

OPERATOR'S MANUAL

E215C EVO

E245C EVO

Crawler Excavator

Part number 90420950

1st edition English

December 2020

Replaces part number 48044546



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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 NEW HOLLAND 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 NEW HOLLAND 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 NEW HOLLAND CONSTRUCTION Dealer about changes to your machine.
- NEW HOLLAND 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 NEW HOLLAND 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.

2 - SAFETY INFORMATION

Safety rules



NOTICE: This safety alert symbol indicates important safety-related messages in this manual. When you see this symbol, carefully read the message shown and be alert to the possibility of death or serious injury.

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.

Do not allow unauthorized persons to perform maintenance or repairs on the machine.

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 NEW HOLLAND 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 NEW HOLLAND CONSTRUCTION Dealer if you need additional manuals or manuals in other languages. Always keep the manual in the cab, so that you can consult the manual at any time.

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 NEW HOLLAND CONSTRUCTION Dealer about changes to your machine.

Before beginning the day, walk around the machine and check for oil or fluid leaks. Check the levels of hydraulic fluid, transmission fluid, engine oil, and coolant. Replace any damaged parts or install missing parts. Carry out the required lubrication and maintenance as shown in this manual. Clean any dirt and debris from the machine, especially the engine compartment and the air conditioning condenser.

Before you start the engine, sound the horn. Make sure that everyone is at a safe distance from the machine.

Ensure that the parking brake is applied and that all the controls are in neutral before starting the engine.

You must sound the horn to warn people in the work area.

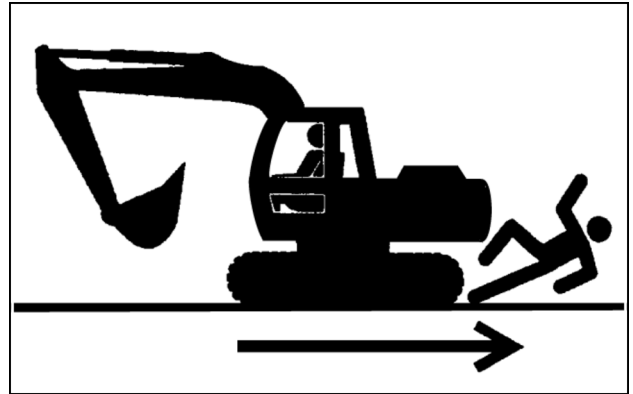
Before night work, make sure all the lights are turned on.

If your machine is equipped with a cab, make sure that all of the windows are clean and that the windshield wipers work correctly.

NOTICE: The safety messages in this manual are intended to illustrate the basic safety procedures of the machine. However, it is impossible for these safety messages to cover all dangerous situations you may encounter. If you have any doubts, consult your direct supervisor prior to operating or performing any maintenance service on the machine.

Safe movement and operation of the machine

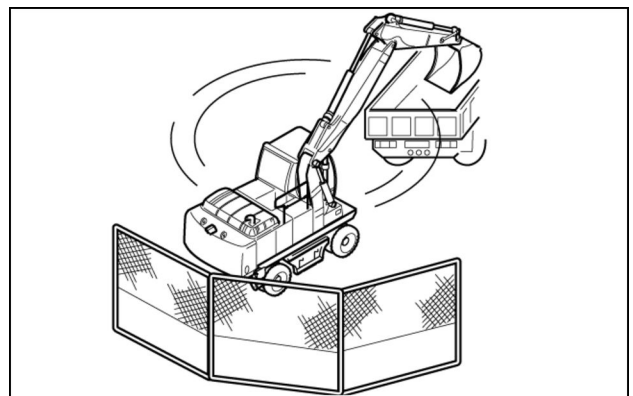
- Be alert of the position of people near the machine.
- Bystanders can be run over.
- Make sure that exposed people in the area of operation are clear of the machine before you move the machine or the machine's implements.
- Sound horn to inform bystanders that the machine is going to be operated.
- If anyone enters the work area, lower the implements or loads to the ground. Stop the machine immediately.



SP0012 1

Keep people away from the work area

- A person may be hit by the moving front implement or by the counterweight, and may be crushed against another object, which may result in serious injury or death.
- Keep all people away from the area of operation and movement of the machine.
- Before operating the machine, set barriers in the side and rear areas of the radius of action of the bucket and the turning radius of the counterweight to prevent unauthorized persons from entering the work area.



SP0029 2

Never move the bucket over a person

- Never lift, move, or tip the bucket above anyone or above a truck cab.
- Serious injury or machine damage may result due to the bucket load dumping or due to collision with the bucket.



SP0030 3

Safety Precautions (Weld works)

⚠ WARNING

Avoid injury!

When welding, always wear proper protective equipment and welding clothing. All persons in the work area must, at minimum, wear welding goggles. Never look directly at the welding arc without welding eye protection.

Failure to comply could result in death or serious injury.

W1178A

NOTICE: Repair works with welding must be performed by a qualified and experienced welder. Appropriate safety regulations should be followed by the personnel involved in the work. The time to perform welding operations depends on the quality and precision of the work. Never make modifications on the machine.

To perform welding operations on the machine (authorized and in accordance with NEW HOLLAND CONSTRUCTION recommendations), proceed as follows:

- Identify all points of fracture or cracking, and the areas in which welding is required.
- Thoroughly clean the areas involved.
- Remove all paint. Inspect the parts with liquid penetrant or a magnetic tool for particles.
- Shut down the engine. Place the ignition key in the "OFF" position to shut down the engine.

NOTICE: After you shut down the machine, wait at least **8 min** to shut down the battery cables or the master switch (if equipped). This time is necessary so that the engine's electronic system (if equipped) can store the settings data in the electronic module.

- Disconnect the batteries and the wires from terminals D+ and B+ of the alternator.
- Disconnect the electrical wiring harnesses from the control modules of the machine.
- Connect the ground cable of the welding machine to the component to be welded.
- Always connect the welding equipment to the frame that is being welded.
- Never connect the welding equipment ground to a component of the hydraulic system.
- Avoid welding at low temperatures, e.g., below **16 °C**. If necessary, warm up the part involved prior to welding.
- Remove the paint from all surfaces before heating or welding. Painted surfaces can generate toxic gases when heated or welded.
- Use appropriate masks or protective goggles.
- Wear appropriate gloves and protective equipment.
- Disconnect the connectors from all control modules of the machine.



SP0064 1

Operating precautions (Stopping the machine)

NOTICE: If you need to stop the machine for any reason, proceed as described below.

- Keep all unauthorized personnel clear of the area.
- Park the machine on a flat, level, firm surface, away from any obstacles, whenever possible.

NOTE: On sloped areas, park the machine with the track securely blocked. Position the machine perpendicular to the slope of the terrain. Make sure that there is no danger of unexpected movement.

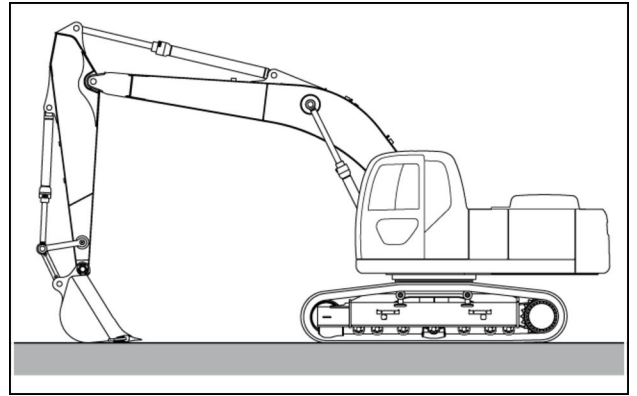
- Park the machine in an area outside of the work site and without traffic, whenever possible.

NOTE: If that is not possible, provide appropriate flags, barriers, lighting and other appropriate signals, as required, to properly warn drivers traveling through the location.

- Support the implements on the ground. Align the upper structure with the tracks in order to allow the entry or exit from the cab.
- Put the control levers in the NEUTRAL position.
- Shut down the auto throttle switch.
- Put all switches in the off position.
- Let the engine run at idle speed for **5 min.**
- Place the ignition key in the "OFF" position to shut down the engine.

NOTE: Never leave the machine unattended with the engine running.

- Set the park brake.
- Place a do not operate tag.
- Place the safety lever in the "Lock" position.
- Before leaving the machine, close the windows, the cab door and all machine component access doors.



SP0018 1

Roll Over Protection Structure (ROPS)

DANGER

Crushing hazard!

Do not change the Roll Over Protective Structure (ROPS) in any way. Unauthorized changes such as welding, drilling, or cutting will weaken the ROPS and decrease your protection. Have an authorized dealer replace the ROPS if damage of any kind occurs. DO NOT TRY TO REPAIR THE ROPS.

