SKYTRAK™

Operation & Safety Manual

Original Instructions -
Keep this manual with the machine at all times.

Model 6034, 6042

PVC 2305, 2311

31211487

November 13, 2023 - Rev B

ANSI

JLG®
An Oshkosh Corporation Company

⚠ WARNING

Operating, servicing and maintaining this vehicle or equipment can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle or equipment in a well-ventilated area and wear gloves or wash your hands frequently when servicing. For more information go to www.P65Warnings.ca.gov.

REVISION LOG

DATE	REVISION	DESCRIPTION
January 5, 2023	A	Original Issue of Manual.
November 13, 2023	B	Revision of Manual.

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READ THIS FIRST

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.

Refer to www.JLG.com for Warranty, Product Registration, and other machine-related documentation.

Operator Qualifications

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

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

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

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

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

Modifications

Modifications to this machine may affect compliance with Industry Standards and/or Governmental Regulations. Any modification 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

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. 31211491

Parts Manual

6034 31211485

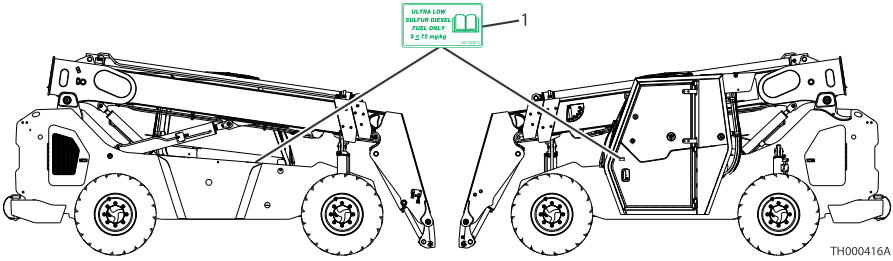
6042 31220697

Note: Refer to the machine Serial Number Plate to identify the applicable compliance standard.

Machine Configuration

Two configurations of each machine are included in this manual. Determine if machine is equipped with Ultra Low Sulfur Fuel Decal (**1**) as indicated below.

- If equipped with the Ultra Low Sulfur decal, all specific references to this machine configuration will be referred to as Ultra Low Sulfur (ULS) from this point forward.
- If not equipped with the Ultra Low Sulfur decal, all specific references to this machine configuration will be referred to as Low Sulfur (LS) from this point forward.



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SECTION CONTENTS

SECTION 1
General Safety Practices

1.1 HAZARD CLASSIFICATION SYSTEM

1.1.1 Safety Alert System and Safety Signal Words

⚠ DANGER

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

⚠ WARNING

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

⚠ CAUTION

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

1.2 GENERAL PRECAUTIONS

This vehicle has been designed and built as a self-propelled vehicle with operator's seat and wheels designed for use on paved or natural ground and driven on uneven ground.

It contains a main support structure suitable to support the extendable boom.

The head of the boom can be fitted with forks or other attachments only if approved by JLG.

When used normally, the machine performs load lifting and positioning by extending/ retracting the lifting/lowering of the boom.

⚠ WARNING

Any other use is considered contrary to the intended use by JLG which, therefore cannot be responsible for damage to objects and the machine itself, or injury to persons that might derive from misuse.

⚠ WARNING

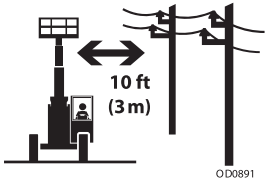
Before operation, read and understand this manual. Failure to comply with the safety precautions listed in this manual could result in machine damage, property damage, personal injury or death.

- Hydraulic cylinders are subject to thermal expansion and contraction. This may result in changes to the boom and/or attachment position while the machine is stationary. Factors affecting thermal movement can include the length of time machine is stationary, hydraulic oil temperature, ambient air temperature and boom and/or attachment position.
- Precautions to avoid all hazards in the work area must be taken by the user before and during operation of the machine.

1.3 OPERATION SAFETY

Note: The manufacturer has no direct control over machine application and operation. Therefore, safety issues listed in this manual are non-exhaustive. The user and operator are responsible for conforming with good safety practices.

1.3.1 Electrical Hazards



- This machine is not insulated and does not provide protection from contact or being near electrical current.
- Always check for power lines before raising the boom.
- Maintain distance from electrical lines, apparatus, or any energized (exposed or insulated) parts according to the Minimum Approach Distance (MAD).

Voltage Range (Phase to Phase)	Minimum Approach Distance (MAD)
0 to 50 KV	10 ft (3 m)
Over 50KV to 200 KV	15 ft (5 m)
Over 200 KV to 350 KV	20 ft (6 m)
Over 350 KV to 500 KV	25 ft (8 m)
Over 500 KV to 750 KV	35 ft (11 m)
Over 750 KV to 1000 KV	45 ft (14 m)

Note: This requirement shall apply except where employer, local or governmental regulations are more stringent.

- Allow for machine movement and electrical line swaying.
- Maintain a clearance of at least 10 ft (3m) between any part of the machine and its occupants, their tools and their equipment from any electrical line or apparatus carrying up to 50,000 volts. One foot additional clearance is required for every additional 30,000 volts or less.
- The minimum approach distance may be reduced if insulating barriers are installed to prevent contact, and the barriers are rated for the voltage of the line being guarded. These barriers shall not be part of (or attached to) the machine. The minimum approach distance shall be reduced to a distance within the designed working dimensions of the insulating barrier. This determination shall be made by a

qualified person in accordance with the employer, local, or governmental requirements for work practices near energized equipment.

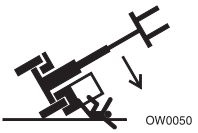
⚠ DANGER

Do not maneuver machine or personnel inside prohibited zone (MAD). Assume all electrical parts and wiring are energized unless known otherwise.

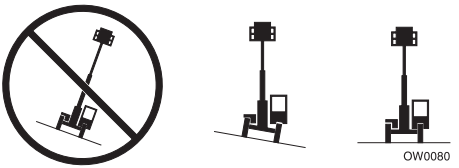
1.3.2 Tip Over Hazard

General

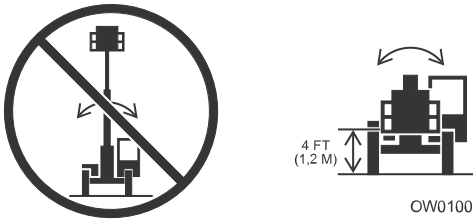
- For additional load requirements, refer to the appropriate capacity chart.



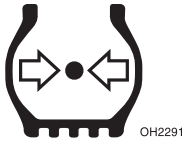
- Never use an attachment without the appropriate original equipment manufacturer (OEM) approved capacity chart installed on the telehandler.
- Understand how to properly use the capacity charts located in cab.
- **DO NOT** exceed rated lift capacity.
- Be sure that the ground conditions are able to support the machine.
- Be aware of wind conditions. Wind may cause load swing and dangerous side loads.
- Keep the machine a minimum of 2 ft (0,6 m) from holes, drop-offs, obstructions, debris, concealed holes and other potential hazards at ground level.



- **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).



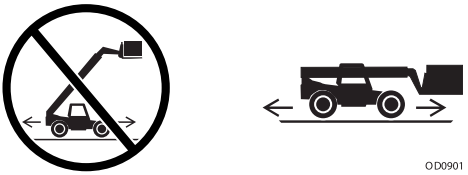
- **MAINTAIN proper tire pressure** at all times. If proper tire pressures are not maintained, this machine could tip over.
- Refer to manufacturer's specifications for proper fill ratio and pressure requirements for tires equipped with ballast.

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

If telehandler starts to tip over:

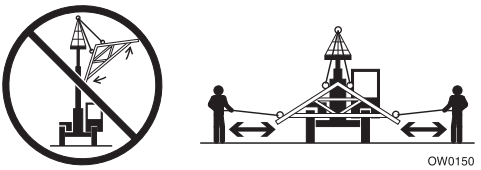
- **DO NOT** JUMP
- BRACE YOURSELF and STAY WITH THE MACHINE
- KEEP YOUR SEAT BELT FASTENED
- HOLD ON FIRMLY
- LEAN AWAY FROM THE POINT OF IMPACT

Non-Suspended Load



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

Suspended Load

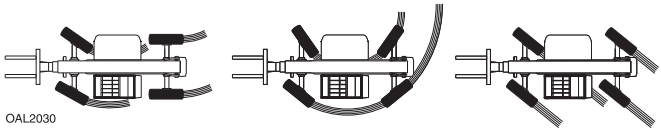


- Tether suspended loads to restrict movement.
- Weight of all rigging (slings, etc.) must be included as part of load.
- **DO NOT** attempt to use telehandler frame-leveling to compensate for load swing.
- Keep heavy part of load closest to attachment.
- Never drag the load; lift vertically.

When driving with a suspended load:

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

1.3.3 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 or foam filled 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, it is recommended to use telehandlers not equipped with solid or foam filled tires.

1.3.4 Load Falling Hazard

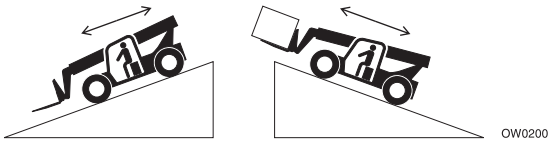
- Never suspend load from forks or other parts of carriage weldment. Use only approved lift points.
- **DO NOT** burn or drill holes in fork(s).
- Forks must be centered under load and spaced apart as far as possible.

1.3.5 Lifting Personnel

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

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

1.3.6 Driving Hazards on Slopes

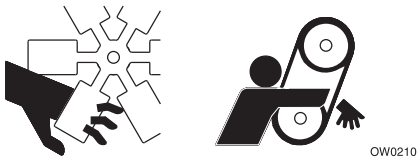


To maintain sufficient traction and braking capabilities, travel on slopes as follows:

- 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, 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.

1.3.7 Pinch Points and Crush Hazards

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



- Stay clear of moving parts while engine is running.

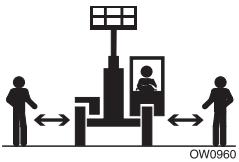
- Keep clear of steering tires and frame or other objects.

- 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.

1.3.8 Fall Hazard

- 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 *Shut-Down Procedure* has been performed.

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

1.3.9 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

- **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

- **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.

1.4 CLEARSKY (IF EQUIPPED)

1.4.1 Federal Communications Commission (FCC) Information for Users

FCC Statement Regarding Interference

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice Regarding Radio Frequency Radiation Exposure

Do not operate your unit when a person is within eight inches (20 centimeters) of the antenna. A person or object within eight inches (20 centimeters) of the antenna could impair call quality and may cause the unit to operate at a higher power level than necessary, as well as expose that person to RF energy in excess of that established by the FCC RF Exposure Guidelines.

Important: The unit must be installed in a manner that provides a minimum separation distance of eight inches (20 centimeters) or more between the antenna and persons and just not be co-located or operate in conjunction with any other antenna or transmitter in order to satisfy FCC RF exposure requirements for mobile transmitting devices.

Important: To comply with the FCC RF exposure limits and to satisfy the categorical exclusion requirements for mobile transmitters, the requirements described in the following section, "Antenna Installation", must be met.

Antenna Installation

A minimum separation distance of eight inches (20 centimeters) must be maintained between the antenna and all persons.

The combined cable loss and antenna gain must not exceed +7.5 dBi (850 band). The combined cable loss and antenna gain must not exceed +2.5 dBi and total system output must not exceed 2.0W EIRP in the PCS (1900) band in order to comply with the EIRP limit of 24.232 (b). OEM installers must be provided with antenna installation instruction and transmitter operating conditions for satisfying RF exposure compliance.

SECTION 2
Pre-Operation and Inspection

2.1 PREPARATION, INSPECTION AND MAINTENANCE

The following table covers the periodic machine inspections and maintenance required. Consult local regulations for further requirements for telehandlers. The frequency of inspections and maintenance must be increased as necessary when the machine is used in a harsh or hostile environment, if the machine is used with increased frequency, or if the machine is used in a severe manner.

Inspection and Maintenance				
Type	**Frequency**	**Primary Responsibility**	**Service Qualification**	**Reference**
Pre-Operation Inspection	Beginning of each work shift or at each change of operator.	User or Operator	User or Operator	Operation & Safety Manual
Pre-Delivery Inspection (see note)	Before each sale, lease or rental delivery.	Owner, Dealer or User	Qualified Mechanic	Service Manual and applicable Inspection form.
Preventative Maintenance	At intervals as specified in the Service Manual and/ or the Maintenance Charts located on the machine.	Owner, Dealer or User	Qualified Mechanic	Service Manual and Maintenance Charts

Note: Inspection forms are available.

2.2 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.

3. **Safety Decals** - Ensure all safety decals are legible and in place. Clean or replace as required. See *Section — Safety Decals* for details.

4. **Operation and Safety Manuals** - Operation & Safety Manual and AEM Safety Manual (ANSI only) located in cab manual holder.

5. **Walk-Around Inspection** - See *Section — Walk-Around Inspection* for details.

6. **Fluid Levels** - Check fluids, including fuel, hydraulic oil, engine oil and coolant. When adding fluids, refer to *Section — Lubrication and Maintenance* and *Section — 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 telehandler. If provided, reference 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 warmup and operational check (see *Section — Warm-Up And Operational Checks*) of all systems in an area free of overhead and ground level obstructions. See *Section — Controls and Indicators* for more specific operating instructions.

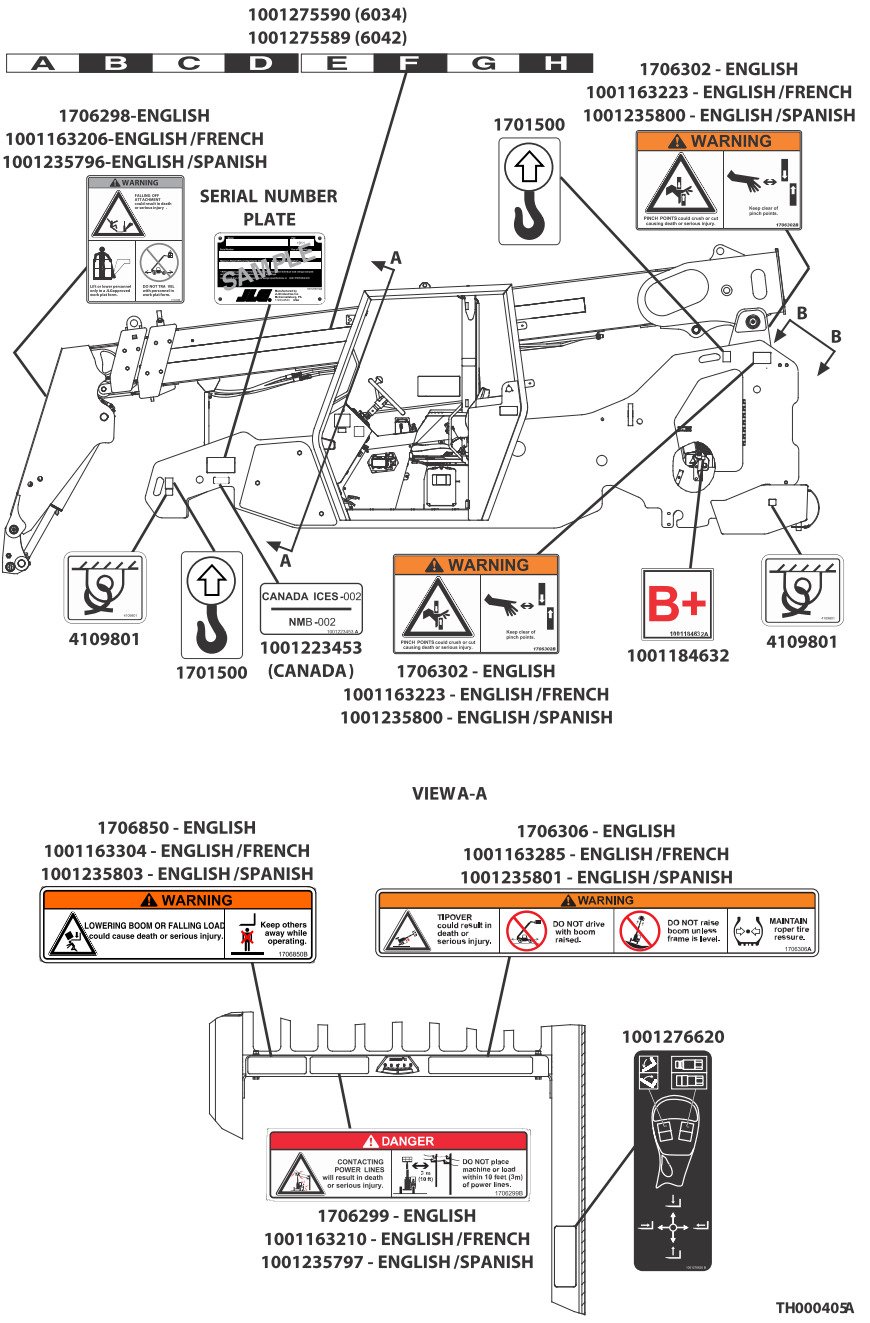
⚠ WARNING

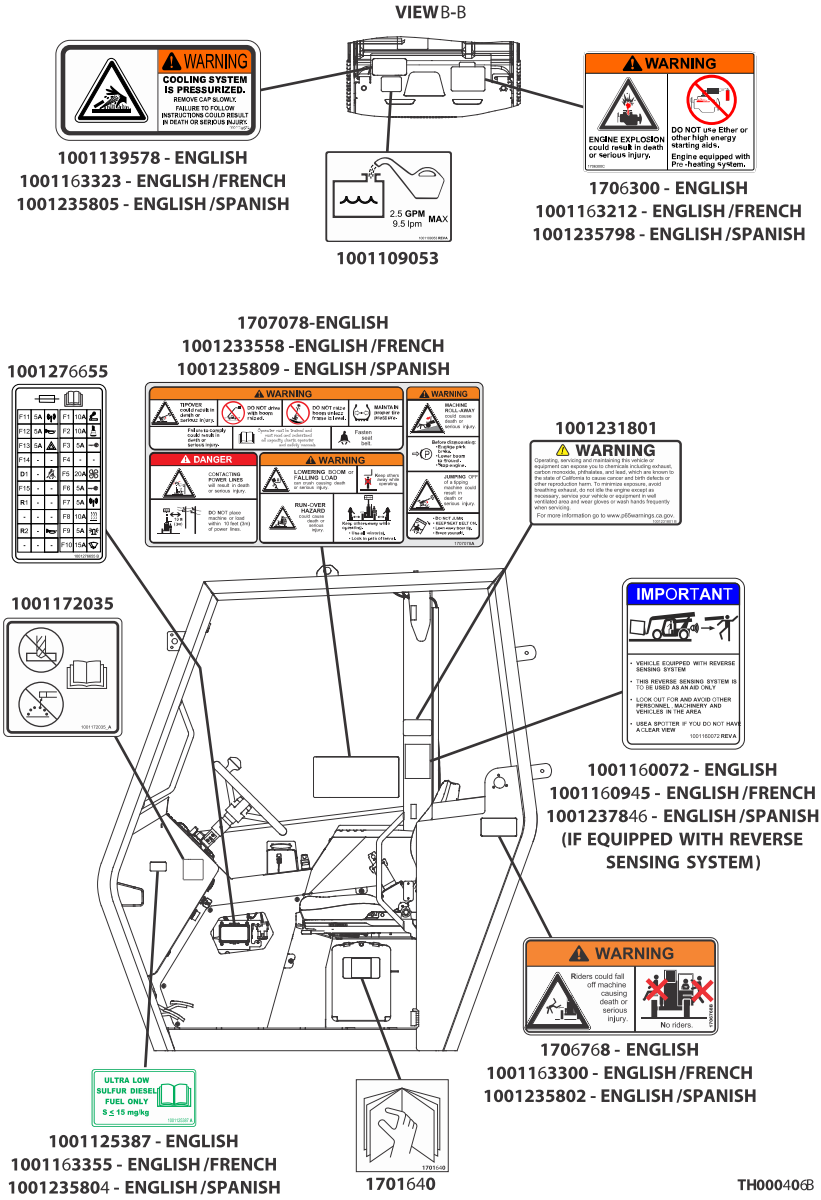
If telehandler does not operate properly, immediately bring machine to a stop, lower boom and attachment to ground and stop the engine. Determine cause and correct before continued use.

