OPERATOR'S MANUAL

721E Tier3 Z-bar. [N7AE12500 -]
721E Tier3 Z-bar Fertilizer. [N8AE12547 -]
721E Tier3 Z-bar Bagage suggar. [N8AE12525 -]
721E Tier3 XT. [N8AE12517 -]

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Read the operator's manual

Important information

- Each machine is supplied with a copy of this manual.
- This manual has been developed as a guide for the safe and proper use of the machine, as well as for its maintenance. Always follow the recommendations in this manual to ensure the best performance, cost-effective operation and long service life of your machine.
- The manual is in sections. For a list of sections, see the table of contents. Refer to the index at the back of this manual for locating specific items about your machine.
- The "SAFETY INFORMATION" chapter contains important information about safety at the time of maintenance, adjustments and safe operation of the machine, and also contains information about the use of safety messages found throughout this manual.
- The "MAINTENANCE" chapter contains important information about lubrication, cleaning work, maintenance and adjustments of the machine.
- The "SPECIFICATIONS" chapter contains important information about weights, dimensions, torques, and general specifications of the machine.
- The remaining chapters provide operating instructions for the machine, its controls, instruments, and accessories, and information about transport, storage and operation of the machine.
- READ THIS MANUAL COMPLETELY and make sure that you have learned how to operate the machine and its controls correctly and safely. It is your responsibility to read and understand the operator's manual and other provided information before you start to operate the machine. This information includes the speed, brakes, steering, stability and load characteristics of the machine.
- Do not operate this machine or perform maintenance work if you have not had appropriate training. Read and fully understand all the instructions and warnings in this manual. Have all operators read this manual carefully.
- If you follow the basic safety procedures and precautions, you can avoid most accidents that relate to machine inspection and maintenance services.
- Always see the Operator's Manual when you have doubts about any operating procedure of the machine. Read and understand all the safety warnings contained in this manual and all the safety decals on the machine. Correctly follow the maintenance procedures. See your Authorized CASE CONSTRUCTION Dealer if you have any doubts.
- DO NOT remove this manual from the machine. Make sure this manual is complete and in good condition. Contact an Authorized CASE CONSTRUCTION Dealer if you need additional manuals or manuals in other languages. Always keep the manual in its compartment.
- Your machine is compliant with current safety regulations, but the safety information in this manual does not replace safety rules, insurance requirements, and federal, state or local laws. Make sure that your machine has all the appropriate and certified equipment in accordance with these government codes or laws. Consult an Authorized CASE CONSTRUCTION Dealer about changes to your machine.
- CASE CONSTRUCTION reserves the right to improve designs and change specifications at any time, without obligation to install them on previously sold units. The specifications, descriptions, and illustrative materials here correctly reflect the data known on the publication date, but may vary by region and are subject to change without notice. Therefore, all content in this publication is subject to production variations. These variations can affect the maintenance that you perform on the machine. Make sure that your Authorized CASE CONSTRUCTION Dealer has provided complete and current information before you start to operate any machine.
- The illustrations may include optional equipment and accessories, and may not include all standard equipment.
- Dimensions and weights in this manual are only approximate.
- Additional safety messages are used in the text of the manual to show specific safety hazards. Pay attention.

Fuel usage conditions

You must follow fuel usage conditions. Incorrect use can lead to severe damage to both the engine and the fuel injection equipment.

The main concerns when operating with biodiesel are:

- Filter and injector blockage caused by poor fuel quality.
- Wear and corrosion of internal components from water content, which affects lubricity.
- Deterioration of some rubber sealing compounds in the fuel system.
- Biodiesel oxidation, which can lead to the formation of deposits that can harm the fuel injection system.

NOTICE: *Problems in the engine fuel injection equipment associated with non-compliance with the following conditions for biodiesel handling and maintenance will not be covered for warranty by CASE CONSTRUCTION.*

Purchase biodiesel fuel from a trusted supplier who understands the product and maintains acceptable fuel quality. Use biodiesel from BQ 9000 accredited suppliers to maintain the quality and consistency of the fuel. The BQ 9000 Quality Management Program is accredited by the National Biodiesel Board for producers and marketers of biodiesel fuel. See the website at www.biodiesel.org for more information.

Biodiesel Fuel must be pre-blended by the supplier. Mixing biodiesel fuel blends on-site can result in an incorrect mixture that may damage the engine and/or fuel system.

NOTICE: *CASE CONSTRUCTION may void your warranty if an engine or fuel system problem results from poor fuel quality due to improper blending. You and your fuel supplier are responsible that the right type of fuel and blend is delivered and used.*

Using an additive for Biodiesel

Despite strict standards for the manufacture of biodiesel in Brazil, fuel may present problems after some time in storage, such as the formation of colonies of microorganisms, oxidation and crystallization in the cold. Although the percentage of biodiesel blended with diesel fuel is small, the problems that can occur with the fuel cause major disruptions.

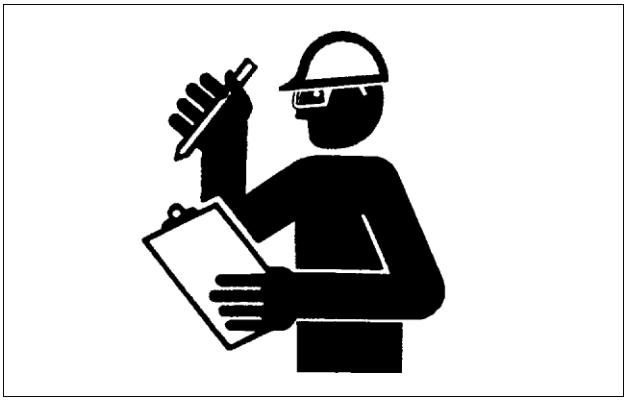
To avoid disruptions and possible damage to equipment, CASE CONSTRUCTION makes the following recommendation:

Use a Biodiesel biocide additive for the purpose of combating the formation of colonies of microorganisms in the machine's fuel system. The additive, as well as having biocidal properties, should also function as a lubricant and antioxidant. Consult your CASE CONSTRUCTION dealer for detailed information on the concentration and frequency of use of the additive.

Inspect the machine

Walk around the machine and perform a visual inspection before you climb into the cab and start operation.

Never start the engine or operate the machine if you notice any failed parts or damaged parts.



SP0007 6

Access the operator's compartment safely

Always approach the machine from the front.

When you enter or exit the machine, always keep contact with three points of support with the steps and handrail.

NOTE: *This will make it safer for you to move your feet and hands, which will help to prevent accidents.*

Keep the steps and handrails clean and clear of debris.

NOTE: *Accidents may result from slippery surfaces.*

Do not use the control levers or hydraulic hoses as a support to enter or exit the machine.

NOTE: *The control levers and hydraulic hoses are movable parts. They do not provide safety as a support. In addition, the control levers could inadvertently move and cause unexpected movement of the machine or implements.*

Never jump to enter or exit the machine.

Never mount or dismount a moving machine.

Do not hurry. Walk, do not run.

Always keep your head, body, limbs, hands and feet inside the operator’s compartment to reduce exposure to external hazards.

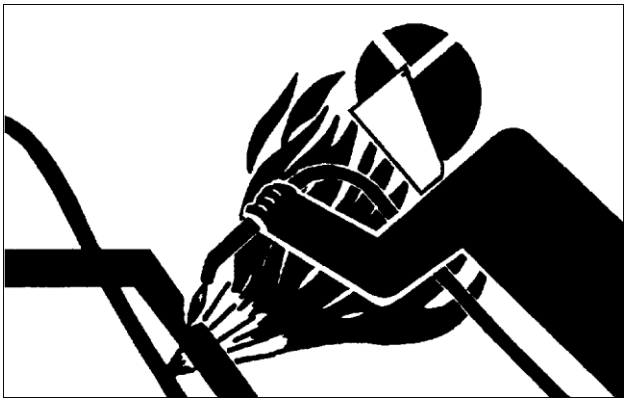
Never exit the operator's compartment until the machine has come to a complete stop and the engine is shut down.

Heating lines containing pressurized fluid

NOTICE: *Flammable sprays can be generated by heating near lines containing pressurized fluid, resulting in severe burns to those doing the repair and to bystanders.*

- Do not cause heating by welding, or use open flames near the components containing pressurized fluid or other flammable materials.
- Install temporary fire protection to protect the lines and other components of the machine when you perform a welding procedure.

  NOTE: *Pressurized lines can be accidentally cut when the heat goes beyond the area of the flame.*
- Avoid heating lines containing flammable fluids
- Do not weld or torch cut lines that contain flammable fluids.
- Clean the lines to be welded or cut with non-flammable solvents before welding or cutting them.

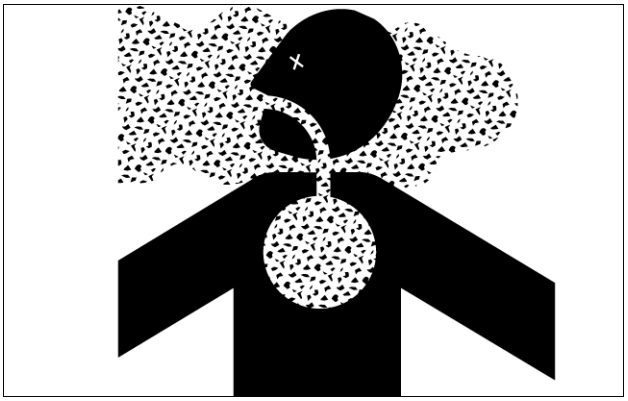


SP0059 2

Remove the paint before welding or heating

NOTICE: *Hazardous fumes can be generated when the paint is heated by the welding arc or torch flame. If inhaled, these fumes may be harmful to your health.*

- Do not breath in potentially toxic fumes and dust.
- Do all such work outside or in a well-ventilated area.
- Handle and dispose of waste from paints or solvents in accordance with environmental regulations, laws, and government codes.
- Remove the paint from the part to be welded before welding or heating operations.
- When sanding or grinding the paint, avoid breathing in the dust.
- Wear an approved respirator.
- If you use solvent or paint stripper, remove the stripper with soap and water before welding operations.
- Remove solvent or paint stripper containers and other flammable material from area.
- Allow the fumes to disperse for at least **15 min** before welding or heating operations.



SP0060 3

Support, block, and protect the machine properly

SP0040 6

- Do not perform maintenance work on a machine that is not properly supported.
- Always support the implement on the ground before starting the maintenance work.
- If it is necessary to perform maintenance on a machine with the implement raised, make sure to support it firmly.
- Do not support the machine on bricks, boards or other material that could collapse under load.
- Do not perform maintenance work on a machine that is supported solely by a jack.
- Lock the machine components that must be raised for maintenance using appropriate lifting equipment.
- Always lock all moving components or parts of the machine that should be lifted for maintenance purposes using adequate external lifting equipment as required by local regulations.
- Do not allow anyone to pass or remain near or below a raised attachment.

  NOTE: *Never move or stop the bucket above people or a cab of another machine or truck.*

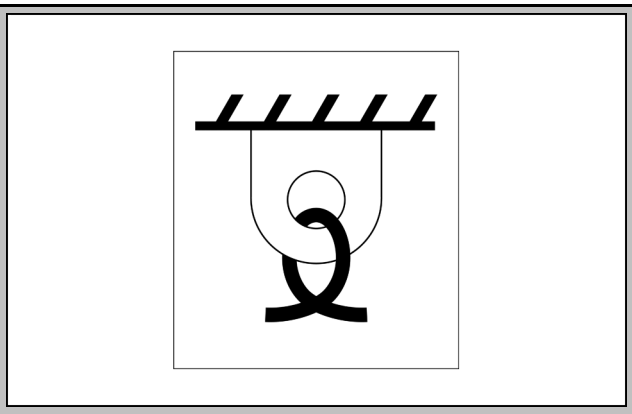
- When the maintenance to be performed requires access to areas that cannot be reached from the ground, use a ladder or scaffolding.
- Workshop maintenance or field scaffolding should be manufactured and maintained in accordance with the safety regulations.

