CATERPILLAR®

Operation & Maintenance Manual

Original Instructions
Keep this manual with machine at all times.

Models
TH336C, TH337C, TH406C, TH407C, TH414C, TH514C, TH417C

S/N MJR00150 & After, S/N THM00150 & After
S/N DJB00150 & After, S/N SXJ00150 & After
S/N GAT00150 & After, S/N RCH00150 & After
S/N MLH00150 & After, S/N JJT00150 & After
S/N KEK00150 & After, S/N RWW00150 & After
S/N MWC00150 & After, S/N KKW00150 & After
S/N RRJ00150 & After, S/N RRW00150 & After

31200752
SEBU9285-03

Revised
July 15, 2014

CALIFORNIA PROPOSITION 65

BATTERY WARNING

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

WASH HANDS AFTER HANDLING!

CALIFORNIA PROPOSITION 65

EXHAUST WARNING

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

REVISION LOG

August 30, 2012 - A - Original Issue of Manual

November 30, 2012 - B - Revised pages d, 1-2, 2-3, 2-4, 2-5, 2-10, 3-1, 5-44 thru 5-50, 9-1 thru 9-4, 9-7 thru 9-14.

September 9, 2013 - C - Revised cover and pages d, 1-7, 2-3 thru 2-11, 2-13, 2-14, 2-15, 3-2, 3-3, 3-6, 3-7, 3-10 thru 3-13, 3-15, 3-20, 3-23 thru 3-26, 3-29, 3-34, 4-1, 4-3, 4-4, 4-7, 4-10, 5-3, 5-5, 5-24, 5-25, 5-26, 5-44, 5-45, 6-2, 6-3, 7-6, 7-15, 7-16, 7-17, 7-20, 7-21, 7-24, 8-3, 9-1, 9-2, 9-3, 9-6, 9-7 thru 9-10, 9-12 & 9-13.

July 15, 2014 - D - Revised cover.

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

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

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

Operator Qualifications

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

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

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

- This Operation & Maintenance 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 Caterpillar dealer 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

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.....31200799

Parts Manual
TH336C, TH337C, TH406C, TH407C 31200730
TH414C, TH514C, TH417C.....31200729

THP18s & THP45s Platforms for TH414, TH514, TH417, TH414C, TH514C, TH417C Operation & Maintenance Manual (if equipped for platform).....Contact JLG

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

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

TABLE OF CONTENTS

Section 3 - Controls and Indicators

Section 4 - Operation

SECTION 1 - GENERAL SAFETY PRACTICES

1.1 HAZARD CLASSIFICATION SYSTEM

Safety Alert System and Safety Signal Words

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

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

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

1.2 GENERAL PRECAUTIONS

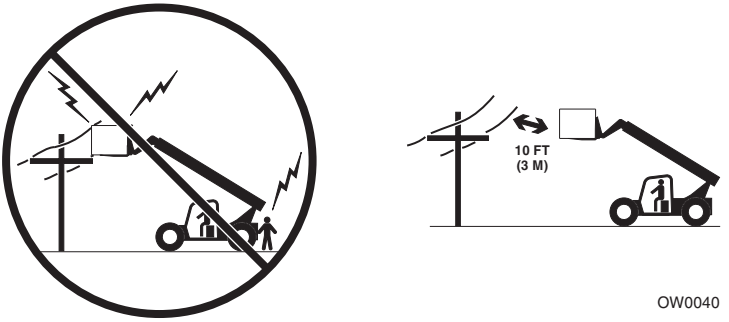
WARNING

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

1.3 OPERATION SAFETY

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.*

Electrical Hazards

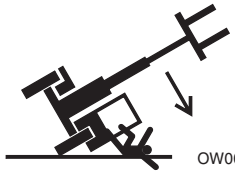


- This machine is not insulated and does not provide protection from contact or being near electrical current.
- **NEVER** operate the telehandler in an area where overhead power lines, overhead or underground cables, or other power sources may exist without ensuring the appropriate power or utility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

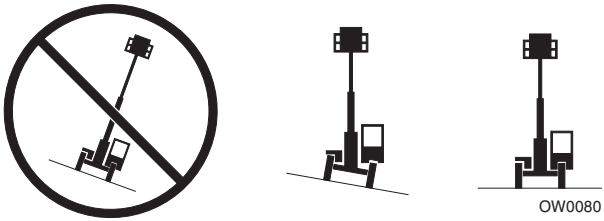
Tip Over Hazard

General

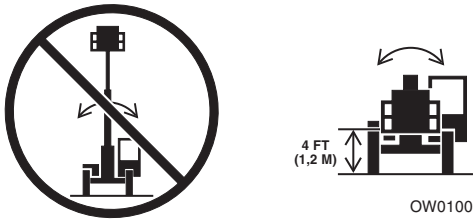
- For additional load requirements, refer to the appropriate load chart.



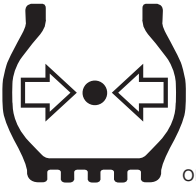
- Never use an attachment without the appropriate JLG approved load chart installed on the telehandler.
- Understand how to properly use the load charts located in cab.
- **DO NOT** exceed rated lift capacity.
- Be sure that the ground conditions are able to support the machine.



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



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


OH2291

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


OH20911

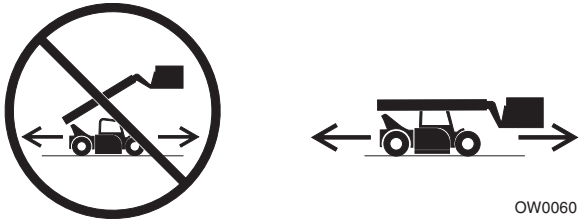
- Always wear the seat belt.
- Keep head, arms, hands, legs and all other body parts inside operator's cab at all times.


OH2221

If the telehandler starts to tip over:

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

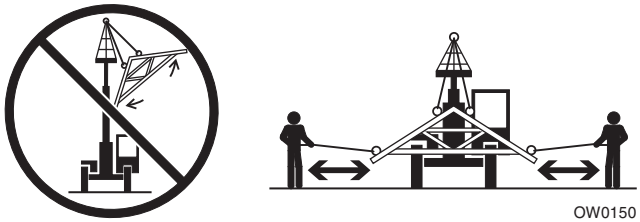
Non-Suspended Load



OW0060

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

Suspended Load



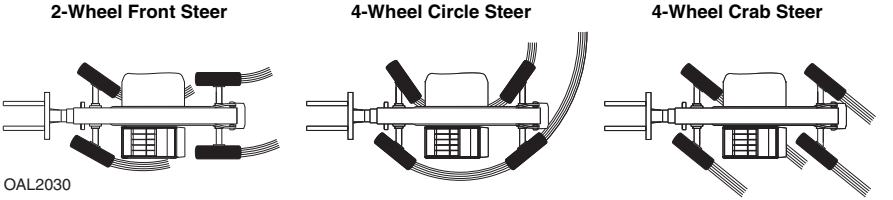
OW0150

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

  When driving with a suspended load:

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

Travel Hazard



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

Load Falling Hazard

OW0130

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

Lifting Personnel

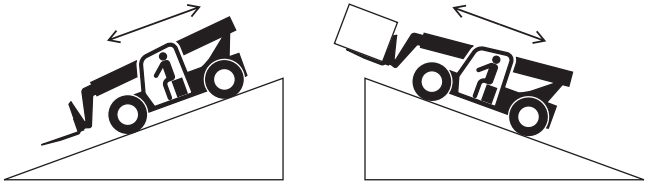
OW0170

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

OW0190

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

Driving Hazards on Slopes

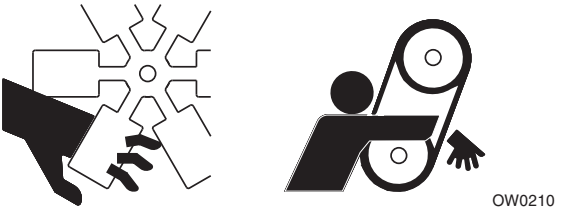


To maintain sufficient traction and braking capabilities, travel on slopes as follows:

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

Pinch Points and Crush Hazards

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



OW0210

- Stay clear of moving parts while engine is running.

OW0220

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

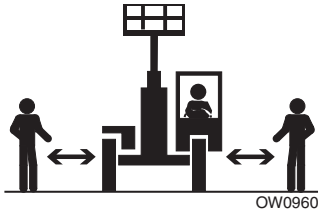
OW0230

- Keep clear from under boom.

- Keep clear of boom holes.

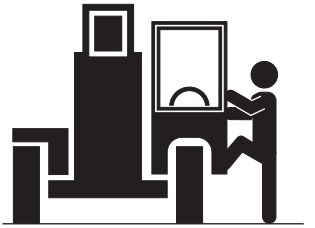
- Keep arms and hands clear of attachment tilt cylinder.

- Keep hands and fingers clear of carriage and forks.



- Keep others away while operating.

Fall Hazard


OW0280

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


OW0290

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

Chemical Hazards

Exhaust Fumes

- **DO NOT** operate machine in an enclosed area without proper ventilation.
- **DO NOT** operate the machine in hazardous environments unless approved for that purpose by JLG and site owner. Sparks from the electrical system and the engine exhaust can cause an explosion.

Flammable Fuel

OW0300

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

Hydraulic Fluid

OW0950

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

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SECTION 2 - PRE-OPERATION AND INSPECTION

2.1 PRE-OPERATION CHECK AND INSPECTION

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

⚠ WARNING

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

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

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

PARENT METAL CRACK **WELD CRACK**

3. **Safety Decals** - Ensure all safety decals are legible and in place. Clean or replace as required. See page 2-3 for details.
4. **Operation and Safety Manuals** - Operation & Maintenance Manual and AEM Safety Manual (ANSI only) located in cab manual holder.
5. **Walk-Around Inspection** - See page 2-14 for details.
6. **Fluid Levels** - Check fluids, including fuel, hydraulic oil, engine oil and coolant. When adding fluids, refer to Section 7 - Lubrication and Maintenance and Section 9 - Specifications to determine proper type and intervals. Before removing filler caps or fill plugs, wipe all dirt and grease away from the ports. If dirt enters these ports, it can severely reduce component life.
7. **Attachments/Accessories** - Ensure correct load charts are installed on the telehandler. If provided, reference the Operation & Maintenance Manual of each attachment or accessory installed for specific inspection, operation and maintenance instructions.

8. **Operational Check** - Once the walk-around inspection is complete, perform a warm-up and operational check (see page 2-16) of all systems in an area free of overhead and ground level obstructions. See Section 3 - Controls and Indicators for more specific operating instructions.

⚠ WARNING

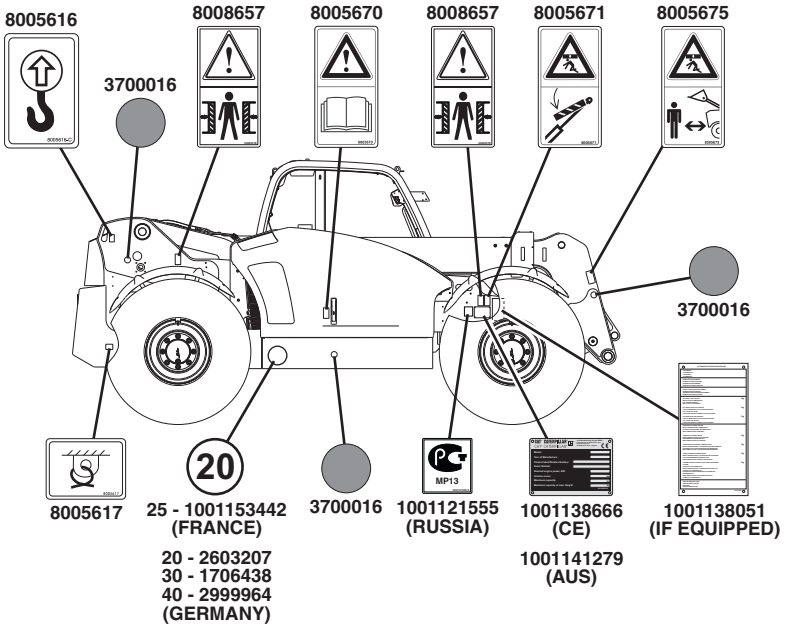
If telehandler does not operate properly, immediately bring machine to a stop, lower boom and attachment to ground and stop the engine. Determine cause and correct before continued use.

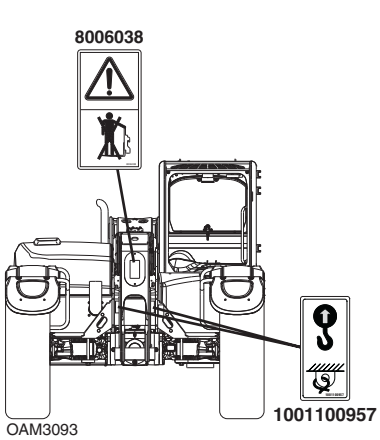
2.2 SAFETY DECALS

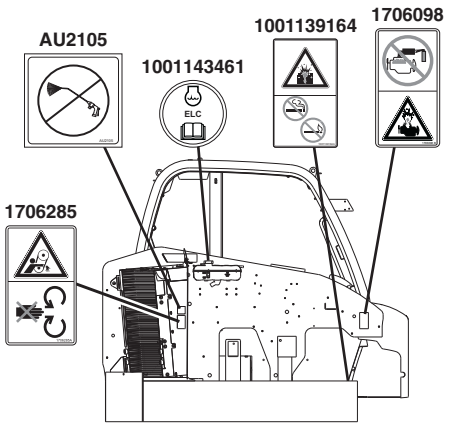
Ensure all **DANGER**, **WARNING**, **CAUTION** and instructional decals and proper load charts are legible and in place. Clean and replace as required.

Note: *Part numbers referenced are for inspection and identification purposes only. Refer to the Parts Manual when ordering replacement parts.*

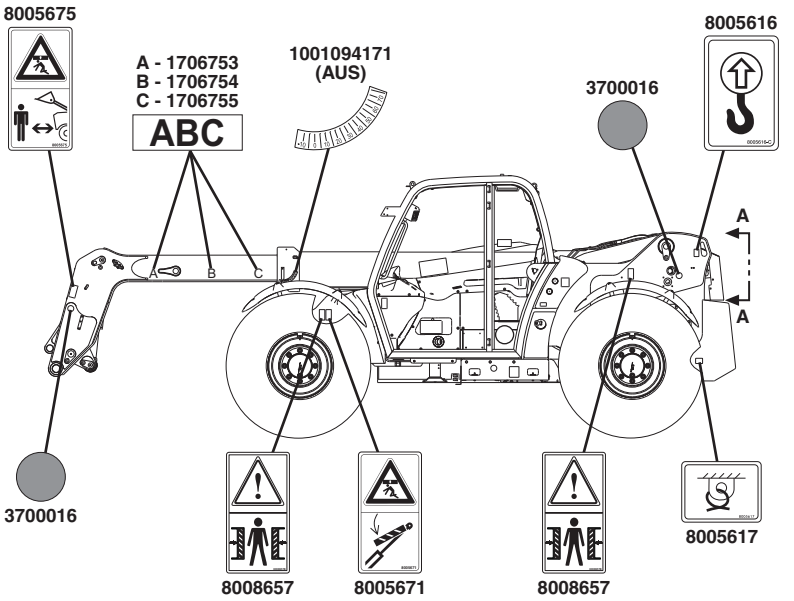
TH336C, TH337C, TH406C & TH407C (CE & AUS)







VIEW OF ENGINE COMPARTMENT
(COMPONENTS REMOVED FOR CLARITY)


8005675
A - 1706753
B - 1706754
C - 1706755
ABC
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(AUS)
3700016
8005616
A
A
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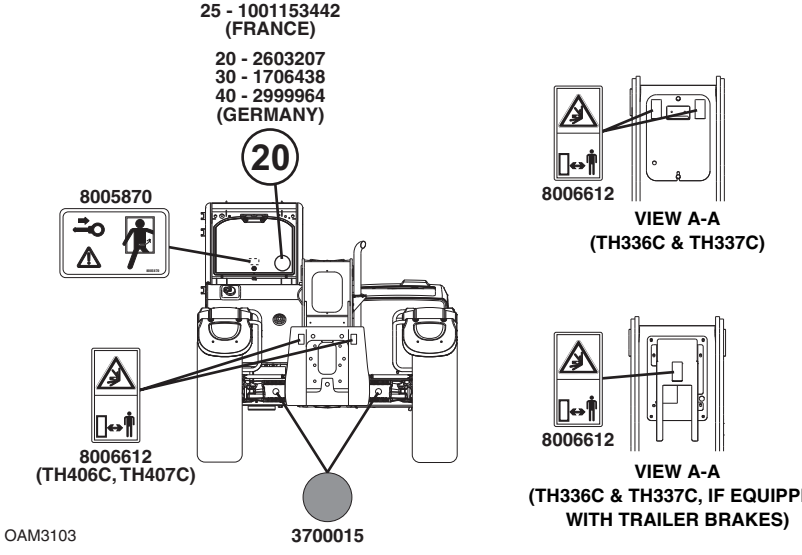
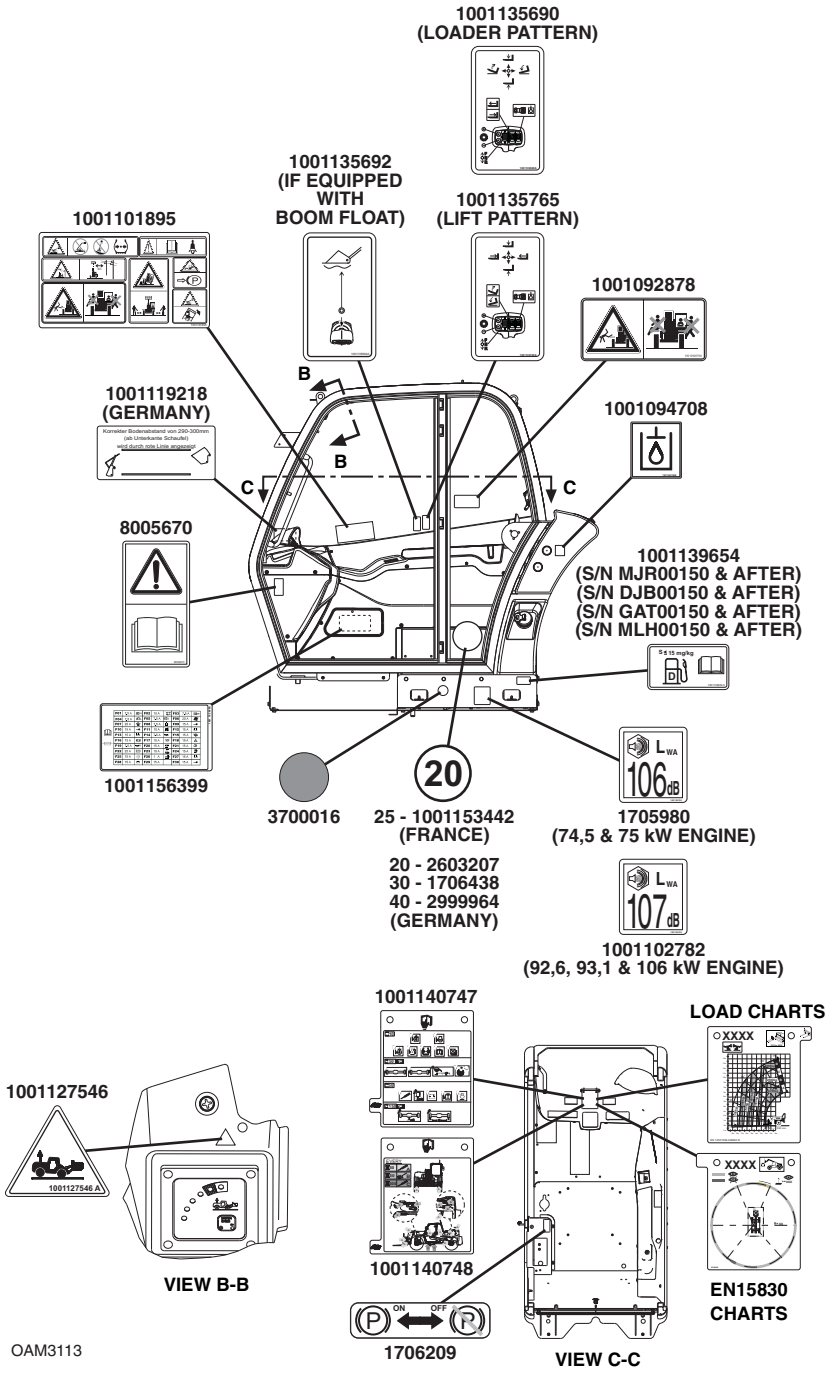
8005671
8008657
8005617


25 - 1001153442
(FRANCE)
20 - 2603207
30 - 1706438
40 - 2999964
(GERMANY)
20
8005870
8006612
(TH406C, TH407C)
3700015
OAM3103
8006612
VIEW A-A
(TH336C & TH337C)
8006612
VIEW A-A
(TH336C & TH337C, IF EQUIPPED
WITH TRAILER BRAKES)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1001135692
(IF EQUIPPED
WITH
BOOM FLOAT)
1001135765
(LIFT PATTERN)
1001101895
1001092878
1001119218
(GERMANY)
1001094708
B
B
C
C
8005670
1001139654
(S/N MJR00150 & AFTER)
(S/N DJB00150 & AFTER)
(S/N GAT00150 & AFTER)
(S/N MLH00150 & AFTER)
1001156399
3700016
20
25 - 1001153442
(FRANCE)
20 - 2603207
30 - 1706438
40 - 2999964
(GERMANY)
1705980
(74,5 & 75 kW ENGINE)
1001102782
(92,6, 93,1 & 106 kW ENGINE)
1001140747
LOAD CHARTS
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1001127546 A
VIEW B-B
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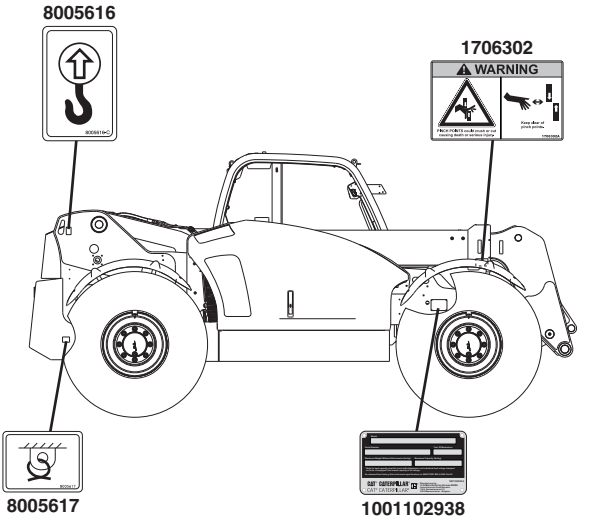
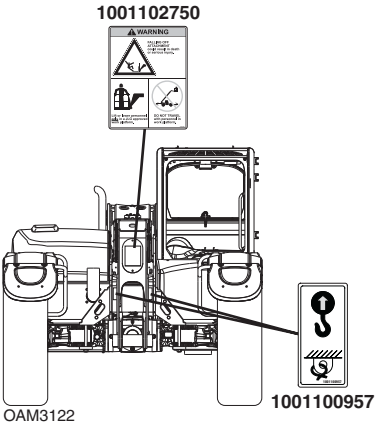
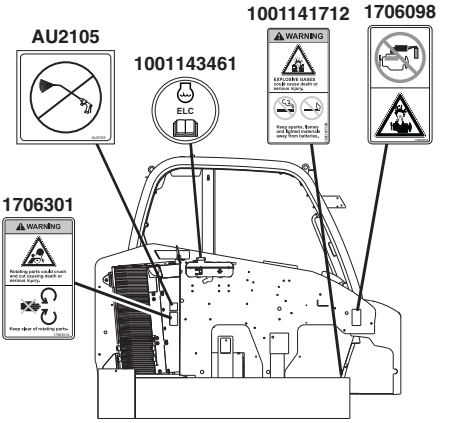
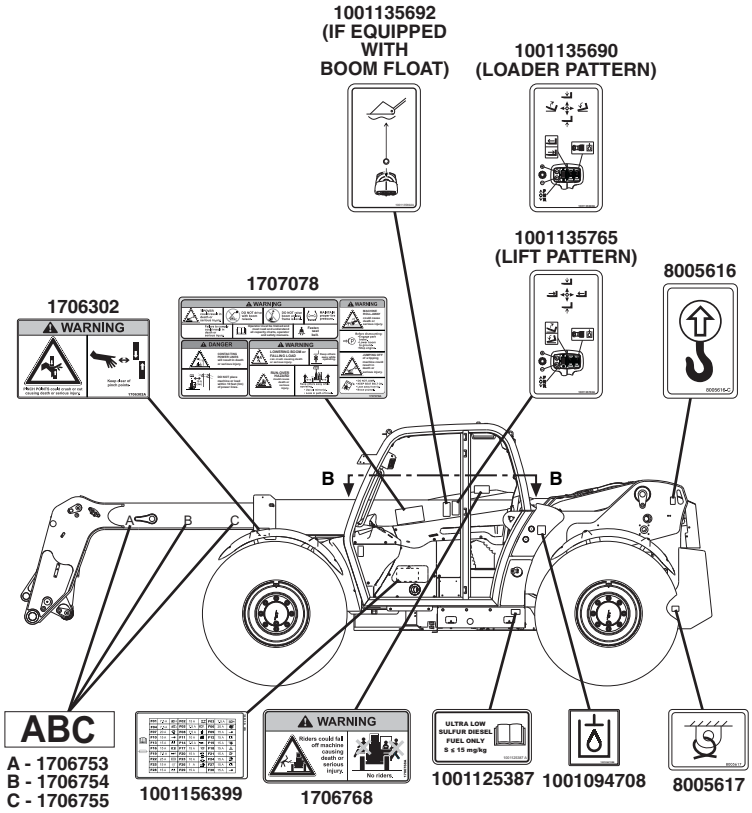
EN15830
CHARTS
ON
OFF
1706209
VIEW C-C
OAM3113







VIEW OF ENGINE COMPARTMENT
(COMPONENTS REMOVED FOR CLARITY)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WITH
BOOM FLOAT)
1001135690
(LOADER PATTERN)
1001135765
(LIFT PATTERN)
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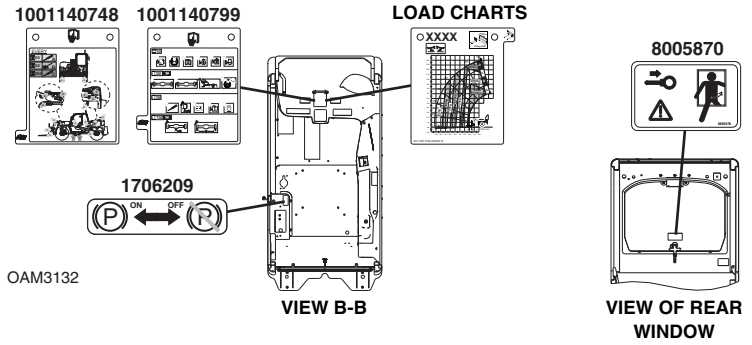
1707078
1706302
WARNING
B
B
A
B
C
ABC
A - 1706753
B - 1706754
C - 1706755
1001156399
WARNING
1706768
ULTRA LOW
SULFUR DIESEL
FUEL ONLY
5 x 15 mg/kg
1001125387
1001094708
8005617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1001140799
LOAD CHARTS
XXXX
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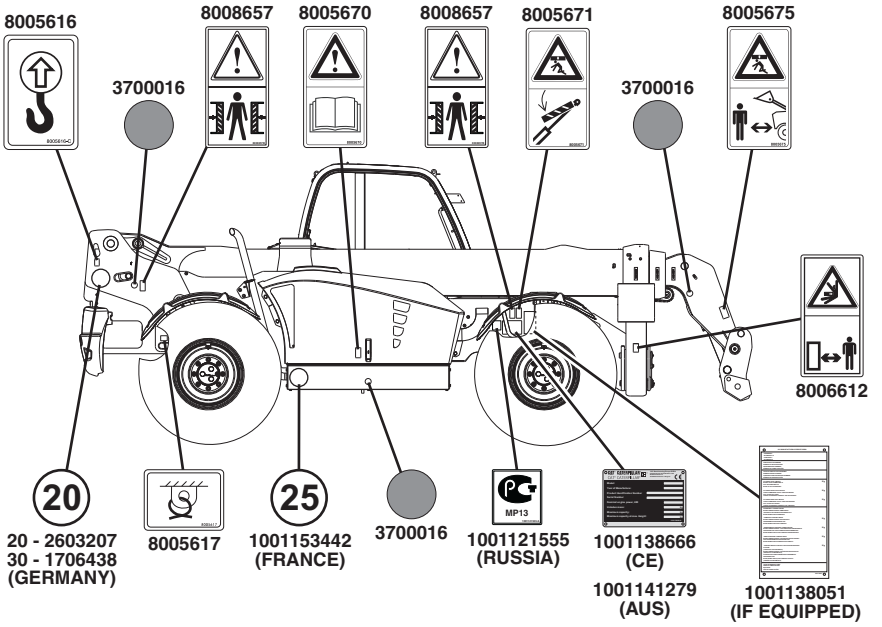
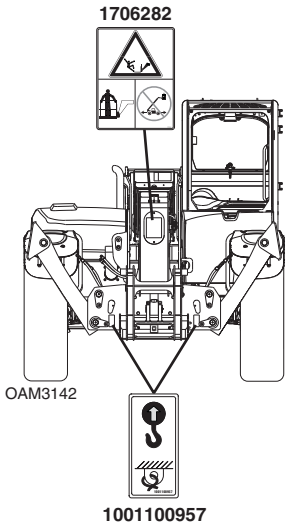
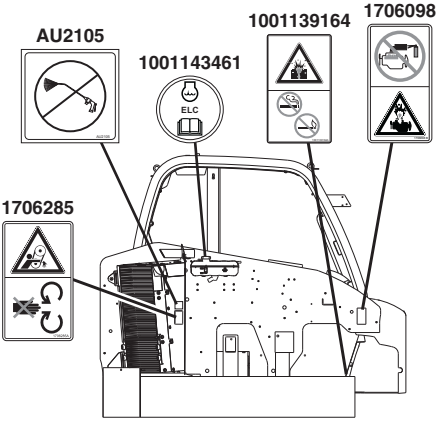
1706209
ON
OFF
P
R
OAM3132
VIEW B-B
VIEW OF REAR
WINDOW