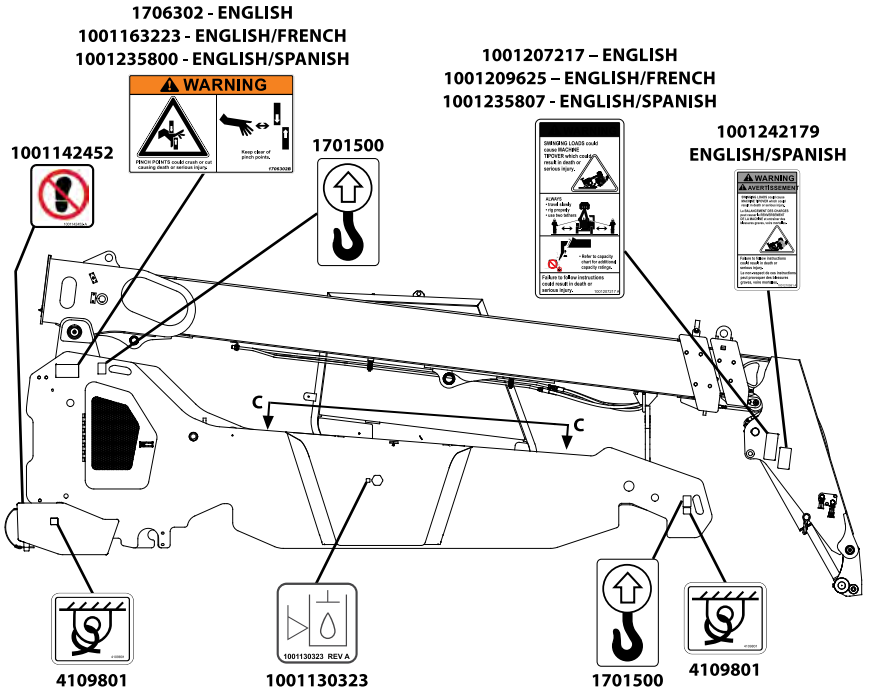
2.3 SAFETY DECALS

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

2.3.1 ANSI (If equipped)




VIEW B-B
WARNING
COOLING SYSTEM IS PRESSURIZED.
REMOVE CAP SLOWLY.
FAILURE TO FOLLOW INSTRUCTIONS COULD RESULT IN DEATH OR SERIOUS INJURY.
1001139578 - ENGLISH
1001163323 - ENGLISH/FRENCH
1001235805 - ENGLISH/SPANISH
2.5 GPM 9.5 lpm MAX
1001109053
WARNING
ENGINE EXPLOSION could result in death or serious injury.
DO NOT use Ether or other high energy starting aids.
Engine equipped with Pre-heating system.
1706300 - ENGLISH
1001163212 - ENGLISH/FRENCH
1001235798 - ENGLISH/SPANISH
1001276655
1707078-ENGLISH
1001233558 -ENGLISH/FRENCH
1001235809 - ENGLISH/SPANISH
WARNING
DANGER
1001231801
WARNING
1001172035
IMPORTANT
VEHICLE EQUIPPED WITH REVERSE SENSING SYSTEM
THIS REVERSE SENSING SYSTEM IS TO BE USED AS AN AID ONLY
LOOK OUT FOR AND AVOID OTHER PERSONNEL, MACHINERY AND VEHICLES IN THE AREA
USE A SPOTTER IF YOU DO NOT HAVE A CLEAR VIEW
1001160072 REVA
1001160072 - ENGLISH
1001160945 - ENGLISH/FRENCH
1001237846 - ENGLISH/SPANISH
(IF EQUIPPED WITH REVERSE SENSING SYSTEM)
WARNING
Riders could fall off machine causing death or serious injury.
No riders.
1706768 - ENGLISH
1001163300 - ENGLISH/FRENCH
1001235802 - ENGLISH/SPANISH
ULTRA LOW SULFUR DIESEL FUEL ONLY
S ≤ 15 mg/kg
1001125387 - ENGLISH
1001163355 - ENGLISH/FRENCH
1001235804 - ENGLISH/SPANISH
1701640
1701640
TH000406B



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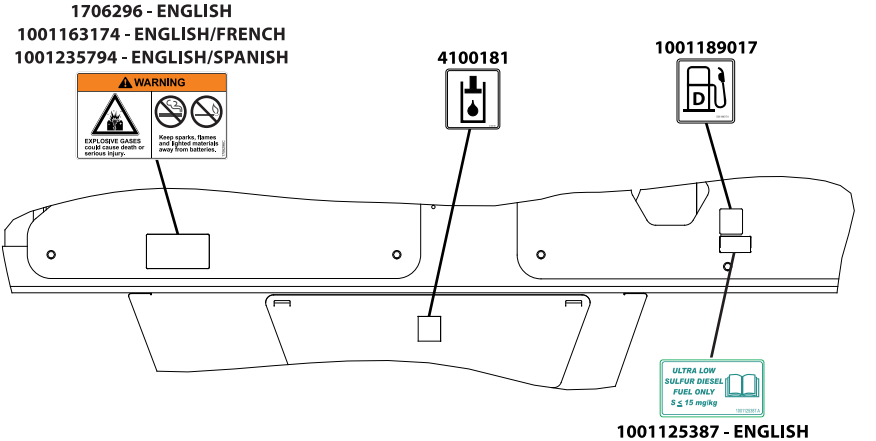
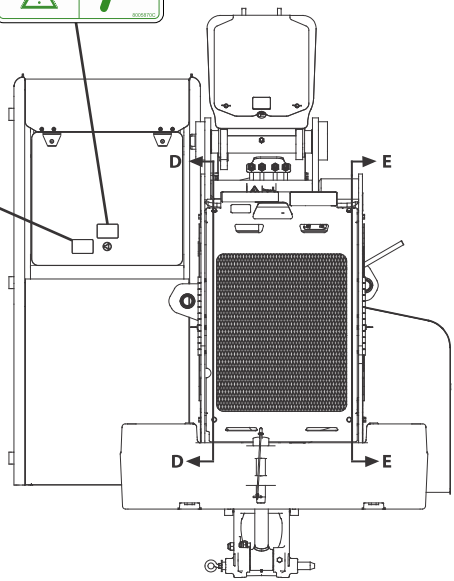


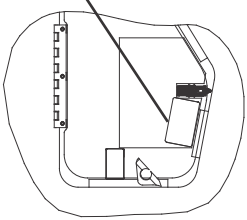
TH000407A

8005870
(INSIDE ENCLOSED CAB)

1001212049 - ENGLISH
1001204709 - ENGLISH/FRENCH
1001237845 - ENGLISH/SPANISH
(IF EQUIPPED WITH
SECONDARY EXIT)

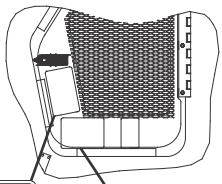


1706301 - ENGLISH
1001163222 - ENGLISH/FRENCH
1001235799 - ENGLISH/SPANISH



VIEW D-D

VIEW E-E



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1001235799 - ENGLISH/SPANISH

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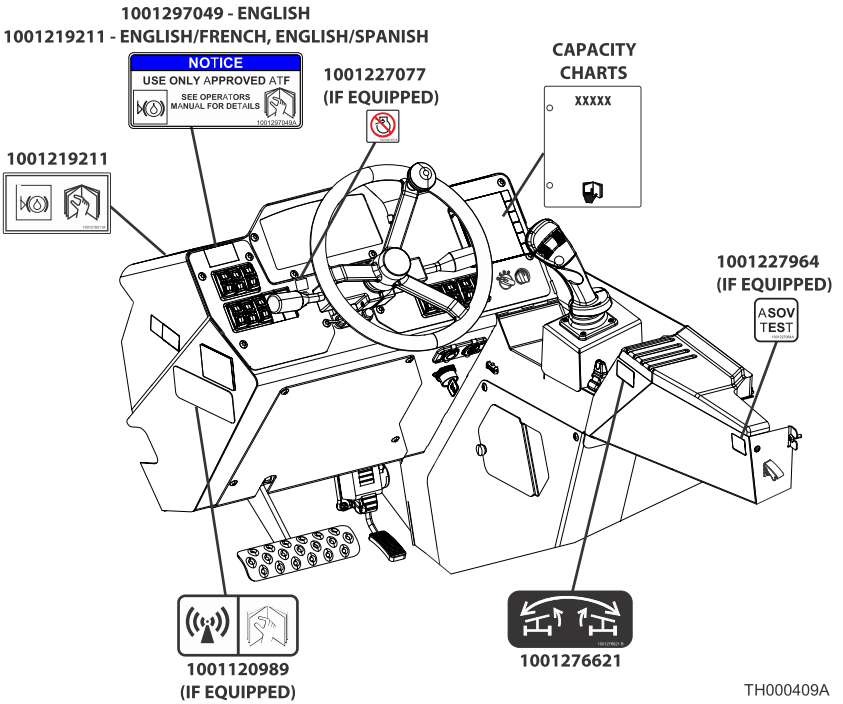
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1001219211 - ENGLISH/FRENCH, ENGLISH/SPANISH
NOTICE
USE ONLY APPROVED ATF
SEE OPERATORS MANUAL FOR DETAILS
1001227077
(IF EQUIPPED)
CAPACITY CHARTS
XXXXX
1001219211
1001227964
(IF EQUIPPED)
ASOV TEST
1001120989
(IF EQUIPPED)
1001276621
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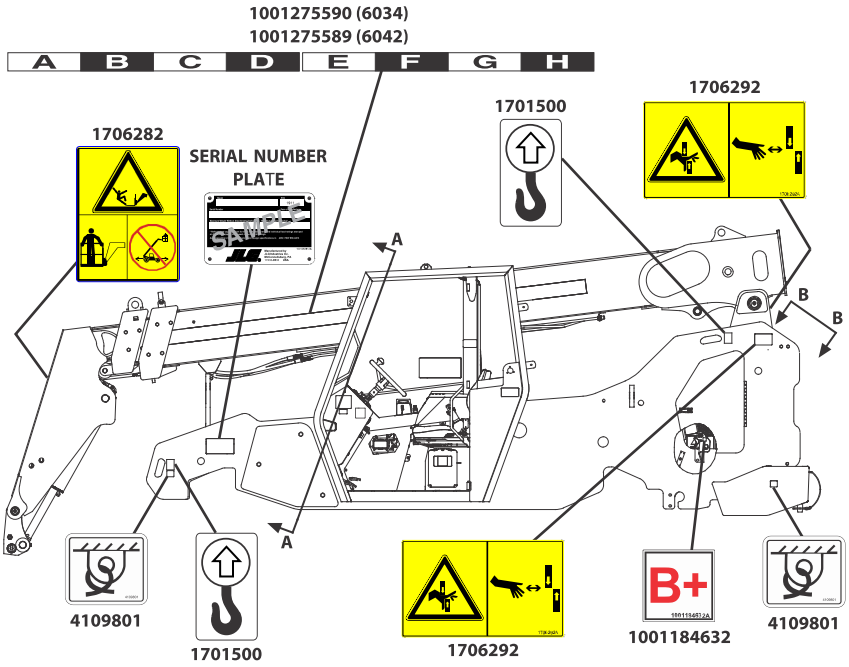
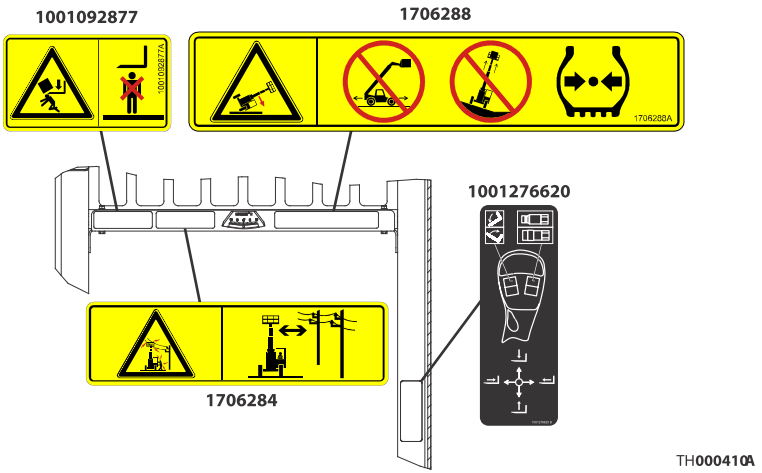
2.3.2 ISO (If equipped)



VIEW A-A



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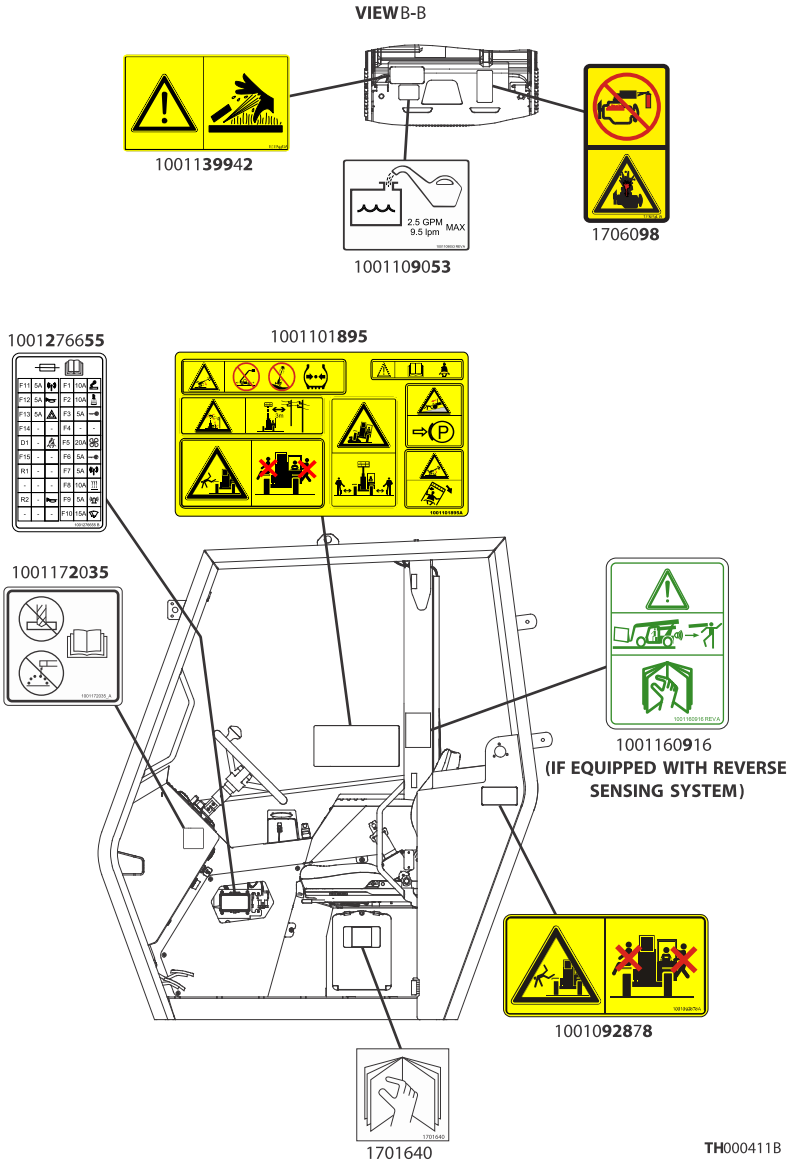
VIEW B-B
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2.5 GPM
9.5 lpm
MAX
10011**09053**
1706**098**
10012**766**55
10011**018**95
10011**720**35
10011**609**16
(IF EQUIPPED WITH REVERSE SENSING SYSTEM)
10010**928**78
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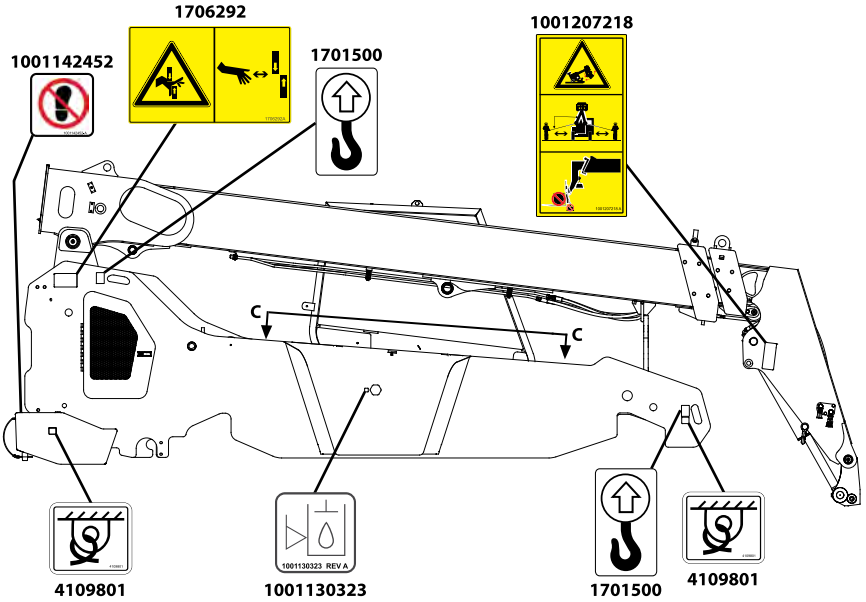
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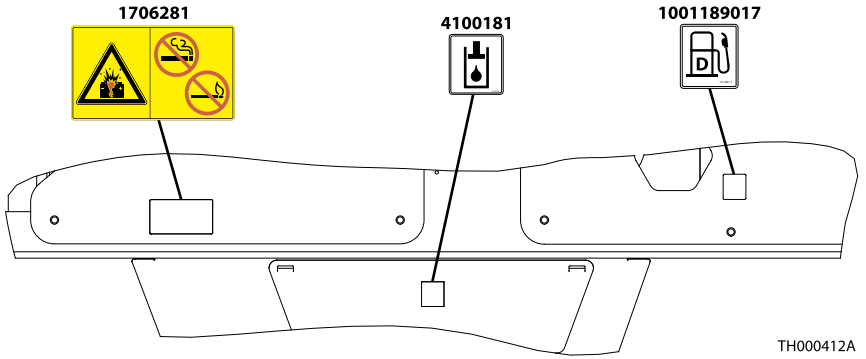
1701500
1001207218
C
C
4109801
1001130323
1001130323 REV A
1701500
4109801

VIEW C-C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D
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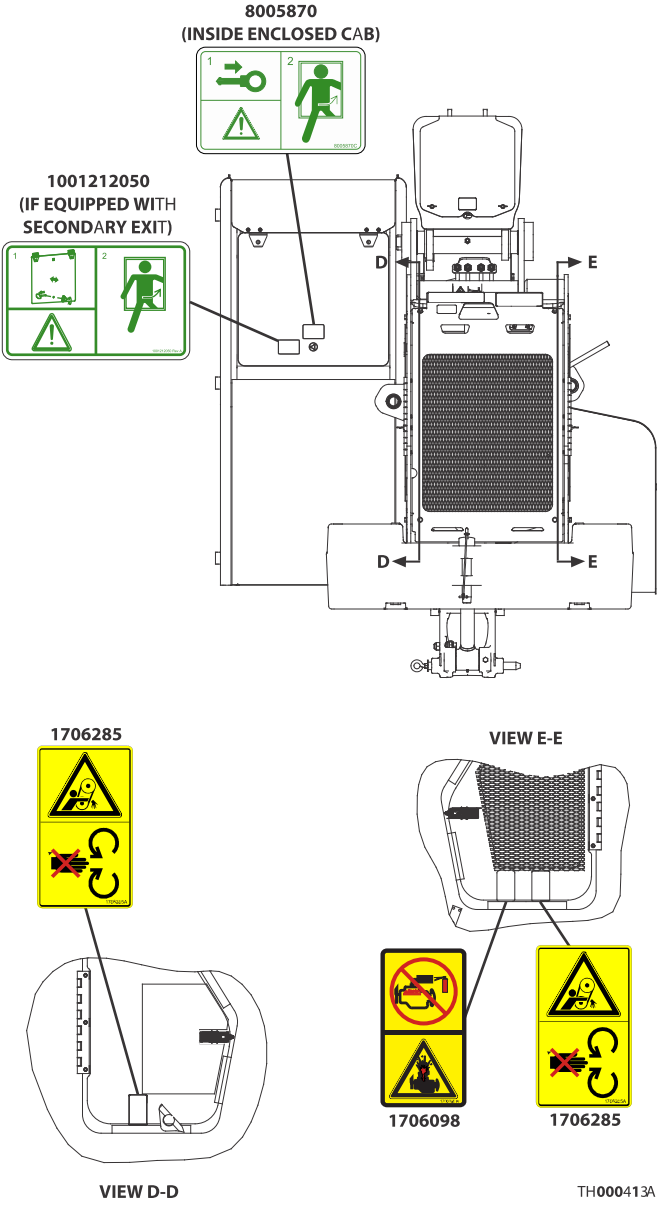
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(INSIDE ENCLOSED CAB)
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(IF EQUIPPED WITH
SECONDARY EXIT)
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E
D
E
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VIEW E-E
1706098
1706285
VIEW D-D
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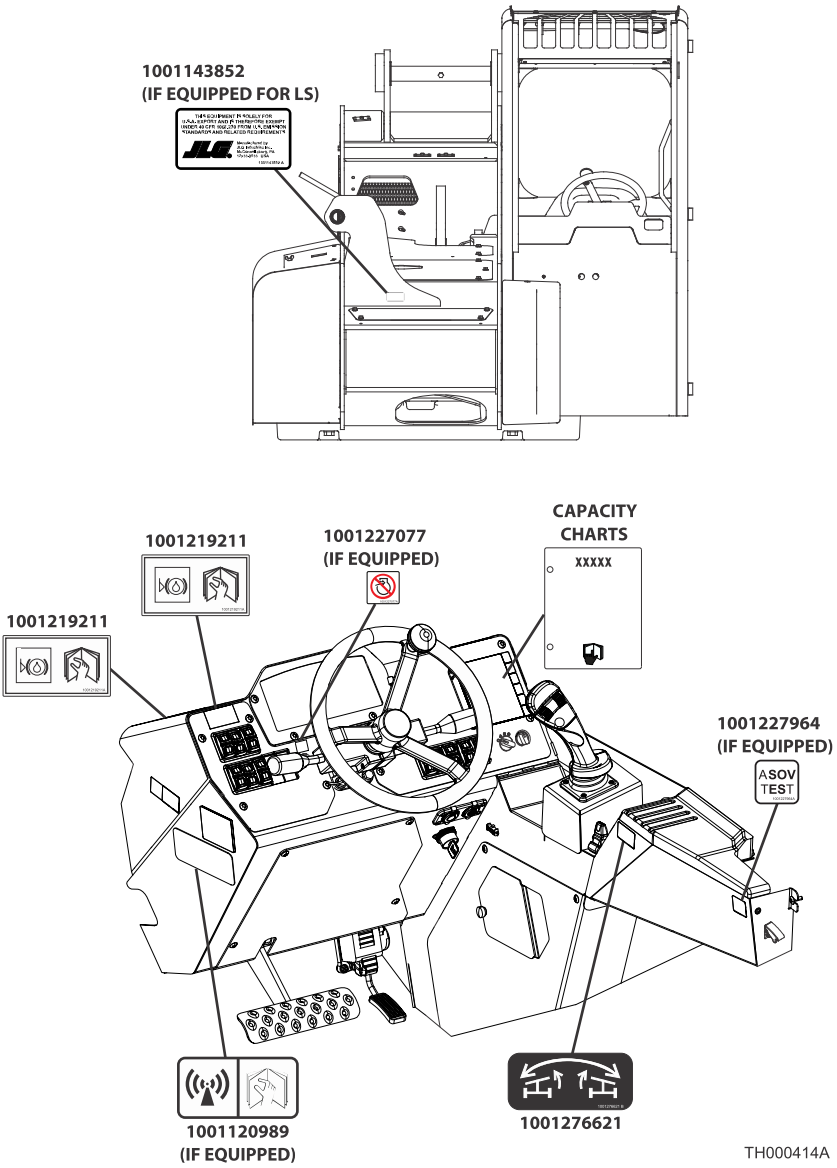
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CHARTS
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ASOV
TEST
1001120989
(IF EQUIPPED)
1001276621
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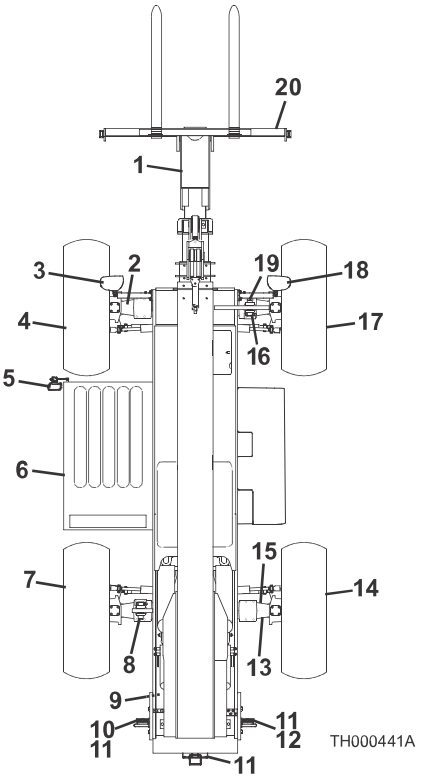
2.4 WALK-AROUND INSPECTION