  NOTE: *If a ladder or scaffolding are not available, use the machine handrails and steps.*

- Perform any maintenance work with the greatest care and attention.
- Do not place your head, body, limbs, hands, feet, or fingers near the articulated cutting edges without the necessary protection.
- Securely block the machine or any component that may fall before working on the machine or component. If possible, also use an auxiliary or backup blocking device.

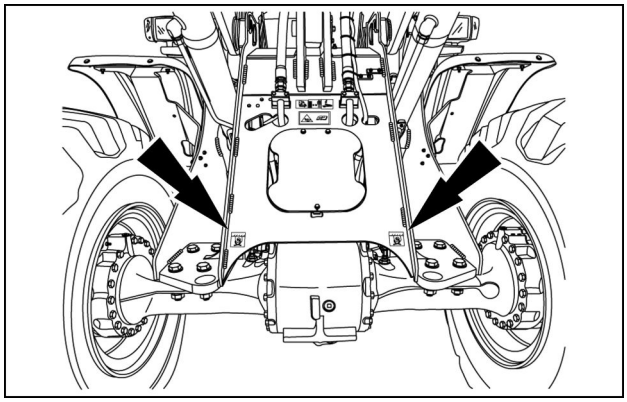
  NOTE: *To prevent unexpected movement, securely block the working elements whenever you service or replace working tool parts such as cutting edges.*

1 – “Sling Point” decal
Use these points to tie the machine during transport on a trailer.
Failure to comply with this recommendation may result in damage, serious injuries, or death.
Quantity: 4
139728A1



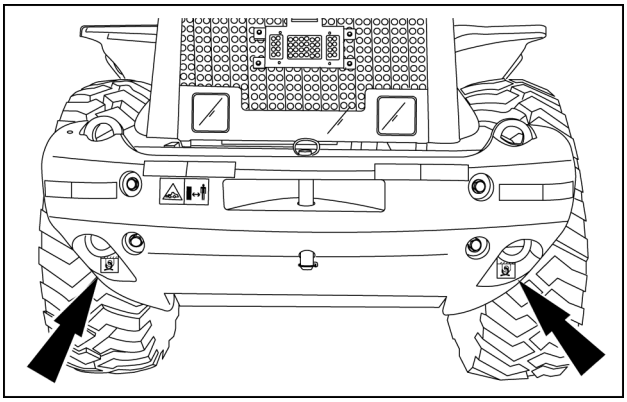
139728A1_A 3

These decals are installed on the front chassis, near the attachment point of the front axle.



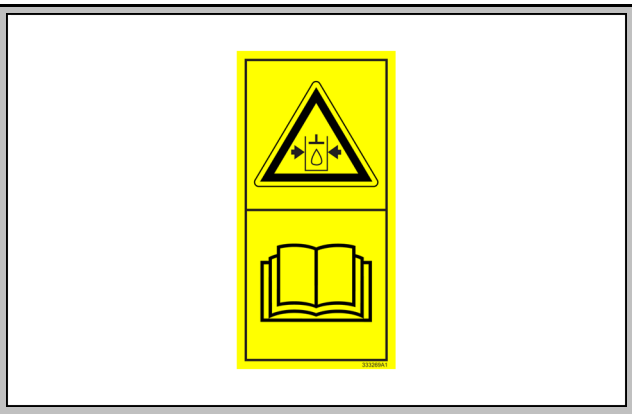
COIL17WEL0443AA 4

These decals are installed on the bottom of the counterweight, on the right-hand and left-hand sides.



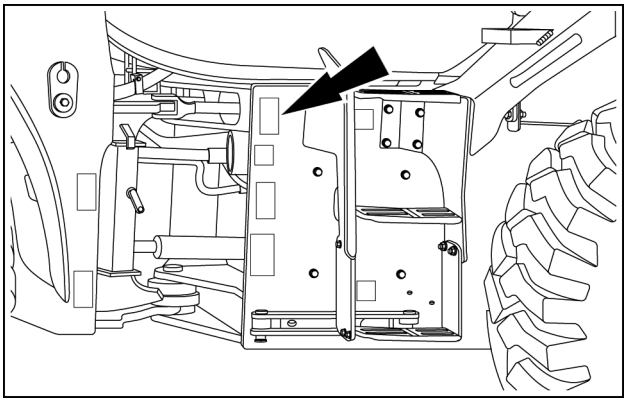
COIL17WEL0500AB 5

16 – “Hydraulic fluid reservoir pressurized” decal
Before you perform maintenance or repair services on the hydraulic fluid reservoir, operate the loader control lever in all positions to release the internal pressure of the system.
At operating temperature, the hydraulic fluid can cause burns if it comes into contact with the skin.
Quantity: 2
333269A1



333269A1_B2 39

This decal is installed on the left-hand and right-hand sides of the rear chassis, just below the cab.



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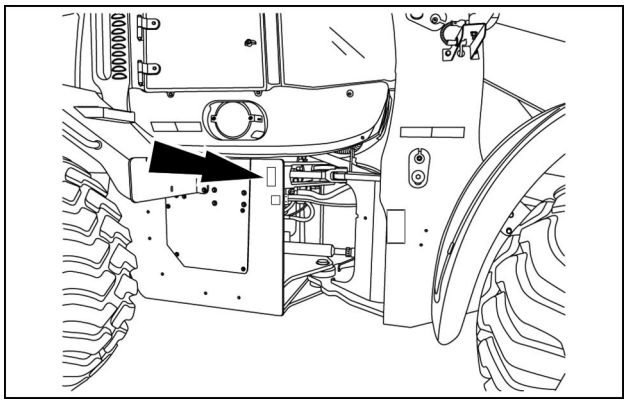
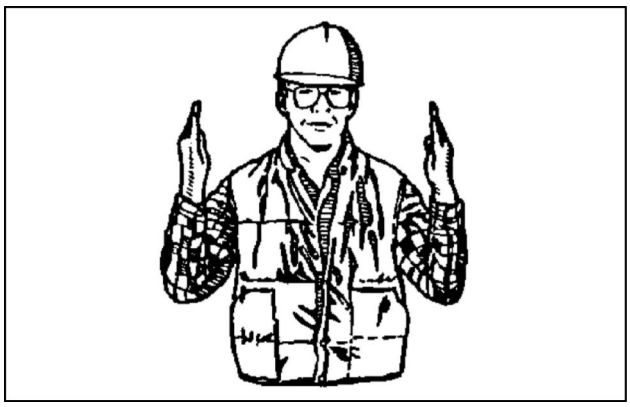


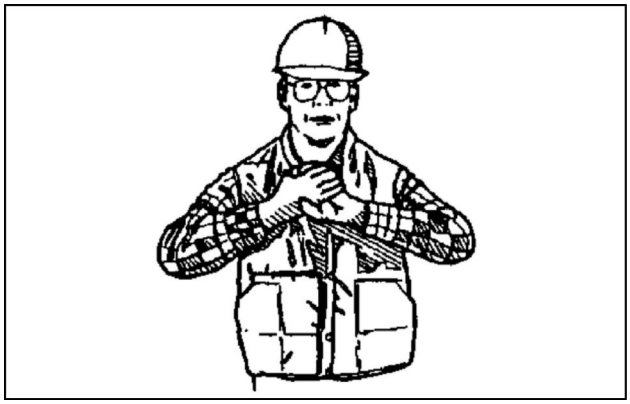
COIL17WEL0390AB 41

Move this far



BRIL12SP0314A0A 5

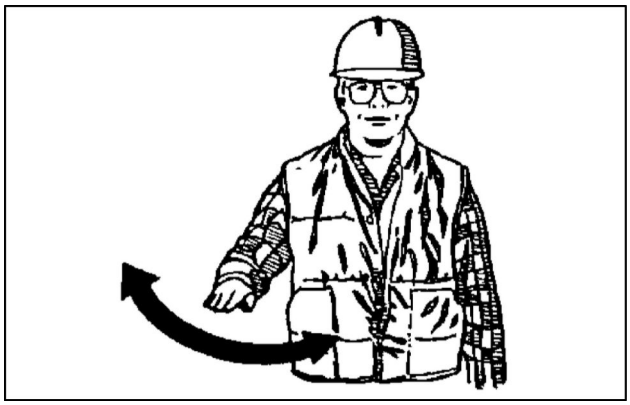
Stop completely and wait



BRIL12SP0315A0A 6

Stop

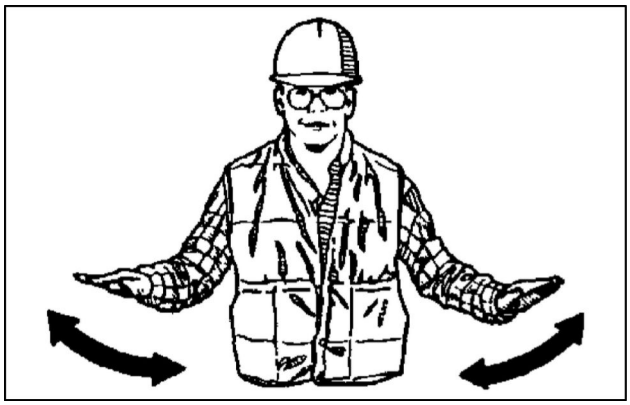
Move one hand from one side to the other



BRIL12SP0379A0A 7

Emergency stop

Quickly move both hands from one side to the other.

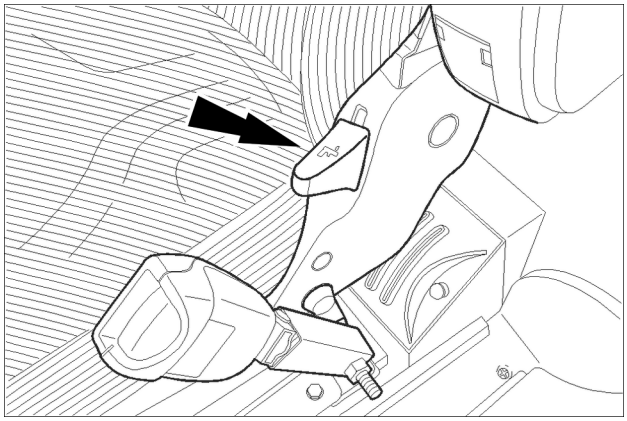


BRIL12SP0380A0A 8

Backrest tilt adjustment

Pull the lever upward to release the backrest and move it into the desired position.

Release the lever to lock the backrest in position.



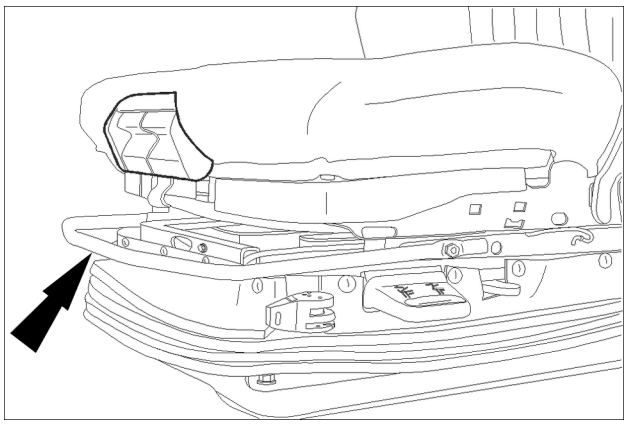
RCPH10WHL084BAL 4

Slide adjustment

Lift the bar and adjust the position of the seat forward or backward, as necessary.

Release the bar to lock the seat in position.

