Lull®

Operation & Safety Manual

Keep this manual with machine at all times.

Model 1044C-54 Series II

S/N 0160037900 & After

31200608

Revised
September 30, 2014

JLG®

An Oshkosh Corporation Company

CALIFORNIA PROPOSITION 65

BATTERY WARNING

Battery posts, terminals and related accessories contain lead and lead compounds, chemical known to the State of California to cause cancer and reproductive harm.

WASH HANDS AFTER HANDLING!

CALIFORNIA PROPOSITION 65

EXHAUST WARNING

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

REVISION LOG

February 23, 2009 - A - Original Issue of Manual

September 25, 2009 - B - Revised pages b, 1-5, 1-6, 2-3, 2-4, 3-3, 3-4, 3-5, 3-17, 3-19, 4-1, 4-2, 7-2, 7-5, 7-11, 7-14, 7-16, 7-17, 7-23, 7-24, 8-1, 8-2 & 9-1.

December 21, 2010 - C - Revised pages 7-18, 9-2 & 9-4.

September 30, 2014 - D - Revised pages 1-6, 1-7, 5-2, 5-14 thru 5-39 & 9-4.

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 telehandler:

- 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.....31200079

Illustrated Parts Manual.....31200069

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 1 - GENERAL SAFETY PRACTICES

1.1 HAZARD CLASSIFICATION SYSTEM

Safety Alert System and Safety Signal Words

OW0010

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

OW0021

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

OW0031

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

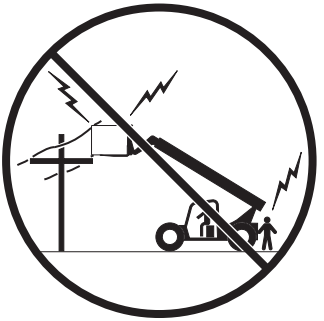
1.2 GENERAL PRECAUTIONS

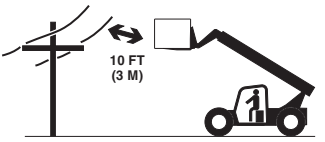
WARNING

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





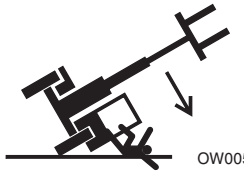
OW0040

- 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.

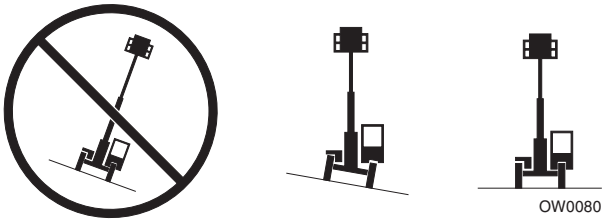
Tip Over Hazard

General

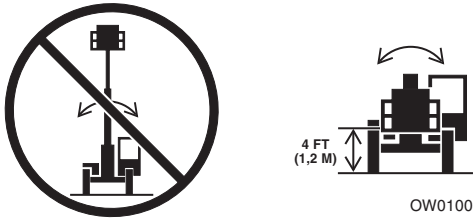
- For additional load requirements, refer to the appropriate capacity chart.



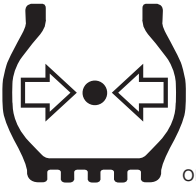
- Never use an attachment without the appropriate JLG approved capacity chart installed on the telehandler.
- Understand how to properly use the capacity charts located in cab.
- **DO NOT** exceed rated lift capacity.
- Be sure that the ground conditions are able to support the machine.



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



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

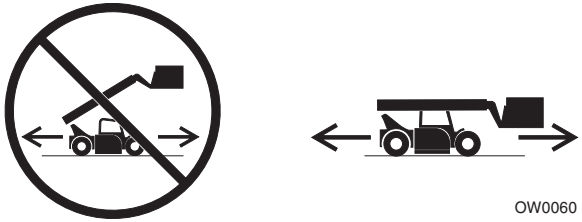
- Always wear the seat belt.
- Keep head, arms, hands, legs and all other body parts inside operator's cab at all times.


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

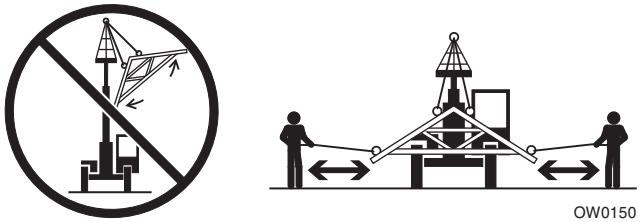
Non-Suspended Load



OW0060

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

Suspended Load



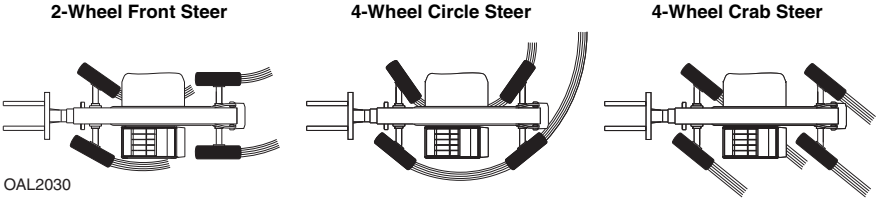
OW0150

- 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 11.8 in (300 mm) 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).
- Telehandlers equipped with solid tires should not be used in applications requiring excessive roading or driving extended distances. In the event an application requires excessive roading or driving expanded distances, JLG recommends the use of telehandlers not equipped with solid tires.

Load Falling Hazard

OW0130

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

Lifting Personnel

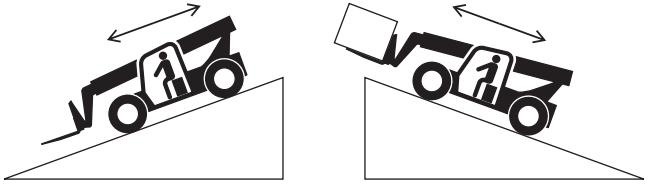
OW0170

- When lifting personnel, **USE ONLY** an 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

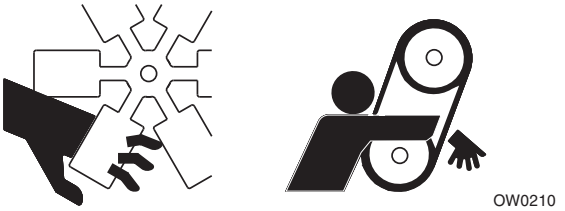


To maintain sufficient traction and braking capabilities, travel on slopes as follows:

- When unloaded, drive with forks pointed downhill.
- When loaded, 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.

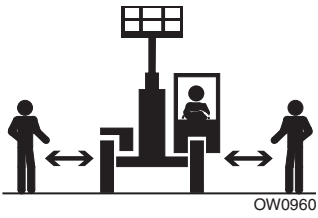
OW0230

- Keep clear from under boom.

- Keep clear of boom holes.

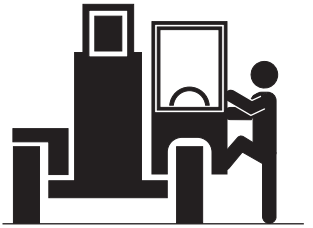
- Keep arms and hands clear of attachment tilt cylinder.

- 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 4-4 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.

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.

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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 and AEM Safety Manual (as required) are located in cab manual holder.
5. **Walk-Around Inspection** - See page 2-6 for details.
6. **Fluid Levels** - Check fluids, including fuel, 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.

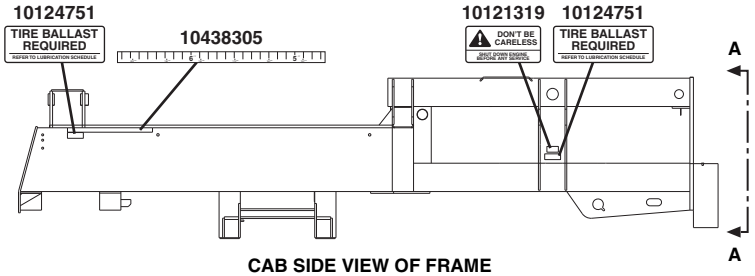
8. **Operational Check** - Once the walk-around inspection is complete, perform a warm-up and operational check (see page 2-8) of all systems in an area free of overhead and ground level obstructions. See Section 3 - Controls and Indicators for more specific operating instructions.

⚠ WARNING

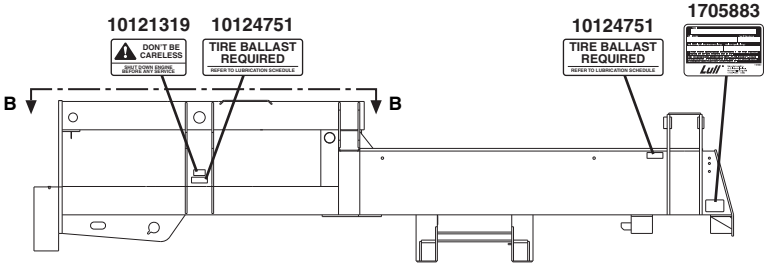
If telehandler does not operate properly, immediately bring machine to a stop, lower boom and attachment to ground and stop the engine. Determine cause and correct before continued use.

2.2 SAFETY DECALS

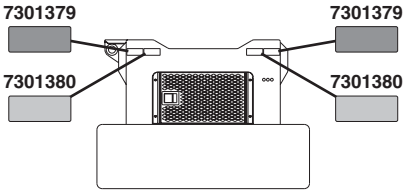
Ensure all **DANGER**, **WARNING**, **CAUTION** and instructional decals and proper capacity charts are legible and in place. Clean and replace as required.



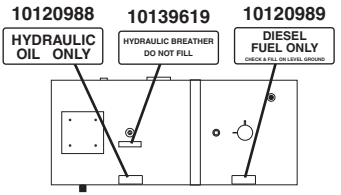
CAB SIDE VIEW OF FRAME



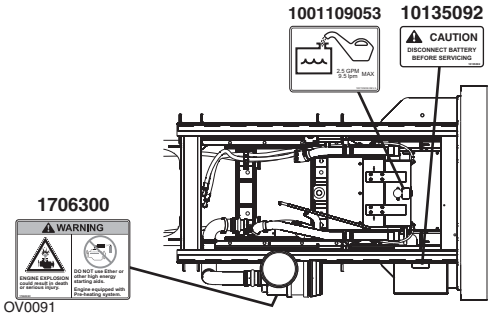
TANK SIDE VIEW OF FRAME



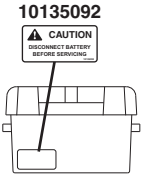
VIEW A-A



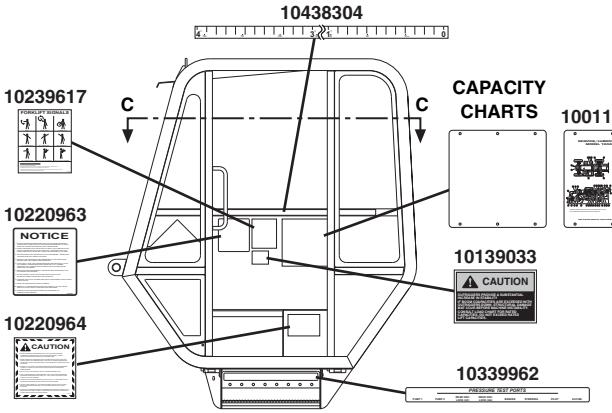
TOP VIEW OF HYDRAULIC AND FUEL TANKS

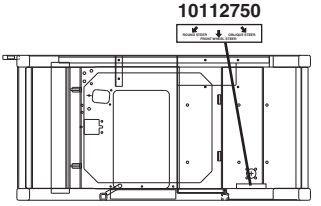


VIEW B-B
(IF EQUIPPED WITH CUMMINS ENGINE)

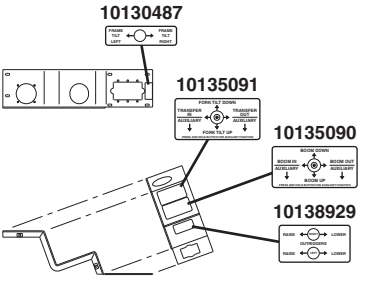


VIEW OF BATTERY BOX
(IF EQUIPPED WITH JOHN DEERE ENGINE)

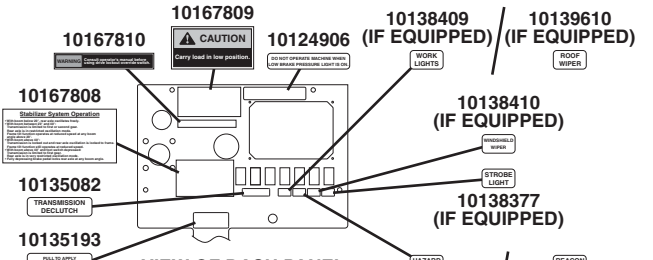




VIEW C-C



VIEW OF JOYSTICK PANEL



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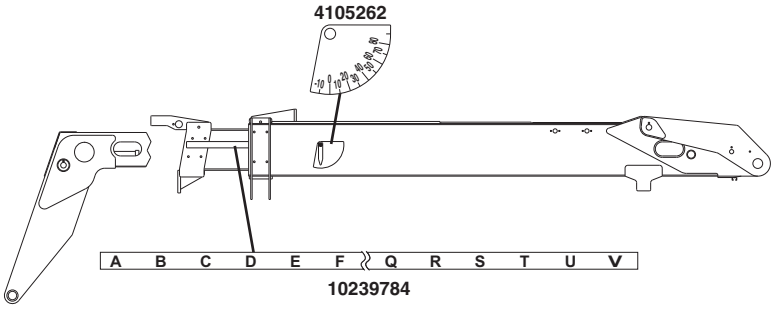
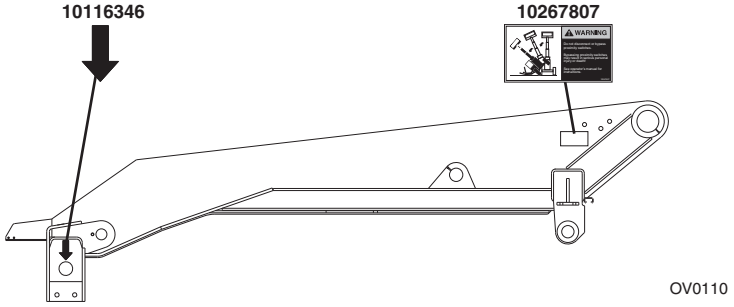
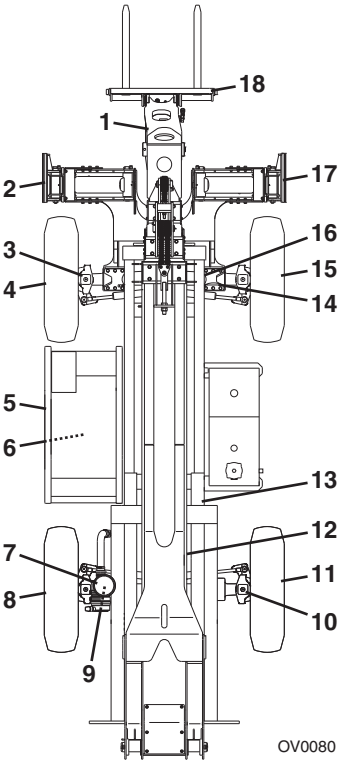




VIEW OF TRANSFER CARRIAGE

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 slider pads for presence of grease.
   - Pivot pins secure; hydraulic hoses undamaged, not leaking.
2. Left Outrigger - Pins secure; hydraulic hoses and cylinder undamaged, not leaking.
3. Front Axle - Steer cylinders undamaged, not leaking; pivot pins secure; hydraulic hoses undamaged, not leaking.
4. Wheel/Tire Assembly - Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.

5. Cab and Electrical -
   - General appearance; no visible damage.
   - Frame level indicator and window glass undamaged and clean.
   - Gauges, switches, joysticks, foot controls and horn operational.
   - Check seat belt for damage, replace belt if frayed or cut webbing, damaged buckles or loose mounting hardware.
6. Main Control Valve (under cab floor) - See Inspection Note.
7. Air Cleaner - Air cleaner element condition indicator, check for clogged condition. Replace element as required.
8. Wheel/Tire Assembly - Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.
9. Rear Axle Oscillation Cylinder - Pins secure; hydraulic hoses undamaged, not leaking.
10. Rear Axle - Steer cylinders undamaged, not leaking; pivot pins secure; hydraulic hoses undamaged, not leaking.
11. Wheel/Tire Assembly - Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.
12. Engine Compartment -
    - Drive belts, check condition and replace as required.
    - Engine mounts - See inspection note.
    - Battery cables tight, no visible damage or corrosion.
    - Engine access doors (if equipped) closed and properly secured.
13. Transfer Carriage - See inspection note. Transfer carriage cylinder pins secure; hydraulic hoses undamaged, not leaking.
14. Mirror - Clean and undamaged.
15. Wheel/Tire Assembly - Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.
16. Frame Level Cylinder - Pins secure; hydraulic hoses undamaged, not leaking.
17. Right Outrigger - Pins secure; hydraulic hoses and cylinder undamaged, not leaking.
18. Attachment - Properly installed, see *"Attachment Installation"* on page 5-9.

