

ORIGINAL INSTRUCTIONS - according to Directive 2006/42/EC, Annex I, 1.7.4.1

721F
Stage IV
Wheel Loader

OPERATOR'S MANUAL

Part number 47919938

1st edition English

October 2016



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PLEASE RECORD THE FOLLOWING INFORMATION

Model

Date Purchased

	<p>This is the safety alert symbol. It is used with and without signal words to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.</p>
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⚠ WARNING

Avoid injury and/or machine damage!

Illustrations may show protective shielding open or removed to better illustrate a particular feature or adjustment. Unless instructed otherwise, the machine should be turned off and hazardous energies dissipated before you open any shields. Replace all shields before you operate the machine.

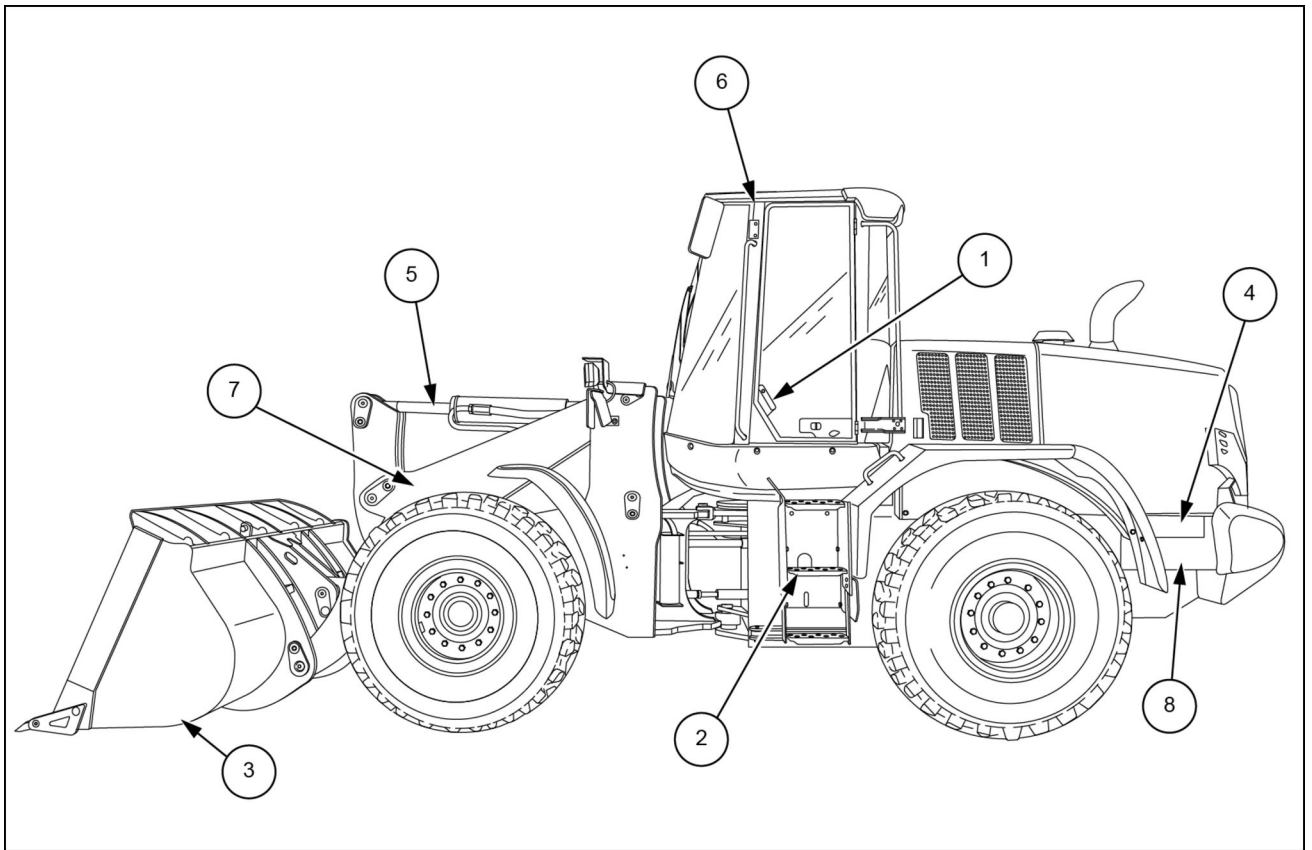
Failure to comply could result in death or serious injury.

W1399A

IMPROVEMENTS

CNH Industrial is continually striving to improve its products. We reserve the right to make improvements or changes when it becomes practical and possible to do so, without incurring any obligation to make changes or additions to the equipment sold previously.

Machine components



LEIL15WHL0004FB 1

- | | |
|---|---|
| 1. Cab door and hand holds | 5. Bucket cylinder |
| 2. Steps | 6. Roll Over Protection System (ROPS) cab |
| 3. Bucket (Z-bar version) | 7. Loader lift arms |
| 4. Electric disconnect and optional battery jump post | 8. Battery access |

Maintenance precautions

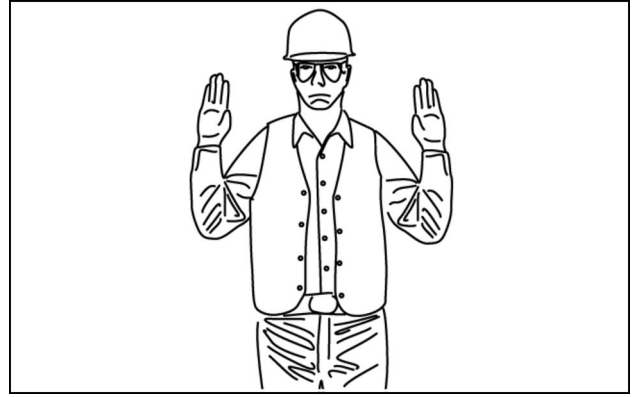
- Do not attempt repairs unless trained. Refer to manuals and experienced repair personnel for help.
- Before you service the machine, always place a DO NOT OPERATE tag on the key switch. Make sure that the machine is clearly “tagged out”.
- Wear protective glasses and other required safety equipment when servicing or repairing the machine.
- Wear gloves to protect hands when handling cable.
- Disconnect the battery clamp from the negative battery terminal before working on the electrical system. Know the consequences of disconnecting any electronic or computer devices.
- Avoid lubrication or mechanical adjustments with the machine in motion or the engine operating. If the engine must be in operation to make certain adjustments, place the transmission in neutral, install the articulation lock, apply the parking device, place the bucket/attachment in a safe position, securely block the wheels and use extreme caution.
- Securely block the machine or any component that may fall before working on the machine or component. If possible, use a backup or secondary blocking device as well.
- To prevent unexpected movement, securely block working elements when repairing or changing working tool parts such as cutting edges.
- Never make repairs on pressurized components, fluid, gas or mechanical until the pressure has been relieved according to the manufacturer’s instructions.
- Use extreme caution when removing radiator, reservoir, or tank caps, drain plugs, grease fittings or pressure taps. Park the machine and let it cool before opening a pressurized tank.
- Release all pressure before working on systems which have an accumulator.
- Hydraulic oil or diesel fuel leaking under pressure can penetrate the skin and cause infection or other injuries. To prevent personal injury, relieve all pressure before disconnecting fluid lines or performing work on the hydraulic system. Before applying pressure, make certain all connections are tight and components are in good condition.
- Use a piece of cardboard, newspaper, or wood to check for any pressurized leaks to prevent fluid penetrating the skin. Pressurize accumulators with the proper gas according to manufacturer’s recommendations.
- When inflating tires, use a self-attaching inflation chuck with remote shutoff and stand clear of the tire. Position yourself beside the tire and not beside the rim.
- Towing this machine is not recommended.
- When absolutely necessary to tow the machine, do not exceed the recommended towing speed. Be sure the towing machine has sufficient braking capacity to stop the towed load. If the towed machine cannot be braked, a tow bar must be used or two towing machines must be used - one in front pulling and one in the rear to act as a brake. Avoid towing over long distances.
- Always observe proper maintenance procedures.
- Always replace all missing, illegible or damaged safety signs or decals as necessary. Keeps all safety signs and decals clean and legible.

Observe proper maintenance procedures

- Whenever servicing or replacing hardened pins, etc., use a brass drift or other suitable material between the hammer and the pin. Alt: use a brass hammer, drift or suitable material on the pin, etc.
- Keep the brakes and steering systems in good operating condition.

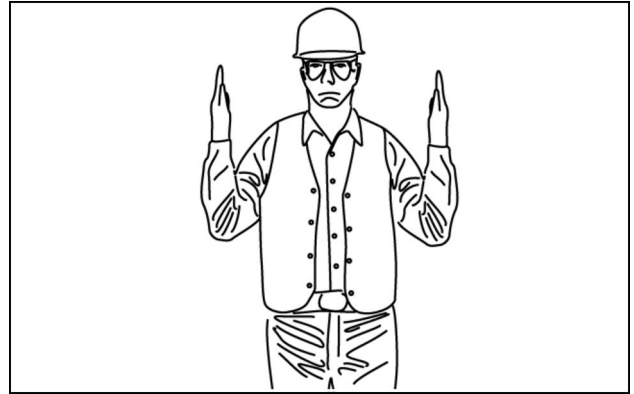
2 - SAFETY INFORMATION

Move away from me
Wave hands back and forth (palms outward).



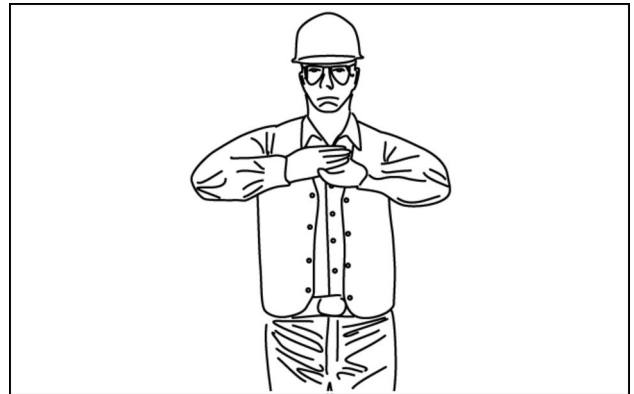
LEEN11T0008AA 4

Go this far



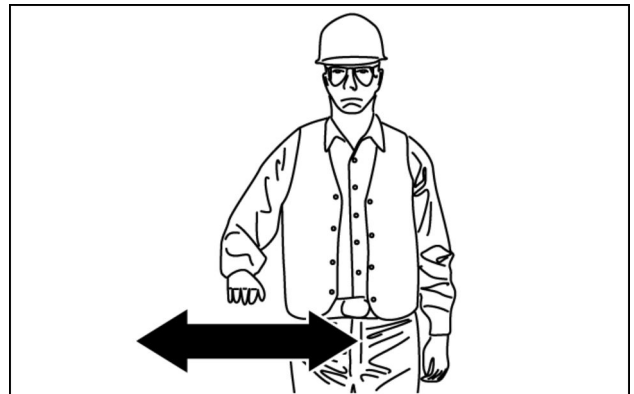
LEEN11T0009AA 5

All stop and hold

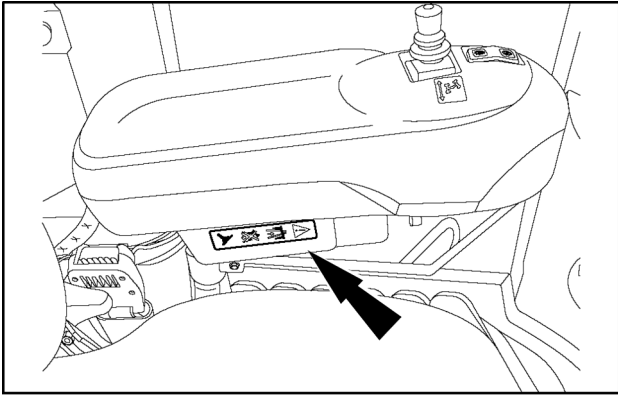


LEEN11T0010AA 6

Stop
Move one hand back and forth.



LEEN11T0011AA 7



RCIL10WHL303BAL 11

NOTE: only for machine equipped with Joystick steering.

Location: on the left-hand armrest.

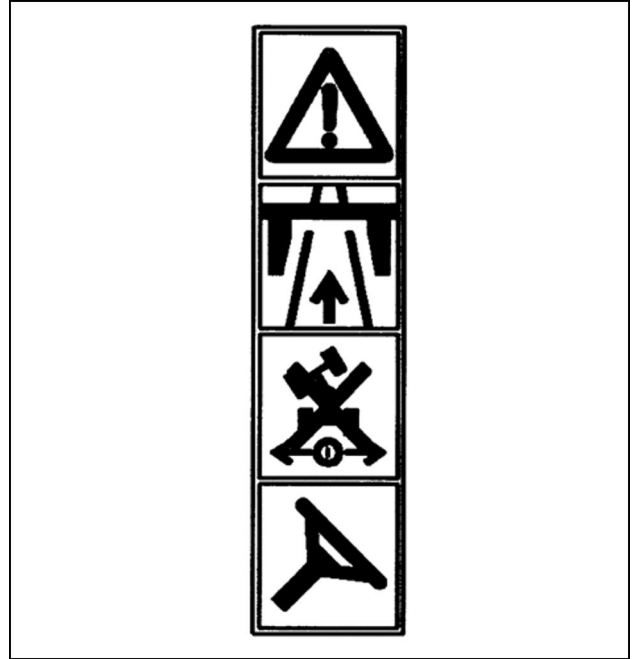
WARNING

Driving hazard!