NOTE: *Always make adjustments from the front center of the adjustment bar.*



RCPH10WHL092BAL 5

LEFT-HAND SIDE CONTROLS

Drive – (Control through the lever on the steering column)

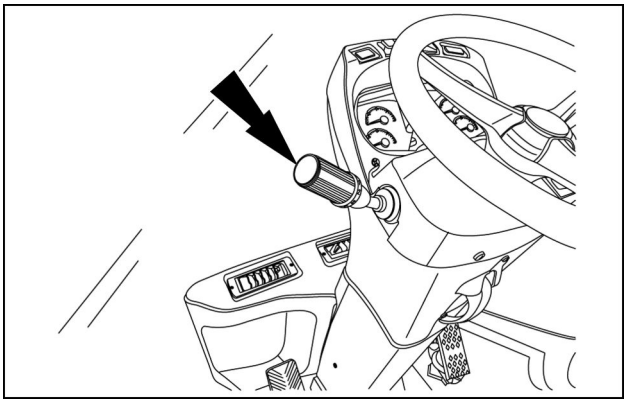
NOTE: *The steering column transmission control lever shifts the transmission gears from first through fourth gear. The steering column transmission control lever also controls the direction of travel of the machine.*

- To select a gear, rotate the handle grip to align the number indicator mark on the control lever.
- To keep the transmission in neutral **(N)**, keep the lever in the central position.
- To travel forward **(F)**, lift the lever and push all the way forward.
- To travel in reverse **(R)**, lift the lever and pull all the way back.

All the following steps are required to use the transmission shift functions through the steering column transmission lever:

1. Service brake pressure must be at operating temperature.
2. The steering column transmission control lever must be in neutral.
3. Push down on the bottom of the parking brake switch to release the parking brake switch.

   NOTE: *If the parking brake was NOT set when the machine was shut down, the parking brake switch must be set and released.*
4. Place the transmission control lever in either forward or reverse to move the machine.



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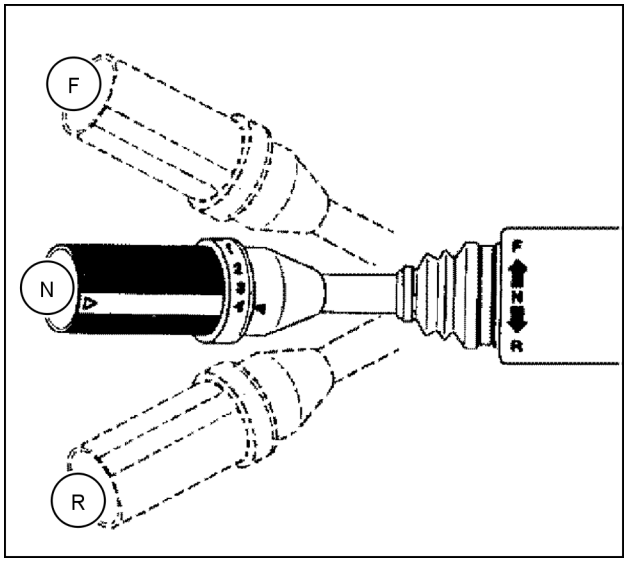

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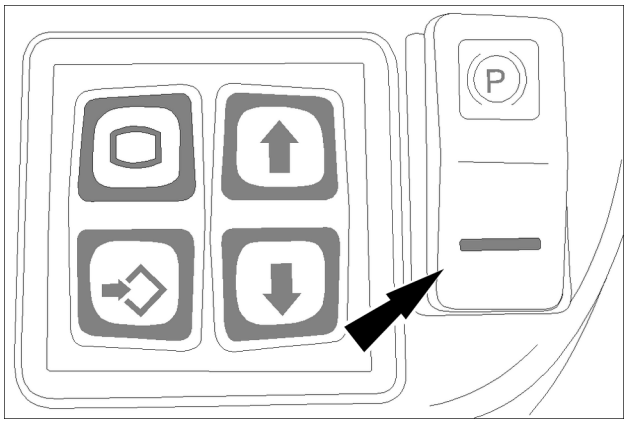


RCPH10WHL005BAL 3

Two-lever system with two-spool valve

A. Bucket control lever.

1. Unloads.
2. Loads.
3. Standby – The loader lift arm and bucket will not move while the control levers are in this position. When released, the control levers automatically return to the standby position.

   NOTE: *The operator must manually move the control lever from the float position to the standby position.*

B. Lift arm control lever.

4. Float (Backstop) – In this position, the loader bucket can follow the irregularities of the terrain without movement of the control lever.
5. Lowers the bucket.
6. Standby – The loader lift arm and bucket will not move while the control levers are in this position. When released, the control levers automatically return to the standby position.

   NOTE: *The operator must manually move the control lever from the float position to the standby position.*

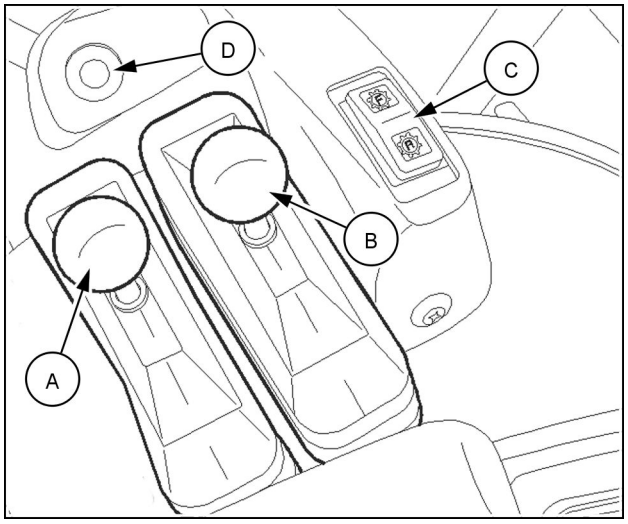
7. Raises the bucket.

C. “F-N-R” switch – This switch allows the operator to put the transmission in forward, neutral, or reverse gears

   NOTE: *To activate this auxiliary “F-N-R” switch, the proper sequence must be followed. The primary shift lever must be in the neutral position before you use the auxiliary “F-N-R” switch. Push the switch forward to place the transmission in forward gear. Place the switch in the middle position to place the transmission in neutral. Pull the switch backward to put the transmission in reverse.*

D. “kickdown” downshift button – Drops the transmission down one gear at a time.

   NOTE: *See “Transmission operation” for movement of the machine after start-up.*



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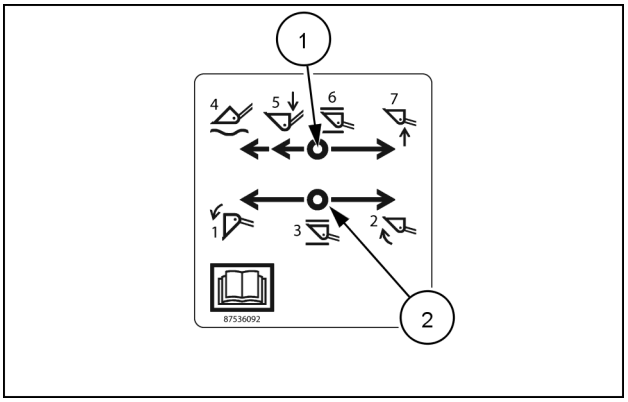


87536092_A 5

Critical warnings

Display	Description	Corrective Action
Engine Oil Pressure	Low engine oil pressure. Below **10 psi**.	Stop the machine safely and turn the engine OFF immediately. Contact an authorized CASE CONSTRUCTION dealer.
Brake pressure	Low brake pressure.	Stop the machine safely and turn the engine OFF immediately. Contact an authorized CASE CONSTRUCTION dealer.
Auxiliary steering system pressure	Low pressure in the auxiliary steering system.	Stop the machine safely and turn the engine OFF immediately. Contact an authorized CASE CONSTRUCTION dealer.
Coolant Level	Low engine coolant level.	Stop the machine safely and turn the engine OFF immediately. Check the coolant level after letting the engine cool. Contact an authorized CASE CONSTRUCTION dealer.
Coolant temperature	High engine coolant temperature.	Stop the machine safely and turn the engine OFF immediately. Check the coolant level after letting the engine cool. Contact an authorized CASE CONSTRUCTION dealer.
Hydraulic fluid temperature high	High temperature high in the hydraulic fluid.	Stop the machine safely and turn the engine OFF immediately. Contact an authorized CASE CONSTRUCTION dealer.
Transmission fluid temperature	High transmission fluid temperature.	Stop the machine safely and turn the engine OFF immediately. Contact an authorized CASE CONSTRUCTION dealer.

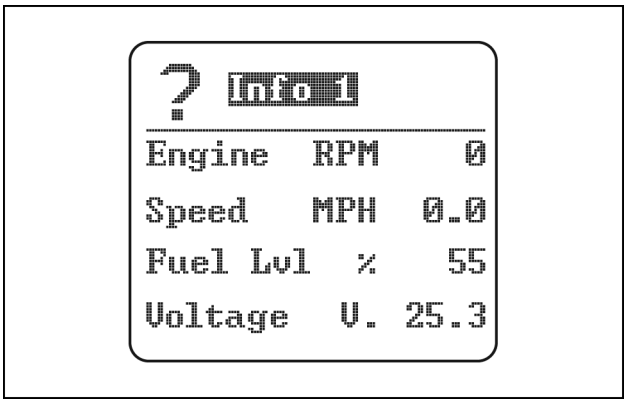
LCD Display – (Menu screens)

Viewing the screens

“Info 1”.

“Info 1” is the first information screen reached via the down arrow from the main screen.

It displays engine RPM, speed of the machine, fuel level, and alternator voltage level.

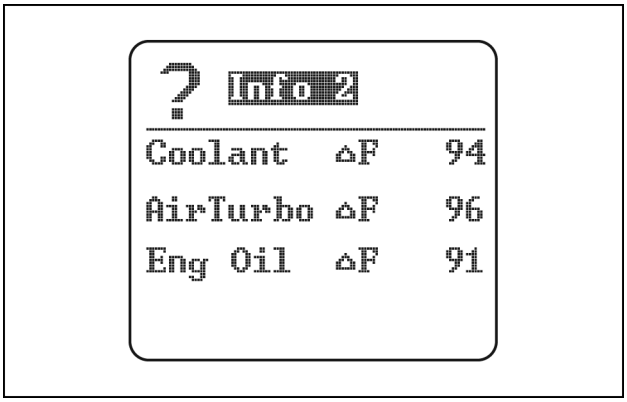


ALLX16LCD0001AA 1

“Info 2”.

“Info 2” is the second information screen reached via the down arrow from the main screen.

The “Info 2” screen displays the coolant temperature, the turbocharger air temperature, and the engine oil temperature in “Fahrenheit” or “Celsius”. “Info 2” also displays the oil pressure in PSI.

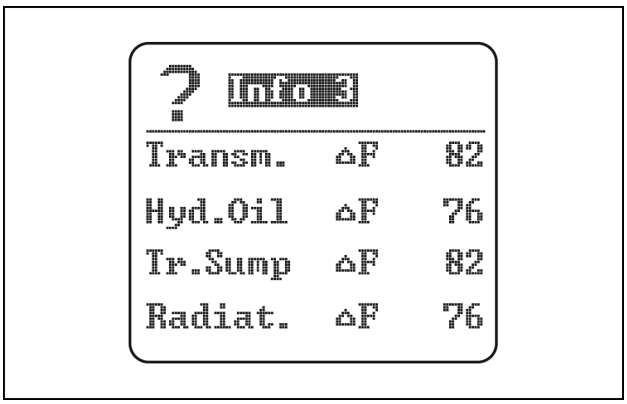


ALLX16LCD0002AA 2

“Info 3”.

“Info 3” is the third information screen reached via the down arrow from the main screen.

The “Info 3” screen displays the transmission fluid temperature, the hydraulic fluid temperature, the temperature of the oil in the sump, and the temperature of the coolant in the radiator, in “Fahrenheit” or “Celsius”.



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“Display”

On the “Service” screen, use the Up arrow or the Down arrow keys to navigate to the “Display” menu.

Press the “Enter” key. The highlighted section flashes to indicate that a new selection can be made.

Press the “Enter” key again. A sub-menu displays the “Day display”, “Day LED”, “Night display”, and “Night LED”options.

Use the Up arrow or the Down arrow keys to navigate to the desired selection. Use the “Enter” key to confirm the selection.

The display menu can be used to change the background and brightness of the screen.

The screen display can be changed to suit working conditions.