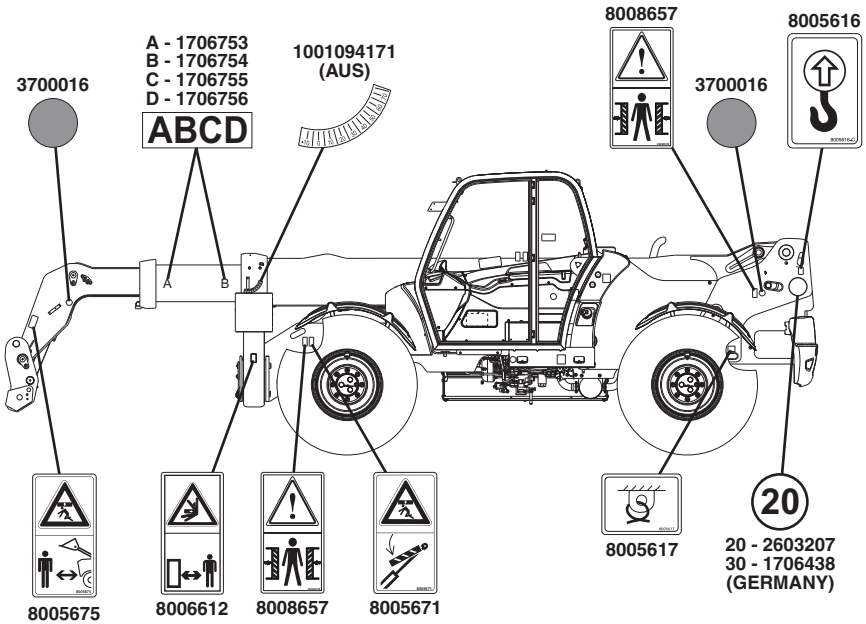
TH414C, TH514C & TH417C (CE & AUS)

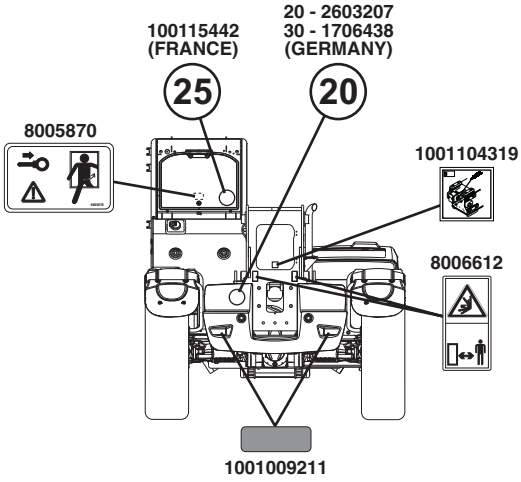




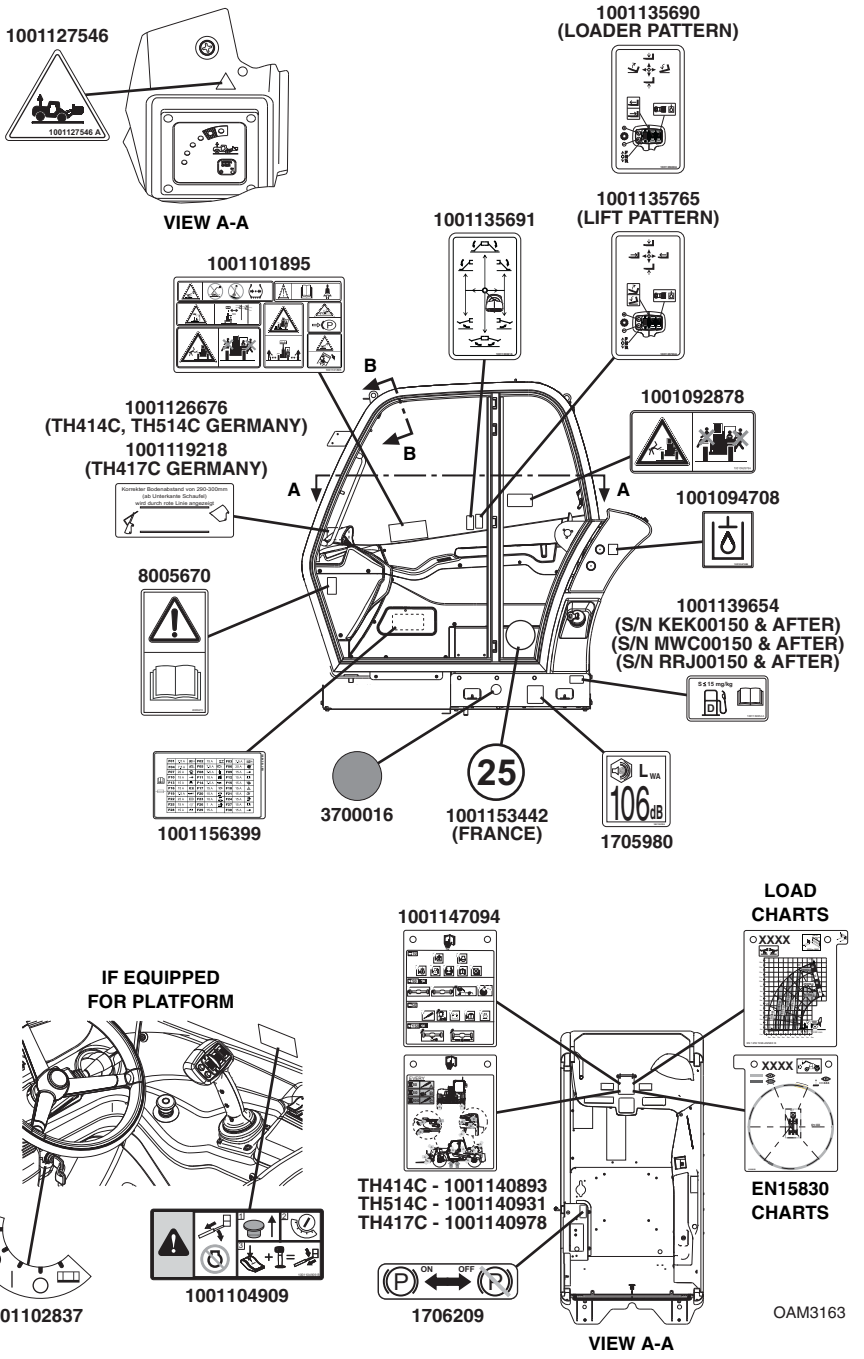


VIEW OF ENGINE COMPARTMENT
(COMPONENTS REMOVED FOR CLARITY)

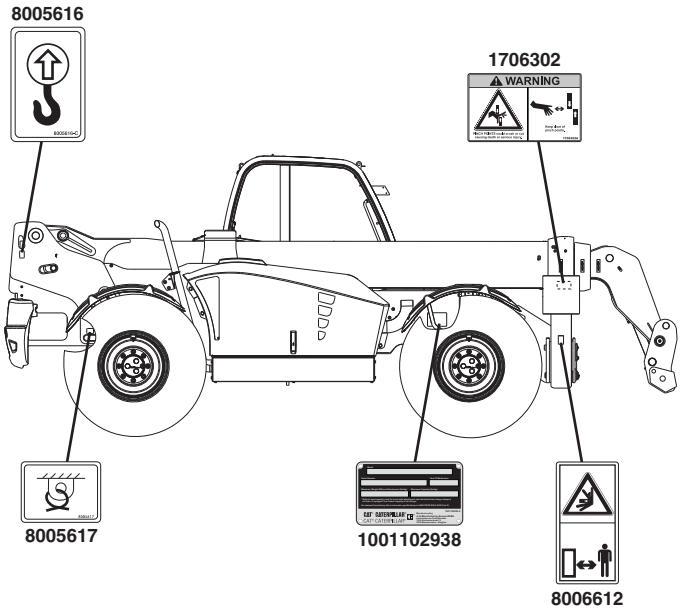

3700016
A - 1706753
B - 1706754
C - 1706755
D - 1706756
ABCD
1001094171
(AUS)
8008657
3700016
8005616
8005675
8006612
8008657
8005671
8005617
20
20 - 2603207
30 - 1706438
(GERMANY)

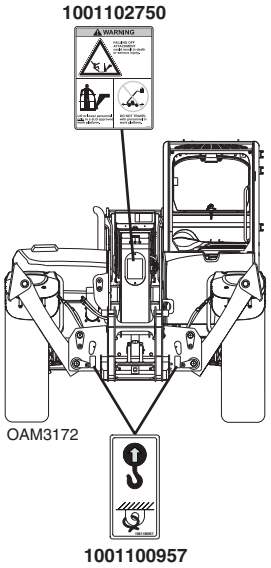

100115442
(FRANCE)
20 - 2603207
30 - 1706438
(GERMANY)
25
20
8005870
1001104319
8006612
1001009211

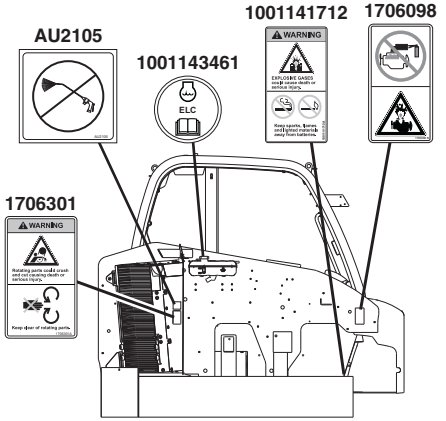
OAM3152


1001127546
1001127546 A
VIEW A-A
1001135690
(LOADER PATTERN)
1001135765
(LIFT PATTERN)
1001135691
1001101895
B
B
A
A
1001126676
(TH414C, TH514C GERMANY)
1001119218
(TH417C GERMANY)
Korrekter Bodenabstand von 290-300mm
(ab Unterkante Schaufel)
wird durch rote Linie angezeigt
1001092878
1001094708
8005670
1001139654
(S/N KEK00150 & AFTER)
(S/N MWC00150 & AFTER)
(S/N RRJ00150 & AFTER)
S ≤ 15 mg/kg
1001156399
3700016
25
1001153442
(FRANCE)
L WA
106 dB
1705980
IF EQUIPPED
FOR PLATFORM
1001102837
1001104909
1001147094
TH414C - 1001140893
TH514C - 1001140931
TH417C - 1001140978
ON
OFF
1706209
LOAD
CHARTS
XXXX
XXXX
EN15830
CHARTS
VIEW A-A
OAM3163

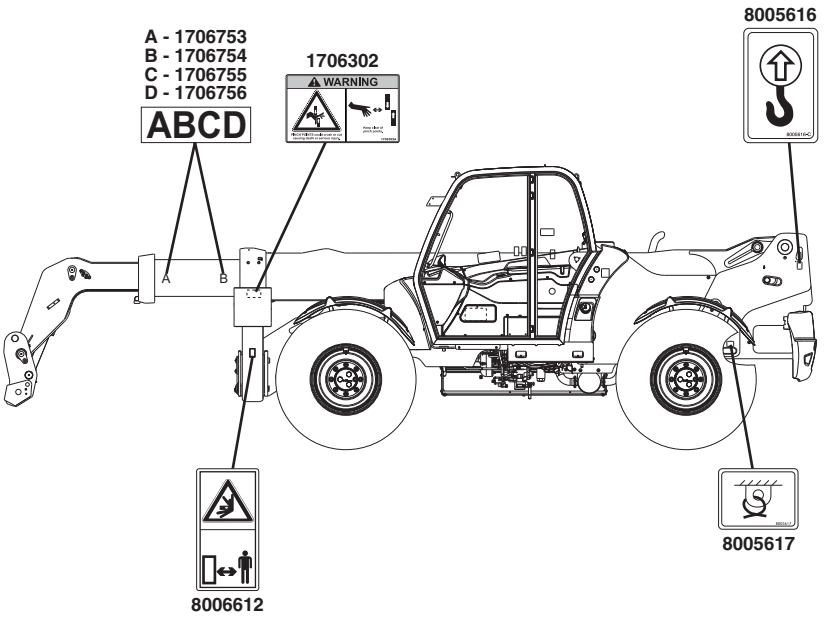
TH514C (ANSI)

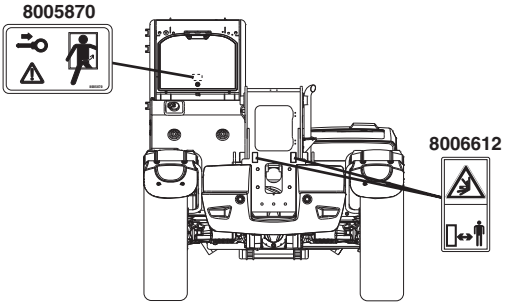




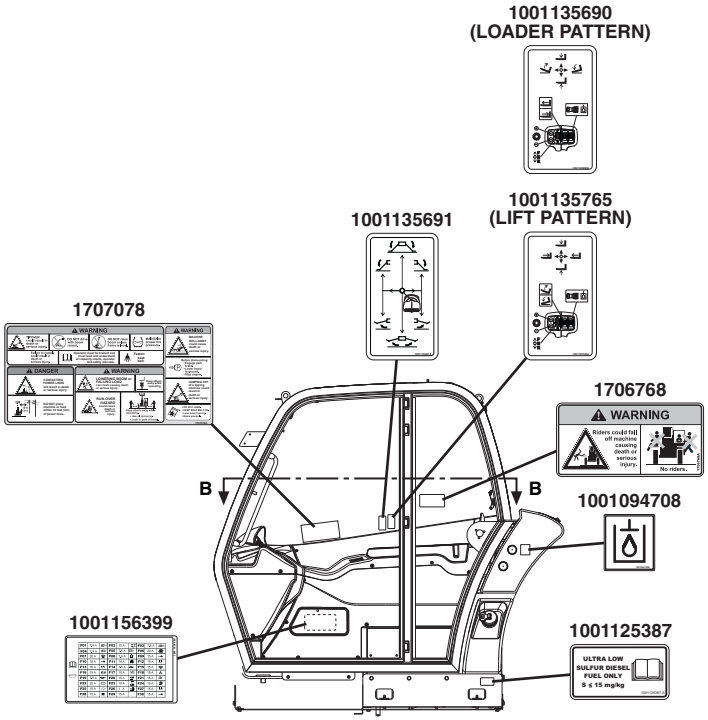


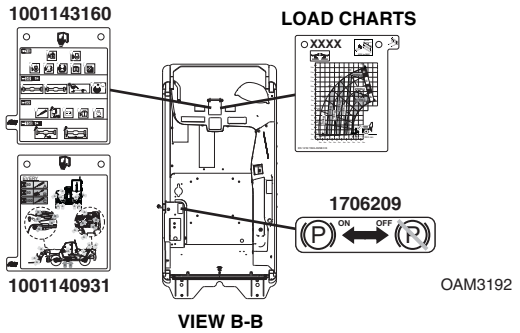
VIEW OF ENGINE COMPARTMENT (COMPONENTS REMOVED FOR CLARITY)


A - 1706753
B - 1706754
C - 1706755
D - 1706756
ABCD
1706302
WARNING
8005616
A
B
8006612
8005617

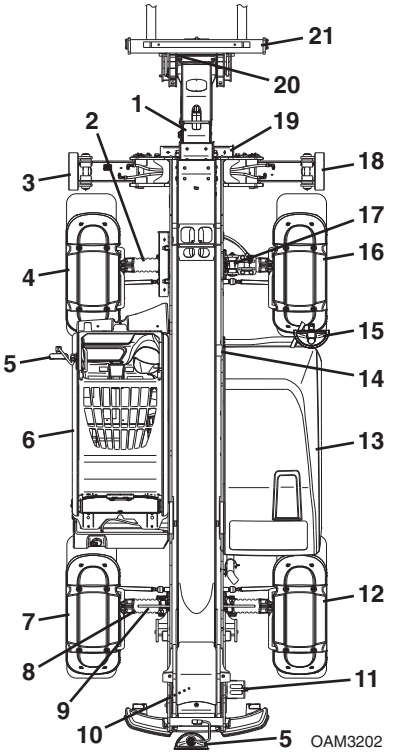

8005870
8006612

OAM3181


1001135690
(LOADER PATTERN)
1001135765
(LIFT PATTERN)
1001135691
1707078
1706768
WARNING
Riders could fall off machine causing death or serious injury.
No riders.
B
B
1001094708
1001156399
1001125387
ULTRA LOW SULFUR DIESEL FUEL ONLY
5 ≤ 15 mg/kg


1001143160
LOAD CHARTS
XXXX
1706209
ON
OFF
1001140931
OAM3192
VIEW B-B

2.3 WALK-AROUND INSPECTION



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

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

1. Boom Sections and Lift, Tilt, Extend/Retract, Compensating (Slave) Cylinders -
   - Check front, top, side and rear wear pads for presence of grease.
   - Pivot pins secure; hydraulic hoses undamaged, not leaking.
2. Front Axle - Steer cylinders undamaged, not leaking; pivot pins secure (if equipped); hydraulic hoses undamaged, not leaking.
3. Left Outrigger (TH414C, TH514C & TH417C) - Pins secure; hydraulic hoses and cylinder undamaged, not leaking.
4. Wheel/Tire Assembly - Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.

5. Mirror - Clean and undamaged.
6. Cab and Electrical -
   - General appearance; no visible damage.
   - Frame level indicator(s) and window glass undamaged and clean.
   - Gauges, switches, joystick, foot controls and horn operational.
   - Check seat belt for damage, replace belt if frayed or cut webbing, damaged buckles or loose mounting hardware.
7. Wheel/Tire Assembly - Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.
8. Rear Axle - Steer cylinders undamaged, not leaking; pivot pins secure; hydraulic hoses undamaged, not leaking.
9. LSI Sensor (CE & AUS) - See inspection note.
10. Main Control Valve - See inspection note.
11. Wheel Chock (if equipped) - See inspection note.
12. Wheel/Tire Assembly - Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.
13. Engine Compartment -
    - Drive belts, check condition and replace as required.
    - Engine mounts - See inspection note.
    - Battery cables tight, no visible damage or corrosion.
    - Engine cover properly secured.
14. Boom Sensor (CE & AUS) - See inspection note.
15. Mirrors - Clean and undamaged.
16. Wheel/Tire Assembly - Properly inflated and secured; no loose or missing lug nuts. Inspect for worn tread, cuts, tears or other discrepancies.
17. Frame Level Cylinder (TH414C, TH514C & TH417C) - Pins secure; hydraulic hoses undamaged, not leaking.
18. Right Outrigger (TH414C, TH514C & TH417C) - Pins secure; hydraulic hoses and cylinder undamaged, not leaking.
19. Boom Prop (if equipped) - See inspection note.
20. Platform Recognition Sensor (AUS - if equipped for platform): See inspection note.
21. Attachment - Properly installed, see *"Attachment Installation"* on page 5-13.

2.4 WARM-UP AND OPERATIONAL CHECKS

Warm-Up Check

During warm-up period, check:

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

⚠ WARNING

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

Operational Check

When engine warms, perform an operational check:

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

2.5 OPERATOR CAB

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

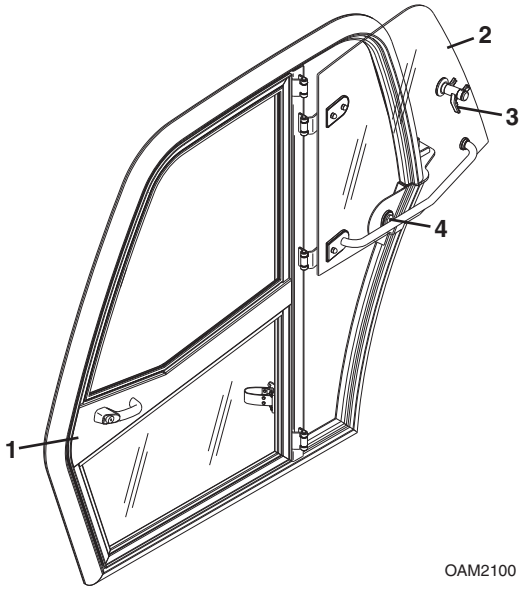
⚠ WARNING

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

2.6 WINDOWS

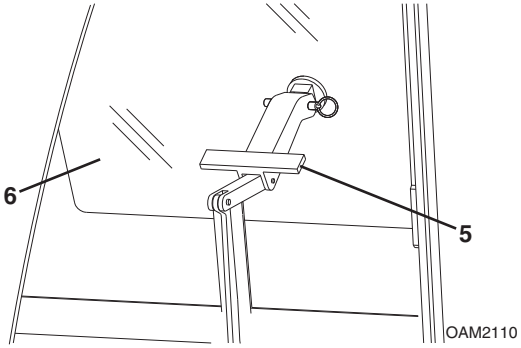
Keep all windows clean and unobstructed.

Cab Door Window



- Cab door (**1**) must be closed during operation.
- During operation the cab door window (**2**) must either be latched open or closed.
- Open the cab door window using lever (**3**) and secure it in the latch (**4**).
- Press the release inside the cab to unlatch the window.

Rear Window



- Lift lever (**5**) and push to open the rear window (**6**).
- Lift lever and pull to close.

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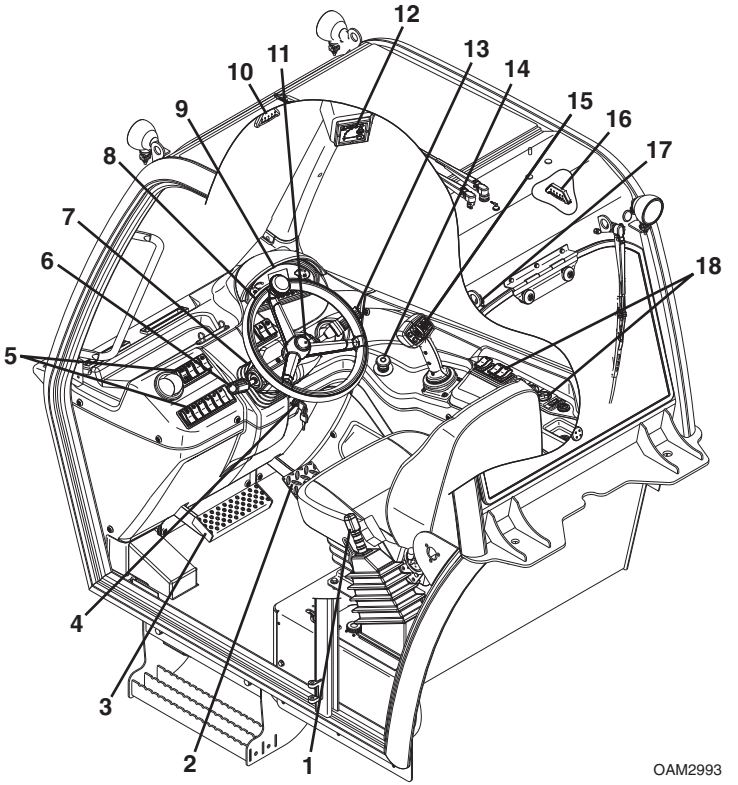
SECTION 3 - CONTROLS AND INDICATORS

3.1 GENERAL

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

3.2 CONTROLS



1. Park Brake: See page 3-11.

2. Accelerator Pedal: Pressing down the pedal increases engine and hydraulic speed.

3. Service Brake Pedal: The further the pedal is depressed, the slower the travel speed.

4. Ignition Switch: Key Activated. See page 3-10.

5. Front Console Switches: See page 3-24.

6. Transmission Control Lever (if equipped): See page 3-12.

7. Steering Column Adjuster: See page 3-16.

8. Steering Wheel: Turning the steering wheel to the left or right steers the machine in the corresponding direction. Three steering modes are available. See *"Steer Modes"* on page 3-32.

9. Instrument Panel: See page 3-4.

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

11. Keypad: See page 3-8.

12. LSI Indicator (CE & AUS): See page 3-14.

13. Accessory Control Lever (if equipped): See page 3-28.

14. Power/Emergency Stop Switch (if equipped for platform): Push down to shut off power and stop engine.

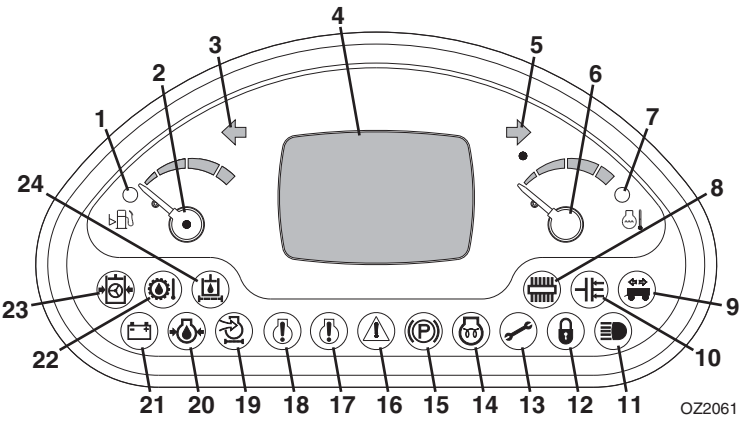
15. Boom Joystick and Transmission Control: See page 3-18.

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

17. Power Outlet: 12V receptacle.

18. Right Console Switches: See page 3-26.

Instrument Panel



1. Low Fuel Indicator: Illuminates and buzzer sounds briefly when fuel level is low.
2. Fuel Gauge: Indicates amount of fuel in fuel tank.
3. Left Turn Signal Indicator: Illuminates when left turn signal is active.
4. Display Screen: See page 3-6.
5. Right Turn Signal Indicator: Illuminates when right turn signal is active.
6. Engine Temperature Gauge: Indicates engine operating temperature.
7. Engine Temperature Warning Indicator: Illuminates and buzzer sounds when engine temperature is too high.
8. Continuous Auxiliary Hydraulics Indicator: Illuminates when continuous auxiliary hydraulics are active.
9. Trailer Turn Signal Indicator: Illuminates when trailer turn signal is activated.
10. Clutch Lock Indicator: Illuminates when clutch lock feature is engaged.
11. High Beam Indicator: Illuminates when high beam lights are on.
12. Anti Theft Indicator: Illuminates and buzzer sounds briefly at start-up when anti theft feature is active. Enter anti theft code, see page 3-30.
13. Maintenance Indicator: Illuminates and buzzer sounds briefly when maintenance is required.
14. Engine Preheat Indicator: Illuminates with ignition key in position II. Indicator goes out when start temperature is reached.
15. Park Brake Indicator: Illuminates when park brake is applied. See page 3-11.

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

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

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

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

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

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

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

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

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

NOTICE

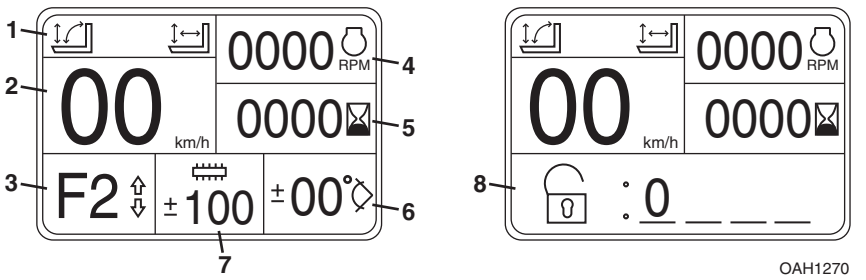
EQUIPMENT DAMAGE. When the engine fault, system distress or a red indicator illuminates (except park brake), immediately bring machine to a stop, lower boom and attachment to ground and stop the engine. Determine cause and correct before continued use.

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

Display Screen

DISPLAY SHOWN WITH CONTINUOUS AUXILIARY HYDRAULICS ACTIVE

DISPLAY SHOWN WITH ANTI THEFT ACTIVE AT SYSTEM START



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

a. Loader Joystick Pattern - Displays loader joystick pattern icon on left when active. See page 3-21.

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

2. Speed and Power to Platform:

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

b. Transfer Power to Platform (if equipped for platform) - Assists with transferring power to platform. Refer to the THP18s & THP45s Platform for TH414, TH514, TH417, TH414C, TH514C, TH417C Operation & Maintenance Manual.

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

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

b. Gear - First (1), Second (2), Third (3), Fourth (4) or, if equipped, Fifth (5), Sixth (6).

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

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

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

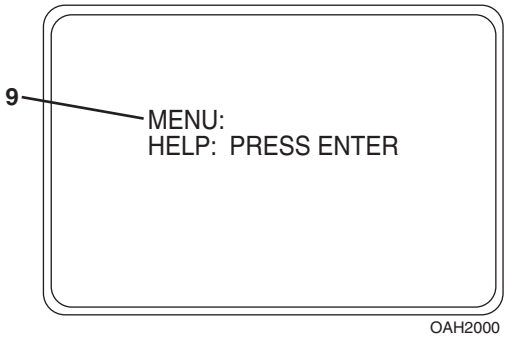
7. Continuous Auxiliary Hydraulics, Steering Mode Change and Platform Status:

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

b. Steering Mode Change - Assists with steering mode change. See *"Steer Modes"* on page 3-32 for details.

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

8. Anti Theft Code Entry: If active, the four digit code must be entered after system start. See *"Anti Theft"* on page 3-30 for details.



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

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

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

- Machine Speed - Select units (km/h or m/h) to be displayed.
- Engine Temperature - Select units (Celsius or fahrenheit) to be displayed.
- Steering Alignment Mode - Select mode (manual or all wheel assisted) to be used when changing steering modes, see page 3-32.

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

d. Access Level - Code entry determines access level.

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

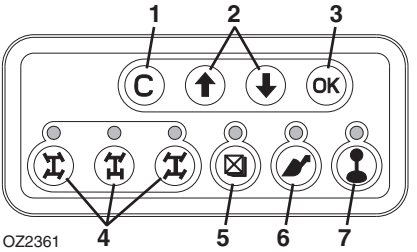
e. Diagnostics - View diagnostic information.

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

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

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

Keypad



1. C (Clear or escape): Use in conjuction with display screen. Returns user interface one level during navigation. If at top level menu, depress and hold for one second to exit.
2. Up/Down Arrows: Use in conjuction with display screen. Navigate menu selections and change adjustable values.
3. OK (Enter): Use in conjuction with display screen. Confirms user interface inputs.
4. Steer Mode: Three steer modes available: 4-Wheel Circle Steer, 2-Wheel Front Steer and 4-Wheel Crab Steer. Illuminated LED indicates current steer mode. See page 3-32.

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

⚠ WARNING

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

6. Bucket Mode: LED lit while activated. Increases response to boom functions.
7. Joystick Function: LED lit while activated. Boom, auxiliary hydraulics and outrigger functions are enabled. Deactivate this function before traveling on public roads. See *"Road Operation (CE)"* on page 4-12.