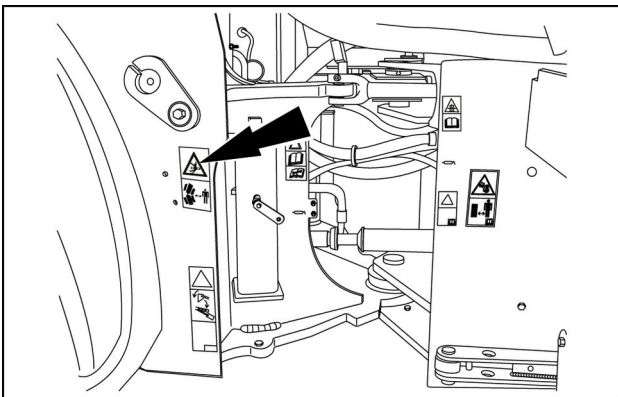
Do not use joystick steering when traveling on road.

Failure to comply with this warning could result in death or serious injury.

ISO decal number: 84128349



RCPH10WHL399BAH 12



LEIL15WHL0078AA 13

Location: right-hand and left-hand side of the machine, near the articulation area.

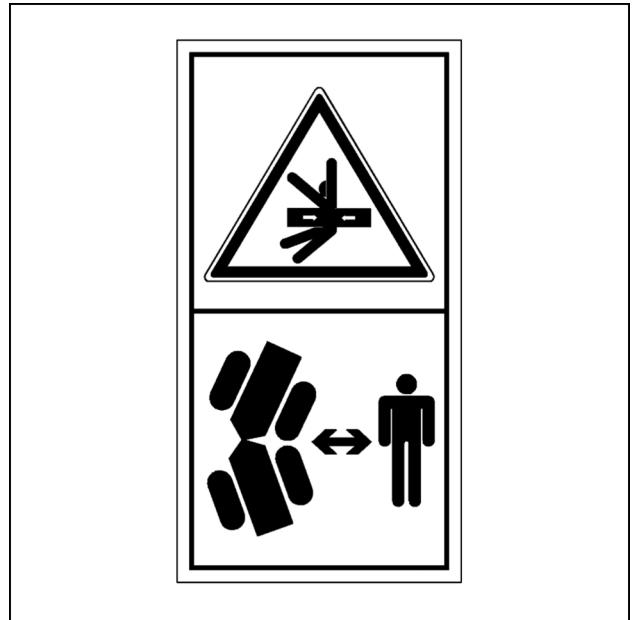
WARNING

Crush hazard!

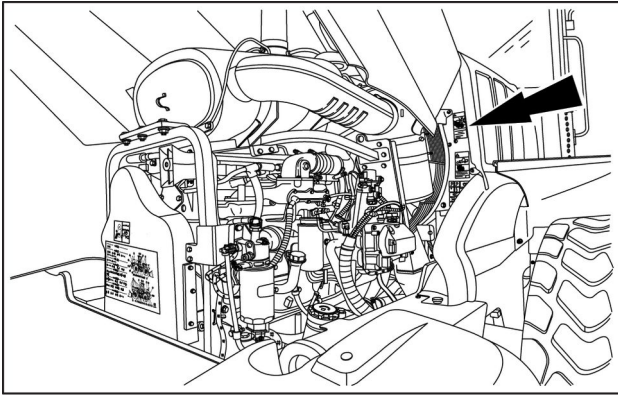
Keep clear.

Failure to comply with this warning could result in death or serious injury.

ISO decal number: 323695A1



323695A1 14



LEIL13WHL0293AA 51

Location: left-hand and right-hand side of the machine, near the fan guard.

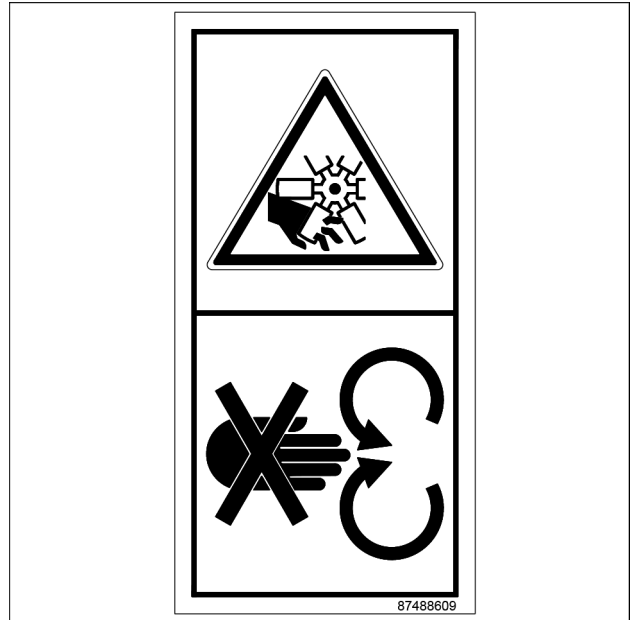
WARNING

Entanglement hazard!

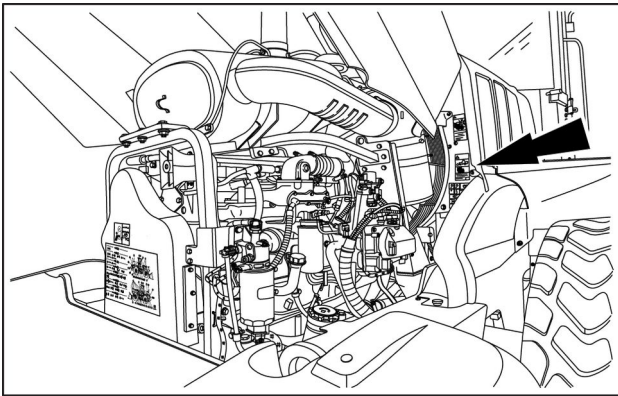
Keep clear or stop the engine before servicing.

Failure to comply with this warning could result in death or serious injury.

ISO decal number: 87488609



87488609_ 52



LEIL13WHL0293AA 53

Location: right-hand side of the engine compartment, on the fan guard.

DANGER

Unexpected movement!

Start the engine from the operator's seat. Transmission must be in NEUTRAL.

Failure to comply will result in death or serious injury.

ISO decal number: 87488619



87488619_ 54

Operator's seat

Overview

▲ WARNING

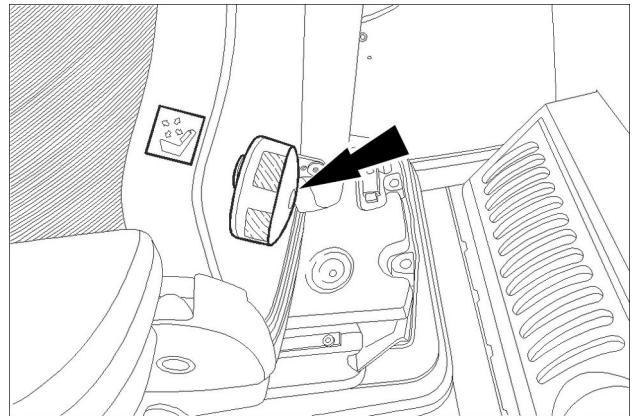
Loss of control hazard!

DO NOT make seat adjustments while the machine is in motion. All seat adjustment should be made with the machine stationary and the parking brake applied. Failure to comply could result in death or serious injury.

W0293A

Standard operator's seat

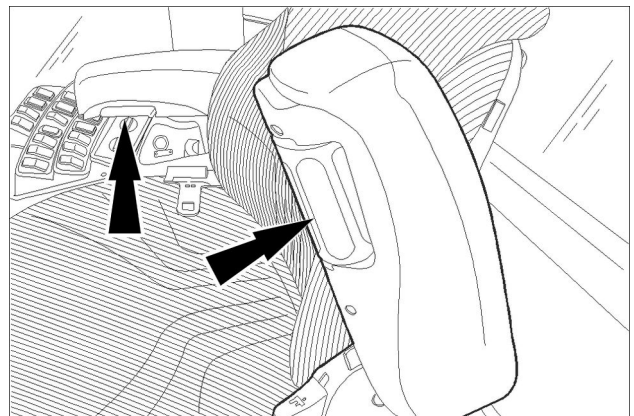
1. Lumbar adjustment knob - Turn the knob clockwise to increase the lumbar support. Turn the knob counter-clockwise to decrease the lumbar support.



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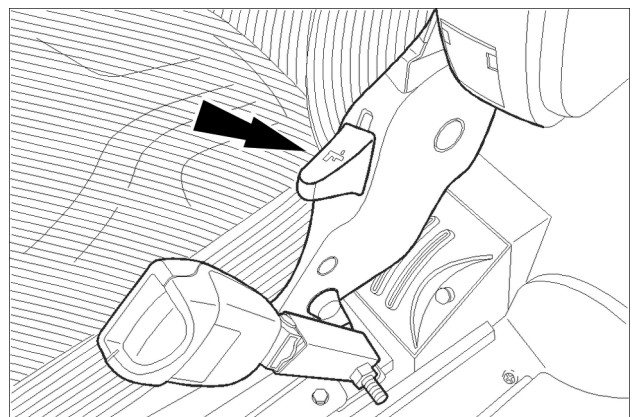
2. Armrest height control adjustment - Turn the knob to raise or lower the armrest to the desired position.

NOTE: each armrest will pivot to the up position.



RCPH10WHL085BAL 2

3. Recliner adjustment handle - Lift up the handle, move the backrest to the desired position, release the handle to lock in position.



RCPH10WHL084BAL 3

Steering column

Ignition switch

The ignition switch has four positions:

Accessory position

This position will energize the optional radio only. It will not energize the instruments or start the engine.

OFF position

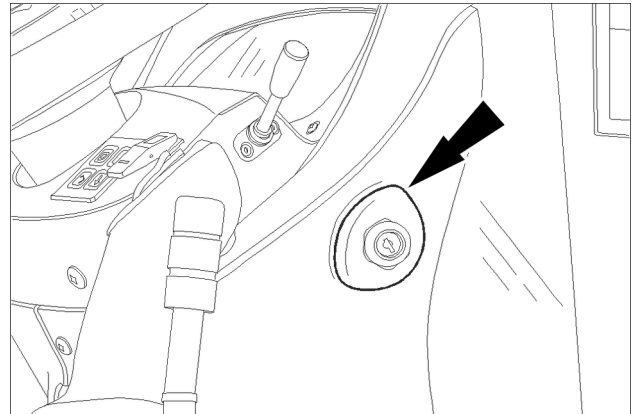
In this position, all switch controlled current is OFF. Turn the key to OFF to stop the engine. Remove the key and turn the Master Disconnect Switch to OFF.

START position

Turn the key to this position to engage the starter motor to start the engine. The switch is spring loaded and will return to the ON position when released.

ON position

This position will energize all electrical systems. The key will return to this position after you release the key from the start position.



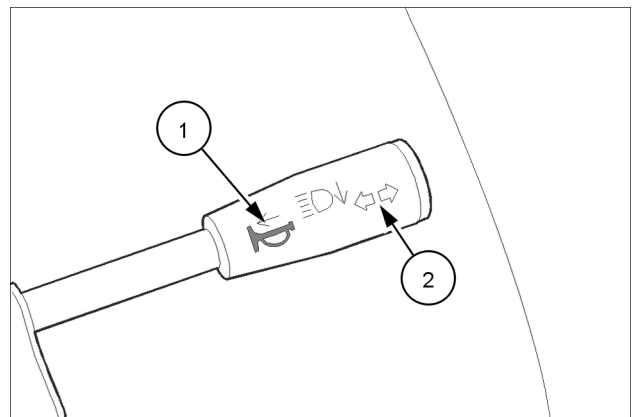
RCPH10WHL114BAL 1

Horn and turn signal

⚠ WARNING

Hazard to bystanders!
Always sound the horn before starting the machine. Make sure the work area is clear of other persons, domestic animals, tools, etc. before you operate the machine. Never allow anyone in the work area during machine operation.
Failure to comply could result in death or serious injury.

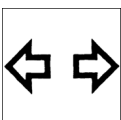
W0304A



RCPH10WHL115BAL 2



1. Horn - Push the horn lever in to actuate the horn.



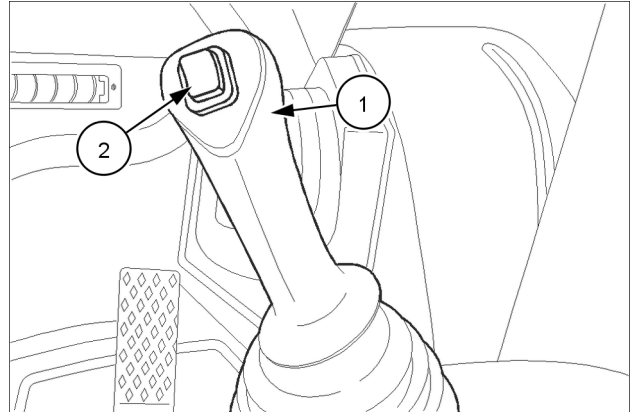
2. Turn signal lever - Push the control lever up to signal a left turn. Pull the lever down to signal a right turn. The lever must be moved manually to the center position to stop the signals.

