4008PS, 3509PS, 4009PS, 3512PS, 4012PS, 3513PS & 4013PS
- 405/70-24 MPT-01 ..... 4,0 bar (58 psi)
- 405/70-24 MPT-04 ..... 4,0 bar (58 psi)

4017PS
- 405/70-24 MPT-01 ..... 4,5 bar (65 psi)
- 405/70-24 MPT-04 ..... 4,5 bar (65 psi)

Wheel Lug Nut

Torque .... 550-600 Nm (406-443 lb-ft)

Performance

Maximum Lift Capacity
- 3508PS, 3509PS, 3512PS & 3513PS ..... 3500 kg (7716 lb)
- 4008PS, 4009PS, 4012PS, 4013PS & 4017PS ..... 4000 kg (8818 lb)

Maximum Lift Height
- 3508PS & 4008PS ..... 8,0 m (26.2 ft)
- 3509PS & 4009PS ..... 9,0 m (29.5 ft)
- 3512PS & 4012PS ..... 11,4 m (37.4 ft)
- 3513PS & 4013PS ..... 13,0 m (42.7 ft)
- 4017PS
  - Outriggers Engaged ..... 16,5 m (54.1 ft)
  - Outriggers Not Engaged ..... 14,9 m (48.9 ft)

Capacity at Maximum Height
- 3508PS
  - Frame Level Equipped ..... 3500 kg (7716 lb)
  - Frame Level Not Equipped ..... 750 kg (1653 lb)
- 4008PS
  - Frame Level Equipped ..... 4000 kg (8818 lb)
  - Frame Level Not Equipped ..... 500 kg (1102 lb)
- 3509PS ..... 3500 kg (7716 lb)
- 4009PS ..... 4000 kg (8818 lb)
- 3512PS
  - Frame Level Equipped
    - Outriggers Engaged ..... 3500 kg (7716 lb)
    - Outriggers Not Engaged ..... 2500 kg (5512 lb)
  - Frame Level Not Equipped
    - Outriggers Engaged ..... 3500 kg (7716 lb)
    - Outriggers Not Engaged ..... 0 kg (0 lb)
- 4012PS
  - Frame Level Equipped
    - Outriggers Engaged ..... 4000 kg (8818 lb)
    - Outriggers Not Engaged ..... 2500 kg (5512 lb)
  - Frame Level Not Equipped
    - Outriggers Engaged ..... 4000 kg (8818 lb)
    - Outriggers Not Engaged ..... 0 kg (0 lb)
- 3513PS
  - Outriggers Engaged ..... 3500 kg (7716 lb)
  - Outriggers Not Engaged
    - CE ..... 1500 kg (3307 lb)
    - AUS ..... 1000 kg (2205 lb)
- 4013PS
  - Outriggers Engaged ..... 4000 kg (8818 lb)
  - Outriggers Not Engaged ..... 2000 kg (4409 lb)
- 4017PS
  - Outriggers Engaged ..... 3000 kg (6614 lb)
  - Outriggers Not Engaged ..... 500 kg (1102 lb)

Maximum Forward Reach
- 3508PS & 4008PS ..... 4,4 m (14.4 ft)
- 3509PS & 4009PS ..... 5,2 m (17.1 ft)
- 3512PS & 4012PS ..... 7,9 m (25.9 ft)
- 3513PS & 4013PS ..... 9,2 m (30.2 ft)
- 4017PS ..... 12,5 m (41.0 ft)