When the headlights are turned on, the screen changes to night lighting.

“Clock”

On the “Service” screen, use the Up arrow or the Down arrow keys to navigate to the “Display” menu.

Press the “Enter” key. The highlighted section flashes to indicate that a new selection can be made.

Press the “Enter” key again. A sub-menu displays the “Hour”, “Minute”, “Day”, “Month”, and “Year” options.

Use the Up arrow or the Down arrow keys to navigate to the desired selection. Use the “Enter” key to confirm the selection.

“Cluster hardware”

On the “Service” screen, use the Up arrow or the Down arrow keys to navigate to the “Display” menu.

Press the “Enter” key. The highlighted section flashes to indicate that a new selection can be made.

Press the “Enter” key again. A sub-menu displays the “Hardware part number”, “Hardware serial number”, “Hardware ID”, and “Hardware version” options.

Use the Up arrow or the Down arrow keys to navigate to the desired selection. Use the “Enter” key to confirm the selection.

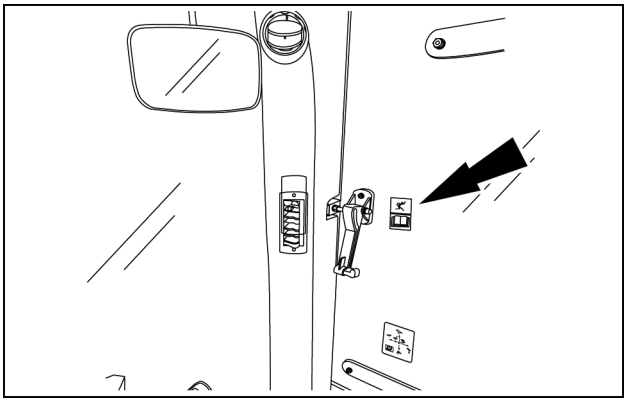
The “Hardware” screen cannot be changed by the operator.

Press “Esc” to exit this field and return to the selection menu. Alternatively, use the Up arrow key to scroll back to the other sub-menu selections.

Emergency exit

The right-hand window of the cab can be used as an emergency exit.

Be proactive and open and close the emergency window exit as a safety measure to become familiar with its operation.



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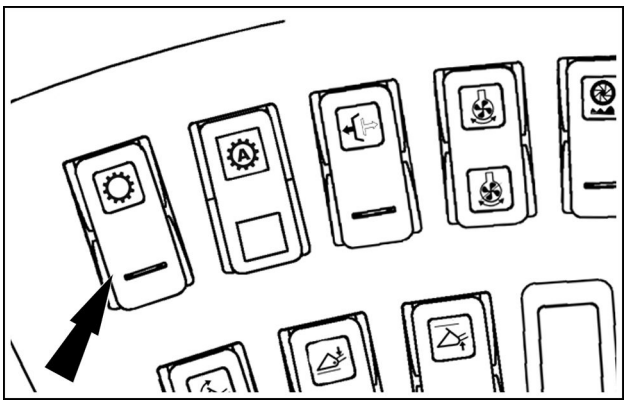
MOVING THE UNIT

Before operating the transmission

Transmission enable switch



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The transmission enable switch can be enabled only after the following conditions have been completed:

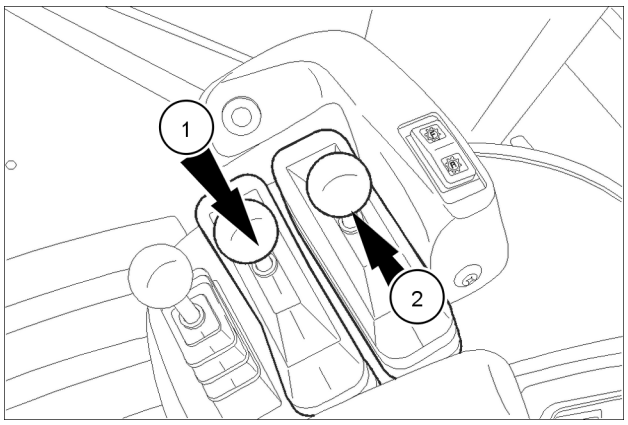
1. The transmission control lever must be in neutral (left-hand side).
2. The F-N-R switch must be in neutral (right-hand side).
3. The engine must be running.
4. The machine must be stopped.
5. The parking brake must be released.
6. Press the transmission enable switch to allow the transmission to be controlled by the auxiliary F-N-R switch.
7. The indicator light at the bottom of the enable switch will illuminate when activated.

   NOTE: *Within 8 seconds from depressing the transmission enable switch the following actions must take place or the F-N-R enable switch must be reactivated.*

   NOTE: *If the transmission control lever installed on the steering column is moved from neutral, the engine is stopped, or the parking brake is applied, the auxiliary F-N-R mode is deactivated. The transmission control returns back to the standard transmission control lever configuration.*
8. The parking brake must be released.
9. Shift to F or R from neutral on the F-N-R switch.
10. The service brake must be stepped on.

Return-to-travel function

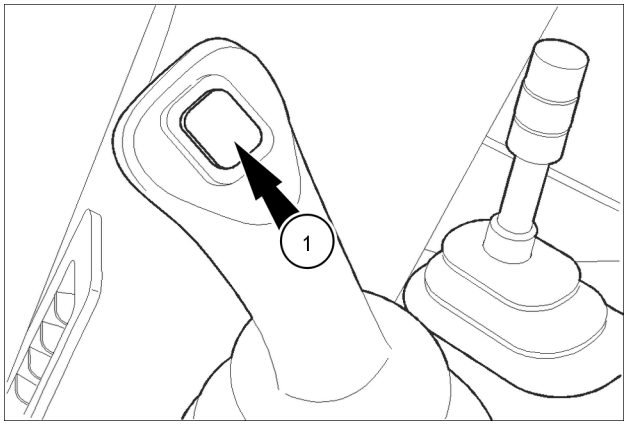
The return-to-travel function is used to automatically stop the movement of the loader bucket at the selected carry height. To enable the return-to-dig function, press the top of the return to travel/float switch.



RCPH10WHL110BAL 6

1. Tilt detent
2. Floatation

To engage, move the control lever into the FLOAT and TILT detents. The control levers will automatically return to the “HOLD” position when the loader reaches the return-to-travel position.



RCPH10WHL119BAL 7

1. Float and tilt detent

SHIPPING TRANSPORT

Machine transport

⚠ WARNING

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

W1154A

⚠ 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

NOTICE: *Make sure that the trailer is suitable for the machine. The trailer and machine must be equipped with the correct safety equipment for transport. Clean the trailer before loading or unloading the machine. Make sure you know the regulations, laws and governmental codes related to road transport before transporting the machine. Make sure that the trailer and the machine are equipped with the correct safety equipment. Use care when loading a machine.*

CLICK HERE TO DOWNLOAD THE COMPLETE MANUAL

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Operations to scrape surfaces

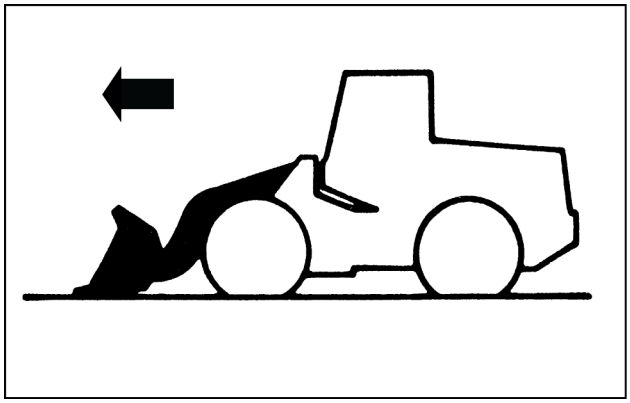
When you perform operations to scrape hard surfaces, the bucket should be level in relation to the surface.

Operate the machine at a low speed.

Before starting the operation, inspect the work area for objects that could hit the bucket and clearly identify them. When you approach the identified objects, go around the identified objects with the machine at low speed.

The bucket edges or teeth can hit protruding parts of frozen surfaces or objects buried in the ground during scraping operations.

ATTENTION: *The result of the operator failing to take these precautions could be injury or damage to the machine.*

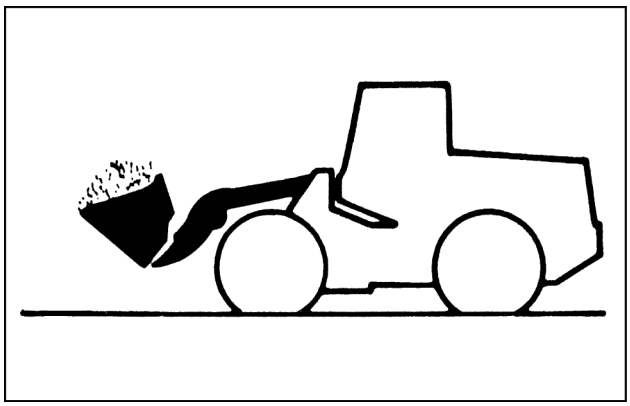


BRIL12WL0033A0A 3

Material transport operations

When you perform material transport operations, the bucket must tilted back. The bottom of the bucket must not be more than **305 – 457 mm** (**12.0 – 18.0 in**) above the surface.

ATTENTION: *When you operate the machine, keep the loader bucket as low as possible. This low position gives better balance and permits you to see more clearly. If the bucket is full and you move the machine over ground that is rough or surfaces that can cause the machine to slide, always operate at low speed.*



BRIL12WL0034A0A 4

Operations on sloped surfaces

Do not let the machine move down a sloped surface with the transmission in neutral.

Do not use the declutch switch when you operate on sloped surfaces.

Be extra careful and pay extra attention when you operate on sloped surfaces.

Make sure that the low speed travel is selected.

Always travel in the same direction as the slope to prevent the machine from turning over

On extremely steep surfaces, use the transmission kick down mode.

NOTICE: *This procedure helps with braking and prevents brake overheating and premature disk wear.*

Security lock, transport and service

⚠ WARNING

Improper operation or service of this machine can result in an accident.
Read and understand the SAFETY INFORMATION chapter before you perform any maintenance, service, or repairs. Read and understand the specific service procedures for the components you plan to work with before you start servicing the machine.
Failure to comply could result in death or serious injury.

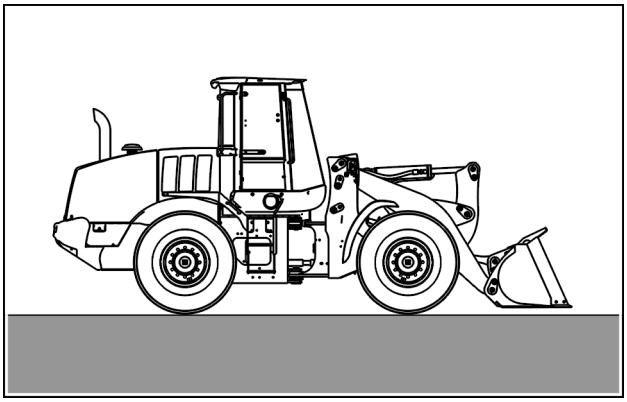
W0138B

NOTICE: *When latched, this device prevents the machine from articulating.*

Security lock, transport and service

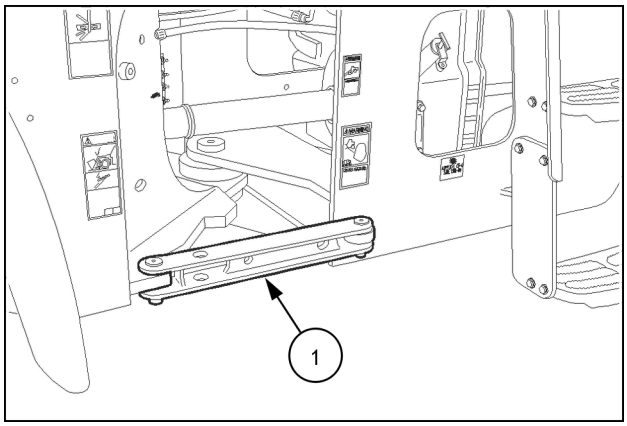
Before you start any maintenance, inspection, lubrication, or transport of the machine, proceed as follows:

1. Keep all unauthorized personnel clear of the area.
2. Park the machine on a flat, level, firm surface, away from any obstacles.
3. Support the implements on the ground.
4. Place the ignition key in the "OFF" position to shut down the engine.
5. Set the park brake.