Two function valve

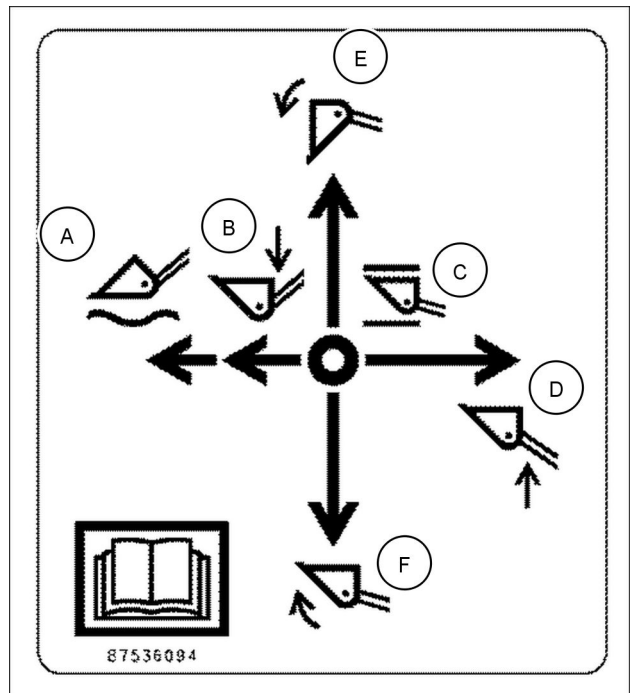
Two function valve - one control lever

1. LIFT ARM AND BUCKET CONTROL

- A. FLOAT (DETENT) - This is a detent position. When in the FLOAT (detent) position, the loader bucket can follow the level of the ground without movement of the control lever
- B. LOWER
- C. HOLD - The loader arms and bucket will not move when the control lever is in the HOLD position. When released, the control lever will automatically return to the HOLD position. You must manually move the control lever from the FLOAT position to the HOLD position.
- D. RAISE
- E. DUMP
- F. ROLLBACK



RCPH10WHL121BAL 1



RCPH10WHL008AAL 2

Exterior controls

Hood switch and master disconnect

⚠ WARNING

Automatic closure!

Keep your hands and body and all personnel clear of the machine hood as it closes.

Failure to comply could result in death or serious injury.

W0048A

Hood switch

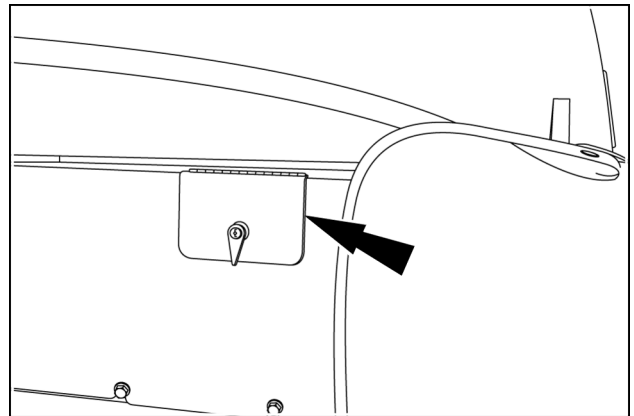
The hood switch is located on the left-hand side of the machine. The hood, left-hand, and right-hand side engine covers allow access to both engine sides, air cleaner and coolers. A locking mechanism is provided for the hood switch cover. Use the machine key to open and close this cover.

1. Insert the key. Make sure to completely insert the key for proper operation.

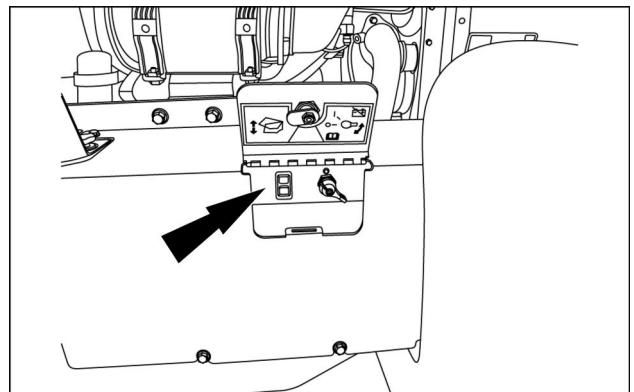
NOTICE: damage can occur to the key or locking mechanism if key is improperly inserted and turned.

2. After releasing the lock, remove the key and open the cover.
3. The hood switch will automatically raise the hood on the machine. Keep all tools, service equipment, and personnel away from the hood when it is automatically opening and closing.

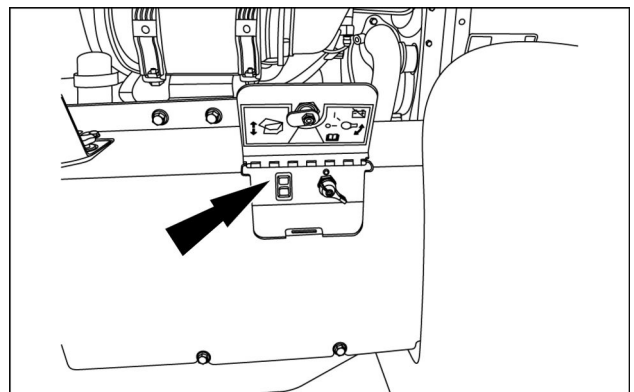
4. Push up on the switch to raise the hood. The switch will remain in the up position for hands free opening. To close the hood, push down on the switch. As a built in safety measure, the down control must be held in order to lower the hood.



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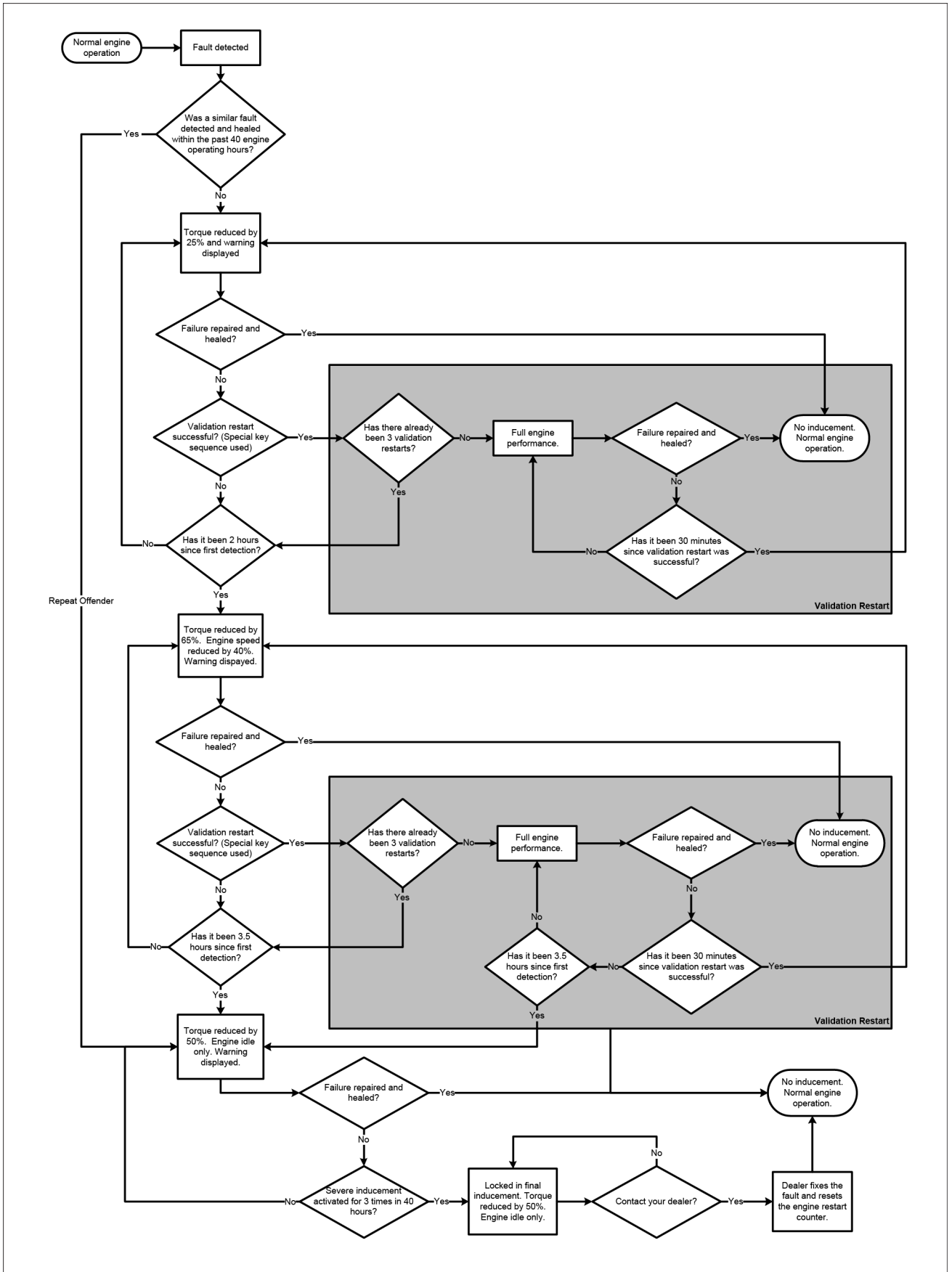


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RCPH10WHL106AAH 3

Inducement and validation re-starts

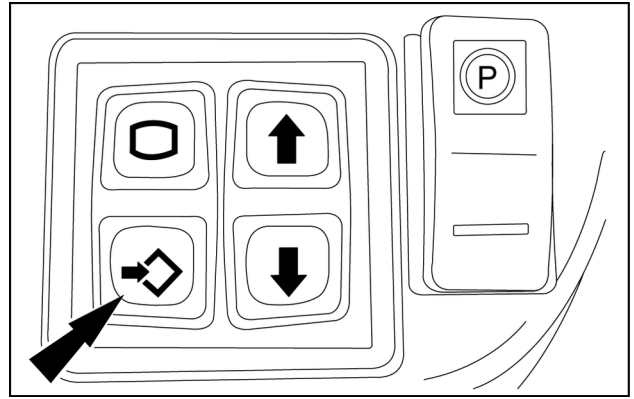


LEIL14WHL0394HA 3

Press the confirm key to reset to the desired trip screen.

The trip screen will indicate a reset message. At this screen, press the confirm key to clear the numbers and reset the trip information. The current date and time will display automatically. The hours, fuel consumption, and fuel used per hour will reset and revert to zero.

Press the escape key to return to the main driving screen and lock settings into memory. The screen will begin to record time and fuel usage immediately.



LEIL15WHL1707AA 11

WARNING DISPLAY AND ERRORS

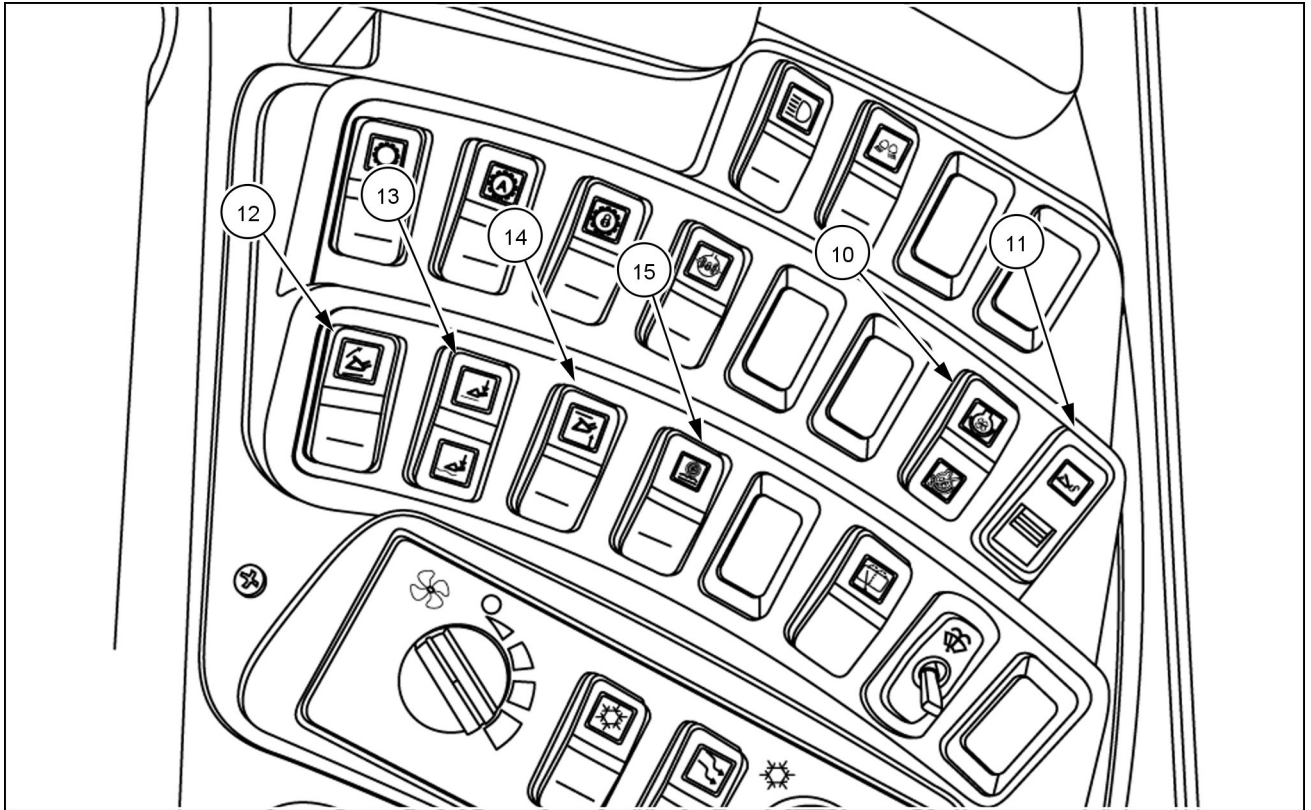
JOYSTICK STEERING RELATED ERROR HANDLING

All JSS related errors will be displayed only while the JSS activation switch is in ON position except for the red error "Short to power on power supply" and the failure of the activation switch which will be always displayed when present.