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**
   a. Check front, top, side and rear wear pads for presence of grease.
   b. Pivot pins secure; hydraulic hoses undamaged, not leaking.
2. **Front Axle** — Steer cylinders undamaged, not leaking; pivot pins secure; hydraulic hoses undamaged, not leaking.
3. **Front Lights (if equipped)** — Clean and undamaged.
4. **Wheel/Tire Assembly** — Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.

5. **Mirrors** — Clean and undamaged.
6. **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.
   - Emergency escape hammer in place (fixed window only).
   - Check seat belt for damage, replace belt if frayed or cut webbing, damaged buckles or loose mounting hardware.
7. **Wheel/Tire Assembly** — Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.
8. **Stabil-Trak Cylinder** — Pins secure; hydraulic hoses undamaged, not leaking.
9. **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 closed and properly secured.
   - Air Shutoff Valve (ASOV) (if equipped)—See inspection note.
10. **Rear Lights (if equipped)** — Clean and undamaged.
11. **Reversing Cameras (if equipped)** — See inspection note.
12. **Rear Lights (if equipped)** — Clean and undamaged.
13. **Rear Axle** — Steer cylinders undamaged, not leaking; pivot pins secure; hydraulic hoses undamaged, not leaking.
14. **Wheel/Tire Assembly** — Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.
15. **LSI Sensor (if equipped)** — See inspection note.
16. **Mirrors** — Clean and undamaged.
17. **Wheel/Tire Assembly** — Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.
18. **Front Lights (if equipped)** — Clean and undamaged.
19. **Frame Level Cylinder** — Pins secure; hydraulic hoses undamaged, not leaking.
20. **Attachment** — Properly installed, see “Attachment Installation” on page 86.

2.5 WARM-UP AND OPERATIONAL CHECKS

2.5.1 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.

Note: **CUT/CRUSH/BURN HAZARD.** Keep engine cover closed while engine is running.

2.5.2 Operational Check

When engine warms, perform an operational check:

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

2.6 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**.

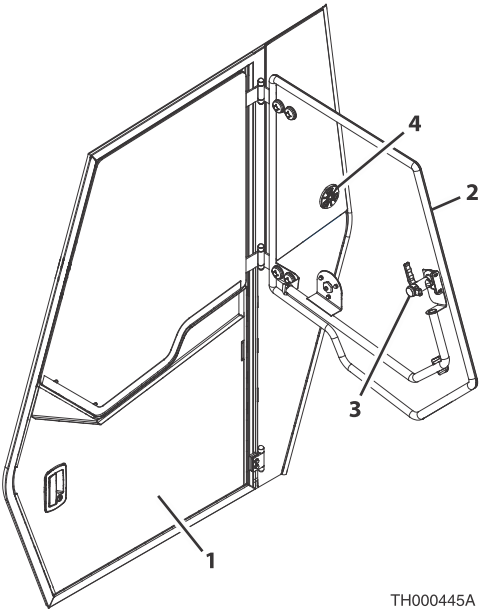
⚠ WARNING

Never drill, cut, and/or weld to cab. Any modification to this machine must be approved by JLG to assure compliance with machine configuration. If unauthorized drilling, cutting and/or welding is present, the cab must be **REPLACED**.

2.7 WINDOWS

Keep all windows and mirrors clean and unobstructed.

2.7.1 Cab Door Window (if equipped)



- Cab door window (**2**) must either be latched open or closed during operation.
- Open cab door window using lever (**3**) and secure it in latch (**4**).
- Press release (**4**) to unlatch window.

NOTICE

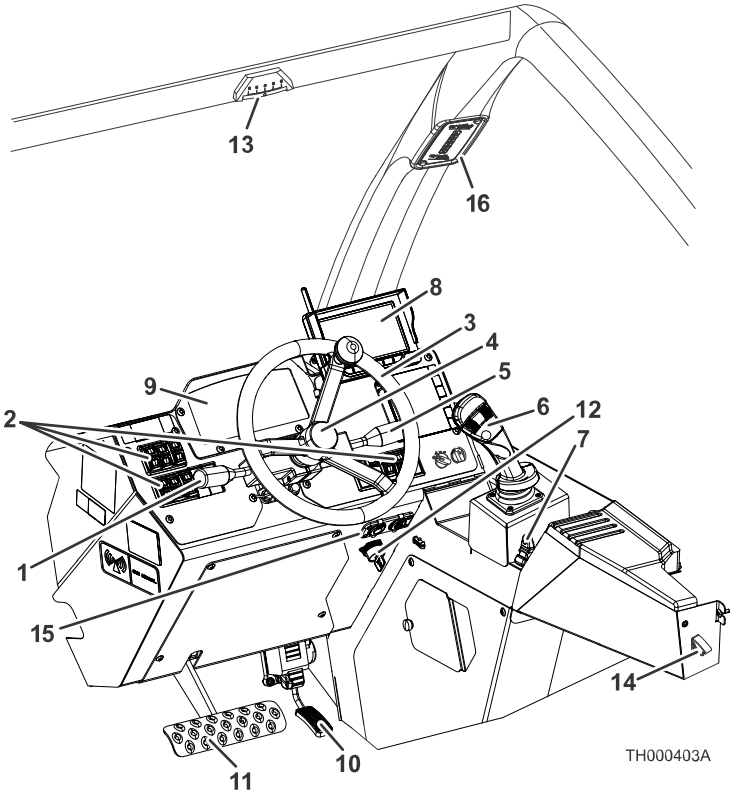
EQUIPMENT DAMAGE. Cab door (**1**) must be closed during operation. Failure to do so may result in machine damage.

SECTION 3
Controls and Indicators

3.1 GENERAL

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

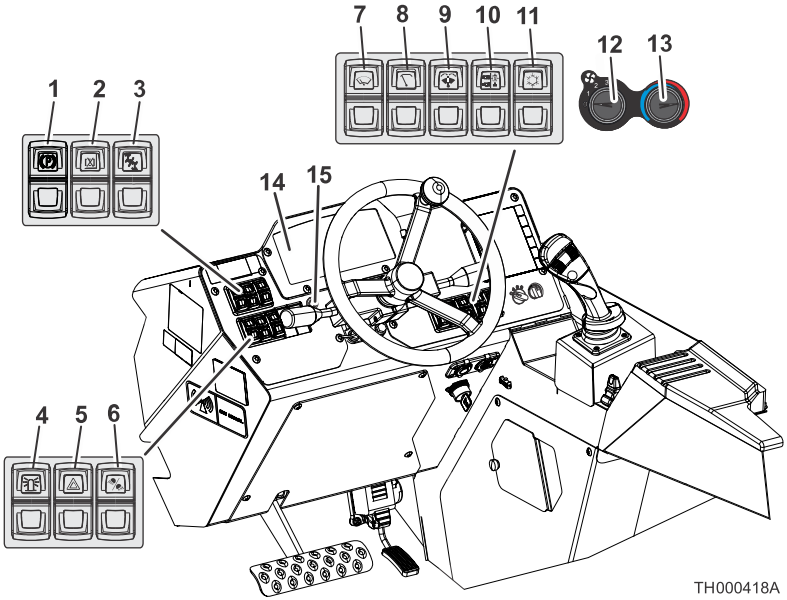
3.2 CONTROLS



1. **Transmission Control Lever:** See page 51.
2. **Dash Controls and Indicators:** See page 45.
3. **Steering Wheel:** Turning the steering wheel to the left or right steers the machine in the corresponding direction. Three steering modes are available. See Section — Steer Modes.
4. **Horn:** Press to sound horn.

5. **Accessory Control Lever (if equipped):** See page 57.
6. **Joystick:** See page 54.
7. **Frame Level Joystick:** See page 56.
8. **Reversing Camera Monitor (if equipped):** See page 63.
9. **Instrument Panel:** See page 47.
10. **Accelerator Pedal:** Pressing down the pedal increases engine and hydraulic speed.
11. **Service Brake / Inching Travel Pedal:** Pedal operates the service brakes on the front axle. It also permits slow travel speed while engine speed is kept high for other machine functions. The further the pedal is depressed, the slower the travel speed. Full depression of pedal causes full service brake application. With service brake pedal depressed and boom angles above 40°, the locked mode of the Stabil-Trak system is activated. See Section — Stabil-Trak System.
12. **Ignition Switch:** Key activated. See page 49.
13. **Frame Level Indicator:** Enables operator to determine the left to right level condition of the telehandler.
14. **Air Shutoff Valve (ASOV) Test Switch (if equipped):** See page 132.
15. **Auxiliary Power Socket and USB Ports:** Auxiliary power socket and USB charger ports under protective tabs.
16. **LSI Indicator (if equipped):** See page 52.

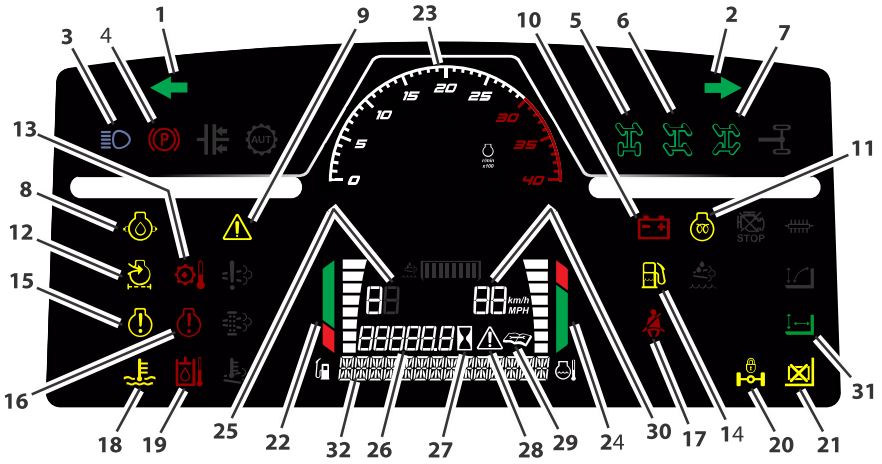
3.2.1 Dash Controls and Indicators



1. **Park Brake Switch:** On/Off switch. See Park Brake, page 50 for details.
2. **LSI Override Switch (if equipped):** Momentarily disables the automatic function cut-out. Depress and hold up to 30 seconds while operating joystick to momentarily disable the automatic function cut-out.
3. **Steer Select Switch:** Three positions: 4-wheel circle steer, 4-wheel crab steer and 2-wheel front steer. See Section — Steer Modes.
4. **Beacon Light Switch (if equipped):** On/Off switch.
5. **Hazard Light Switch (if equipped):** On/Off switch.
6. **Work Light Switch (if equipped):** Three position switch. Push top of switch to turn all work lights on. Move switch to middle position to turn on front and boom work lights. Push bottom of switch to turn off all work lights.
7. **Windshield Wiper Switch (if equipped):** Three position switch. Push top of switch to operate wiper at high speed. Move switch to middle position to operate wiper at low speed. Push bottom of switch to turn off wiper.
8. **Skylight Wiper Switch (if equipped):**On/Off switch.
9. **Windshield and Skylight Washer Switch (if equipped):** Push and hold top of switch to activate washer.
10. **Auxiliary Decompression Switch:** Press to relieve pressure in auxiliary hydraulic circuit. See Section — Auxiliary Hydraulic Decompression.
11. **Air Conditioning (AC) Switch (if equipped):** On/Off switch.

12. **HVAC Fan Speed (if equipped):** Adjustable rotary switch.
13. **HVAC Temperature Control Switch (if equipped):** Continuously variable rotary switch. Adjust to coldest position to shut heater flow to cab.
14. **Instrument Panel:** See Instrument Panel, page 47.
15. **Air Shutoff Valve (ASOV) Indicator Lamp (if equipped):** Indicates when the ASOV valve has been actuated.

3.2.2 Instrument Panel



1. **Left Turn (if equipped):** Illuminates and flashes when left turn signal or hazard lights are active.
2. **Right Turn (if equipped):** Illuminates and flashes when right turn signal or hazard lights are active.
3. **High Beam (if equipped):** Illuminates when high beam lights are active.
4. **Park Brake:** Illuminates when park brake is applied. See Park Brake.
5. **2-Wheel Front Steer:** Illuminates when two wheel steer is active. See Section — Steer Modes.
6. **4-Wheel Crab Steer:** Illuminates when crab steer is active. See Section — Steer Modes.
7. **4-Wheel Circle Steer:** Illuminates when all wheel steer is active. See Section — Steer Modes.
8. **Low Engine Oil Pressure:** Illuminates when oil pressure is low.
9. **System Distress:** Illuminates when critical machine and engine faults exist.
10. **Low Battery Indicator:** Illuminates when battery is at low charge or charging system is not functioning properly. Also illuminates when engine is stopped.
11. **Engine Preheat:** Illuminates with ignition key in position 1. Indicator goes out when start temperature is reached.
12. **Air Cleaner Restriction Indicator:** Illuminates when air cleaner requires maintenance.
13. **Transmission Oil Temperature Indicator:** Illuminates when transmission temperature is high.
14. **Low Fuel Level:** Illuminates when fuel level is low.

15. **Engine Fault Warning:** Illuminates when engine is operating outside normal range.

16. **Engine Fault Critical:** Illuminates when critical engine fault exists.

17. **Seat Belt Indicator (if equipped):** Illuminates and sounds an alarm when the operator is seated but the seat belt is not fastened.

18. **High Engine Coolant Temperature:** Illuminates when engine coolant temperature is high.

19. **High Hydraulic Oil Temperature:** Illuminates when hydraulic oil temperature is high.

20. **Stabil-Trak Indicator:** Illuminates Stabil-Trak system has been activated.

21. **LSI Passive Mode (if equipped):** Illuminates when LSI passive mode is active. See Passive Mode.

22. **Fuel Level Gauge:** Indicates fuel level.

23. **Engine Speed:** Indicates engine speed in revolutions per minute (rpm).

24. **Engine Coolant Temperature Gauge:** Indicates engine coolant temperature.

25. **Driving Direction:** Displays current driving direction – Forward (F), Neutral (N) or Reverse (R).

Note: Driving direction will flash if the operator has selected a direction but the vehicle cannot shift into the desired direction.

26. **Numeric Display:** Displays either operating hours or fault codes. See Operating Hours Indicator (**27**), Diagnostic Icon (**28**) and Maintenance Indicator (**29**).

27. **Operating Hours Indicator:** When illuminated, the Numeric Display (**26**) shows total hours of telehandler operation.

28. **Diagnostic Icon:** When illuminated, the Numeric Display (**26**) shows active fault codes. See Service Manual for details.

29. **Maintenance Indicator:** When illuminated, the Numeric Display (**26**) shows active fault codes when regular maintenance interval is reached.

Note: Automatic Maintenance Intervals can be configured using the analyzer hand-held diagnostic tool: Operator Tools menu, “Enable Maint Interval” and “Set Maint Interval”.

30. **Speed:** Displays machine speed mph (km/h). When maximum vehicle or engine speed is exceeded, speed will flash. Slow down immediately or risk damaging drivetrain.

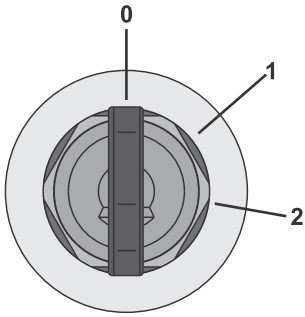
Note: Speed will display ‘99’ if a speed sensor fault is active. See Service Manual for details.

Note: Speedometer units can be changed using the analyzer hand-held diagnostic tool: Operator Tools menu, “Speed Units” set to mph or km/h.

31. **Lift Mode:** Illuminates when lift joystick pattern is active.

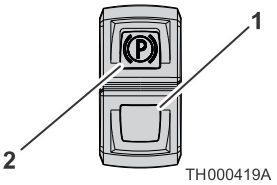
32. **Fault Text Display:** When a vehicle or engine fault code is active, scrolls a short description of the fault code. If multiple codes are active, shows a description for each code shown in the Numeric Display (**26**).

3.2.3 Ignition



- Position **0**: Engine off, no voltage available.
- Position **1**: Voltage available for all electrical functions. Wait to start engine until engine pre-heat indicator goes out.
- Position **1**: Engine run.
- Position **2**: Engine start. In event engine does not start, rotate key to position 0 then back to position 2 to re-engage starter.

3.2.4 Park Brake



Park brake switch controls application and release of park brake.

- With engine running and the park brake switch in "OFF" position (**1**), park brakes are disengaged.
- With switch in "ON" position (**2**), park brake is engaged and transmission will not engage forward or reverse.
- With switch in “ON” position and boom angles greater than 40°, locked mode of Stabil-Trak system is activated.

⚠ WARNING

MACHINE ROLL-AWAY HAZARD. In the event of engine failure, apply constant pressure to service brake pedal while activating the park brake to the ON position.

⚠ WARNING

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

⚠ WARNING

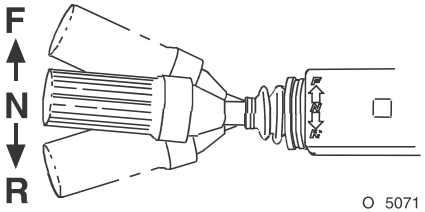
CRUSH HAZARD. Turning engine off applies the park brake. Applying park brake or turning engine off while traveling will cause unit to stop abruptly and could cause load loss. Either may be used in an emergency situation.

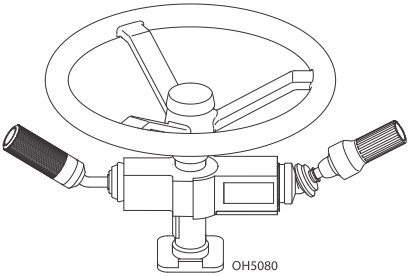
3.2.5 Parking Procedure

1. Using service brake, stop telehandler in an appropriate parking area.
2. Follow “Shut-Down Procedure”, page 67.

3.2.6 Transmission Control Lever

Direction of Travel Selection





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

- Lift and push lever forward for forward travel; lift and pull lever rearward for reverse travel. Move lever to centered position for neutral.
- When traveling in reverse, back-up alarm will automatically sound.
- Drive in reverse and turn only at slow rates of speed.
- With lever in neutral and boom angles greater than 40°, locked mode of Stabil-Trak system is activated.