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

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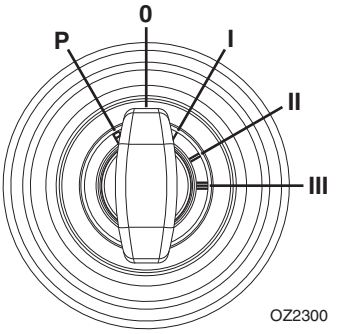
Ignition

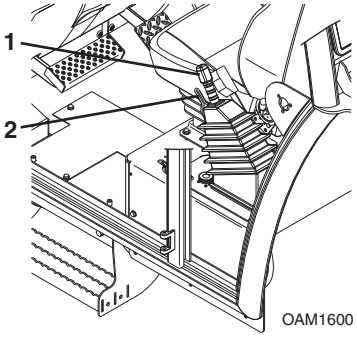


- Position **0** - Engine off.
- Position **I** - Voltage available for all electrical functions.
- Position **II** - Wait to start engine until preheat indicator on instrument panel goes out.
- Position **III** - Engine start. In the event the engine does not start, rotate key to position 0 then back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

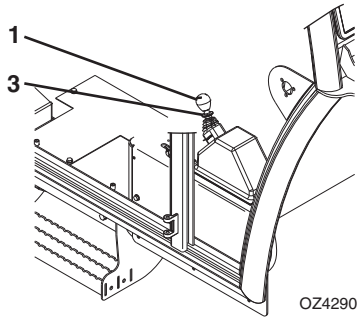
Note: *Key is removable in the 0 and P positions.*

Park Brake

IF EQUIPPED WITH MECHANICAL PARK BRAKE



IF EQUIPPED WITH HYDRAULIC PARK BRAKE



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

If Equipped with Mechanical Park Brake

- Pull lever back to apply park brake.
- Squeeze release (**2**) and push lever forward to release park brake.

If Equipped with Hydraulic Park Brake

- Pull lever back to apply park brake.
- Lift detent ring (**3**) and push lever forward to release park brake.

⚠ WARNING

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

⚠ WARNING

CRUSH HAZARD. Applying park brake while traveling will cause unit to stop abruptly and could cause load loss. To stop the machine in an emergency, apply the park brake.

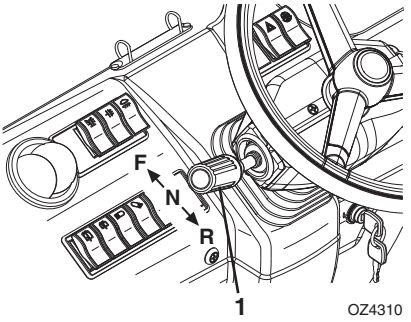
Parking Procedure

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

Transmission Control Lever (if equipped)

Direction of Travel Selection

Note: *Transmission control lever takes priority over joystick transmission controls.*



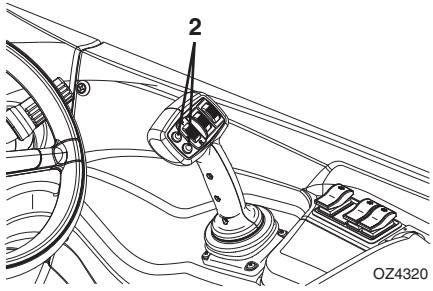
Transmission control lever (**1**) engages forward or reverse travel.

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

⚠ WARNING

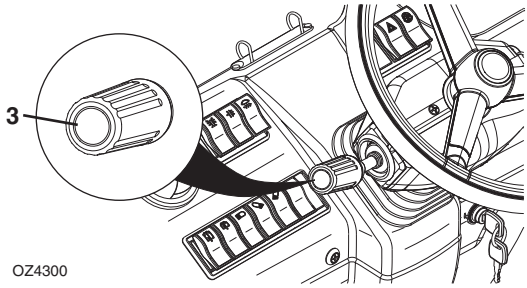
TIP OVER/CRUSH HAZARD. Bring telehandler to a complete stop before shifting transmission. A sudden change in direction of travel could reduce stability and/or cause load to shift or fall.

Gear Selection



Gear selection is made with joystick buttons (**2**). See page 3-20 or page 3-23 for details.

Horn



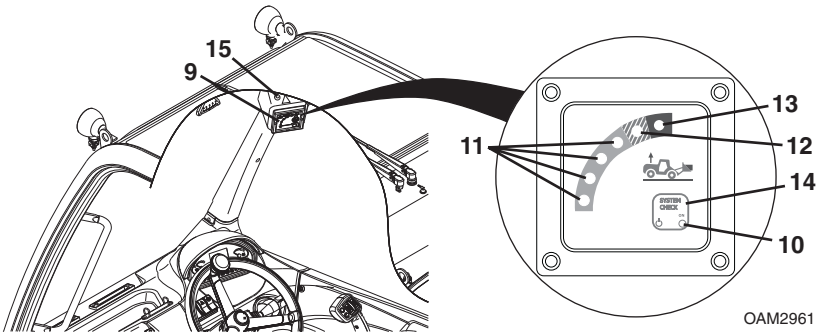
Horn button (**3**) is located on the end of transmission control lever.

- Depress to sound horn.

Load Stability Indicator - LSI (CE & AUS)

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

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

The LSI has two modes:

Active Mode (TH336C, TH337C, TH406C, TH407C, TH414C, TH514C & TH417C)

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

Passive Mode (TH336C, TH337C, TH406C & TH407C)

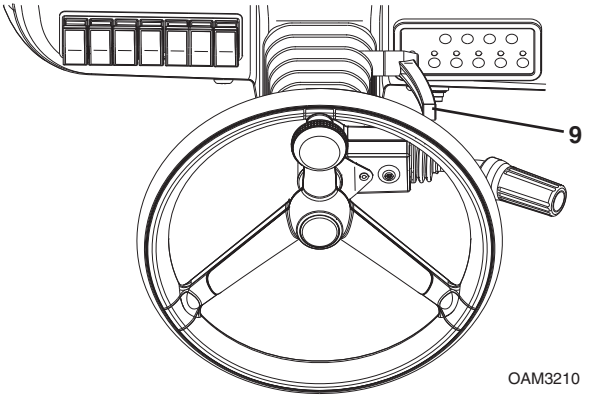
- The orange LED (**15**) illuminates when either of the following occurs:
  - The boom is fully retracted.
  - The park brake is not applied and transmission is in forward or reverse.
- When approaching forward stability limitations, visual and audible indication is provided and the automatic function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

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

⚠ WARNING

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

Steering Column Adjuster



- Follow *"Shut-Down Procedure"* on page 4-3.
- Turn lever (**9**) counterclockwise to unlock.
- Place steering column in desired position.
- Turn lever clockwise to lock.

⚠ WARNING

TIP OVER/CRUSH HAZARD. Bring telehandler to a complete stop and shutdown engine before adjusting steering column. A sudden change in direction of travel could reduce stability and/or cause load to shift or fall.

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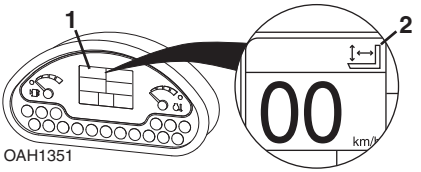
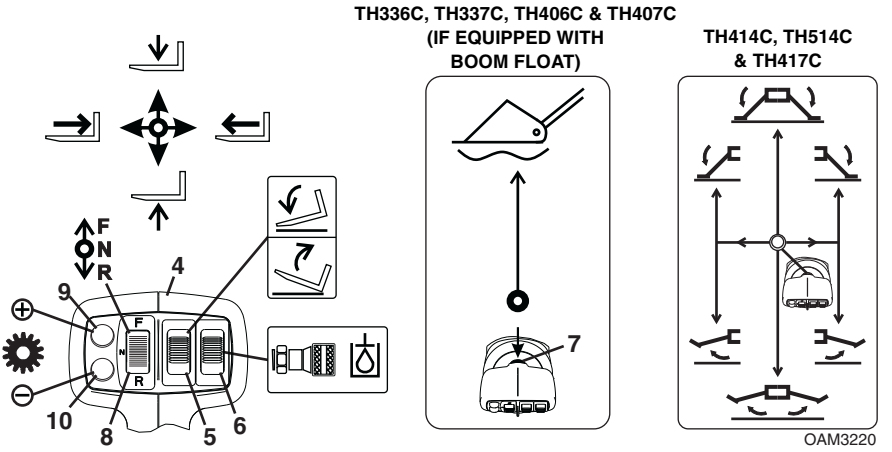
Joystick

Lift Joystick Pattern



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



The joystick (**4**) controls the boom, attachment, auxiliary hydraulics, outrigger and transmission functions.

Boom Functions

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

⚠ WARNING

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

Attachment Functions

Attachment tilt is controlled by the roller switch (**5**).

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

Auxiliary Hydraulic Functions

Auxiliary Hydraulics roller switch (**6**) controls function of attachments that require hydraulic supply for operation. See Section 5 - Attachments and Hitches for approved attachments and control instructions.

Boom Float Function (TH336C, TH337C, TH406C & TH407C, if equipped)

Joystick trigger button (**7**) controls boom float. Boom float allows free movement of boom (lift/lower) while the attachment follows ground contours.

- With boom retracted and lowered, press and hold the button; move the joystick forward to activate boom float. Button and joystick position must be held to maintain boom float.
- Release button to deactivate boom float and move joystick to neutral position.

Outrigger Functions (TH414C, TH514C & TH417C)

Joystick trigger button (**7**) controls both outriggers.

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

⚠ WARNING

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

Transmission Control

Note: *Transmission control lever (see page 3-12) takes priority over joystick transmission controls.*

Transmission switch (**8**) engages forward or reverse travel.

- Depress top of switch for forward travel; Depress bottom of switch for reverse travel. Move switch to centered position for neutral.
- Forward or reverse travel can be selected while in any gear.
- When traveling in reverse, the back-up alarm will automatically sound.
- Travel at slow rates of speed when making turns and driving in reverse.

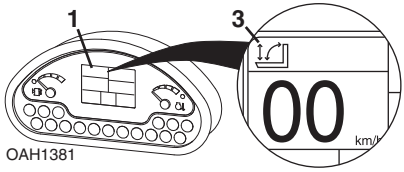
⚠ WARNING

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

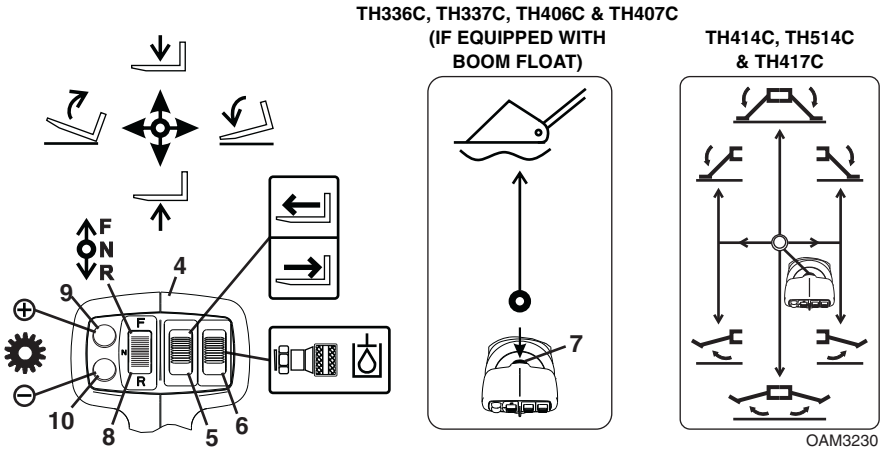
Gear selection is controlled by buttons (**9** & **10**).

- Depress upshift button (**9**) to select a higher gear; Depress downshift button (**10**) to select a lower gear.
- The Transmission is equipped with either six forward and three reverse gears or four forward and three reverse gears. Default gear at start-up is third gear.
- Select the appropriate gear for the task being performed. **Use a lower gear when transporting a load**. Use a higher gear only when driving unloaded for longer distances.
- Slow down prior to downshifting. **Do not downshift more than one gear at a time.**

Loader Joystick Pattern



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



The joystick (**4**) controls the boom, attachment, auxiliary hydraulics, outrigger and transmission functions.

Boom Functions

- Move the joystick back to lift boom; move joystick forward to lower boom.
- Extend/retract is controlled by the roller switch (**5**). Push roller switch up to extend boom; push roller switch down to retract boom.
- The speed of boom functions depends upon the amount of joystick travel in corresponding direction. Increasing engine speed will also increase function speed.
- For two simultaneous boom functions, move the joystick between quadrants. For example; moving the joystick forward and to the left will lower boom and tilt attachment up simultaneously.

⚠ WARNING

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

Attachment Functions

Attachment tilt is controlled by the joystick.

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

Auxiliary Hydraulic Functions

Auxiliary Hydraulics roller switch (**6**) controls function of attachments that require hydraulic supply for operation. See Section 5 - Attachments and Hitches for approved attachments and control instructions.

Boom Float Function (TH336C, TH337C, TH406C & TH407C, if equipped)

Joystick trigger button (**7**) controls boom float. Boom float allows free movement of boom (lift/lower) while the attachment follows ground contours.

- With boom retracted and lowered, press and hold the button; move the joystick forward to activate boom float. Button and joystick position must be held to maintain boom float.
- Release button to deactivate boom float and move joystick to neutral position.

Outrigger Functions (TH414C, TH514C & TH417C)

Joystick trigger button (**7**) controls both outriggers.

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

⚠ WARNING

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

Transmission Control

Note: *Transmission control lever (see page 3-12) takes priority over joystick transmission controls.*

Transmission switch (**8**) engages forward or reverse travel.

- Depress top of switch for forward travel; Depress bottom of switch for reverse travel. Move switch to centered position for neutral.
- Forward or reverse travel can be selected while in any gear.
- When traveling in reverse, the back-up alarm will automatically sound.
- Travel at slow rates of speed when making turns and driving in reverse.

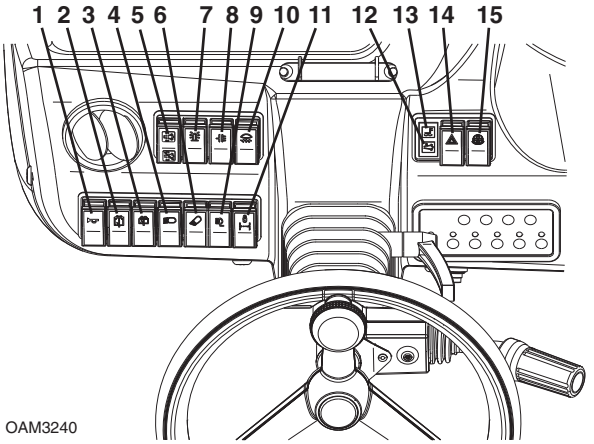
⚠ WARNING

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

Gear selection is controlled by buttons (**9** & **10**).

- Depress upshift button (**9**) to select a higher gear; Depress downshift button (**10**) to select a lower gear.
- The Transmission is equipped with either six forward and three reverse gears or four forward and three reverse gears. Default gear at start-up is third gear.
- Select the appropriate gear for the task being performed. **Use a lower gear when transporting a load**. Use a higher gear only when driving unloaded for longer distances.
- Slow down prior to downshifting. **Do not downshift more than one gear at a time.**

Front Console Switches



1. Horn Switch (if equipped): Depress and hold to sound horn.
2. Roof Wiper Switch (if equipped): On/Off switch.
3. Rear Wiper Switch (if equipped): On/Off switch.
4. Driving Lights Switch (if equipped): On/Off switch.
   Note: *ANSI Only - Driving lights switch must be in the ON position in order to operate work lights. Prior to machine shut-down, ensure driving lights switch is in the OFF position.*
5. Regeneration Switch (S/N MJR00150 & After, S/N DJB00150 &After, S/N GAT00150 & After, S/N MLH00150 & After, S/N KEK00150 & After, S/N MWC00150 & After, S/N RRJ00150 & After - if equipped with 75 kW engine): Momentary switch used to inhibit regeneration or perform a manual regeneration. See page 4-4 for details.
6. Front and Rear Cab Work Lights Switch (if equipped): On/Off switch.
7. Beacon Light Switch (if equipped): On/Off switch. Place magnetic base of beacon on cab roof. Power supplied by 12V receptacle at rear left of cab roof.
8. Clutch Lock Switch: Depress front of switch to activate system and keep transmission engaged while depressing service brake. Depress back of switch to deactivate system and have transmission disengage while depressing service brake.
9. Boom Work Lights Switch (if equipped): On/Off switch.
10. Fog Lights Switch (if equipped): On/Off switch.
11. Hydraulic Quick Coupler Switch (if equipped): Used in conjunction with the joystick to hydraulically lock or unlock an attachment.

12. High Exhaust System Temperature (HEST) Light (S/N MJR00150 & After, S/N DJB00150 &After, S/N GAT00150 & After, S/N MLH00150 & After, S/N KEK00150 & After, S/N MWC00150 & After, S/N RRJ00150 & After - if equipped with 75 kW engine) Illuminates during active regeneration. See page 4-4 for details.

⚠ WARNING

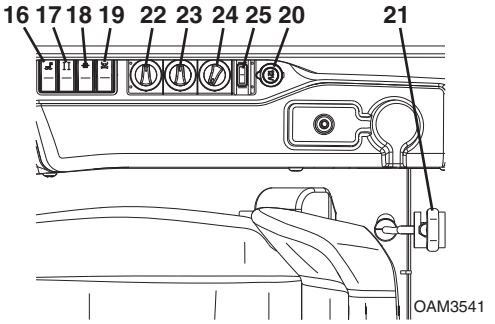
HIGH EXHAUST TEMPERATURE. Keep flammables and people away from hot exhaust.

13. Boom Ride Control Indicator (TH336C, TH337C, TH406C & TH407C, if equipped): Illuminates when boom ride control system is activated.

14. Hazard Lights Switch (if equipped): On/Off switch.

15. Reversing Fan Switch (if equipped): See page 3-29.

Right Console Switches



16. Boom Ride Control Switch (TH336C, TH337C, TH406C & TH407C, if equipped): Depress switch to activate boom ride control. While activated and traveling 5 kph (3 mph) or faster, the system acts to cushion boom movement. Depress switch again to deactivate boom ride control.
Auxiliary Power Switch (TH414C, TH514C & TH417C, if equipped for platform): Depress and hold in place to engage auxiliary power. See *"Emergency Lowering of Boom If Equipped for Platform"* on page 6-3.

17. Second Auxiliary Hydraulics Switch (if equipped): Depress switch to activate second auxiliary hydraulics on boom. See Section 5 - Attachments and Hitches for approved attachments and control instructions.

18. Continuous Auxiliary Hydraulics Switch:

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

b. Relieves auxiliary hydraulic circuit pressure. See page 5-24.

19. Hydraulic Hitch Switch (TH336C, TH337C, TH406C & TH407C, if equipped): Controls position of hydraulic hitch. Depress and hold right side of switch to raise hitch. Depress and hold left side of switch to lower hitch. See page 5-53 for control instructions.
Frame Level Switch (TH414C, TH514C & TH417C): Controls the left to right frame level. Depress right side of switch to rotate frame right; depress left side of switch to rotate frame left. Frame level operable with boom below 20 degrees. If equipped with boom retracted switch, frame level operable with boom below 20 degrees or with boom fully retracted and between 20 and 55 degrees.

20. Power Outlet: 12V receptacle.

21. Hydraulic Hitch Safety Hook Release (TH336C, TH337C, TH406C & TH407C, if equipped): Pull to release safety hooks on hydraulic hitch. See page 5-53 for control instructions.

Heater and Air Conditioning Controls (if equipped)

22. Fan Speed Switch: Adjustable rotary switch.

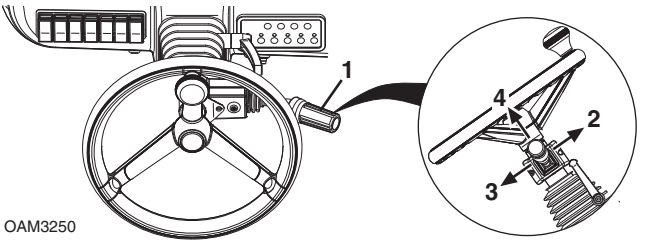
23. Recycle/Fresh Air Switch: Adjustable rotary switch.

24. Temperature Control Switch: Adjustable rotary switch.

25. Air Conditioning Switch: On/Off switch.

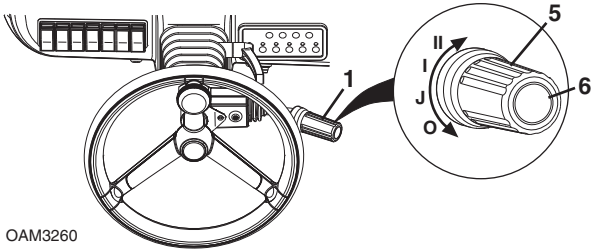
Accessory Control Lever

Turn Signals and Low/High Beam Headlights



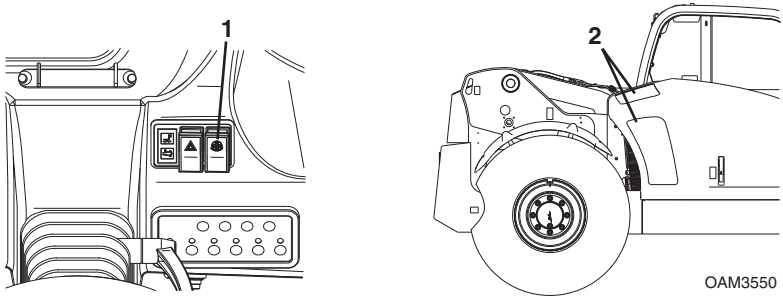
- Push accessory control lever (**1**) forward (**2**) to activate left turn signal.
- Pull lever backward (**3**) to activate right turn signal.
- The lever must be manually returned to the center position to deactivate either turn signal. The lever will not cancel automatically after a turn.
- Pull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

Front Windshield Wiper



- Rotate hand grip (**5**) to activate front windshield wiper.
  O - Off, **J** - Interval (not used), **I** - Continuous or **II** - Fast
- Depress end of lever (**6**) to activate windshield wiper fluid.

Reversing Fan (if equipped)



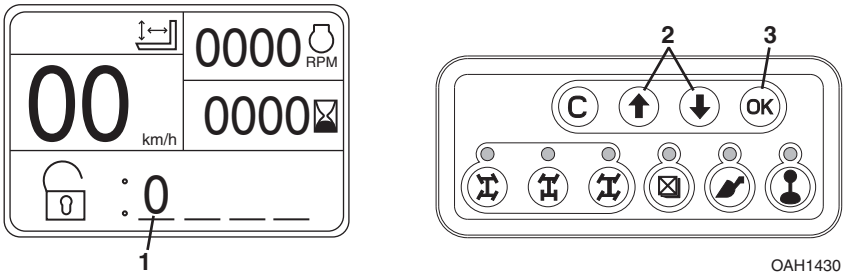
The reversing fan enables the operator to clear debris from the engine cover grill (**2**). Two modes of operation are available at any engine speed.

1. Timed - Fan will reverse automatically at predetermined intervals.
   a. The fan will reverse every 20 minutes for a duration of 2 seconds.
   b. The interval and duration can be adjusted in the Operator Settings using the keypad and display.
2. Manual - The operator can depress and hold front of switch (**1**) to reverse the fan rotation.

Note: *It is recommended to operate the reversing fan prior to opening the engine cover to remove debris.*

3.3 ANTI THEFT

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



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

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

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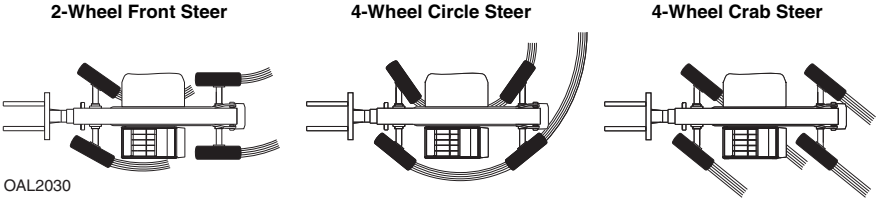
3.4 STEER MODES

Three steer modes are available for operator use.

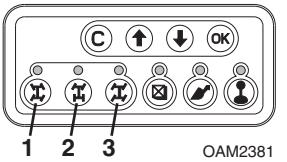


Note: *2-Wheel Front Steer mode is required for travel on public roads.*

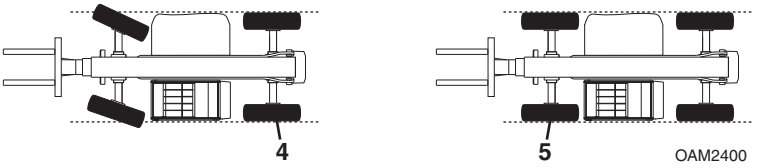
Manual Steering Alignment Mode Change

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

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



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

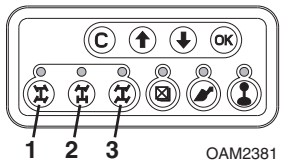


2. With circle steer (**1**) or crab steer (**3**) mode active, turn the steering wheel until the left rear wheel (**4**) is aligned with the side of the machine.
3. Select front steer mode (**2**).
4. Turn the steering wheel until the left front wheel (**5**) is aligned with the side of the machine.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

All Wheel Assisted Steering Alignment Mode Change

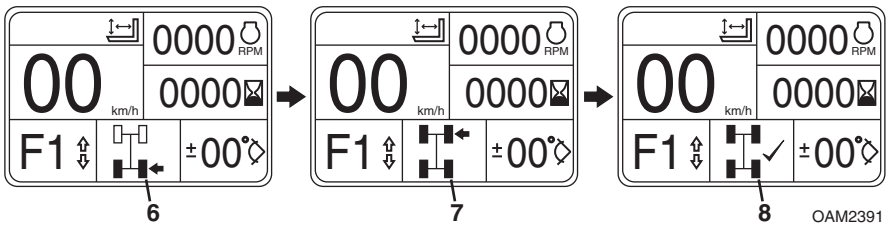
If all wheel assisted steering alignment mode is active under the Operator Tools menu (see page 3-7), use the following procedure for steer mode change.

1. Bring machine to a stop using service brake.



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

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

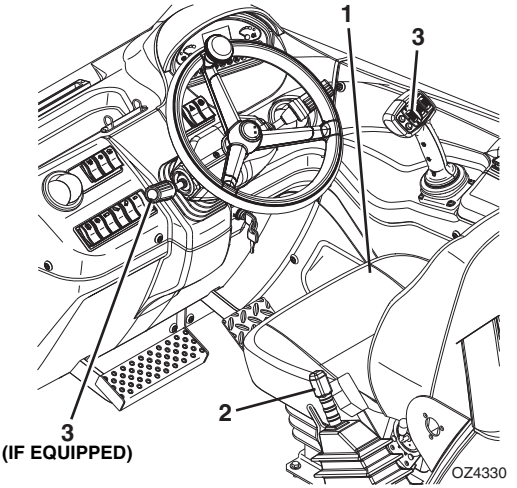


3. Turn the steering wheel until the rear wheels are centered (**6**). This step will be skipped if changing from front steer mode and rear wheels are already centered.
4. Turn the steering wheel until the front wheels are centered (**7**). This step will be skipped if changing to front steer mode.
5.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

Note: *Avoid turning steering wheel while machine is shut down. If wheels are not correctly aligned, manual adjustment may be required. See page 3-32.*

3.5 OPERATOR SEAT

Operator Presence (CE & AUS)



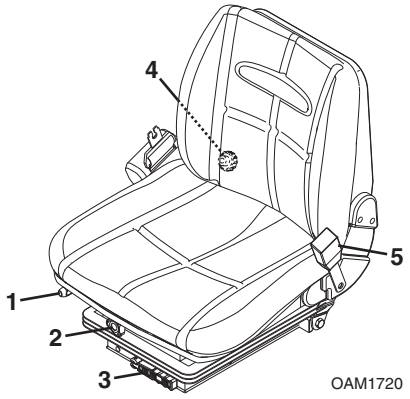
The operator seat (**1**) is equipped with an operator presence system. Engine start and hydraulic functions are prohibited if operator is not present. If the system detects a loss of pressure during operation, after a two second delay one of the following will occur:

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

Adjustments

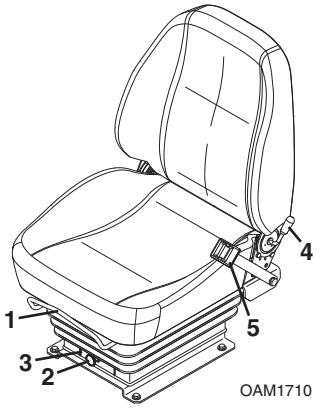
Prior to starting the engine adjust seat for position and comfort.

Mechanical Suspension Seat

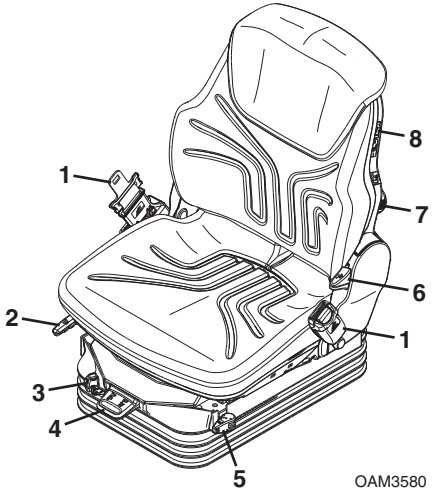


1. Fore/Aft: Use handle to move seat fore and aft.
2. Height: Use knob to adjust height of the seat.
3. Suspension: Use the knob to adjust the suspension to the appropriate weight setting.
4. Backrest: Use knob to adjust backrest angle.
5. Seat Belt: Always fasten seat belt during operation. If required, a 76 mm (3 in) seat belt is available.

Pneumatic Suspension Seats



1. Fore/Aft: Use handle to move seat fore and aft.
2. Suspension: Use the knob to adjust the suspension to the appropriate weight setting.
3. Weight: Displays current weight setting.
4. Backrest: Use lever to adjust backrest angle.
5. Seat Belt: Always fasten seat belt during operation. If required, a 76 mm (3 in) seat belt is available.



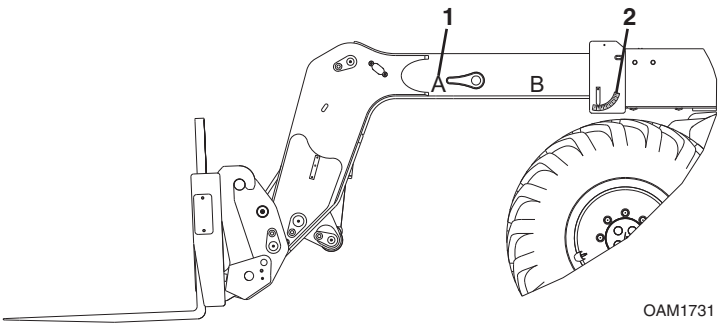
1. Seat Belt: Always fasten seat belt during operation. If required, a 76 mm (3 in) seat belt is available.
2. Fore/Aft: Use handle to move seat fore and aft.
3. Absorber: Use lever to adjust cushioning to soft or hard.
4. Suspension: Use the lever to adjust the suspension to the appropriate weight and height settings.
5. Fore/Aft Isolator: Use lever to activate fore/aft isolator.
6. Backrest: Use lever to adjust backrest angle.
7. Lumbar: Use knob to adjust the height and curvature of the backrest cushion.
8. Heater: Use switch to activate seat heater.