All JSS related errors will be reset by switching the JSS activation switch to the OFF position.

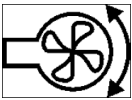
While ignition is ON and JSS is deactivated the software will check if the JSS Power Supply is off. Check JSS Output Control is low/open → if not a red error will be displayed "Short on JSS power supply JSS active".

Error Item	Location of Error Detection	Message
1812y	JSC	Open Circuit, Short to Battery or Short to Ground at JSS armrest switch.
1816y	JSC	Open Circuit / JSS activation switch mechanical defect.
1820y	JSC	Check JSS Relay, JSS Valve, JSS Joystick power supply connections.
1821r	JSC	Short to ground on JSS Relay 85/AIC1.21 or short to Power on Relay 86/87a. Or Activation Switch failure.
1823y	JSC	JSS RELAY, GROUND CONNECT., BAD ELEC. CONNCT. Permanent ground at JSS Relay (87) open circuit or short to power.
1824y	JSC	Short to battery at activation button. Activation switch failure.
1829y	JSC	Joystick Steering is not calibrated.
1830y	JSC	Open circuit between activation switch Pin 3 and C5.E Pin 1.
1831y	JSC	JSC CONTROLLER, WRONG OPERATION. JSC controller internal fault.
1832y	JSC	JSC CONTROLLER, JSC SIGNAL IN, OUT OF LIMITS. Input signal from JSS joystick to JSC controller out of limits. (Joystick Neutral: USignal>40%UBat + <60%UBat; Joystick Actuated: USignal>20%UBat + <80%UBat)
1833y	JSC	Output signal from JSC controller to valve out of limits. Check connector of JSS valve and JSC controller.
1834y	JSC	JSS CONTROLLER, JSC OUTPUT, SC to BAT Power is applied to one of the JSC controller outputs. Check electrical connection for short to power. Or JSC internal Relay is defect.
1835y	AIC	JSS-valve/Pin4 JSC/Pin5 short to power, short to ground or open circuit.
1836y	JSC	JSS CONTROLLER, BOARD TEMPERATURE, OUT OF LIMITS Temperature on the JSC board is <-40°C or >+85°C; Check ambient temperature or short circuit at JSC power outputs.
1837y	JSC	JSS CONTROLLER, SWITCHED POWER, OUT OF LIMITS Switched power supply at JSC Pin3 is out of limit; Check elect connection for electrical transients, burst or drifts.
1838y	JSC	Neutral Sw out of range.
1841y	JSC	JSS valve internal error, spool position not accurate or signal voltage out of range.
1842y	JSC	JSS valve Pin2 (alarm signal) open circuit.
1843y	JSC	Pilot pressure switch open when JSS is deactivated. High pilot pressure on JSS valve even when JSS is not active. Pilot Dump valve stuck close or short to power on valve power supply. Or open circuit on JSS pilot pressure switch lines or JSC/Pin8.
1844y	JSC	Pilot pressure switch short to ground.



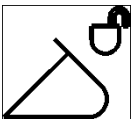
RCPH10WHL079FAH 4

10. Fan reverse switch



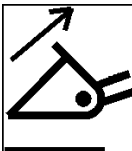
To use the fan reverser let the machine idle in neutral. Depress the fan reverser switch and depress the throttle to high idle for a minimum of 10 seconds or until debris stops blowing out of the coolers. Return the machine to idle and release the fan reverser switch. This is a three-position switch. Push the upper part of the switch for momentary reversal as described above. The center position of the switch is the automatic position, and the lower position disables the automatic fan.

11. Coupler engagement switch (if equipped)



This switch allows engagement of the attachment from the operator's compartment. Slide the locking plate toward the center of the switch. Push down on the top of the switch to retract pins for the attachment. The switch lamp will illuminate when the pins have been retracted. The switch will lock the pin in the extended position when the bottom of the switch has been pressed and the pins are extended.

12. Return to dig switch



Push on the top of the function switch for the ON position. This will allow the bucket to return to level with the ground for digging.

13. Return to travel detent switch



The return-to-travel switch is used to automatically return the loader bucket to the travel position after you have dumped the loader bucket. Push down on the top of the return-to-travel switch to engage the return to travel detent. Push the bottom of the switch for the float detent position.

Starting the unit

Starting the engine

▲ WARNING

IMPROPER OPERATION OF THIS MACHINE CAN CAUSE DEATH OR SERIOUS INJURY.

MAKE SURE THAT EVERY OPERATOR:

- is instructed in the safe and proper use of this machine.
 - reads and understands the operator's manual for this machine.
 - reads and understands **ALL** safety signs on the machine.
- Failure to comply could result in death or serious injury.

W0188A

Before operating the machine

Before operating this machine, complete the following procedures:

1. Check the level of all fluids (engine oil, fuel, **DEF/ AdBLUE®**, hydraulic fluid, and coolant) and make sure that the fluids and lubricants are suitable for prevailing conditions.
2. Carry out the daily maintenance operations.
3. Inspect the machine, look for any signs of possible leakage and check the hoses. Tighten or replace as necessary.
4. See "Run in period of a new machine" in this chapter, if the machine is new or if the engine has been reconditioned.
5. Check the tires for any visible damage. Replace or repair as necessary. Check for correct tire air pressure and adjust pressure if necessary.
6. Clean the steps and hand holds. Grease, oil, mud, or ice in winter on the steps and access handles can cause accidents. Make sure they are kept clean at all times.
7. Clean or replace any decals which are illegible. See "Safety signs" – Chapter 2.
8. Make sure that the engine access panels and all doors are properly closed and latched.
9. Secure the cab door in either fully closed or fully opened position.
10. Remove any obstructions which hinder visibility. Clean the windshield, the windows and the rear view mirrors.
11. Check that no tools or other items have been left on the machine or in the operator's compartment.
12. Make sure no one is on or under the machine. The operator must be alone on the machine.
13. Make sure no one is standing in the machine working area.
14. Find out about current safety measures in use on the work site.
15. Work out a convenient means of escape from the machine (emergency exit via the windshield, the rear or side window glass) in the event of the cab door being jammed or the machine turning over.
16. Before undertaking any travel or working operations during hours of darkness, make sure the lighting and signaling equipment is fully operative.
17. Adjust the seat so that you can apply the foot brakes when your back is against the seat backrest.
18. Fasten and adjust the seat belt.
19. With the engine running and at operating temperature, check the instrument panel for correct indications.
20. Check the loader controls for correct operation.

Ride control



Ride control is an optional feature that increases the ride comfort of the wheel loader over all types of terrain with either an empty or loaded bucket. It allows faster speeds during operation, resulting in increased productivity and operator comfort. It will also reduce shock loads to the wheel loader for reduced tire flex, structural fatigue and vibration, resulting in longer component life and reduced costs. Ride control will reduce fore and aft pitching motion during travel to allow faster speeds in load and carry applications.

The machine is equipped with a 3-position Ride control switch (manual, auto, and off). Most commonly, the operator will choose to leave this switch in the automatic (center) position. With ride control active, the green indicator light will illuminate anytime the machine is traveling faster than **5 km/h (3.1 mph)** indicating that the ride control is functioning. Ride control will disengage automatically at slower speeds for loading and unloading. Ride control can be left ON at all times, whether loading or roading.

To turn Ride control OFF, push on the bottom of function switch for the OFF position.

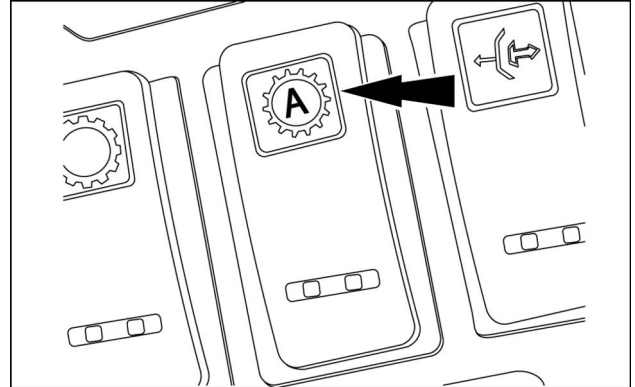
The top position of the switch turns ride control on in the manual position.

NOTE: *turn Ride control OFF when you operate the bucket in fine grading operations or when precision placement of a load suspended from the bucket or other attachment is required*

Automatic mode

Automatic mode operation

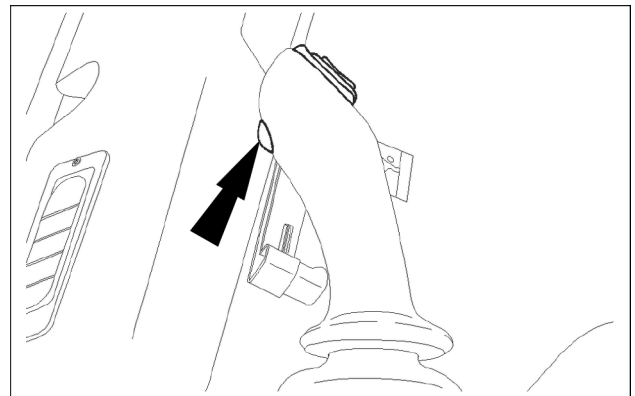
To put the transmission in the automatic mode, press the top of the auto shift switch.



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Automatic shifting mode

When the transmission is in the automatic mode, the transmission will start out in first gear or second gear (dependent upon gear minimum setting), and automatically shift up until the gear selected has been reached. The transmission will also shift down automatically as the speed decreases.



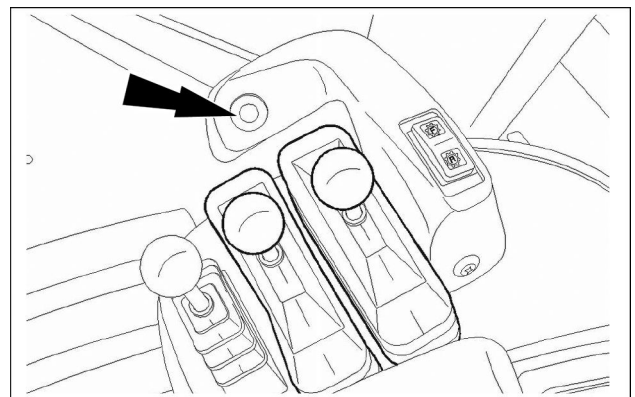
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Down-shift button, automatic mode

Use the down-shift button to shift down through the gears in single steps. Each time you press the switch, the transmission shifts down one gear range until reaching the first gear. Once the down-shift button has been pressed down, the transmission maximum gear allowed is lowered. The down-shift button will return to the automatic mode in one of the two cases, as follows:

1. When the transmission control lever changes gear
2. When the transmission control lever is moved to NEUTRAL and then to FORWARD or to REVERSE

NOTE: when the operator selects the Automatic Mode, the Automatic Mode indicator will be shown on the multi-function display.



LEIL16WHL0133AA 3

5 - TRANSPORT OPERATIONS

Recovery transport

Safety rules

⚠ WARNING

Crushing hazard!
Engage the safety lock link before service or transport.
Failure to comply could result in death or serious injury.

W0154A

⚠ WARNING

Driving hazard!
Know all rules, regulations, laws, and required safety equipment for transporting or operating this machine on a road or highway. See your dealer to obtain a rotating beacon, backup alarm, Slow Moving Vehicle (SMV) emblem, and other safety equipment.
Failure to comply could result in death or serious injury.

W0154A

⚠ WARNING

Transport hazard!
The machine can slip or fall from a ramp or trailer. Make sure the ramp and trailer are not slippery. Remove all oil, grease, ice, etc. Move the machine on or off the trailer with machine centered on the trailer or ramp.
Failure to comply could result in death or serious injury.