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 engine cover 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 open or enclosed ROPS/FOPS cab.

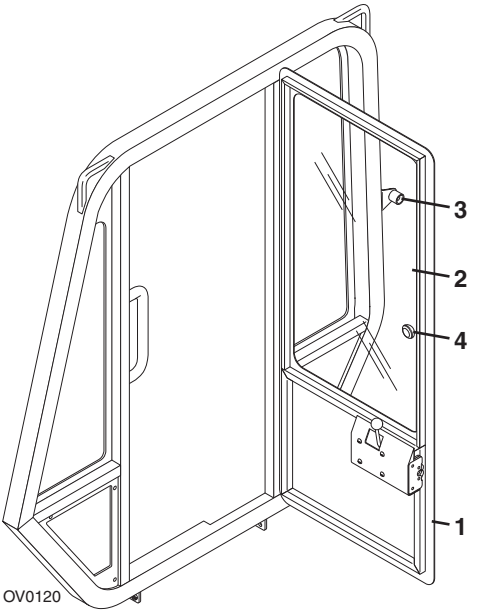
⚠ WARNING

Never operate telehandler unless the overhead guard, cab structure and right side glass or screen 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 the overhead guard or cab structure is damaged, the **CAB CANNOT BE REPAIRED**. It must be **REPLACED**.

2.6 WINDOWS

Keep all windows and mirrors clean and unobstructed.

Cab Door Window (if equipped)



- 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 (**3**).
- Pull on knob (**4**) to unlatch the window.

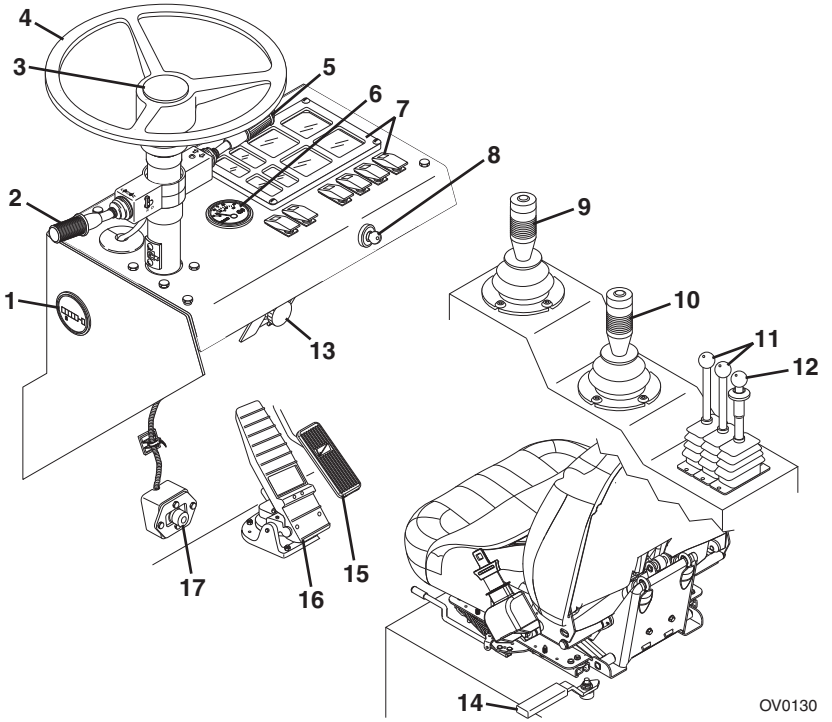
SECTION 3 - CONTROLS AND INDICATORS

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. Hourmeter: Records and indicates engine operating hours.
2. Transmission Control Lever: See page 3-8.
3. Horn: Depress button to sound horn.
4. 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 3-16.
5. Accessory Control Lever (if equipped): See page 3-15.
6. Transmission Oil Temperature Gauge: Indicates transmission oil operating temperature.
7. Instrument Panel and Switches: See page 3-4.
8. Ignition Switch: Key activated. See page 3-6.
9. Front Joystick: See page 3-10.
10. Middle Joystick: See page 3-11.
11. Outrigger Joysticks: See page 3-12.

12. Frame Level Joystick: See page 3-13.

13. Park Brake: See page 3-7.

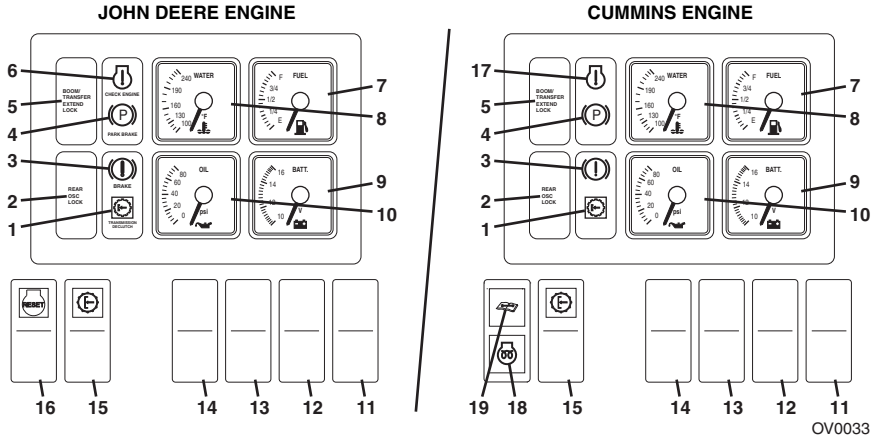
14. Steer Mode Selector: Three positions: 4-wheel circle steer, 4-wheel crab steer and 2-wheel steer. See page 3-16.

15. Accelerator Pedal: Pressing down the pedal increases engine and hydraulic speed.
(Cummins Engine Only) Accelerator pedal also used to activate Cummins diagnostic system. See Service Manual for details.

16. Service Brake Pedal: The further the pedal is depressed, the slower the travel speed.
With service brake pedal fully depressed, the locked mode of the rear oscillation lock system is activated. See page 3-17.

17. Drive Lockout Override Switch: Press and hold down to override the drive lockout system. See page 3-18.

Instrument Panel and Switches



1. Transmission Declutch Indicator: Illuminates when transmission declutch feature is activated.
2. Rear Oscillation Lock Indicator: Illuminates when rear oscillation lock system is active. See page 3-17.
3. Low Brake Pressure Indicator: Illuminates and buzzer sounds when hydraulic brake pressure is too low.
4. Park Brake Indicator: Illuminates when park brake is applied. See page 3-7 for details.
5. Boom/Transfer Extend Lock Indicator: Illuminates when boom/transfer extend lock system is active. See page 3-19.
6. Check Engine Indicator (John Deere Engine): Illuminates and buzzer sounds for 30 seconds before engine shuts down when a “shut-down” fault occurs. Indicator also flashes engine fault codes. See Service Manual for details.
7. Fuel Gauge: Indicates amount of fuel in fuel tank.
8. Engine Coolant Temperature Gauge: Indicates engine operating temperature.
9. Voltmeter: Indicates system voltage.
10. Engine Oil Pressure Gauge: Indicates engine oil operating pressure.
11. Strobe Light Switch (if equipped): On/Off switch.
12. Windshield Wiper Switch (if equipped): Three position switch. Move switch to middle position to turn on wiper. Push and hold bottom of switch to activate washer. Push top of switch to turn off wiper.

13. Beacon Light Switch (if equipped): On/Off switch.
Hazard Light Switch (if equipped): On/Off switch.

14. Work Light Switch (if equipped): On/Off switch.
Roof Wiper Switch (if equipped): On/Off switch.

15. Transmission Declutch Switch: Depress top of switch to activate transmission declutch function and have transmission declutch while depressing service brake. Indicator illuminates to indicate transmission has declutched. Depress bottom of switch to deactivate transmission declutch function and keep transmission engaged while depressing service brake.

⚠ WARNING

UNEXPECTED MOVEMENT HAZARD. Always apply park brake or service brake and return engine to idle before deactivating transmission declutch function. Deactivating transmission declutch with engine above idle could cause the machine to move abruptly.

16. Shutdown Override Switch (John Deere Engine): Depress and release to delay engine shutdown for 30 seconds. The switch resets the shutdown timer to 30 seconds and may be used repeatedly.
Switch also used to retrieve engine fault codes. See Service Manual for details.

17. Engine Warning Indicator (Cummins Engine): Illuminates and buzzer sounds when critical engine fault is detected.
Indicator also flashes engine fault codes. Diagnose fault using the Cummins diagnostic system. See Service Manual for details.

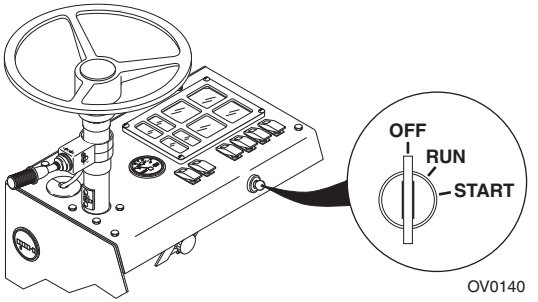
18. Engine Air-Intake Preheat Indicator (Cummins Engine): With ignition key in the "RUN" position, illuminates until engine is preheated.

19. Engine Fault Indicator (Cummins Engine): Illuminates when diagnostic system has detected a fault within the engine. Diagnose fault using the Cummins diagnostic system. See Service Manual for details.

NOTICE

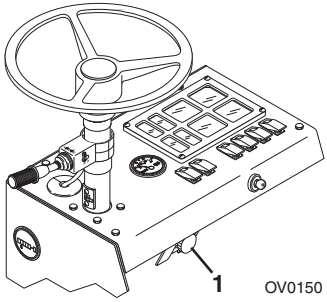
EQUIPMENT DAMAGE. When low brake pressure, check engine or engine warning indicators illuminate, immediately bring machine to a stop, lower boom and attachment to ground and stop the engine. Determine cause and correct before continued use.

Ignition



- In the "RUN" position, voltage is available for all electrical functions.
- Full clockwise rotation to "START" engages starter motor.
- Counter-clockwise rotation to "OFF" stops engine and removes voltage from all electrical functions.

Park Brake



Park brake knob (**1**) controls the application and release of the park brake.

- Pull knob out to engage park brake. Push knob in to disengage park brake.
- With the engine running and the park brake knob pushed in, park brakes are disengaged.
- With knob pulled out, park brake is engaged and transmission will not engage forward or reverse.

⚠ WARNING

MACHINE ROLL-AWAY HAZARD. Always pull park brake knob out, lower boom to ground and stop engine before leaving cab.

⚠ WARNING

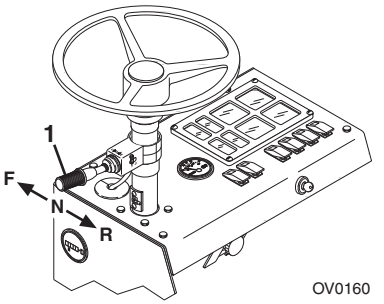
CRUSH HAZARD. Turning engine off applies the park brake. Applying park brake or turning engine off while traveling will cause unit to stop abruptly and could cause load loss. Either may be used in an emergency situation.

Parking Procedure

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

Transmission Control Lever

Direction of Travel Selection



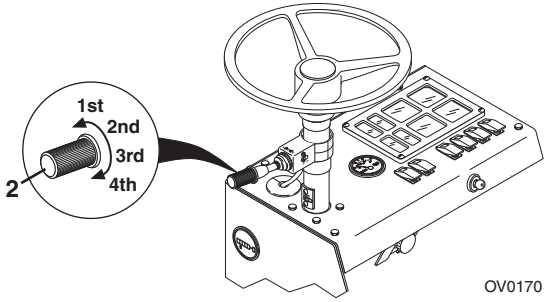
Transmission control lever (**1**) engages forward or reverse travel.

- 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 transmission declutch function is not active (see page 3-5), 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.

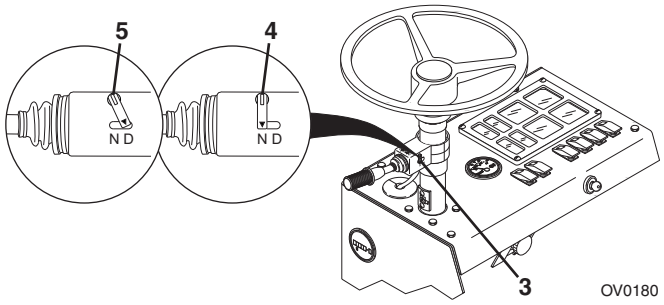
Gear Selection



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.**

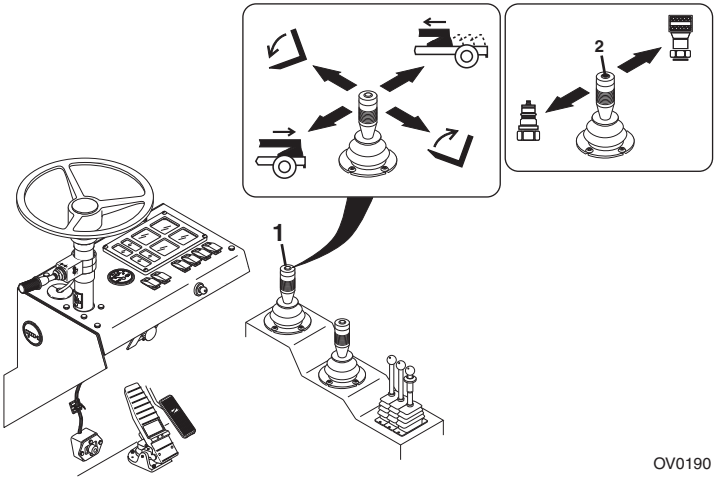
Neutral Lock



Neutral lock lever (**3**) locks transmission control lever.

- To lock the transmission control lever in the neutral position, place the transmission control lever in neutral and move neutral lock lever to the “N” position (**4**).
- To unlock, move the neutral lock lever to the “D” position (**5**).

Front Joystick



The front joystick (**1**) controls attachment tilt, transfer carriage and auxiliary hydraulic functions.

Attachment Tilt Function

- Move the joystick forward to tilt down, move the joystick back to tilt up.

Transfer Carriage Function

- Move the joystick right to extend transfer carriage; move joystick left to retract transfer carriage.
- For two simultaneous functions, move the joystick between quadrants. For example; moving the joystick forward and to the left will tilt attachment down and retract transfer carriage simultaneously.

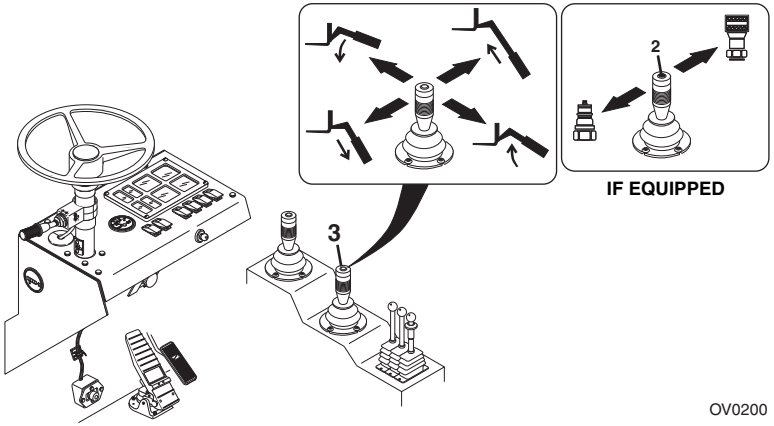
Auxiliary Hydraulic Function

- For attachments that require hydraulic supply for operation, press button (**2**) to activate auxiliary hydraulics control. The button must be held down while moving the joystick left or right. See Section 5 - Attachments for approved attachments and control instructions.

⚠ 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.

Middle Joystick



The middle joystick (**3**) controls boom and second auxiliary hydraulic (if equipped) 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.