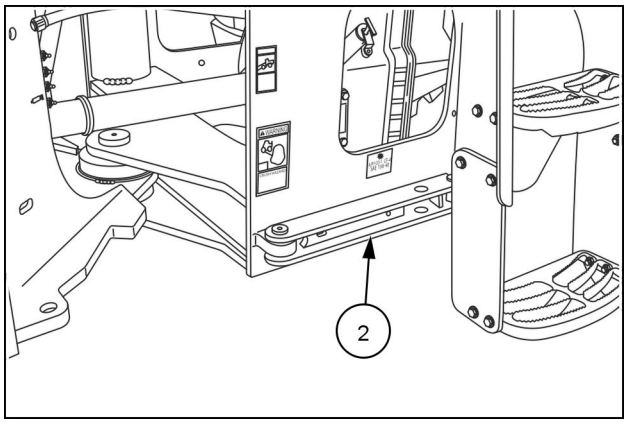


PL1418WEL0001AA 1

6. Position the locking bar in the locked position (maintenance) **(1)**.
7. Perform the maintenance procedures, inspection, or lubrication.
8. After you complete the service, deactivate the safety knuckle. Lock the knuckle in the normal operating position **(2)** on the rear chassis.



RCPH10WHL063BAL 2



RCPH10WHL062BAL 3

Engine coolant system

⚠ WARNING

Improper operation or service of this machine can result in an accident.
Read and understand the SAFETY INFORMATION chapter before you perform any maintenance, service, or repairs. Read and understand the specific service procedures for the components you plan to work with before you start servicing the machine.
Failure to comply could result in death or serious injury.

W0138B

Specifications

For information about engine cooling system specifications and capacities, see page **8-1**.

For information about engine coolant level check, see page **7-48**.

For information about cleaning the system and changing the coolant in the engine cooling system, see **7-115** page.

Radiator

- The cooling system operates under high pressure.
- Remove the radiator cap slowly and only when the engine is cold. Otherwise, this could result in serious injury.
- The radiator is intended to cool the water under all conditions of operation.
- It is important that all of the internal and outer water passages are always unobstructed.
- The radiator cap should be replaced if it does not maintain the correct pressure.

Coolant

A mixture of **50%** ethylene glycol and **50%** water should be used in this machine. This mixture is recommended for use in locations where minimum ambient temperatures are above **–37 °C** (**–34 °F**).

NOTE: *If the ambient temperature is lower, adjust the composition of the mixture to **60%** ethylene glycol and **40%** water. Use the ethylene glycol and water mixture in your machine all year.*

NOTE: *After you fill up the cooling system, start the engine. Let the engine run at operating temperature for approximately **5 min** to thoroughly mix the ethylene glycol and the water. You must perform this procedure when the machine is at temperatures below **0 °C** (**32 °F**).*

NOTICE: *Hot coolant can spray out if the recovery reservoir cap is removed. To remove the reservoir cap, let the cooling system cool down. Check and service the engine cooling system, as per the servicing instructions.*

Releasing pressure in the hydraulic system

⚠ WARNING

Pressurized system!
Never attempt to drain fluids or remove filters when the engine is running. Turn off the engine and relieve all pressure from pressurized systems before servicing the machine.
Failure to comply could result in death or serious injury.

W0905A

⚠ WARNING

Escaping fluid!
Hydraulic fluid or diesel fuel leaking under pressure can penetrate the skin and cause infection or other injury. To prevent personal injury: Relieve all pressure before disconnecting fluid lines or performing work on the hydraulic system. Before applying pressure, make sure all connections are tight and all components are in good condition. Never use your hand to check for suspected leaks under pressure. Use a piece of cardboard or wood for this purpose. If injured by leaking fluid, see your doctor immediately.
Failure to comply could result in death or serious injury.

W0178A

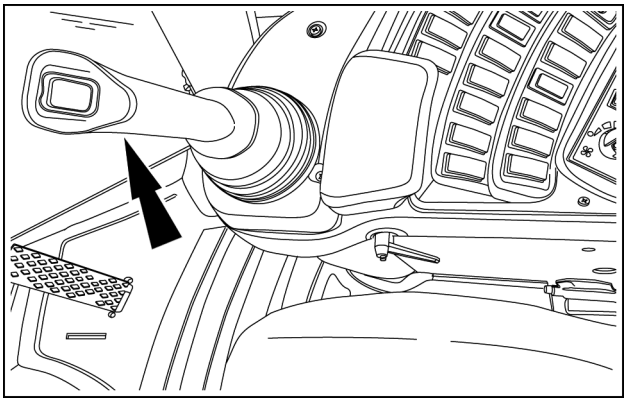
NOTICE: *Always release the hydraulic pressure before you service the system. There should be no pressure in any of the circuits.*

NOTICE: *Before you carry out any service work on the hydraulic system, allow the system to cool (the temperature should not be more than* ***40.0 °C*** *(****104.0 °F****).*

Releasing pressure in the hydraulic system

To release the pressure in the hydraulic system, proceed as follows:

1. Keep all unauthorized personnel clear of the area.
2. Park the machine on a flat, level, firm surface, away from any obstacles.
3. Support the implements on the ground.
4. Put the ignition key in the "ON" position.
5. Push the pilot control switch to the enabled position.
6. Set the parking brake.
7. Operate the control levers from right to left and front to rear approximately a dozen times.
8. Put the ignition key in the “OFF” position.



COIL17WEL0433AB 1

Loader control (Height control and adjustment of the return-to-movement)

⚠ WARNING

Improper operation or service of this machine can result in an accident.
Read and understand the SAFETY INFORMATION Section before you perform any maintenance, service, or repairs. Read and understand the specific service procedures for the components you plan to work with before you start servicing the machine.
Failure to comply could result in death or serious injury.

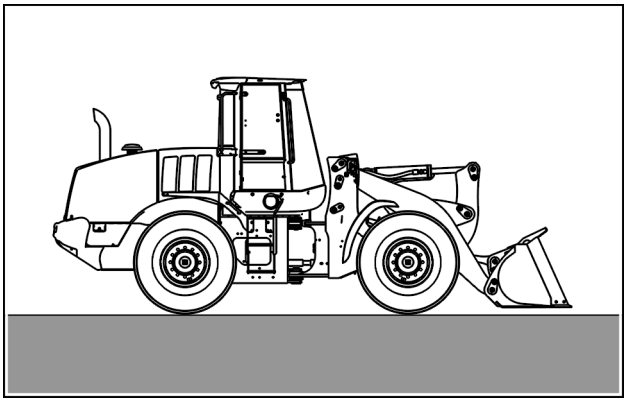
W0138A

NOTICE: *To prevent damage to the proximity sensor, you need to adjust it so that it avoids contact with the lift arm when the lift arm is moving.*

Height control and adjustment of the loader return-to-movement

Proceed as follows for height control and adjustment of the loader return-to-movement:

1. Keep all unauthorized personnel clear of the area.
2. Park the machine on a flat, level, firm surface, away from any obstacles.
3. Support the implements on the ground.
4. Place the ignition key in the "OFF" position to shut down the engine.
5. Set the parking brake.
6. Place the safety, transport, and service latch in the lock position.



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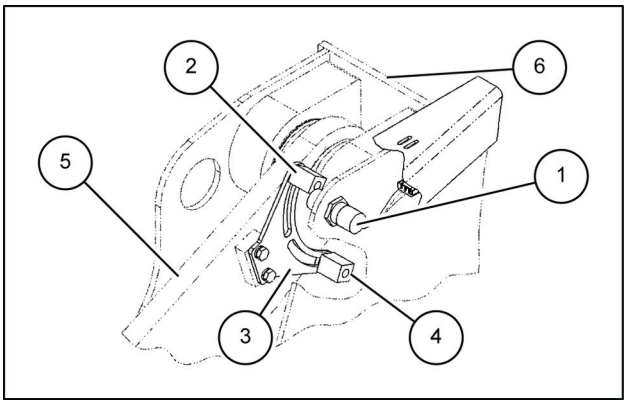
7. Position the return-to-movement backstop **(2)** on the side opposite the proximity sensor. Then secure the backstop to the backstop mounting plate **(3)**.
8. Adjust the proximity sensor **(1)** toward the return-to-movement backstop **(2)**. Make sure there is a clearance of **3.5 – 5.0 mm** (**0.14 – 0.20 in**).
9. Secure the proximity sensor with its lock nut. Torque the lock nut to **6.8 N·m** (**5 lb ft**).



BRIL12WL0001A0A 2

Component description:

(1) Proximity sensor

(2) Return-to-movement backstop

(3) Backstop mounting plate

(4) Height control backstop

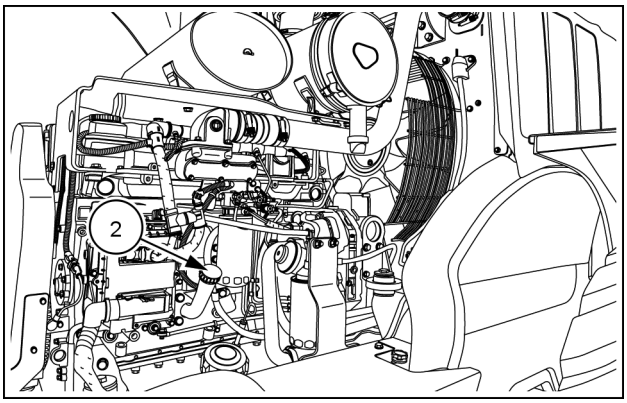
(5) Lift arm

(6) Front chassis

12. Remove the filler nozzle cap **(2)**. Add oil if the level is below the minimum level mark.

    NOTE: *Do not over fill engine oil.*

13. Check the level again
14. Close the engine hood



COIL17WEL0419AC 4

Transmission fluid (Checking the level)

⚠ WARNING

Improper operation or service of this machine can result in an accident.
Read and understand the SAFETY INFORMATION Section before you perform any maintenance, service, or repairs. Read and understand the specific service procedures for the components you plan to work with before you start servicing the machine.
Failure to comply could result in death or serious injury.

W0138A

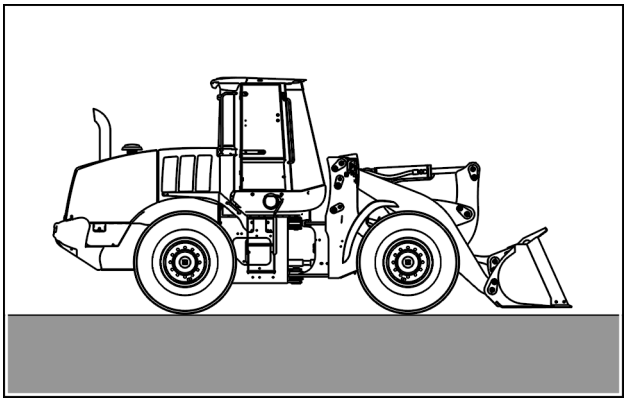
NOTICE: *The transmission fluid level should be checked every 50 hours of operation or more frequently (shorter periods) when you operate the machine in extreme conditions. For transmission fluid specifications, refer to page* ***8-1****.*

Checking the transmission fluid level

To check the transmission fluid level, proceed as follows:

1. Keep all unauthorized personnel clear of the area.
2. Activate the service brake. Use the transmission selector level to select the 4th forward gear.
3. Throttle the engine to the maximum to cause the torque converter to stall.
4. Maintain this condition for maximum of **15 s**.

   NOTE: *The fluid temperature should be between* ***75 – 85 °C (167 – 185 °F)***
5. Park the machine on a flat, level, firm surface, away from any obstacles.
6. Support the implements on the ground.
7. Place the transmission in NEUTRAL.
8. Set the parking brake.
9. Place the safety, transport, and service latch in the locked position. See page **7-7** for additional information.
10. Keep the engine at idle speed.