Failure to comply will result in death or serious injury.

D0037A

Cab protection

NOTE: Your machine is equipped with certified safety systems to protect the operator's cab, ROPS and FOPS.

The ROPS is a rollover protective structure.

The FOPS is a falling object protective structure. The FOPS may be a cab frame or a two-posted or four-posted frame used for the protection of the operator to minimize the possibility of serious injury.

The protective structure, the mounting brackets, and the hardware on the machine are integral parts of the ROPS and FOPS. The protective structures are special safety components of your machine.

Use of the ROPS and FOPS is essential when you operate in areas where there is a danger of falling rocks or debris, or when there is a danger of frontal impacts with objects that could penetrate the operator's cab. If the machine was not originally equipped with ROPS and FOPS cab protection, you can contact an Authorized NEW HOLLAND CONSTRUCTION Dealer to request installation of the cab protection.

ATTENTION: Do NOT connect any device to the protective structure for purposes of lifting the cab or towing the machine. DO NOT weld, drill or attempt to straighten or repair protection structures. Any type of modification could influence the structural integrity of the safety system, jeopardizing its effect, with serious consequences for the operator, in case of collision, falling objects or landslides.

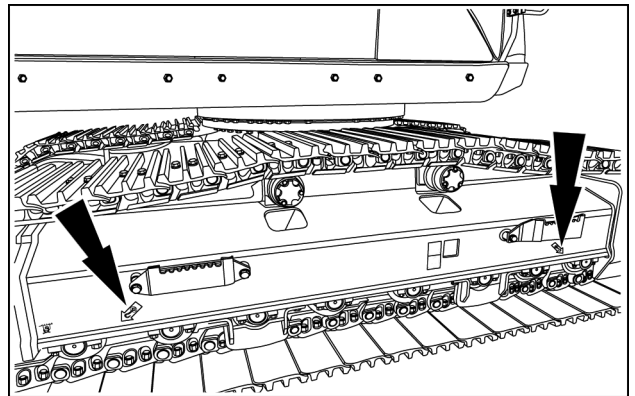
ATTENTION: After a fire, corrosion or collisions, any possible damage to the cab protective structure must be carefully evaluated by specialized and qualified technicians. In any case, all damaged parts must be replaced by genuine spare parts, so that the original conditions are reinstated. Contact an Authorized NEW HOLLAND CONSTRUCTION Dealer to check the proper function of the cab structure or if you need to replace all or parts of the structure.

2 – “Hoist Point” decal
Use these points to hoist and lift the machine for transport.
Failure to comply with this recommendation may result in damage, serious injuries, or even death.
Quantity : 4
47758107



47758107_A2 7

This decal is located on the sides of the track frame.



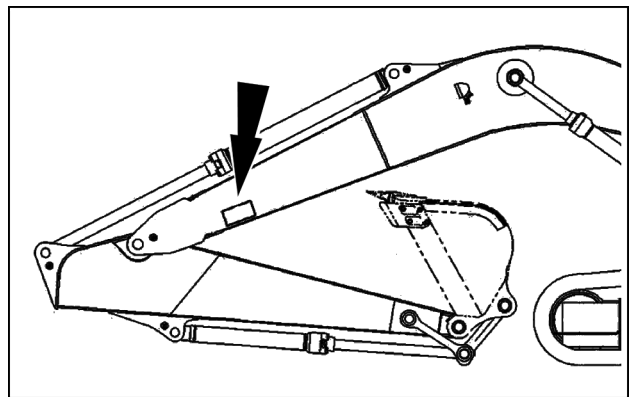
COIL16CEX0020AB 8

3 – “Crush Hazard/Keep clear of machine” decal
Ensure that any person near the work site is outside the machine operating area before starting the engine or operating the attachments.
Sound the horn before starting the engine.
Failure to comply with this recommendation may result in damage, serious injuries, or even death.
Quantity : 2
47759461



47759461_B 9

This decal is located on the boom, on the right-hand and left-hand sides, near the arm link.



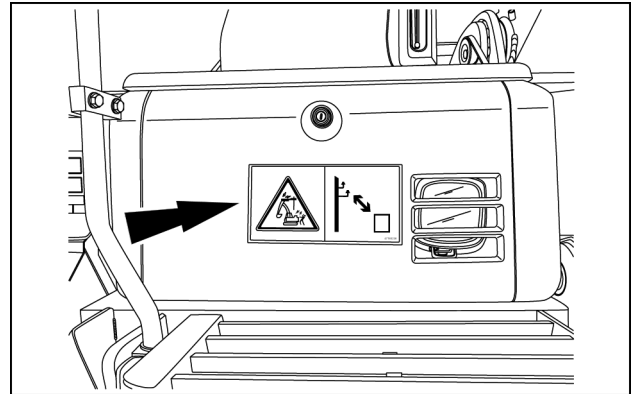
COIL15CEX0042AB 10

15 – “Danger with electrical grid” decal
 This decal shows that you should not work near overhead power lines, unless you first check to verify that all necessary measures have been taken to comply with the minimum distances.
 Failure to comply with this recommendation may result in serious injuries or death.
 Quantity :1
 47760236



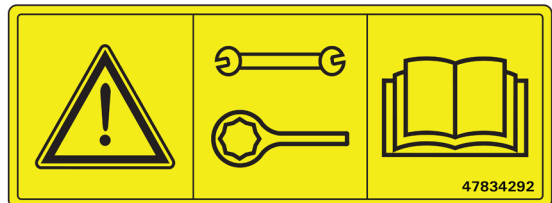
47760236_A 34

This decal is located on the outside of the toolbox cover



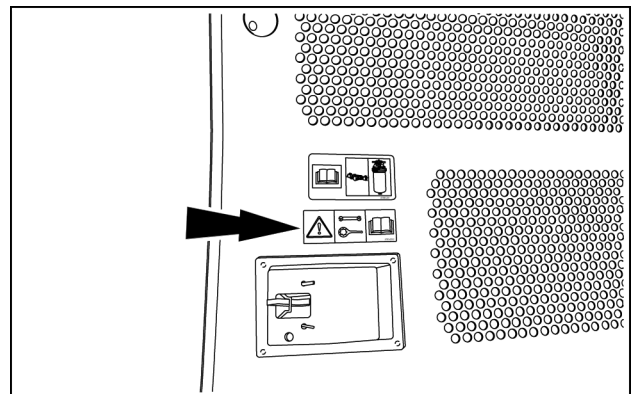
COIL16CEX0197AA 35

16 – “Fuel filter replacement/See Operator's Manual” decal
 This decal indicates that the fuel filter must be replaced, after you read the operator's manual.
 Use the tool correctly at the time of replacement.
 Quantity :1
 47834292



47834292_A 36

This decal is located on the inside of the access door for the hydraulic pumps and fuel filters compartment.



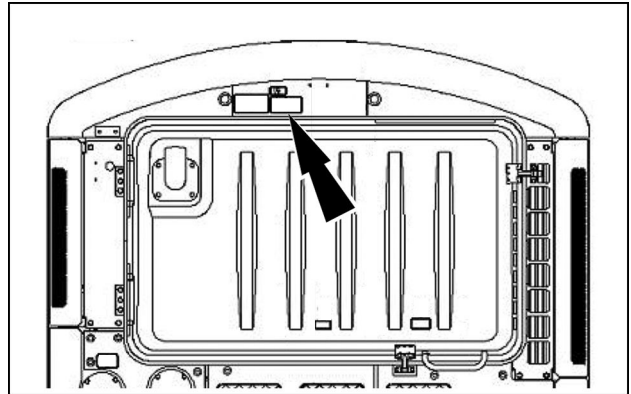
COIL16CEX0187AA 37

32 – “Fall hazard” decal
 This decal shows that a safety distance must be maintained during movements on the upper structure frame
 Non-compliance with this instruction may result in serious injuries.
 Quantity :1
 47834296



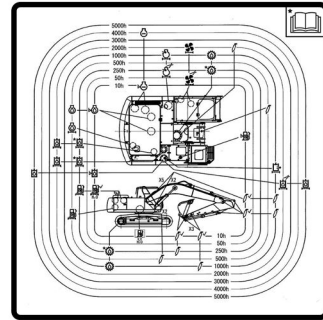
47834296_A 68

This decal is located over the rear counterweight on the rear of the machine, to the side of the engine hood.