W0152A

⚠ WARNING

Transport hazard!
Always use the primary steering when loading or unloading the machine for transport. Do not use joystick steering when loading or unloading the machine from a truck or trailer.
Failure to comply could result in death or serious injury.

W0448A

Make sure you know the safety rules and regulations before transporting the machine. You must know the rules or laws for transportation and safety that are used in each

area that you will be in. Make sure that the truck and machine are equipped with the correct safety equipment.

6 - WORKING OPERATIONS

Preparing for work

Operating tips

⚠ WARNING

Impact hazard!

Bucket edge or teeth can catch on frozen surfaces or buried objects during surface scraping operations. Before operation, inspect the area for hazardous objects. Operate the machine at slow speed around objects.

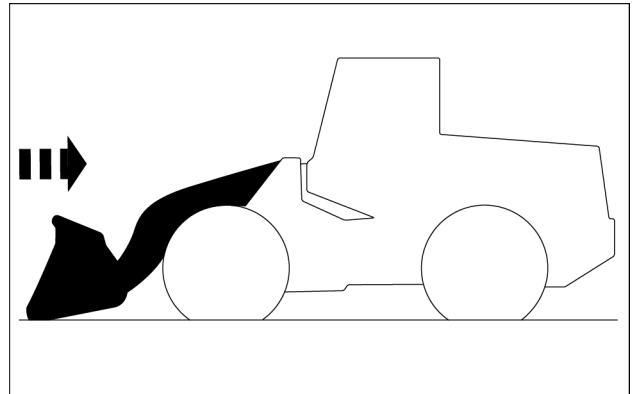
Failure to comply could result in death or serious injury.

W0459A

This wheel loader, with standard equipment and authorized attachments, is intended to be used for above ground level digging and general earth moving purpose such as land leveling, truck loading, material rehandling and ditch cleaning. If the machine is to be used for lifting objects, make sure that the machine is properly equipped and follow the instructions and safety precautions in this manual.

Leveling operation

Always operate the machine in reverse when leveling the surface.

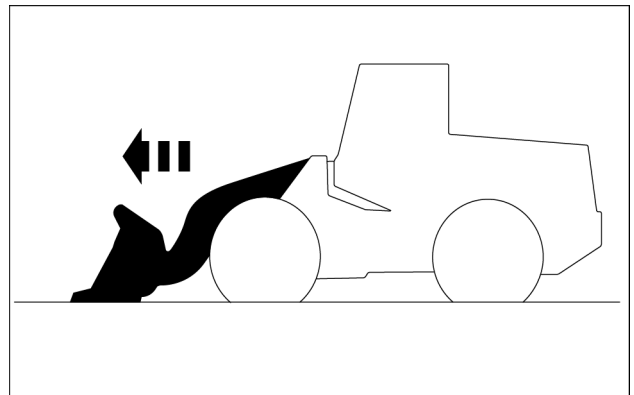


LEIL16WHL0036AB 1

Pushing operation

When pushing material, do not set the bucket dumping angle more than 20°.

NOTICE: the bucket **MUST NOT** be in the **FULL DUMP** position during the pushing operation.



LEIL16WHL0037AB 2

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Joystick operation

⚠ WARNING

Driving hazard!

**Check all controls and safety devices in a safe, open area before starting work.
Failure to comply could result in death or serious injury.**

W0248A

⚠ WARNING

Driving hazard!

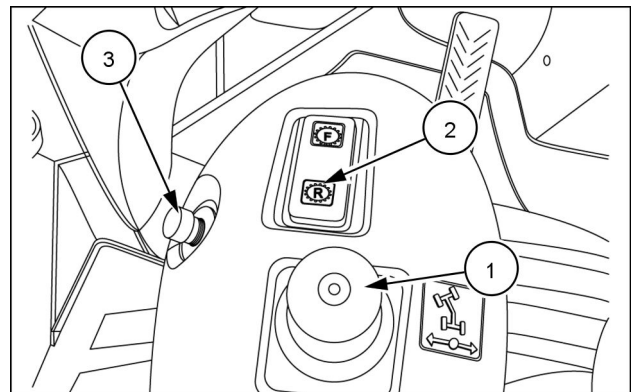
Always use the primary steering when traveling on a public road or highway. The left armrest must be raised and in a locked position during travel. Do not use joystick steering when traveling on a public road or highway.

Failure to comply could result in death or serious injury.

W0451A

Joystick steering control lever (optional)

The joystick steering control lever allows to operate the loader using hand controls located on the left-hand operator seat armrest. It allows for steering capabilities at the operator's fingertips. Moving the lever right or left steers the machine in the right or left direction. When the Joystick is released, the lever will return to the neutral position automatically. The machine will remain in the last direction chosen. Forward and reverse are accomplished with the F-N-R switch. Use the joystick steering controls for short cycle, repetitive high production load and carry operations to reduce operator fatigue and increase operating efficiency.



RCIL10WHL188BAL 1

1. Joystick steering control lever
2. Forward-Neutral-Reverse switch
3. Kick-down switch

Support strut for loader lift arm

Loader lift arm support

⚠ DANGER

Crushing hazard!

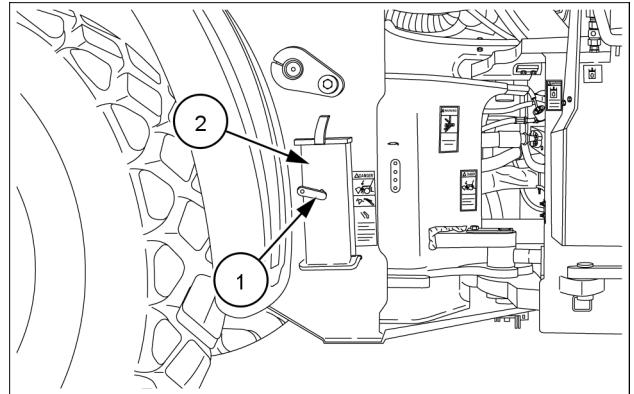
If you service the machine with the loader lift arms raised, always use the support strut. Remove the retaining pin and place the support strut onto the cylinder rod. Install the retaining pin into the support strut. Lower the lift arms onto the support strut.

Failure to comply will result in death or serious injury.

D0084A

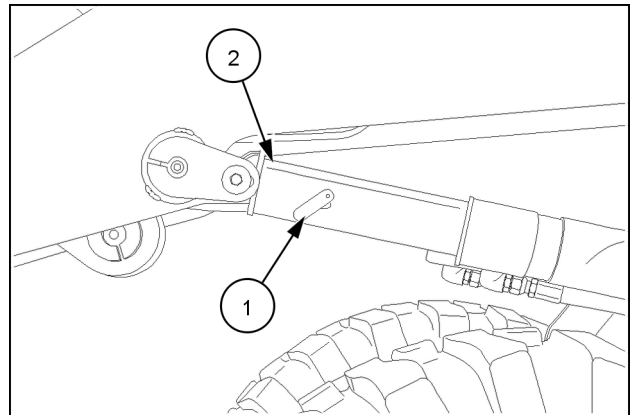
1. Empty the loader bucket, raise the loader lift arms to approximately **2.1 m (7 ft)** and stop the engine.
2. Remove the retaining bolt **(1)**. Remove the support strut **(2)** from the storage position.
3. Place the support strut **(2)** on the cylinder rod with the guide lock tab on top of cylinder and pointing toward the bucket.
4. Install the retaining bolt **(1)** entirely into the support strut **(2)** using all threads.
5. Slowly lower the lift arms onto the support strut.

If you do not follow this procedure, you can cause death or serious injury if the loader lift arms are lowered unexpectedly.



LEIL15WHL1850AA 1

NOTE: support strut in transport position.



RCPH10WHL061BAL 2

NOTE: support strut in service position.

Fuel

Use diesel fuel suitable for the ambient temperature conditions (ASTM-D-975).

Use fuel which is to ASTM (American Society for Testing and Materials) D975 standard.

Use grade No. 2 fuel. The use of other types of fuel can result in a loss of power of the engine and may cause high fuel consumption.

In very low ambient temperatures, use a mixture of fuels No. 1 and No. 2 as necessary. Consult your fuel supplier for appropriate fuel supply.

If the temperature falls below the fuel cloud point (point at which wax begins to form) the wax crystals will cause power loss or will prevent the engine from starting.

In cold weather, fill the fuel tank at the end of the day's work in order to prevent the formation of condensation.

Fuel storage

Prolonged storage of fuel can lead to the accumulation of impurities and condensation in the fuel. Engine trouble can often be traced to the presence of water in the fuel.

The storage tank must be placed outside and the temperature of the fuel should be kept as low as possible. Drain off water and impurities regularly.

Hydraulic fluid

CASE AKCELA HYDRAULIC EXCAVATOR FLUID meets the CNH material specification **MAT3509** and is specifically designed for high pressure applications and for CASE CONSTRUCTION hydraulic systems. Your CASE CONSTRUCTION dealer can provide hydraulic fluid to fulfill different climate/temperature conditions. Refer to the charts at the beginning of this section.

Transmission component oil

Extreme pressure oil must be used for enclosed transmission components. Choose an oil that is manufactured for your climate/temperature conditions such as **CASE AKCELA NEXPLORE™ FLUID**. See the charts at the beginning of this section.

Front and rear axle oil

Extreme pressure oil must be used for enclosed axle components. Choose an oil that is manufactured for your climate/temperature conditions such as **CASE AKCELA TRANSAXLE FLUID 80W-140**. See the charts at the beginning of this section.

Resetting the Selective Catalytic Reduction (SCR) system

For **DEF/AdBLUE®** storage tank fluid level faults, failures which can cause engine power loss:

- The **DEF/AdBLUE®** tank level must be raised above **15 %** total volume.
- The key switch must be cycled to the “off” position or throttle returned to low idle position.

For **DEF/AdBLUE®** quality and SCR system technical faults, failures which can cause engine power loss:

- To fully reset the system, the component/failure causing the fault must be repaired or replaced.
- Switching off the engine will reset the system and the engine will restart at full power.
- If the same failure is re-detected within **40 h** of engine operation, the last active engine power loss level will be activated.
- If the same failure is detected three consecutive times within **40 h** of engine operation, maximum engine power loss will remain active after engine restart until the system is repaired.
- Please contact your authorized CASE CONSTRUCTION dealer for service.

Coverage

The model year, class of diesel engine, and emission application determination for your engine are identified on the Emission Control Information Label. This label is affixed to one of the following areas of the engine: the top of engine's rocker arm cover, the right-hand side of the oil pan, and the right-hand side of the engine front gear cover. The warranty period begins on the date the new equipment is sold to the first retail purchaser. The presence of the emission control label is the indication that the engine conforms to the applicable standards. Any emission control system parts which are proven defective during normal use will be repaired or replaced during the warranty period.

The engine owner has responsibility to perform all the required maintenance listed in the Owner's Manual. CASE CONSTRUCTION will not deny an emission warranty claim solely because no record of maintenance exists; however, a claim may be denied if failure to perform maintenance resulted in the failure of a warranted part

It is recommended that replacement parts used for maintenance or repairs be CASE CONSTRUCTION Service Parts to maintain the quality originally designed into your emission certified engine. The use of non- CASE CONSTRUCTION parts does not invalidate the warranty on other components unless the use of such parts causes damage to warranted parts.

The manufacturer is liable for damages to other engine components caused by the failure of any warranted emission control system part. CASE CONSTRUCTION is not responsible for failures resulting from improper repair or the use of parts that are not genuine CASE CONSTRUCTION or CASE CONSTRUCTION approved parts.