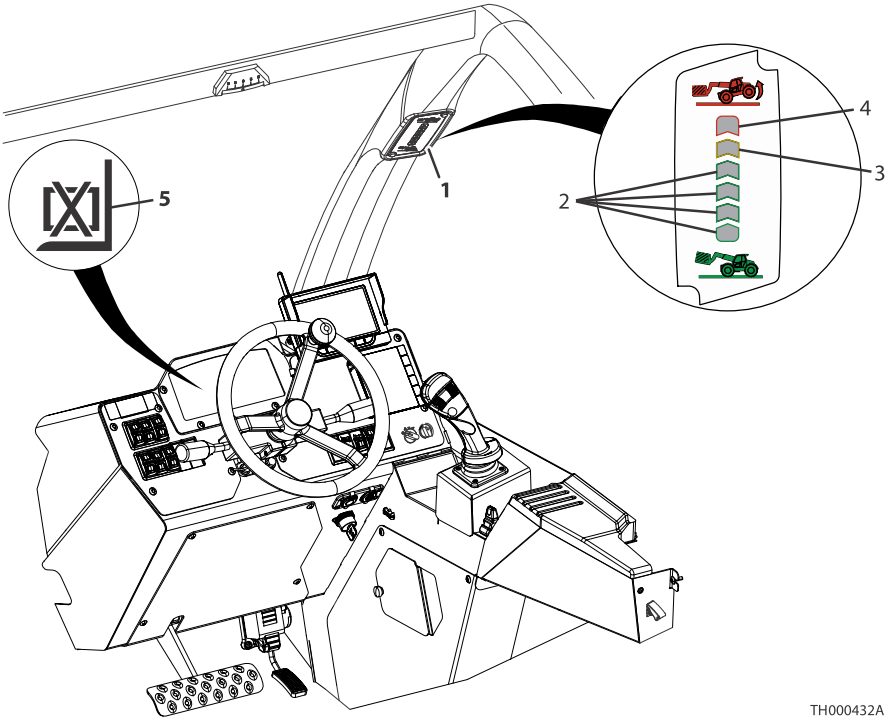
⚠ WARNING

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.

3.2.7 Load Stability Indicator - LSI (if equipped)

⚠ WARNING

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



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

- When approaching forward stability limitations LEDs progressively illuminate, green **(2)**, then orange **(3)** and finally red **(4)**.
- If the red LED illuminates the warning buzzer also sounds.

The LSI has two modes:

Active Mode

- As the telehandler reaches forward stability limitations and the red LED **(4)** illuminates, the automatic function cut-out is activated. All boom functions are disabled except for boom retract and boom lift. Retract boom and return joystick to neutral to resume operation.

Note: When functions are cut-out, the LSI Override Switch can be used to temporarily re-enable them. See *Dash Controls and Indicators*, page 45.

- In some instances the LSI system may slow down or stop boom functions if operated close to forward stability limitations.

Passive Mode

- The yellow LED **(5)** on the instrument panel illuminates when the boom is fully retracted.

- When approaching forward stability limitations, visual and audible indication is provided and the automatic function cut-out and/or slow down feature is disabled.

Travel in accordance with the requirements set forth in *Section — General Safety Practices*, page 11.

When placing a load, ensure axles are not fully steered in either direction.

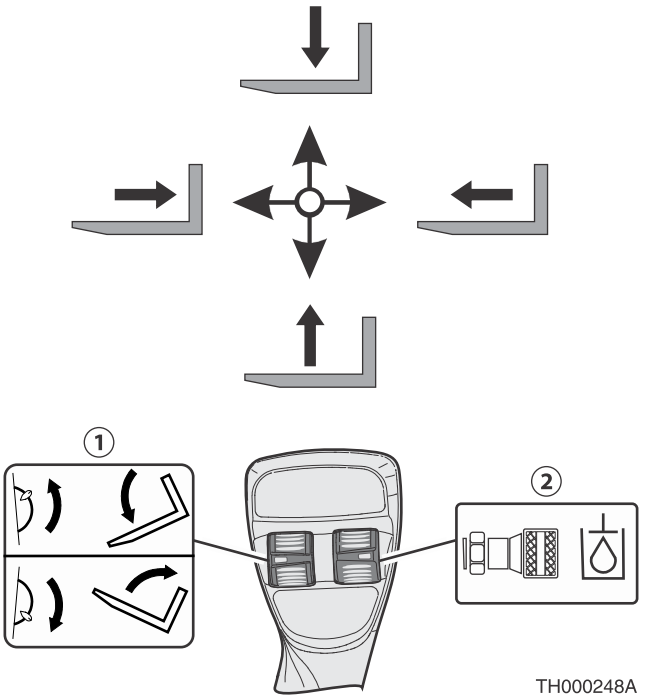
⚠ WARNING

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

3.2.8 Joystick

⚠ 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.



The joystick controls the boom, attachment tilt and auxiliary hydraulic functions.

Boom Functions

- Move joystick back to lift boom; move joystick forward to lower boom; move joystick right to extend boom; move joystick left to retract boom.
- Speed of boom functions depends upon amount of joystick travel in corresponding direction. Increasing engine speed will also increase function speed.

- For two simultaneous boom functions, move joystick between quadrants. Example: moving joystick forward and to left will lower and retract boom simultaneously.

Attachment Tilt Functions

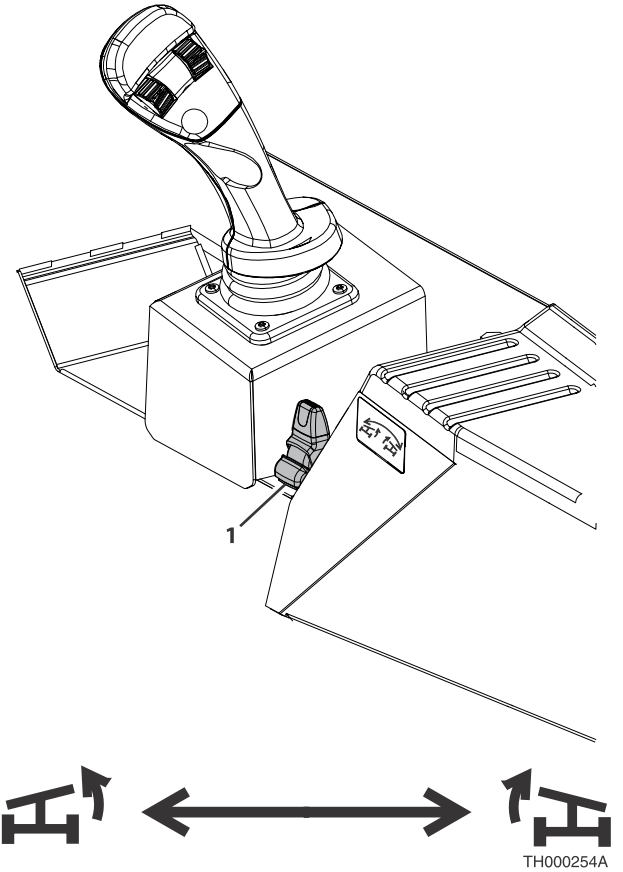
Attachment tilt is controlled by roller switch (**1**).

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

Auxiliary Hydraulic Functions

The Auxiliary Hydraulics roller switch (**2**) controls the function of attachments that require the hydraulic supply for operation. See Section — Attachments for approved attachments and control instructions.

3.2.9 Frame Level Joystick



Frame level joystick (**1**) controls left to right frame level.

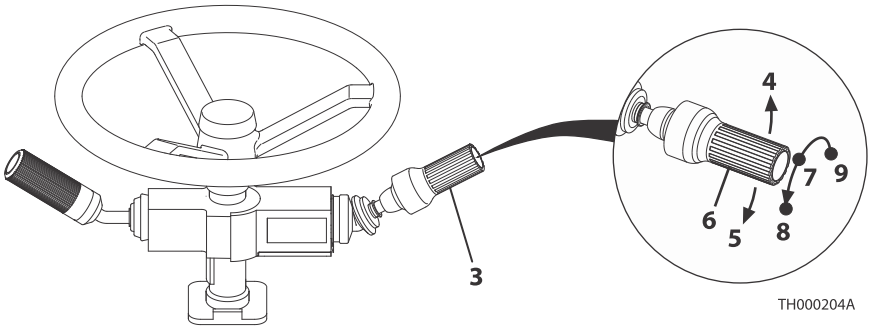
- Move joystick left to rotate frame left, move joystick right to rotate frame right.
- A level indicator is located above front cab window to permit operator to determine whether telehandler frame is level.

⚠ 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.

3.2.10 Accessory Control Lever (if equipped)

Accessory control lever (**3**) operates turn signals, parking lights and headlights.



Turn Signal

- Raise lever (**4**) to activate left turn signal.
- Lower lever (**5**) to activate right turn signal.
- Lever must be manually returned to center position to deactivate either turn signal. Lever will not cancel automatically after a turn.

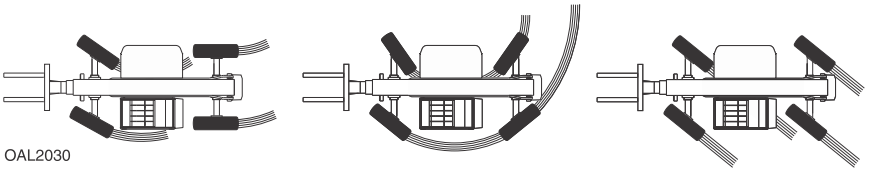
Parking Lights and Headlights

- Turn twist grip (**6**) of lever counterclockwise to first position (**7**) to turn on parking lights.
- Turn twist grip to second position (**8**) to turn on headlights.
- Pull lever to switch between low and high beam.
- Turn twist grip clockwise to OFF position (**9**) to turn all lights off.

3.3 STEER MODES

Three steer modes are available for operator use.

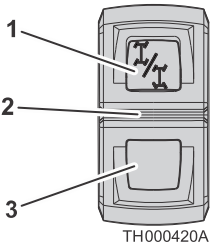
2-Wheel Front Steer | 4-Wheel Circle Steer | 4-Wheel Crab Steer



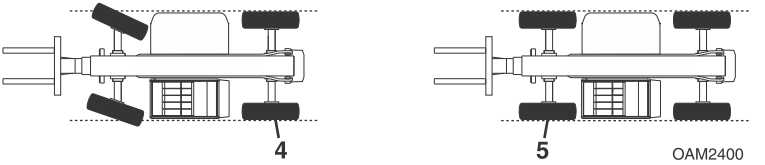
Note: 2-Wheel Front Steer mode is required for high speed travel.

3.3.1 Steer Mode Change

Note: Steer mode will change immediately after selection.

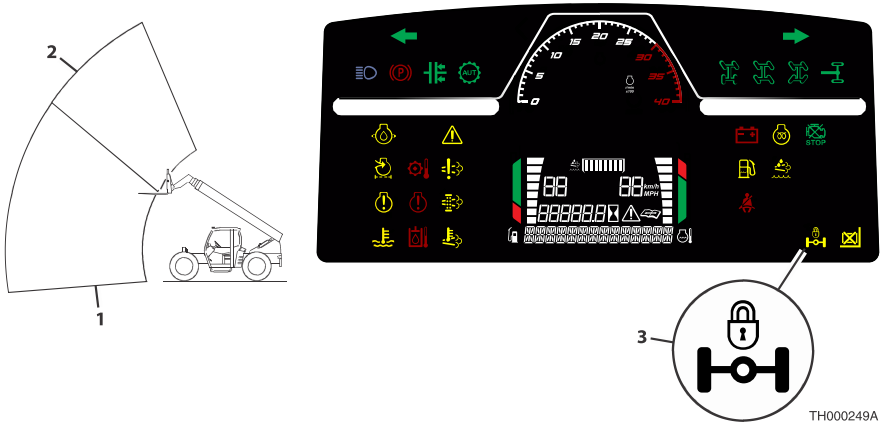


1. Bring machine to a stop using service brake while either circle steer mode (**1**) or crab steer mode (**3**) is selected.



2. Turn steering wheel until left rear wheel (**4**) is aligned with side of machine.
3. Select front steer mode (**2**).
4. Turn steering wheel until left front wheel (**5**) is aligned with side of machine.
5. Wheels are now aligned. Select desired steer mode.

3.4 STABIL-TRAK™ SYSTEM



3.4.1 Free Pivot Mode

With boom below 40° (**1**), Stabil-Trak system is in Free Pivot Mode. Rear axle pivots freely and frame level functions normally. Stabil-Trak indicator (**3**) will be off.

3.4.2 Slow Pivot Mode

With boom above 40° (**2**), the Stabil-Trak system is in Slow Pivot Mode when park brake is not applied, service brake is not applied and transmission is in gear. Rear axle will respond slowly to changes in terrain and frame level functions slower than normal. Stabil-Trak indicator (**3**) will be off.

3.4.3 Locked Mode

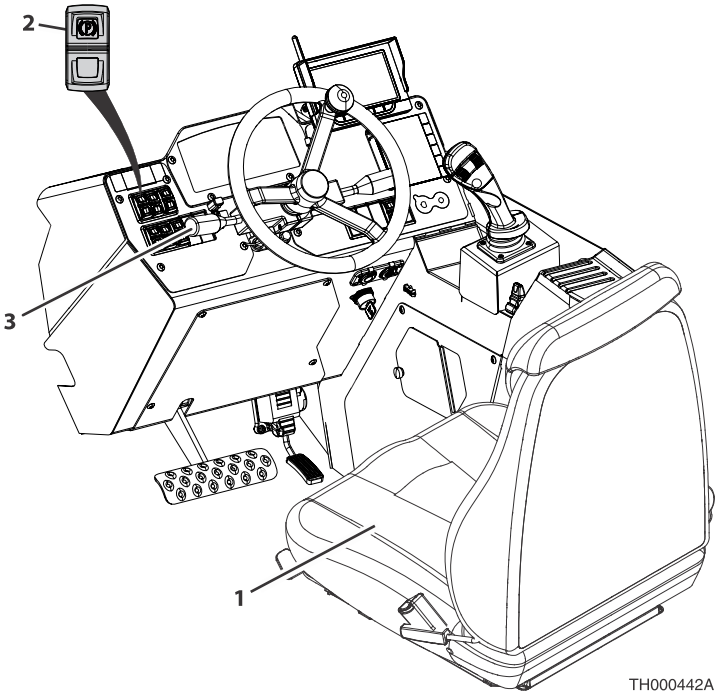
With boom above 40° (**2**), and activating one or more of following functions, Stabil-Trak system is in Locked Mode.

- Park brake switch engaged.
- Transmission control lever in Neutral.
- Service brake pedal depressed.

Rear axle is locked and frame level functions slower than normal. Stabil-Trak indicator (**3**) will illuminate.

3.5 OPERATOR SEAT

3.5.1 Operator Presence (if equipped)



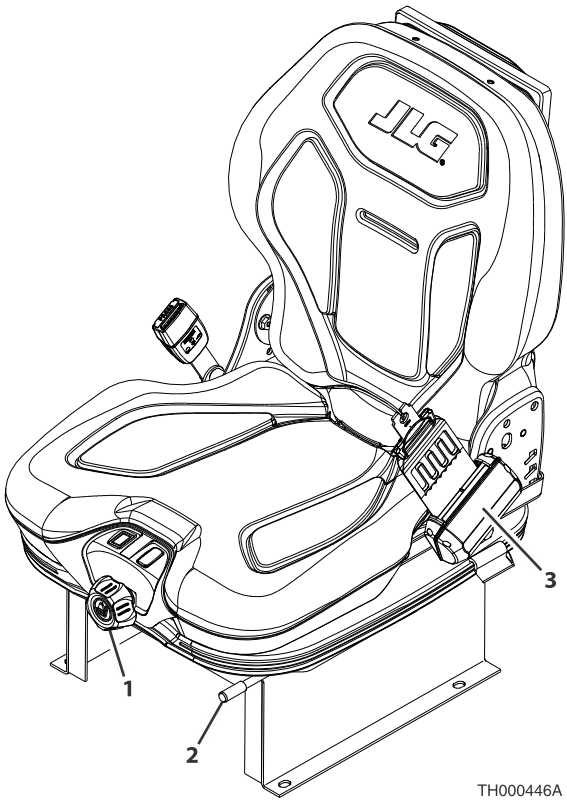
The operator seat (**1**) is equipped with an operator presence system. Engine start and hydraulic functions are prohibited if operator is not present. If the system detects a loss of pressure during operation, after a two second delay one of the following will occur:

1. With the park brake (**2**) engaged and transmission in neutral (**3**):
   - Hydraulic controls are disabled. (Continuous Auxiliary function permitted)
   - Upon returning to seated position, hydraulic controls are enabled.
2. With the park brake (**2**) disengaged and transmission in neutral (**3**):
   - Hydraulic controls are disabled and cabin alarm sounds continuously. (Continuous Auxiliary function permitted)
   - Upon returning to seated position, hydraulic controls are enabled and cabin alarm will cease.

3. With the park brake (**2**) disengaged and transmission in forward or reverse (**3**):
   - Hydraulic controls are disabled, cabin alarm sounds continuously and transmission shifts to neutral.
   - Upon returning to seated position, hydraulic controls are enabled and cabin alarm will cease. Return transmission to neutral to allow system to reset prior to reengaging forward or reverse travel.

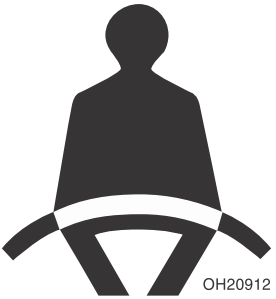
3.5.2 Adjustments

Prior to starting engine adjust seat for position and comfort.



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

3.5.3 Seat Belt

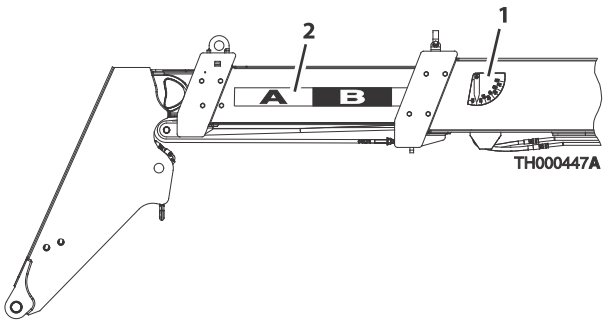


Fasten seat belt as follows:

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

Note: If equipped with operator presence, unfastening the seat belt while seated will illuminate the seat belt indicator lamp and sound an alarm.

3.6 BOOM ANGLE AND EXTENSION INDICATORS



- Boom angle indicator (**1**) is located on left side of boom. Use this indicator to determine boom angle when using capacity chart.
- Boom extension indicators (**2**) are located on left side of boom. Use these indicators to determine boom extension when using capacity chart.

3.7 REVERSE SYSTEMS (IF EQUIPPED)

⚠ WARNING

CRUSH HAZARD. Running into persons or objects can cause death, serious injury, or damage to property and equipment. Always check mirrors and area behind machine before and when backing up. Reverse systems are for supplementary use only.

3.7.1 Reverse Sensing System

The reverse sensing system provides audible indication of objects to rear of machine while in reverse gear.

- Alarm sounds when transmission is shifted into reverse.

Note: Reverse Sensing System detects objects larger than 64 square inches (413 square centimeters) area and is functional when machine is moving in reverse direction.

- No alarm when detection zone is clear of objects.
- Pulsing alarm sounds when an object is in range of Reverse Sensing System. Alarm increases in frequency as object becomes closer.
- If alarm sounds at a frequency of eight pulses per second (8 Hz) an object is detected within 5 feet (1.5 m). Stop reverse direction of machine by applying service brake. Perform "Shut-Down Procedure" on page 67. Check and clear area behind machine of objects before proceeding in a reverse direction.

3.7.2 Multi View Camera

The multi view camera provides additional views of the area directly behind, to the left, and to the right of the telehandler. The view displays on the multi view camera monitor when the key is switched on and transmission is in reverse.

The screen provides a graphic overlay indicating approximate distances of objects around the rear of the telehandler.

NOTICE

EQUIPMENT MALFUNCTION. Always keep camera lens clean. Camera may not operate normally at extremely high or low temperatures.

SECTION 4
Operation

4.1 ENGINE

4.1.1 Starting the Engine

This machine can be operated under normal conditions in temperatures of 0°F to 115°F (-18° C to 46° C). Consult JLG for operation outside this range or under abnormal conditions.

If equipped for extreme cold weather, -20° F to 0° F (-29° C to -18° C), see page 62 for starting procedure.

1. Make sure all controls are in "Neutral" and all electrical components (lights, heater, defroster, etc.) are turned off. Apply park brake.
2. Turn the ignition switch to position 1 and wait until engine pre-heat indicator goes out.
3. Turn ignition switch to position 2 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 two minutes before trying again.
4. After engine starts, observe indicators. If indicators remain on for more than five seconds, stop engine and determine cause before restarting engine.
5. Warm up engine at approximately 1/2 throttle. Do not run engine up to high idle and/or full load immediately after starting.