PL1418WEL0001AA 1

EVERY 250 HOURS

Engine oil and filter (Replacement)

⚠ WARNING

Improper operation or service of this machine can result in an accident.
Read and understand the SAFETY INFORMATION chapter before you perform any maintenance, service, or repairs. Read and understand the specific service procedures for the components you plan to work with before you start servicing the machine.
Failure to comply could result in death or serious injury.

W0138B

NOTICE: *The engine oil and the engine oil filter should be replaced every 250 hours of operation or more frequently (shorter periods) when you operate the machine in extreme conditions, or if the fuel used has a sulfur content greater than 0.5%. For lubricant specifications, see page* ***8-1*** *.*

NOTE: *Handle and dispose of the waste in accordance with environmental regulations, laws and government codes.*

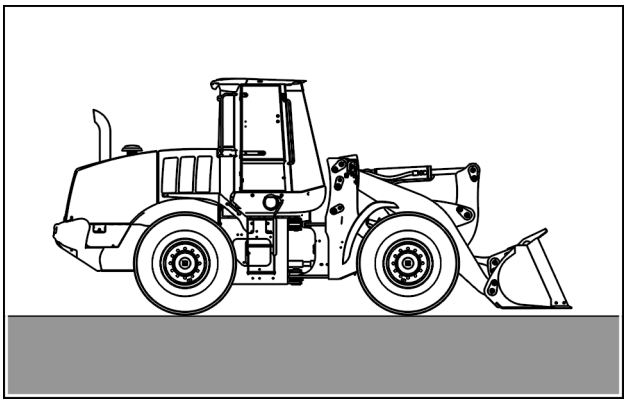
Replacing engine oil and Engine oil filter

To replace the engine oil and oil filter, proceed as follows:

1. Keep all unauthorized personnel clear of the area.
2. Park the machine on a flat, level, firm surface, away from any obstacles.
3. Support the implements on the ground.
4. Set the parking brake.
5. If engine oil is not warm, run the engine at idle speed for **3 – 5 min** before you shut down the engine.
6. Place the ignition key in the "OFF" position to shut down the engine.
7. Place the safety, transport, and service latch in the locked position. See page **7-7** for additional information.
8. Open the engine hood.
9. Remove the dipstick **(1)**. Remove the filler neck cap **(2)**. Make sure that the oil is warm.

   NOTE: *The dipstick and the filler neck are located on the right-hand side on the engine, near the fuel filters.*

   NOTE: *These operations provide a faster drainage of the oil.*



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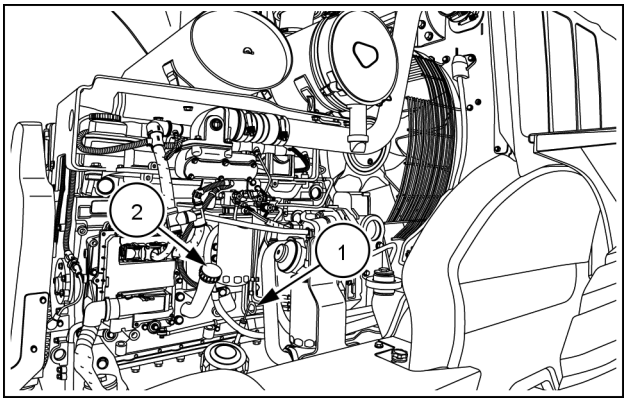


COIL17WEL0419AC 2

Tires – (Pressure check and Calibration)

⚠ WARNING

Improper operation or service of this machine can result in an accident.
Read and understand the SAFETY INFORMATION chapter before you perform any maintenance, service, or repairs. Read and understand the specific service procedures for the components you plan to work with before you start servicing the machine.
Failure to comply could result in death or serious injury.

W0138B

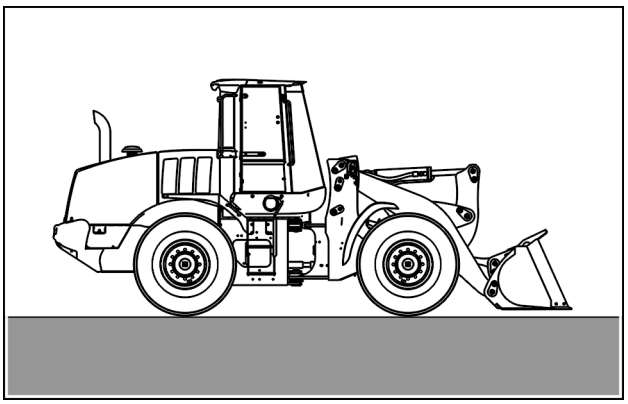
NOTICE: *The tire pressure belt must be checked as needed and every 250 hours of operation or more frequently (shorter periods) when you operate the machine in extreme conditions. For tire pressure specifications, see page* ***8-3****.*

NOTICE: *Always entrust maintenance of the tires and rims to a qualified professional. It is recommended that the tires be calibrated by this professional. To prevent accidents, use a proper tire fastening device (tire inflation cage), equipment and procedures. An explosion that separates the tire and rim or breaks either of these into pieces could cause serious injury or death.*

Tire calibration and pressure check

To check the pressure and calibrate the tires, proceed as follows:

1. Keep all unauthorized personnel clear of the area.
2. Park the machine on a flat, level, firm surface, away from any obstacles.
3. Support the implements on the ground.
4. Place the ignition key in the "OFF" position to shut down the engine.
5. Set the parking brake.



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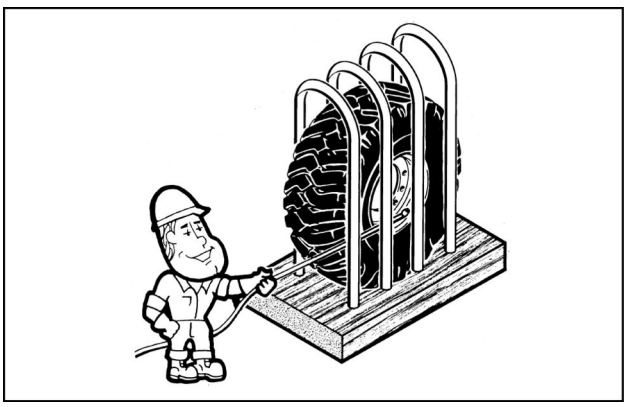
6. Before you fill the tire, properly install the wheel on the machine or place the wheel in a suitable fixture (tire inflation cage).
7. Use an air hose with a remote shut-off valve and an air nozzle with automatic lock.



BRIL12WL0200A0A 2

Air intake lines (Verification of the hoses)

⚠ WARNING

Improper operation or service of this machine can result in an accident.
Read and understand the SAFETY INFORMATION chapter before you perform any maintenance, service, or repairs. Read and understand the specific service procedures for the components you plan to work with before you start servicing the machine.
Failure to comply could result in death or serious injury.

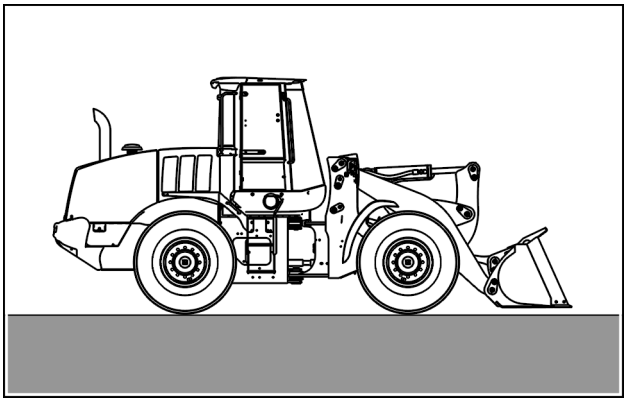
W0138B

NOTICE: *The hoses of the engine air intake system should be checked every 500 hours of operation.*

Verification of the engine air intake system hoses

To check the engine air intake system hoses, proceed as follows:

1. Keep all unauthorized personnel clear of the area.
2. Park the machine on a flat, level, firm surface, away from any obstacles.
3. Support the implements on the ground.
4. Set the parking brake.
5. Place the ignition key in the "OFF" position to shut down the engine.



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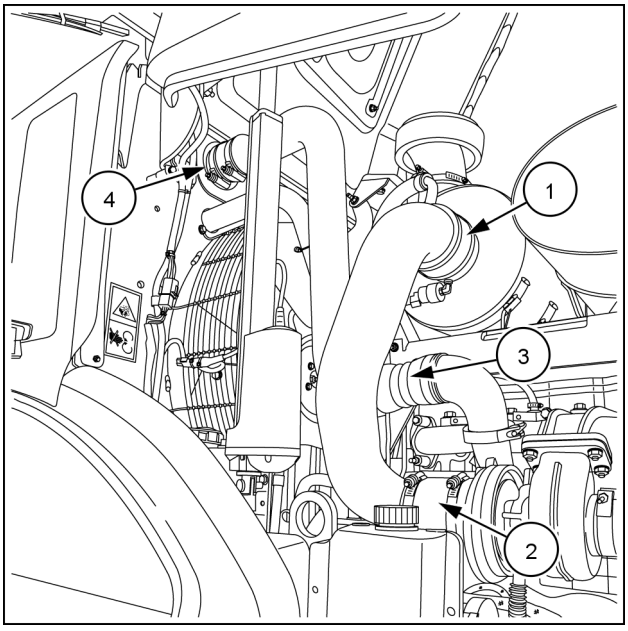
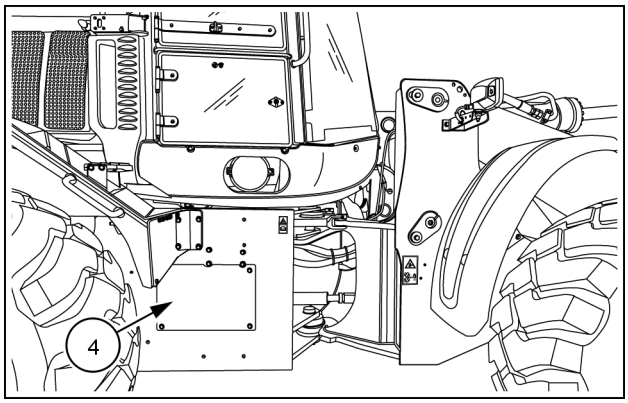
6. Open the engine hood.
7. Check the condition of the hoses, for drying out, cracks, splitting, and tightness.
8. Check the condition and tightness of the hose clamps.
9. Air filter outlet **(1)**.
10. Turbocharger inlet **(2)**.
11. Turbocharger outlet **(3)**.
12. Inlet in the intake air cooler **(4)**.



COIL17WEL0508BA 2

12. Locate the hydraulic fluid filter. Remove the lateral inspection cover **(4)** from the rear chassis, on the right-hand side of the machine.



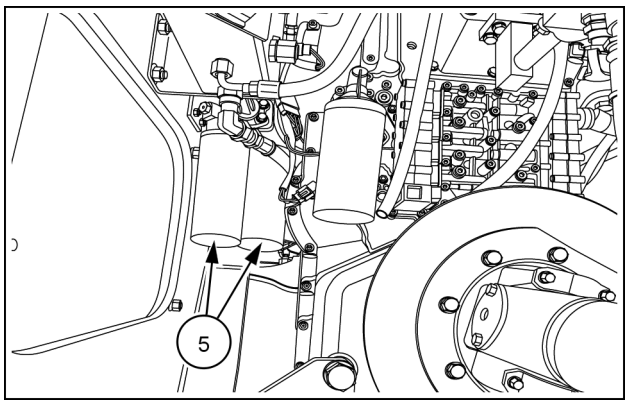
COIL17WEL0406AB 3

13. Place an appropriate container under the hydraulic system filters **(5)** to collect a small amount of fluid and the filter after removal.
14. Remove any dirt in the region of the filters before removal.
15. Turn the filters counter-clockwise with a special filter wrench to remove the filters.