Seat Belt

Fasten seat belt as follows:

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

3.6 BOOM INDICATORS



Boom Extension

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

Boom Angle (AUS)

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

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SECTION 4 - OPERATION

4.1 ENGINE

Note: *Refer to Engine Operation & Maintenance Manual for additional information.*

Starting the Engine

This machine can be operated under normal conditions in temperatures of -20°C to 48°C (0°F to 118°F). Consult the local Caterpillar dealer for operation outside this range or under abnormal conditions.

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

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

⚠ 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.

⚠ WARNING

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

Battery Boosted Starting

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

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

⚠ WARNING

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

Normal Engine Operation

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

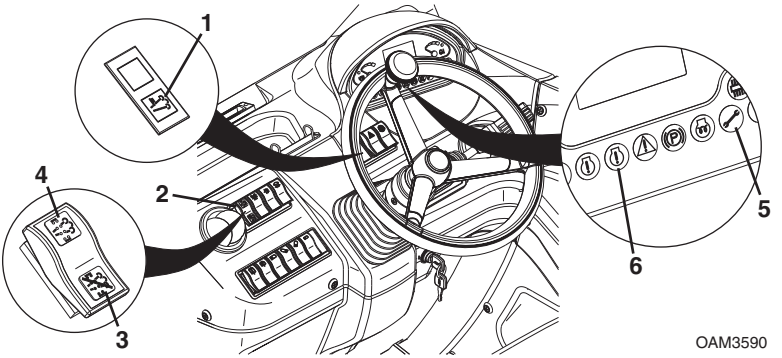
Shut-Down Procedure

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

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

4.2 AFTER-TREATMENT SYSTEM (S/N MJR00150 & AFTER, S/N DJB00150 & AFTER, S/N GAT00150 & AFTER, S/N MLH00150 & AFTER, S/N KEK00150 & AFTER, S/N MWC00150 & AFTER, S/N RRJ00150 & AFTER - IF EQUIPPED WITH 75 KW ENGINE)

This machine is equipped with an exhaust After-Treatment System (ATS). The ATS includes a Diesel Particulate Filter (DPF), regeneration switch and indicators.



Automatic Regeneration

ATS is in automatic regeneration mode at start-up and will perform regenerations as required without any operator interaction.

- High Exhaust System Temperature (HEST) Indicator (**1**) illuminates during and shortly after active regeneration.

⚠ WARNING

HIGH EXHAUST TEMPERATURE. Keep flammables and people away from hot exhaust.

- If operating in a sensitive environment or to stop an active regeneration, depress and hold bottom of regeneration switch (**2**) until indicator (**3**) illuminates to inhibit regeneration.
- With inhibit mode active, regeneration indicator (**4**) will illuminate when regeneration is required.
- Move telehandler to an area free of flammables and people that could be exposed to hot exhaust. Deactivate inhibit function by depressing bottom of regeneration switch until indicator goes out. The machine is now in automatic regeneration mode and will perform a regeneration as needed.

Manual Regeneration

If inhibit function is continually utilized, the regeneration indicator (**4**) illuminates, check engine indicator (**5**) flashes and engine will derate. A manual regeneration is required at this point.

1. Move telehandler to an area free of flammables and people that could be exposed to hot exhaust.
2. Apply park brake, shift transmission to neutral and lower boom.
3. Deactivate inhibit function by depressing bottom of regeneration switch until indicator (**3**) goes out.
4. To activate ATS regeneration, depress top of regeneration switch (**2**) until engine rpm begins to increase. Engine will ramp up to approximately 2000 rpm.
5. Do not depress accelerator pedal or other controls during an active regeneration.

Note: *If a manual regeneration must be interrupted, the operator can do so by depressing the bottom of the regeneration switch, releasing the park brake, shifting the transmission into forward or reverse, depressing the accelerator pedal or by turning off the engine.*

6. HEST indicator (**1**) illuminates during and shortly after active regeneration.

⚠ WARNING

HIGH EXHAUST TEMPERATURE. Keep flammables and people away from hot exhaust.

7. Manual regeneration takes up to approximately 25 minutes to complete.
8. Manual regeneration is complete after engine returns to idle and HEST indicator goes out.

NOTICE

EQUIPMENT DAMAGE. If manual regeneration requirement is continually ignored, the regeneration (**4**), check engine (**5**) and engine warning (**6**) indicators will illuminate. Immediately bring machine to a stop, retract and lower boom and stop the engine. Regeneration is no longer available and machine must be serviced. Contact the local Caterpillar dealer for further information.

4.3 OPERATING WITH A NON-SUSPENDED LOAD

Lift Load Safely

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

⚠ WARNING

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

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

Picking Up a Load

- Note the conditions of the terrain. Adjust travel speed and reduce amount of load if conditions warrant.
- Avoid lifting double-tiered loads.
- Make sure load is clear of any adjacent obstacles.
- Adjust spacing of forks so they engage the pallet or load at maximum width. See *"Adjusting/Moving Forks"* on page 5-26.
- 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 load chart in the operator cab for the telehandler/attachment combination you are using.

Transporting a Load

- After engaging the load and resting it against the backrest, tilt the load back to position it for travel. Travel in accordance with the requirements set forth in Section 1 - General Safety Practices and Section 5 - Attachments and Hitches.
- If equipped, boom ride control mode (see page 3-26) is recommended for transport of a load over longer distances. When activated, the boom ride control system acts to cushion boom movement.

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(s) to determine whether machine must be leveled prior to lifting load. If equipped, level machine with frame level switch (see page 3-26) or outrigger controls (see page 3-19 or 3-22).
4. Move boom/attachment to 1,2 m (4 ft) off ground.
   (AUS - Move boom so forks are no more than 300 mm (11.8 in) above ground surface.)

Important things to remember:

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

Placing a Load

Before placing any load be sure that:

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

Disengaging a Load

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

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

4.4 OPERATING WITH A SUSPENDED LOAD

Lift Load Safely

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

⚠ WARNING

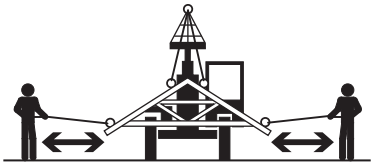
TIP OVER HAZARD. Exceeding lift capacity of the telehandler could damage the equipment and/or cause tip over.

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

Picking Up a Suspended Load

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

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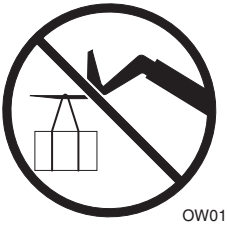
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- Travel in accordance with the requirements set forth in Section 1 - General Safety Practices and Section 5 - Attachments and Hitches.
- For additional requirements, refer to the appropriate load chart in the operator cab.

Important things to remember:

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

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(s) to determine whether machine must be leveled prior to lifting load. If equipped, level machine with frame level switch (see page 3-26) or outrigger controls (see page 3-19 or 3-22).
4. Move boom so load is no more than 300 mm (11.8 in) above ground surface and boom/or boom is raised no more than 45°.

Placing a Suspended Load

Before placing any load be sure that:

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

Disengaging a Suspended Load

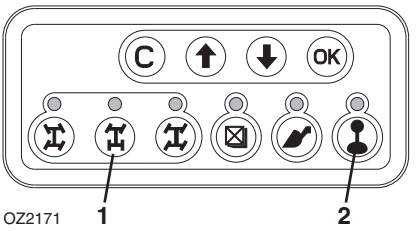
- Never place the guide persons between the suspended load and the telehandler.
- Once at the destination of the load, ensure to bring the telehandler to a complete stop and apply the park brake prior to disengagement of the lifting devices and tethers.

4.5 ROAD OPERATION (CE)

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

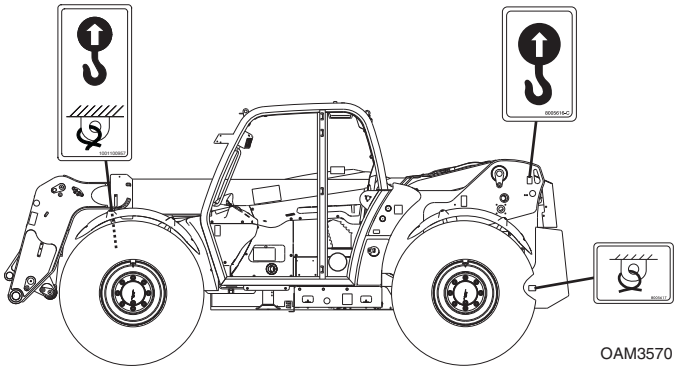
Note: *Be sure to follow all local and federal/provincial traffic regulations.*

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



5. Depress button (**2**) to deactivate joystick function and disable all joystick controlled functions. Joystick function LED will go out.
6. Deactivating the joystick function automatically changes steer mode to front wheel steering (**1**). See *"Steer Modes"* on page 3-32 for details.
7. Machine is now ready for road operation.

4.6 LOADING AND SECURING FOR TRANSPORT



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Tiedown

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

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

⚠ WARNING

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

Lifting

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

SECTION 5 - ATTACHMENTS AND HITCHES

5.1 APPROVED ATTACHMENTS

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

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

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

5.2 UNAPPROVED ATTACHMENTS

Do not use unapproved attachments for the following reasons:

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

⚠ WARNING

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

5.3 JLG SUPPLIED ATTACHMENTS

Note: *All attachments listed are for use with the CAT quick coupler.*

TH336C, TH337C, TH406C & TH407C

Attachment	Part Number	Applicable Standard				
		TH336C TH337C		TH406C TH407C		
		CE	AUS	CE	ANSI	AUS
Carriage, 1185 mm (47 in)	326-2013	X		X	X	
	351-2519		X			X
Carriage, 1850 mm (72 in)	174-7731	X		X	X	
	351-2521		X			X
Carriage, 50 in	301-9757				X	
Carriage, 72 in	301-9758				X	
Side Shift Carriage, 1200 mm (47.2 in)	222-6210	X		X	X	
	351-2520		X			X
Side Shift Carriage, 48 in	314-8479				X	
Rotate/Side Tilt Carriage, 1200 mm (47.2 in)	231-3229	X		X	X	
	351-2523		X			X
Rotate/Side Tilt Carriage, 1850 mm (72 in)	227-5748	X		X	X	
	351-2522		X			X
Rotate/Side Tilt Carriage, 50 in	309-4315				X	
Rotate/Side Tilt Carriage, 72 in	309-4316				X	
Swing Carriage, 100°	318-9222				X	
Fork, Pallet 45x100x1070 mm (1.8x4x42 in)	252-1454	X		X	X	
Fork, Pallet 50x100x1200 mm (2x4x47.2 in)	326-1997	X		X	X	
Fork, Pallet 50x100x1525 mm (2x4x60 in)	252-1456	X		X	X	
Fork, Pallet 50x120x1200 mm (2x4.7x47.2 in)	364-5356	X		X	X	
Fork, Pallet 60x100x1200 mm	352-4117		X			X
Fork, Block 50x50x1220 mm (2x2x48 in)	252-1460	X	X	X	X	X
Fork, Pallet 2.36x4x48 in	301-9755				X	
Fork, Pallet 2.36x6x60 in	301-9754				X	
Fork, Pallet 1.75x7x60 in	301-9756				X	
Fork, Block 2x2x48 in	301-9752				X	
Bucket, GP 1,0 m^3 (1,3 yd^3)	163-4261	X		X	X	
	394-3547		X			X

Attachment	Part Number	Applicable Standard				
		TH336C TH337C		TH406C TH407C		
		CE	AUS	CE	ANSI	AUS
Bucket, Light Material 1,5 m^3 (1,9 yd^3)	186-5838	X		X	X	
	394-3549		X			X
Bucket, Light Material 2,0 m^3 (2,6 yd^3)	220-4759	X		X	X	
	394-3550		X			X
Bucket, Light Material 2,5 m^3 (3.3 yd^3)	220-4760	X		X	X	
	394-3552		X			X
Bucket, Light Material 3,0 m^3 (3,9 yd^3)	220-4761	X		X	X	
	394-3553		X			X
Bucket, Multi-Purpose 1,0 m^3 (1,3 yd^3)	163-4265	X		X	X	
	394-3548		X			X
Bucket, Grapple 0,8 m^3 (1,0 yd^3)	219-5515	X		X	X	
	394-3551		X			X
Manure Fork	186-6054	X		X	X	
Bale Handler	163-4263	X		X	X	
Coupler Mounted Hook	169-6460	X		X	X	
	*	X	X	X	X	X
Truss Boom, 4 m (13.1 ft)	169-3945	X		X	X	
Truss Boom, 2 m	354-2622					X

* Part number not available at publication.

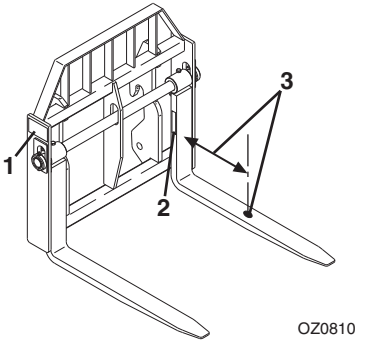
TH414C, TH514C & TH417C

Attachment	Part Number	Applicable Standard						
		TH414C		TH514C			TH417C	
		CE	AUS	CE	ANSI	AUS	CE	AUS
Carriage, 1185 mm (47 in)	326-2013	X					X	
	351-2519		X					X
	326-2014			X				
	351-2518					X		
Carriage, 50 in (1270 mm)	301-9757				X			
Carriage, 1850 mm (72 in)	174-7731	X		X			X	
	351-2521		X					X
	301-9758				X			
Side Shift Carriage, 1200 mm (47.2 in)	222-6210	X		X			X	
	351-2520		X			X		X
Rotate/Side Tilt Carriage, 1200 mm (47.2 in)	231-3229	X		X			X	
	351-2523		X			X		X
Rotate/Side Tilt Carriage, 50 in (1270 mm)	375-6292				X			
Rotate/Side Tilt Carriage, 1850 mm (72 in)	227-5748	X		X			X	
	351-2522		X			X		X
	375-6293				X			
Carriage, Fork Rotator 1850 mm (72 in)	*		X			X		X
Fork, Pallet 45x100x1070 mm (1.8x4x42 in)	252-1454	X					X	
Fork, Pallet 50x100x1200 mm (2x4x47.2 in)	326-1997	X					X	
Fork, Pallet 50x100x1525 mm (2x4x60 in)	252-1456	X					X	
Fork, Pallet 50x120x1200 mm (2x4.7x47.2 in)	364-5356	X					X	
Fork, Pallet 60x100x1200 mm	352-4117		X					X
Fork, Pallet 60x100x1200 mm (2.4x4x47.2 in)	326-1998			X	X	X		
Fork, Block 50x50x1220 mm (2x2x48 in)	252-1460	X					X	
Fork, Long Drop 50x125x1220 mm (2x5x48 in)	252-1459						X	
Fork, Pallet 2x6x72 in	311-2854				X			
Fork, Pallet 2.36x6x60 in	301-9754				X			
Fork, Pallet 2.36x5x48 in	301-9753				X			
Fork, Block 2x2x48 in	301-9752				X			
Bucket, GP 1,0 m^3 (1,3 yd^3)	163-4261	X		X	X		X	
	394-3547		X			X		X

Attachment	Part Number	Applicable Standard						
		TH414C		TH514C			TH417C	
		CE	AUS	CE	ANSI	AUS	CE	AUS
Bucket, Light Material 1,5 m^3 (1,9 yd^3)	186-5838	X						
	394-3549		X					
Bucket, Multi-Purpose 1,0 m^3 (1,3 yd^3)	163-4265	X						
	394-3548		X					
Bucket, Grapple 0,8 m^3 (1,0 yd^3)	219-5515	X						
	394-3551		X					
Coupler Mounted Hook	169-6460	X		X	X		X	
	*	X	X	X	X	X	X	X
Truss Boom, 4 m (13.1 ft)	169-3945	X		X	X		X	
Truss Boom, 2 m	354-2622		X			X		X
Truss Boom, Adjustable	229-9714				X			
THP18s Platform	372-7708	X		X			X	
	354-0474		X			X		X
THP45s Platform	372-7707	X		X			X	
	354-0475		X			X		X

* Part number not available at publication.

5.4 TELEHANDLER/ATTACHMENT/FORK CAPACITY



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

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

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

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

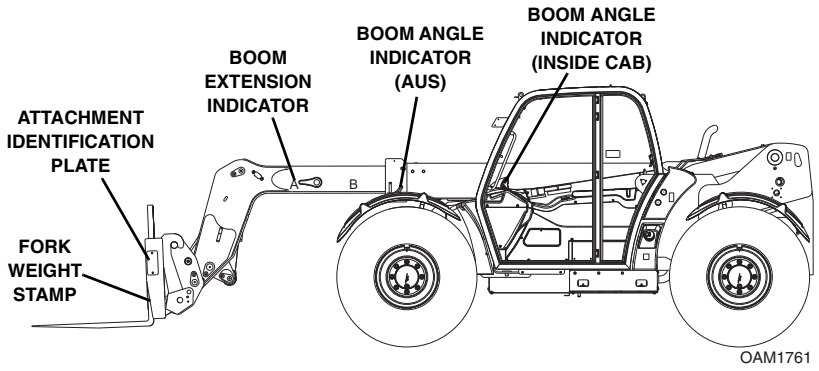
5.5 USE OF THE LOAD CHART

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

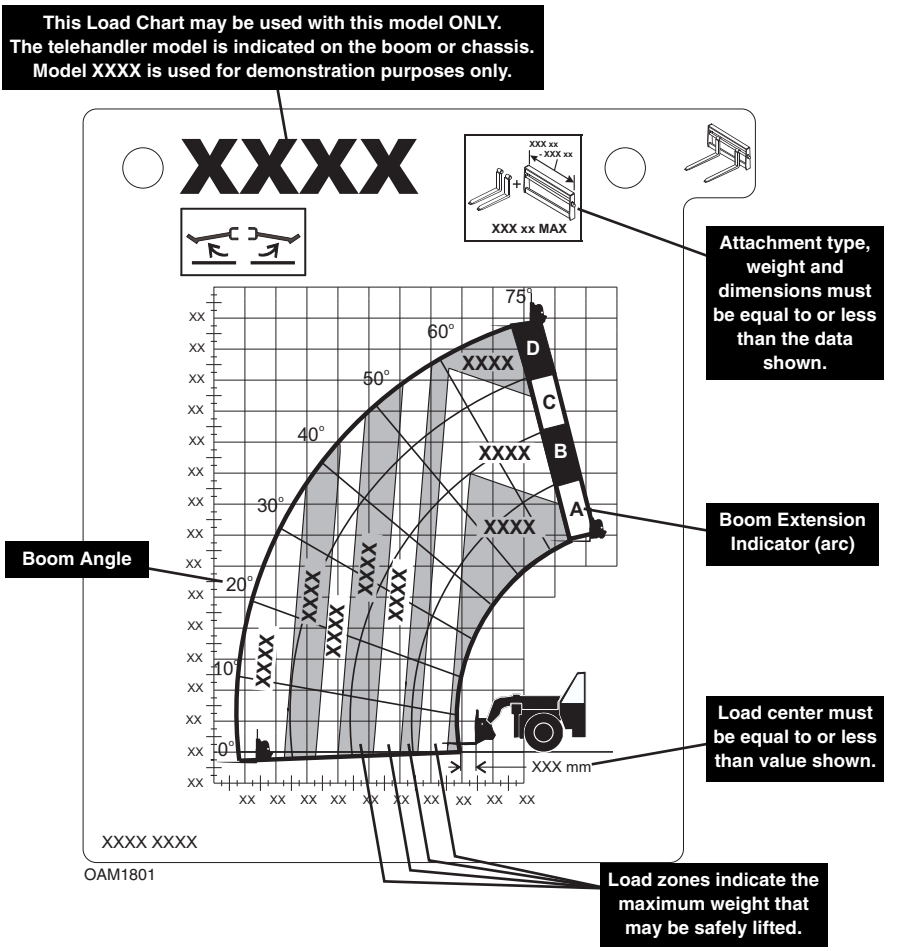
1. An approved attachment. See *"Approved Attachments"* on page 5-1.
2. The proper Load Chart.
3. Weight of the load being lifted.
4. Load placement information:
   a. HEIGHT where the load is to be placed.
   b. DISTANCE from the front tires of the telehandler where the load is to be placed.
5. On the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

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

Capacity Indicator Locations



Sample Load Chart (CE & ANSI)



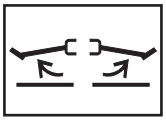
Note: *This is a sample load chart* ***only****!* ***DO NOT*** *use this chart, use the one located in your operator cab.*

⚠ WARNING

TIP OVER HAZARD. All loads shown on rated load chart are based on machine being on firm ground with frame level (see page 4-7); the forks being positioned evenly on carriage; the load being centered on forks; proper size tires being properly inflated; and the telehandler being in good operating condition.

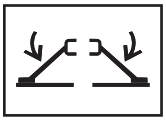
To identify the proper load chart on telehandlers equipped with outriggers, refer to the following icons which may be located on the load chart.

- Use when lifting a load with outriggers up.



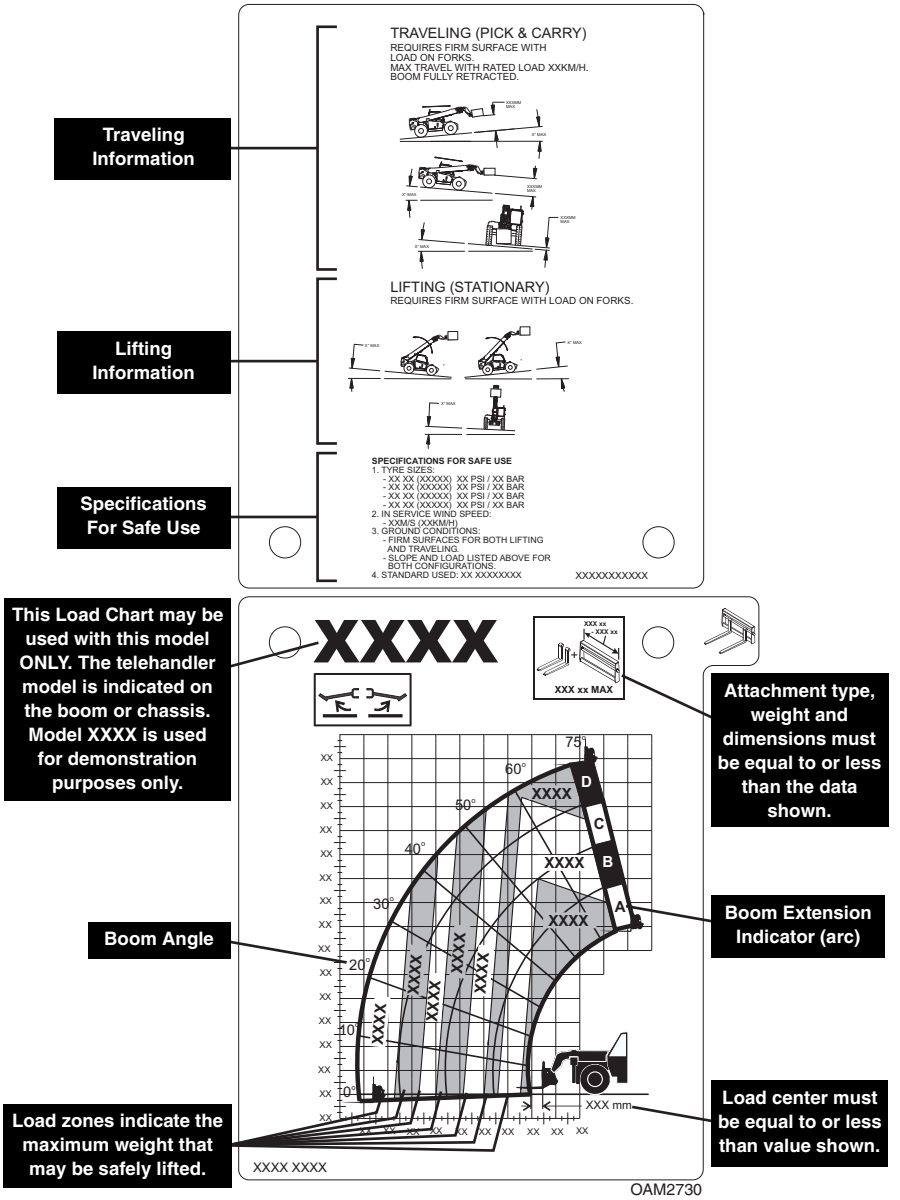
OAL1090

- Use when lifting a load with outriggers down.



OAL1100

Sample Load Chart (AUS)



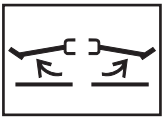
Note: *This is a sample load chart* ***only****!* ***DO NOT*** *use this chart, use the one located in your operator cab.*

⚠ WARNING

TIP OVER HAZARD. All loads shown on rated load chart are based on machine being on firm ground with frame level (see page 4-7); the forks being positioned evenly on carriage; the load being centered on forks; proper size tires being properly inflated; and the telehandler being in good operating condition.

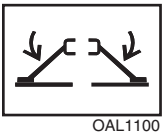
To identify the proper load chart on telehandlers equipped with outriggers, refer to the following icons which may be located on the load chart.

- Use when lifting a load with outriggers up.



OAL1090

- Use when lifting a load with outriggers down.



OAL1100

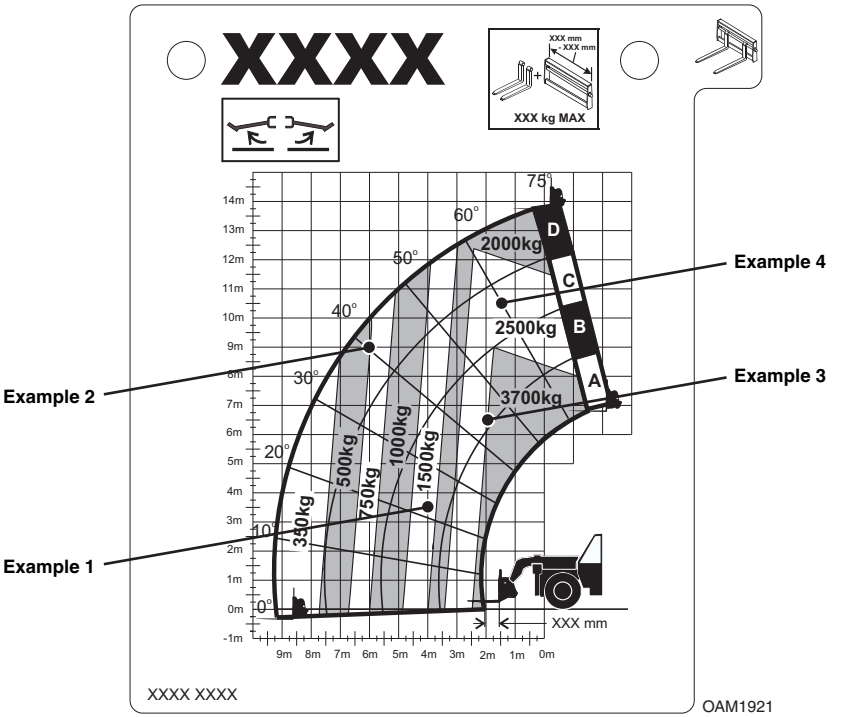
Example

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

- The attachment style, weight, dimensions and load center match the attachment data on the load chart.
- The load 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.

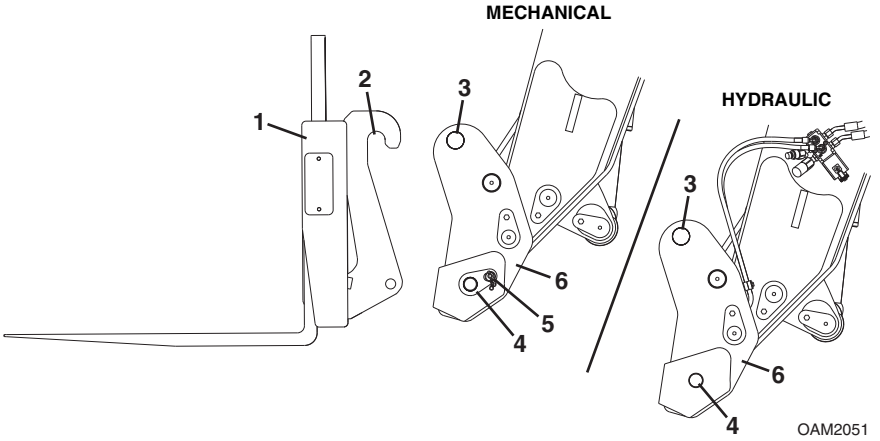
	Load Weight	Distance	Height	OK to Lift
1	1250 kg (2755 lb)	4,0 m (13.1 ft)	3,5 m (11.5 ft)	Yes
2	750 kg (1653 lb)	6,0 m (19.7 ft)	9,0 m (29.5 ft)	NO
3	2500 kg (5512 lb)	2,0 m (6.6 ft)	6,5 m (21.3 ft)	Yes
4	3000 kg (6614 lb)	1,5 m (4.9 ft)	10,5 m (34.4 ft)	NO



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

5.6 ATTACHMENT INSTALLATION

CAT Quick Coupler



1. Attachment
2. Attachment Pin Recess
3. Attachment Pin
4. Lock Pin
5. Retainer Pin (mechanical coupler)
6. Quick Coupler (attachment tilt control in cab, see page 3-19 or 3-22)

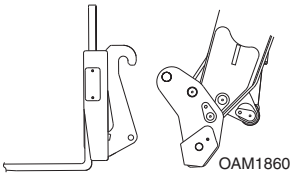
⚠ WARNING

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

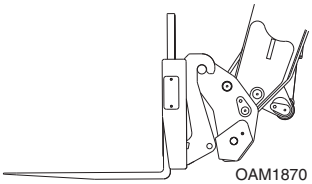
Mechanical Quick Coupler

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

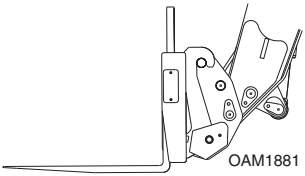
1. Tilt quick coupler forward to provide clearance. Check to be sure lock pin and retainer pin is out.