Note: Engine will not start unless transmission is in neutral and park brake is applied.

⚠ WARNING

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

⚠ WARNING

UNEXPECTED MOVEMENT HAZARD. Always ensure that transmission 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.

4.1.2 Extreme Cold Weather Starting (if equipped)

If equipped with extreme cold weather components, machine can be operated in temperatures of -40°F to 0°F (-40° C to -18° C).

1. Machine must be equipped with heating components and extreme cold weather fluids. See Section 9- Specifications for fluid details.
2. Locate the two yellow extension cords stored behind seat in cab.
3. Locate the hydraulic tank heater and battery blanket heater under the top cover of the hydraulic tank.
4. Locate the block heater and oil pan heater on the hydraulic tank side of the engine compartment.
5. Connect the hydraulic tank heater and battery blanket heater to one extension cord and the block heater and oil pan heater to the other extension cord. Connect each extension cord to separate A/C power supplies with a minimum rating of 15 Amps each.
6. Allow the heating components to operate a minimum of 12 hours prior to machine operation.
7. Follow start-up procedure on page 65 and allow engine to idle 20 minutes.
8. Operate all boom functions continuously for five minutes to circulate the warm hydraulic fluid.
9. Perform “Shut-Down Procedure” on page 67.
10. Disconnect A/C power supplies and place back in storage locations.
11. Machine is ready for operation.

4.1.3 Battery Boosted Starting

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

- Never allow vehicles to touch.
- Ensure boosting vehicle engine is running.
- Remote battery post is located on cab side of engine compartment near the starter for jump-starting.
- Connect positive (+) jumper cable to remote battery post.
- Connect 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 engine ground cable located below the starter.
- 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.

4.1.4 Normal Engine Operation

- Observe gauges and indicators frequently to be sure all systems are functioning properly.
- **Be alert for unusual noises or vibration.** When an unusual condition is noticed, park machine in safe position and perform shut-down procedure. Report condition to your supervisor or maintenance personnel.
- **Avoid prolonged idling.** If engine is not being used, turn it off.
- If prolonged idling is required (park brake applied), engine idle may increase in cold ambient temperatures.
- When operating a machine at high altitudes, a decrease in machine performance may occur due to a decrease in air density. When operating a machine at high temperatures, a decrease in machine performance and an increase in engine coolant temperature may occur. Contact JLG for operation under abnormal conditions.

4.1.5 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

4.2.1 Lift Load Safely

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

⚠ WARNING

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

- Know rated load capacities (refer to *Section — Attachments*, page 75) of telehandler to determine operating range in which you can safely lift, transport and place a load.

4.2.2 Picking Up a Load

- Note 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 *Section — Adjusting/Moving Forks*, page 88.
- 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 operator cab for telehandler/attachment combination you are using.

4.2.3 Transporting a Load

- After engaging the load and resting it against the backrest, tilt the load back to position it for travel. Travel in accordance with the requirements set forth in *Section — General Safety Practices*, page 11 and *Section — Attachments*, page 75.

4.2.4 Leveling Procedure

1. Position machine in best location to lift or place load.
2. Apply parking brake and shift transmission to NEUTRAL.
3. Observe level indicator to determine whether machine must be leveled prior to lifting load. Level machine with frame level switch (see page 56).

4. Move boom/attachment to 4 ft (1,2 m) off ground.

Important things to remember:

- Never raise boom/attachment more than 4 ft (1,2 m) above ground unless telehandler is level.
- Combination of frame leveling and load could cause telehandler to tip over.

4.2.5 Placing a Load

Before placing any load be sure that:

- Landing point can safely support weight of the load.
- Landing point is level; front to back and side to side.
- Use capacity chart to determine safe boom extension range. See *Section — Use of the Capacity Chart*.
- Align forks at level the 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.

4.2.6 Disengaging a Load

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

1. With forks free from weight of load, boom can be retracted.
2. Lower carriage.
3. Telehandler can now be driven from landing location to continue work.

4.3 OPERATING WITH A SUSPENDED LOAD

4.3.1 Lift Load Safely

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

⚠ WARNING

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

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

4.3.2 Picking Up a Suspended Load

- Note conditions of 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 operator cab for telehandler/attachment combination you are using.
- Only use approved lifting devices rated for lifting of load.
- Identify proper lifting points of load, taking into consideration center of gravity and load stability.
- Ensure to always properly tether loads to restrict movement.
- Refer to *Section — Use of the Capacity Chart* for proper lifting guidelines in addition to appropriate capacity chart in operator cab.

4.3.3 Transporting a Suspended Load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- Travel in accordance with the requirements set forth in *Section — General Safety Practices* and *Section — Attachments*.
- For additional requirements, refer to appropriate capacity chart in operator cab.

Important things to remember:

- Ensure boom is fully retracted.
- Never raise load more than 11.8 in (300 mm) above ground surface or boom more than 45°.
- Combination of frame leveling and load could cause telehandler to tip over.
- Guide persons and operator must remain in constant communication (verbal or hand) and be in visual contact with operator at all times.
- Never place guide persons between suspended load and telehandler.
- Only transport load at walking speed, 0.9 mph (0.4 m/s), or less.

4.3.4 Leveling Procedure

1. Position machine in best location to lift or place load.
2. Apply parking brake and shift transmission to NEUTRAL.
3. Observe level indicator to determine whether machine must be leveled prior to lifting load. Level machine with frame level switch (see page 56).
4. 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°.

4.3.5 Placing a Suspended Load

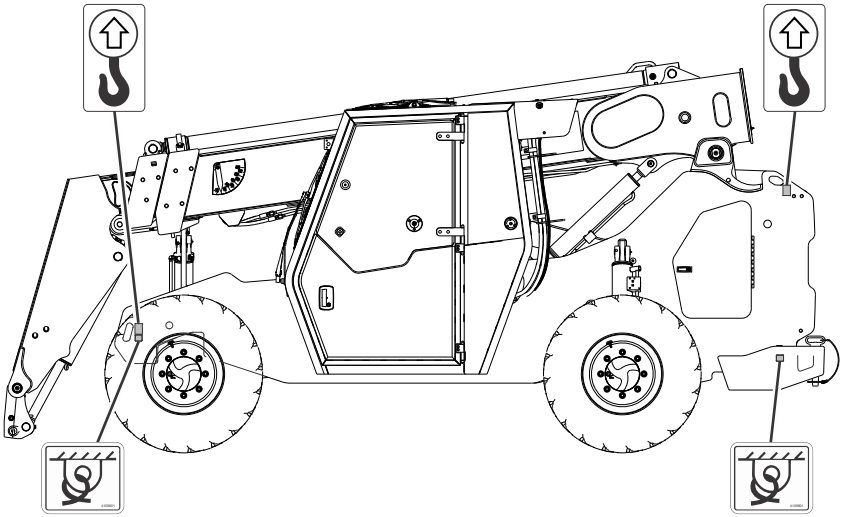
Before placing any load be sure that:

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

4.3.6 Disengaging a Suspended Load

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

4.4 LOADING AND SECURING FOR TRANSPORT



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4.4.1 Tie Down

1. Level telehandler prior to loading.
2. Using a spotter, load 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 designated tie down points as shown in figure.
5. Do not tiedown front of boom.

Note: User assumes all responsibility for choosing proper method of transportation and tiedown devices, making sure equipment used is capable of supporting weight of vehicle being transported and that all manufacturer's instructions and warnings, regulations and safety rules of their employer, 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.

4.4.2 Lifting

The weight of the machine is listed on the serial number plate located at the front of the frame. Actual machine weight and center of gravity will vary depending on attachment, fluid levels and machine options. Actual weight and center of gravity should be verified prior to lifting.

The following precautions must be taken when lifting the machine with a mobile crane:

- When lifting machine, it is very important that the lifting device and equipment is attached only to designated lifting points.
- The appropriate lifting locations are on the sides of the frame for the front and the rear of the machine.
- Make adjustments to the lifting device and equipment to ensure that the machine will be level when elevated. The machine must remain level at all times while being lifted.
- Machine must never be lifted by any point on the boom.
- Take care not to let cables, chains, slings, etc. contact any part of the vehicle during lift.
- Ensure that the boom is retracted and lowered.
- Ensure that the lifting device and equipment is adequately rated and suitable for the intended purpose.
- Remove all loose items from machine prior to lifting of the machine.
- Lift at a slow, even pace.
- Obtain any additional training regarding the proper lifting procedures that may be required. Please consult the local, state, and employer regulations.

SECTION 5
Attachments

5.1 APPROVED ATTACHMENTS

5.1.1 Coupler Mounted Attachments

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

- The attachment type, weight and dimensions 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.
- The attachment is clearly labeled in accordance with ANSI/ITSDF B56.6

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

5.1.2 JLG Supplied Fork Mounted Attachments

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

- The machine is authorized for use with JLG supplied fork mounted attachments.
- 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 attachment. Telehandler may not be equipped with proper capacity chart or attachment may not be approved for the model telehandler being used. Contact JLG or a local distributor for further information.

For requirements regarding fork mounted attachments, see *Section - Fork Mounted Attachments*.

5.1.3 Non-OEM Fork Mounted Attachments

JLG authorizes the use of non-OEM fork mounted attachments provided the criteria and instructions are followed. See *Section - Fork Mounted Attachments*.

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 FORK MOUNTED ATTACHMENTS

5.3.1 General Requirements

- Certain fork mounted attachments have a dedicated capacity chart. The attachment type, weight and dimensions must be equal to or less than the data shown on a capacity chart located in the operator cab. If it does not have a dedicated capacity chart, utilize the applicable carriage capacity chart on which the fork mounted attachment is attached.
- Fork mounted attachments are to be used on telehandlers with a standard carriage or side tilt carriage with pallet or lumber forks only.
- All fork mounted attachments must ensure secure connection with pins behind the heel of the forks. Do not secure using chains, straps or clamps directly to the forks, fork carriage, load bar and/or the boom.
- The forks of the carriage must support 2/3 of the load length for any load applied.
- The weight of the fork mounted attachment, rigging and the associated load is to be included in the total load being lifted. Refer to the capacity chart for the carriage in use.
- The capacity chart for the applicable carriage is established with a 24-inch load center, and the load center of the attachment and load must equal 24 inches to utilize the existing load chart capacities.
- When the load center of a combined attachment and/or load exceeds 24 inches, the equivalent load must be calculated to use with the carriage capacity chart. See *Fork Mounted Attachments Equivalent Load*.

Note: When lifting loads, ensure that the center of gravity (CG) of the load being lifted is centered (right to left) between the forks.

5.3.2 Non-OEM Attachments

User of non-OEM attachments is responsible for:

- Design
- Fabrication
- Workmanship
- Structural Integrity
- Maximum Capacity
- Fit and Function
- Overall Quality
- Any operation and safety instructions specific to the attachment
- The attachment is clearly labeled in accordance with ANSI/ITSDF B56.6
- Ensure that the attachment and use of the attachment complies with this and all other applicable standards

5.4 EQUIVALENT LOAD

5.4.1 Load Centers Beyond 24 Inches

Carriage and fork capacity charts provided by JLG are validated based on load centers of 24 inches. When the load center for the application being performed exceeds 24 inches, the Equivalent Load must be calculated to use with the carriage capacity chart.

Utilizing Equivalent Load Calculation is applicable for all carriage and fork arrangements. The forks of the JLG carriage must support 2/3 of the load length for any load applied.

Equivalent Load Calculation

The Equivalent Load is determined with the calculation below. The Equivalent Load is the value applied to the respective carriage capacity chart to determine the appropriate use zone(s).

$$\frac{\text{Weight of Attachment Load (lb)} \times \text{CG Distance of Load (in)}\ ^{1}}{\text{24 in}} = \text{Equivalent Load}$$

[1] Center of Gravity (CG) Distance is measured horizontally from the front surface of the fork.

Example

- Weight of load = 5,000 pounds
- Center of gravity of load = 36 inches

The Equivalent Load for this example is:

$$\frac{\text{5,000 X 36}}{\text{24}} = \text{7,500 pounds}$$

This value is cross-checked to the capacity of the forks to ensure the forks are rated to equally share this load. The user then utilizes the carriage capacity chart to determine where 7,500 lb can be safely moved and placed within the machine operating limits.

5.4.2 Fork Mounted Attachments Equivalent Load

Equivalent Load Calculation

The Equivalent Load is determined with the calculation below. The Equivalent Load is the value applied to the respective carriage capacity chart to determine the appropriate use zone(s).

Weight of Attachment (lb) x CG Distance of Attachment (in)[1]) + (Weight of Attachment Load (lb) x CG Distance of Load (in)[1]) ÷ 24 in = Equivalent Load

[1] Center of Gravity (CG) Distance is measured horizontally from the front surface of the fork.

Example

- Weight of attachment = 500 pounds
- Center of gravity of attachment = 36 inches
- Weight of load = 1,000 pounds
- Center of gravity of load = 45 inches

The Equivalent Load for this example is:

$$500 \times 36 = 18000$$

$$1000 \times 45 = 45000$$

$$\frac{18{,}000 + 45{,}000}{24} = 2{,}625 \text{ pounds}$$

This value is cross-checked to the capacity of the forks to ensure the forks are rated to equally share this load. The user then utilizes the carriage capacity chart to determine where 2,625 lb can be safely moved and placed within the machine operating limits.

⚠ WARNING

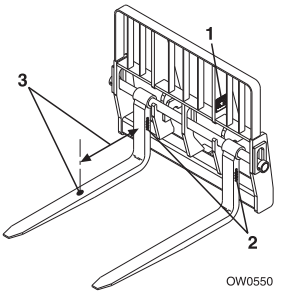
This calculation does not apply to Personnel Work Platforms. Refer to Telehandler Personnel Work Platform Operation & Safety Manual for additional information.

5.5 JLG SUPPLIED ATTACHMENTS

Attachment	Part Number	Applicable Model	
		6034	6042
Carriage, 50 in (1270 mm)	1170021	X	X
Carriage, 60 in (1524 mm)	1170024	X	X
Carriage, 72 in (1829 mm)	1001211516	X	X
Side Shift Carriage, 50 in (1270 mm)	1001242644	X	X
Side Tilt Carriage, 50 in (1270 mm)	1001233383	X	X
Side Tilt Carriage, 60 in (1524 mm)	1001233384	X	X
Side Tilt Carriage, 72 in (1829 mm)	1001233385	X	X
90° Swing Carriage, 72 in (1829 mm)	1001095418	X	X
Dual Fork Positioning Carriage, 50 in (1270 mm)	7301295	X	X
Fork, Pallet 2.36x4x48 in (60x100x1220 mm)	1001272761	X	X
Fork, Pallet 2.36x5x48 in (60x127x1220 mm)	1001272760	X	X
Fork, Pallet 2.36x4x48 in (60x100x1220 mm)	1001272759	X	X
Fork, Pallet 2.36x4x60 in (60x100x1524 mm)	1001272762	X	X
Fork, Pallet 2.36x5x72 in (60x127x1830 mm)	1001272763	X	X
Fork, Pallet 2.36x5x60 in (60x127x1524 mm)	1001272764	X	X
Fork, Pallet 2.36x6x60 in (60x152x1524 mm)	1001272765	X	X
Fork, Lumber 1.75x7x60 in (44x178x1524 mm)	1001272766	X	X
Fork, Lumber 2x6x72 in (50x152x1830 mm)	1001272767	X	X
Fork, Block 2x2x48 in (50x50x1220 mm)	1001272768	X	X
Bucket, 72 in–1.0 yd3	1001100822	X	X
Bucket, 96 in–1.5 yd3	1001100823	X	X
Bucket, 102 in–2.0 yd3	1001100824	X	X
Hook, Fork Mounted	1001097205	X	X
Hook, Coupler Mounted	1001207606	X	X
Truss Boom w/ Winch, 3 ft (914 mm)	1001100967	X	X
Truss Boom, 12 ft (3658 mm)	1001275853	X	X

Attachment	Part Number	Applicable Model	
		6034	6042
Truss Boom w/ Winch, 12 ft (3658 mm)	1001099351	X	X
Truss Boom, 15 ft (4572 mm)	1001275852	X	X
Truss Boom, Adjustable	1001230241	X	X
Platform, Fork Mounted (ASME)	1001238653	X	X
Platform, Fork Mounted (ASME - French)	1001238655	X	X
Platform, Fork Mounted (ISO)	1001238654	X	X

5.6 TELEHANDLER/ATTACHMENT/FORK CAPACITY



Prior to installing attachment, verify it is approved and telehandler is equipped with proper capacity chart. See *Section — Approved Attachments*.

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

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

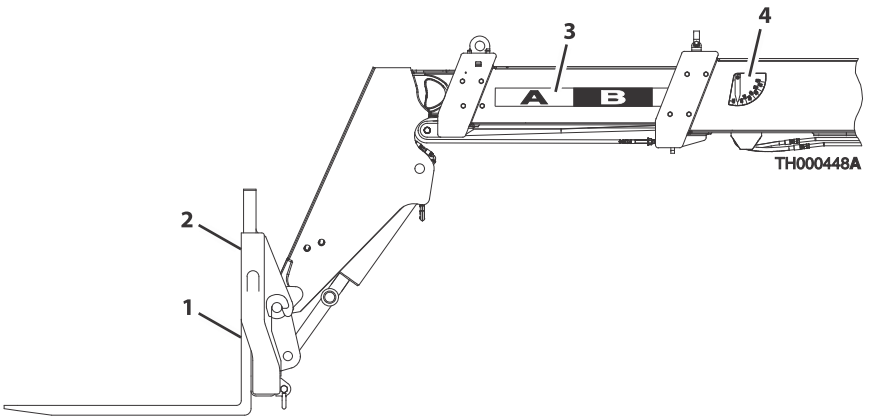
5.7 USE OF THE CAPACITY CHART

To properly use capacity chart (see *Sample Capacity Chart, page 84*) operator must first determine and/or have the following:

1. An approved attachment. See *Section — Approved Attachments*.
2. Proper Capacity Chart(s).
3. Weight of load being lifted.
4. Load placement information:
   a. HEIGHT where load is to be placed.
   b. DISTANCE from front tires of telehandler where load is to be placed.
5. On capacity chart, find the line for height and follow it over to distance.
6. Number in 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.

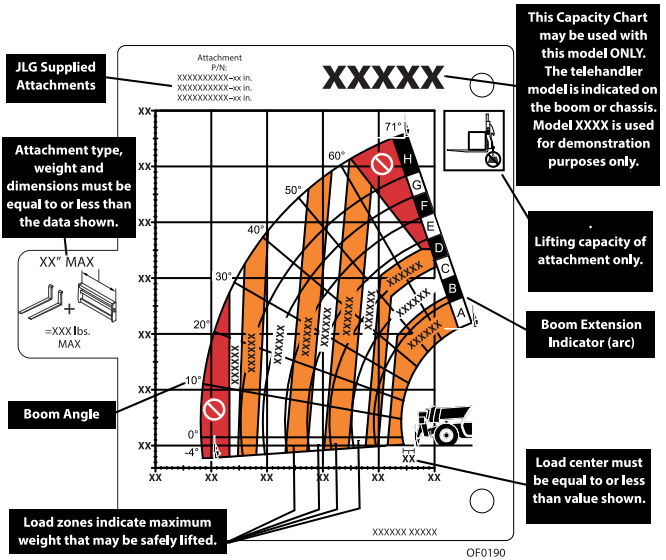
The number in load zone must be equal to or greater than weight of load to be lifted. Determine limits of load zone on capacity chart and keep within these limits.

5.7.1 Capacity Indicator Locations



1. Fork Weight Stamp	**2.** Attachment Identification Plate	**3.** Boom Extension Indicator	**4.** Boom Angle Indicator

5.7.2 Sample Capacity Chart



Note: This is 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 *Section — Leveling Procedure* or *Section — Leveling Procedure*); 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.

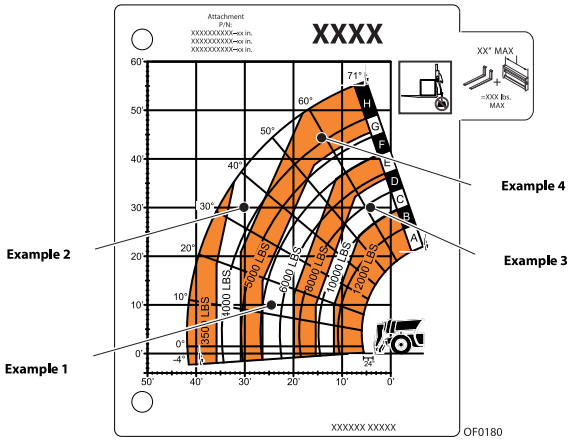
5.7.3 Example

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

- The part number on the attachment identification plate matches the attachment part number on a capacity chart located in the operator cab.
- Attachment style, weight, dimensions and load center match the attachment data on the capacity chart.
- Capacity chart is clearly marked for model xxxx and corresponds with machine configuration being used.