Component coverage

New engines certified for sale and registered will have the following items covered by the emission warranty, depending on the emission level of the engine, if the items were first installed on the new engine as original equipment:

Fuel injection system

- Fuel injection pump
- Fuel injectors
- Fuel injection lines

Air induction system

- Intake manifold
- Turbocharger system (includes exhaust manifold)
- Charge air cooler

Positive Crankcase Ventilation (PCV) system (if applicable)

- PCV valve
- Oil fill cap

Exhaust after treatment Devices (if applicable)

- Diesel Oxidation Catalyst (DOC)
- Diesel Particulate Filter (DPF)
- Selective Catalytic Reduction (SCR)
- **DIESEL EXHAUST FLUID (DEF)/AdBLUE®** tank and dispensing systems

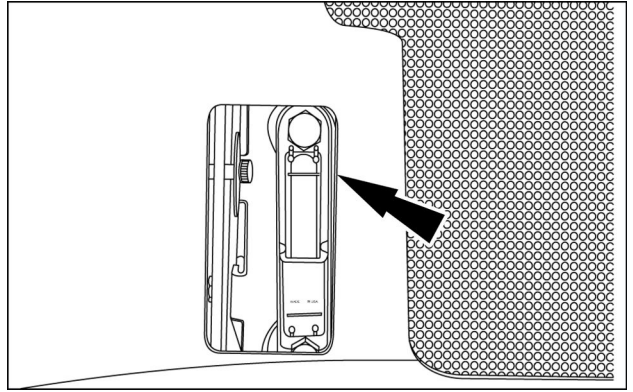
Exhaust Gas Recirculation Systems (EGR)

- EGR valve assembly
- EGR cooler

Cold Start Enrichment Systems

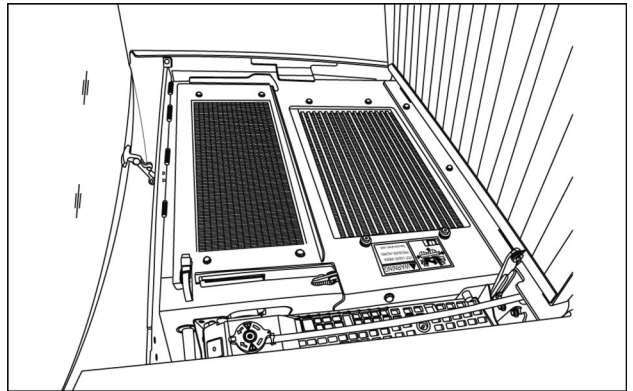
Electronic Control Units, Sensors, Solenoids, and Wiring harnesses used in above systems

4. Hydraulic fluid gauge and access door – right-hand side



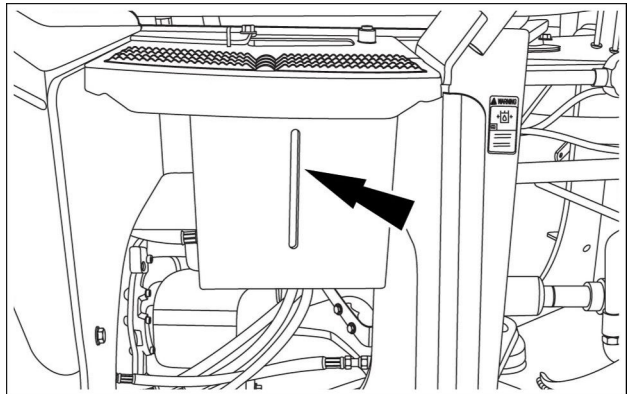
RCPH10WHL102AAH 4

5. Coolant and hydraulic fills



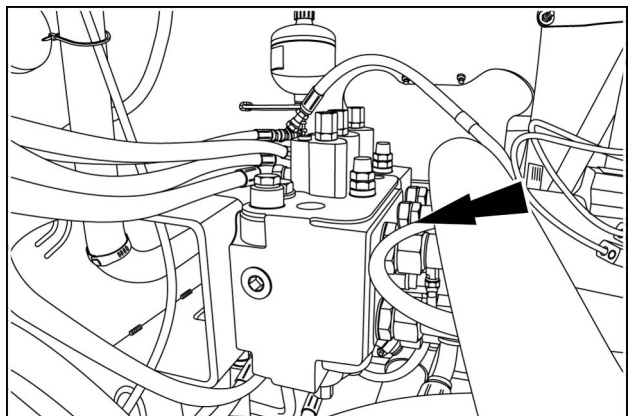
RCPH10WHL139AAH 5

6. Windshield fluid bottle access (if equipped) – right-hand side



LEIL15WHL0651AB 6

7. Hydraulic valve access



RCPH10WHL426AAH 7

Initial 100 hours

Wheel nuts tightening - Check

⚠ WARNING

Explosion hazard!

Never weld on a wheel. Welding can cause stresses that will cause a wheel to crack or break unexpectedly. Tires can separate explosively during welding. Always have a qualified tire mechanic service wheels and tires.

Failure to comply could result in death or serious injury.

W0124A

Tire or rim service

Always have a qualified tire technician service the tires and rims for this machine. It is recommended that you have this technician inflate the tires. To prevent accidents, use a restraining device (tire inflation cage), correct equipment, and correct procedure.

Explosive separation of the tire (single piece rim), or the tire and/or rim parts (multi-piece rim) can cause serious injury or death.

Stud mounted wheels (if equipped)

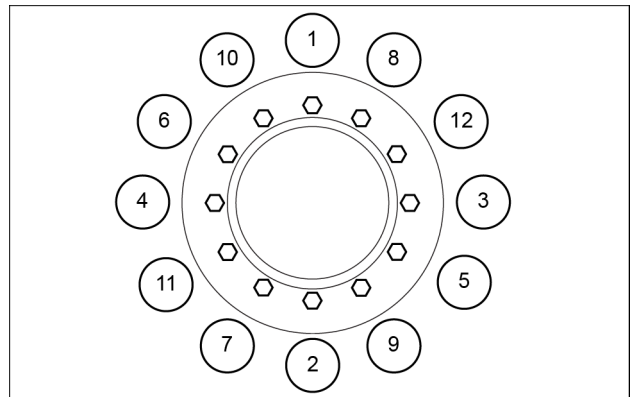
Machines equipped with optional heavy duty axles have a stud mounted wheel. The Heavy Duty (HD) axle incorporates a stud and nut assembly.

Wheel bolt torque

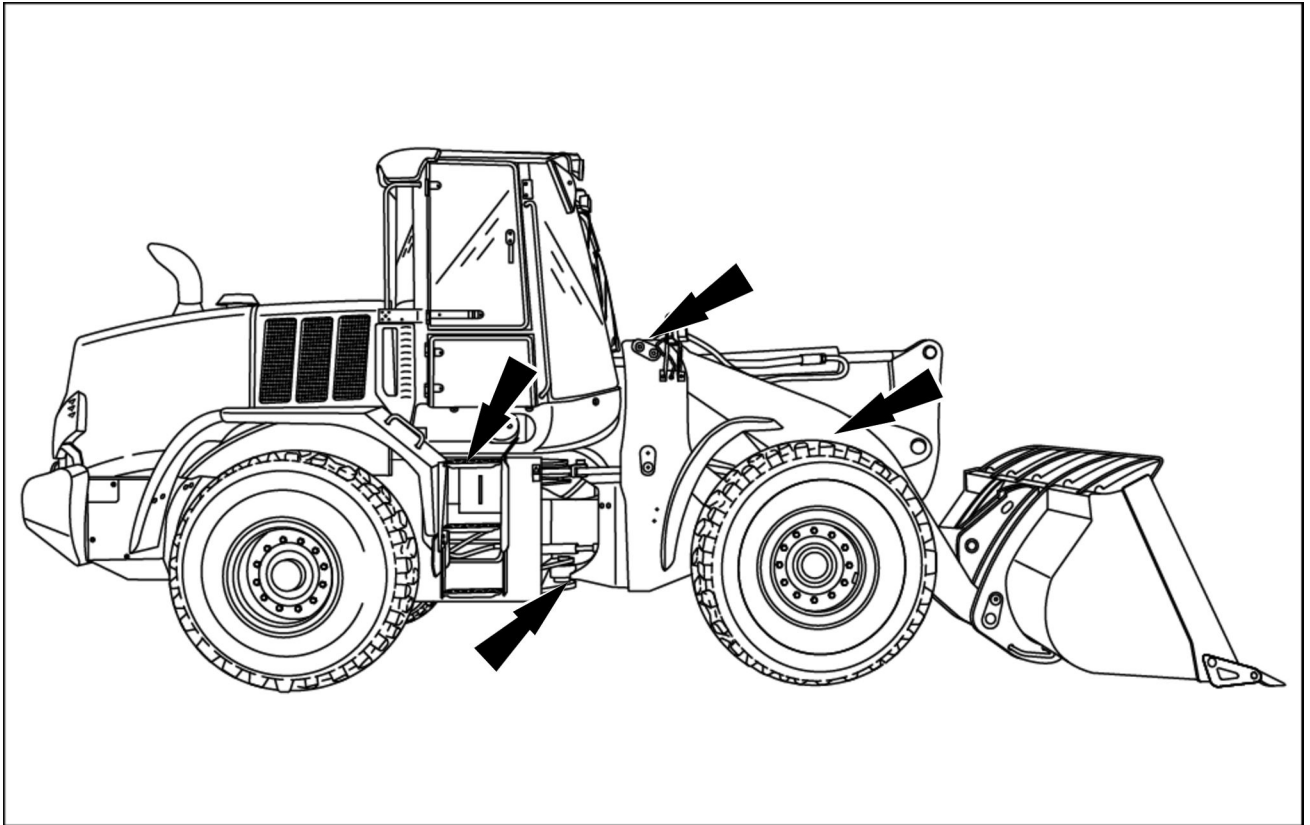
If the machine is new or if a wheel has been removed and installed, check the torque of the wheel bolts during the run-in period until the bolts are stable.

Use a hand wrench (not an impact) to tighten the wheel bolts to pull the wheel against the planetary housing.

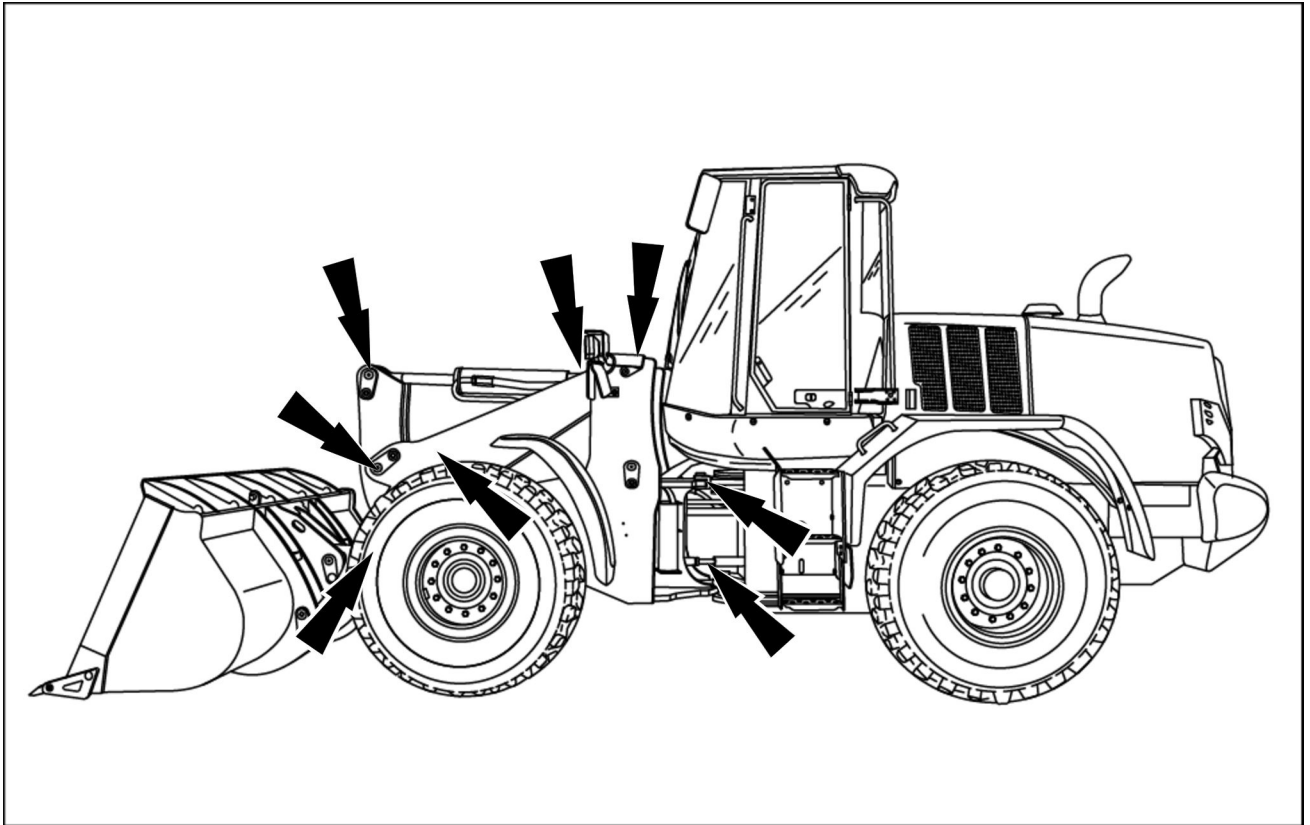
Tighten the wheel bolts using the sequence shown. First tighten the bolts to **278 N·m (205.0 lb ft)**, then tighten to a final torque of **640 - 720 N·m (472.0 - 531.0 lb ft)**, using the same sequence.



LEIL15WHL1848AB 1



LEIL15WHL0085AA 1



LEIL15WHL0084AA 2

Every 500 hours

Engine oil and filter - Replace

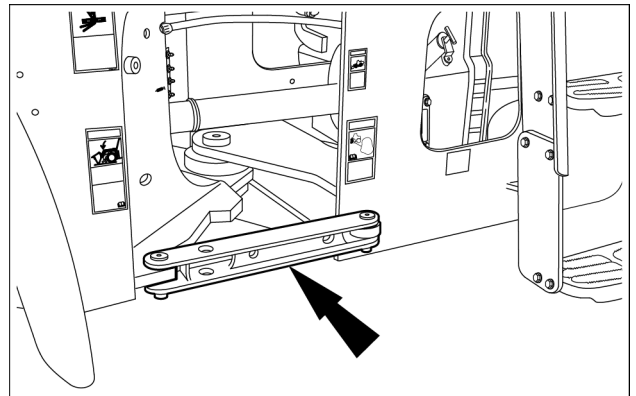
Change the engine oil and filter every 500 hours or more frequently when the engine operating conditions are severe.