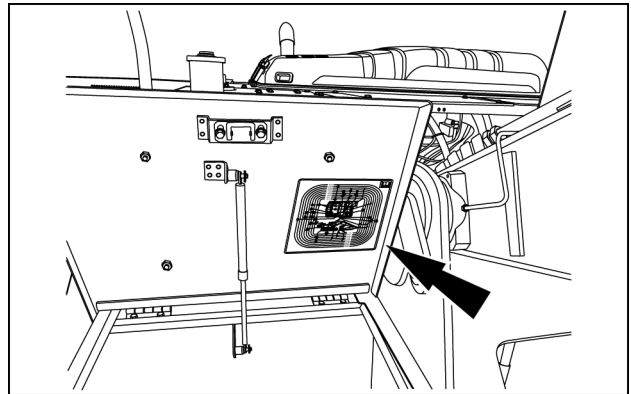
COIL15CEX0043AB 69

33 – "Maintenance information" decal
 This decal displays the machine maintenance and lubrication intervals.
 Quantity :1
 47925978



47925978_A 70

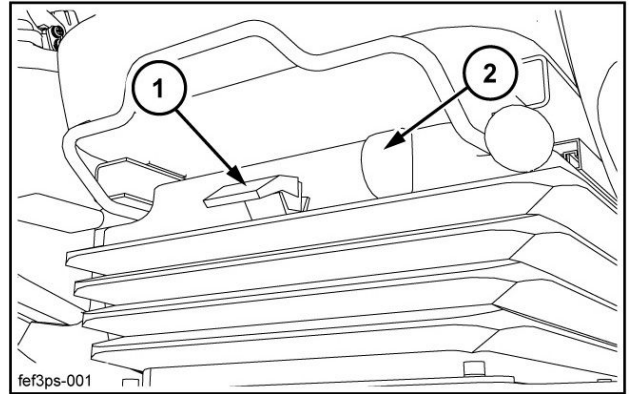
This decal is located on the inside of the toolbox cover.



COIL16CEX0201AA 71

Combined height and weight adjustment

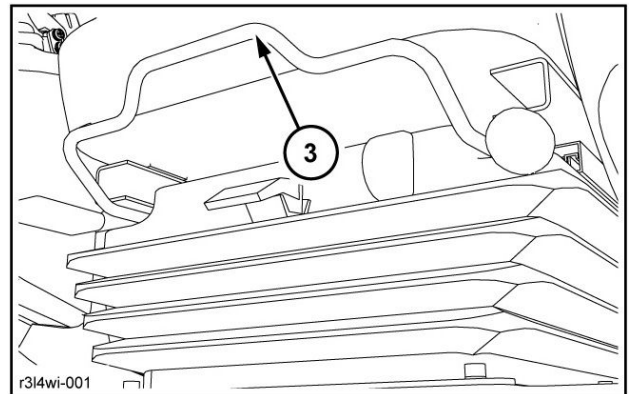
Lower the handle (1) to decrease the rigidity of the suspension. Raise the lever (1) backward to obtain harder suspension. The indicator (2) must be green when the operator is sitting on the seat.



FEF3PS-001 2

Fore/aft adjustment

Hold the control (3) in the raised position, slide the seat to the required position and then release the control.



R3L4WI-001 3

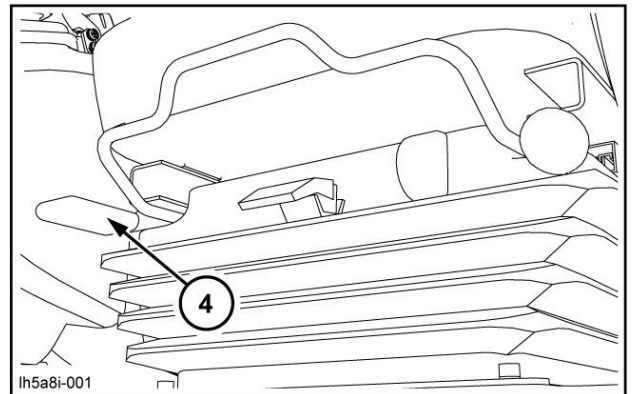
Seat back angle adjustment

⚠ WARNING

Unexpected machine movement!
Before tilting the back of the seat forward, you must raise the armrests. This prevents accidental operation of the control levers.
Failure to comply could result in death or serious injury.

W0210A

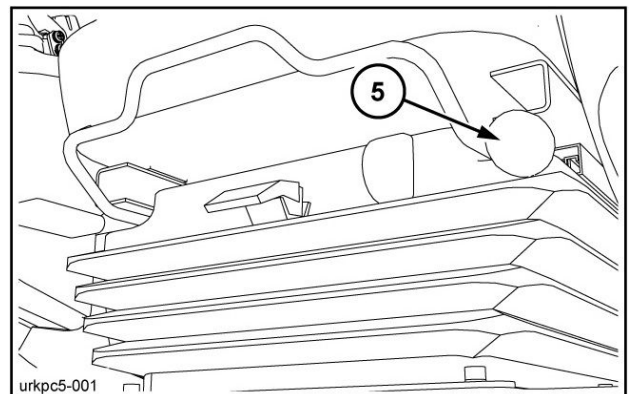
To adjust the seat back angle, hold the lever (4) in the raised position. Move with the seat-back to the desired position and then release the lever.



LH5A8I-001 4

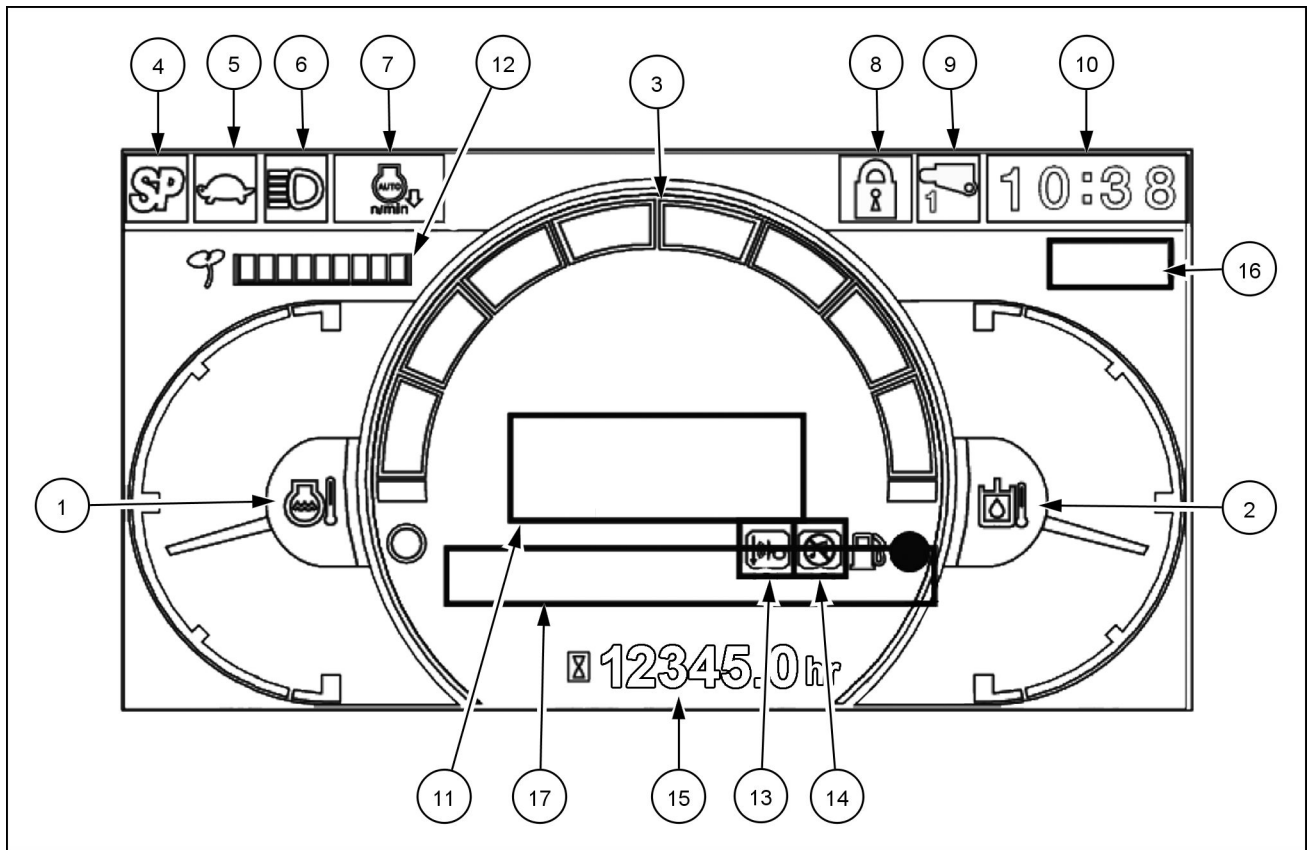
Lumbar support adjustment

Use the inflation bulb (5) to inflate the lumbar support. Press the button on the tip of the inflation bulb (5) to deflate the lumbar support.