Capacity at Maximum Forward Reach
- 3508PS ..... 1000 kg (2205 lb)
- 4008PS ..... 1500 kg (3307 lb)
- 3509PS
  - CE ..... 1200 kg (2646 lb)
  - AUS ..... 800 kg (1764 lb)
- 4009PS
  - CE ..... 1500 kg (3307 lb)
  - AUS ..... 1250 kg (2756 lb)
- 3512PS
  - Frame Level Equipped
    - Outriggers Engaged ..... 1000 kg (2205 lb)
    - Outriggers Not Engaged ..... 200 kg (441 lb)
  - Frame Level Not Equipped
    - Outriggers Engaged ..... 1000 kg (2205 lb)
    - Outriggers Not Engaged ..... 150 kg (331 lb)
- 4012PS
  - Outriggers Engaged ..... 1400 kg (3086 lb)
  - Outriggers Not Engaged ..... 400 kg (882 lb)
- 3513PS
  - Outriggers Engaged
    - CE ..... 1000 kg (2205 lb)
    - AUS ..... 800 kg (1764 lb)
  - Outriggers Not Engaged
    - CE ..... 200 kg (441 lb)
    - AUS ..... 150 kg (331 lb)
- 4013PS
  - Outriggers Engaged
    - CE ..... 1300 kg (2866 lb)
    - AUS ..... 1000 kg (2205 lb)
  - Outriggers Not Engaged
    - CE ..... 400 kg (882 lb)
    - AUS ..... 300 kg (661 lb)
- 4017PS
  - Outriggers Engaged
    - CE ..... 700 kg (1543 lb)
    - AUS ..... 500 kg (1102 lb)
  - Outriggers Not Engaged ..... 0 kg (0 lb)

Reach at Maximum Height
- 3508PS & 4008PS....0,60 m (2.0 ft)
- 3509PS....0,75 m (2.5 ft)
- 4009PS....0,50 m (1.6 ft)
- 3512PS & 4012PS....1,20 m (3.9 ft)
- 3513PS & 4013PS....1,85 m (6.1 ft)
- 4017PS
  - Outriggers Engaged....2,30 m (7.5 ft)
  - Outriggers Not Engaged....5,40 m (17.7 ft)

Maximum Travel Speed ....
- 3 spd....20 km/h (12.4 mph)
- 4 spd....35 km/h (21.7 mph)

Towing Capacity .... 5000 kg (11 023 lb)

Frame Leveling (if equipped)....9 degrees

Maximum Travel Grade (boom in travel position)
- Gradeability 45%
- Side Slope 8.75%

Dimensions

Overall Height
- 3508PS, 4008PS, 3509PS & 4009PS ..... 2410 mm (94.9 in)
- 3512PS, 4012PS, 3513PS & 4013PS ..... 2450 mm (96.5 in)
- 4017PS ..... 2520 mm (99.2 in)

Overall Width ..... 2380 mm (93.7 in)

Cab Width ..... 890 mm (35 in)

Track Width ..... 1920 mm (75.6 in)

Wheelbase ..... 2850 mm (112.2 in)

Length at Front Wheels
- 3508PS, 4008PS, 3509PS, 4009PS, 3512PS, 4012PS, 3513PS & 4013PS ..... 4600 mm (181.1 in)
- 4017PS ..... 4758 mm (187.3 in)

Overall Length (less Forks)
- 3508PS & 4008PS ..... 5300 mm (208.7 in)
- 3509PS & 4009PS ..... 5620 mm (221.3 in)
- 3512PS & 4012PS ..... 5790 mm (228.0 in)
- 3513PS & 4013PS ..... 6000 mm (236.2 in)
- 4017PS ..... 6093 mm (239.9 in)

Ground Clearance ..... 420 mm (16.5 in)

Turning Radius Over Tires ..... 3800 mm (149.6 in)

Outside Turning Radius
- 3508PS & 4008PS ..... 4750 mm (187.0 in)
- 3509PS & 4009PS ..... 5020 mm (197.6 in)
- 3512PS & 4012PS ..... 5170 mm (203.5 in)
- 3513PS & 4013PS ..... 5350 mm (210.6 in)
- 4017PS ..... 5400 mm (212.6 in)

Gross Vehicle Weight with Forks
- 3508PS ..... 7400 kg (16 314 lb)
- 4008PS ..... 8100 kg (17 857 lb)
- 3509PS ..... 8600 kg (18 959 lb)
- 4009PS ..... 9200 kg (20 282 lb)
- 3512PS ..... 10 000 kg (22 046 lb)
- 4012PS ..... 10 700 kg (23 589 lb)
- 3513PS ..... 11 000 kg (24 250 lb)
- 4013PS ..... 11 800 kg (26 015 lb)
- 4017PS ..... 12 098 kg (26 671 lb)

Front Axle Weight, (boom level and fully retracted)