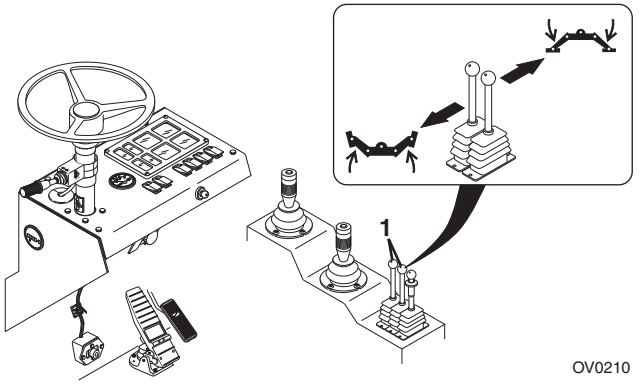
Second Auxiliary Hydraulic Function (if equipped)

- For attachments that require a second hydraulic supply for operation, press button (**2**) to activate auxiliary hydraulics control. The button must be held down while moving the joystick left or right. See Section 5 - Attachments for approved attachments and control instructions.

⚠ 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.

Outrigger Joysticks



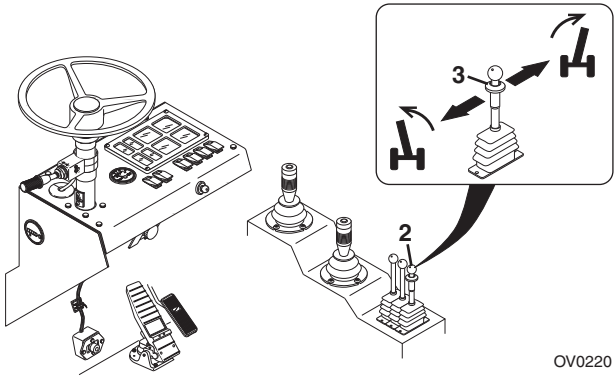
The outrigger joysticks (**1**) control the outriggers.

- The front joystick controls the right outrigger; the middle joystick controls the left outrigger.
- Push the joysticks right to lower outriggers; push the joysticks left to raise outriggers.
- Use outriggers to increase stability and/or load capacity and in leveling the telehandler. Study capacity charts to determine maximum load capacities, with and without outriggers.

⚠ 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.

Frame Level Joystick



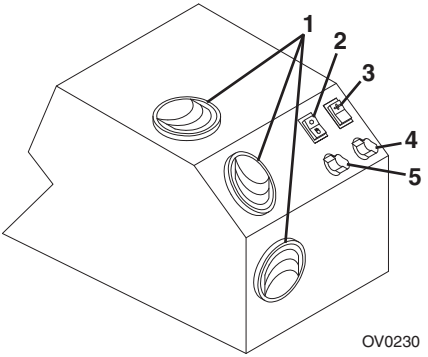
The frame level joystick (**2**) controls the left to right frame level.

- Lift detent ring (**3**) and move the joystick left to rotate frame left; lift detent ring and move the joystick right to rotate frame right.
- A level indicator is located above the front cab window to permit the operator to determine whether the telehandler frame is level.

⚠ WARNING

TIP OVER HAZARD. Always move boom as low as possible while allowing for best visibility of right hand mirror before leveling frame. Attempting to level machine with boom raised could cause it to tip over.

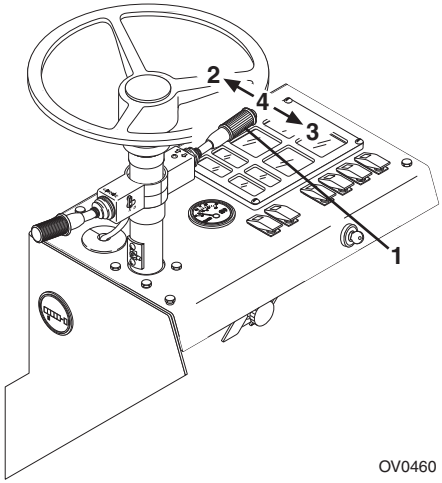
Heater and Air Conditioning Controls (if equipped)



The heater and air conditioning controls are located on the left side of the cab dash.

1. Air Vent: Three individually adjustable air vents.
2. Heat/Air Conditioning Switch: Depress top of switch for air conditioning. Depress bottom of switch for heat.
3. Fan Switch: On/off switch.
4. Fan Speed Switch: Adjustable rotary switch.
5. Temperature Control Switch: Adjustable rotary switch.

Accessory Control Lever (if equipped)

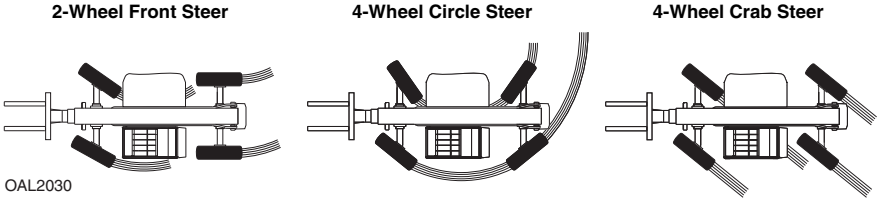


The accessory control lever (**1**) operates the turn signals.

- Push lever forward (**2**) to activate the left turn signal.
- Pull lever back (**3**) to activate the right turn signal.
- The lever must be manually returned to the center position (**4**) to deactivate either turn signal. The lever will not cancel automatically after a turn.

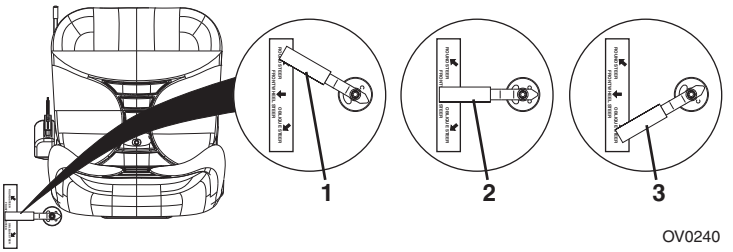
3.3 STEER MODES

Three steer modes are available for operator use.

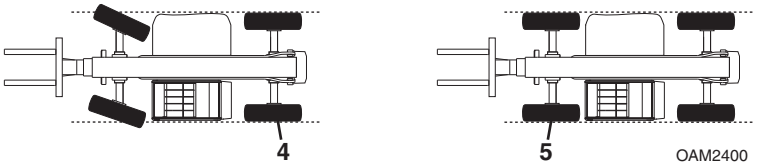


Note: *2-Wheel Front Steer mode is required for travel on public roads.*

Steer Mode Change

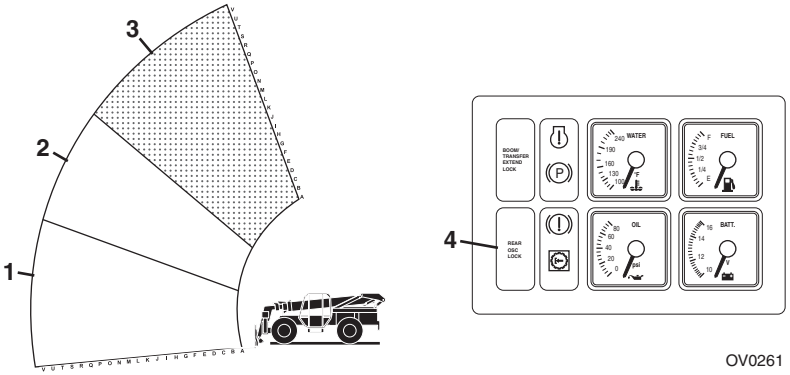


1. Bring machine to a stop using service brake while either circle steer mode (**1**) or crab steer mode (**3**) is selected.



2. 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.

3.4 REAR OSCILLATION LOCK SYSTEM



Free Pivot Mode

With boom below 20° (**1**), the system is in free pivot mode.

- The rear axle pivots freely and frame level functions normally.
- The Rear Oscillation Lock indicator (**4**) will be off.

Slow Pivot Mode

With boom between 20° and 40° (**2**), the system is in slow pivot mode.

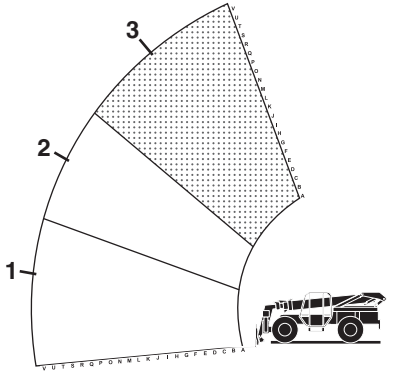
- The rear axle will respond slowly to changes in terrain and frame level functions slower than normal.
- The Rear Oscillation Lock indicator (**4**) will illuminate.

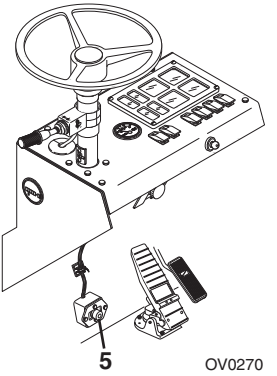
Locked Mode

With boom above 40° (**3**) or service brake pedal fully depressed, the system is in locked mode.

- The rear axle is locked and the frame level functions slower than normal.
- The Rear Oscillation Lock indicator (**4**) will illuminate.

3.5 DRIVE LOCKOUT SYSTEM





Normal Mode

With boom below 20° (**1**), the drive system functions normally.

Restricted Mode

With boom between 20° and 40° (**2**), the system is in restricted mode.

- The transmission is limited to first and second gear.

Locked Mode

With boom above 40° (**3**), the system is in locked mode.

- The transmission is disengaged, stopping drive capabilities.

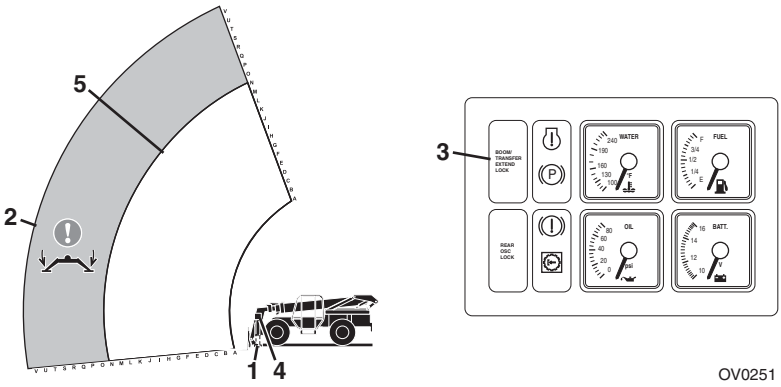
Override Mode

With boom above 40° (**3**) and the drive lockout override switch depressed and held down, the system is in override mode.

- The transmission is limited to first gear.
- The rear oscillation lock system is in slow pivot mode. See page 3-17.

3.6 BOOM/TRANSFER EXTEND LOCK SYSTEM

The boom/transfer extend lock system limits boom/transfer carriage extension when outriggers are not engaged.



Unlocked Mode

With outriggers lowered (**1**) on firm terrain, boom/transfer extend mode is unlocked and allows for full boom or transfer carriage extension (**2**).

- When outriggers are lowered shift travel select lever into neutral, move neutral lock lever to neutral lock position and engage the parking brake.
- Outriggers can be to adjusted for any changes in outrigger footing.
- The Boom/Transfer Extend Lock indicator (**3**) will not illuminate.

Locked Mode

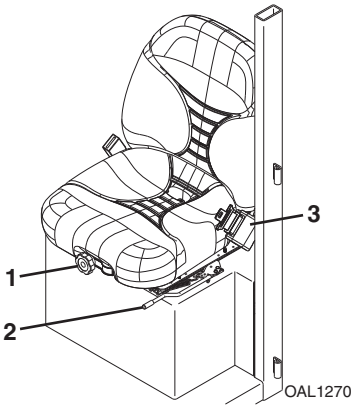
With outriggers raised (**4**), telehandler is in boom/transfer extend lock mode and limits boom/transfer carriage extension.

- The boom and transfer carriage extension is limited from extending beyond a point (**5**) between the “N” and “O” boom extension indicators.
- The Boom/Transfer Extend Lock indicator (**3**) will illuminate.

3.7 OPERATOR SEAT

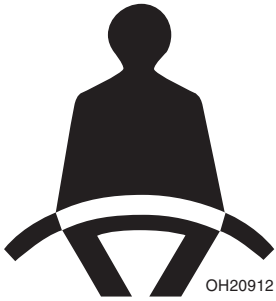
Adjustments

Prior to starting engine adjust seat for position and comfort.



1. Suspension: Use knob to adjust suspension to the appropriate setting. Turn clockwise to increase stiffness. Turn counterclockwise to reduce stiffness.
2. Fore/Aft: Pull up on handle to move seat fore and aft.
3. Seat Belt: Always fasten seat belt during operation. If required, a 3 in (76 mm) seat belt is available.

Seat Belt

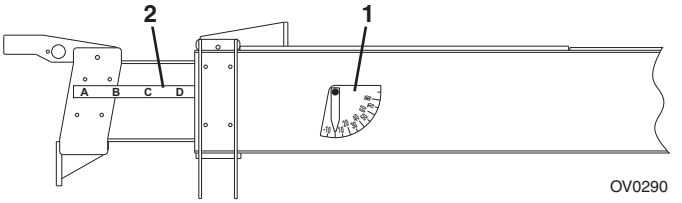


Fasten seat belt as follows:

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.

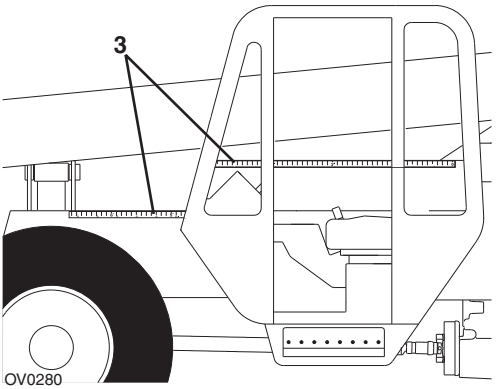
3.8 INDICATORS

Boom Angle and Extension Indicators



- The boom angle indicator (**1**) is located on the left side of the boom. Use this indicator to determine the boom angle when using the capacity chart (see *"Use of the Capacity Chart"* on page 5-4).
- Boom extension indicators (**2**) 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 5-4).

Transfer Carriage Extension



- The transfer carriage indicators (**3**) are located on the left main frame rail and right cab wall. Use these indicators to determine transfer carriage extension when using the capacity chart (see *"Use of the Capacity Chart"* on page 5-4).

SECTION 4 - OPERATION

4.1 ENGINE

Starting the Engine

This machine can be operated under normal conditions in temperatures of 0°F to 104°F (-20°C to 40°C). 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. Apply parking brake.
2. If equipped with Cummins engine, turn the ignition switch to “RUN” position and hold until engine air-intake preheat indicator goes out.
3. Turn ignition switch to “START” 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.
4. After engine starts, observe engine oil pressure gauge. If gauge remains on zero for more than five seconds, stop engine and determine cause before restarting engine.
5. Warm up engine at approximately 1/2 throttle.

Note: *Engine will not start unless transmission control lever is in “Neutral” and park brake switch 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, causing an accident.

Cold Weather Starting Aids

John Deere Engine

⚠ WARNING

ENGINE EXPLOSION. If your telehandler is equipped with a cold start aid, do not spray additional ether into air cleaner. If machine is not equipped with cold start aid, follow instructions listed in the engine manual supplied with the telehandler.

Cummins Engine

Cummins engines are equipped with preheat for cold weather starting. Refer to *"Starting the Engine"* on page 4-1 for cold weather starting procedure.

⚠ WARNING

ENGINE EXPLOSION. Do not use ether for cold weather starting.

Battery Boosted Starting

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

- Never allow vehicles to touch.
- 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 gauges and indicators frequently to be sure all engine 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. Exit telehandler properly.
7. 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 (see Section 5) 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 5-12.
- 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 and fully retract transfer carriage. Travel in accordance with the requirements set forth in Section 1 - General Safety Practices and Section 5 - Attachments.

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. Move boom/attachment to 4 ft (1,2 m) off ground.
   (AUS - Move boom so forks are no more than 11.8 in (300 mm) above ground surface.)
4. Observe level indicator to determine whether machine must be leveled prior to lifting load. Level machine with frame level joystick (see page 3-13) or outrigger joysticks (see page 3-12).

Important things to remember:

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

The telehandler is designed to permit leveling the main frame 10° to left or right to compensate for uneven ground conditions.

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 and transfer carriage extension range. See *"Use of the Capacity Chart"* on page 5-4.
- Align forks at the level load is to be placed, then position 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.
- The transfer carriage can be used to place the load onto the landing point, being certain the load is within the transfer limits.

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 or transfer carriage can be retracted.
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 over.

- Know the rated load capacities (refer to Section 5) 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 See *"Use of the Capacity Chart"* on page 5-4. 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.
- For additional requirements, refer to the appropriate capacity chart in the operator cab.

Important things to remember:

- Ensure the boom and transfer carriage is fully retracted.
- Never raise the load more than 11.8 in (300 mm) above ground surface or the boom more than 45°.
- 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, 0.9 mph (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. Move boom so load is no more than 11.8 in (300 mm) above ground surface and boom/or boom is raised no more than 45°.
4. Observe level indicator to determine whether machine must be leveled prior to lifting load. Level machine with frame level joystick (see page 3-13) or outrigger joysticks (see page 3-12).