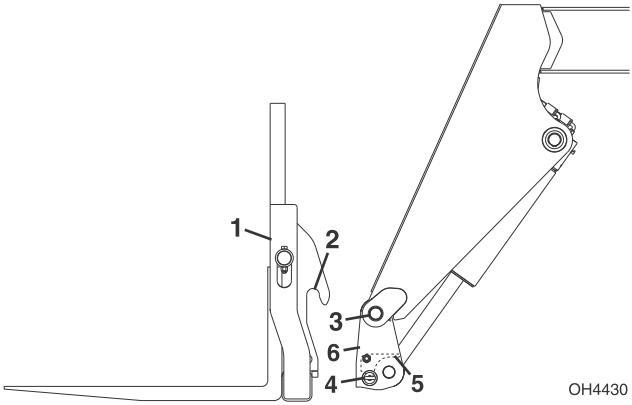
Below are examples with various conditions the contractor may encounter and whether or not the load may be lifted.

	Load Weight	Distance	Height	OK to Lift
1	5750 lb (2608 kg)	25 ft (7,62 m)	10 ft (3 m)	Yes
2	4900 lb (2223 kg)	30 ft (9,2m)	30 ft (9,2 m)	NO
3	8100 lb (3674 kg)	5 ft (1,5 m)	30 ft (9,2 m)	Yes
4	5250lb (2381kg)	15ft (4,6 m)	45 ft (13,7 m)	NO



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

5.8 ATTACHMENT INSTALLATION



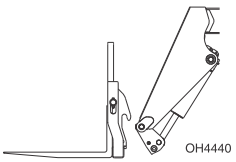
1. Attachment
2. Attachment Pin Recess
3. Attachment Pin
4. Lock Pin
5. Lock Lever
6. Quick Coupler (attachment tilt control in cab)

⚠ WARNING

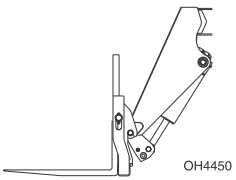
CRUSH HAZARD. Always be certain that carriage or attachment is properly positioned on boom and is secured by lock pin and lock lever. Failure to ensure proper installation could permit carriage/attachment/load to disengage.

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

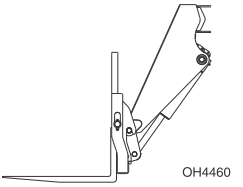
1. Tilt quick coupler back to provide clearance. Check to be sure lock pin is removed.



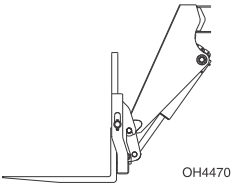
2. Align attachment pin with recess in attachment. Raise boom slightly to engage attachment pin in recess.



3. Tilt quick coupler forward to engage attachment.



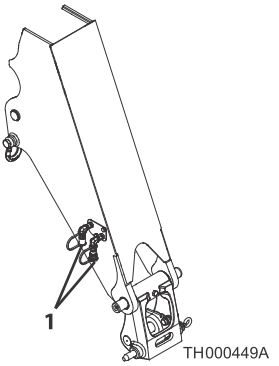
4. Lift lock lever and insert lock pin completely through quick coupler. Release lock lever and ensure lock pin is secured.



5. If equipped, connect auxiliary hydraulic hoses. See “Hydraulic Operated Attachment”.

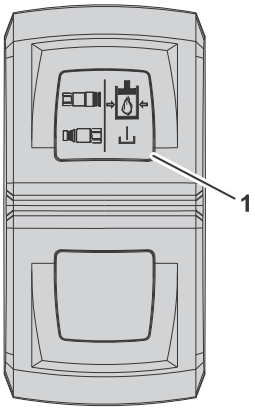
5.8.1 Hydraulic Operated Attachment

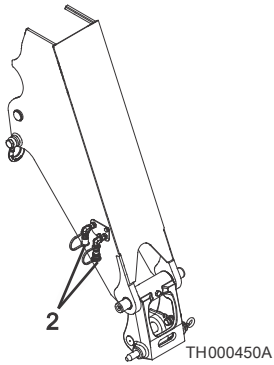
1. Install attachment.
2. Lower attachment to ground and perform “Shut-Down Procedure”.



3. Connect attachment hoses to both auxiliary fittings (**1**).

5.8.2 Auxiliary Hydraulic Decompression





1. With engine running and attachment installed and lowered to ground, press and hold top of auxiliary decompression switch (**1**) on right control panel for three seconds to relieve pressure at both auxiliary hydraulic fittings (**2**).
2. Perform *Shut-Down Procedure*.
3. Attachment hoses may be connected or disconnected at both auxiliary hydraulic fittings.

5.9 ADJUSTING/MOVING FORKS

Carriages may have different locations where forks can be positioned. Two different methods can be used for repositioning, depending upon 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 *Section — Attachment Installation*.
2. If equipped, loosen fork locking bolt.
3. Elevate attachment to approximately 5 ft (1,5 m) and tilt carriage forward until fork heel is free from attachment.
4. Stand at side of carriage. To slide fork toward center of carriage, push fork near fork eye. To slide fork toward edge of carriage, pull fork near fork eye. To avoid pinching, do not place fingers or thumb between fork and carriage structure.
5. If equipped, tighten fork locking bolt.

If removing fork bar is necessary:

1. Rest forks on ground.

2. If equipped, loosen fork locking bolt.
3. Remove fork bar.
4. Reposition forks.
5. Reinstall the fork bar and fork bar retaining mechanism(s).
6. If equipped, tighten fork locking bolt.

5.10 ATTACHMENT OPERATION

- Capacities and range limits for telehandler change depending on 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 attachment if it is equipped with a manual holder.

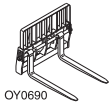
NOTICE

EQUIPMENT DAMAGE. Some attachments may contact 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

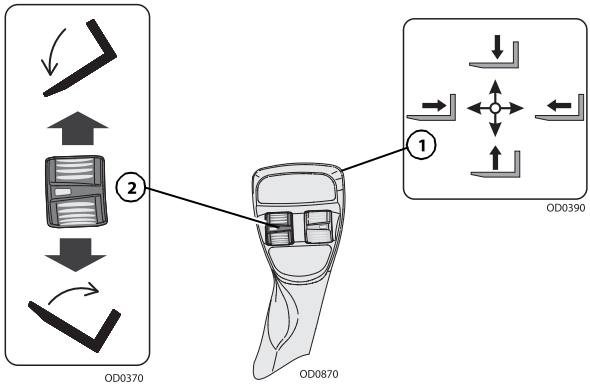
EQUIPMENT DAMAGE. Avoid contact with any structure or object when lifting a load. Maintain clearance around boom structure and load. Failure to maintain clearance may result in attachment or machine structural damage.

5.10.1 Carriage with Forks


OY0690

Use Carriage Attachment Capacity Chart.

To determine maximum capacity, refer to *Section — Telehandler/Attachment/Fork Capacity*.



Joystick **(1)** controls movement of the boom.

Roller switch **(2)** controls fork tilt.

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

Installation Procedure:

- Refer to *Section — Attachment Installation*.

Equipment Damage Precautions:

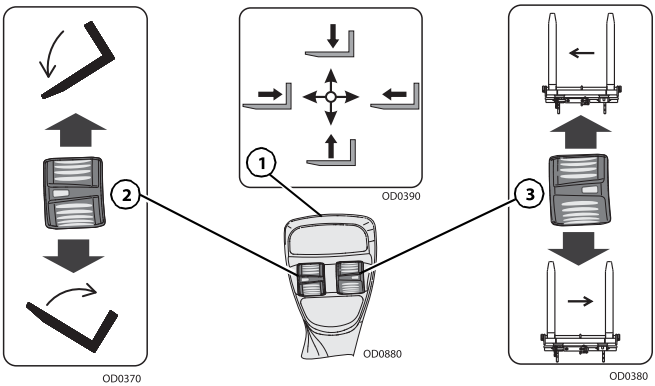
- Do not use forks as a lever to pry material. Excessive prying forces could damage forks or machine structure.
- Do not attempt to lift loads that are attached or connected to another object.

5.10.2 Side Shift Carriage


OAL1540

Use Side Shift Carriage Capacity Chart.

To determine maximum capacity, refer to *Section — Telehandler/Attachment/Fork Capacity*.



Joystick **(1)** controls movement of the boom.

Roller switch **(2)** controls fork tilt.

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

To Side Shift:

Roller switch **(3)** controls carriage side shift.

- Press roller switch down to shift right.
- Press roller switch up to shift left.

Installation Procedure:

Refer to *Section — Attachment Installation*.

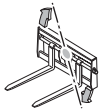
⚠ WARNING

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

Equipment Damage Precautions:

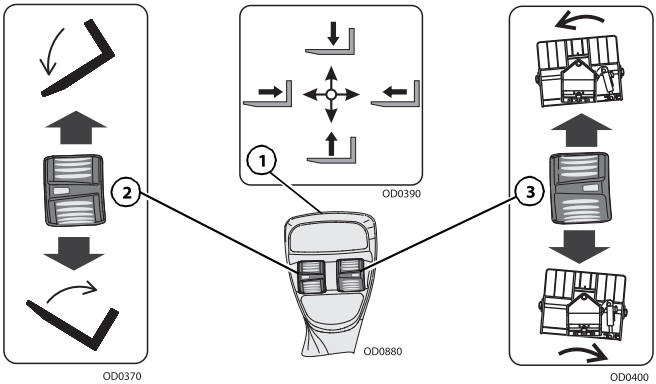
- Do not use forks as a lever to pry material. Excessive prying forces could damage forks or machine structure.
- Do not attempt to lift loads that are attached or connected to another object.

5.10.3 Side Tilt Carriage


OAL1550

Use Side Tilt Carriage Attachment Capacity Chart.

To determine maximum capacity, refer to *Section — Telehandler/Attachment/Fork Capacity*.



Joystick **(1)** controls movement of the boom.

Roller switch **(2)** controls fork tilt.

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

To Side Tilt:

Roller switch **(3)** controls carriage side tilt.

- Press roller switch down to side tilt right.
- Press roller switch up to side tilt left.

Installation Procedure:

Refer to *Section — Attachment Installation*.

⚠ 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.

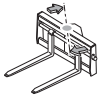
Operation:

- 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 requirements set forth in *Section — General Safety Practices*.

Equipment Damage Precautions:

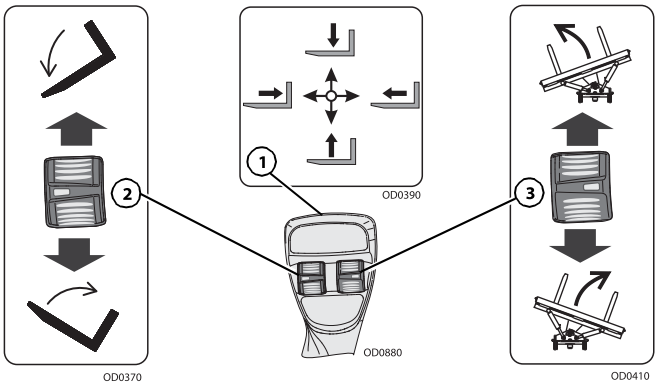
- Do not use forks as a lever to pry material. Excessive prying forces could damage forks or machine structure.
- Do not attempt to lift loads that are attached or connected to another object.

5.10.4 Swing Carriage


OU2150

Use Swing Carriage Attachment Capacity Chart.

To determine maximum capacity, refer to *Section — Telehandler/Attachment/Fork Capacity*.



Joystick **(1)** controls movement of the boom.

Roller switch **(2)** controls fork tilt.

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

To Swing:

Roller switch **(3)** controls carriage swing.

- Press roller switch down to swing right.
- Press roller switch up to swing left.

Installation Procedure:

- Refer to *Section — Attachment Installation*.

⚠ 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 (2268 kg). 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 requirements set forth in *Section — General Safety Practices*.

Equipment Damage Precautions:

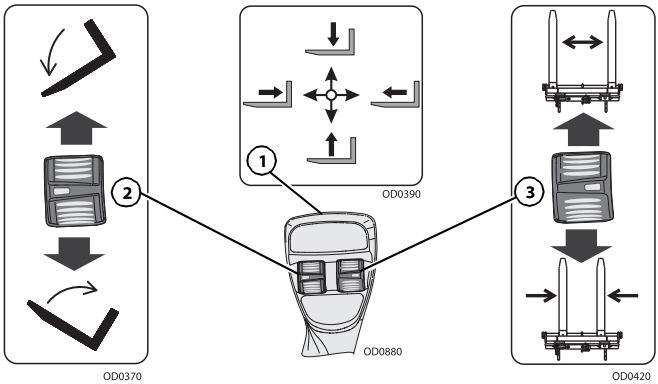
- Do not use forks as a lever to pry material. Excessive prying forces could damage forks or machine structure.
- Do not attempt to lift loads that are attached or connected to another object.

5.10.5 Dual Fork Positioning Carriage


OZ3670

Use Dual Fork Positioning Carriage Capacity Chart

To determine maximum capacity, refer to *Section — Telehandler/Attachment/Fork Capacity*.



Joystick **(1)** controls movement of the boom.

Roller switch **(2)** controls fork tilt.

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

To Fork Position:

Roller switch **(3)** controls fork position.

- Press roller switch down to shift forks in.
- Press roller switch up to shift forks out.

Installation Procedure:

- Refer to *Section — Attachment Installation*.

⚠ 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 requirements set forth in *Section — 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.

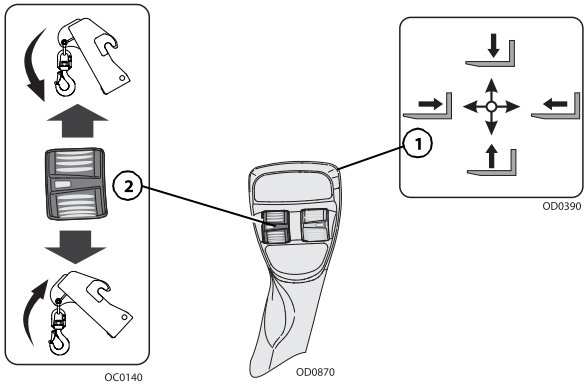
5.10.6 Coupler Mounted Hook


OC0130

Use Appropriate Coupler Mounted Hook Capacity Chart.

To determine maximum capacity, refer to *Section — Telehandler/Attachment/Fork Capacity*.

Suspend loads in accordance with requirements set forth in *Section — General Safety Practices*.



Joystick **(1)** controls movement of the boom.

Roller switch **(2)** controls coupler mounted hook tilt.

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

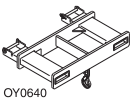
Installation Procedure:

- Refer to *Section — Attachment Installation*.

Operation:

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

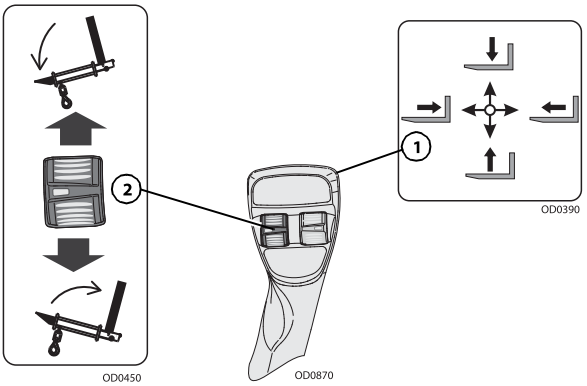
5.10.7 Fork Mounted Hook



Use Appropriate Carriage Attachment Capacity Chart.

To determine maximum capacity, refer to *Section — Telehandler/Attachment/Fork Capacity*.

Suspend loads in accordance with requirements set forth in *Section — General Safety Practices*.



Joystick **(1)** controls movement of the boom.

Roller switch **(2)** controls fork tilt.

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

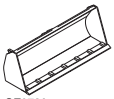
Installation Procedure:

- Ensure carriage is properly installed. Refer to *Section — Attachment Installation*.
- 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:

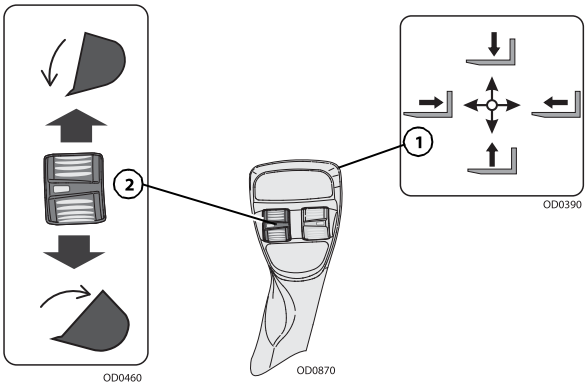
- Pallet or lumber forks of an appropriate load rating must be used. Do not use with cubing or block forks.
- Fork mounted hook and rigging weight must be included as part of total load being lifted.
- Do not use with mast carriage attachment.
- Do not use fork mounted hook with attachments capable of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

5.10.8 Bucket


OZ0730

Use Appropriate Bucket Capacity Chart.

To determine maximum capacity, refer to *Section — Telehandler/Attachment/Fork Capacity*.



Joystick **(1)** controls movement of the boom.

Roller switch **(2)** controls bucket tilt.

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

Installation Procedure:

- Refer to *Section — Attachment Installation*.

Operation:

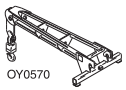
- Raise or lower boom to appropriate height for loading material from stockpile.
- Align telehandler with face of stockpile and drive slowly and smoothly into pile to load bucket.
- Tilt bucket up far enough to retain load and back away from pile.
- Travel in accordance with requirements set forth in *Section — 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 coupler or machine structure.
- Do not use bucket for "back dragging." This could cause severe damage to coupler and retraction cables/chains.

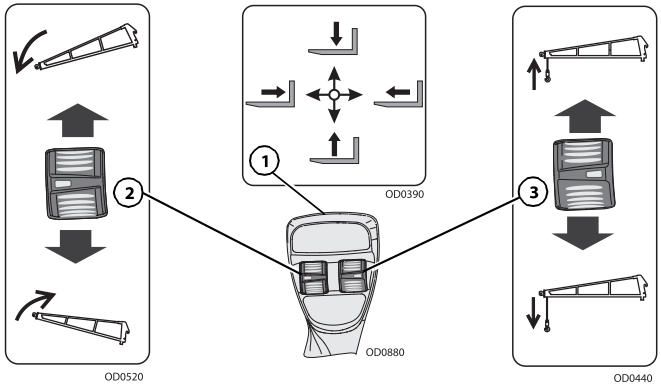
5.10.9 Truss Boom



Use Appropriate Truss Boom Attachment Capacity Chart.

To determine maximum capacity, refer to *Section — Telehandler/Attachment/Fork Capacity*.

Suspend loads in accordance with requirements set forth in *Section — General Safety Practices*.



Joystick **(1)** controls movement of the boom.

Roller switch **(2)** controls truss boom tilt.

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

Winch Control (if equipped):

Roller switch **(3)** controls truss boom mounted winch.

- Press roller switch down to lower cable.
- Press roller switch up to raise cable.

Installation Procedures

Refer to *Section — Attachment Installation*.

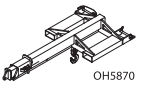
⚠ WARNING

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.

Operation:

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

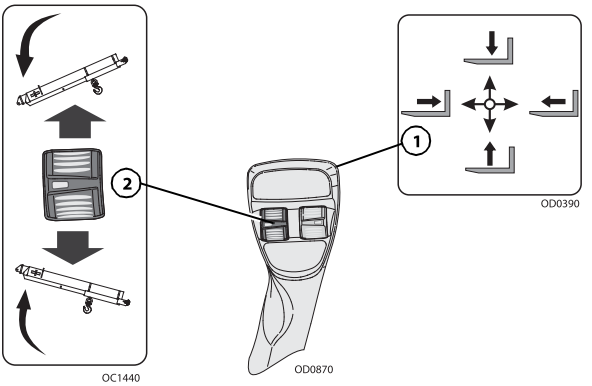
5.10.10 Adjustable Truss Boom - Fork Mounted



Use Appropriate Adjustable Truss Boom Attachment Capacity Chart.

To determine maximum capacity, refer to *Section — Telehandler/Attachment/Fork Capacity*.

Suspend loads in accordance with requirements set forth in *Section — General Safety Practices*.



Joystick **(1)** controls movement of the boom.

Roller switch **(2)** controls adjustable truss boom tilt.

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

Installation Procedures

- Ensure carriage is properly installed. Refer to *Section — Attachment Installation*.
- Secure the adjustable truss boom to the forks by sliding the adjustable truss boom onto the parent forks and install the retaining pin behind the vertical shank of the fork.

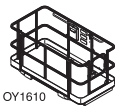
⚠ WARNING

CRUSH HAZARD. Ensure adjustable arm is properly secured using the retaining pin prior to lifting load. Failure to comply could cause object or load to fall.

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 adjustable truss boom with attachments capable of rotating (i.e. side tilt and swing carriages) without disabling the rotation feature(s).

5.10.11 Personnel Work Platform - Fork Mounted

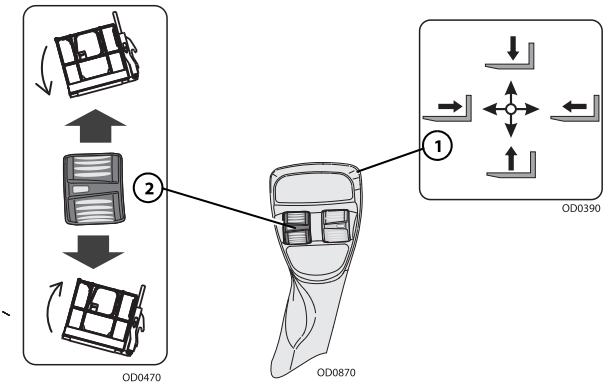


For fork mounted platforms utilized on machines built to the B56.6-2011 Standard or older, use Appropriate Carriage Attachment Capacity Chart.