OAM1860

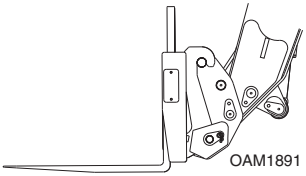
2. Align attachment pin with recess in attachment. Raise boom slightly to engage attachment pin in recess.


OAM1870

3. Tilt quick coupler back to engage attachment.


OAM1881

4. Insert lock pin and secure with retainer pin.

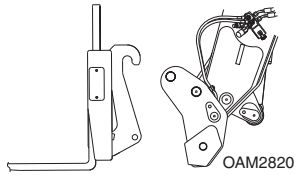

OAM1891

5. If attachment is equipped, connect auxiliary hydraulic hoses. See *"Hydraulic Operated Attachment"* on page 5-24.

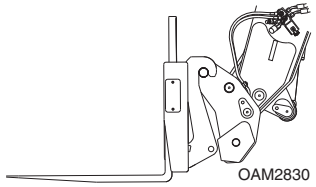
Hydraulic Quick Coupler

This installation procedure is designed for one-person operation.

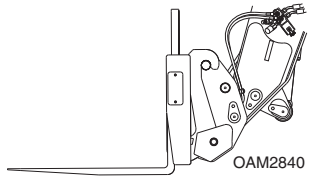
1. Tilt quick coupler forward to provide clearance. Check to be sure lock pin is disengaged.


OAM2820

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

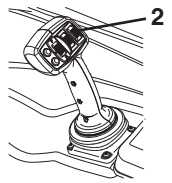

OAM2830

3. Tilt quick coupler back to engage attachment.


OAM2840

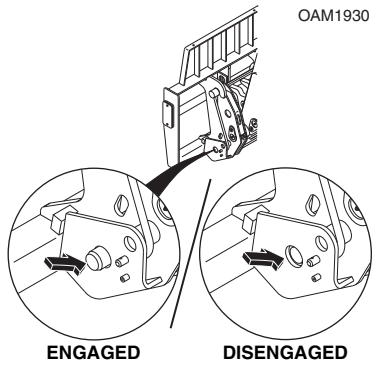
4. Press and hold button (**1**) and at the same time push roller switch down (**2**) to engage lock pin or push roller switch up to disengage lock pin.

OAM3270



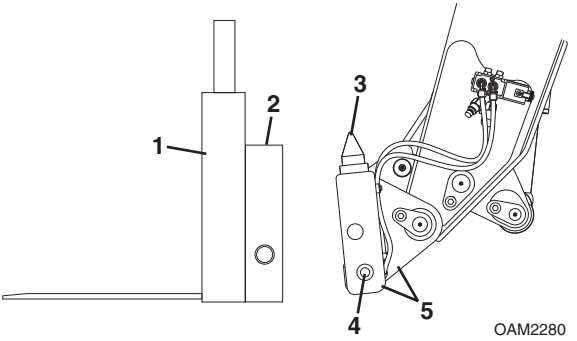
OAM1930

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



6. If attachment is equipped, connect auxiliary hydraulic hoses. See *"Hydraulic Operated Attachment"* on page 5-24.

JD Coupler



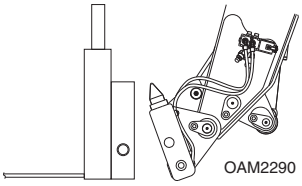
1. Attachment
2. Attachment Point Opening
3. Coupler Point
4. Lock Pin
5. JD Coupler (attachment tilt control in cab, see page 3-19 or 3-22)

⚠ WARNING

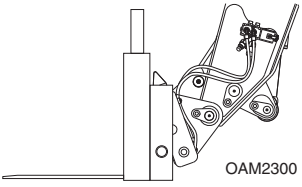
CRUSH HAZARD. Always be certain that carriage or attachment is properly positioned on boom and is secured by lock pin. Failure to ensure proper installation could permit carriage/attachment/load to disengage.

This installation procedure is designed for one-person operation.

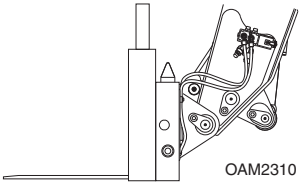
1. Tilt coupler forward to provide clearance. Check to be sure lock pin is disengaged.


OAM2290

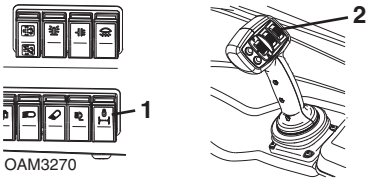
2. Align coupler point with opening in attachment. Raise boom slightly to engage coupler point in opening.


OAM2300

3. Tilt coupler back to engage attachment.


OAM2310

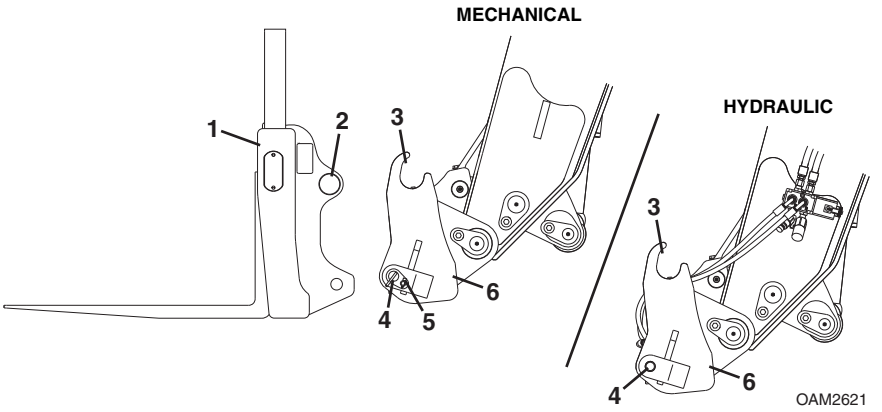
4. Press and hold button (**1**) and at the same time push roller switch down (**2**) to engage lock pin or push roller switch up to disengage lock pin.



OAM3270

5. Raise boom to eye level and visually check that the lock pin protrudes through the attachment hole. If the pin does not protrude through the attachment hole, place the attachment on the ground and return to step 2.
6. If attachment is equipped, connect auxiliary hydraulic hoses. See *"Hydraulic Operated Attachment"* on page 5-24.

Manitou Coupler



1. Attachment
2. Attachment Pin
3. Attachment Pin Recess
4. Lock Pin
5. Retainer Pin (mechanical coupler)
6. Manitou Coupler (attachment tilt control in cab, see page 3-19 or 3-22)

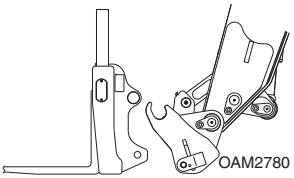
⚠ WARNING

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

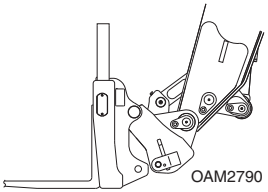
Mechanical Coupler

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

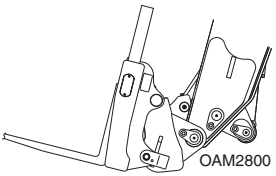
1. Tilt coupler forward to provide clearance. Check to be sure lock pin and retainer pin is out.



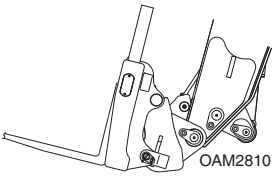
2. Align attachment pin recess with attachment pin. Raise boom slightly to engage attachment pin in recess.



3. Tilt coupler back to engage attachment.



4. Insert lock pin and secure with retainer pin.

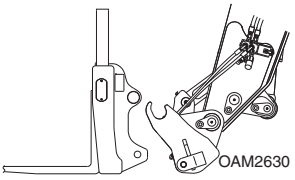


5. If attachment is equipped, connect auxiliary hydraulic hoses. See *"Hydraulic Operated Attachment"* on page 5-24.

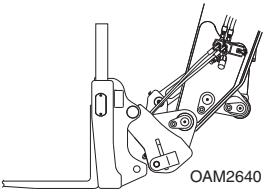
Hydraulic Coupler

This installation procedure is designed for one-person operation.

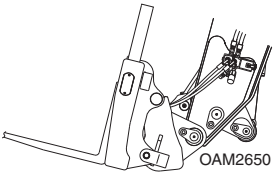
1. Tilt coupler forward to provide clearance. Check to be sure lock pin is disengaged.


OAM2630

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

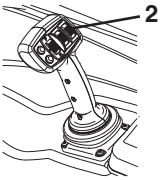

OAM2640

3. Tilt coupler back to engage attachment.


OAM2650

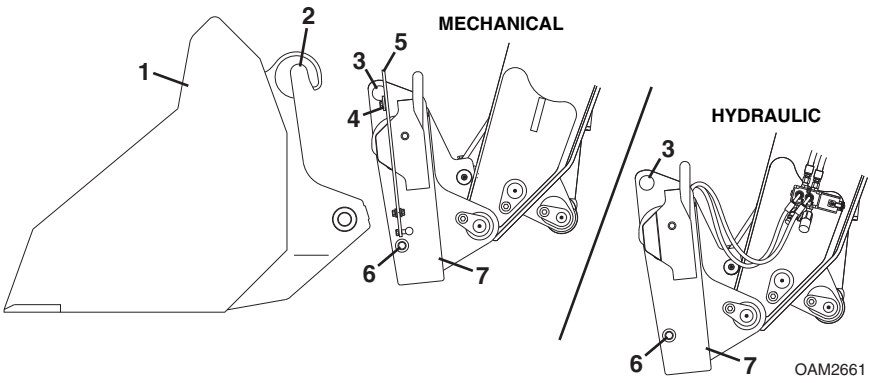
4. Press and hold button (**1**) and at the same time push roller switch down (**2**) to engage lock pin or push roller switch up to disengage lock pin.

OAM3270



5. Raise boom to eye level and visually check that the lock pin protrudes through the attachment hole. If the pin does not protrude through the attachment hole, place the attachment on the ground and return to step 2.
6. If attachment is equipped, connect auxiliary hydraulic hoses. See *"Hydraulic Operated Attachment"* on page 5-24.

JCB Coupler



1. Attachment
2. Attachment Pin Recess
3. Attachment Pin
4. Hook (mechanical coupler)
5. Lock Pin Handle (mechanical coupler)
6. Lock Pin
7. JCB Coupler (attachment tilt control in cab, see page 3-19 or 3-22)

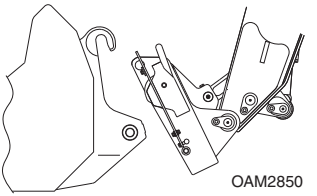
⚠ WARNING

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

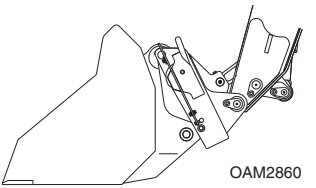
Mechanical Coupler

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

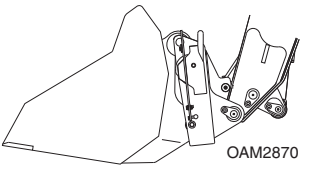
1. Tilt coupler forward to provide clearance. Unhook lock pin handle and pull to disengage lock pin.


OAM2850

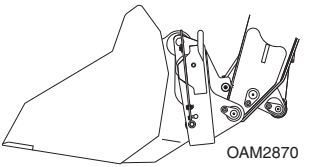
2. Align attachment pin with recess in attachment. Raise boom slightly to engage attachment pin in recess.


OAM2860

3. Tilt coupler back to engage attachment.


OAM2870

4. Push lock pin handle to engage coupler lock pin and secure with hook.

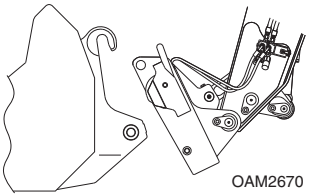

OAM2870

5. If attachment is equipped, connect auxiliary hydraulic hoses. See *"Hydraulic Operated Attachment"* on page 5-24.

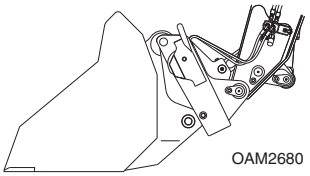
Hydraulic Coupler

This installation procedure is designed for one-person operation.

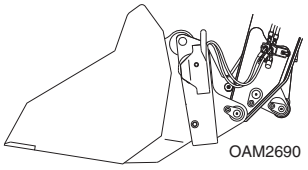
1. Tilt coupler forward to provide clearance. Check to be sure lock pin is disengaged.


OAM2670

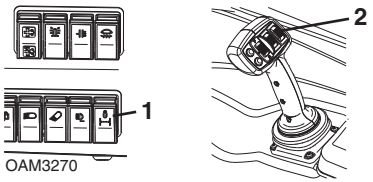
2. Align attachment pin with recess in attachment. Raise boom slightly to engage attachment pin in recess.


OAM2680

3. Tilt coupler back to engage attachment.


OAM2690

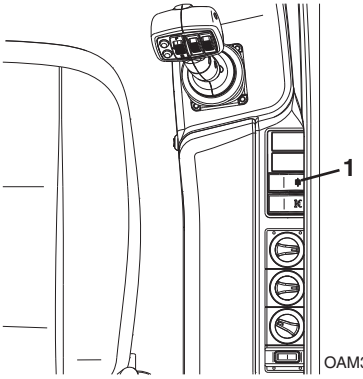
4. Press and hold button (**1**) and at the same time push roller switch down (**2**) to engage lock pin or push roller switch up to disengage lock pin.

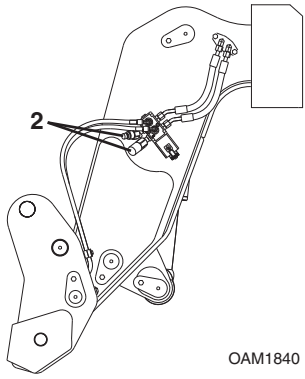


OAM3270

5. Raise boom to eye level and visually check that the lock pin protrudes through the attachment hole. If the pin does not protrude through the attachment hole, place the attachment on the ground and return to step 2.
6. If attachment is equipped, connect auxiliary hydraulic hoses. See *"Hydraulic Operated Attachment"* on page 5-24.

Hydraulic Operated Attachment



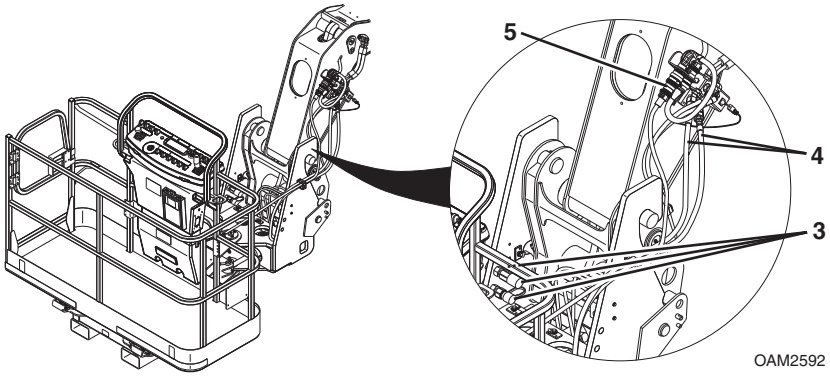


1. Install attachment (see page 5-13, 5-16, 5-18 or 5-21).
2. Lower attachment to ground.
3. Quickly depress and release continuous auxiliary hydraulics switch (**1**) twice. Depress again and hold to relieve pressure at both auxiliary fittings (**2**).

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

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

5.7 PLATFORM ATTACHMENT (IF EQUIPPED)



1. Install platform (see page 5-13).
2. Remove hydraulic lines and electric cable from stowage locations (**3**).
3. Connect hydraulic lines (**4**). See page 5-24.
4. With the park brake applied and engine off, connect electric cable (**5**).

5.8 ADJUSTING/MOVING FORKS

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

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

To slide forks:

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

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5.9 ATTACHMENT OPERATION

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

Note: *Operations described within this section reference the Lift joystick pattern. Refer to page 3-21 if utilizing the Loader joystick pattern.*

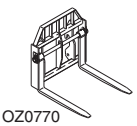
NOTICE

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

NOTICE

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

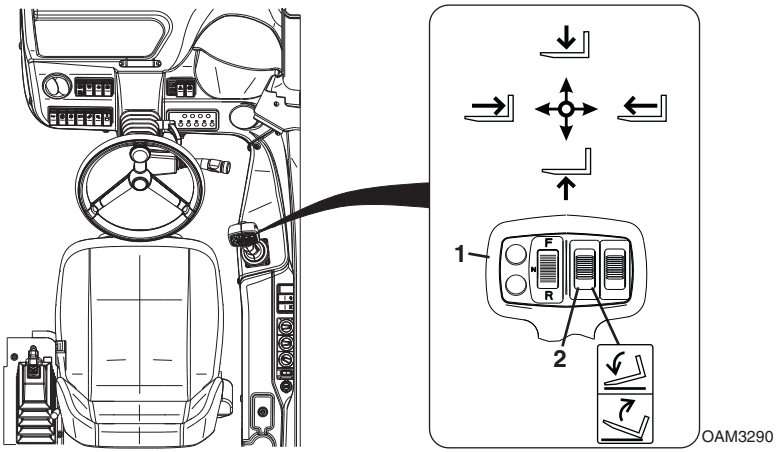
Carriage w/Forks



OZ0770

Use Carriage Attachment Load Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-6.



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

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

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

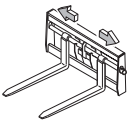
Installation Procedure:

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

Equipment Damage Precautions:

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

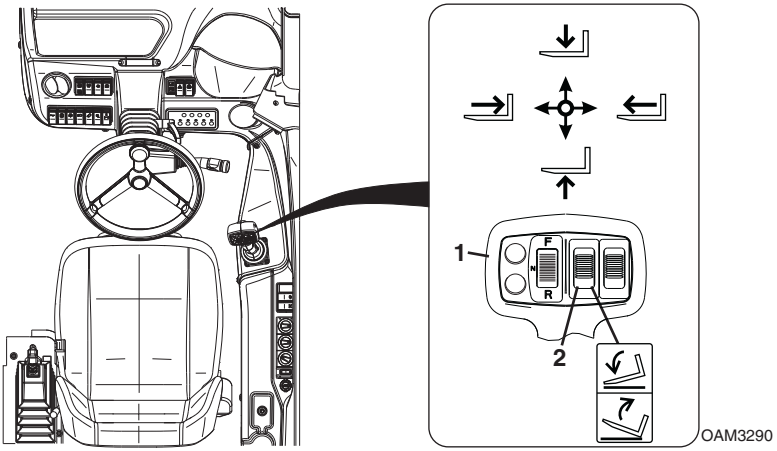
Side Shift Carriage



OAL1540

Use Side Shift Carriage Load Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-6.

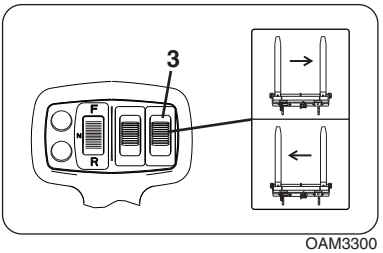


OAM3290

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

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

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



OAM3300

To Side Shift:

The attachment auxiliary hydraulic roller switch (**3**) controls side shift.

- Push roller switch down to shift forks left.
- Push roller switch up to shift forks right.

Installation Procedure:

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

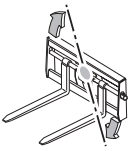
⚠ WARNING

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

Equipment Damage Precautions:

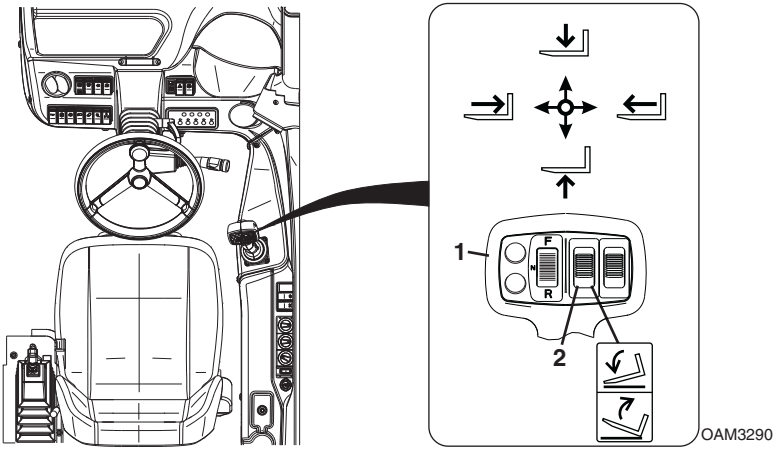
- Do not use forks as a lever to pry material. Excessive prying forces could damage forks or machine structure.
- Do not attempt to lift loads that are attached or connected to another object.

Rotate/Side Tilt Carriage and Fork Rotator Carriage


OAL1550

Use Rotate/Side Tilt Carriage Load Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-6.

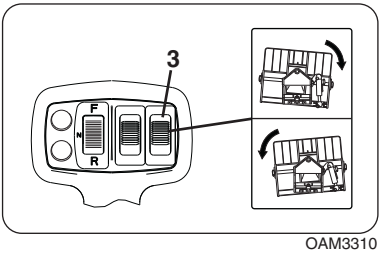


OAM3290

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

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

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



OAM3310

To Rotate:

The attachment auxiliary hydraulic roller switch (**3**) controls carriage rotation.

- Push roller switch down to rotate left.
- Push roller switch up to rotate right.

Installation Procedure:

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

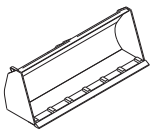
⚠ WARNING

CRUSH HAZARD. Do not use rotation 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.

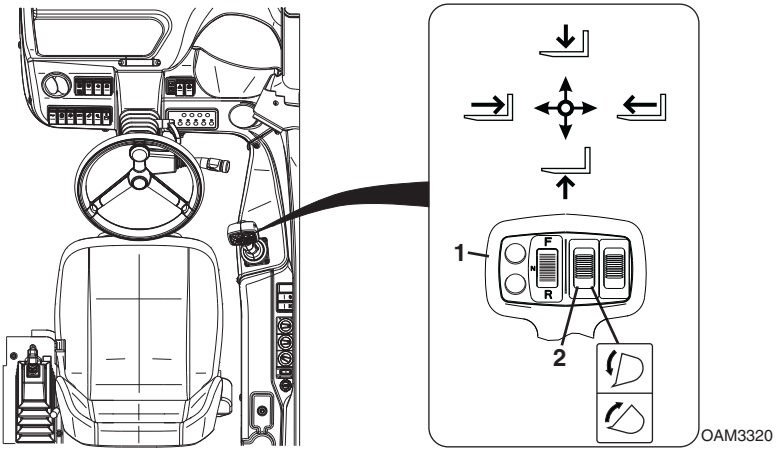
Bucket



OZ0730

Use Appropriate Bucket Load Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-6.



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

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

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

Installation Procedure:

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

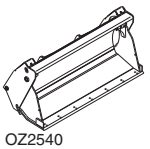
Operation:

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

Equipment Damage Precautions

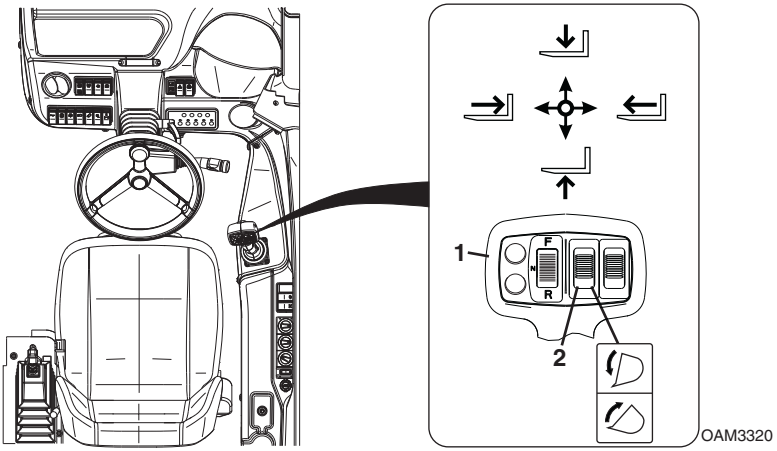
- Except for lifting or dumping a load, the boom must be fully retracted for all bucket operations.
- Do not corner-load bucket. Distribute material evenly within the bucket. Bucket load charts are for evenly distributed loads only.
- Do not use bucket as a lever to pry material. Excessive prying forces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

Multi-Purpose Bucket


OZ2540

Use Multi-Purpose Bucket Load Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-6.

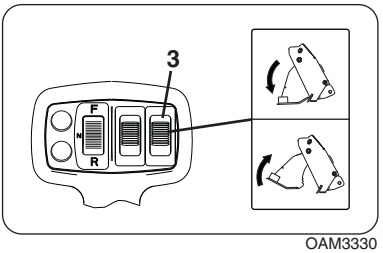


OAM3320

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

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

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



OAM3330

To open/close bucket:

The attachment auxiliary hydraulic roller switch (**3**) controls open/close movement of the bucket.

- Push roller switch down to open bucket.
- Push roller switch up to close bucket.

Installation Procedure:

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

Operation:

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

Equipment Damage Precautions

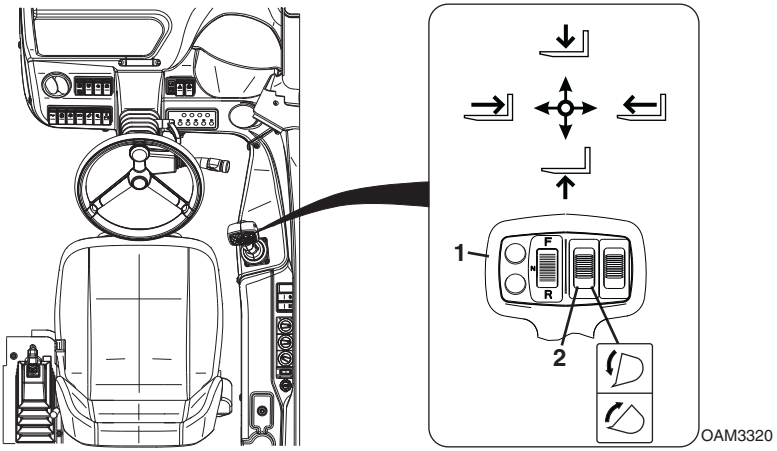
- Except for lifting or dumping a load, the boom must be fully retracted for all bucket operations.
- Do not corner-load bucket. Distribute material evenly within the bucket. Bucket load charts are for evenly distributed loads only.
- Do not use bucket as a lever to pry material. Excessive prying forces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

Grapple Bucket

OZ1450

Use Grapple Bucket Load Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-6.

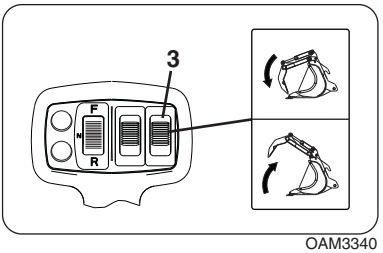


OAM3320

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

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

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



OAM3340

To open/close grapple:

The attachment auxiliary hydraulic roller switch (**3**) controls open/close movement of the grapple.

- Push roller switch down to open grapple.
- Push roller switch up to close grapple.

Installation Procedure:

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

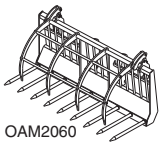
Operation:

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

Equipment Damage Precautions

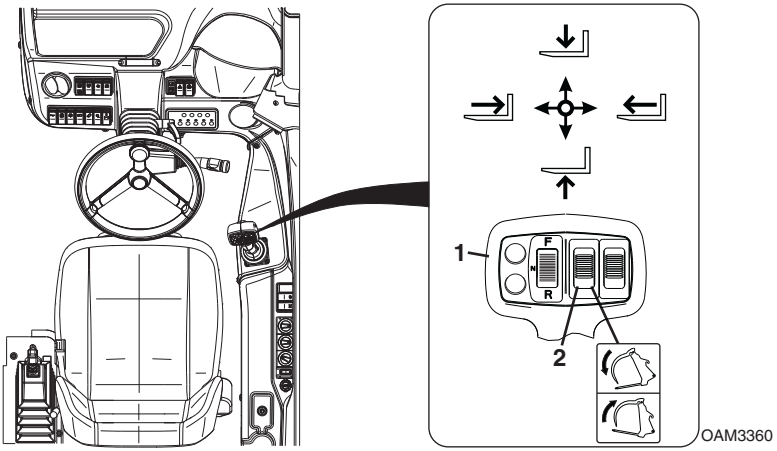
- Except for lifting or dumping a load, the boom must be fully retracted for all bucket operations.
- Do not corner-load bucket. Distribute material evenly within the bucket. Bucket load charts are for evenly distributed loads only.
- Do not use bucket as a lever to pry material. Excessive prying forces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

Manure Fork


OAM2060

Use Manure Fork Load Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-6.

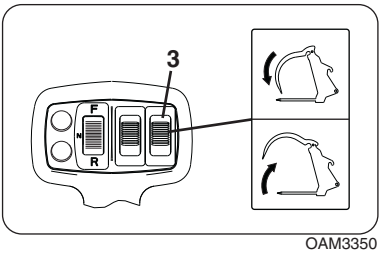


OAM3360

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

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

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



OAM3350

To open/close manure fork:

The attachment auxiliary hydraulic roller switch (**3**) controls open/close movement of the manure fork attachment.

- Push roller switch down to open forks.
- Push roller switch up to close forks.

Installation Procedure:

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

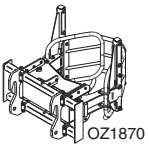
Operation:

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

Equipment Damage Precautions

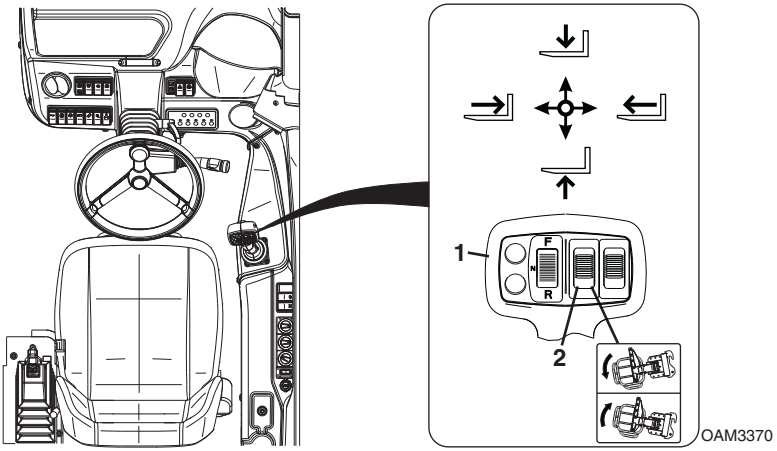
- Except for lifting or dumping a load, the boom must be fully retracted for all operations.
- Do not corner-load manure fork. Distribute material evenly within the manure fork. Manure fork load charts are for evenly distributed loads only.
- Do not use manure fork as a lever to pry material. Excessive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

Bale Handler


OZ1870

Use Bale Handler Load Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-6.