3508PS	3500 kg (7716 lb)
4008PS	3400 kg (7495 lb)
3509PS	5000 kg (11 023 lb)
4009PS	4800 kg (10 582 lb)
3512PS	5350 kg (11 794 lb)
4012PS	5050 kg (11 133 lb)
3513PS	5400 kg (11 904 lb)
4013PS	5200 kg (11 464 lb)
4017PS	5449 kg (12 013 lb)

Rear Axle Weight, (boom level and fully retracted)

3508PS	3850 kg (8487 lb)
4008PS	4800 kg (10 582 lb)
3509PS	3550 kg (7826 lb)
4009PS	4500 kg (9920 lb)
3512PS	4800 kg (10 582 lb)
4012PS	5700 kg (12 566 lb)
3513PS	5700 kg (12 566 lb)
4013PS	6700 kg (14 770 lb)
4017PS	6649 kg (14 659 lb)

Maximum Ground Bearing Pressure

3508PS	13,2 kg/cm² (188 lb/in²)
4008PS	14,6 kg/cm² (208 lb/in²)
3509PS	14,6 kg/cm² (208 lb/in²)
4009PS	15,9 kg/cm² (226 lb/in²)
3512PS	16,3 kg/cm² (232 lb/in²)
4012PS	17,7 kg/cm² (252 lb/in²)
3513PS	17,5 kg/cm² (249 lb/in²)
4013PS	19,1 kg/cm² (272 lb/in²)
4017PS	19,4 kg/cm² (276 lb/in²)

Declaration of Vibration (CE)

Average weighted whole body acceleration.

Mechanical Suspension Seat

3508PS	0,6 m/s² (2.0 ft/s²)
4008PS	0,6 m/s² (2.0 ft/s²)
3509PS	0,7 m/s² (2.3 ft/s²)
4009PS	0,7 m/s² (2.3 ft/s²)
3512PS	0,9 m/s² (3.0 ft/s²)
4012PS	0,8 m/s² (2.6 ft/s²)
3513PS	0,8 m/s² (2.6 ft/s²)
4013PS	0,8 m/s² (2.6 ft/s²)
4017PS	0,5 m/s² (1.6 ft/s²)

Pneumatic Suspension Seat

3508PS	0,7 m/s² (2.3 ft/s²)
4008PS	0,6 m/s² (2.0 ft/s²)
3509PS	0,8 m/s² (2.6 ft/s²)
4009PS	0,7 m/s² (2.3 ft/s²)
3512PS	0,8 m/s² (2.6 ft/s²)
4012PS	0,8 m/s² (2.6 ft/s²)
3513PS	0,8 m/s² (2.6 ft/s²)
4013PS	0,7 m/s² (2.3 ft/s²)
4017PS	0,7 m/s² (2.3 ft/s²)

Noise Emission Level (CE)

- The telehandler is approved under the applicable EC directives.
- The LWA sound power level is shown on the machine.

  3508PS, 3509PS, 3512PS, 3513PS, 4008PS, 4009PS, 4012PS, 4013PS & 4017PS ..... 106 dB

- To avoid any increase in noise emission, after maintenance and repair work, all panels and other sound absorbing materials must be replaced in their original condition. Do not modify the machine in such a manner as to increase noise emissions.

V

W

Serial Number ________________________________

Date	Comments

Inspection, Maintenance and Repair Log

Date	Comments

An Oshkosh Corporation Company

TRANSFER OF OWNERSHIP

To Product Owner:

If you now own but ARE NOT the original purchaser of the product covered by this manual, we would like to know who you are. For the purpose of receiving safety-related bulletins, it is very important to keep JLG Industries, Inc. updated with the current ownership of all JLG products. JLG maintains owner information for each JLG product and uses this information in cases where owner notification is necessary.

Please use this form to provide JLG with updated information with regard to the current ownership of JLG products. Please return completed form to the JLG Product Safety & Reliability Department via facsimile or mail to address as specified below.

Thank You,
Product Safety & Reliability Department
JLG Industries, Inc.
13224 Fountainhead Plaza
Hagerstown, MD 21742
USA
Telephone: +1-717-485-6591
Fax: +1-301-745-3713

NOTE: Leased or rented units should not be included on this form.