URKPC5-001 5

System monitor / Function control panel



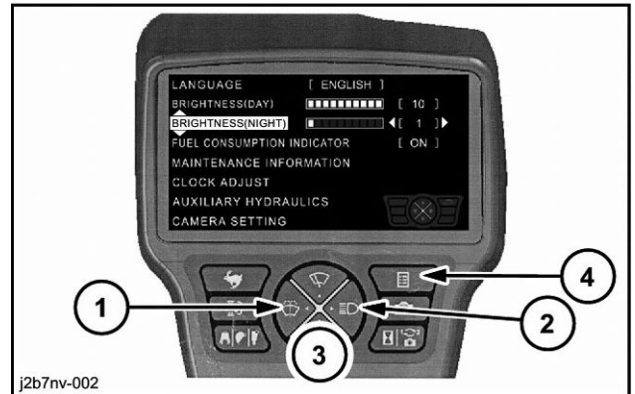
COIL15CEX0013FA 1

1. Engine coolant temperature gauge
2. Hydraulic fluid temperature indicator
3. Fuel level gauge
4. Work mode icon
5. Travel mode icon
6. Work lamp
7. Automatic idle speed selection and automatic stop
8. Anti-theft protection
9. Displays the selected attachment
10. Clock display
11. Auxiliary hydraulic configuration screen
12. ECO gauge
13. Automatic hydraulic pressure boost icon
14. Mute icon
15. Hour meter
16. Fuel consumption sight glass and DTC (fault diagnosis code)
17. Message screens

Brightness (night)

1. Push button (1) or (2).
2. When you push the button (1), the level decreases. When you push the button (2), the level increases.
3. Push button (3) to access the following menu.

If (4) is pushed, the display returns to the machine information screen (original screen).

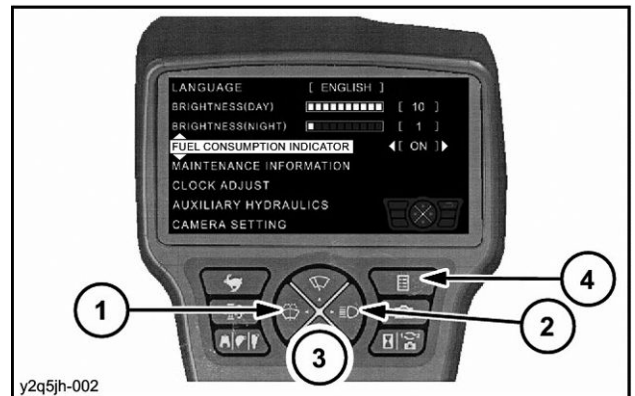


J2B7NV-002 4

Fuel consumption indicator

1. Push button (1) or (2).
2. Select item "On" or "Off".
3. Push the button (3) to access the following menu.

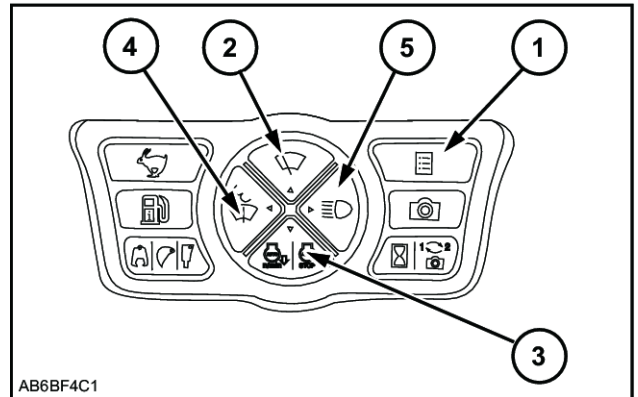
If (4) is pushed, the display returns to the machine information screen (original screen).



Y2Q5JH-002 5

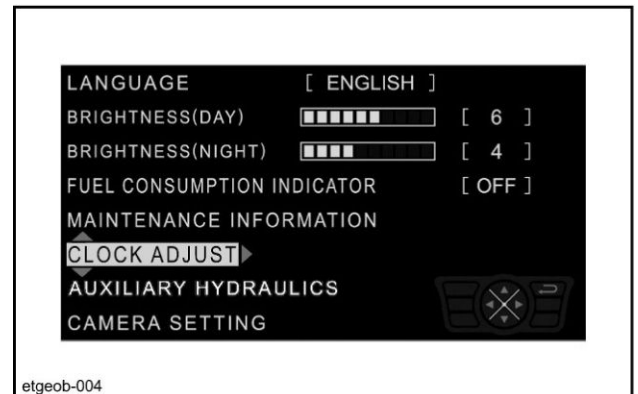
Clock adjustment

1. Press the menu button (1) to display the menu screen.



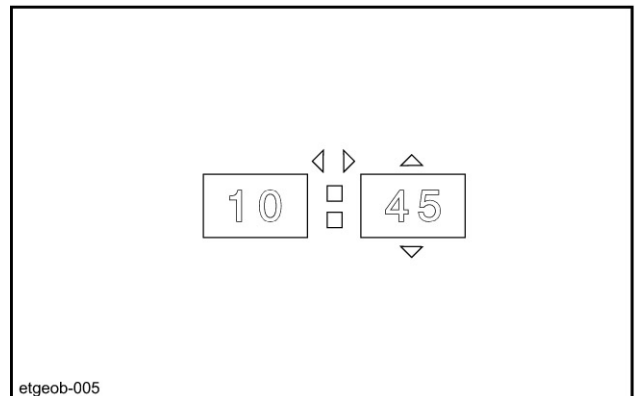
ETGEOB-004 1

2. Select "Clock adjust" in the menu screen by pressing buttons (2) to (3) and enter by pressing button (5).



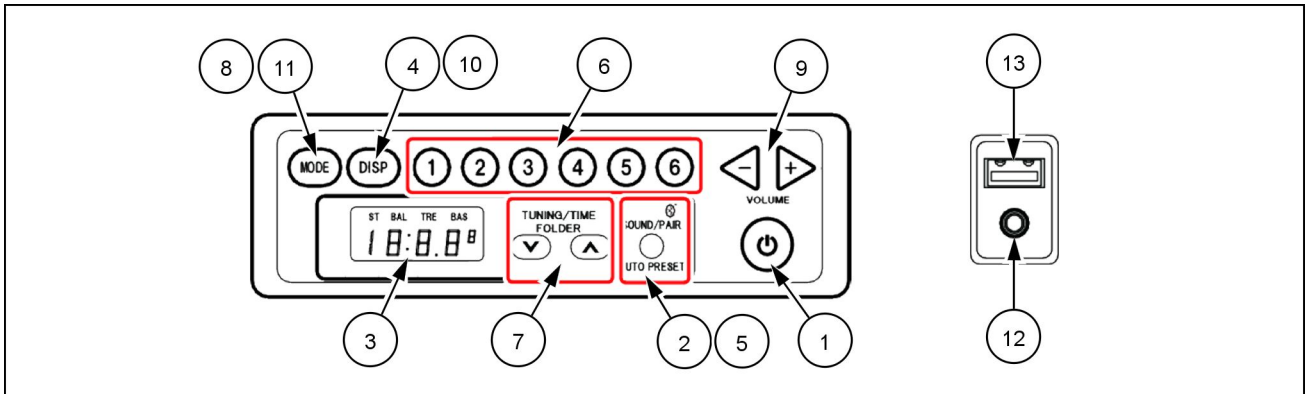
ETGEOB-004 2

3. Set the time on "Hour : Minutes" by pressing buttons (2) to (3) and (4) to (5) and return to the menu screen by pressing (1).