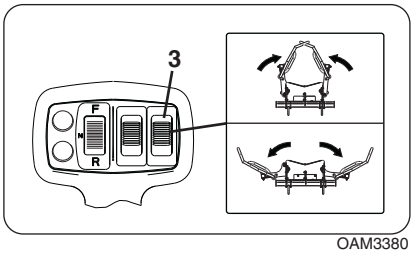


OAM3370

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

The attachment tilt roller switch (**2**) controls bale handler tilt.

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



OAM3380

To open/close grapple:

The attachment auxiliary hydraulic roller switch (**3**) controls open/close movement of the bale handler.

- Push roller switch down to open bale handler.
- Push roller switch up to close bale handler.

Installation Procedure:

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

Operation:

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

Equipment Damage Precautions

- Do not use bale handler as a lever to pry material. Excessive prying forces could damage the bale handler or machine structure.
- Do not attempt to load material which is hard or frozen. This could cause severe damage to quick coupler or machine structure.

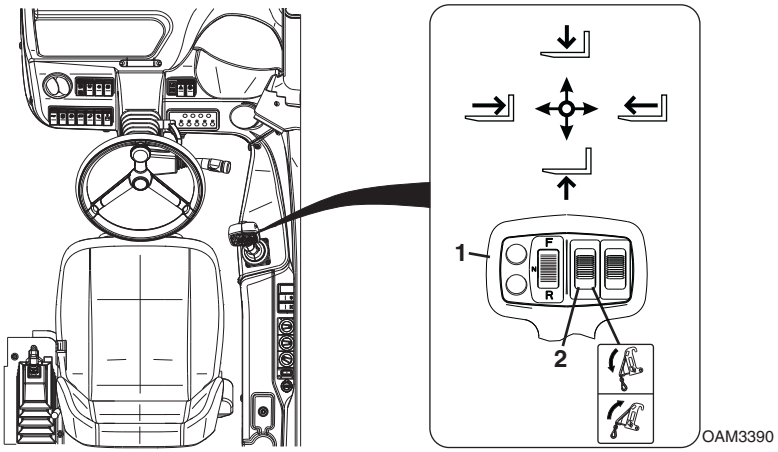
Coupler Mounted Hook


OAL1510

Use Coupler Mounted Hook Load Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-6.

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



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

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

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

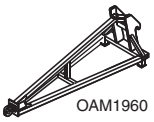
Installation Procedure:

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

Operation:

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

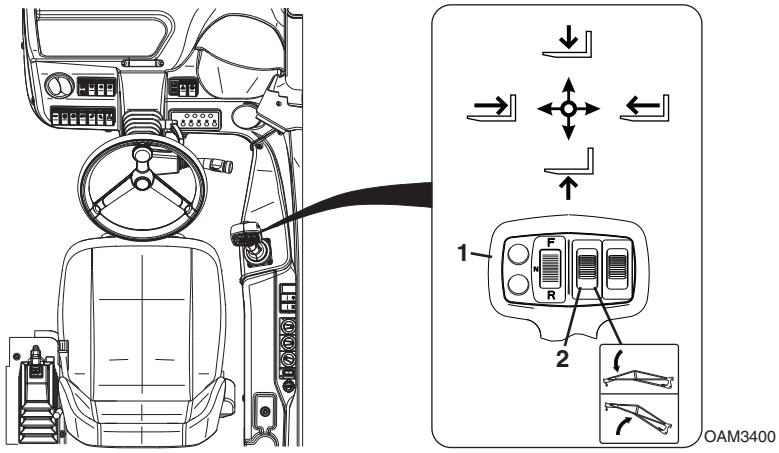
Truss Boom


OAM1960

Use Truss Boom Load Chart

To determine maximum capacity, refer to *"Telehandler/ Attachment/Fork Capacity"* on page 5-6.

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



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

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

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

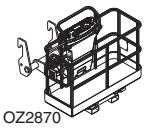
Installation Procedure:

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

Operation:

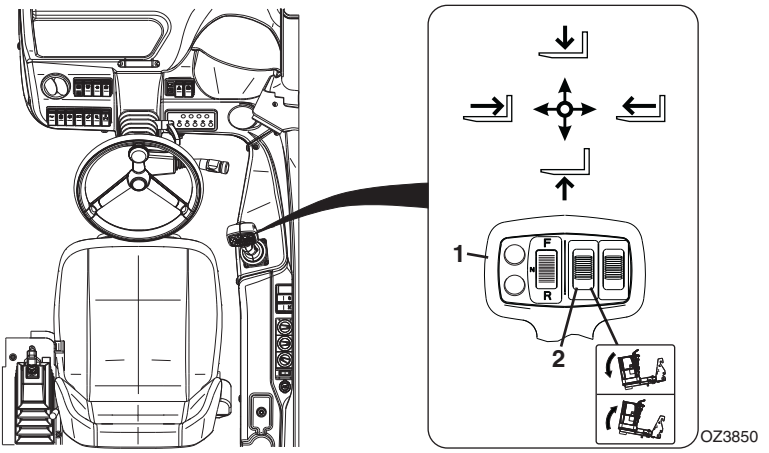
- Weight of rigging must be included as part of total load being lifted.

Platform


OZ2870

Use Platform Load Chart

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



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

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

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

Installation Procedure:

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

Operation from Cab

- The platform is to be only used on machines specifically designed to accept the platform. Refer to the THP18s & THP45s Platform for TH414, TH514, TH417, TH414C, TH514C, TH417C Operation & Maintenance Manual.
- Machine travel is limited to first gear.
- Function speeds are reduced.
- Boom can only be raised up to 10 degrees.

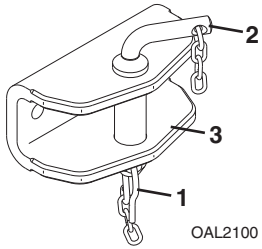
5.10 HITCHES AND TRAILER BRAKES (TH336C, TH337C, TH406C & TH407C)

Machines may be equipped with various types of hitches. If not previously installed, secure hitch to machine with hardware supplied with installation.

Maximum towing capacity shall be the smallest of the telehandler and hitch capacities. Refer to page 9-14 for details.

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

Retrieval Hitch



Connecting for retrieval:

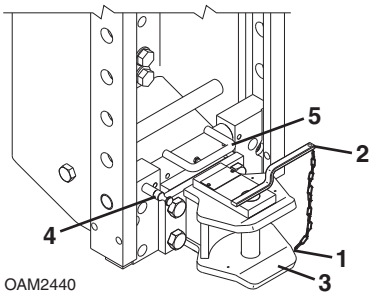
1. Remove safety pin (**1**) and pull pin (**2**) from hitch (**3**).
2. Place pin through hitch and retrieval device. Secure pin with safety pin.

Note: *Retrieval devices are not intended for trailer towing applications.*

Pin Hitch - CUNA C (Italy)

Hitch Capacities

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



Connecting trailer for towing:

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

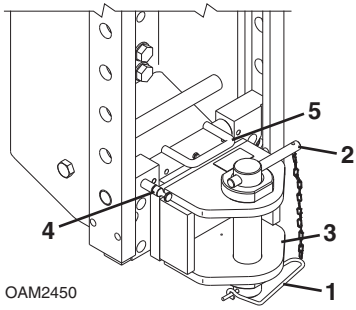
Adjusting Hitch Height:

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

Pin Hitch - CUNA D2 (Italy)

Hitch Capacities

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



Connecting trailer for towing:

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

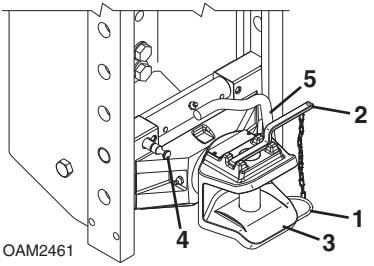
Adjusting Hitch Height:

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

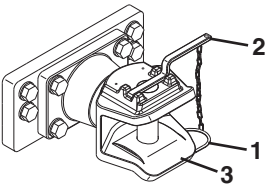
EEC Manual Pin Hitch

Hitch Capacities

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



TH336C & TH337C



Connecting trailer for towing:

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

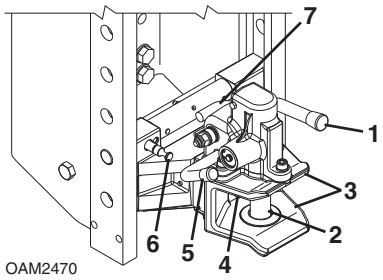
Adjusting Hitch Height:

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

EEC Auto Hitch

Hitch Capacities

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



Connecting trailer for towing:

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

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

Adjusting Hitch Height:

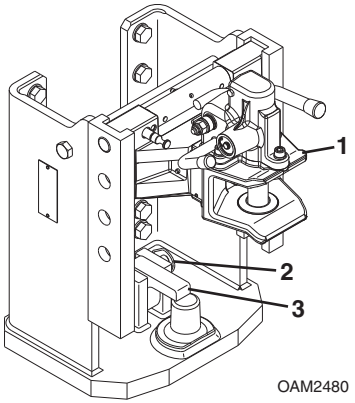
1. Pull lock pin (**6**) and lift handle (**7**) to release locking mechanism.
2. Move hitch to desired height.
3. Lower handle. When locking mechanism engages, lock pin will return to locked position

Piton Frame and EEC Auto Hitch

Hitch Capacities

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

Note: *See page 5-51 for Auto Hitch information.*



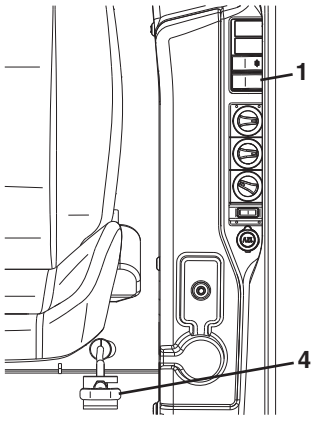
Connecting trailer for towing:

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

Hydraulic Hitch

Hitch Capacities

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



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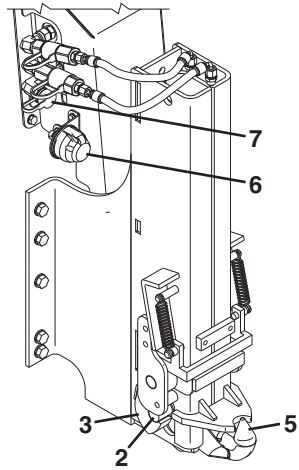
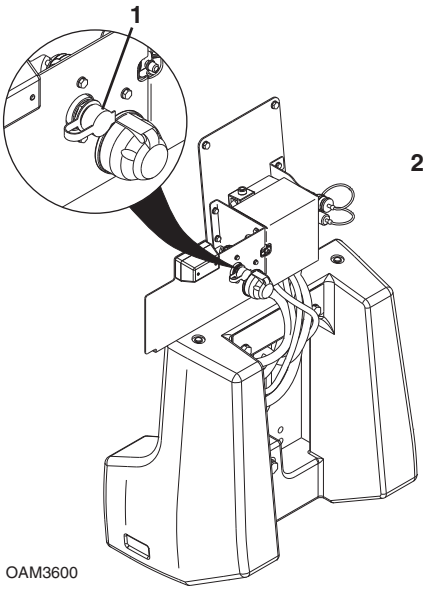


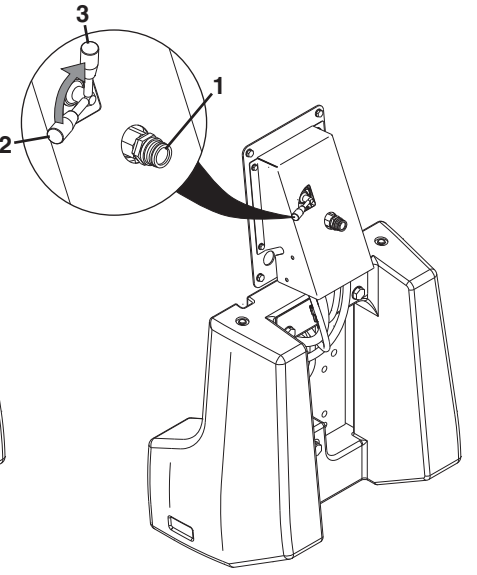
Connecting trailer for towing:

1. Depress and hold right side of hydraulic hitch switch (**1**) to raise hitch safety posts (**2**) off safety hooks (**3**).
2. Pull safety hook release (**4**).
3. Depress and hold left side of hydraulic hitch switch to lower the hitch (**5**) to the required height.
4. Reverse machine until the hitch is under the center of the tow eye.
5. Depress and hold right side of hydraulic hitch switch to raise hitch until the safety hooks are engaged.
6. If equipped, connect trailer harness to trailer plug (**6**).
7. If equipped, connect trailer brake line to trailer coupling (**7**). See page 5-54.

Trailer Brakes



CE, AUS & ANSI



ITALY

Connecting trailer brake system:

CE, AUS & ANSI

1. Ensure trailer is properly connected for towing.
2. Connect trailer brake line to machine coupling (**1**).

Italy

1. Ensure trailer is properly connected for towing.
2. Lever should be in horizontal position (**2**).
3. Connect trailer brake line to machine coupling (**1**).
4. Lift lever to vertical position (**3**).

SECTION 6 - EMERGENCY PROCEDURES

6.1 TOWING A DISABLED PRODUCT

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

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

Moving Short Distances

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

Moving Longer Distance

- See Service Manual for information.

Contact the local Caterpillar dealer for specific instructions if neither of these methods are applicable.

6.2 EMERGENCY LOWERING OF BOOM

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

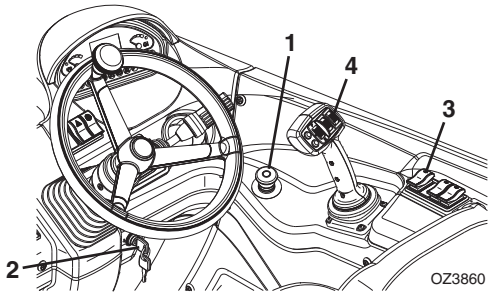
Secure the telehandler using the following procedures:

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

6.3 EMERGENCY LOWERING OF BOOM IF EQUIPPED FOR PLATFORM

Auxiliary Power System

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

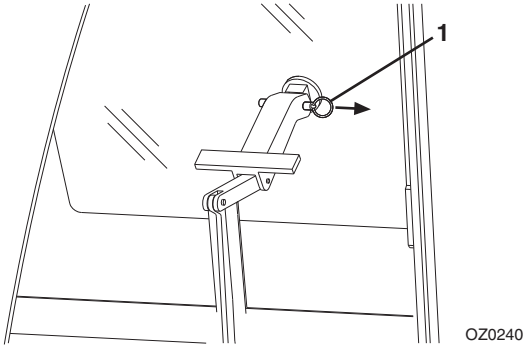


1. Verify the power/emergency stop switch (**1**) is not depressed and the ignition switch (**2**) is in position I.
2. Depress auxiliary power switch (**3**) and hold in place to engage auxiliary power system.
3. While holding the switch, operate the boom joystick (**4**) until the attachment is at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

⚠ WARNING

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

6.4 CAB EMERGENCY EXIT

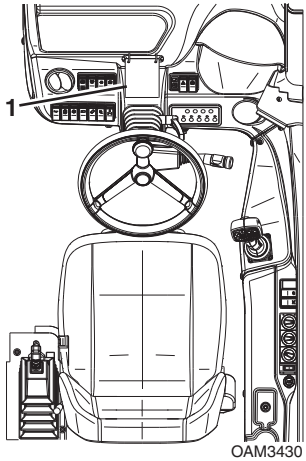


- In an emergency the rear window can be used to exit the telehandler.
- Remove the latch pin (**1**). The window is then free to swing open.

SECTION 7 - LUBRICATION AND MAINTENANCE

7.1 INTRODUCTION

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



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

Clothing and Safety Gear

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

7.2 GENERAL MAINTENANCE INSTRUCTIONS

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

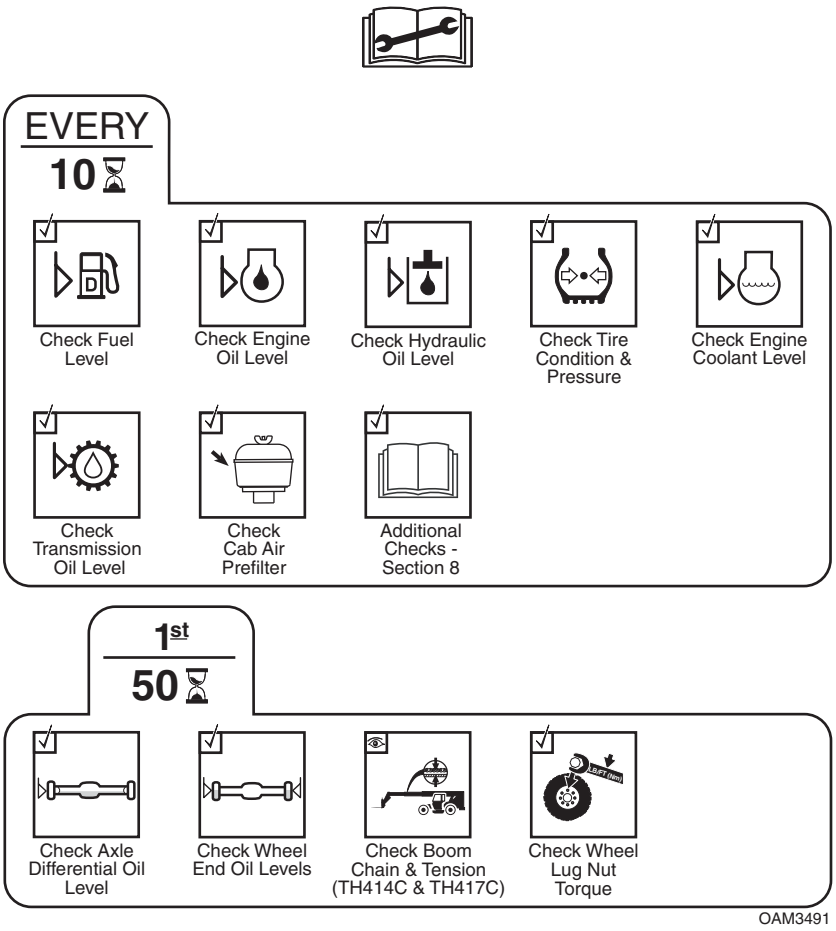
- Clean lubrication fittings before lubricating.
- After greasing telehandler, cycle all functions several times to distribute lubricants. Perform this maintenance procedure without attachment installed.
- Apply a light coating of engine oil to all linkage pivot points.
- Intervals shown are for normal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

⚠ WARNING

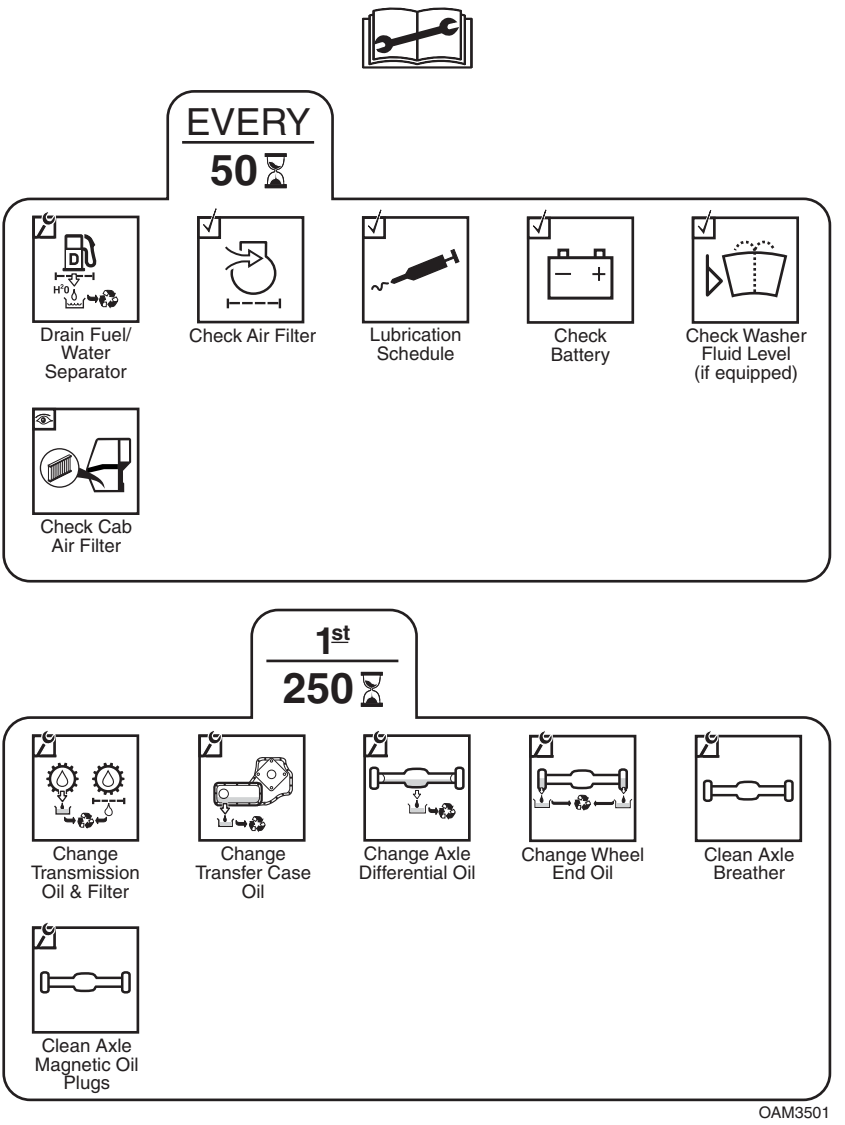
CUT/CRUSH/BURN HAZARD. Do not perform service or maintenance on the machine with the engine running.

7.3 SERVICE AND MAINTENANCE SCHEDULES

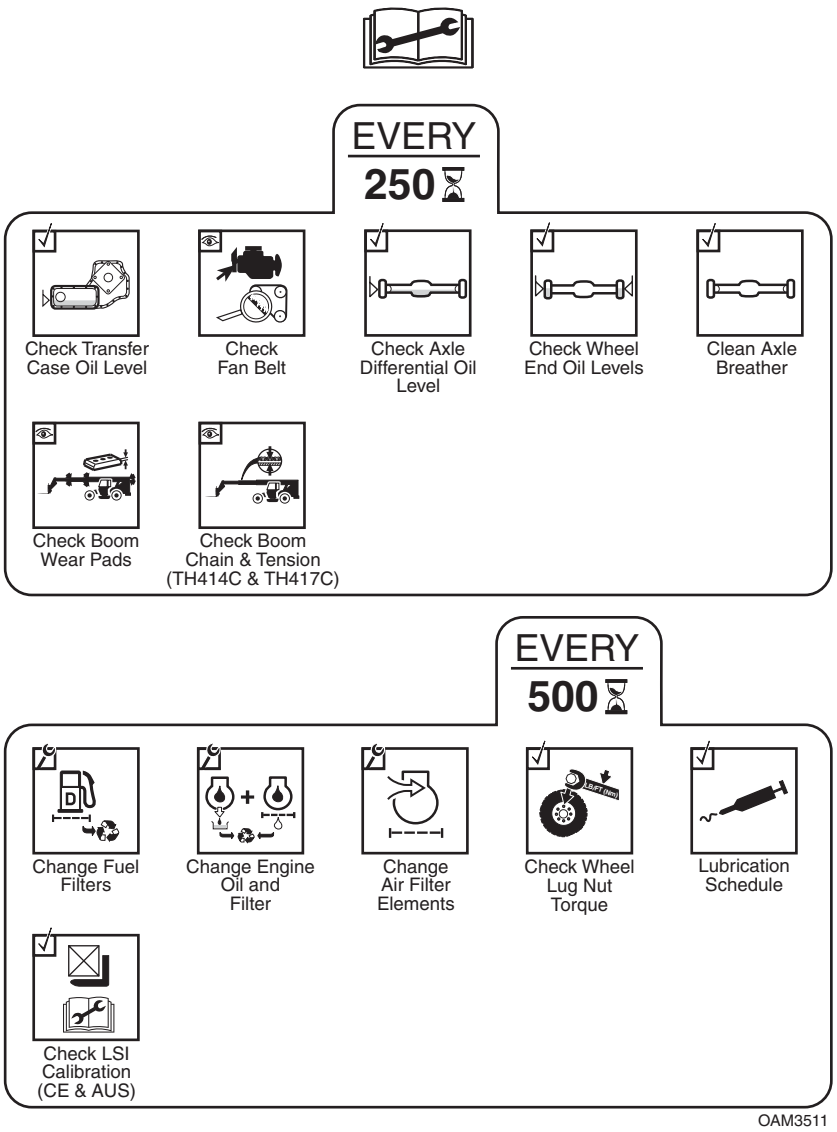
10 & 1st 50 Hour Maintenance Schedule



50 & 1st 250 Hour Maintenance Schedule

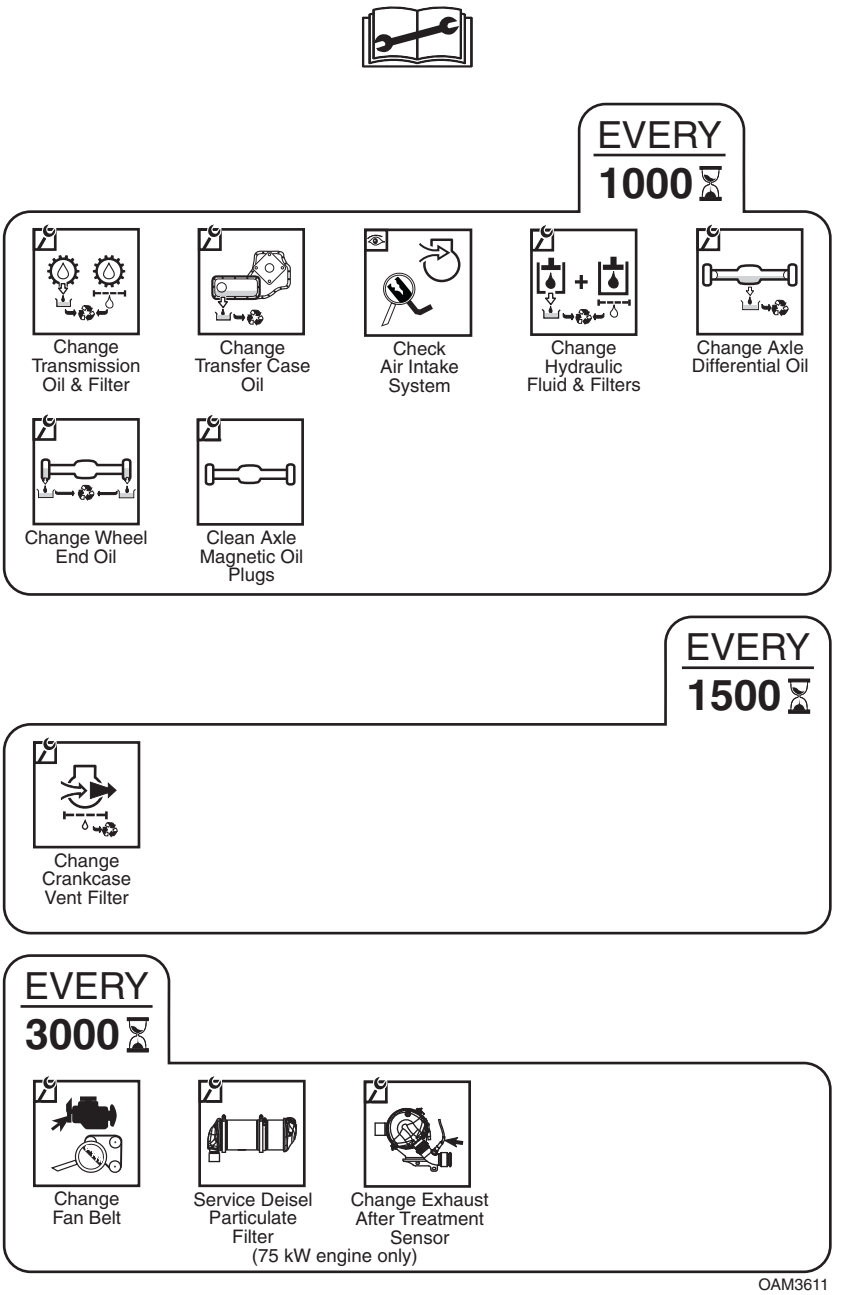


250 & 500 Hour Maintenance Schedule

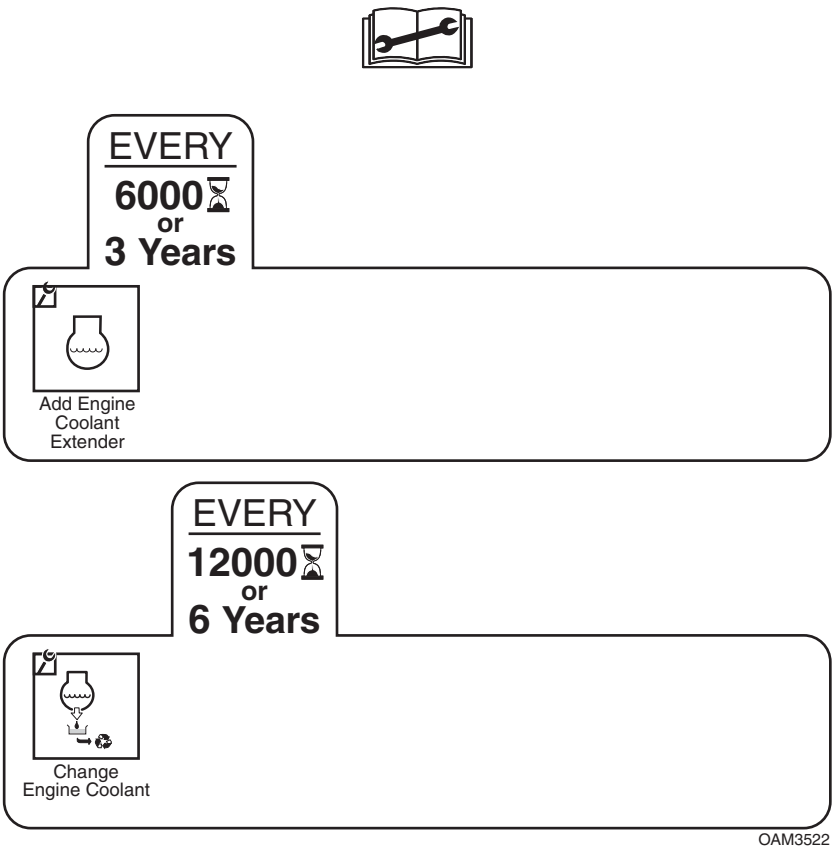


OAM3511

1000, 1500 & 3000 Hour Maintenance Schedule



6000 & 12000 Hour Maintenance Schedule

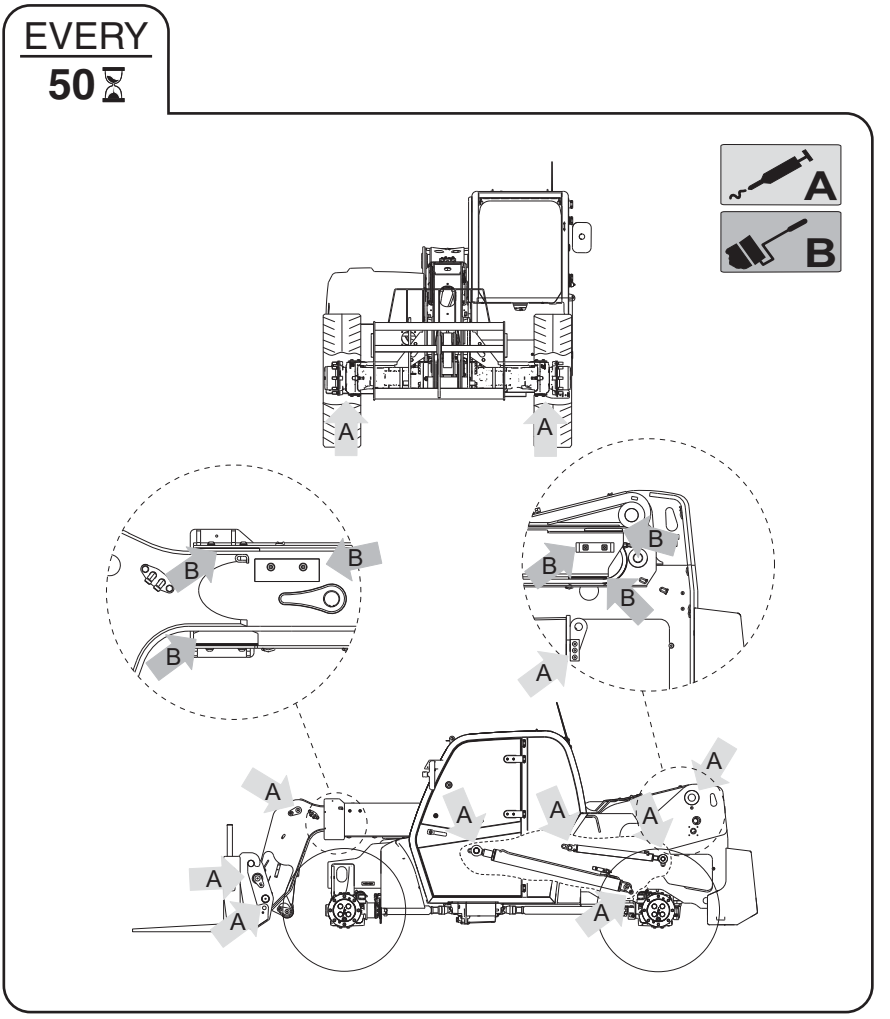


Note: *If hour and year intervals are listed, use the interval that occurs first. Refer to Engine Operation & Maintenance Manual for additional information.*