The telehandler is designed to permit leveling the main frame 10° to left or right to compensate for uneven ground conditions.

Placing a Suspended Load

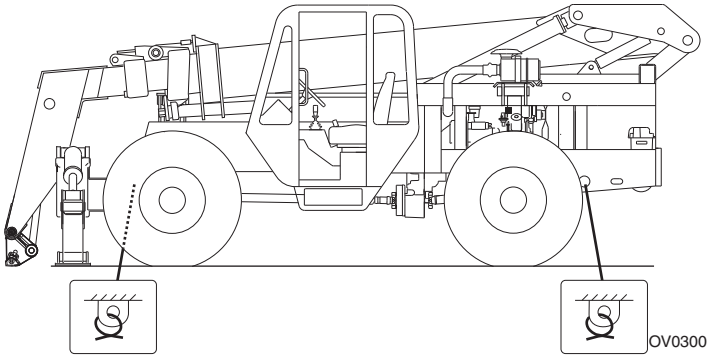
Before placing any load be sure that:

- 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 and transfer carriage extension range. See *"Use of the Capacity Chart"* on page 5-4.
- 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.
- The transfer carriage can be used to place the load onto the landing point, being certain the load is within the transfer limits.

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 tethers.

4.4 LOADING AND SECURING FOR TRANSPORT



Tiedown

1. 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 tie down points as shown in the figure.
5. Do not tie down 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, the Department of Transportation and/or any other local, state or 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.
- 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

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 type, weight, dimensions and load center must be equal to or less than the data shown on a capacity chart located in the operator cab.
- The model on the capacity chart must match the model telehandler being used.
- Hydraulically powered attachments must only be used on machines equipped with auxiliary hydraulics.
- Hydraulically powered attachments that require auxiliary electrics must only be used on machines equipped with auxiliary hydraulics and electrics.

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 a 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.

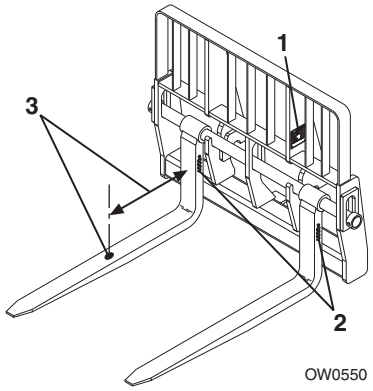
⚠ WARNING

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

Attachment	Part Number	Applicable Model 1044C-54
Carriage, 50 in (1270 mm)	1170021	X
	1001146084	X
Carriage, 60 in (1524 mm)	1170024	X
	1001146086	X
Carriage, 72 in (1829 mm)	1170027	X
	1001132514	X
	1001146088	X
Side Shift Carriage, 50 in (1270 mm)	1001142790	X
Side Tilt Carriage, 50 in (1270 mm)	1170054	X
Side Tilt Carriage, 60 in (1524 mm)	1001101956	X
Side Tilt Carriage, 72 in (1829 mm)	1170057	X
90° Swing Carriage, 72 in (1829 mm)	1001095418	X
Dual Fork Positioning Carriage, 50 in(1270 mm)	7301295	X
8 ft Mast Carriage, 50 in (1270 mm)	1001108668	X
8 ft Mast Carriage w/ Side Tilt, 50 in (1270 mm)	1001108670	X
Fork, Pallet 2.36x4x48 in(60x100x1220 mm)	2340045	X
Fork, Pallet 2.36x5x48 in(60x127x1220 mm)	2340038	X
Fork, Dual Taper 1.75x7x60 in (44x178x1524 mm)	2340046	X
Fork, Dual Taper 2.36x6x60 in (60x152x1524 mm)	2340039	X
Fork, Dual Taper 2x6x72 in(50x152x1830 mm)	1001092391	X
Fork, Block 2x2x48 in (50x50x1220 mm)	2340037	X
Fork Extension, 90 in (2286 mm)	1001137512	X
Bucket, 72 in–1.0 yd^3	1001100822	X
Bucket, 96 in–1.5 yd^3	1001100823	X
Bucket, 102 in –2.0 yd^3	1001100824	X
Grapple Bucket, 96 in–1.75 yd^3	0930020	X
Hook, Fork Mounted	91565094	X
	1001097205	X
Truss Boom, 12 ft (3658 mm)	1001099902	X
Truss Boom w/ Winch, 12 ft (3658 mm)	1001099351	X
Truss Boom, 15 ft (4572 mm)	1001099901	X
Platform, Fork Mounted (ASME)	1001103637	X
Platform, Fork Mounted (ASME - French)	1001103736	X
Platform, Fork Mounted (ISO)	1001103730	X

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.

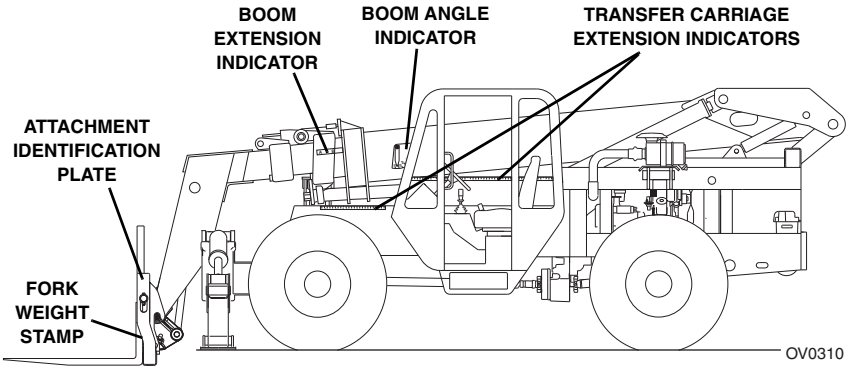
5.5 USE OF THE CAPACITY CHART

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

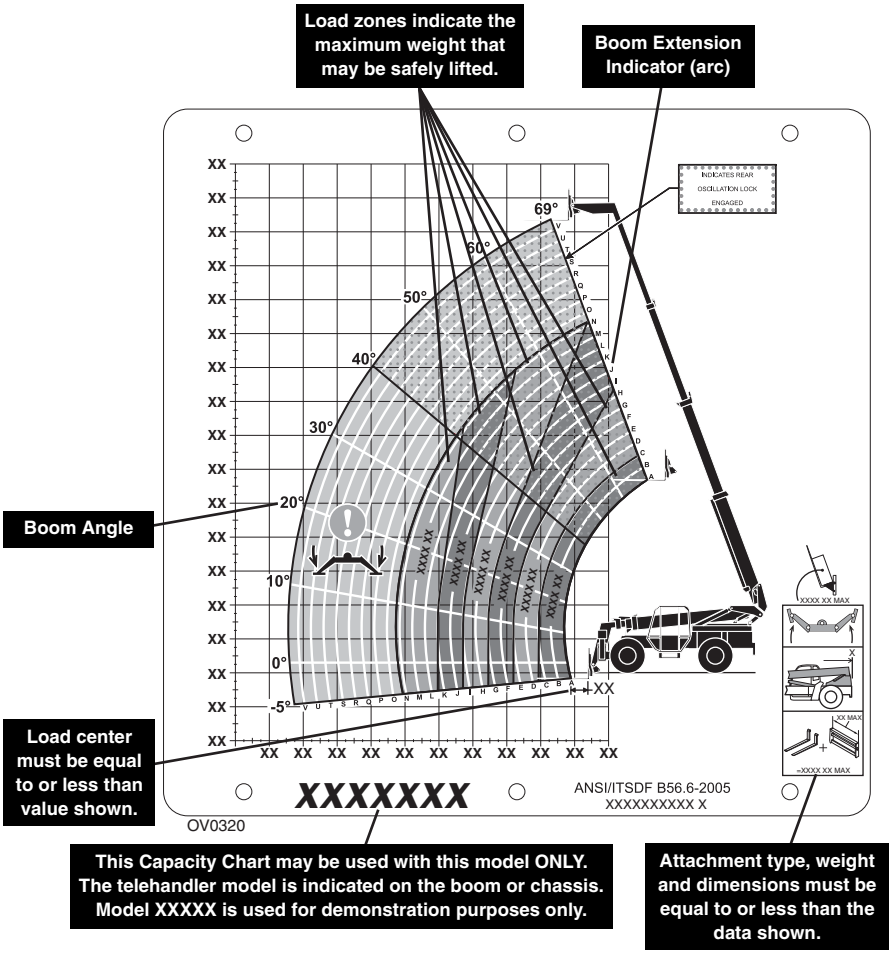
1. An approved attachment. See *"Approved Attachments"* on page 5-1.
2. The proper Capacity Chart(s).
3. Weight of the load being lifted.
4. Load placement information:
   a. HEIGHT where the load is to be placed.
   b. DISTANCE from the front tires of the telehandler where the load is to be placed.
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



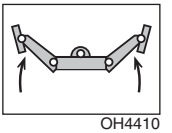
Note: *This is a sample capacity chart* ***only****!* ***DO NOT*** *use this chart, use the one located in your operator cab.*

⚠ WARNING

TIP OVER HAZARD. All loads shown on rated capacity chart are based on machine being on firm ground with frame level (see page 4-6); 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.

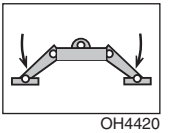
To identify the proper capacity chart on telehandlers equipped with outriggers and/or transfer carriage, refer to the following icons which may be located on the load chart.

- Use when lifting a load with outriggers up.



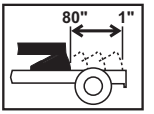
OH4410

- Use when lifting a load with outriggers down.



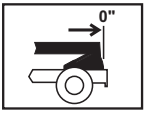
OH4420

- Use for any forward movement (1 to 80 in) of the transfer carriage.



OW0910

- Use for no forward movement (0 in) of the transfer carriage. Fully retracted position only.



OW0920

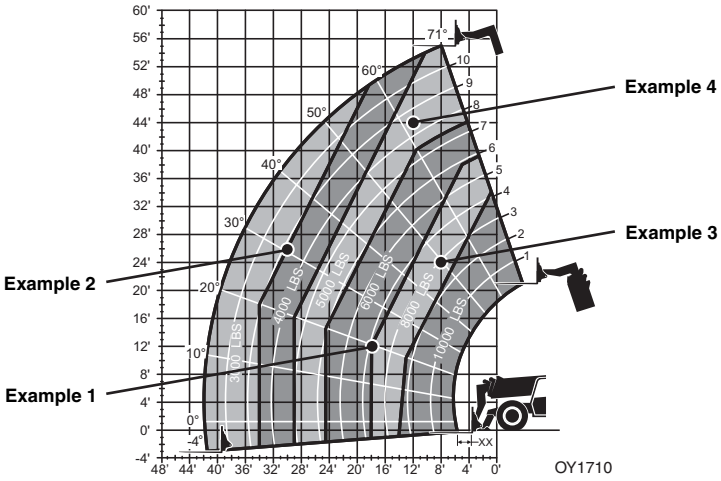
Example

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

- The attachment style, weight, dimensions and load center match the attachment data on the capacity chart.
- The capacity chart is clearly marked for model xxxxx 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	6000 lb (2722 kg)	18 ft (5,5 m)	12 ft (3,7 m)	Yes
2	4000 lb (1814 kg)	30 ft (9,1 m)	26 ft (7,9 m)	NO
3	7500 lb (3402 kg)	8 ft (2,4 m)	24 ft (7,3 m)	Yes
4	5750 lb (2608 kg)	12 ft (3,7 m)	44 ft (13,4 m)	NO



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

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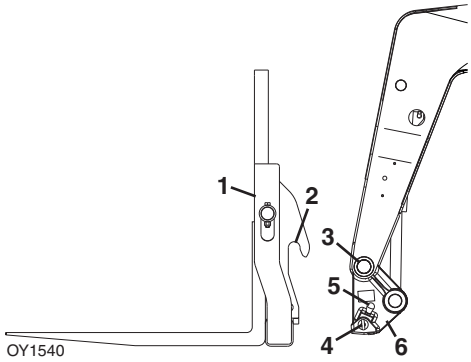
5.6 ATTACHMENT INSTALLATION



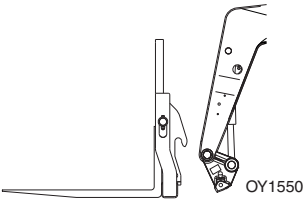
1. Attachment
2. Attachment Pin Recess
3. Attachment Pin
4. Lock Pin
5. Retaining Pin
6. Quick Switch (attachment tilt control in cab, see page 3-10)

WARNING

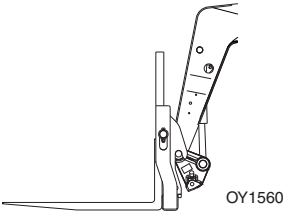
CRUSH HAZARD. Always be certain that carriage or attachment is properly positioned on boom and is secured by lock pin and retainer pin. Failure to ensure proper installation could permit carriage/attachment/load to disengage.

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

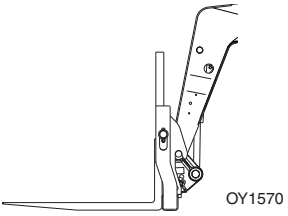
1. Tilt quick switch back to provide clearance. Check to be sure lock pin is removed.



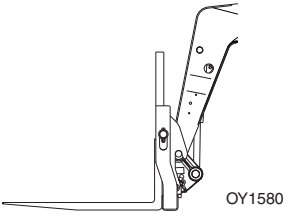
2. Align attachment pin with recess in attachment. Raise boom slightly to engage attachment pin in recess.



3. Tilt quick switch forward to engage attachment.



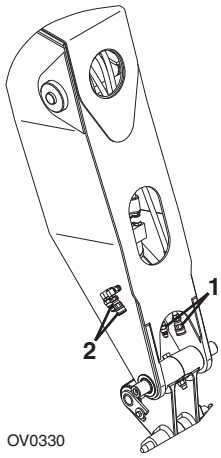
4. Lift retaining pin and insert lock pin completely through quick switch. Release retaining pin and ensure lock pin is secured.



5. If equipped, connect auxiliary hydraulic hoses. See *"Hydraulic Operated Attachment"* on page 5-11.

Hydraulic Operated Attachment

1. Install attachment (see page 5-9).
2. Lower attachment to ground and perform *"Shut-Down Procedure"* on page 4-4.



3. Connect attachment hoses to both auxiliary fittings (**1**).
4. If equipped, connect attachment hoses to both second auxiliary fittings (**2**).

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. See *"Attachment Installation"* on page 5-9.
2. Elevate attachment to approximately 5 ft (1,5 m) 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.

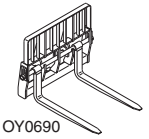
NOTICE

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.

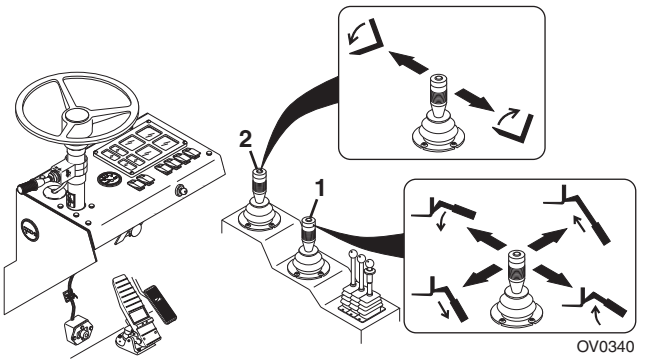
Carriage w/Forks


OY0690

Use Carriage Attachment Capacity Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-3.

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



OV0340

The middle joystick (**1**) controls lift/lower and extend/retract movement of the boom.

The front joystick (**2**) controls fork tilt.

- Move joystick back to tilt up.
- Move joystick forward to tilt down.

Installation Procedure:

Refer to *"Attachment Installation"* on page 5-9.

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.

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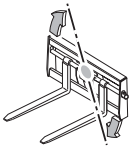
Side Tilt Carriage



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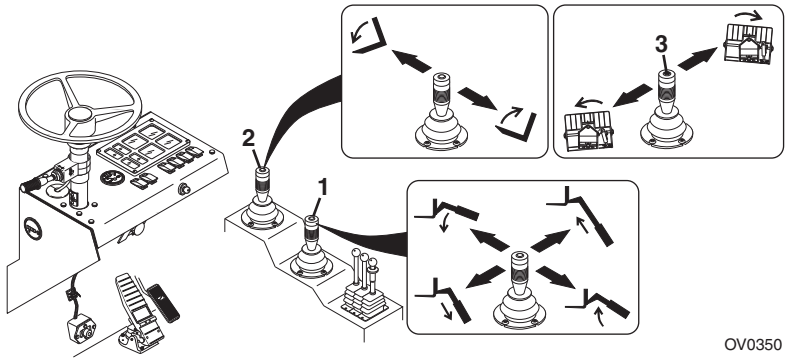
Use Side Tilt Carriage Attachment Capacity Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-3.