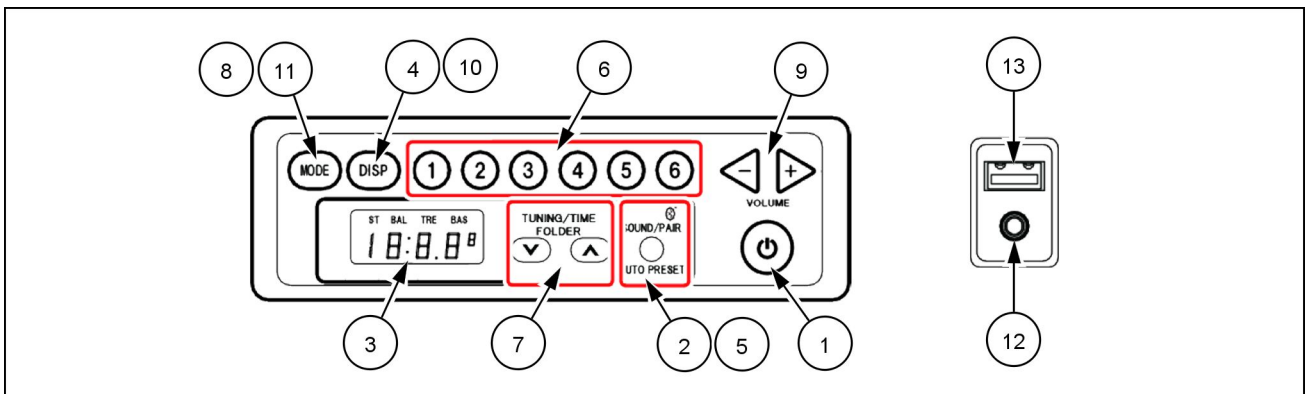
ETGEOB-005 3

Radio



CX3316CEX0000EA 1

1. Power button (POWER)
Push the "POWER" button to turn on the radio. The band and then the frequency are displayed. Push again the "POWER" button to turn off the radio. The clock is displayed.
2. Sound adjustment (SOUND)
Push the "SOUND" button to switch BAL → TRE → BAS.
- In BAL state: push the Δ/∇ tuning button (7) to adjust the balance.
Push the Δ UP button to increase the right speaker volume. Push the ∇ DOWN button to increase the left speaker volume. The volumes can be increased up to a maximum of level 7.
- In TRE state: push the Δ/∇ tuning button (7) to regulate the treble.
Push the Δ UP button to increase the treble. Push the ∇ DOWN button to decrease the treble. The treble can be increased up to a maximum of level 7.
- In BAS state: push the Δ/∇ tuning button (7) to regulate the bass.
Push the Δ UP button to increase the bass. Push the ∇ DOWN button to decrease the bass. The bass can be increased up to a maximum of level 7.
Push the "SOUND" button again in BAS state to end the sound adjustment.
3. Display
The display shows the clock, radio frequency, band name, and operation mode.
4. Clock/Frequency button (DISP)
Push the "DISP" button to show: "Frequency" → "Clock" → "Band name".
Each push of the button changes what is shown. The display returns automatically to the frequency view if no button is pushed within 1 second.
5. Auto store (SOUND/AUTO PRESET)
Push the button to store six radio stations in the memory for the selected band (FM1, FM2, AM).
6. Choice of preset radio stations (PRESET STATION)
Push the button (1-6) to tune the radio to the stored station on the selected band (FM1, FM2, AM).
To store a radio station in the memory, tune the radio to the station desired and hold down one of the buttons (1-6).
7. Tuning button (TUNE)
Push and hold the "TUNE" button to automatically tune the radio to the next station. To stop the tuning, release and push the button again.
Push the Δ button to increase the frequency. Push the ∇ button to decrease the frequency. Hold down either button to change the frequency continuously.
8. Mode switch button (MODE)
Push the button to switch AM → FM1 → FM2 → AUX → USB → BT.



CX3316CEX0000EA 2

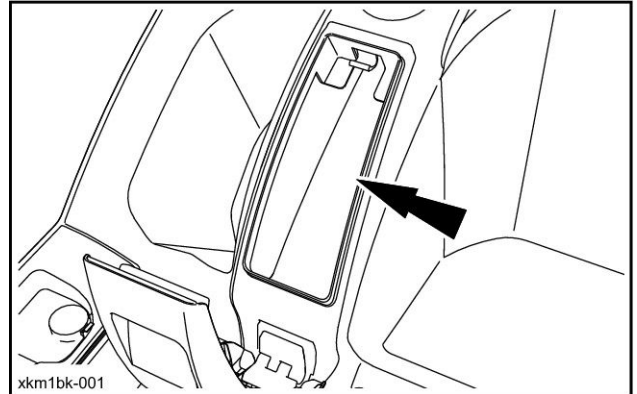
9. Volume adjustment buttons (VOL \leftarrow , VOL \rightarrow)

Refrigerated/heated compartment

Located on the right-hand side, behind the operator's seat.

This compartment, associated with the air-conditioning system, is designed to store different cold or hot products, drinks, etc.

NOTE: *This compartment has thermal insulation. The compartment may not cool down or heat up, in accordance with the conditions.*

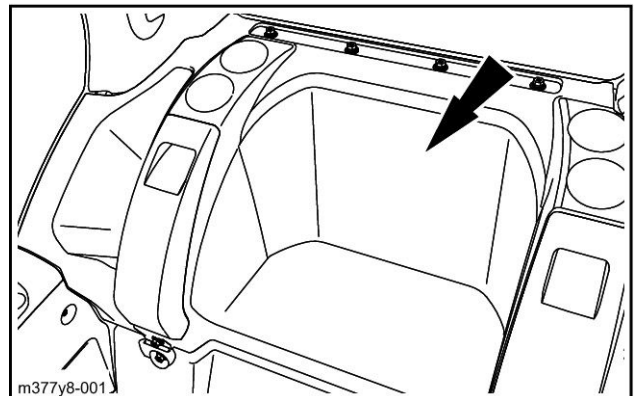


XKM1BK-001A 1

Storage compartment

Located behind the operator's seat, this compartment is used to store various objects.

NOTICE: *Check that the weight of the object stored is less than 10 kg (22.0 lb).*



M377Y8-001A 1

Lower panels

⚠ WARNING

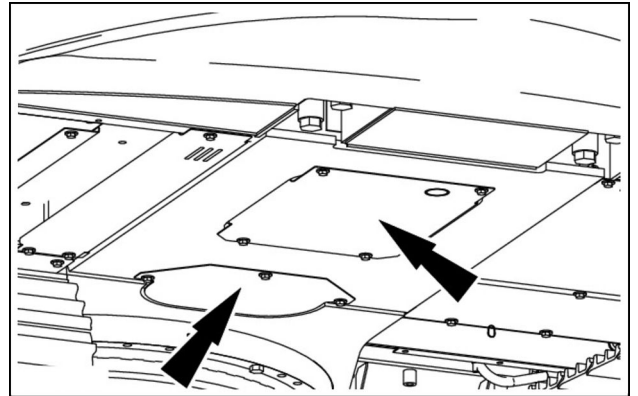
Moving parts!

Make sure the lower panels are properly closed before driving the machine.
Failure to comply could result in death or serious injury.

W0910A

Located under the upper structure frame, these panels provide access to certain machine components.

NOTICE: Do not run the machine with the panels removed.



D5CW65-001A 1

Windshield washer reservoir

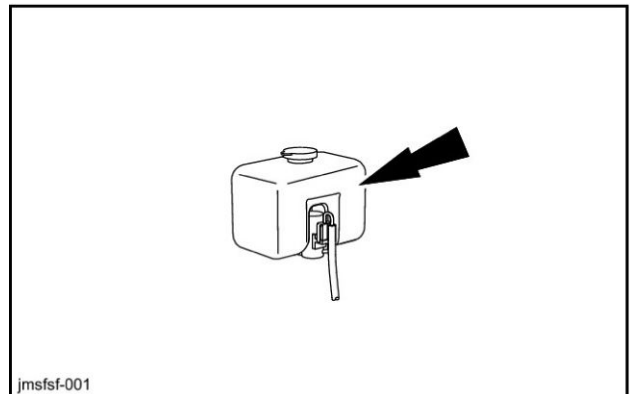
This reservoir, located in the rear left-hand compartment, is equipped with an electric pump which is operated from the control panel.

NOTICE: Never operate the windshield washer control when the reservoir is empty. This could cause damage to the electric pump.

Remove the cap to add windshield washing fluid.

NOTE: In cold weather, add anti-freeze to the windshield washer water.

The reservoir can be lifted out of its support.



jmsfsf-001

JMSFSF-001Z 1

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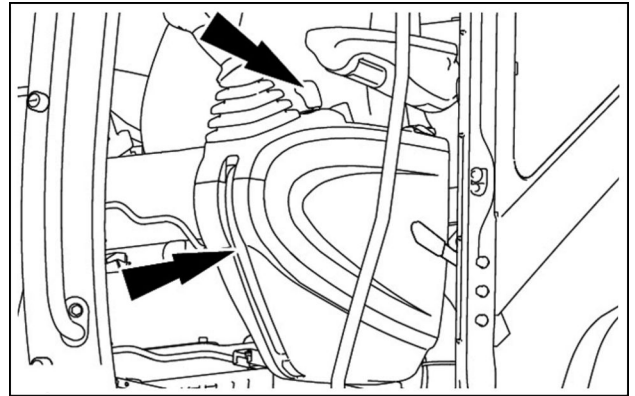
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Starting the engine

NOTE: Refer to page 6-124 if you have to start the engine using booster batteries.

1. Take up position correctly in the operator's seat with the seat belt correctly fastened.
2. Make sure the function cancellation lever is in the central position (safety bar in inward position).