7.4 LUBRICATION SCHEDULES

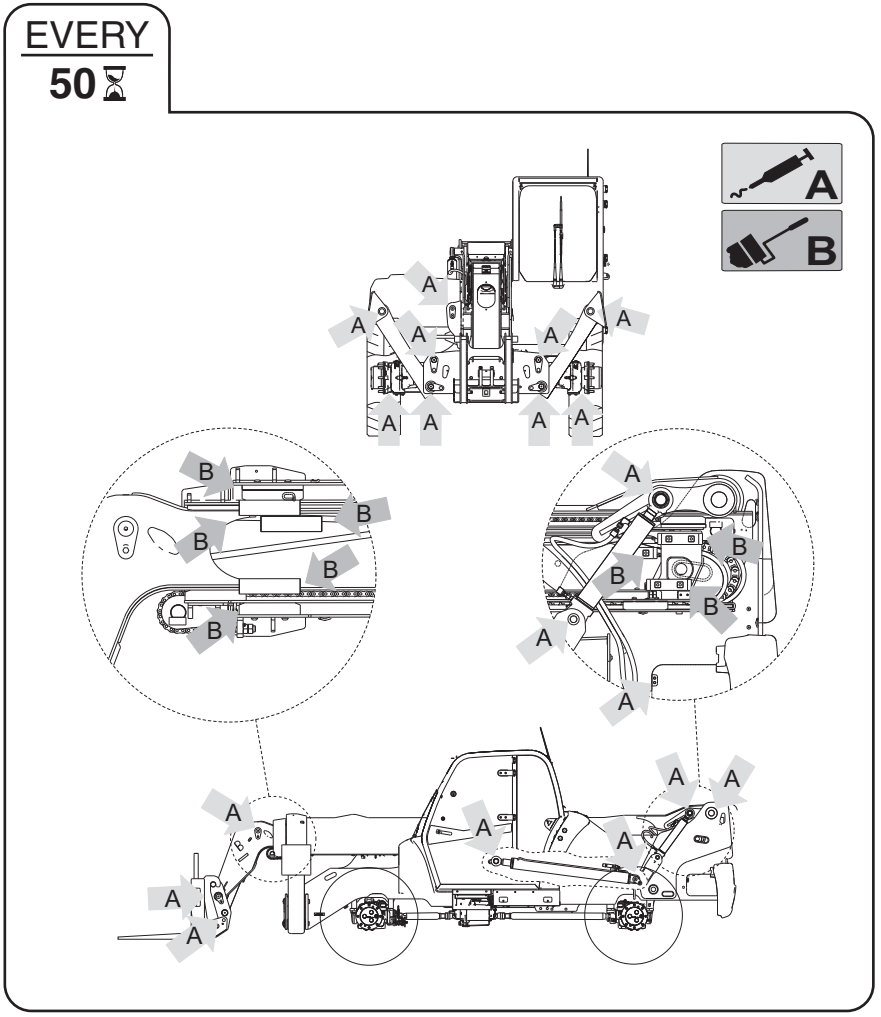
50 Hour Lubrication Schedule

TH336C, TH337C, TH406C & TH407C



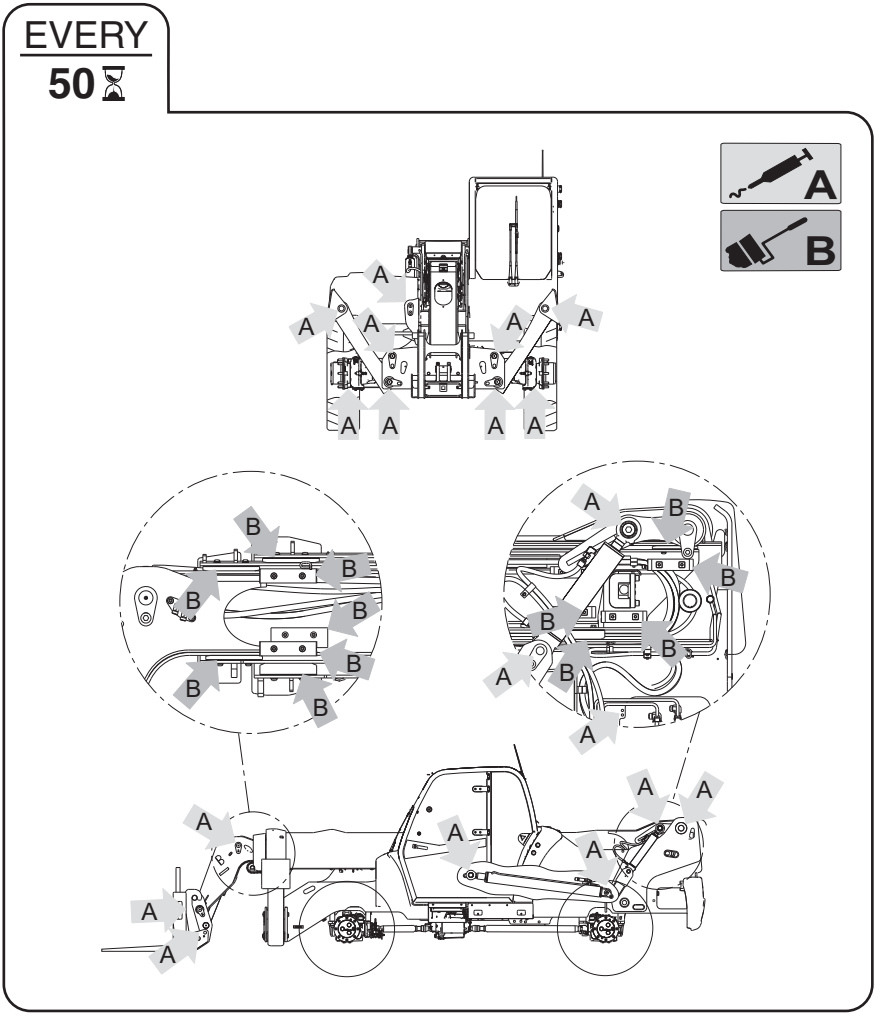
OAM2411

EVERY
50



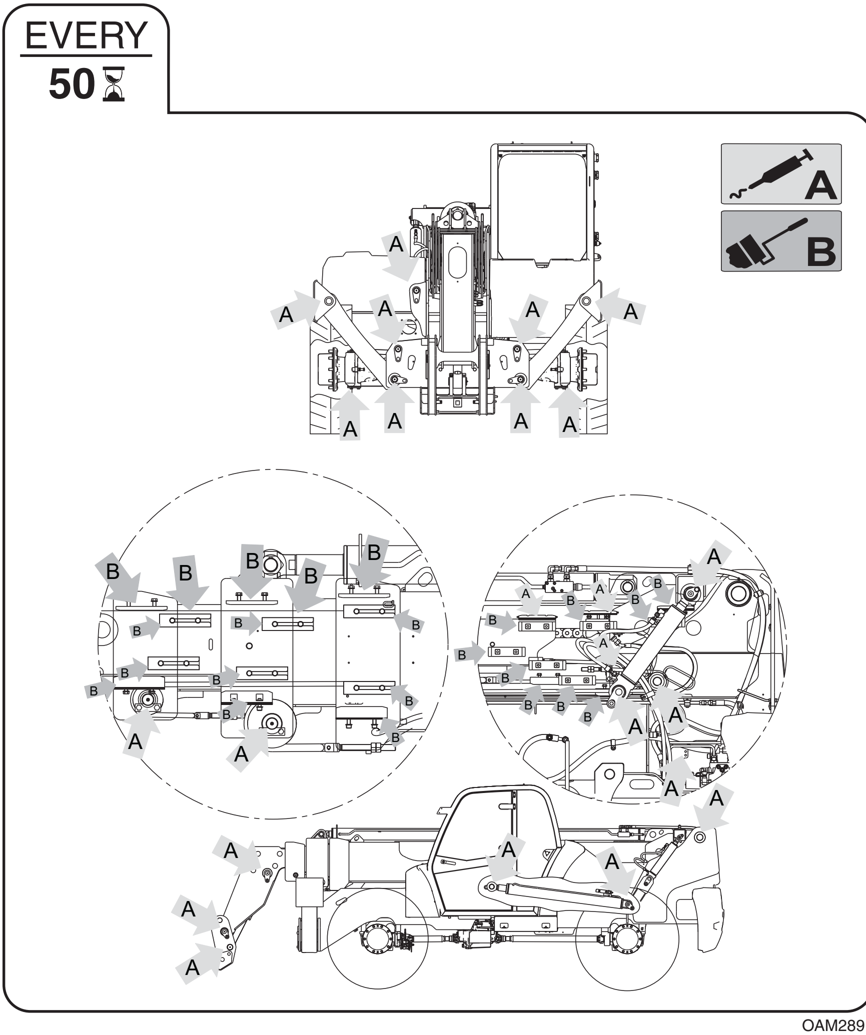
OAM2202

EVERY
50



OAM2880

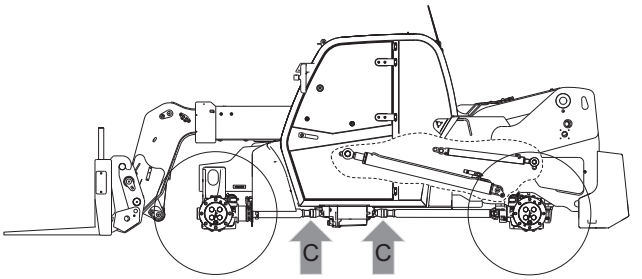
TH417C



500 Hour Lubrication Schedule

TH336C, TH337C, TH406C & TH407C

EVERY
500



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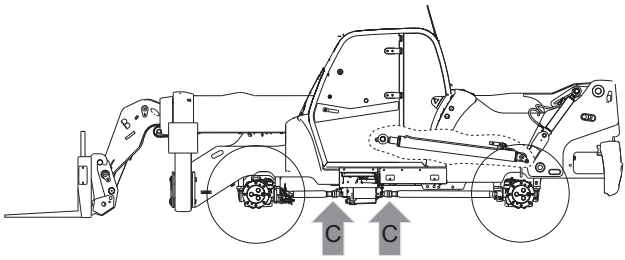
TH414C, TH514C & TH417C

EVERY
500



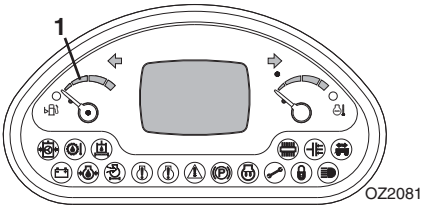
OAM2212

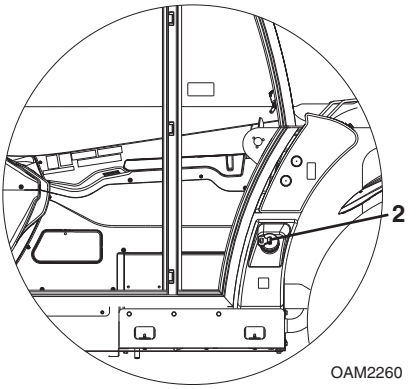
7.5 OPERATOR MAINTENANCE INSTRUCTIONS

Fuel System

A. Fuel Level Check

10 OW0970 OW0990





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

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

NOTICE

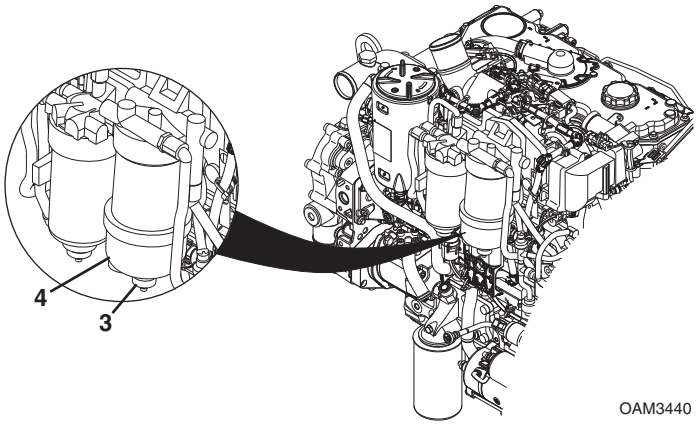
EQUIPMENT DAMAGE. Do not allow machine to run out of fuel during operation. See Engine Operation & Maintenance Manual for details prior to servicing.

B. Drain Fuel/Water Separator

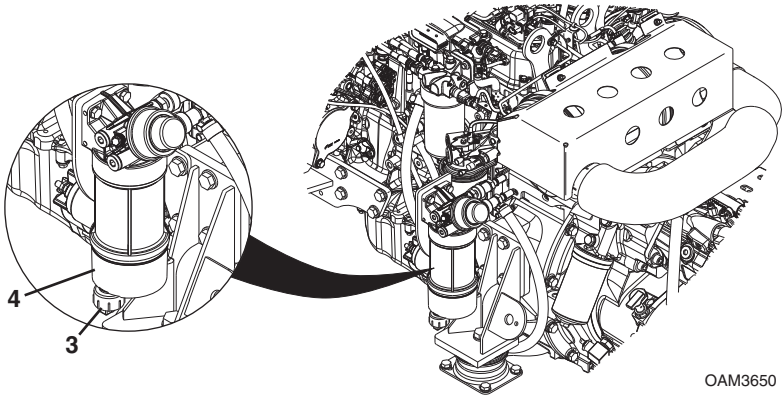
50 OW0980

OW1000

92,6 kW & 106 kW ENGINE



74,5 kW, 75 kW & 93,1 kW ENGINE



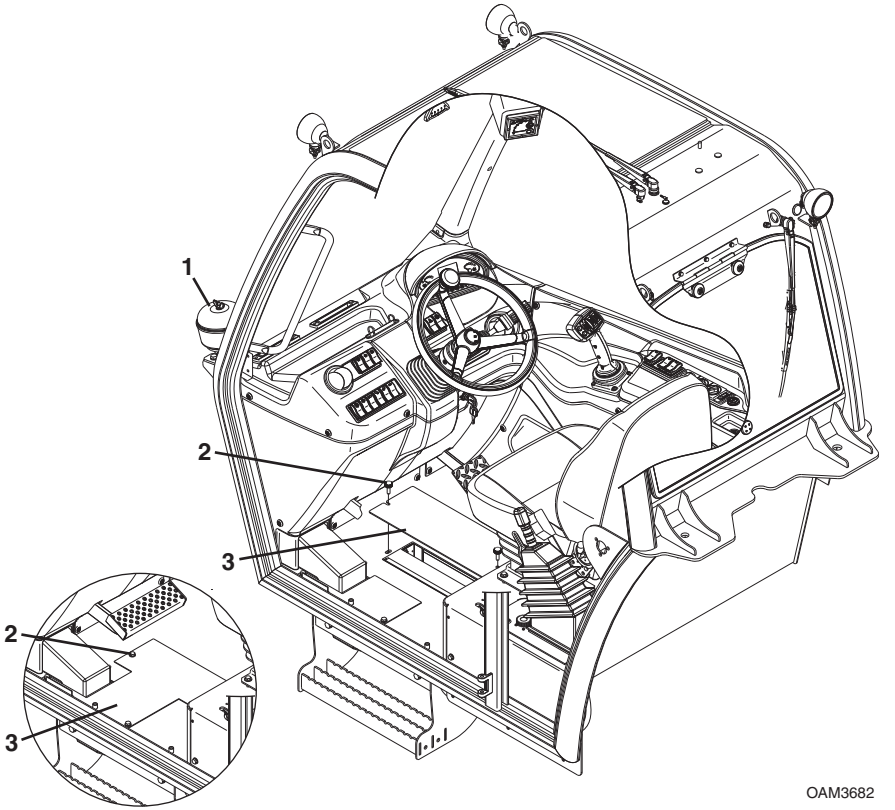
1. Perform *"Shut-Down Procedure"* on page 4-3.
2. Open engine cover.
3. Loosen drain cock (**3**) on underside of fuel filter (**4**) and allow all water to drain into a glass until clear fuel is visible. Tighten drain cock.
4. Close and secure engine cover.

Cab Air Filters (if equipped)

A. Cab Air Prefilter Check

10 OW0970

OAM3660



EARLY PRODUCTION

1. Perform *"Shut-Down Procedure"* on page 4-3.
2. If equipped, locate cab air precleaner (**1**) on front of cab.
3. Loosen wing nut and remove cover.
4. Remove dust from bowl.
5. Replace bowl and secure cover.

Cab Air Filter Check

50 OW0980


OAM3670

1. Perform *"Shut-Down Procedure"* on page 4-3.
2. Remove floor mat from cab.
3. Remove bolts (**2**) and panel (**3**) from cab floor.
4. Remove cab air filter and inspect.
5. If filter is not damaged, clean and place back in cab floor. If damaged, replace filter.
6. Replace floor panel and secure.
7. Replace floor mat.

Tires

A. Tire Air Pressure Check

10 OW0970 OW1040

1. Perform *"Shut-Down Procedure"* on page 4-3.
2. Remove valve stem cap.
3. Check tire pressure.
4. Add air if required. See page 9-4 for tire pressures.
5. Replace valve stem cap.

B. Tire Damage

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

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

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

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

C. Tire and Wheel Replacement

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

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

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

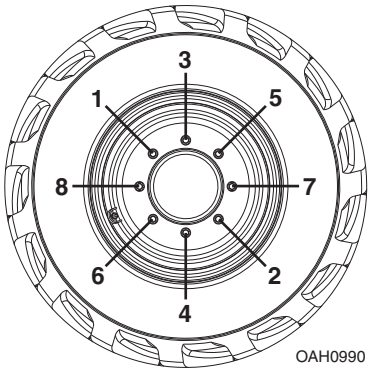
The rims installed have been designed for stability requirements which consist of track width, tire pressure and load capacity. Size changes such as rim width, center piece location, larger or smaller diameter, etc., without written factory recommendations, may result in unsafe condition regarding stability.

E. Wheel Installation

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

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

1. Install wheel lug washers.
2. Start all nuts by hand to prevent cross threading. DO NOT use a lubricant on threads or nuts.
3. Tighten lug nuts in an alternating pattern as indicated in figure. See page 9-5 for torque value.



WARNING

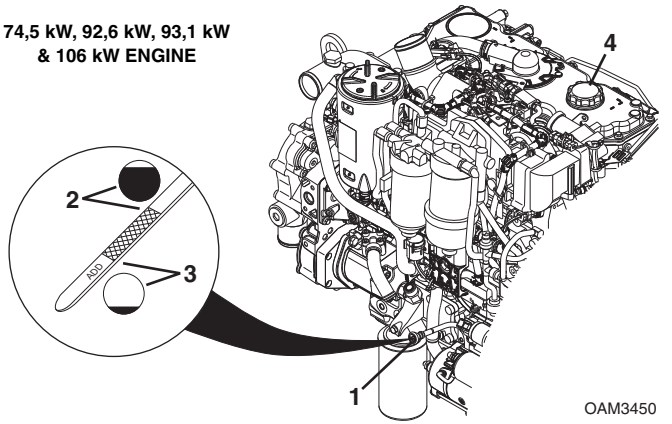
TIP OVER HAZARD. Lug nuts must be installed and maintained at the proper torque to prevent loose wheels, broken studs and possible separation of wheel from the axle.

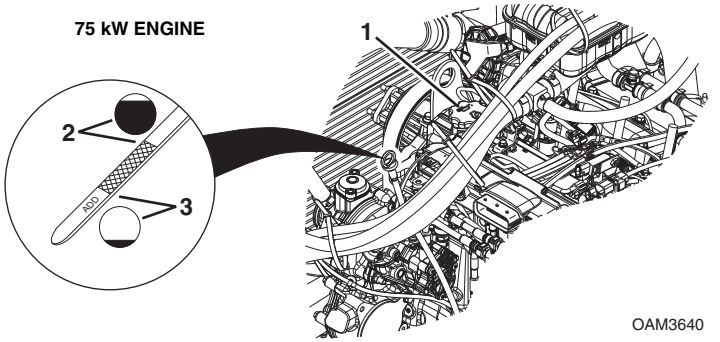
Engine Oil

A. Engine Oil Level Check

10 OW0970

OW1020





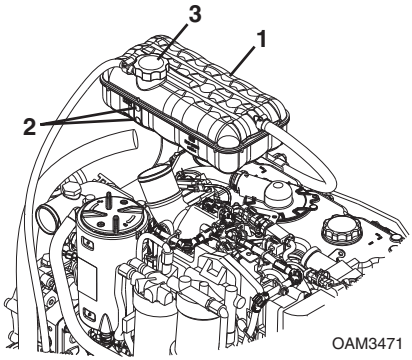
1. Perform *"Shut-Down Procedure"* on page 4-3.
2. Open engine cover.
3. Remove dipstick (**1**) and check oil mark. The oil should be between the full (**2**) and add (**3**) marks within the crosshatched area of the dipstick.
4. Replace dipstick.
5. If oil is low, remove oil fill cap (**4**) and add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

Engine Cooling System

A. Engine Coolant Level Check

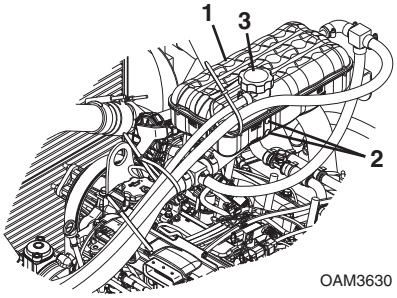
10 OW0970 OW1070

74,5 kW, 92,6 kW & 106 kW ENGINE



OAM3471

75 kW & 93,1 kW ENGINE



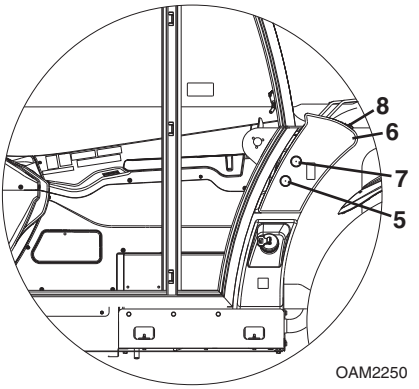
OAM3630

1. Perform *"Shut-Down Procedure"* on page 4-3.
2. Open engine cover.
3. Check coolant level in surge tank (**1**). Coolant should be between the Min and Max (**2**) marks.
4. If coolant is low, allow fluid to cool.
5. Remove surge tank cap (**3**) slowly. Add coolant as required.
6. Replace surge tank cap.
7. Close and secure engine cover.

Hydraulic Oil

A. Hydraulic Oil Level Check

10 OW0970 OW1030

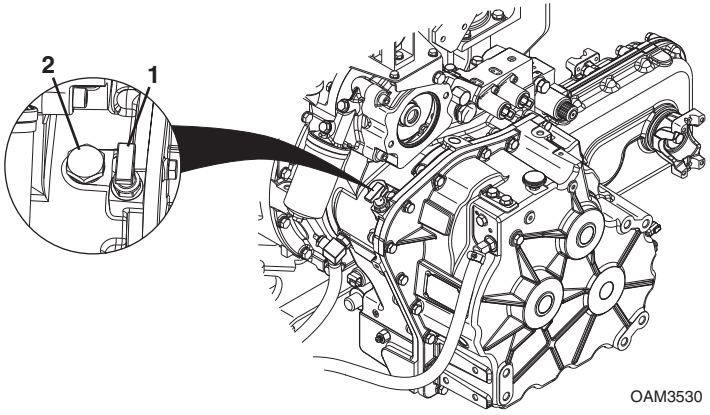


1. If equipped, ensure outriggers are fully raised.
2. Perform *"Shut-Down Procedure"* on page 4-3.
3. If hydraulic oil is cold, check fluid level at the sight gauge (**5**) on the hydraulic tank (**6**). The oil level should be visible in the gauge window.
   If hydraulic oil is warm, check fluid level at the sight gauge (**7**) on the hydraulic tank. The oil level should be visible in the gauge window.
4. If hydraulic oil is low, remove oil fill cap (**8**). Add hydraulic fluid to bring oil up to the center of the appropriate gauge window.
5. Replace hydraulic oil fill cap.

Transmission Oil

A. Transmission Oil Level Check

10 OW0970 OW1050



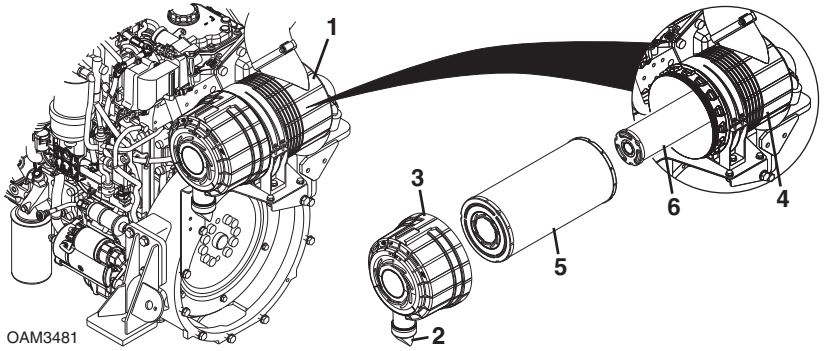
1. Check transmission oil level with engine at idle and transmission oil cold.
2. Apply park brake, shift transmission to "Neutral" and lower forks or attachment to the ground.
3. Open the engine cover.
4. Remove the transmission dipstick (**1**) and check oil level. The oil level should be between the Min and Max marks.
5. Replace transmission dipstick.
6. If oil is low, remove plug (**2**) and add fluid as required.
7. Replace plug.
8. Close and secure the engine cover.

Air Intake System

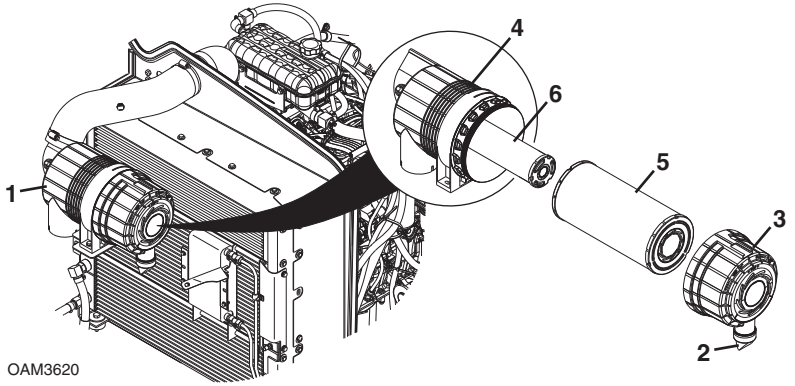
A. Air Filter Check

50 OW0980 OW1010

74,5 kW, 92,6 kW, 93,1 kW & 106 kW ENGINE



75 kW ENGINE



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

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

B. Element Change (as restriction indicator indicates)

If Air Filter Restriction Indicator remains on after start up or illuminates while operating machine, perform the following:

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

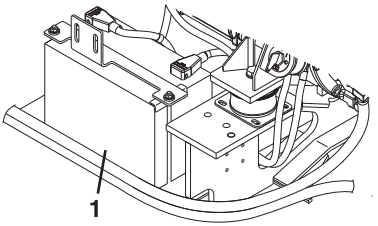
Note: *An inner safety element should never be washed or reused. Always install a new element.*

Battery

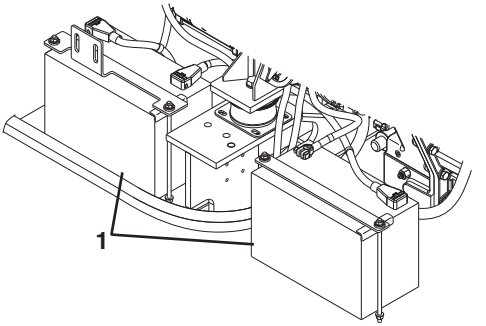
A. Battery Check

50 OW0980 OW1080

SINGLE BATTERY CONFIGURATION



DUAL BATTERY CONFIGURATION



OAM3460

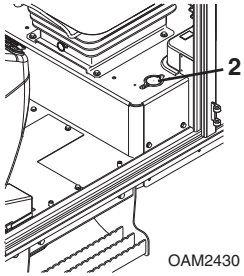
1. Perform *"Shut-Down Procedure"* on page 4-3.
2. Open engine cover.
3. Wearing eye protection, visually inspect the battery (**1**). Check terminals for corrosion. Replace battery if it has a cracked, melted or damaged case.
4. Close and secure engine cover.