OV0350

The middle joystick (**1**) controls lift/lower and extend/retract movement of the boom.

The front joystick (**2**) controls fork tilt.

- Move joystick back to tilt up.
- Move joystick forward to tilt down.

To Side Tilt:

The auxiliary hydraulic button (**3**) on the front joystick enables carriage side tilt.

- While depressing button move joystick left to (side) tilt left.
- While depressing button move joystick right to (side) tilt right.

Installation Procedure:

- Refer to *"Attachment Installation"* on page 5-9.

⚠ WARNING

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

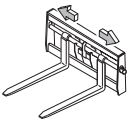
Operation:

- Approach load with forks centered on load and stop telehandler.
- Level telehandler before side tilting carriage to engage load.
- Side tilt carriage to left or right to align forks with load and engage load.
- Raise load slightly and level carriage side to side.
- Travel in accordance with the requirements set forth in Section 1 - General Safety Practices.

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.

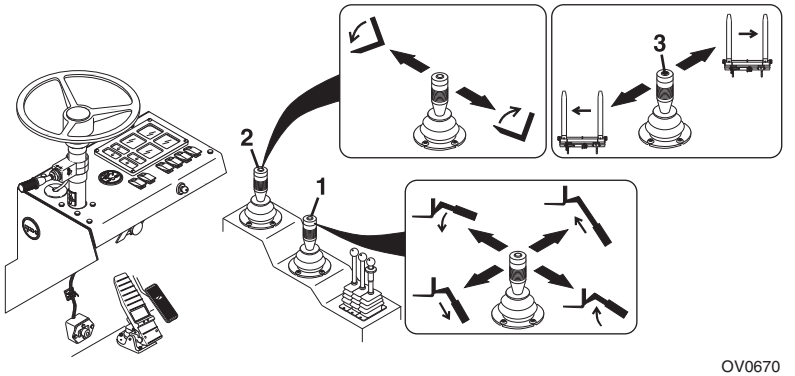
Side Shift Carriage



OAL1540

Use Side Shift Carriage Attachment Capacity Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-3.



OV0670

The middle joystick (**1**) controls lift/lower and extend/retract movement of the boom.

The front joystick (**2**) controls fork tilt.

- Move joystick back to tilt up.
- Move joystick forward to tilt down.

To Side Shift:

The auxiliary hydraulic button (**3**) on the front joystick enables carriage side shift.

- While depressing button move joystick left to (side) shift left.
- While depressing button move joystick right to (side) shift right.

Installation Procedure:

- Refer to *"Attachment Installation"* on page 5-9.

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.

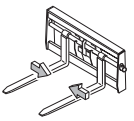
Operation:

- Approach load with forks centered on load and stop telehandler.
- Level telehandler before side shifting carriage to engage load.
- Side shift carriage to left or right to align forks with load and engage load.
- Raise load slightly and level carriage side to side.
- Travel in accordance with the requirements set forth in Section 1 - General Safety Practices.

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.

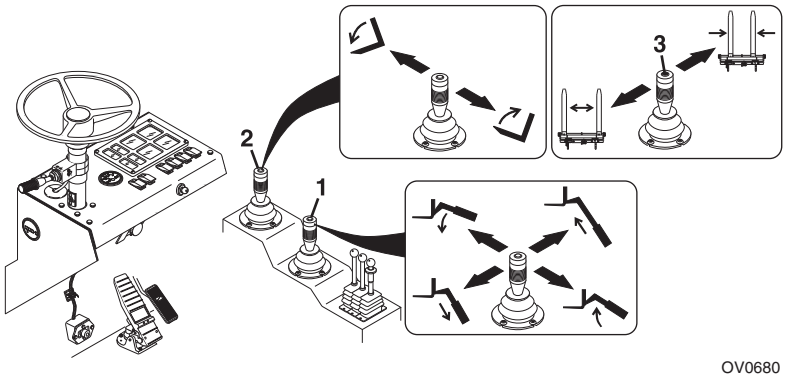
Dual Fork Positioning Carriage



OZ3670

Use Carriage Load Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-3.



OV0680

The middle joystick (**1**) controls lift/lower and extend/retract movement of the boom.

The front joystick (**2**) controls fork tilt.

- Move joystick back to tilt up
- Move joystick forward to tilt down.

To Fork Position:

The auxiliary hydraulic button (**3**) controls fork position.

- While depressing button, move joystick left to shift forks out.
- While depressing button, move joystick right to shift forks in.

Installation Procedure:

- Refer to *"Attachment Installation"* on page 5-9.

⚠ 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.

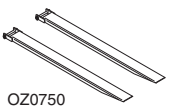
Operation:

- Travel in accordance with the requirements set forth in Section 1 - General Safety Practices.

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.

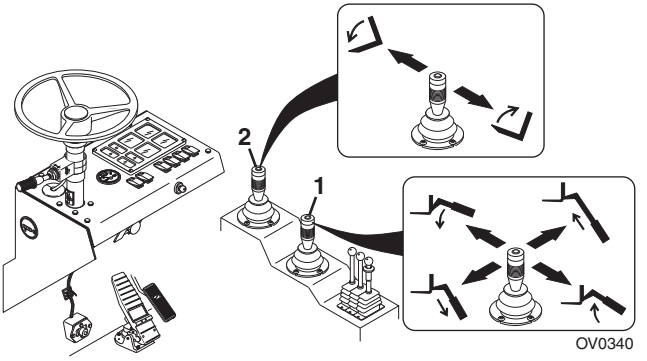
Fork Extension



OZ0750

Use Appropriate Carriage Attachment Capacity Chart

To determine maximum capacity, refer to *"Telehandler/Attachment/Fork Capacity"* on page 5-3. 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.



OV0340

The middle joystick (**1**) controls lift/lower and extend/retract movement of the boom.

The front joystick (**2**) controls fork tilt.

- Move joystick back to tilt up.
- Move joystick forward to tilt down.

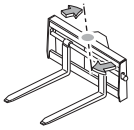
Installation Procedure:

- Ensure carriage is properly installed. Refer to *"Attachment Installation"* on page 5-9.
- 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 extensions onto the parent forks and install the retaining pin behind the vertical shank of the fork.

Operation:

- Heavy part of load must be against 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 tip of fork extensions.

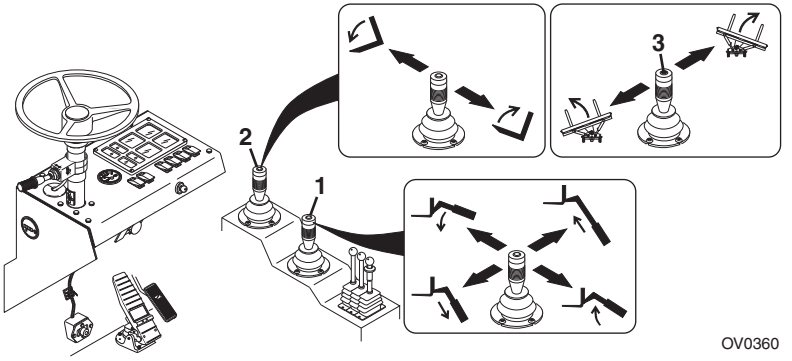
Swing Carriage



OU2150

Use Swing Carriage Attachment Capacity Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-3.



OV0360

The middle joystick (**1**) controls lift/lower and extend/retract movement of the boom.

The front joystick (**2**) controls fork tilt.

- Move joystick back to tilt up.
- Move joystick forward to tilt down.

To Swing:

The auxiliary hydraulic button (**3**) on the front joystick enables the swing function.

- While depressing button move joystick left to swing left.
- While depressing button move joystick right to swing right.

Installation Procedure:

- Refer to *"Attachment Installation"* on page 5-9.

⚠ WARNING

CRUSH HAZARD. Always level forks (horizontally) and telehandler frame before swinging load to side. Swinging unlevel forks could cause load to slide off forks.

⚠ WARNING

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

⚠ WARNING

CRUSH HAZARD. Use retaining pin (if equipped) for locking swing frame to fixed frame when carrying loads greater than 5000 lb. Failure to comply could cause object or load to fall.

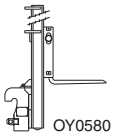
Operation:

- To drive with a load, keep forks pointed forward and travel in accordance with the requirements set forth in Section 1 - General Safety Practices.

Equipment Damage Precautions:

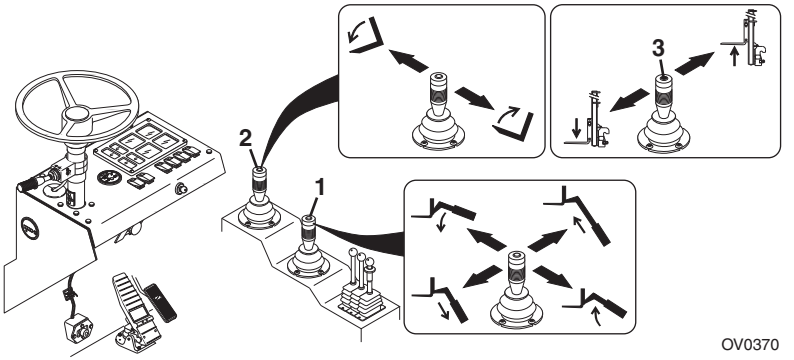
- Do not use forks as a lever to pry material. Excessive prying forces could damage forks or machine structure.
- Do not attempt to lift loads that are attached or connected to another object.

Mast Carriage


OY0580

Use Mast Carriage Attachment Capacity Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-3.



OV0370

The middle joystick (**1**) controls lift/lower and extend/retract movement of the boom.

The front joystick (**2**) controls fork tilt.

- Move joystick back to tilt up.
- Move joystick forward to tilt down.

To Raise/Lower Mast:

The auxiliary hydraulic button (**3**) on the front joystick enables the raise/lower movement of the mast.

- While depressing button move joystick left to lower.
- While depressing button move joystick right to raise.

Installation Procedure:

- Refer to *"Attachment Installation"* on page 5-9.

⚠ WARNING

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

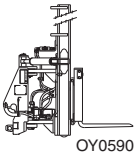
Operation:

- Always lower forks fully in mast before engaging load.
- To drive with a load, lower forks fully in mast and travel in accordance with the requirements set forth in Section 1 - General Safety Practices.
- Use a signal person to assist in positioning of load if necessary.

Equipment Damage Precautions:

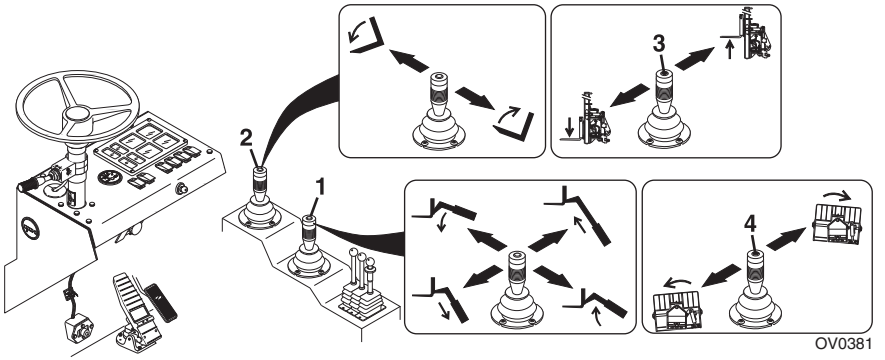
- Do not use forks as a lever to pry material. Excessive prying forces could damage forks or machine structure.
- Do not attempt to lift loads that are attached or connected to another object.

Mast Carriage w/Side Tilt


OY0590

Use Mast Carriage Attachment Capacity Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-3.



OV0381

The middle joystick (**1**) controls lift/lower and extend/retract movement of the boom.

The front joystick (**2**) controls fork tilt.

- Move joystick back to tilt up.
- Move joystick forward to tilt down.

To Raise/Lower Mast:

The auxiliary hydraulic button (**3**) on the front joystick enables the raise/lower movement of the mast.

- While depressing button move joystick left to lower.
- While depressing button move joystick right to raise.

To Side Tilt:

The auxiliary hydraulic button (**4**) on the middle joystick enables carriage side tilt.

- While depressing button move joystick left to (side) tilt left.
- While depressing button move joystick right to (side) tilt right.

Installation Procedure:

- Refer to *"Attachment Installation"* on page 5-9.

⚠ WARNING

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

⚠ WARNING

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

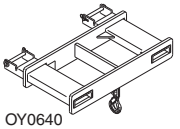
Operation:

- Always lower forks fully in mast before engaging load.
- To drive with a load, lower forks fully in mast and travel in accordance with the requirements set forth in Section 1 - General Safety Practices.
- Use a signal person to assist in positioning load if necessary.

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.

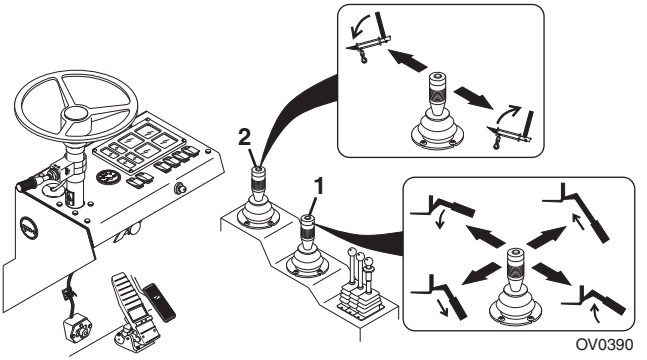
Fork Mounted Hook


OY0640

Use Appropriate Carriage Attachment Capacity Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-3.

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



OV0390

The middle joystick (**1**) controls lift/lower and extend/retract movement of the boom.

The front joystick (**2**) controls fork tilt.

- Move joystick back to tilt up.
- Move joystick forward to tilt down.

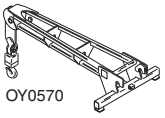
Installation Procedure:

- Ensure carriage is properly installed. Refer to *"Attachment Installation"* on page 5-9.
- 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).

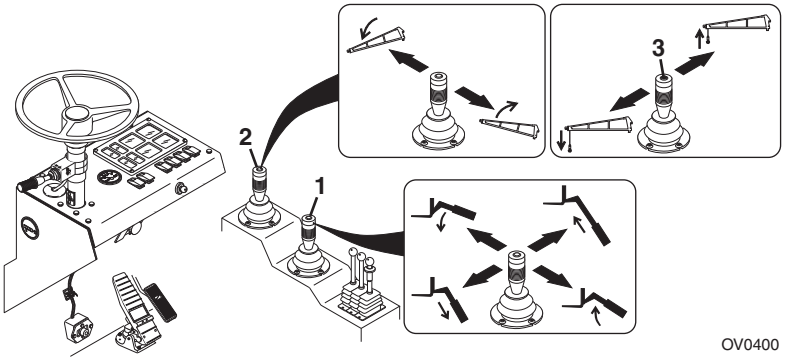
Truss Boom


OY0570

Use Appropriate Truss Boom Attachment Capacity Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-3.

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



OV0400

The middle joystick (**1**) controls lift/lower and extend/retract movement of the boom.

The front joystick (**2**) controls truss boom tilt.

- Move joystick back to tilt up.
- Move joystick forward to tilt down.

Winch Control (if equipped):

The auxiliary hydraulic button (**3**) on the front joystick enables the truss boom mounted winch.

- While depressing button move joystick left to lower cable.
- While depressing button move joystick right to raise cable.

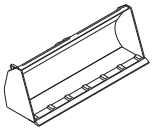
Installation Procedure:

- Refer to *"Attachment Installation"* on page 5-9.

⚠ WARNING

CRUSH HAZARD. Maintain a minimum of three wraps of wire rope on the cable drum at all times. Failure to comply could cause object or load to fall.

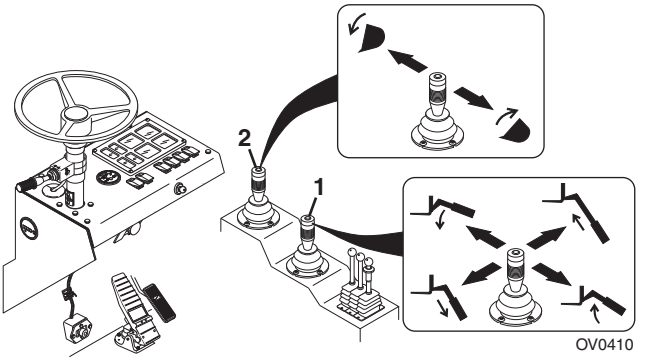
Bucket



OZ0730

Use Appropriate Bucket Capacity Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-3.