    NOTE: *The special filter wrench may only be used to remove the filter. The special filter wrench should never be used during installation.*

16. Clean the contact surfaces of the filter packing glands.
17. Apply a thin layer of clean fluid to the packing gland and to the thread of the filter.
18. Install the new filters. Turn the filters clockwise until they come into contact with the seal. Hand-tighten the filter another 1/2 to 3/4 of a turn.

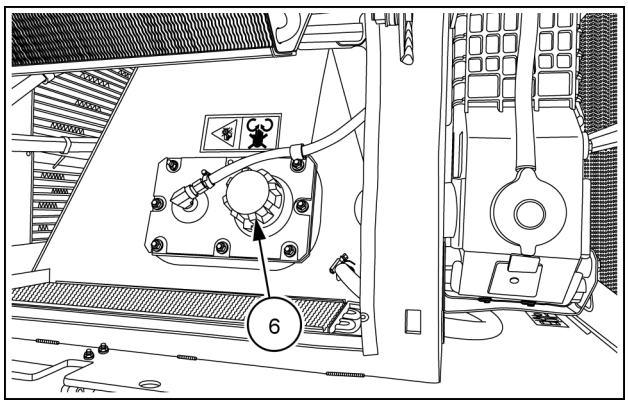
    NOTE: *Never use a special filter wrench to install a new filter. Never overtighten the filter during installation.*



COIL17WEL0417AB 4

19. Close the hydraulic fluid reservoir filler cap **(6)**.
20. Close and latch the inside cover or the air-conditioning condenser (if equipped).
21. Start the engine. Run the engine at low speed (about **1000 RPM**) for about **5 min**.

    NOTE: *Check for leaks around the filters.*



COIL17WEL0438AB 5

Drive belt – (Engine accessories and air-conditioning compressor) (Replacement)

⚠ WARNING

Improper operation or service of this machine can result in an accident.
Read and understand the SAFETY INFORMATION chapter before you perform any maintenance, service, or repairs. Read and understand the specific service procedures for the components you plan to work with before you start servicing the machine.
Failure to comply could result in death or serious injury.

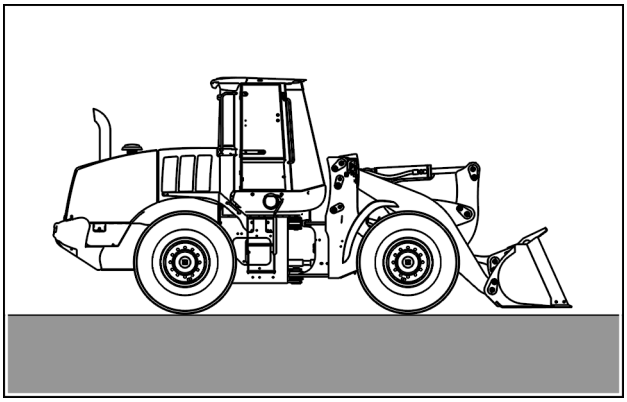
W0138B

NOTICE: *The engine accessories and air-conditioning compressor belt should be replaced every 1000 hours of operation, or more frequently (shorter periods) when you operate the machine in extreme conditions.*

Replacement of the belt for the engine accessories and for the air-conditioning compressor

To replace the engine accessories belt, proceed as follows:

1. Keep all unauthorized personnel clear of the area.
2. Park the machine on a flat, level, firm surface, away from any obstacles.
3. Support the implements on the ground.
4. Set the parking brake.
5. Place the ignition key in the "OFF" position to shut down the engine.
6. Place the safety, transport, and service latch in the latched position. See page **7-7** for additional information.
7. Turn off the master switch. See page **3-33**.
8. Open the engine hood.
9. Loosen the four bolts **(1)** that secure protective cover **(2)** of the engine accessories belt.
10. Remove the flip-up cover.



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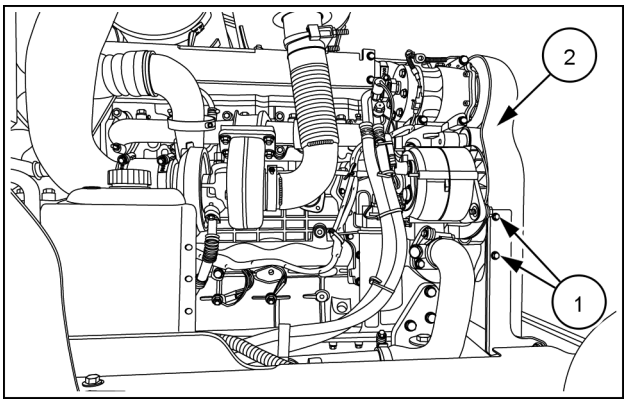
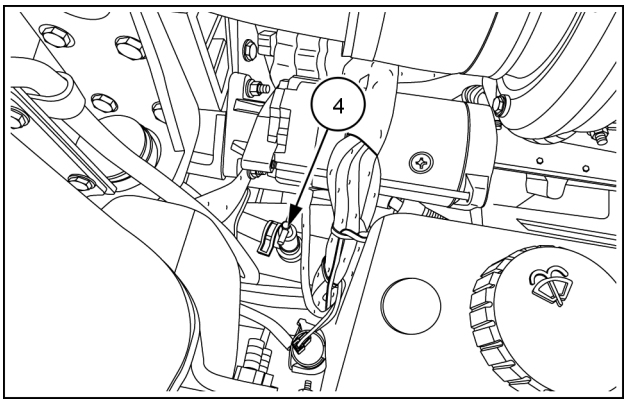


COIL17WEL0420AB 2

18. Open the engine hood.
19. Fully open the hot water circulation valve **(4)** through the cab heating system.

    NOTE: *The valve is located on the left-hand side of the engine compartment, just below the starter motor.*
20. Rotate the heater control selector clockwise to the “ON” position to turn on the cab heater.
21. Position the cab heating control selector in the maximum heating position.
22. Start the engine. Let the engine run for approximately **10 min** at idle speed, so that the cleaning product fully circulates.
23. Turn off the engine. Perform the drain procedure again, as described in steps 8 to 13.
24. After you complete the system cleaning process, discard the fluid with the cleaning product in an appropriate place.

    NOTE: *Handle and dispose of the waste in accordance with environmental regulations, laws and government codes.*
25. Top up the system with clean water through the neck of the radiator.
26. Firmly close the radiator cap.
27. Start the engine. Let the engine run for approximately **5 min** at idle speed, so that the clean water circulates through the system.
28. Turn off the engine. Perform the drain procedure again, as described in steps 8 to 13.



COIL17WEL0395AB 5

Lubrication points

⚠ WARNING

Improper operation or service of this machine can result in an accident.
Read and understand the SAFETY INFORMATION chapter before you perform any maintenance, service, or repairs. Read and understand the specific service procedures for the components you plan to work with before you start servicing the machine.
Failure to comply could result in death or serious injury.

W0138B

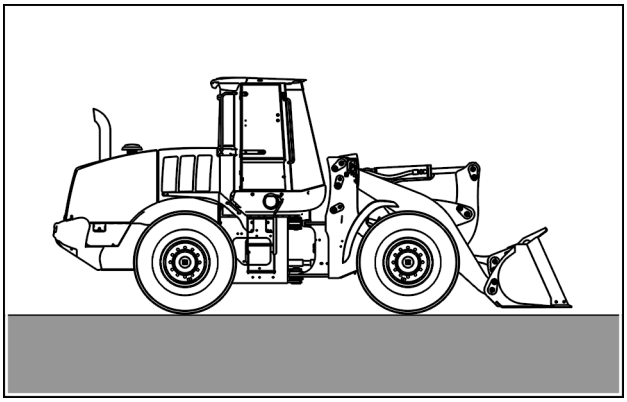
NOTICE: *The grease fittings should be lubricated every 2000 hours of operation or more frequently (shorter periods) when you operate the machine in extreme conditions or in environments with a large concentration of dust, water, or mud. For grease specifications, see page* ***8-1****.*

Lubrication of the machine grease fittings

To lubricate the machine grease fittings, proceed as follows:

1. Keep all unauthorized personnel clear of the area.
2. Park the machine on a flat, level, firm surface, away from any obstacles.
3. Support the implements on the ground.
4. Place the ignition key in the "OFF" position to shut down the engine.
5. Set the parking brake.
6. Make sure that all residual pressure is relieved from the hydraulic circuits.

   NOTE: *For the procedures to release pressure in the hydraulic system, refer to page* ***7-27****.*
7. Place the safety, transport, and service latch in the lock position.
8. Clean around the area to be lubricated before service.
9. Inject grease at the lubrication points indicated below.



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If the temperature is **0 °C** (**32 °F**) or below, connect a battery charger to the battery or run the engine for approximately two (2) hours. This procedure is necessary in order for the recently added water to mix with the electrolyte inside the battery.

Precautions for cold periods

As the air temperature falls, the battery's performance and capacity drops. In fact, the battery will be weakened by the cold and the starter motor will not be engaged as quickly or for as long as during hot periods.

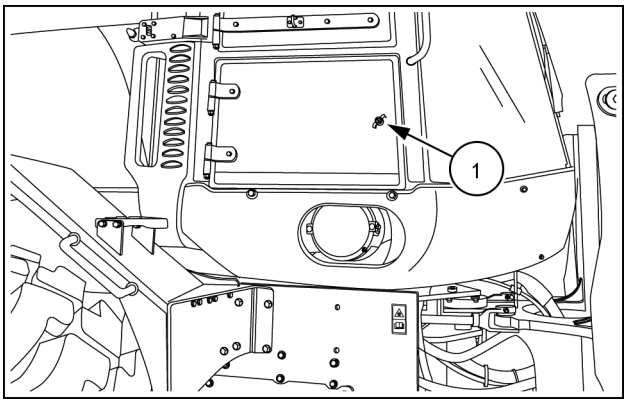
Given that starting a diesel engine is directly dependent on starter motor rotations, at speeds high enough to result in the self-ignition of diesel fuel, the importance of keeping the batteries well charged, in order to start-up the engine during cold weather, cannot be stressed enough.

Breather plugs

Always keep the breather plugs in the correct place and properly tightened. Make sure that the breather holes are unplugged to prevent the gas pressure in the cells breaking the seal or box.

“PRMA”, “PRMB”, and “PRMC” fuse and relay compartment

1. To access the fuse and relay compartment, turn the handle **(1)** counter-clockwise to open the inspection door on the right-hand side of the cab.
2. Loosen the fastening clamp **(2)** to open the access cover **(3)** of the fuse compartment.



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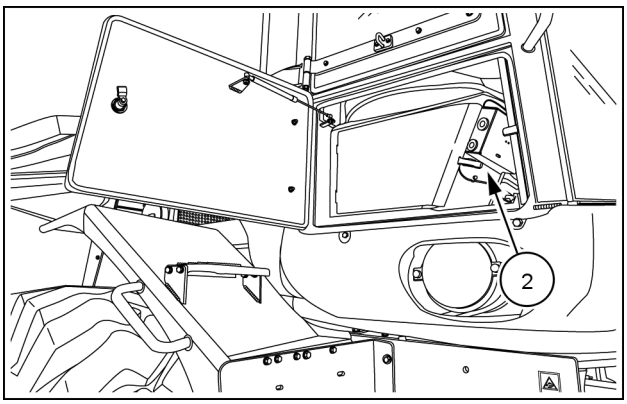

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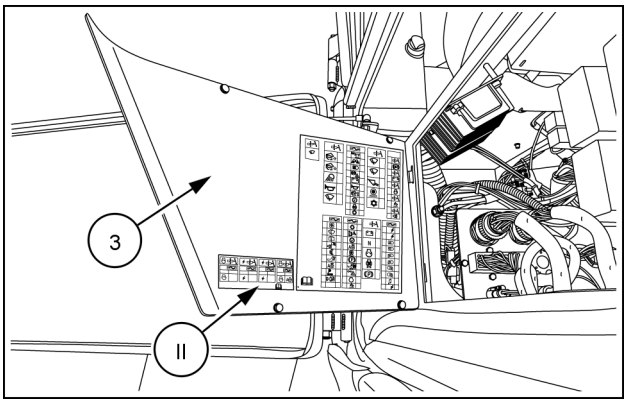

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Removal from storage

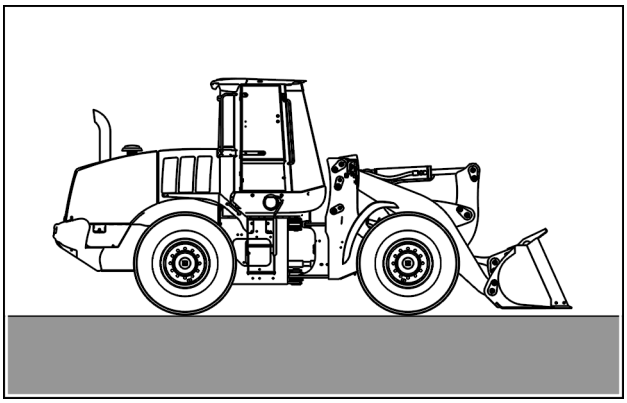
⚠ WARNING

Improper operation or service of this machine can result in an accident.
Read and understand the SAFETY INFORMATION chapter before you perform any maintenance, service, or repairs. Read and understand the specific service procedures for the components you plan to work with before you start servicing the machine.
Failure to comply could result in death or serious injury.