Windshield Washer System (if equipped)

A. Windshield Washer Fluid Level Check

50 OW0980

OAL2040



1. Perform *"Shut-Down Procedure"* on page 4-3.
2. The windshield washer fluid should be visible in the reservoir (**2**).
3. If washer fluid level is low, add fluid as needed.

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SECTION 8 - ADDITIONAL CHECKS

8.1 GENERAL

If any of the following test results cannot be achieved, the system is not functioning properly and the machine must be removed from service and repaired before continued operation.

8.2 LOAD STABILITY INDICATOR SYSTEM (CE & AUS)

A. Load Stability Indicator System Test

10 OW0970


OZ0840

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

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

8.3 BOOM INTERLOCK (TH414C, TH514C & TH417C)

A. Boom Interlock System Test

10

OW0970

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

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

8.4 AUXILIARY POWER (IF EQUIPPED FOR PLATFORM)

A. Auxiliary Power System Test

10 OW0970

OZ2770

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

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

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SECTION 9 - SPECIFICATIONS

9.1 PRODUCT SPECIFICATIONS

Fluids

S/N MJR00150 & After, S/N DJB00150 & After, S/N GAT00150 & After, S/N MLH00150 & After, S/N KEK00150 & After, S/N MWC00150 & After, S/N RRJ00150 & After

Compartment or System	Type and Classification	Viscosities	Ambient Temperature Range			
			°F		°C	
			Min	Max	Min	Max
Engine Crankcase	CAT DEO ULS API CJ-4	SAE 0W-20	-22	50	-30	10
		SAE 0W-30	-22	86	-30	30
		SAE 0W-40	-22	104	-30	40
		SAE 5W-30	-13	86	-25	30
		SAE 5W-40	-13	122	-25	50
		SAE 10W-30	-4	104	-20	40
		SAE 10W-40	-4	122	-20	50
		SAE 15W-40	14	122	-10	50
Hydraulic System	CAT HYDO Advanced	SAE 10W	-4	104	-20	40
		SAE 30	50	122	10	50
Transmission and Transfer Case	CAT TDTO	SAE 10W	0	95	-18	35
		SAE 30	32	95	0	35
		SAE 50	50	122	10	50
		SAE 5W-30	-22	68	-30	20
		SAE 0W-20	-40	68	-40	20
Axle Differential* and Wheel End	CAT TDTO TO-4	SAE 30	-4	104	-20	40
Cylinder, Boom Wear Pad and Axle Grease	CAT Multipurpose Grease	NLGI Grade 2	-22	104	-30	40
Engine Coolant	CAT Extended Life Coolant (ELC)	50/50 Mix				
Fuel	#2 Diesel	Ultra Low Sulfur ($S \leq 15$ mg/kg)				
Air Conditioning	Refrigerant R-134a	Tetrafluoroethane				

Note: *Friction Modifier* (197-0017) *required for front axle differential.*

S/N THM00150 & After, S/N SXJ00150 & After, S/N RCH00150 & After, S/N JJT00150 & After, S/N RWW00150 & After, S/N KKW00150 & After, S/N RRW00150 & After

Compartment or System	Type and Classification	Viscosities	Ambient Temperature Range			
			°F		°C	
			Min	Max	Min	Max
Engine Crankcase	CAT DEO API CI-4	SAE 0W-20	-22	50	-30	10
		SAE 0W-30	-22	86	-30	30
		SAE 0W-40	-22	104	-30	40
		SAE 5W-30	-13	86	-25	30
		SAE 5W-40	-13	122	-25	50
		SAE 10W-30	-4	104	-20	40
		SAE 10W-40	-4	122	-20	50
		SAE 15W-40	14	122	-10	50
Hydraulic System	CAT HYDO Advanced	SAE 10W	-4	104	-20	40
		SAE 30	50	122	10	50
Transmission and Transfer Case	CAT TDTO	SAE 10W	0	95	-18	35
		SAE 30	32	95	0	35
		SAE 50	50	122	10	50
		SAE 5W-30	-22	68	-30	20
		SAE 0W-20	-40	68	-40	20
Axle Differential* and Wheel End	CAT TDTO TO-4	SAE 30	-4	104	-20	40
Cylinder, Boom Wear Pad and Axle Grease	CAT Multipurpose Grease	NLGI Grade 2	-22	104	-30	40
Engine Coolant	CAT Extended Life Coolant (ELC)	50/50 Mix				
Fuel	#2 Diesel	Low Sulfur (S ≤ 500 mg/kg)				
Air Conditioning	Refrigerant R-134a	Tetrafluoroethane				

Note: *Friction Modifier* (197-0017) *required for front axle differential.*

Fluid Capacities

Engine Crankcase Oil

Capacity with Filter Change
- 74,5 kW ..... 8,5 L (9.0 qt)
- 75,0 kW ..... 8,0 L (8.5 qt)
- 92,6 kW & 106 kW ..... 8,8 L (9.3 qt)
- 93,1 kW ..... 9,5 L (10.0 qt)

Fuel Tank

Capacity ..... 150 L (39.6 gal)

Cooling System

System Capacity
- 75,0 kW ..... 16,0 L (16.9 qt)
- 74,5 kW, 92,6 kW, 93,1 kW & 106 kW ..... 25,0 L (26.4 qt)

Hydraulic System

System Capacity
- TH336C, TH337C, TH406C & TH407C ..... 135 L (35.7 gal)
- TH414C, TH514C & TH417C ..... 145 L (38.3 gal)

Reservoir Capacity to Full Mark ..... 90 L (23.8 gal)

Auxiliary Hydraulic Circuit Max Flow ..... 80 lpm (21.1 gpm)

Transmission System

Capacity with Filter Change ..... 14,0 L (14.8 qt)

Transfer Case

Capacity ..... 2,75 L (2.9 qt)

Axles

Differential Housing Capacity
- TH336C, TH337C, TH406C & TH407C
  - Front Axle ..... 10,5 L (11.1 qt)
  - Rear Axle ..... 11,5 L (12.2 qt)
- TH414C, TH514C & TH417C
  - Front & Rear Axle ..... 11,5 L (12.2 qt)

Friction Modifier (197-0017) - Front Axle Differential ..... 0,35 L (0.37 qt)

Wheel End Capacity
- TH336C, TH337C, TH406C & TH407C ..... 0,8 L (0.8 qt)
- TH414C ..... 0,9 L (1.0 qt)
- TH514C & TH417C ..... 1,5 L (1.6 qt)

Air Conditioning System (if equipped)

System Capacity ..... 1,35 kg (3.0 lb)

Tires

TH336C, TH337C, TH406C & TH407C

- 15.5-25 L-2
  - Pneumatic ..... 4,0 bar (58 psi)
  - Foam Filled (ANSI) ..... Approx 264 kg (582 lb)
  - Liquid Filled ..... Approx 4,6 L (155 oz)
- 15.5/80-24 TR01
  - Pneumatic ..... 4,25 bar (62 psi)
  - Liquid Filled ..... Approx 6,0 L (200 oz)
- 15.5/80-24 SGI
  - Pneumatic ..... 4,0 bar (58 psi)
  - Liquid Filled ..... Approx 6,0 L (200 oz)
- 460/70 R24
  - Pneumatic ..... 4,0 bar (58 psi)
  - Liquid Filled ..... Approx 6,4 L (215 oz)
- 500/70 R24 (TH337C & TH407C only)
  - Pneumatic ..... 3,0 bar (44 psi)
  - Liquid Filled ..... Approx 6,5 L (220 oz)
- 400/80-24
  - Pneumatic ..... 4,0 bar (58 psi)
  - Liquid Filled ..... Approx 6,0 L (200 oz)
- 440/80-24 (TH337C & TH407C only)
  - Pneumatic ..... 3,5 bar (51 psi)
  - Liquid Filled ..... Approx 6,4 L (215 oz)

TH414C

- 15.5/80-24 TR01
  - Pneumatic ..... 4,25 bar (62 psi)
  - Liquid Filled ..... Approx 6,0 L (200 oz)
- 15.5-25 L-2
  - Pneumatic ..... 4,0 bar (58 psi)
  - Liquid Filled ..... Approx 4,6 L (155 oz)
- 400/80-24
  - Pneumatic ..... 4,5 bar (65 psi)
  - Liquid Filled ..... Approx 6,0 L (200 oz)
- 440/80-24
  - Pneumatic ..... 4,0 bar (58 psi)
  - Liquid Filled ..... Approx 6,4 L (215 oz)

TH514C & TH417C
- 14-24 TG02
  - Pneumatic.....4,25 bar (61 psi)
  - Foam Filled (TH514C - ANSI).....Approx 264 kg (582 lb)
  - Liquid Filled..... Approx 4,6 L (155 oz)
- 14-24 SGG-2A
  - Pneumatic.....5,25 bar (76 psi)
  - Foam Filled (TH514C - ANSI).....Approx 264 kg (582 lb)
  - Liquid Filled..... Approx 4,6 L (155 oz)

Wheel Lug Nut

Torque
- TH336C, TH337C, TH406C, TH407C & TH414C ..... 360 ±20 Nm (265 ±15 lb-ft)
- TH514C & TH417C ..... 460 ±20 Nm (340 ±15 lb-ft)

Performance

Maximum Lift Capacity
- TH336C
  - CE ..... 3300 kg (7275 lb)
  - AUS ..... 3000 kg (6614 lb)
- TH337C ..... 3300 kg (7275 lb)
- TH406C
  - CE ..... 3700 kg (8157 lb)
  - ANSI ..... 8150 lb (3697 kg)
- TH407C
  - CE & AUS ..... 3700 kg (8157 lb)
  - ANSI ..... 8150 lb (3697 kg)
- TH414C
  - CE ..... 3700 kg (8157 lb)
  - AUS
    - Outriggers Engaged ..... 3700 kg (8157 lb)
    - Outriggers Not Engaged ..... 3300 kg (7275 lb)
- TH514C
  - CE ..... 4999 kg (11,021 lb)
  - AUS
    - Outriggers Engaged ..... 5000 kg (11,023 lb)
    - Outriggers Not Engaged ..... 4600 kg (10,141 lb)
  - ANSI ..... 11,000 lb (4990 kg)
- TH417C
  - CE & AUS ..... 4000 kg (8818 lb)

Maximum Lift Height
- TH336C & TH406C ..... 6,1 m (20.0 ft)
- TH337C & TH407C ..... 7,3 m (24.0 ft)
- TH414C ..... 13,7 m (44.9 ft)
- TH514C
  - Outriggers Engaged ..... 13,7 m (44.9 ft)
  - Outriggers Not Engaged ..... 13,3 m (43.6 ft)
- TH417C
  - Outriggers Engaged ..... 17,3 m (56.8 ft)
  - Outriggers Not Engaged ..... 15,2 m (49.9 ft)

Capacity at Maximum Height
- TH336C
  - CE ..... 2400 kg (5291 lb)
  - AUS ..... 2250 kg (4960 lb)
- TH337C ..... 2000 kg (4409 lb)
- TH406C
  - CE ..... 2500 kg (5512 lb)
  - ANSI ..... 5500 lb (2495 kg)

- TH407C
  - CE & AUS ..... 2000 kg (4409 lb)
  - ANSI ..... 4000 lb (1814 kg)
- TH414C
  - Outriggers Engaged
    - CE ..... 3000 kg (6614 lb)
    - AUS ..... 2500 kg (5512 lb)
  - Outriggers Not Engaged
    - CE ..... 1750 kg (3858 lb)
    - AUS ..... 1250 kg (2756 lb)
- TH514C
  - Outriggers Engaged
    - CE ..... 3500 kg (7716 lb)
    - AUS ..... 2000 kg (4409 lb)
    - ANSI ..... 0 lb (0 kg)
  - Outriggers Not Engaged
    - CE ..... 1500 kg (3307 lb)
    - AUS ..... 1800 kg (3968 lb)
    - ANSI ..... 4000 lb (1814 kg)
- TH417C
  - Outriggers Engaged ..... 3000 kg (6614 lb)
  - Outriggers Not Engaged ..... 1000 kg (2205 lb)

Maximum Forward Reach

- TH336C & TH406C ..... 3,1 m (10.2 ft)
- TH337C & TH407C ..... 3,8 m (12.3 ft)
- TH414C & TH514C ..... 9,2 m (30.3 ft)
- TH417C ..... 12,7 m (41.7 ft)

Capacity at Maximum Forward Reach

- TH336C
  - CE ..... 1000 kg (2205 lb)
  - AUS ..... 975 kg (2150 lb)
- TH337C ..... 1000 kg (2205 lb)
- TH406C
  - CE ..... 1500 kg (3307 lb)
  - ANSI ..... 3300 lb (1497 kg)
- TH407C
  - CE ..... 1500 kg (3307 lb)
  - AUS ..... 1300 kg (2866 lb)
  - ANSI ..... 3300 lb (1497 kg)
- TH414C
  - Outriggers Engaged
    - CE ..... 1150 kg (2535 lb)
    - AUS ..... 1000 kg (2205 lb)
  - Outriggers Not Engaged ..... 350 kg (772 lb)

- TH514C
  - Outriggers Engaged
    - CE ..... 1600 kg (3572 lb)
    - AUS ..... 1200 kg (2646 lb)
    - ANSI ..... 3000 lb (1361 kg)
  - Outriggers Not Engaged
    - CE ..... 600 kg (1322 lb)
    - AUS ..... 500 kg (1102 lb)
    - ANSI ..... 1000 lb (454 kg)
- TH417C
  - Outriggers Engaged ..... 500 kg (1102 lb)
  - Outriggers Not Engaged ..... 0 kg (0 lb)

Reach at Maximum Height
- TH336C & TH406C ..... 0,8 m (2.6 ft)
- TH337C & TH407C ..... 0,7 m (2.3 ft)
- TH414C ..... 0,5 m (1.6 ft)
- TH514C
  - Outriggers Engaged ..... 0,5 m (1.6 ft)
  - Outriggers Not Engaged ..... 1,8 m (5.9 ft)
- TH417C
  - Outriggers Engaged ..... 2,1 m (6.9 ft)
  - Outriggers Not Engaged ..... 6,0 m (19.7 ft)

Maximum Travel Speed (see note)
- TH336C, TH337C, TH406C & TH407C
  - 4 Speed ..... 32 kph (19.9 mph)
  - 6 Speed ..... 40 kph (24.9 mph)
- TH414C ..... 32 kph (19.9 mph)
- TH514C & TH417C ..... 34 kph (21.1 mph)

Frame Leveling
- TH336C, TH337C, TH406C & TH407C ..... 0 degrees
- TH414C, TH514C & TH417C ..... 10 degrees

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

Note: *Refer to machine specific documents and/or plates for local governmental requirements and/or restrictions.*

Dimensions

Note: *Values will vary depending on machine configuration.*

Maximum Overall Height
- TH336C & TH406C ..... 2566 mm (101.0 in)
- TH337C & TH407C ..... 2586 mm (101.8 in)
- TH414C ..... 2788 mm (109.8 in)
- TH514C ..... 2784 mm (109.6 in)
- TH417C ..... 2979 mm (117.3 in)

Maximum Overall Width
- TH336C, TH337C, TH406C & TH407C ..... 2402 mm (94.6 in)
- TH414C ..... 2450 mm (96.5 in)
- TH514C ..... 2449 mm (96.4 in)
- TH417C ..... 2467 mm (97.1 in)

Maximum Track Width
- TH336C, TH337C, TH406C & TH407C ..... 1988 mm (78.3 in)
- TH414C ..... 2036 mm (80.2 in)
- TH514C & TH417C ..... 2078 mm (81.8 in)

Wheelbase
- TH336C & TH406C ..... 2975 mm (117.1 in)
- TH337C & TH407C ..... 3075 mm (121.1 in)
- TH414C, TH514C & TH417C ..... 3200 mm (126.0 in)

Length at Front Wheels
- TH336C ..... 4278 mm (168.4 in)
- TH337C ..... 4451 mm (175.2 in)
- TH406C ..... 4278 mm (168.4 in)
- TH407C ..... 4704 mm (185.2 in)
- TH414C ..... 5061 mm (199.3 in)
- TH514C & TH417C ..... 5113 mm (201.3 in)

Overall Length (less Forks and Hitch)
- TH336C ..... 4850 mm (190.9 in)
- TH337C ..... 5128 mm (201.9 in)
- TH406C ..... 4850 mm (190.9 in)
- TH407C ..... 5347 mm (201.5 in)
- TH414C ..... 6575 mm (258.9 in)
- TH514C ..... 6617 mm (260.5 in)
- TH417C ..... 6782 mm (267.0 in)

Ground Clearance
- TH336C & TH406C ..... 389 mm (15.3 in)
- TH337C & TH407C ..... 406 mm (16.0 in)
- TH414C ..... 368 mm (14.5 in)
- TH514C ..... 420 mm (16.5 in)
- TH417C ..... 376 mm (14.8 in)

Outside Turning Radius Over Tires
- TH336C & TH406C....3700 mm (145.7 in)
- TH337C & TH407C....3750 mm (147.6 in)
- TH414C ....3805 mm (149.8 in)
- TH514C & TH417C....3920 mm (154.3 in)

Outside Turning Radius Over Forks
- TH336C & TH406C....4670 mm (183.9 in)
- TH337C & TH407C....4740 mm (186.6 in)
- TH414C .... Not Available at Publication
- TH514C & TH417C.... Not Available at Publication

Maximum Operating Weight (no attachment)
- TH336C ....7500 kg (16,535 lb)
- TH337C ....7900 kg (17,417 lb)
- TH406C ....8200 kg (18,078 lb)
- TH407C ....8600 kg (18,960 lb)
- TH414C
  - CE ....10.075 kg (22,212 lb)
  - AUS....10.344 kg (22,805 lb)
- TH514C .... 11.160 kg (24,604 lb)
- TH417C ....12.310 kg (27,139 lb)

Distribution of Maximum Operating Weight
(no attachment, boom level and fully retracted)
- Front Axle
  - TH336C....3880 kg (8,554 lb)
  - TH337C....3900 kg (8,598 lb)
  - TH406C....3970 kg (8,752 lb)
  - TH407C....3980 kg (8,774 lb)
  - TH414C
    - CE ....4564 kg (10,062 lb)
    - AUS....4633 kg (10,214 lb)
  - TH514C....4855 kg (10,703 lb)
  - TH417C....5724 kg (12,619 lb)
- Rear Axle
  - TH336C....3620 kg (7,981 lb)
  - TH337C....4000 kg (8,818 lb)
  - TH406C....4230 kg (9,326 lb)
  - TH407C....4620 kg (10,185 lb)
  - TH414C
    - CE ....5511 kg (12,150 lb)
    - AUS....5711 kg (12,591 lb)
  - TH514C....6305 kg (13,900 lb)
  - TH417C....6586 kg (14,520 lb)

Maximum Ground Bearing Pressure

- TH336C & TH406C
  - Pneumatic
    - 15.5-25 L-2 ..... 7,9 kg/cm² (112 lb/in²)
    - 15.5/80-24 TR01 ..... 9,3 kg/cm² (132 lb/in²)
    - 15.5/80-24 SGI ..... 10,7 kg/cm² (152 lb/in²)
    - 460/70 R24 XMCL ..... 11,5 kg/cm² (164 lb/in²)
    - 460/70 R24 TL ..... 10,0 kg/cm² (142 lb/in²)
    - 400/80-24 ..... 11,5 kg/cm² (164 lb/in²)
  - Foam (ANSI)
    - 15.5-25 L-2 ..... 9,0 kg/cm² (128 lb/in²)
- TH337C & TH407C
  - Pneumatic
    - 15.5-25 L-2 ..... 7,9 kg/cm² (112 lb/in²)
    - 15.5/80-24 TR01 ..... 9,3 kg/cm² (132 lb/in²)
    - 15.5/80-24 SGI ..... 10,7 kg/cm² (152 lb/in²)
    - 460/70 R24 XMCL ..... 11,5 kg/cm² (164 lb/in²)
    - 460/70 R24 TL ..... 10,0 kg/cm² (142 lb/in²)
    - 500/70 R24 ..... 10,5 kg/cm² (149 lb/in²)
    - 400/80-24 ..... 11,5 kg/cm² (164 lb/in²)
    - 440/80-24 ..... 9,6 kg/cm² (137 lb/in²)
  - Foam (ANSI)
    - 15.5-25 L-2 ..... 9,0 kg/cm² (128 lb/in²)
- TH414C
  - Pneumatic
    - 15.5/80-24 TR01 ..... 9,6 kg/cm² (137 lb/in²)
    - 15.5-25 L-2 ..... 8,0 kg/cm² (114 lb/in²)
    - 400/80-24 ..... 12,7 kg/cm² (181 lb/in²)
    - 440/80-24 ..... 10,8 kg/cm² (154 lb/in²)
- TH514C & TH417C
  - Pneumatic
    - 14-24 TG02 ..... 9,0 kg/cm² (128 lb/in²)
    - 14-24 SGG-2A ..... 11,2 kg/cm² (159 lb/in²)
  - Foam (TH514 - ANSI)
    - 14-24 TG02 ..... 10,3 kg/cm² (147 lb/in²)
    - 14-24 SGG-2A ..... 12,9 kg/cm² (183 lb/in²)

Declaration of Vibration (CE)

According to Directive 78/764/EEC

Seat	Weighted Seat Vibration Acceleration (a_{ws})	
	Light Driver	**Heavy Driver**
320-9298	1,13 m/s^2	1,01 m/s^2
424-0024	1,14 m/s^2	1,06 m/s^2

According to Standard EN13059

Seat	Average Weighted Whole Body Acceleration	
	TH336C, TH337C, TH406C, TH407C	**TH414C, TH514C, TH417C**
Mechanical Suspension	0,5 m/s^2 (1.6 ft/s^2)	0,7 m/s^2 (2.3 ft/s^2)
Pneumatic Suspension	0,6 m/s^2 (2.0 ft/s^2)	0,6 m/s^2 (2.0 ft/s^2)

Noise Emission Level (CE)

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

According to Directive 2009/63/EC & 2009/76/EC

Model	Net Power:	Drive-by noise (2009/63/EC):	Driver perceived noise (2009/76/EC):	
			Windows Closed	Windows Open
TH336C TH337C TH406C TH407C	75,0 kW	80 dB (A)	76,1 dB (A)	81,2 dB (A)
	92,6 kW	77 dB (A)	77,1 dB (A)	80,5 dB (A)
	106 kW			

According to Directive 2000/14/EC & EN12053

Model	Net Power:	Outdoor noise (2000/14/EC):	Operator position noise (EN12053):
TH336C TH337C TH406C TH407C TH414C TH514C TH417C	74,5 kW	106 dB (A)	75,7 dB (A)
	75,0 kW		75,6 dB (A)
	92,6 kW	107 dB (A)	77,4 dB (A)
	93,1 kW		75,7 dB (A)
	106 kW		77,4 dB (A)

Machine Towing Capacity

Note: *Refer to machine specific documents and/or plates for local governmental requirements and/or restrictions.*

TH336C, TH337C, TH406C & TH407C
- Unbraked ..... 3.000 kg (6,614 lb)
- Independently Braked ..... 12.000 kg (26,455 lb)
- Inertia Braked ..... 8.000 kg (17,637 lb)
- Hydraulic or Pneumatic Braked ..... 12.000 kg (26,455 lb)

TH414C, TH514C & TH417C ..... 0 kg (0 lb)

According to Directive 2010/52/EU

	Maximum Mass per Axle (kg)		Maximum Vertical Load (kg) on Fixed Height Hitch			
			TH336C		TH337C	
Tires	30 km/h	40 km/h	30 km/h	40 km/h	30 km/h	40 km/h
15.5/80-24 TR	8700	7900	2500	2500	2500	2200
15.5/80-24 SGI	6900	6200	2200	1600	1400	900
400/80 R24	8200	7900	2500	2500	2500	2200
460/70 R24	9100	8100	2500	2500	2500	2400
500/70 R24	8300	7800	-	-	2500	2100
440/80 R24	8700	8100	-	-	2500	2400
15.5-25	5600	5300	1100	900	400	200

	Maximum Mass per Axle (kg)		Maximum Vertical Load (kg) on EEC Auto & EEC Manual Hitches			
			TH336C		TH337C	
Tires	30 km/h	40 km/h	30 km/h	40 km/h	30 km/h	40 km/h
15.5/80-24 TR	8700	7900	2500	2500	2500	2100
15.5/80-24 SGI	6900	6200	2100	1500	1400	900
400/80 R24	8200	7900	2500	2500	2300	2100
460/70 R24	9100	8100	2500	2500	2500	2300
500/70 R24	8300	7800	-	-	2400	2100
440/80 R24	8700	8100	-	-	2500	2300
15.5-25	5600	5300	1100	800	400	200

Tires	Maximum Mass per Axle (kg)		Maximum Vertical Load (kg) on Piton Frame Pin Hitch			
			TH336C		TH337C	
	30 km/h	40 km/h	30 km/h	40 km/h	30 km/h	40 km/h
15.5/80-24 TR	8700	7900	2500	2500	2500	2200
15.5/80-24 SGI	6900	6200	2200	1600	1400	900
400/80 R24	8200	7900	2500	2500	2400	2200
460/70 R24	9100	8100	2500	2500	2500	2400
500/70 R24	8300	7800	-	-	2500	2100
440/80 R24	8700	8100	-	-	2500	2400
15.5-25	5600	5300	1100	900	400	200

Tires	Maximum Mass per Axle (kg)		Maximum Vertical Load (kg) on Hydraulic Hitch			
			TH336C		TH337C	
	30 km/h	40 km/h	30 km/h	40 km/h	30 km/h	40 km/h
15.5/80-24 TR	8700	7900	2000	2000	2000	2000
15.5/80-24 SGI	6900	6200	2000	1500	1400	900
400/80 R24	8200	7900	2000	2000	2000	2000
460/70 R24	9100	8100	2000	2000	2000	2000
500/70 R24	8300	7800	-	-	2000	2000
440/80 R24	8700	8100	-	-	2000	2000
15.5-25	5600	5300	1000	800	400	200

Tires	Maximum Mass per Axle (kg)		Maximum Vertical Load (kg) on EEC Auto & EEC Manual Hitches			
			TH406C		TH407C	
	30 km/h	40 km/h	30 km/h	40 km/h	30 km/h	40 km/h
15.5/80-24 TR	8700	7900	2500	2300	2500	1900
15.5/80-24 SGI	6900	6200	1500	1000	1200	700
400/80 R24	8200	7900	2500	2300	2100	1900
460/70 R24	9100	8100	2500	2400	2500	2000
500/70 R24	8300	7800	-	-	2200	1800
440/80 R24	8700	8100	-	-	2500	2000
15.5-25	5600	5300	500	300	300	100

Tires	Maximum Mass per Axle (kg)		Maximum Vertical Load (kg) on Piton Frame Pin Hitch			
			TH406C		TH407C	
	30 km/h	40 km/h	30 km/h	40 km/h	30 km/h	40 km/h
15.5/80-24 TR	8700	7900	2500	2400	2500	2000
15.5/80-24 SGI	6900	6200	1600	1000	1200	700
400/80 R24	8200	7900	2500	2400	2200	2000
460/70 R24	9100	8100	2500	2500	2500	2100
500/70 R24	8300	7800	-	-	2300	1900
440/80 R24	8700	8100	-	-	2500	2100
15.5-25	5600	5300	500	300	300	100

Tires	Maximum Mass per Axle (kg)		Maximum Vertical Load (kg) on Hydraulic Hitch			
			TH406C		TH407C	
	30 km/h	40 km/h	30 km/h	40 km/h	30 km/h	40 km/h
15.5/80-24 TR	8700	7900	2000	2000	2000	1900
15.5/80-24 SGI	6900	6200	1500	1000	1200	700
400/80 R24	8200	7900	2000	2000	2000	1900
460/70 R24	9100	8100	2000	2000	2000	2000
500/70 R24	8300	7800	-	-	2000	1800
440/80 R24	8700	8100	-	-	2000	2000
15.5-25	5600	5300	500	300	300	100

S

T

V

W

Serial Number ________________________________

Date	Comments

Inspection, Maintenance and Repair Log

Date	Comments

An Oshkosh Corporation Company

TRANSFER OF OWNERSHIP

To Product Owner:

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

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

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

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

Mfg. Model: _____

Serial Number: _____

Previous Owner: _____

Address: _____

_____

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

Date of Transfer: _____

Current Owner: _____

Address: _____

_____

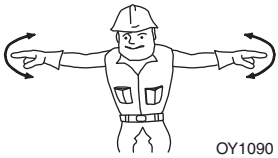
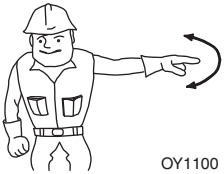
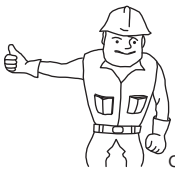
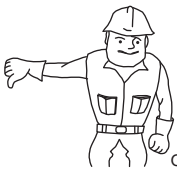
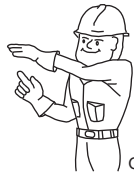
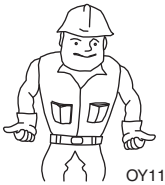
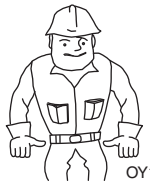
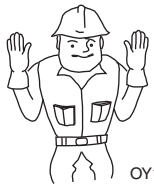
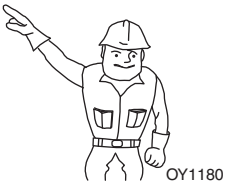
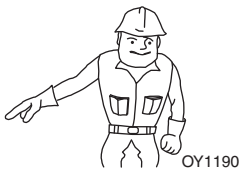
Country: _____ **Telephone: (_____)** _____

Who in your organization should we notify?

Name: _____

Title: _____

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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