For fork mounted platforms utilized on machines built to the B56.6-2016 Standard, use Fork Mounted Platform Attachment Capacity Chart.

To determine maximum capacity, refer to *Section — Telehandler/Attachment/Fork Capacity*.

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



Joystick **(1)** controls movement of the boom.

Roller switch **(2)** controls platform tilt.

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

Installation Procedure:

- Ensure carriage is properly installed. Refer to *Section — Attachment Installation*.
- Secure the fork mounted platform to the forks by sliding the fork mounted 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 the 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 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 on-road trailer towing applications.
- The steering system permits manual steering if engine or power assist feature fails; however, **steering will be slow and will require much greater force.**
- **DO NOT** attempt to tow a telehandler that is loaded or the boom/attachment is raised above 4 ft (1,2 m).

6.1.1 Moving

- See Service Manual for information to move telehandler.
- Dependant on local regulations the appropriate machine Service Manual should be kept in the cab at all times.

Contact the local dealer for specific instructions if this method is not 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 the local dealer for specific instructions.**

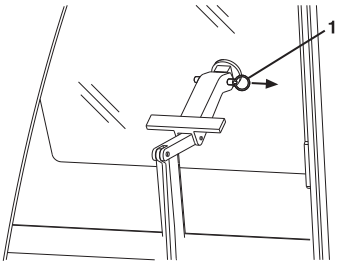
Secure the telehandler using the following procedures:

1. If equipped with platform attachment, rescue platform occupants.
2. Clear the area around telehandler of all personnel.
3. Apply the parking brake. Place the transmission in “NEUTRAL”.
4. Block all four wheels.
5. Section off a large area under the boom to restrict any personnel from entering this area.
6. See Service Manual for information.

6.3 EMERGENCY EXIT FROM ENCLOSED CAB

In an emergency the rear window can be used to exit the telehandler.

6.3.1 Inside Cab

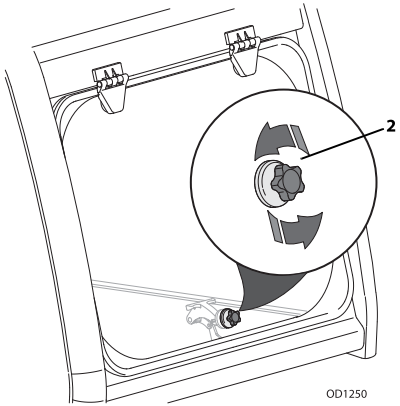


OZ0240

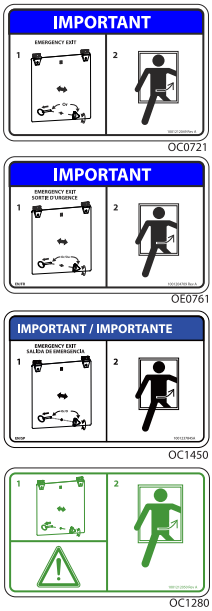
OE0751

- Remove the latch pin **(1)**. The window is then free to swing open.

6.3.2 Outside Cab (if equipped)



OD1250



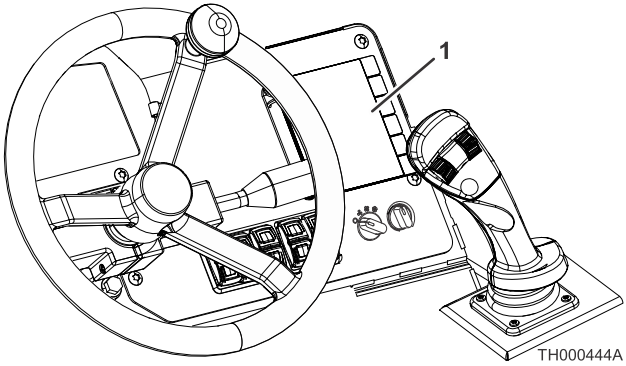
OC0721
OE0761
OC1450
OC1280

- Remove the knob **(2)** securing window. The window is then free to swing open.

SECTION 7
Lubrication and Maintenance

7.1 INTRODUCTION

This section is intended as information to assist the operator to perform maintenance tasks only. Service product in accordance with maintenance schedule on the following pages.



Lubrication and Maintenance charts (**1**) contain 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.

7.1.1 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* 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.
- 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.

⚠ WARNING

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

7.3 MAINTENANCE SCHEDULES

Note: If hour and year intervals are listed, perform maintenance at interval that occurs first.

7.3.1 Every 10 Hours

Check Fuel Level

Check Tire Condition and Pressure

Check Brake Fluid Level

Check Engine Oil Level

Drain Fuel/Water Separator

Check Engine Coolant Level

Check Air Cleaner

Check Hydraulic Oil Level

Additional Checks (see *Section — Additional Checks*)

7.3.2 First 50 Hours

Check Wheel Lug Nut Torque

Check Boom Chain Tension

Change Hydraulic Filters

7.3.3 Every 50 Hours

Lubrication Schedule

Check Washer Fluid

Check LSI System

Check Cab Filter

7.3.4 First 250 Hours

Change Axle Oil

Change Wheel End Oil

Change Drop Box Oil

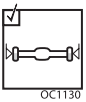
7.3.5 Every 250 Hours

Lubrication Schedule

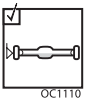
Check Boom Chains

Check Boom Wear Pads

Check Drop Box Oil



Check Wheel End Oil Level



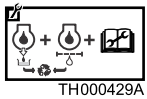
Check Axle Oil Level

7.3.6 First 500 Hours

Change Engine Oil and Filter (if equipped for ULS)

7.3.7 Every 500 Hours

Check Wheel Lug Nut Torque



Change Engine Oil and Filter (if equipped for LS)

Change Hydraulic Tank Breather

Change Hydraulic Filters

Check Battery

Check Stabil-Trak

7.3.8 Every 1000 Hours

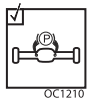
Check Boom Chain Tension

Change Drop Box Oil

Check Air Intake System

Lubrication Schedule

Check LSI Calibration (if equipped)

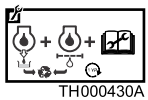


Check Park Brake

Drain Charge Air Cooler Piping

Check Fan Belt

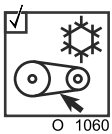
Change Wheel End Oil



Change Engine Oil and Filter (if equipped for ULS, see note)

Change Fuel Filters

Change Axle Oil



Check Air Conditioning Belt

Note: Lubricating oil meeting Deutz DQC IV-18 LA and Deutz 118–5100 filter are required for the 1000 hour oil and filter change interval. The 1000 hour interval applies only when using ultra low sulfur fuel and only after the first 500 hour change interval. An every 500 hour oil and filter change interval applies if using low sulfur fuel or if not using the specified oil and filter.

7.3.9 Every 1500 Hours

Change Hydraulic Fluid and Filters

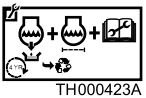
7.3.10 Every 2000 Hours

Change Cab Filter

7.3.11 Every 3000 Hours or 2 Years

Change Fan Belt

7.3.12 Every 6000 Hours or 4 Years

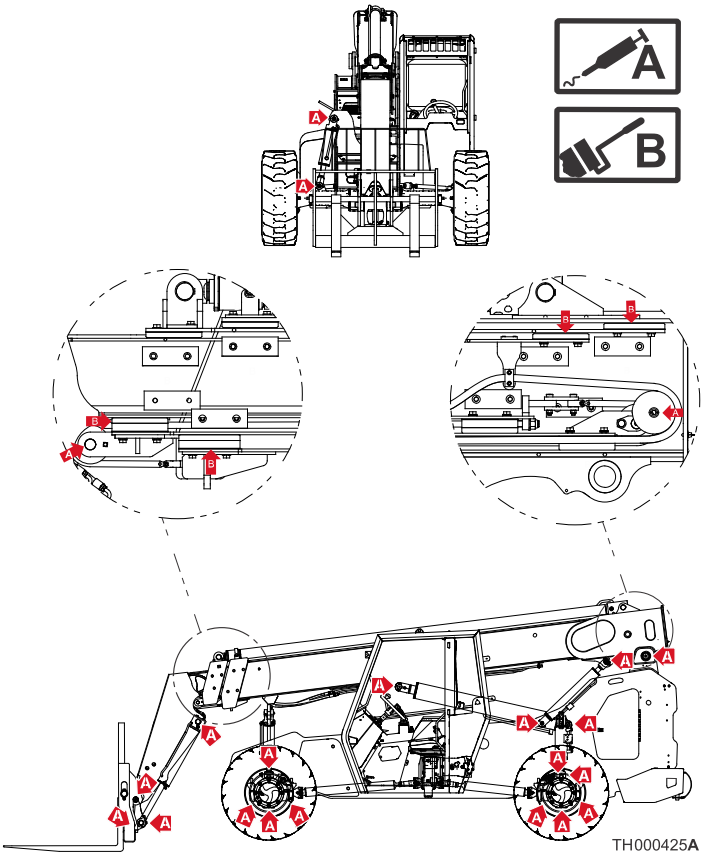


Change Engine Coolant (see note)

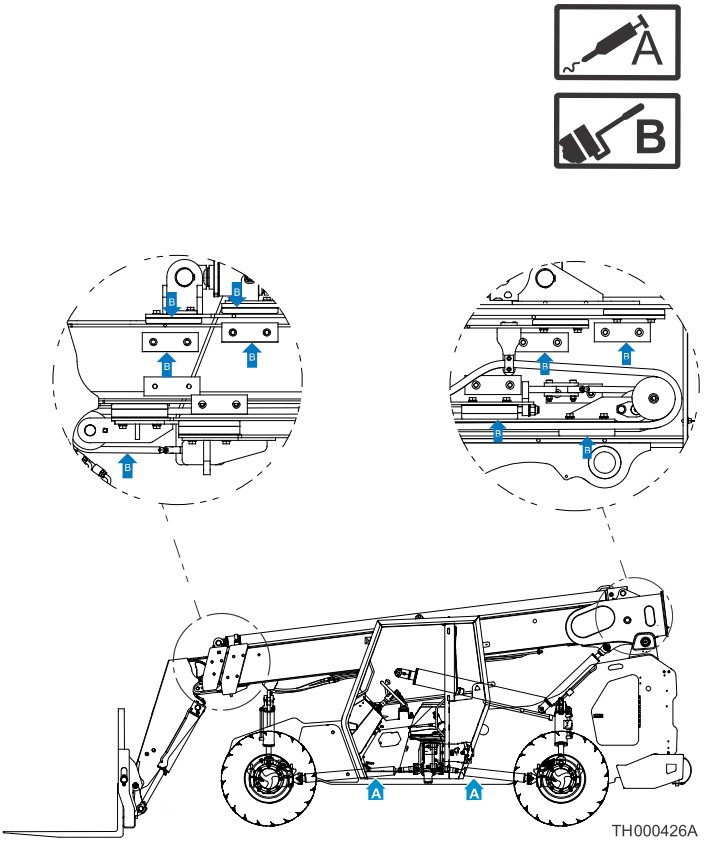
Note: If using DQC CB-14 or DQC CC-14 engine coolant, change intervals are 6,000 hours or 4 years, whichever occurs first.

7.4 LUBRICATION SCHEDULES

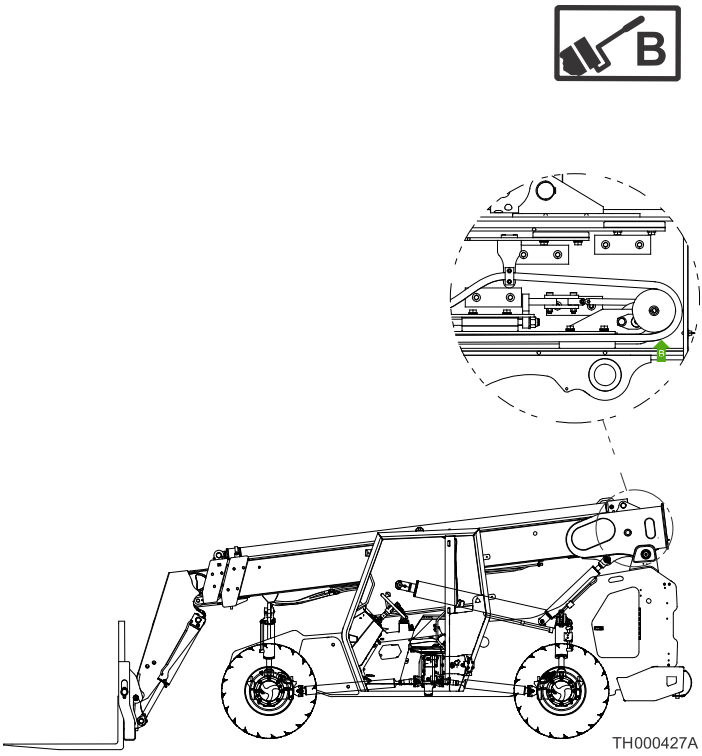
7.4.1 Every 50 Hours



7.4.2 Every 250 Hours



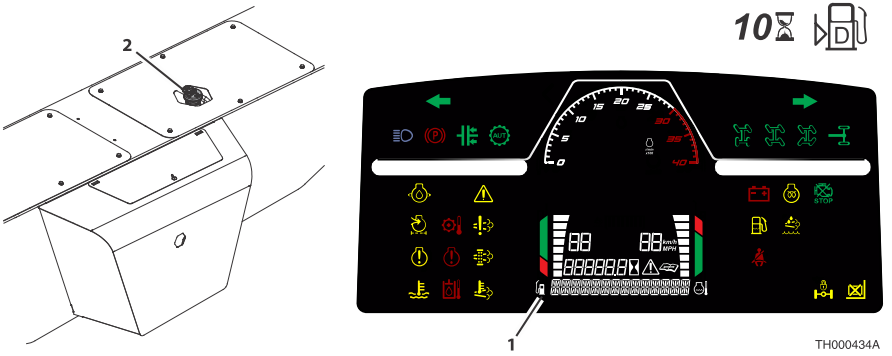
7.4.3 Every 1000 Hours



7.5 OPERATOR MAINTENANCE INSTRUCTIONS

7.5.1 Fuel System

Fuel Level Check



1. Check Fuel Level Gauge (**1**) located on the Instrument Panel in cab.
2. If fuel is low, proceed to fuel source and perform *Shut-Down Procedure*.
3. Turn fuel tank cap (**2**) to remove from filler neck.
4. Add fuel as needed.
5. Replace fuel tank cap.

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

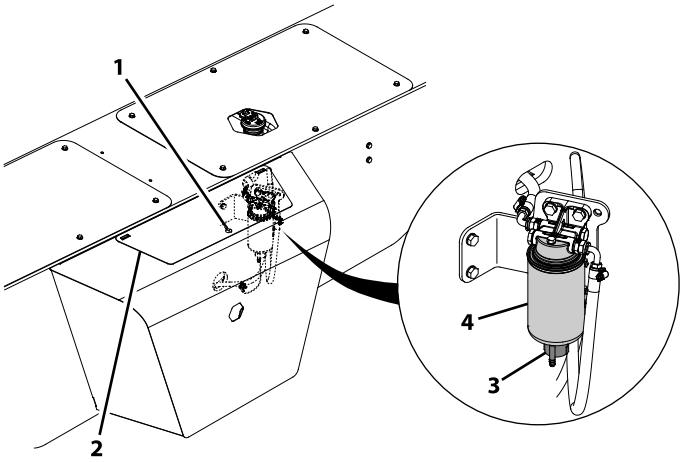
NOTICE

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

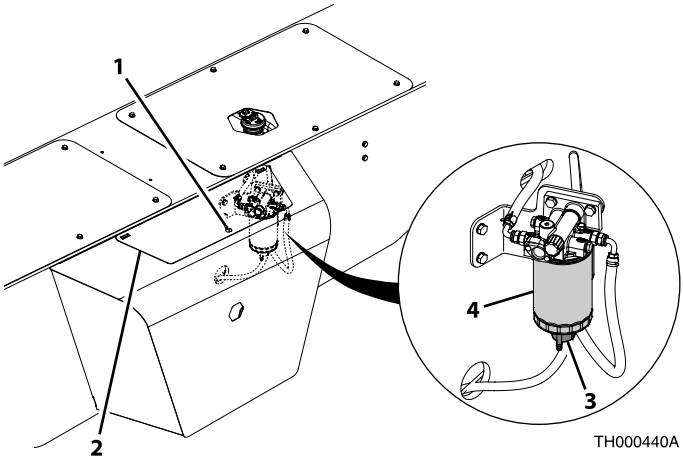
Drain Fuel/Water Separator

10

IF EQUIPPED FOR ULS



IF EQUIPPED FOR LS



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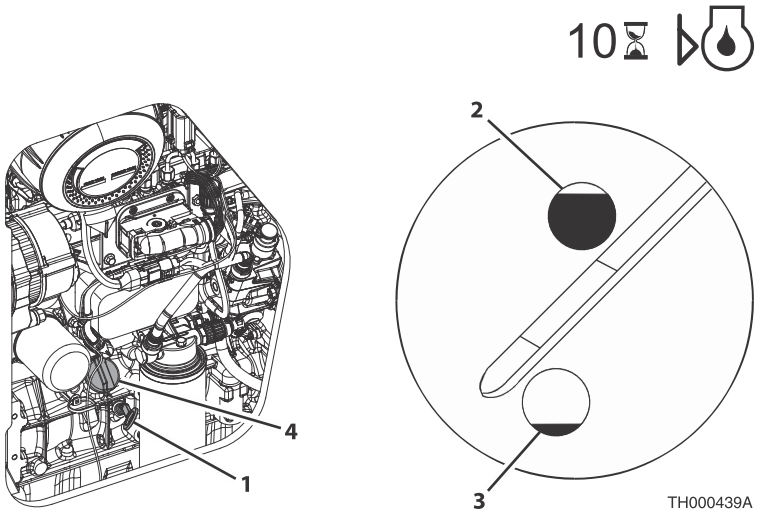
1. Perform *Shut-Down Procedure*.
2. Remove wing nut (**1**).
3. Slide hydraulic tank cover (**2**) towards you then lift cover.
4. Loosen drain petcock (**3**) on underside of fuel filter (**4**) and allow all water to drain into a glass until clear fuel is visible.
5. Tighten drain petcock.
6. Replace hydraulic tank cover and wing nut.

7.5.2 Engine Oil

Engine Oil Level Check



1. Perform *Shut-Down Procedure*.

Note: Allow machine to be shut down for 10 to 15 minutes before removing dipstick to check engine oil level.

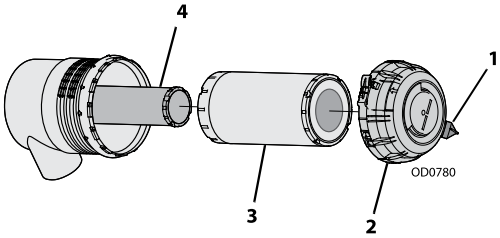
2. Open engine access door.
3. Remove dipstick (**1**) and check oil mark. Oil should be between full (**2**) and add (**3**) marks of dipstick.
4. If oil is low, remove oil fill cap (**4**) and add oil to bring oil up to full mark in crosshatch area.
5. Replace oil fill cap and dipstick.
6. Close and secure engine access door.

7.5.3 Air Intake System

Air Cleaner Check

10 OW0970

OW1010



1. Perform *Shut-Down Procedure*.
2. Open engine cover.
3. Remove dust from vacuator valve **(1)** by squeezing bottom of valve to allow loose particles to fall out.
4. Close and secure engine cover.

NOTICE

EQUIPMENT DAMAGE. Only remove air cleaner cover to service elements. Excessive access to check elements can lead to premature element and/or engine failure.

Element Change

Note: Change elements as air cleaner restriction indicator indicates or every two years. Use the interval that occurs first.

1. Perform *Shut-Down Procedure*.
2. Open engine cover.
3. Unlock air cleaner cover **(2)** and remove from air cleaner.
4. Remove outer primary element **(3)**. Inspect element for damage then discard.
5. Thoroughly clean interior of air cleaner canister and vacuator valve **(1)**.
6. Replace inner safety element **(4)** every third primary element change or if primary element was found to be damaged. If replacing inner safety element at this time, carefully slide element out and replace with new element.
7. Slide new primary element over inner safety element making sure sealing edge is flush with base of air cleaner.
8. Position air cleaner cover in place and lock into position.
9. Close and secure engine cover.

Note: Elements should never be washed or reused. Always install new elements.