OV0410

The middle joystick (**1**) controls lift/lower and extend/retract movement of the boom.

The front joystick (**2**) controls bucket tilt.

- Move joystick back to tilt up.
- Move joystick forward to tilt down.

Installation Procedure:

- Refer to *"Attachment Installation"* on page 5-9.

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

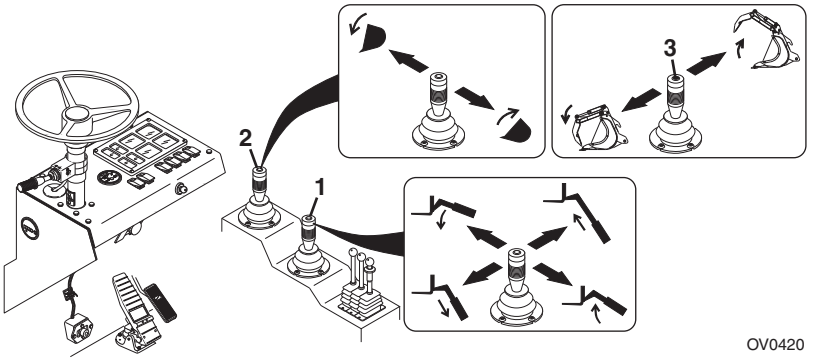
- Except for lifting or dumping a load, the boom must be fully retracted for all bucket operations.
- Do not corner-load bucket. Distribute material evenly within the bucket. Bucket capacity charts are for evenly distributed loads only.
- Do not use bucket as a lever to pry material. Excessive prying 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 switch or machine structure.
- Do not use bucket for "back dragging." This could cause severe damage to quick switch and retraction cables/chains.

Grapple Bucket

OZ1450

Use Grapple Bucket Capacity Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-3.



OV0420

The middle joystick (**1**) controls lift/lower and extend/retract movement of the boom.

The front joystick (**2**) controls grapple bucket tilt.

- Move joystick back to tilt up.
- Move joystick forward to tilt down.

To open/close grapple:

The auxiliary hydraulic button (**3**) on the front joystick enables the open/close movement of the grapple.

- While depressing button move joystick left to close grapple.
- While depressing button move joystick right to open grapple.

Installation Procedure:

- Refer to *"Attachment Installation"* on page 5-9

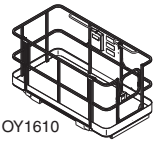
Operation:

- 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 switch or machine structure.
- Do not use bucket for "back dragging." This could cause severe damage to quick switch and retraction cables/chains.

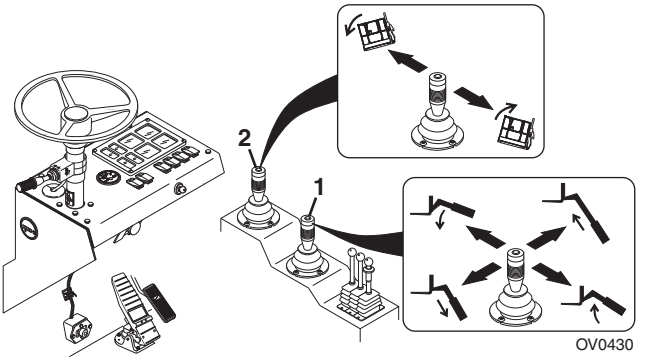
Personnel Work Platform


OY1610

Use Personnel Work Platform Capacity Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-3.

The operator and personnel in platform must read and understand the separate personnel work platform manual prior to installing and using a platform.



The middle joystick (**1**) controls lift/lower and extend/retract movement of the boom.

The front joystick (**2**) controls platform tilt.

- Move joystick back to tilt up.
- Move joystick forward to tilt down.

Installation Procedure:

- Ensure carriage is properly installed. Refer to *"Attachment Installation"* on page 5-9.
- Secure the personnel work platform to the forks by sliding the personnel work platform onto the parent forks and install the retaining pin behind the vertical shank of the fork.

Preparation and Setup:

1. Ensure the telehandler is on a firm surface and is level.
2. Engage the park brake. Blocking the wheels is also recommended.
3. Level platform, both side to side (frame level) and front to back (attachment tilt).
4. Keep area under platform free from personnel.
5. When personnel are on platform, the operator must remain seated in cab with personnel in direct line of sight.
6. **DO NOT** lift or carry persons in a bucket or on forks.

⚠ WARNING

FALL HAZARD. Never tilt the platform forward, rearward, or level the machine when the platform is occupied.

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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 devices.
- 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 4 ft (1,2 m).

Moving Short Distances

- If it is only necessary to move telehandler a short distance, less than 100 ft (30 m), it is permissible to use a vehicle of sufficient capacity to tow the unit with no previous preparation. Drive wheels will not roll.

Moving Longer Distances

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

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

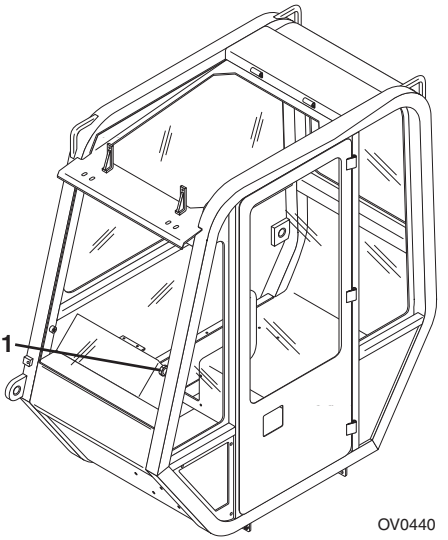
6.2 EMERGENCY LOWERING OF BOOM

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 a local Authorized Distributor for specific instructions.**

Secure the telehandler using the following procedures:

1. Clear the area around telehandler of all personnel.
2. Engage 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 EXIT FROM ENCLOSED CAB

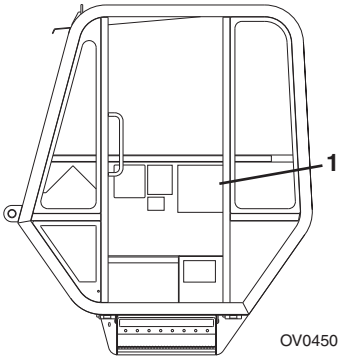


- In an emergency, the front window can be used to exit the telehandler.
- Remove the knob (**1**). The window is then free to swing open.

SECTION 7 - LUBRICATION AND MAINTENANCE

7.1 INTRODUCTION

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



The Lubrication and Maintenance chart (**1**) contains 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 4-4 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, with the exception of the transmission fluid. For ease of filling hydraulic reservoir, use a funnel with a hose or flexible tube for best results.

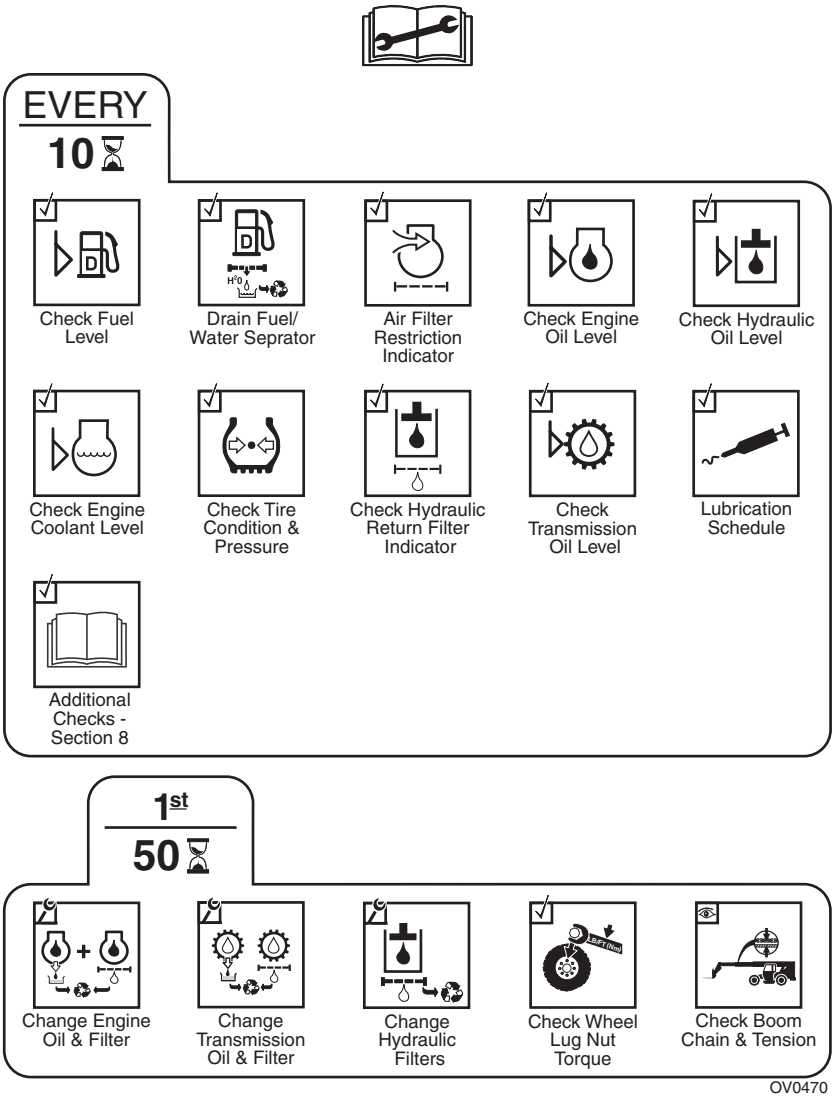
Note: *Be certain to check boom chain and tension every 250 hours and adjust as required. Chain damage can occur if chain is not adjusted properly.*

⚠ WARNING

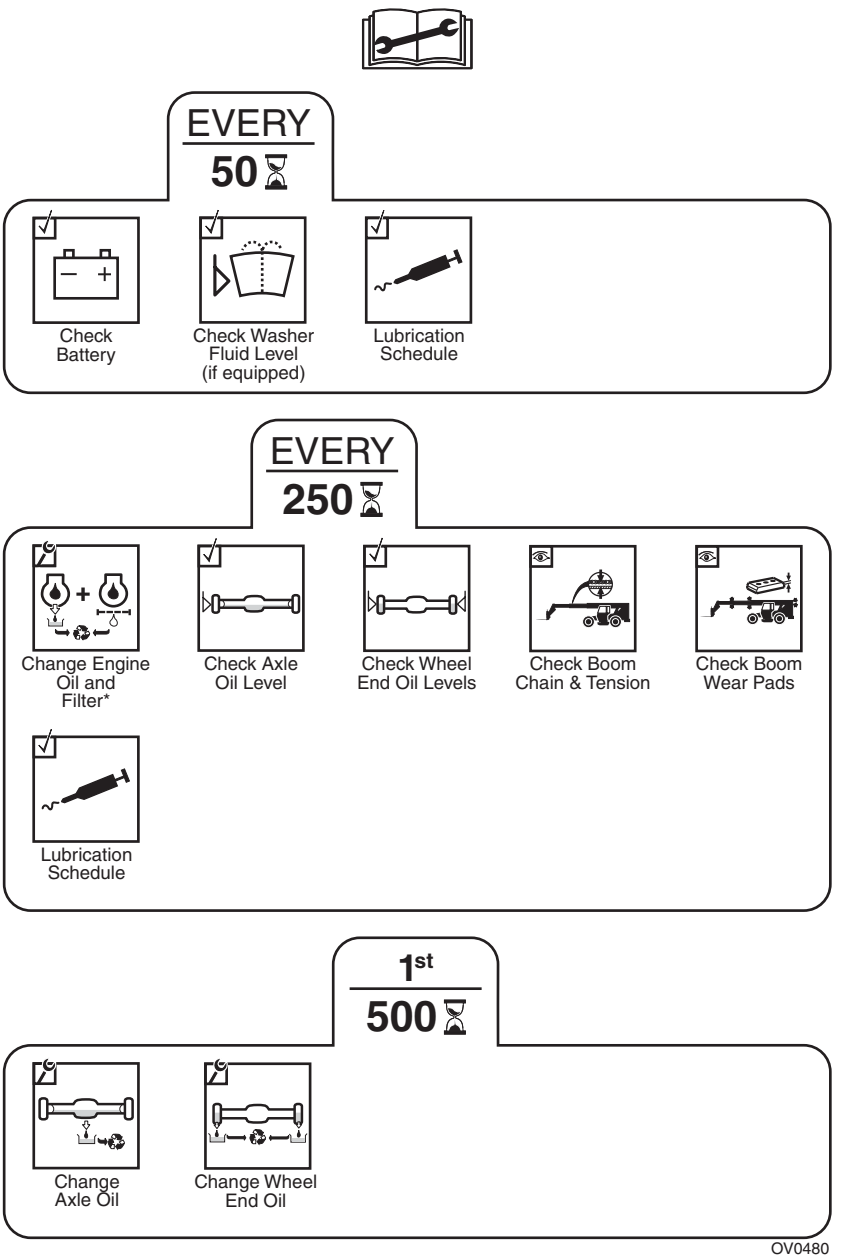
CUT/CRUSH/BURN HAZARD. Do not perform service or maintenance on the machine with the engine running, with the exception of the transmission oil level check.