Prior operation:

Keep all non-authorized personnel clear of the area. Park the machine on level ground, in neutral with the parking brake applied and the attachment lowered to the ground.

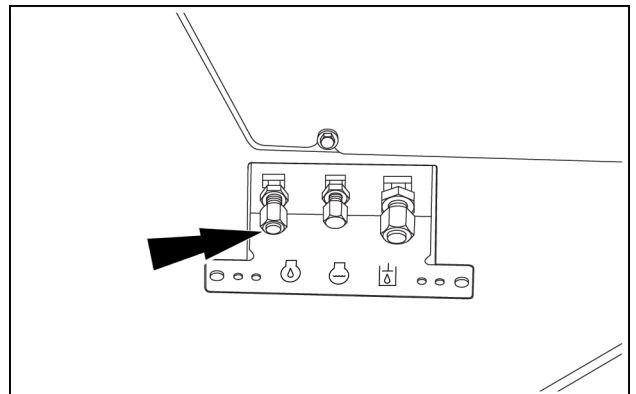
Service specifications	
Type of oil	CASE AKCELA UNITEK 10W-40
Capacity (with filter change)	13.25 l (14.0 US qt)

1. Lower the bucket/attachment to the ground and install the transport/service link into the locked position.



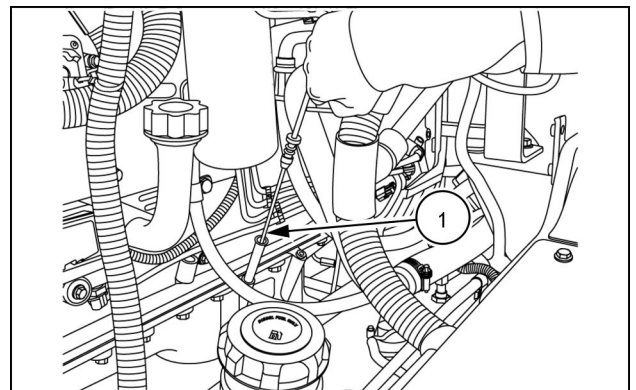
LEIL16WHL0048AB 1

2. Attach the drain hose to the remote drain plug. Use a suitable container to collect the used oil. Drain the engine oil completely.



LEIL16WHL0198AA 2

3. Raise the engine hood. Oil will drain faster if the oil is warm (not hot) and the dipstick (1) is removed.



RCPH10WHL899AAH 3

ROPS cab torque specifications**⚠ WARNING**

Tip-over hazard!

Adding additional weight (buckets, attachments, etc.) to the machine can create a tipping hazard. Do not exceed the gross weight indicated by the machine specifications.

Failure to comply could result in death or serious injury.

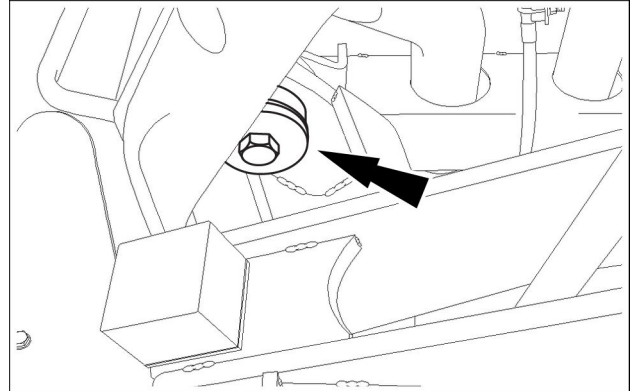
W0153A

Torque specifications

ROPS cab mounting bolts (both sides)	Torque: 773 - 854 N·m (570.1 - 629.9 lb ft)
--------------------------------------	--

NOTE: torque specifications are for clean, dry threads.

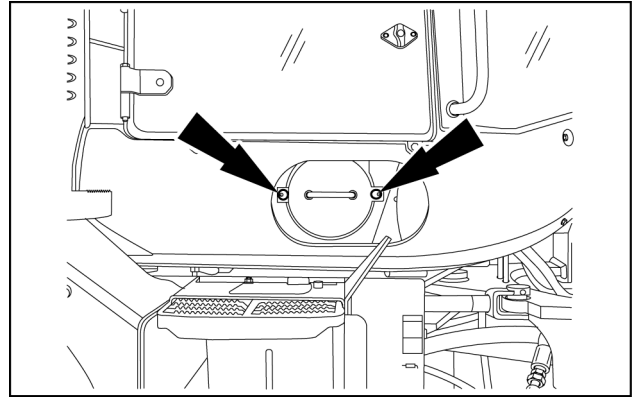
1. Check the torque of the ROPS mounting bolts. If necessary, tighten the bolts to the correct torque.
2. Check for cracks, rust, or holes in the ROPS and ROPS components. Age, weather, and accidents can cause damage to the ROPS and ROPS parts. If you have any doubt about the integrity of the ROPS system, see your CASE CONSTRUCTION dealer.



LEIL16WHL0082AB 4

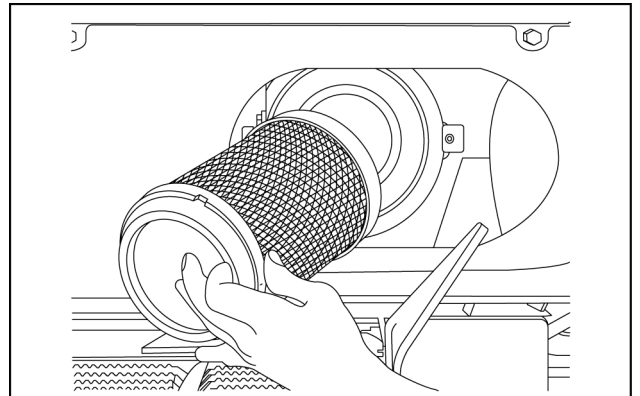
Cab air filter

1. The cab filter is located on the right hand side of the machine, below the operator's compartment. Remove the two screws from the cab air filter cover and remove the cover. Pull the filter forward at a slight angle.



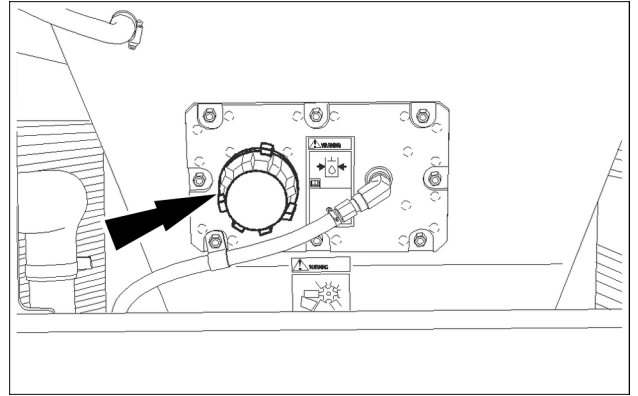
LEIL15WHL1837AB 2

2. Wipe the inside of the filter housing. Replace the filter with a new one and reinstall the filter and air filter cover.



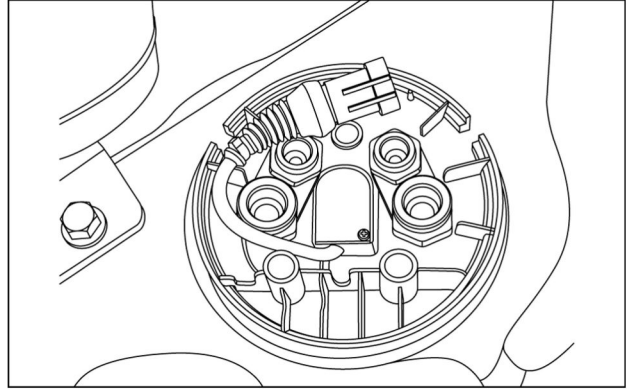
LEIL15WHL1838AA 3

10. Fill the reservoir with new **CASE AKCELA HYDRAULIC EXCAVATOR FLUID**.
11. Install the reservoir filler cap.
12. Start the engine and run at **1000 RPM**. Check for leakage around the filter and drain.
13. Operate the loader controls several times to remove any air in the lines.
14. Place the loader bucket/attachment on the ground and stop the engine. Check the hydraulic oil level.
15. If it is necessary to top off with more oil, remove the fill cap slowly to release the pressure in the reservoir.



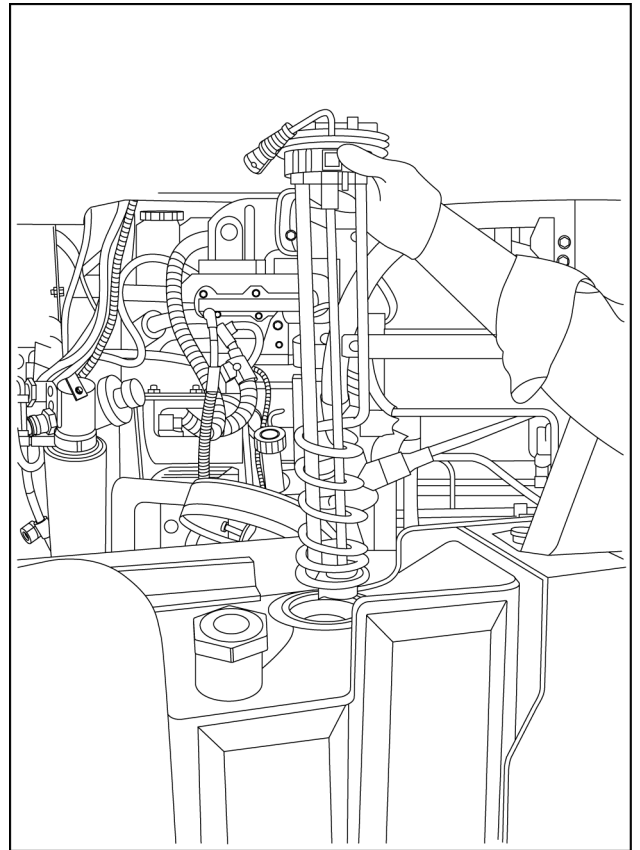
LEIL16WHL0078AB 3

8. Mark location of pickup unit within tank before removal. Twist the unit of the **DEF/AdBLUE®** level/temperature sensor counter clockwise to loosen it from tank.



RCPH11WHL707BAU 8

9. Lift the unit of the **DEF/AdBLUE®** level/temperature sensor out of tank. Clean the suction filter by rinsing with water. Replace if damage.



LEIL13WHL0235BA 9

10. Reinstall the **DEF/AdBLUE®** level/temperature on the **DEF/AdBLUE®** tank.
11. Fill the engine cooling system.

13. Put the joystick in the raise position and verify that the electromagnet holds it in that position until the height control target **(2)** passes in front of the proximity switch **(3)**.
14. With the lift arms still raised, put the joystick in the lower position and verify that the electromagnet holds it in that position until the return to travel target **(5)** passes in front of the proximity switch **(3)**.
15. Repeat steps 8 through 15 until the desired heights are reached.
16. Lower the bucket to the ground and stop the engine.

Door hinges

Use graphite to lubricate all hinges. DO NOT use oil.

Plastic and resin parts

When cleaning the plastic windows, the console, the instrument panel, the indicators, etc. do not use gasoline, kerosene, paint solvents, etc. Only use water, soap and a soft cloth.

The use of gasoline, kerosene, paint solvents, etc. will cause discoloration, cracks or deformation of these parts.

Checking for cylinder leakage

A cylinder rod should be slightly oily. Check that there are no leaks after a period of work, when the whole hydraulic system is at normal operating temperature.

1. Wipe the rod and bearing clean on the cylinder to be checked.
2. Operate normally for five or ten minutes.
3. Extend the cylinder rod.
4. Carry out the leak test.

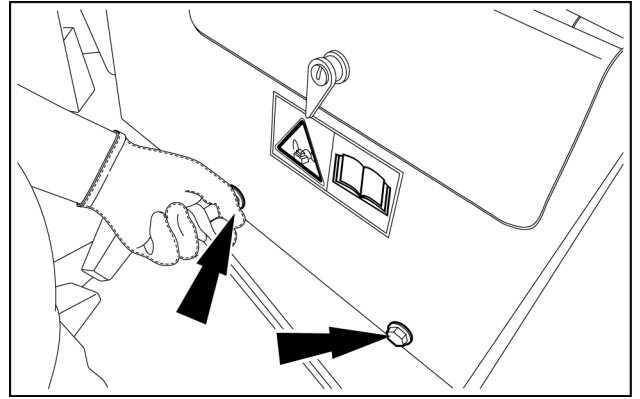
Rod Appearance	Test	Conclusion
Dry	Slight traces of oil when a piece of paper is wiped over 20 cm (7.9 in) of the rod.	Normal
Slightly greasy	Paper remains stuck to rod when run over rod.	Normal
Oily	Paper remains stuck when placed on rod.	Normal
Very oily or weeping	Each time the cylinder rod is extended, a ring of oil can be seen on the rod.	See your dealer
Leakage	Each time the rod retracts, the excess oil drips from the gland.	