W0138B

Preparation of the machine for return to work

To prepare the machine for return to work after a period of inactivity of 30 days or more, proceed as follows:



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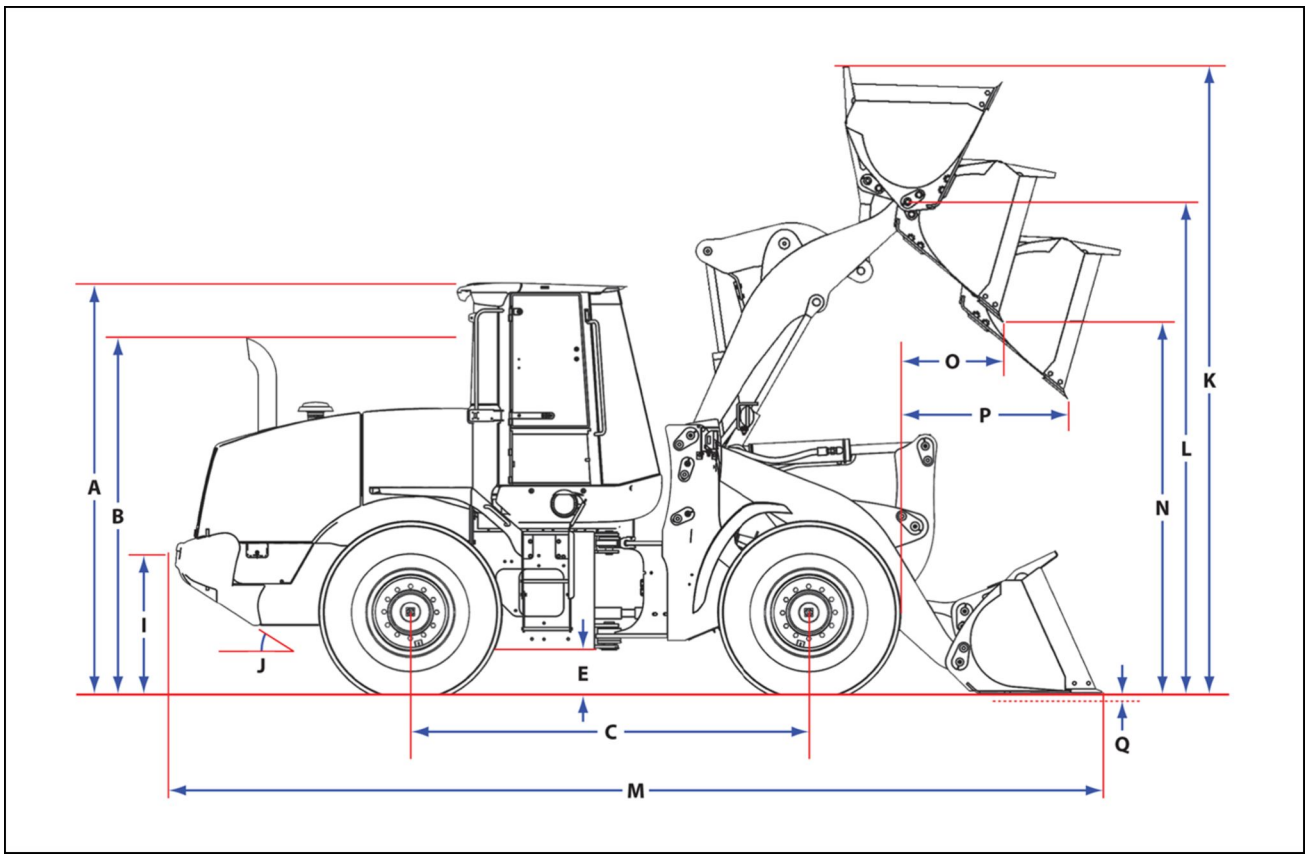
1. Keep the engine shut down with the ignition key in the "OFF" position.

   NOTICE: *Do NOT start the engine until all of the following procedures have been completed:*

2. Keep all unauthorized personnel clear of the area.
3. Check if there are any obstacles near the machine.
4. Keep the parking brake engaged.
5. Keep the safety lever in the locked position.
6. If the cooling system has been drained, top up the radiator with a mixture of clean water and anti-corrosive, or anti-freeze for low temperature regions. See page **7-115**.
7. Check the engine oil level. If necessary, add clean oil. See page **7-67**.
8. Re-install the batteries. Make sure that the batteries are charged.
9. Check the fuel level. If necessary, add clean fuel that is free of water.
10. Replace the fuel filters. See pages **7-84** and **7-83**.
11. Eliminate the air from the fuel system. See “Bleeding air from the fuel system” on **7-83**.
12. Check the tire pressure. See page **7-77**.

Overall dimensions (Models 721E)



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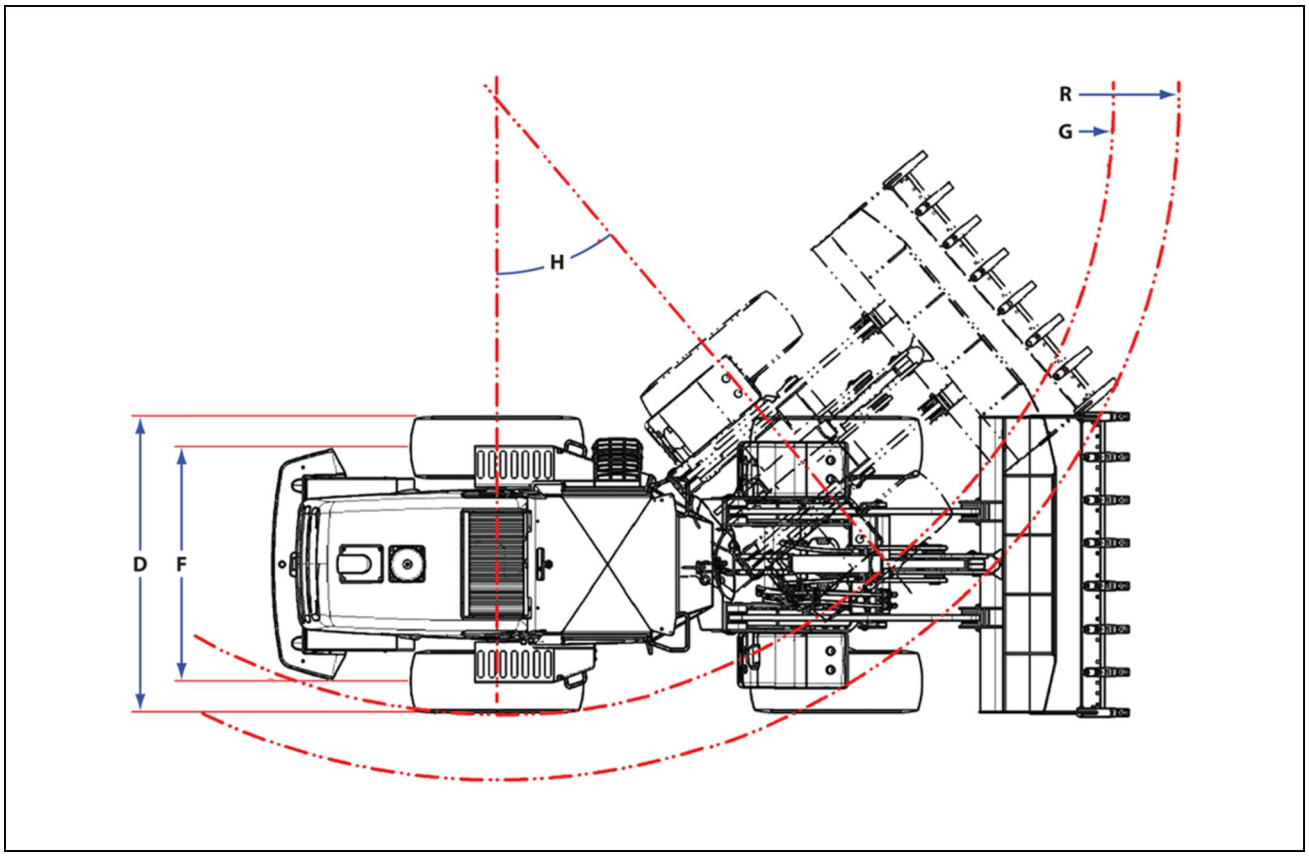

COIL15WEL0211FA 2

Operating data (with XT lift arm)

NOTE: *Machines equipped with 20.5 R 25 Michelin XHA TL tires, cab with ROPS, heater and air conditioning for the cab,* ***1569 kg*** *(****3460 lb****) counterweight, front and rear mudguards, full fuel tank,* ***79 kg*** *(****175 lb****) operator. Specifications as per SAE J732, J1234, J695, J742, J818, ISO14397.*

(2.30 m³ (3.00 yd³) JRB GP bucket with bolt-on cutting edges)

Hydraulic lift capacity (at maximum height)	**6865 kg**
Hydraulic lift capacity (at maximum reach)	**9755 kg**
Hydraulic lift capacity (at ground level)	**13219 kg**
Breakout force (with the tipping cylinder)	**12720 kg**
Bucket weight	**1698 kg**
ISO operating load (Rigid tires)	**5246 kg**
SAE operating load (Deflected tires)	—
Maximum ISO material density (Rigid tires)	**1976 kg/m³**
Maximum SAE material density (Deflected tires)	—
Tipping load, ISO aligned chassis (Rigid tires)	**12152 kg**
Tipping load, SAE aligned chassis (Deflected tires)	—
Tipping load, chassis articulated at **40°** ISO (Rigid tires)	**10492 kg**
Tipping load, chassis articulated at **40°** ISO (Deflected tires)	—
Total operating mass	**14771 kg**

(2.30 m³ (3.00 yd³) JRB GP bucket with teeth and segments)

Hydraulic lift capacity (at maximum height)	**6839 kg**
Hydraulic lift capacity (at maximum reach)	**9728 kg**
Hydraulic lift capacity (at ground level)	**13195 kg**
Breakout force (with the tipping cylinder)	**11587 kg**
Bucket weight	**1682 kg**
ISO operating load (Rigid tires)	**5230 kg**
SAE operating load (Deflected tires)	—
Maximum ISO material density (Rigid tires)	**1979 kg/m³**
Maximum SAE material density (Deflected tires)	—
Tipping load, ISO aligned chassis (Rigid tires)	**12119 kg**
Tipping load, SAE aligned chassis (Deflected tires)	—
Tipping load, chassis articulated at **40°** ISO (Rigid tires)	**10459 kg**
Tipping load, chassis articulated at **40°** ISO (Deflected tires)	—
Total operating mass	**14755 kg**

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