7.3 SERVICE AND MAINTENANCE SCHEDULE

10 & 1st 50 Hour Maintenance Schedule

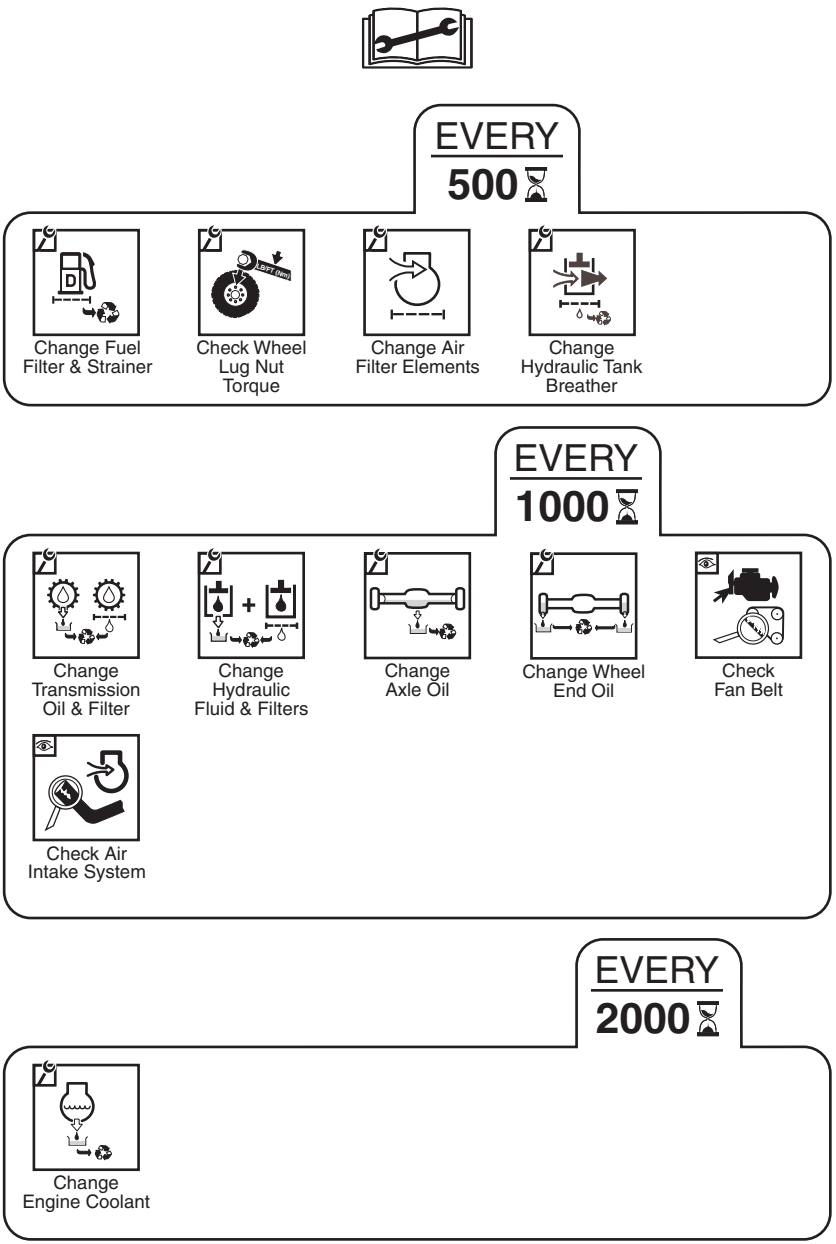


50, 250 & 1st 500 Hour Maintenance Schedule



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

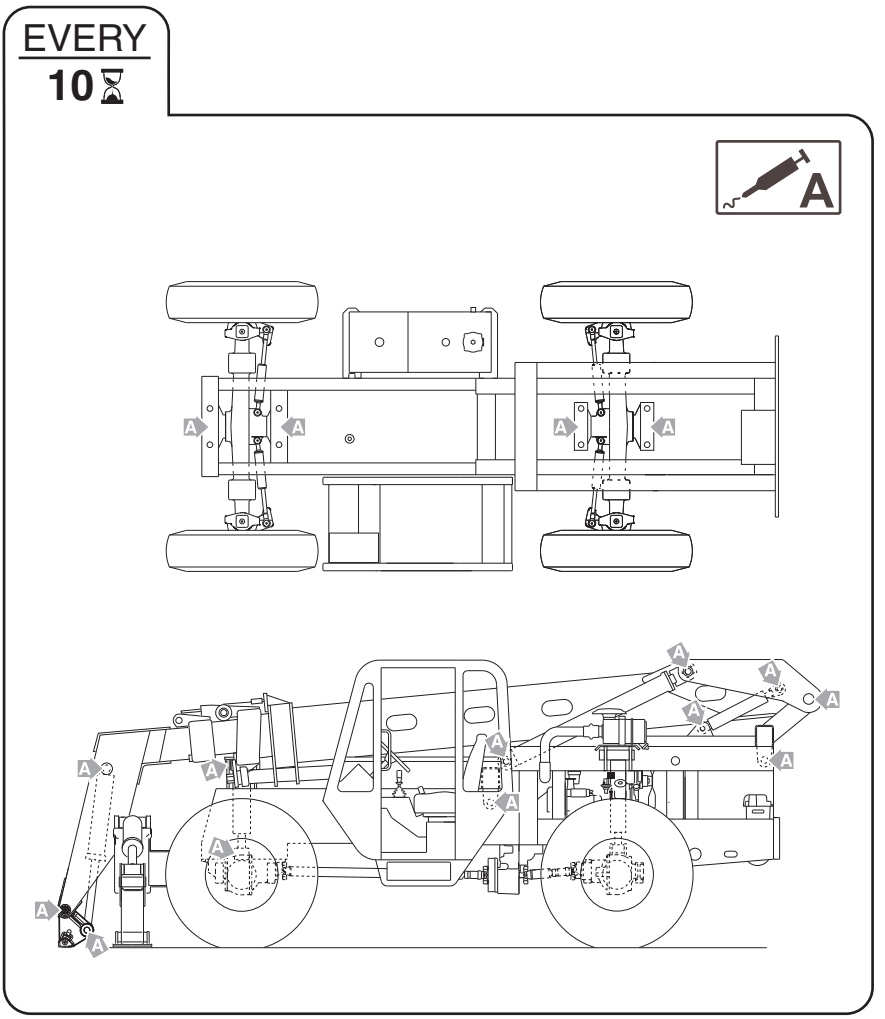
500, 1000 & 2000 Hour Maintenance Schedule



7.4 LUBRICATION SCHEDULES

10 Hour Lubrication Schedule

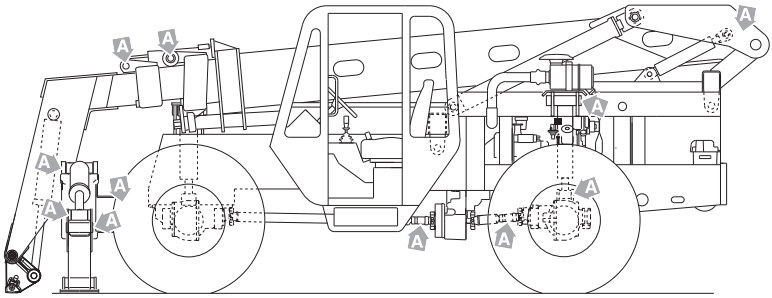
EVERY
10



OV0500

50 Hour Lubrication Schedule

EVERY
50

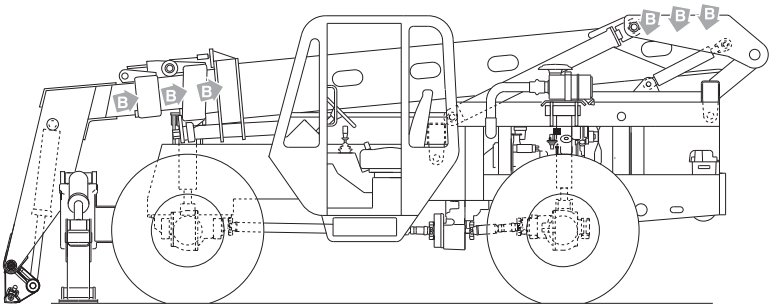


OV0510

250 Hour Lubrication Schedule

EVERY
250

B



OV0610

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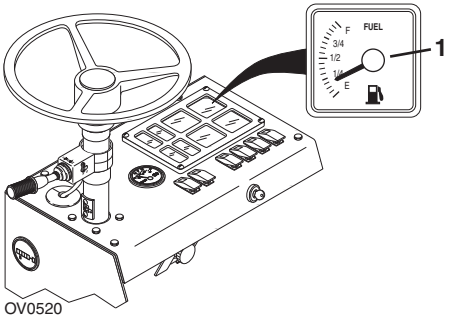
7.5 OPERATOR MAINTENANCE INSTRUCTIONS

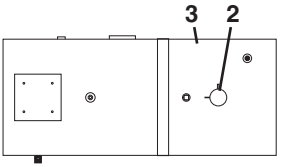
Fuel System

A. Fuel Level Check

10 OW0970 OW0990



OV0520



VIEW OF FUEL TANK FROM TOP OF MACHINE

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 4-4.
3. Locate fuel tank (**3**), turn fuel tank cap (**2**) and remove from filler neck.
4. Add diesel fuel as needed.
5. Replace and secure fuel tank cap.

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

NOTICE

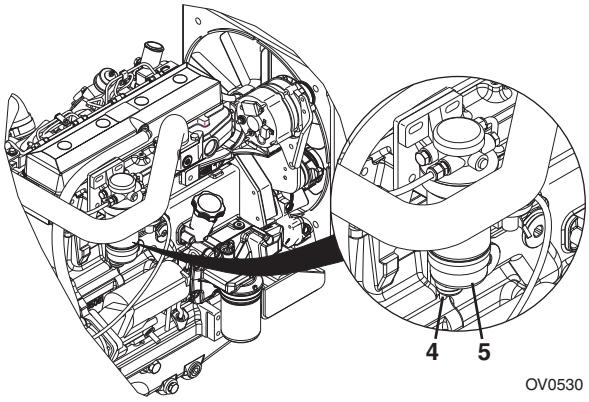
EQUIPMENT DAMAGE. Do not allow machine to run out of fuel during operation. See Engine Operation & Maintenance Manual for details prior to servicing.

B. Drain Fuel/Water Separator

10 OW0970

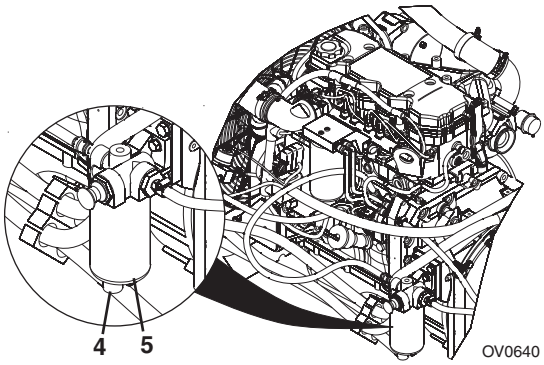
OW1000

JOHN DEERE ENGINE



OV0530

CUMMINS ENGINE

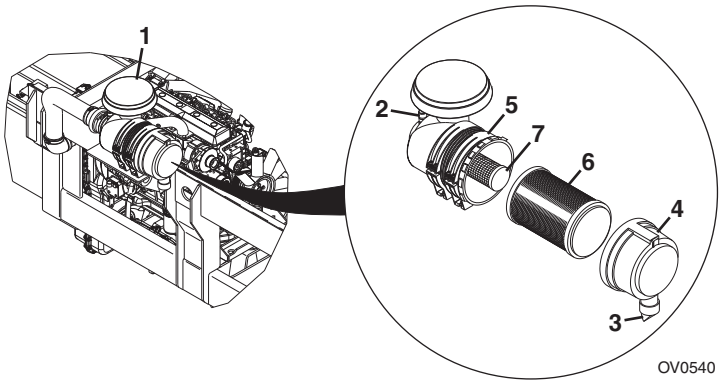


OV0640

1. Perform *"Shut-Down Procedure"* on page 4-4.
2. If equipped, open engine access door.
3. Loosen drain cock (**4**) on underside of fuel filter (**5**) and allow all water to drain into a glass until clear fuel is visible.
4. Tighten drain cock.
5. If equipped, close and secure engine access door.

A. Air Filter Restriction Indicator Check

10 OW0970 OW1010



1. Perform *"Shut-Down Procedure"* on page 4-4.
2. Locate air cleaner (**1**) and check restriction indicator (**2**). If red band is visible, filter(s) must be replaced.
3. Remove dust from vacuator valve (**3**) by squeezing bottom of valve to allow loose particles to fall out.

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)

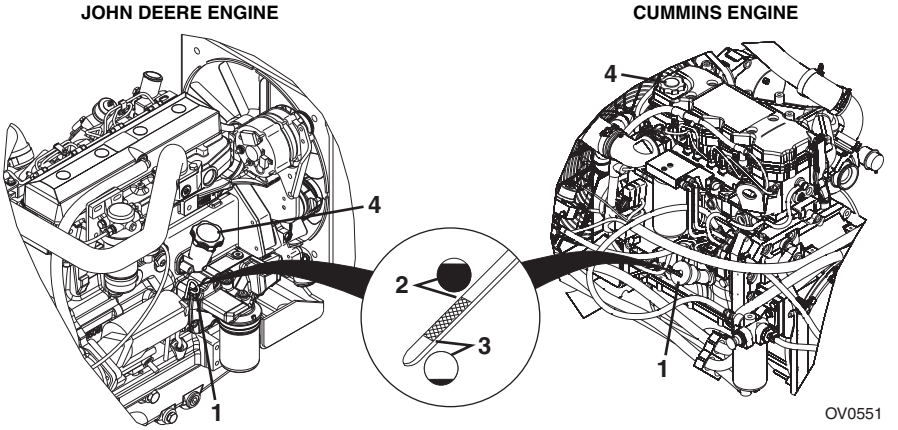
1. Unlock air cleaner cover (**4**), turn counterclockwise and remove from air cleaner canister (**5**).
2. Remove outer primary element (**6**) and inspect for damage. Damaged elements should not be reused.
3. Thoroughly clean the interior of the air cleaner canister and vacuator valve.
4. Replace inner safety element (**7**) 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. Depress button on restriction indicator to reset.

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

Engine Oil

A. Engine Oil Level Check

10 OW0970 OW1020



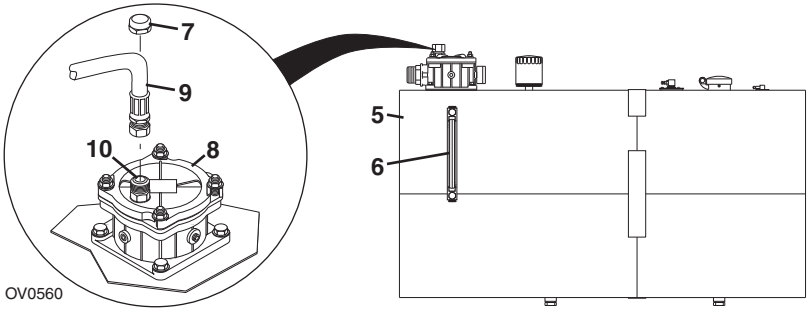
1. Perform *"Shut-Down Procedure"* on page 4-4.
2. If equipped, open engine access door.
3. Remove dipstick (**1**) and check oil mark. The oil should be between the full (**2**) and add (**3**) marks within the crosshatched area of the dipstick.
4. If oil is low, remove oil fill cap (**4**) and add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

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

Hydraulic Oil

A. Hydraulic Oil Level Check

10 OW0970 OW1030



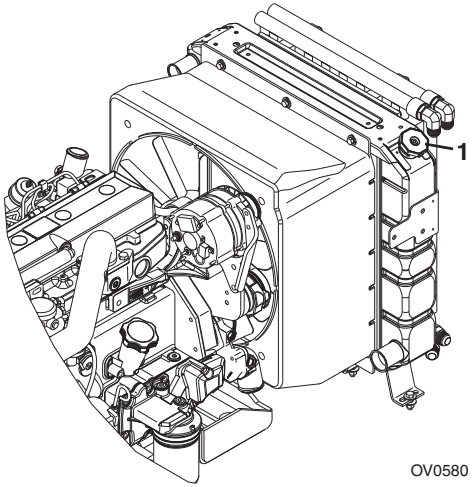
1. Be sure all cylinders are fully retracted and machine is level.
2. Perform *"Shut-Down Procedure"* on page 4-4.
3. Check level of hydraulic oil at the sight gauge (**6**) on the hydraulic tank (**5**). The oil level should be visible in the gauge window.
4. If hydraulic oil is low remove hex cap (**7**) from the hydraulic return filter (**8**).
5. Connect hose (**9**) to filler fitting (**10**).
6. Add hydraulic fluid to bring oil up to the upper mark on the sight gauge.
7. Remove hose from filler fitting and replace hex cap.

Engine Cooling System

A. Engine Coolant Level Check

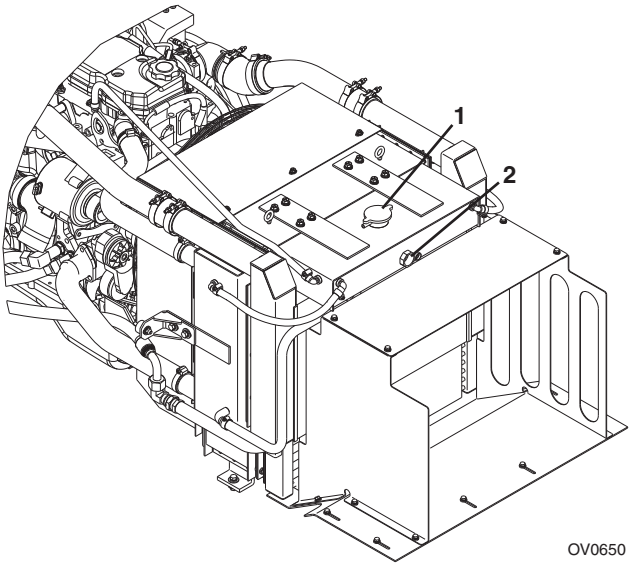
10 OW0970 OW1070

John Deere Engine



1. Perform *"Shut-Down Procedure"* on page 4-4.
2. If equipped, open engine access door.
3. When coolant is cool, remove cap (**1**). Check coolant level in radiator.
4. If coolant is low, add coolant as required.
5. Replace cap.
6. If equipped, close and secure engine access door.

Cummins Engine



1. Perform *"Shut-Down Procedure"* on page 4-4.
2. Check coolant level in sight gauge (**2**).
3. If coolant is low, remove cap (**1**) and add coolant as required.
4. Replace cap.

Note: *When filling with coolant, the maximum fill rate is 2.5 gallon (9,5 liter) per minute.*

Tires

A. Tire Air Pressure Check

10 OW0970  OW1040

1. Perform *"Shut-Down Procedure"* on page 4-4.
2. Remove valve stem cap.
3. Check tire pressure.

   14.00 x 24, G-2/L-2 Bias-Ply Traction - 12 Ply
   - Water and Calcium Chloride .....70 psi (4,8 bar)
   - Foam.....62 psi (4,3 bar)

   14.00 x 24, G-2/L-2 Radial - 1 Star
   - Water and Calcium Chloride .....75 psi (5,2 bar)
   - Foam.....70 psi (4,8 bar)

   14.00 x 24, G-3/L-3 Bias Ply Rock - 12 Ply
   - Water and Calcium Chloride .....70 psi (4,8 bar)
   - Foam.....62 psi (4,3 bar)

   400/75-28, 16 Ply
   - Water and Calcium Chloride .....76 psi (5,2 bar)
   - Foam.....73 psi (5,0 bar)

4. 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.

For polyurethane foam filled tires, when any of the following are discovered, measures must be taken to remove the product from service immediately. Arrangements must be made for replacement of the tire or tire assembly.

- a smooth even cut through the cord piles which exceeds 3 in (7,5 cm) in total length.
- any tears or rips (ragged edges) in the cord plies which exceeds 1 in (2,5 cm) in any direction
- any punctures which exceed 1 in (2,5 cm) in diameter.