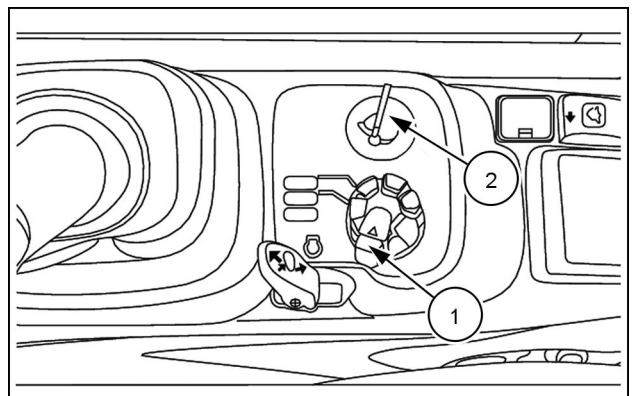
HISNJU-003 1

3. Make sure the engine throttle button (1) is in low idle position.

NOTE: In cold weather, leave it in half-way position.

4. Put the ignition key (2) in the "ON" position.
5. If necessary, enter the anti-theft code.

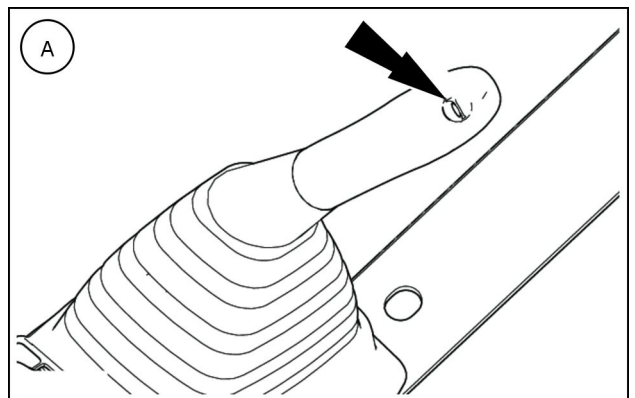
NOTE: In cold weather, the "Engine pre heat" icon appears on the systems display panel.



CX3316CEX0100AA 2

6. Sound the horn button on the left-hand control lever to give warning of your intention to start the machine.

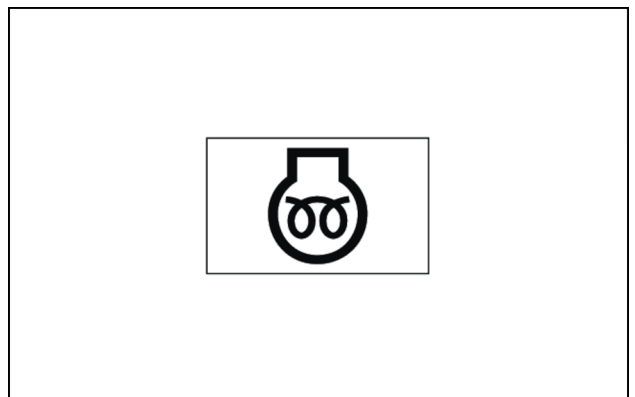
NOTE: (A) Left-hand control lever (Standard Model).



76D19D8C 3

7. When the icon disappears, turn the ignition key to the "Start" position.
8. Release the key as soon as the engine starts to turn.
9. If the engine stops, wait about a minute and perform the operation again.

NOTICE: Do not operate the starter motor for more than ten seconds at one time. Do not operate the starter motor when the engine is running.



HISNJU-005 4

Handling the machine

⚠ WARNING

Improper operation or service of this machine can result in an accident.
Assign a supervisor to direct worksite operations. Agree on all safety measures, procedures, and suitable hand signals.
Failure to comply could result in death or serious injury.

W0287A

⚠ WARNING

Crushing hazard!
The lifting systems must be operated by qualified personnel who are aware of the correct procedures to follow. Make sure all lifting equipment is in good condition, and all hooks are equipped with safety latches.
Failure to comply could result in death or serious injury.

W0256A

⚠ WARNING

Crushing hazard!
This operation may be dangerous. You are advised to wear suitable clothing and respect all relevant safety messages.
Failure to comply could result in death or serious injury.

W0283A

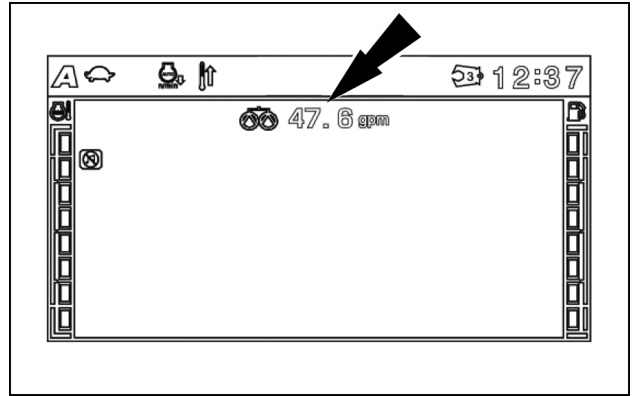
⚠ WARNING

Hazard to bystanders!
ALWAYS make sure the work area is clear of bystanders and domestic animals before starting this procedure. Know the full area of movement of the machine. Do not permit anyone to enter the area of movement during this procedure.
Failure to comply could result in death or serious injury.

W0245A

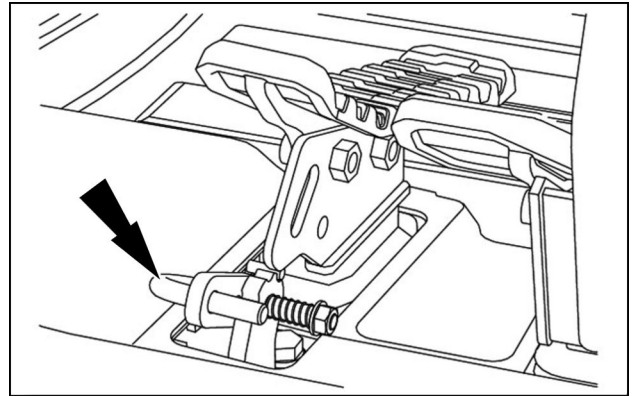
4 - OPERATING INSTRUCTIONS

NOTE: To prevent failure or damage to the tool, make sure that you select the correct circuit configuration and flow rate and pressure for the tool.



COIL15CEX0014AC 12

5. Unlock the pedal.

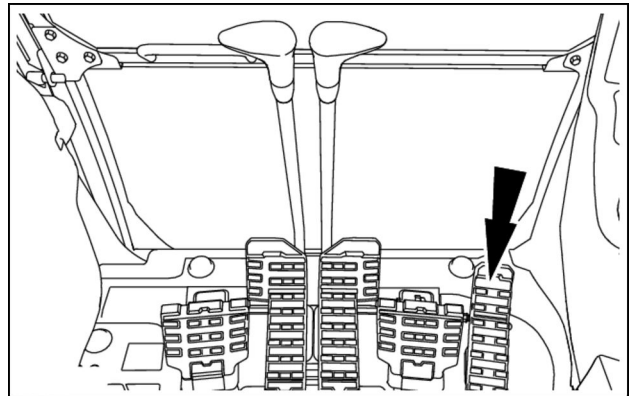


VSLY18-004 13

6. Use the control pedal to operate the concrete crusher.

NOTICE: in bucket mode, do not carry out operation using auxiliary line. If you do that the warning message "Auxiliary set-up required" will be displayed with alarm sound. Stop operation immediately and carry out auxiliary set-up

NOTE: To prevent failure or damage to the tool, make sure that you select the correct circuit configuration and flow rate and pressure for the tool.



VOHLGR-005 14

Recovery transport

Towing

⚠ WARNING

Misuse hazard!

Towing is a delicate maneuver that is always carried out at the risk of the user. The manufacturer's warranty does not apply to incidents or accidents that occur during towing. Where possible, carry out the repairs at the site.

Failure to comply could result in death or serious injury.

W0286A

⚠ WARNING

Hazard to bystanders!

The operator must be the only person on the machine when towing. Make sure that nobody else is on the machine or within its working range.

Failure to comply could result in death or serious injury.

W0259A

NOTICE: Towing must always be done in alignment with the undercarriage.

NOTICE: The machine must be towed very slowly, over a short distance and only if it is really unavoidable.

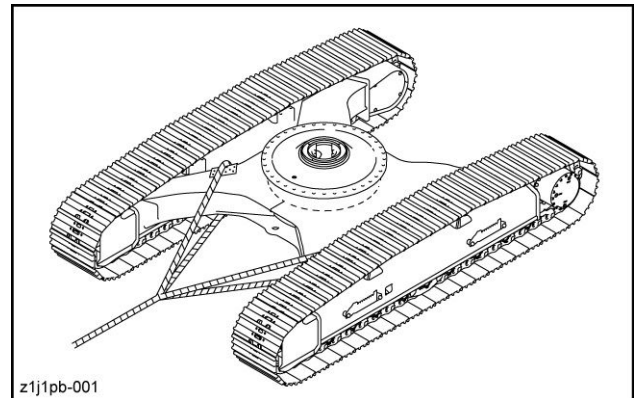
Towing the machine

First, make sure that it can be towed without risk of further damage.