Mfg. Model: _____

Serial Number: _____

Previous Owner: _____

Address: _____

_____

Country: _____ **Telephone: (_____)** _____

Date of Transfer: _____

Current Owner: _____

Address: _____

_____

Country: _____ **Telephone: (_____)** _____

Who in your organization should we notify?

Name: _____

Title: _____

An Oshkosh Corporation Company

JLG Industries, Inc.
1 JLG Drive
McConnellsburg PA. 17233-9533
USA

(717) 485-5161 (Corporate)
(877) 554-5438 (Service)
(717) 485-6417
www.jlg.com

JLG Worldwide Locations

JLG Industries
358 Park Road
Regents Park
NSW 2143
Sydney 2143
Australia
+6 (12) 87186300
+6 (12) 65813058
Email: techservicesaus@jlg.com

JLG Ground Support Oude
Bunders 1034
Breitwaterstraat 12A
3630 Maasmechelen
Belgium
+32 (0) 89 84 82 26
Email: emeaservice@jlg.com

JLG Latino Americana LTDA
Rua Antonia Martins Luiz, 580
Distrito Industrial Joao Narezzi
Indaiatuba-SP 13347-404
Brasil
+55 (19) 3936 7664 (Parts)
+55(19)3936 9049 (Service)
Email: comercialpecas@jlg.com
Email: servicos@jlg.com

Oshkosh-JLG (Tianjin) Equipment
Technology LTD
Shanghai Branch
No 465 Xiao Nan Road
Feng Xian District
Shanghai 201204
China
+86 (21) 800 819 0050

JLG Industries Dubai
Jafza View
PO Box 262728, LB 19
20th Floor, Office 05
Jebel Ali, Dubai
+971 (0) 4 884 1131
+971 (0) 4 884 7683
Email: emeaservice@jlg.com

JLG France SAS
Z.I. Guillaume Mon Amy
30204 Fauillet
47400 Tonniens
France
+33 (0) 553 84 85 86
+33 (0) 553 84 85 74
Email: pieces@jlg.com

JLG Deutschland GmbH
Max Planck Str. 21
27721 Ritterhude - Ihlpohl
Germany
+49 (0) 421 69350-0
+49 (0) 421 69350-45
Email:german-parts@jlg.com

JLG Equipment Services Ltd.
Rm 1107 Landmark North
39 Lung Sum Avenue
Sheung Shui N. T.
Hong Kong
+(852) 2639 5783
+(852) 2639 5797

JLG Industries (Italia) S.R.L.
Via Po. 22
20010 Pregnana Milanese (MI)
Italy
+39 (0) 2 9359 5210
+39 (0) 2 9359 5211
Email: ricambi@jlg.com

JLG EMEA B.V.
Polaris Avenue 63
2132 JH Hoofdorf
The Netherlands
+31 (0) 23 565 5665
Email: emeaservice@jlg.com

JLG NZ Access Equipment & Services
2B Fisher Cresent
Mt Wellington 1060
Auckland, New Zealand
+6 (12) 87186300
+6 (12) 65813058
Email:techservicesaus@jlg.com

JLG Industries
Vahutinskoe shosse 24b.
Khimki
Moscow Region 141400
Russia Federation
+7 (499) 922 06 99
+7 (499) 922 06 99

Oshkosh-JLG Singapore
Technology Equipment Pte Ltd.
35 Tuas Avenue 2
Jurong Industrial Estate
Singapore 639454
+65 6591 9030
+65 6591 9045
Email: SEA@jlg.com

JLG Iberica S.L.
Trapadella, 2
Pol. Ind. Castellbisbal Sur
08755 Castellbisbal Barcelona
Spain
+34 (0) 93 772 47 00
+34 (0) 93 771 1762
Email:parts_iberica@jlg.com

JLG Sverige AB
Enkopingsvagen 150
176 27 Jarfalla
Sweden
+46 (0) 8 506 595 00
+46 (0) 8 506 595 27
Email: nordicsupport@jlg.com

JLG Industries (UK) Ltd.
Bentley House
Bentley Avenue
Middleton, Greater Manchester
M24 2GP
United Kingdom
+44 (0) 161 654 1000
+44 (0) 161 654 1003
Email: ukparts@jlg.com

31200205