If a tire is damaged but within the above noted criteria, the tire must be inspected daily to ensure the damage has not propagated beyond the allowable criteria.

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.

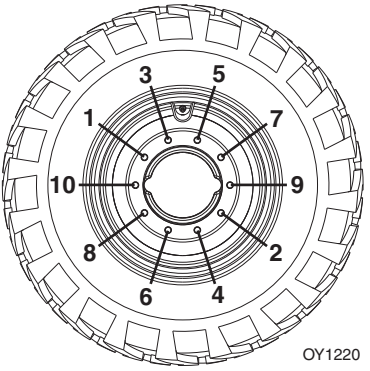
The rims installed have been designed for stability requirements which consist of track width, tire pressure and load capacity. Size changes such as rim width, center piece location, larger or smaller diameter, etc., without written factory recommendations, may result in unsafe condition regarding stability.

E. Wheel Installation

Torque lug nuts before first use and after each wheel removal.

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. Install wheel lug washers.
2. Start all nuts by hand to prevent cross threading. DO NOT use a lubricant on threads or nuts.
3. Tighten lug nuts in an alternating pattern as indicated in figure. Torque to 430-470 lb-ft (583-637 Nm).



WARNING

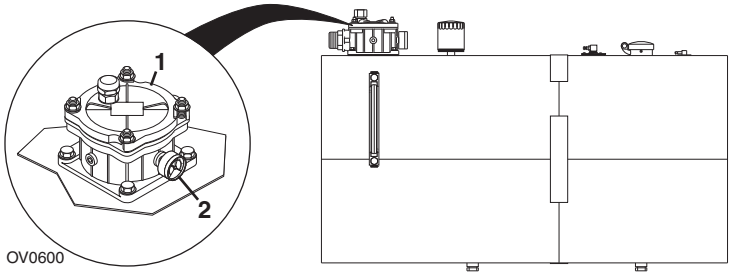
TIP OVER HAZARD. Lug nuts must be installed and maintained at the proper torque to prevent loose wheels, broken studs and possible separation of wheel from the axle.

Hydraulic Return Filter

A. Hydraulic Return Filter Indicator Check

10 OW0970

OW1060

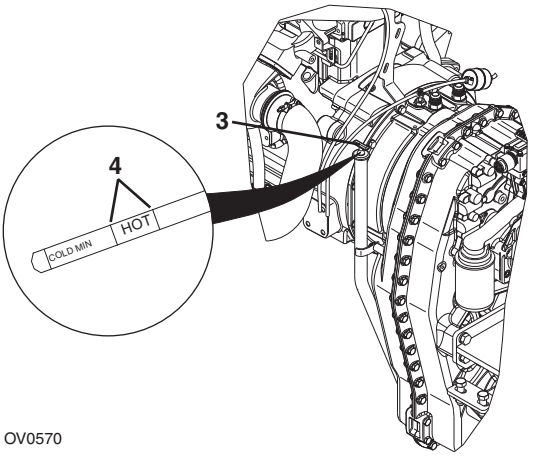


1. Apply park brake, shift transmission to "Neutral" and lower forks or attachment to horizontal position.
2. Check hydraulic return filter indicator with engine at normal operating temperature.
3. With an assistant observing the indicator (**2**) located on the hydraulic return filter (**1**), extend and retract the boom 10 to 12 ft (3,0 to 3,7 m). The bar gauge should be within the green area.
4. Replace filter before the gauge reaches the red area on the indicator. If it reaches the red area, the filter is too dirty and hydraulic oil is bypassing the filter.

Transmission Oil

A. Transmission Oil Level Check

10 OW0970 OW1050



OV0570

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. If equipped, open engine access door.
4. Remove the transmission dipstick (**3**) and check oil level. The oil level should be within the "HOT" zone (**4**).
5. If oil is low, add hydraulic fluid to bring oil up to the "HOT" zone.
6. Replace transmission dipstick.
7. If equipped, close and secure engine access door.

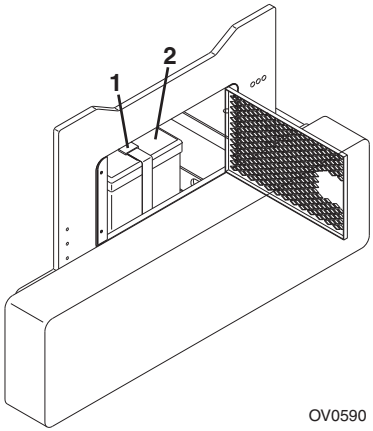
Battery

A. Battery Check

50 OW0980

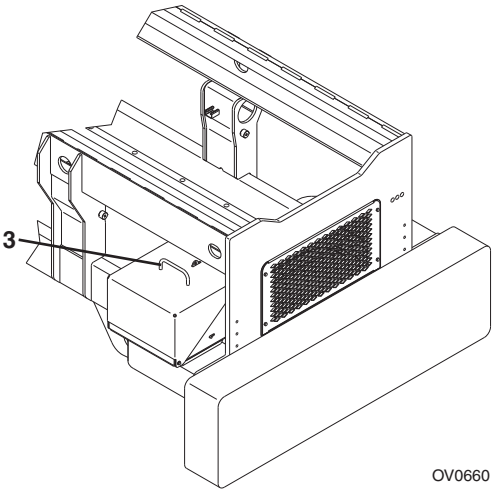
OW1080

John Deere Engine



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

Cummins Engine



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

SECTION 8 - ADDITIONAL CHECKS

8.1 REAR OSCILLATION LOCK SYSTEM

A. Rear Oscillation Lock System Test

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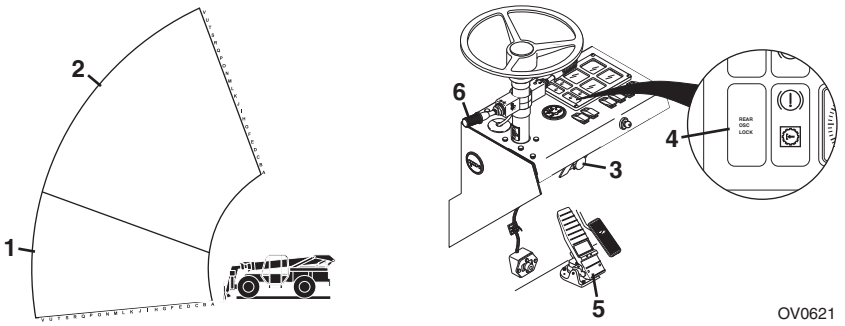
OW0970

With boom raised above 20° the indicator illuminates. If indicator does not illuminate the test was not performed properly or rear oscillation lock system is not functioning correctly and the test should be stopped immediately. To check the indicator, perform the following:



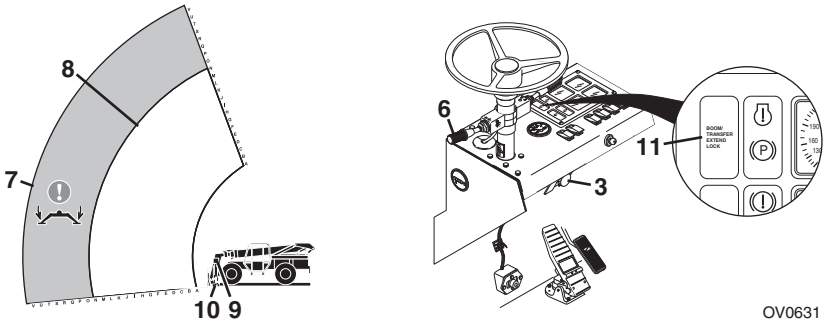
1. Test rear oscillation lock system on a level surface and boom fully retracted, no load.
2. Shift transmission to neutral (**6**).
3. Raise boom above 20° (**2**). Rear oscillation lock system slow pivot mode will be activated and indicator (**4**) will illuminate.
4. Lower boom below 20° (**1**).
5. Depress service brake pedal (**5**) and shift transmission into forward.
6. Raise the boom above 20°. Rear oscillation lock system slow pivot mode will be activated and indicator will illuminate.
7. Lower boom below 20°.
8. Engage park brake switch (**3**).
9. Release service brake pedal.
10. Raise the boom above 20°. Rear oscillation lock system slow pivot mode will be activated and indicator will illuminate.
11. Lower boom below 20°.
12. Shift transmission to neutral.

8.2 BOOM/TRANSFER EXTEND LOCK SYSTEM

A. Boom/Transfer Extend Lock System Test

10
OW0970

Boom/transfer extend lock system operates in two modes. In locked mode, with outriggers raised, the indicator illuminates and a sensor in the boom will stop boom from extending past a point between the “N” and “O” extension indicators. In unlocked mode, with outriggers lowered, the boom will extend fully. To check the sensor and indicator, perform the following:



1. Test boom/transfer extend lock system on a level surface and boom horizontal, no load.
2. Shift transmission to neutral (**6**) and engage park brake (**3**).
3. Raise outriggers (**9**).
4. Boom/transfer extend lock indicator (**11**) will illuminate.
5. Extend boom until it stops. Boom will stop at a point (**8**) between the “N” and “O” extension indicators.
6. Retract boom.
7. Lower outriggers (**10**) on firm terrain.
8. Boom/transfer extend lock indicator (**4**) will turn off.
9. Extend boom (**7**) until it stops. Boom will fully extend.

SECTION 9 - SPECIFICATIONS

9.1 PRODUCT SPECIFICATIONS

Capacities

Engine Crankcase Oil

Capacity with Filter Change
- John Deere ..... 14 quart (13,2 liter)
- Cummins ..... 13.7 quart (13,0 liter)

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

Fuel Tank

Capacity ..... 36 gallon (136 liter)

Type of Fuel ..... #2 Diesel

Cooling System

System Capacity
- John Deere ..... 4.5 gallon (17 liter)
- Cummins ..... 9 gallon (34 liter)

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

Hydraulic System

System Capacity ..... 65 gallon (246 liter)

Reservoir Capacity to Full Mark ..... 47 gallon (178 liter)

Type of Oil ..... Mobilfluid® 424 Tractor Hydraulic Fluid

Transmission

Capacity with Filter Change ..... 4.8 gallon (18 liter)

Type of Fluid ..... Mobilfluid® 424 Tractor Hydraulic Fluid

Axles

Differential Housing Capacity
- Front Axle ..... 9.5 quart (9,0 liter)
- Rear Axle ..... 10.5 quart (9,9 liter)

Wheel End Capacity
- Front Axle ..... 1.7 quart (1,6 liter)
- Rear Axle ..... 1.3 quart (1,2 liter)

Type of Fluid ..... Mobilfluid® 424 Tractor Hydraulic Fluid

Tires

14.00 x 24, G-2/L-2 Bias Ply Traction - 12 ply
- Water and Calcium Chloride ..... Approx 623 lb (283 kg)
- Foam ..... Approx 720 lb (327 kg)

14.00 x 24, G-3/L-3 Bias Ply Rock - 12 Ply
- Water and Calcium Chloride ..... Approx 623 lb (283 kg)
- Foam ..... Approx 720 lb (327 kg)

14.00 x 24, G-2/L-2 Radial - 1 Star
- Water and Calcium Chloride ..... Approx 623 lb (283 kg)
- Foam ..... Approx 720 lb (327 kg)

400/75-28, 16 Ply
- Water and Calcium Chloride ..... Approx 441 lb (200 kg)
- Foam ..... Approx 570 lb (259 kg)

Wheel Lug Nut

Torque ..... 430-470 lb-ft (583-637 Nm)

Performance

Maximum Lift Capacity
- Outriggers Engaged ..... 10,000 lb (4536 kg)
- Outriggers Not Engaged
  - Transfer Carriage Fully Retracted..... 10,000 lb (4536 kg)
  - Transfer Carriage Extended..... 5,000 lb (2268 kg)

Maximum Lift Height
- Outriggers Engaged .....54 ft (16,5 m)
- Outriggers Not Engaged.....42 ft (12,8 m)

Capacity at Maximum Height
- Outriggers Engaged ..... 5,000 lb (2268 kg)
- Outriggers Not Engaged
  - Transfer Carriage Fully Retracted..... 6,000 lb (2722 kg)
  - Transfer Carriage Extended..... 2,000 lb (907 kg)

Maximum Forward Reach
- Outriggers Engaged
  - Transfer Carriage Fully Retracted.....38 ft (11,6 m)
  - Transfer Carriage Extended.....45 ft (13,7 m)
- Outriggers Not Engaged
  - Transfer Carriage Fully Retracted.....25 ft (7,6 m)
  - Transfer Carriage Extended.....30 ft (9,1 m)

Capacity at Maximum Forward Reach
- Outriggers Engaged ..... 1,000 lb (454 kg)
- Outriggers Not Engaged
  - Transfer Carriage Fully Retracted..... 3,000 lb (1361 kg)
  - Transfer Carriage Extended..... 500 lb (227 kg)

Reach at Maximum Height
- Outriggers Engaged
  - Transfer Carriage Fully Retracted.....7 ft (2,1 m)
  - Transfer Carriage Extended.....13.7 ft (4,2 m)
- Outriggers Not Engaged
  - Transfer Carriage Fully Retracted.....2.5 ft (0,8 m)
  - Transfer Carriage Extended.....9.2 ft (2,8 m)

Horizontal Load Placement Distance ..... 80 in (2.03 m

Maximum Travel Speed .....22 mph (35 kph)

Towing Capacity ..... 10,000 lb (4536 kg)

Frame Leveling..... 10 degrees

Maximum Travel Grade
- Gradeability 45%
- Side Slope 8.75%

Dimensions

Overall Height.....97 in (2464 mm)

Overall Width.....101 in (2565 mm)

Track Width .....81.5 in (2070 mm)

Wheelbase.....124 in (3150 mm)

Overall Length (less Forks) .....246 in (6248 mm)

Ground Clearance .....16 in (406 mm)

Outside Turning Radius.....170 in (4318 mm)

Maximum Operating Vehicle Weight (no attachment) .....32,510 lb (14.746 kg)

Distribution of Operating Weight (no attachment)
(boom level and fully retracted)
- Front Axle ..... 11,053 lb (5014 kg)
- Rear Axle .....21,457 lb (9733 kg)

Maximum Ground Bearing Pressure
- 14.00 x 24 .....193 lb/in² (13,6 kg/cm²)
- 400/75-28.....156 lb/in² (11,0 kg/cm²)

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: _____

_____

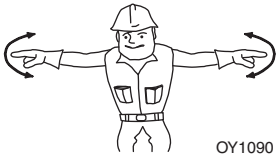
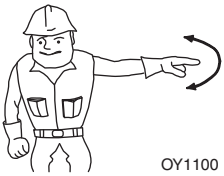
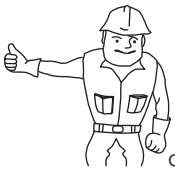
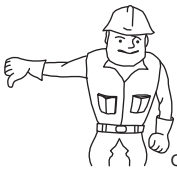
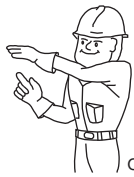
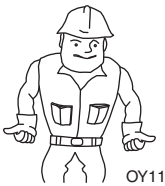
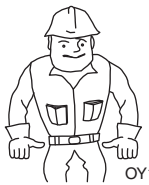
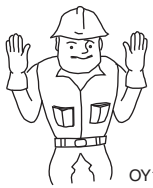
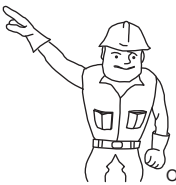
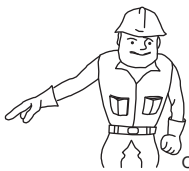
Country: _____ **Telephone: (_____)** _____

Who in your organization should we notify?

Name: _____

Title: _____

Hand Signals

 OY1090	 OY1100	 OY1110
EMERGENCY STOP - With both arms extended laterally, hands open downward, move arms back and forth.	STOP - With either arm extended laterally, hand open downward, move arm back and forth.	STOP ENGINE - Draw thumb or forefinger across throat.
 OY1120	 OY1130	 OY1140
RAISE BOOM - With either arm extended horizontally, fingers closed, point thumb upward.	LOWER BOOM - With either arm extended horizontally, fingers closed, point thumb downward.	MOVE SLOWLY - Place one hand motionless in front of hand giving motion signal. (Raise load slowly shown)
 OY1150	 OY1160	 OY1170
EXTEND BOOM - With both hands clenched, point thumbs outward.	RETRACT BOOM - With both hands clenched, point thumbs inward.	THIS FAR TO GO - With hands raised and open inward, move hands laterally, indicating distance to go.
 OY1180	 OY1190	
TILT FORKS UP - With one arm held at side, extend other arm upward at about 45 degrees.	TILT FORKS DOWN - With one arm held at side, extend other arm downward at about 45 degrees.	

Special Signals - When signals for auxiliary equipment functions or conditions not covered are required, they shall be agreed upon in advance by the operator and signalman.

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