As far as possible try to carry out repairs on spot or consult your NEW HOLLAND CONSTRUCTION Dealer.

If the machine is bogged down for example, it must be towed as follows:

1. Make sure that the shackles, chains and tackle are in perfect condition and strong enough to move the load.
2. Attach the shackles, chains and tackle to the undercarriage taking care to protect any salient angles.
3. Pull the machine without jerking, very slowly and in alignment with the undercarriage.



z1j1pb-001

Z1J1PB-001 1

Organic Acid Technology (OAT) coolant

NEW HOLLAND CONSTRUCTION recommends use of Organic Acid Technology (OAT) coolant solution that meets the specifications outlined in the CNH Industrial material specification **MAT3724**.

Inorganic Acid Technology (IAT) coolant can also be used by following the “Changing coolant types” procedure below. The coolant must meet the specifications outlined in the CNH Industrial material specification **MAT3720** or **ASTM D6210** pre-mix coolant requirements.

Use distilled or demineralized water for diluting when using coolant concentrate. The optimum coolant to water concentration is 50/50. This concentration will protect the cooling system to **-37 °C (-35 °F)**. Do not exceed **60%** by volume ethylene glycol-based coolant. The heat dissipation and antifreeze properties may otherwise be negatively affected. You can use a refractometer to check the concentration level. If distilled or demineralized water is not available, use water for dilution with the following properties:

Property	Limit Maximum
Total Solids	340 ppm
Total Hardness	170 ppm
Chloride (Cl)	40 ppm
Sulfate (SO ₄)	100 ppm
Acidity pH	5.5 to 9.0

NOTICE: NEVER mix OAT coolant with IAT coolant. Mixing of different coolant brands is not recommended. Under no circumstances should you top off a cooling system with only water. You should not use Supplemental Coolant Additives (SCA) when using **MAT3724** OAT coolant. Contact your NEW HOLLAND CONSTRUCTION dealer for approved additives and coolant analysis test package information.

Service intervals

See **6-19** for the proper service intervals. Drain and flush the cooling system at the recommended service interval, then fill with fresh coolant.

NOTICE: Service intervals must be reduced by **50%** when using IAT (**MAT3720**), or ethylene glycol or propylene based (**ASTM D6210**) coolants.

Changing coolant types

To change coolant from OAT coolant to IAT coolant (or vice versa):

1. Empty the engine cooling system by draining the coolant into a suitable container.
2. Fill the system with distilled or demineralized water.
3. Start the engine and run the engine for at least **30 min**.

NOTE: Make sure that you activate the heating system (if equipped) to circulate fluid through the heater core.

4. Repeat Steps 1 to 3 for a total of two washes.
5. Fill the system with IAT coolant (or OAT coolant).
6. Operate the engine until it is warm. Inspect the machine for leaks.
7. If you are changing to OAT coolant, then attach the decal (CNH Industrial part number 90393154) to indicate the use of OAT coolant in the cooling system.

Definitions

Inorganic Acid Technology (IAT) coolant:

A coolant that relies on inorganic inhibitors such as silicates, nitrites, and phosphates for corrosion and cavitation protection

Organic Acid Technology (OAT) coolant:

A coolant that relies on inhibitors such as organic acid salts for corrosion and cavitation protection.

Maintenance planning

Maintenance chart

Maintenance action	Replace				Drain fluid				Page no.
	Verify				Grease				
	Cleaning				Change fluid				
	Bleed				Adjust				
AS REQUIRED									
Fuel system (Air bleed)	x								6-21
Fuel reservoir filter (Clean)	x								6-22
First stage engine filter (if equipped) (Check and clean)	x								6-23
Air-conditioning compressor drive belt (Check the tension)		x							6-24
Tracks (Clean)	x								6-25
Tracks (Check and adjustment of tension)		x							6-27
Cylinders (Check)		x							6-29
Bucket teeth (Check)		x							6-30
Bucket teeth (Replacement)			x						6-31
Bucket (Replacement)			x						6-37
Gas spring (Check)		x							6-39
EVERY 10 HOURS OR DAILY									
Fuel pre-filter (Drainage)				x					6-41
Engine oil (Level check)		x							6-42
Engine coolant (Level check)		x							6-44
Hydraulic fluid (Level check)		x							6-45
Fuel tank (Water and sediment drainage)				x					6-46
Radiator and coolers (Check)		x							6-47
Initial 50 hours									
Tracks – Shoes (Check and adjustment of torque in initial period)		x							6-48
Special torques (Check in initial period)		x							6-48
EVERY 50 HOURS OR WEEKLY									
Cab air filter (Cleaning)	x								6-49
Grease points					x				6-51
Initial 250 hours									
Hydraulic fluid pilot filter (Replacement in initial period)			x						6-53
Hydraulic fluid return filter (Replacement in initial period)			x						6-53
Swing reducer oil (Change in initial period)						x			6-53
Travel reducer oil (Change in initial period)						x			6-53
EVERY 250 HOURS									
Fuel transfer pump (Check)		x							6-54
Engine air filter (Check and clean)	x								6-55
Engine air filter (Check)		x							6-58
Hydraulic reservoir (Water and sediment drainage)				x					6-59
Swing reducer oil (Check the level)		x							6-61
Travel reducer oil (Check the level)		x							6-63
Tracks – Shoes (Check and adjust the torque)		x							6-65
Tracks – Rollers and tensioner wheels (Check)		x							6-67
Battery (Check the charge)		x							6-68
Battery electrolyte (Check the level)		x							6-69
Special torques (Check)		x							6-70
EVERY 500 HOURS									
First stage fuel filter (Replacement)			x						6-71
Fuel filter (Replacement)			x						6-72

Cylinders (Checking)

⚠ 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.

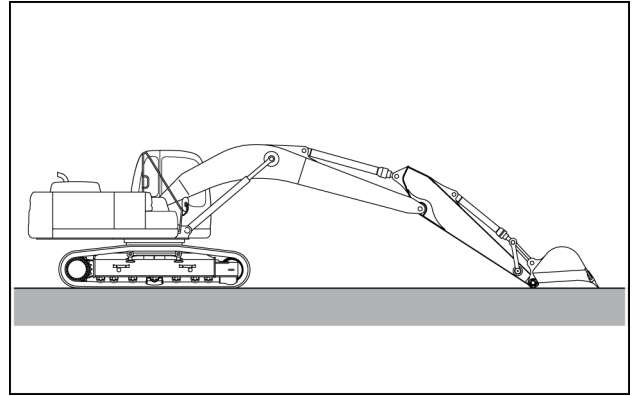
W0138B

NOTICE: 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.

Cylinder checks

To check the cylinders, 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. Position the arm, boom and bucket or implement as shown.
4. Set the park brake.
5. Place the safety lever in the function lockout position.
6. Place the ignition key in the "OFF" position to shut down the engine.
7. Remove the ignition key.
8. Put the safety lever in the locked position.
9. Clean the cylinder rod to be checked.
10. Operate normally for five or ten minutes.
11. Extend the cylinder rod.
12. Carry out the leak test.



NHC0257 1

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 an Authorized NEW HOLLAND CONSTRUCTION Dealer.
Leaking	Each time the rod retracts, the excess oil drips through the closing cover.	

Gas spring (Checking)

⚠ WARNING

Explosive gas!

Gas struts contain high-pressure nitrogen gas. If handled improperly, they could explode.

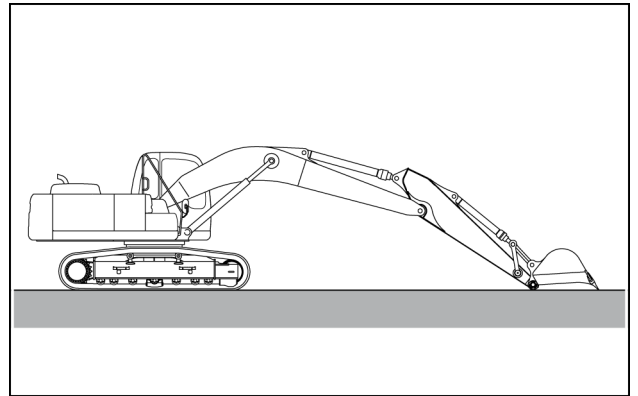
- Do not disassemble.
 - Do not expose to flame or fire.
 - Do not puncture, weld, or melt.
 - Do not expose to shock by striking or turning.
 - The fill gas must be removed before disposal. Consult your dealer.
- Failure to comply could result in death or serious injury.