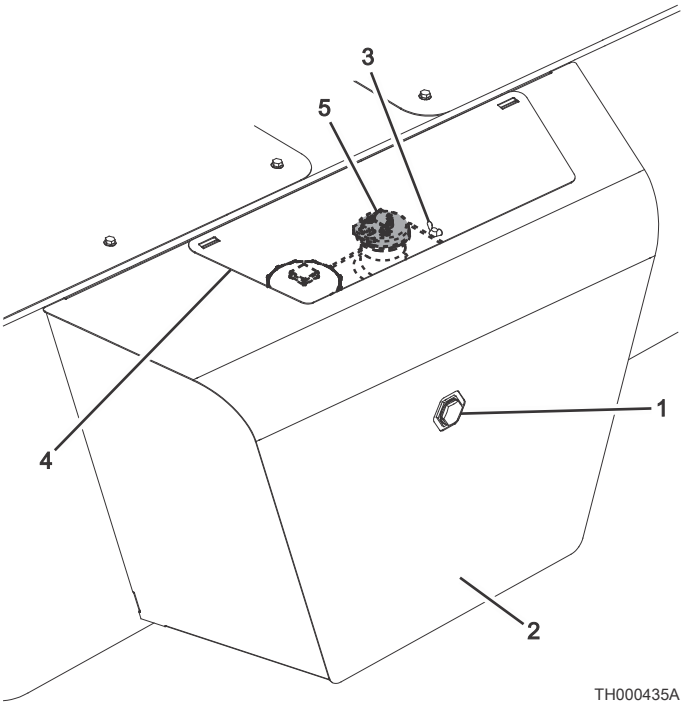
NOTICE

EQUIPMENT DAMAGE. Primary and safety elements are required to be replaced if used in an application longer than two years regardless of hours of operation.

7.5.4 Hydraulic Oil

Hydraulic Oil Level Check

10



1. Be sure all cylinders are fully retracted and machine is level.
2. Perform *Shut-Down Procedure*.
3. Allow hydraulic oil to cool. Check fluid level at sight gauge (**1**) on the hydraulic tank (**2**). Oil level should be visible in gauge window.
4. Remove wing nut (**3**).
5. Slide hydraulic tank cover (**4**) towards you then lift cover.
6. Remove fill cap (**5**). Add fluid to bring oil up to the center of the sight gauge.
7. Replace hydraulic oil fill cap.
8. Replace hydraulic tank cover and wing nut.

7.5.5 Tires

Tire Air Pressure Check

1. Perform *Shut-Down Procedure*.
2. Remove valve stem cap.
3. Check tire pressure.
4. Add air if required. See *Section — Product Specifications* for tire pressures.
5. Replace valve stem cap.

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.

- Smooth even cut through the cord plies which exceeds 3 in (7,5 cm) in total length
- Any tears or rips (ragged edges) in 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 above noted criteria, tire must be inspected daily to ensure damage has not propagated beyond allowable criteria.

Tire and Wheel Replacement

It is recommended that a replacement tire to be same size, ply, inflation medium and brand as originally installed. Refer to appropriate parts manual for ordering information. If not using an approved replacement tire, 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 application by tire manufacturer (including inflation pressure and maximum tire load)

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.

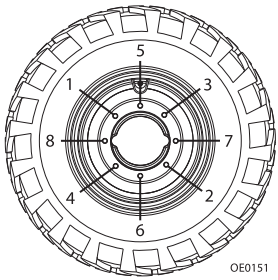
Note: If tire replacement changes the inflation medium, be sure to recalibrate the LSI system (if equipped).

Wheel Installation

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

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

1. Start all nuts by hand to prevent cross threading. DO NOT use a lubricant on threads or nuts.



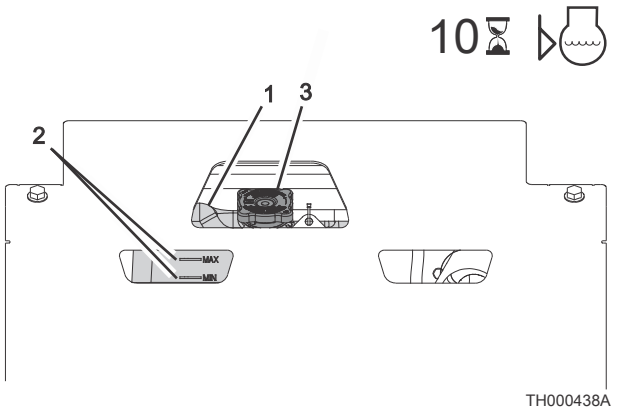
2. Tighten lug nuts in an alternating pattern as indicated in figure. See *Section — Product Specifications*.

⚠ 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.

7.5.6 Engine Cooling System

Engine Coolant Level Check



⚠ WARNING

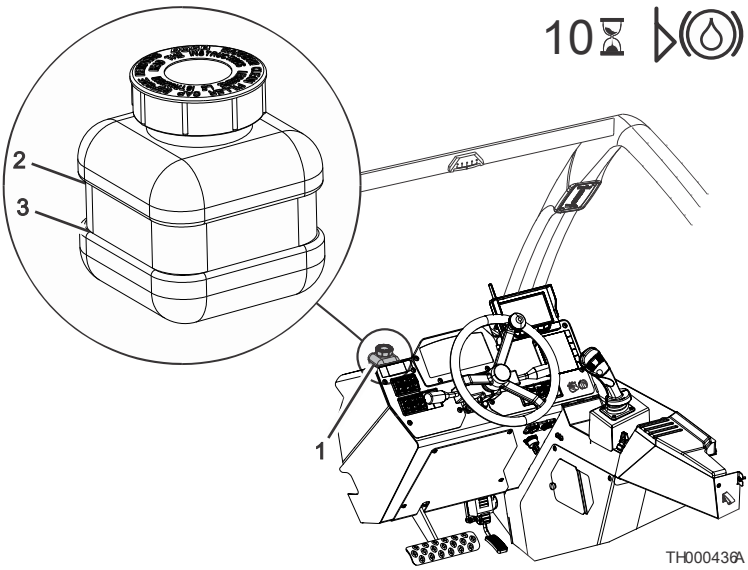
BURN HAZARD. Only open surge tank cap when cool. Danger of scalding from hot coolant. Cooling system under pressure.

1. Perform *Shut-Down Procedure*.
2. Stand at rear of machine.
3. Check coolant level in surge tank (**1**). Coolant should be between Max and Min (**2**) marks on surge tank.
4. If coolant is low, allow fluid to cool.
5. Remove surge tank cap (**3**) carefully. Add coolant as required.
6. Replace surge tank cap.

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

7.5.7 Brake Fluid

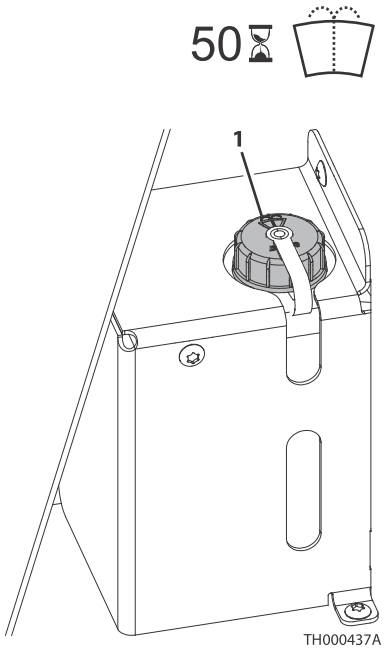
Brake Fluid Level Check



1. Perform *Shut-Down Procedure*.
2. Check the brake fluid level (**1**). Fluid should be between Max (**2**) and Min (**3**) marks on brake reservoir.
3. If fluid is low, follow fluid specification and add fluid as needed.

7.5.8 Windshield Washer System (if equipped)

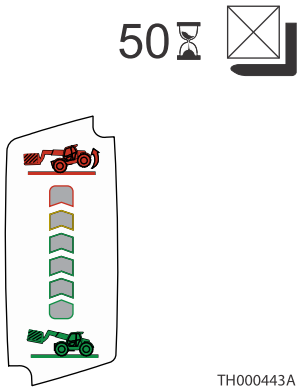
Windshield Washer Fluid Level Check



1. Perform *Shut-Down Procedure*.
2. Remove cap (**1**) from windshield washer reservoir located on the cab floor.
3. Windshield washer fluid should be visible in the reservoir.
4. If washer fluid level is low, add fluid as needed.
5. Replace reservoir cap.

7.5.9 Load Stability Indicator System (if equipped)

Check LSI System



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

1. Remove attachment, fully retract and fully raise boom.
2. Press LSI override switch on left control panel (see page 45) quickly two times followed by a third held press.

Note: All three presses must be completed within two seconds or the switch will be ignored.

3. LSI indicator LEDs will illuminate sequentially then repeat if check is successful. LSI indicator LEDs will resume normal functionality when control buttons are released.
4. If check fails, a fault code will appear on the dash display and must be corrected before continued use. Repeat system check or re-calibrate machine. See Service Manual for LSI system calibration information.

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SECTION 8
Additional Checks

8.1 REVERSE SENSING SYSTEM (IF EQUIPPED)

Reverse Sensing System Check

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OW0970

Reverse Sensing System provides audible indication of objects to rear of unit while in reverse gear.

1. Clear all people and/or obstacles behind machine before performing Reverse Sensing System check.
2. Start machine and depress and hold brake. Place machine in reverse gear.
3. Verify alarm sounds upon system start up.

Note: Reverse Sensing System detects objects of size more than 36 square inches (232.25 square centimeters) area and is functional when machine is moving in reverse direction.

Note: The use of a construction cone or similar object must be used to test the Reverse Sensing System.

⚠ WARNING

CRUSH HAZARD. Do not use a person to test the reverse sensing system.

4. Verify operation with no objects in detection zone. No audible alarm.
5. Verify operation when object is in range of approximately 9 to 15 ft (2.7 to 4.5 m). Produces pulsing audible alarm at a frequency of one per second (1 Hz).
6. Verify operation when object is in range of approximately 7 to 9 ft (2.1 to 2.7 m). Produces pulsing audible alarm. Produces pulsing audible alarm at a frequency of two per second (2 Hz).
7. Verify operation when object is range of approximately 5 to 7 ft (1.5 to 2.1 m) Produces pulsing audible alarm at a frequency of four per second (4 Hz).
8. Verify operation when object is under approximately 5 ft (1.5 m) from machine. Produces pulsing audible alarm at a frequency of eight per second (8 Hz).

8.2 AIR SHUTOFF VALVE (ASOV) (IF EQUIPPED)

Air Shutoff Valve Test

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OW0970

Air Shutoff Valve (ASOV) is an overspeed protection device mounted to the engine's air intake system. When the valve is actuated, it obstructs airflow intake and stops the engine. Weekly tests are recommended to ensure the valve remains in good working condition.

1. Start the engine, running at idle.
2. Open the red switch guard of ASOV test switch, then activate toggle to test mode (see *Section — Controls*).
3. Rev the engine in neutral until the valve actuates at the test RPM of 1500. Once valve actuates, engine will stop.
4. Turn ignition to OFF.
5. Visually inspect valve to ensure it appears in good condition.
6. Reset valve by rotating valve handle to the Open position.

Note: The handle cannot be turned unless the machine is off. Ensure the ignition is moved to the OFF position.

⚠ WARNING

Do not use ASOV as an alternative to shutting down machine properly.

SECTION 9
Specifications

9.1 PRODUCT SPECIFICATIONS

9.1.1 Fluids

If Equipped for ULS

Compartment or System	Type and Classification	Viscosities	Ambient Temperature Range			
			°F		°C	
			Min	Max	Min	Max
Engine Crankcase	Deutz DQC III-10 LA or Deutz DQC IV-10 LA or Deutz DQC IV-18 LA*	SAE 15W-40	5	115	-15	46
		SAE 10W-40	-4	115	-20	46
		SAE 10W-30	-4	86	-20	30
		SAE 5W-40	-22	115	-30	46
		SAE 5W-30	-22	86	-30	30
		SAE 0W-40	-40	115	-40	46
		SAE 0W-30	-40	86	-40	30
Gearbox	API GL4 or API GL5 Oils	75W-90	-40	104	-40	40
	UTTO J20/C	SAE 80W	-4	104	-20	40
	Spirax S4 TXM MobilFluid 424	10W-30	-22	115	-30	46
	Spirax S3 TLV	5W-20	-40	50	-40	10
Axle Differential and Wheel Ends	API GL5 with LS Additives	80W-90 LS	-4	115	-20	46
		75W-90 LS	-40	104	-40	40
Hydraulic System	Spirax S4 TXM MobilFluid 424	10W-30	5	115	-15	46
	Tellus S4 VX 32	ISO VG 32	-40	100	-40	38
	Univis HVI 26	ISO VG 26	-40	100	-40	38
Boom Wear Pad Grease	Mystik Tetrimoly	NLGI Grade 2	-4	104	-20	40

Compartment or System	Type and Classification	Viscosities	Ambient Temperature Range			
			°F		°C	
			Min	Max	Min	Max
Grease Fittings	Extreme Pressure Grease	NLGI Grade 2 EP with Moly Additive or NLGI Grade 3 EP with Moly Additive	5	115	-15	46
Boom Chain Lubricant	Gear Oil	80W-90	-40	115	-40	46
Engine Coolant**	DQC CB-14DQC or DQC CC-14DQC	50% Ethylene Glycol and 50% Water	-26	115	-32	46
		60% Ethylene Glycol and 40% Water	-40	86	-40	30
Fuel	EN590 ASTM D 975 Grade 1-D ASTM D 975 Grade 2-D (Maximum B5 Biodiesel) EN15940 (HVO)	Ultra Low Sulfur (S ≤ 15 mg/kg)				
Brake Fluid	PLZ DEX/MERC 111 ATF		-40	115	-40	46
	Mobil ATF-D/M		-20	115	-29	46

Compartment or System	Type and Classification	Viscosities	Ambient Temperature Range			
			°F		°C	
			Min	Max	Min	Max
Air Conditioning	Refrigerant R-134a	Tetrafluoroethane				

*See Note on page 114 for details.
**Do not mix coolants from different specifications.

If Equipped for LS

Compartment or System	Type and Classification	Viscosities	Ambient Temperature Range			
			°F		°C	
			Min	Max	Min	Max
Engine Crankcase	Deutz DQC III-10 Deutz DQC IV-10 Deutz DQC III-10 LA or Deutz DQC IV-10 LA or Deutz DQC IV-18 LA*	SAE 15W-40	5	115	-15	46
		SAE 10W-40	-4	115	-20	46
		SAE 10W-30	-4	86	-20	30
		SAE 5W-40	-22	115	-30	46
		SAE 5W-30	-22	86	-30	30
		SAE 0W-40	-40	115	-40	46
		SAE 0W-30	-40	86	-40	30
Gearbox	API GL4 or API GL5 Oils	75W-90	-40	104	-40	40
	UTTO J20/C	SAE 80W	-4	104	-20	40
	Spirax S4 TXM MobilFluid 424	10W-30	-22	115	-30	46
	Spirax S3 TLV	5W-20	-40	50	-40	10
Axle Differential and Wheel Ends	API GL5 with LS Additives	80W-90 LS	-4	115	-20	46
		75W-90 LS	-40	104	-40	40
Hydraulic System	Spirax S4 TXM MobilFluid 424	10W-30	5	115	-15	46
	Tellus S4 VX 32	ISO VG 32	-40	100	-40	38
	Univis HVI 26	ISO VG 26	-40	100	-40	38
Boom Wear Pad Grease	Mystik Tetrimoly	NLGI Grade 2	-4	104	-20	40

Compartment or System	Type and Classification	Viscosities	Ambient Temperature Range			
			°F		°C	
			Min	Max	Min	Max
Grease Fittings	Extreme Pressure Grease	NLGI Grade 2 EP with Moly Additive or NLGI Grade 3 EP with Moly Additive	5	115	-15	46
Boom Chain Lubricant	Gear Oil	80W-90	-40	115	-40	46
Engine Coolant**	DQC CB-14DQC or DQC CC-14DQC	50% Ethylene Glycol and 50% Water	-26	115	-32	46
		60% Ethylene Glycol and 40% Water	-40	86	-40	30
Fuel	EN590 ASTM D 975 Grade 1-D ASTM D 975 Grade 2-D (Maximum B5 Biodiesel) EN15940 (HVO)	Low Sulfur (S ≤ 500 mg/kg)				
Brake Fluid	PLZ DEX/MERC 111 ATF		-40	115	-40	46
	Mobil ATF-D/M		-20	115	-29	46
Air Conditioning	Refrigerant R-134a	Tetrafluoroethane				

*See Note on page 114 for details.
**Do not mix coolants from different specifications.

9.1.2 Capacities

Engine Crankcase Oil	
Capacity with Filter Change	9.5 qt (9 L)
Fuel Tank	
Capacity	28 gal (106 L)
Cooling System	
System Capacity	4.5 gal (17 L)
Hydraulic System	

System Capacity	36.9 gal (140 L)
Reservoir Capacity to Full Mark	18.7 gal (70,8 L)

9.1.3 Axles

Differential Housing Capacity	
Front	6.1 qt (6,1 L)
Rear	6.6 qt (6,6 L)
Wheel End Capacity (each)	0.8 qt (0,8 L)

9.1.4 Brake System

Capacity	0.9 qt (0,9 L)

9.1.5 Window Washer Bottle (if equipped)

Capacity	0.5 qt (0,5 L)

9.1.6 Air Conditioning System (if equipped)

Capacity	1.9 lb (0.86 kg)

9.1.7 Tires

15–19.5 SKS Camso - 14 Ply	
Pneumatic	70 psi (4,8 bar)
Foam	Approx 370 lb (168 kg)
15–19.5 Non-Marking - 14 Ply	
Pneumatic	70 psi (4,8 bar)
Foam	Approx 370 lb (168 kg)
18 x 625 Turf - 16 Ply	70 psi (4,8 bar)

9.1.8 Performance

Maximum Lift Capacity	6,000 lb (2 722 kg)
Maximum Lift Height	
6034	34.4 ft (10,5 m)
6042	42.3 ft (12,9 m)
Capacity at Maximum Height	
6034	4,000 lb (1 814 kg)
6042	6,000 lb (2 722 kg)
Maximum Forward Reach	
6034	23.2 ft (7,1 m)
6042	29.5 ft (9,0 m)
Capacity at Maximum Forward Reach	
6034	1,000 lb (454 kg)
6042	1,200 lb (544 kg)
Reach at Maximum Height	
6034	5.1 ft (1,6 m)
6042	6.3 ft (1,9 m)
Auxiliary Hydraulic Circuit Max Flow	21.1 gpm (80,0 lpm)
Maximum Travel Speed	15 mph (24.1 kph)
Hitch Capacity (no load on attachment)	6,000 lb (2 722 kg)
Frame Leveling	10 degrees
Gradeability	24 degrees (45%)
Side Slope	5 degrees (8.75%)

9.1.9 Dimensions

Overall Height	
6034	97.8 in (2483 mm)
6042	99.8 in (2534 mm)
Overall Width	95 in (2414 mm)
Track Width	85 in (2159 mm)
Wheelbase	
6034	110 in (2794 mm)
6042	122 in (3099 mm)
Overall Length (no attachment)	
6034	209.6 in (5325 mm)
6042	235.9 in (5991 mm)
Ground Clearance	
6034	15.4 in (390 mm)
6042	15.1 in (384 mm)
Turning Radius (Over Tires)	
6034	11.9 ft (3.6 m)
6042	12.6 ft (3.8 m)
Turning Radius (Clearance)	
6034	11.9 ft (3.6 m)
6042	12.6 ft (3.8 m)
Maximum Operating Weight (no attachment)	
6034	15,800 lb (7167 kg)
6042	20,400 lb (9253 kg)
Distribution of Maximum Operating Weight (no attachment, boom level, and fully retracted)	
Front Axle	
6034	5,630 lb (2554 kg)
6042	6,500 lb (2948 kg)
Rear Axle	
6034	10,170 lb (4613 kg)
6042	13,900 lb (6305 kg)

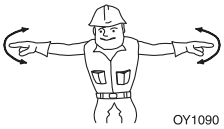
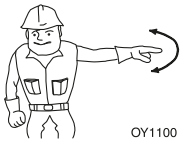
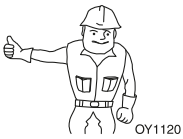
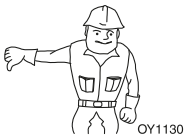
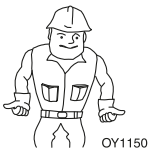
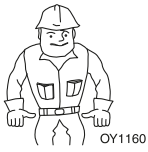
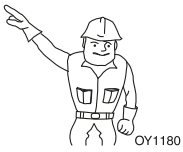
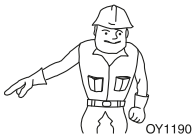
Maximum Ground Bearing Pressure	
6034	
15–19.5 SKS Camso - 14 Ply	
Pneumatic	153 lb/in^2 (10,8 kg/cm^2)
Foam	157 lb/in^2 (11,0 kg/cm^2)
315/8–20/8.5 Solid	194 lb/in^2 (13,6 kg/cm^2)
18 x 625 Turf - 16 Ply	112 lb/in^2 (7,9 kg/cm^2)
6042	
15–19.5 SKS Camso - 14 Ply	
Pneumatic	166 lb/in^2 (11,7 kg/cm^2)
Foam	170 lb/in^2 (12,0 kg/cm^2)
315/8–20/8.5 Solid	216 lb/in^2 (15,2 kg/cm^2)
18 x 625 Turf - 16 Ply	112 lb/in^2 (7,9 kg/cm^2)

Serial Number _____

Date	Comments

Inspection, Maintenance and Repair Log

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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