Fire extinguisher (not supplied)

It is strongly recommended a fire extinguisher be kept on the machine. An extinguisher is not supplied but can be purchased separately and placed in the rear left-hand side compartment. A specific bracket has been provided for this purpose.

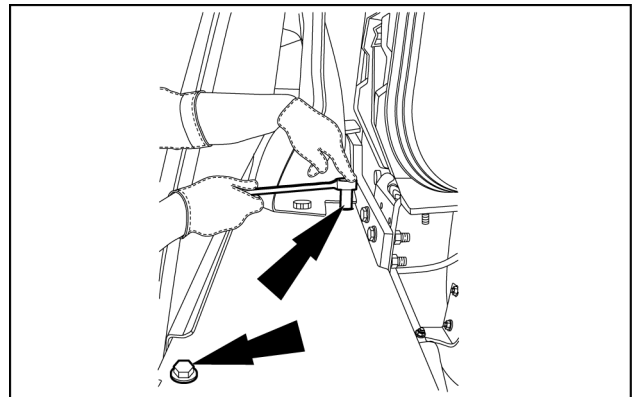
Maintenance specifications	
Every month	Examine the fire extinguisher and make sure it is not damaged.
Every six months	Have an approved specialist empty and refill the fire extinguisher.
Every year	Have an approved specialist examine the fire extinguisher.

4. Remove the two screws of the box battery. Then remove the box battery.



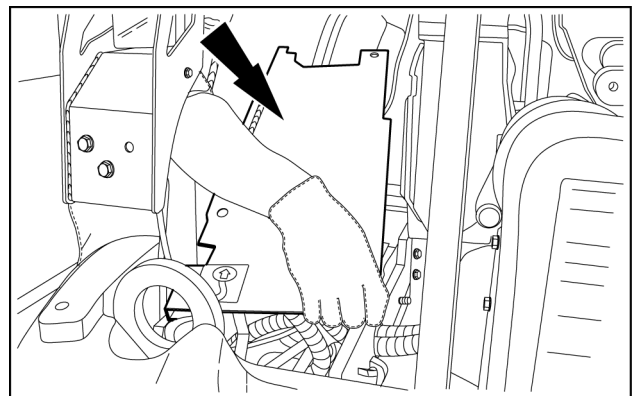
LEIL15WHL0090AB 4

5. Remove the two screw of the upper box battery.



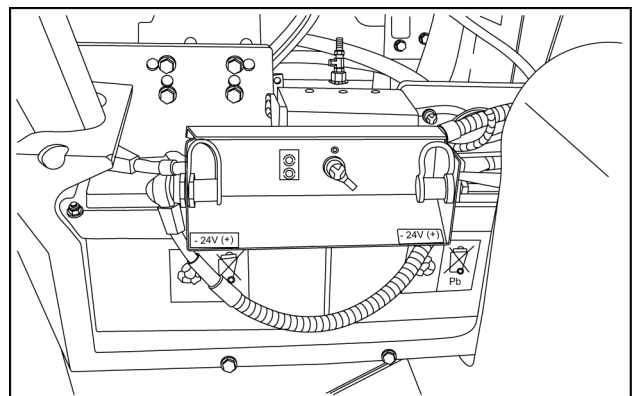
LEIL15WHL0091AB 5

6. Remove the upper box battery.



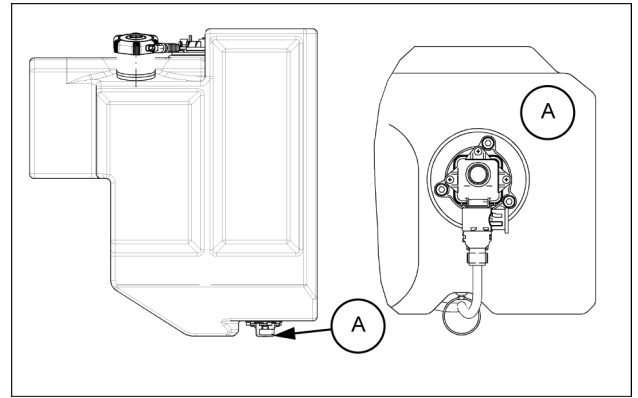
LEIL15WHL0092AB 6

7. Remove the terminal protection caps, disconnect the cables (negative terminals) and then the other cables (positive terminals).
8. Remove the screws, the washers, and the retainer. Remove the old batteries.
9. Install new batteries of the correct voltage and replace the retainer, the washers and the screws.
10. Clean the cables and battery terminals, and coat with grease. Install new anti-sulfate pellets. Reconnect the positive cable ends to the positive terminals first. Reconnect the negative cable ends to the negative terminals, and install the terminal protection caps.



LEIL15WHL0093AA 7

9. Place a suitable container below the **DEF/AdBLUE®** supply tank.
Remove the Urea Quality Sensor (UQS), allow to drain the **DEF/AdBLUE®** through the UQS hole.
Reinstall the UQS.
10. Remove the batteries, clean the battery housings and make sure not to leave any traces of acid. Store the batteries safely in a cool and dry location, where the temperature will be higher than **0 °C (32.0 °F)**.
11. Paint any areas where the paint shows signs of deterioration.
12. Plug the air filter inlet and the exhaust pipe.
13. Remove the starter switch key and place a "DO NOT OPERATE" label on the right-hand control arm.
14. Lock the hoods and the cab door.
15. If equipped with attachment quick coupler, apply anti-seize to the coupler locking pins and bores.



LEIL14WHL0207AB 2

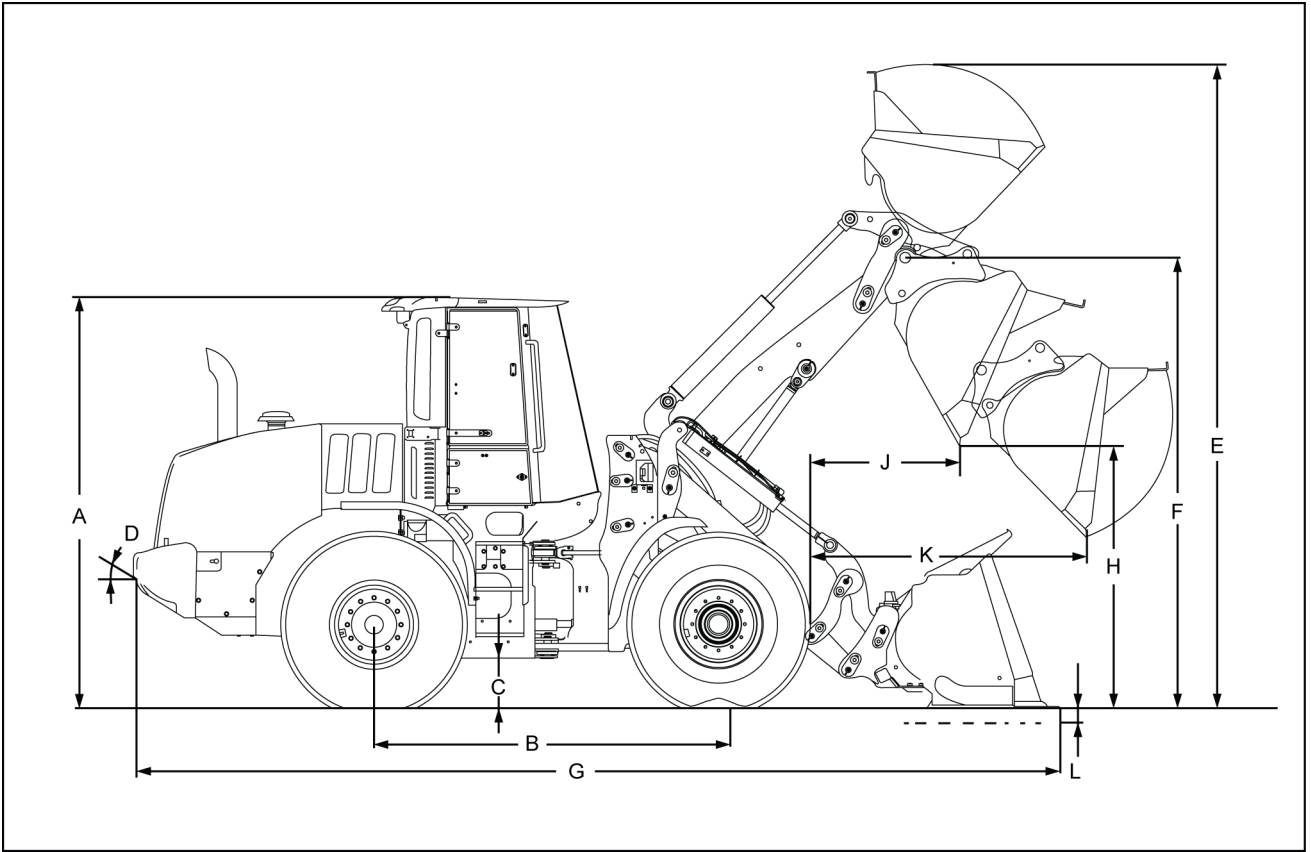
Machine specifications and dimensions – General specifications

The following specifications are common for all 721F model configurations:

Common Specifications

Feature	Specification	
Overall height (top of exhaust)	2960 mm (116.5 in)	
Rear axle oscillation total	24 °	
Height to drawbar	1112 mm (43.8 in)	
Vertical wheel travel (trunnion fully oscillated)	449 mm (17.7 in)	
Loader Speeds	Z-Bar and XR	XT
Loaded raise (rollback @ ground)	5.2 s	5.2 s
Loaded dump (@ full height) (Z-Bar)	1.2 s	1.3 s
Empty power down	2.5 s	2.5 s
Empty float	2.4 s	2.4 s

8 - SPECIFICATIONS



LEIL14WHL0497FB 9

721F XT Specifications with Quick Coupler- 2.4 m³ (3.0 yd³)

Segmented Teeth Bucket

ISO Bucket Specifications	
Struck	2.10 m³ (2.75 yd³)
Heaped	2.40 m³ (3.14 yd³)
Bucket width (maximum outer)	2474 mm (97.4 in)
Dimensional Outline Specifications	
A (top of cab height)	3386 mm (133.3 in)
B (wheelbase)	3254 mm (128.1 in)
C (ground clearance)	366 mm (14.4 in)
D (rear angle of departure)	32 °
Overall width with bucket guard	2550 mm (100.4 in)
Centerline tread width	2029 mm (79.9 in)
Turning radius (outside of tires)	5751 mm (226.4 in)
Turning angle from center	40 °
Total turning angle	80 °
E (fully raised with spillguard)	5666 mm (223.1 in)
F (hinge pin - fully raised)	4160 mm (163.8 in)
G (overall - bucket level on ground)	8237 mm (324.3 in)
H (dump - fully raised, 45 ° dump)	2690 mm (105.9 in)
J (reach - fully raised, 45 ° dump)	1357 mm (53.4 in)
K (reach - 2.13 m (7.0 ft) , 45 ° dump)	1788 mm (70.4 in)
L (dig depth)	212 mm (8.4 in)
ISO Load Specifications	
Operating load	4902 kg (10807 lb)
Tipping load	
Machine straight	11228 kg (24757 lb)
40° turn	9804 kg (21614 lb)

Metric hardware

Grade 8.8 bolts, nuts, and studs

Size	Nm	lb in/lb ft
4 mm	3 - 4 Nm	24 - 36 lb in
5 mm	7 - 8 Nm	60 - 72 lb in
6 mm	11 - 12 Nm	96 - 108 lb in
8 mm	26 - 31 Nm	228 - 276 lb in
10 mm	52 - 61 Nm	456 - 540 lb in
12 mm	90 - 107 Nm	66 - 79 lb ft
14 mm	144 - 172 Nm	106 - 127 lb ft
16 mm	217 - 271 Nm	160 - 200 lb ft
20 mm	434 - 515 Nm	320 - 380 lb ft
24 mm	675 - 815 Nm	500 - 600 lb ft
30 mm	1250 - 1500 Nm	920 - 1100 lb ft
36 mm	2175 - 2600 Nm	1600 - 1950 lb ft

Markings for Grade 8.8 hardware



Grade 10.9 bolts, nuts and studs

Size	Nm	lb in/lb ft
4 mm	4 - 5 Nm	36 - 48 lb in
5 mm	9 - 11 Nm	84 - 96 lb in
6 mm	15 - 18 Nm	132 - 156 lb in
8 mm	37 - 43 Nm	324 - 384 lb in
10 mm	73 - 87 Nm	54 - 64 lb ft
12 mm	125 - 150 Nm	93 - 112 lb ft
14 mm	200 - 245 Nm	149 - 179 lb ft
16 mm	310 - 380 Nm	230 - 280 lb ft
20 mm	610 - 730 Nm	450 - 540 lb ft
24 mm	1050 - 1275 Nm	780 - 940 lb ft
30 mm	2000 - 2400 Nm	1470 - 1770 lb ft
36 mm	3500 - 4200 Nm	2580 - 3090 lb ft

Markings for Grade 10.9 hardware



Grade 12.9 bolts, nuts, and studs

Torque values specified for grade 10.9 hardware can be used for grade 12.9 hardware.

Markings for Grade 12.9 hardware



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