W0914A

How to check the gas springs

To check the gas springs, 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. Position the arm, boom and bucket or implement as shown.
4. Set the parking brake.
5. Place the safety lever in the function lockout position.
6. Place the ignition key in the "OFF" position to shut down the engine.
7. Remove the ignition key.
8. Put the safety lever in the locked position.
9. Request inspection, maintenance or replacement from an Authorized NEW HOLLAND CONSTRUCTION Dealer if one of the following conditions occurs:
 - does not open when moderate force is applied.
 - does not remain open.
 - there is leakage from the gas spring.



NHC0257 1

EVERY 50 HOURS OR WEEKLY**Cab air filter (Cleaning)****▲ WARNING**

Flying debris!

Compressed air can propel dirt, rust, etc. into the air. Wear eye and face protection when using compressed air.

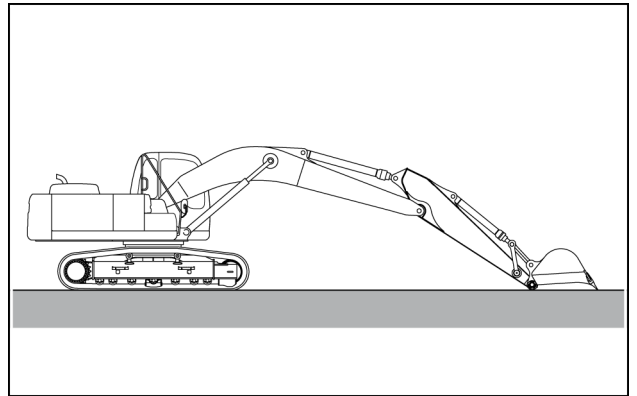
Failure to comply could result in death or serious injury.

W0307A

How to clean the cab air circulation and suction filters

To clean the cab air circulation and suction filters, proceed as follows:

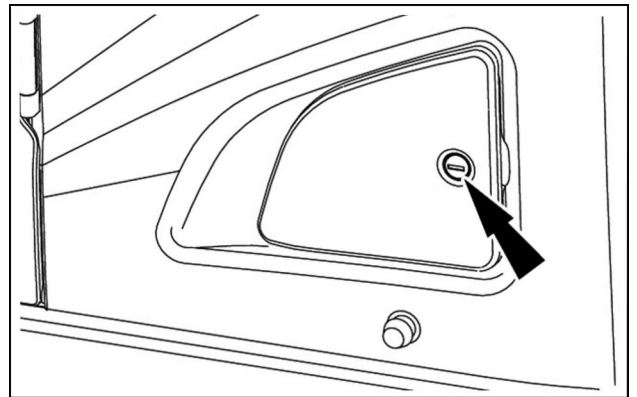
1. Keep all unauthorized personnel clear of the area.
2. Park the machine on a flat, level, firm surface, away from any obstacles.
3. Position the arm, boom and bucket or implement as shown.
4. Set the park brake.
5. Place the safety lever in the function lockout position.
6. Place the ignition key in the "OFF" position to shut down the engine.
7. Remove the ignition key.
8. Put the safety lever in the locked position.



NHC0257 1

How to clean the suction filter

1. Open the operator's seat air filter compartment cover with the key.



SZ8TNN-001 2

Hydraulics reservoir (Water and sediment drainage)

⚠ WARNING

Burn hazard!

Before performing any service on the hydraulic system, you must allow it to cool. Hydraulic fluid temperature should not exceed 40 °C (104 °F).

Failure to comply could result in death or serious injury.

W0241A

⚠ 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

⚠ 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

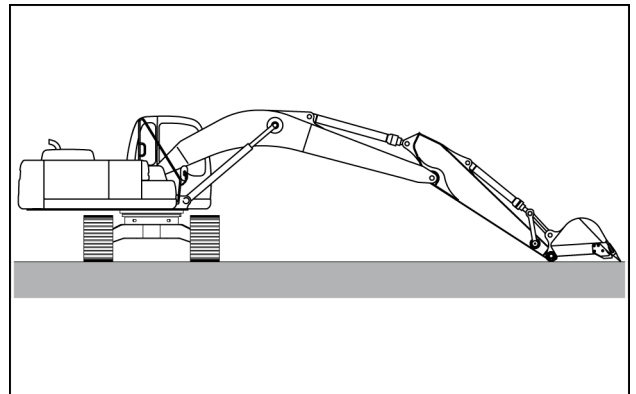
NOTICE: The water and the sediment in the hydraulic reservoir must be drained every 250 hours of operation, or more frequently (shorter periods) when you operate the machine in extreme conditions.

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

Drainage of water and sediments from the hydraulic reservoir

To drain the hydraulic reservoir, 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. Position the arm, boom and bucket or implement as shown.
4. Set the parking brake.
5. Place the safety lever in the function lockout position.
6. Place the ignition key in the "OFF" position to shut down the engine.
7. Remove the ignition key.
8. Put the safety lever in the locked position.
9. Wait until the machine cools down.
10. Make sure that all residual pressure is relieved from the hydraulic circuits.



NHC0259 1

NOTE: For the procedures to release pressure in the hydraulic system, refer to page 6-15.

Battery electrolyte (Checking the level)

⚠ WARNING

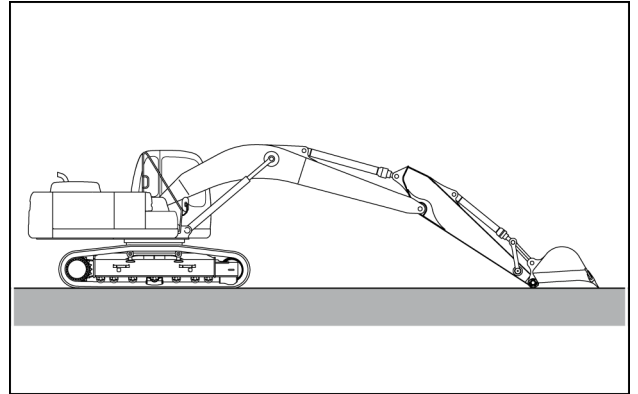
Improper operation or service of this machine can result in an accident. Read and understand the **SAFETY INFORMATION** chapter before you perform any maintenance, service, or repairs. Read and understand the specific service procedures for the components you plan to work with before you start servicing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

W0138B

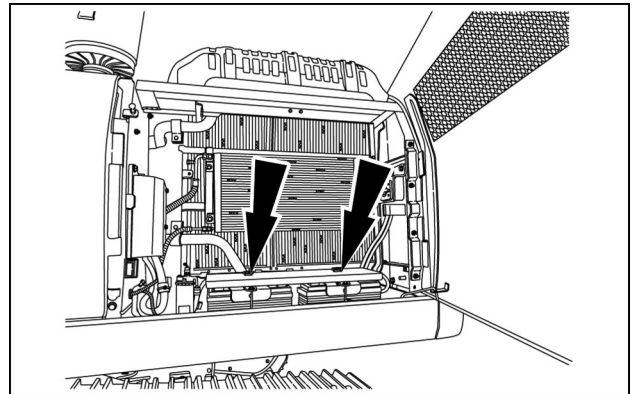
Checking the electrolyte level of a battery (maintenance-type)

To check the battery electrolyte level, 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. Position the arm, boom and bucket or implement as shown.
4. Set the parking brake.
5. Place the safety lever in the function lockout position.
6. Place the ignition key in the "OFF" position to shut down the engine.
7. Remove the ignition key.
8. Put the safety lever in the locked position.
9. Turn off the master switch. See page **3-67**.
10. To access the batteries, open the left-hand rear door. Then remove the protective plate.



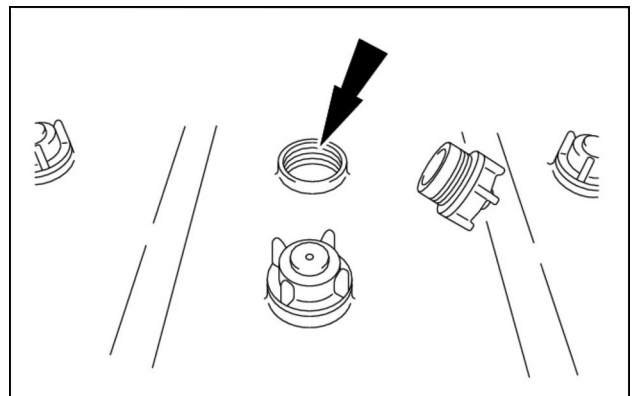
NHC0257 1



COIL16CEX0013AA 2

11. Remove the cell caps.
12. Check the level in each battery cell.

NOTE: The level should be between **10.0 – 15.0 mm (0.4 – 0.6 in)** above the plates.
13. Add distilled water if necessary.
14. Then install the cell caps.



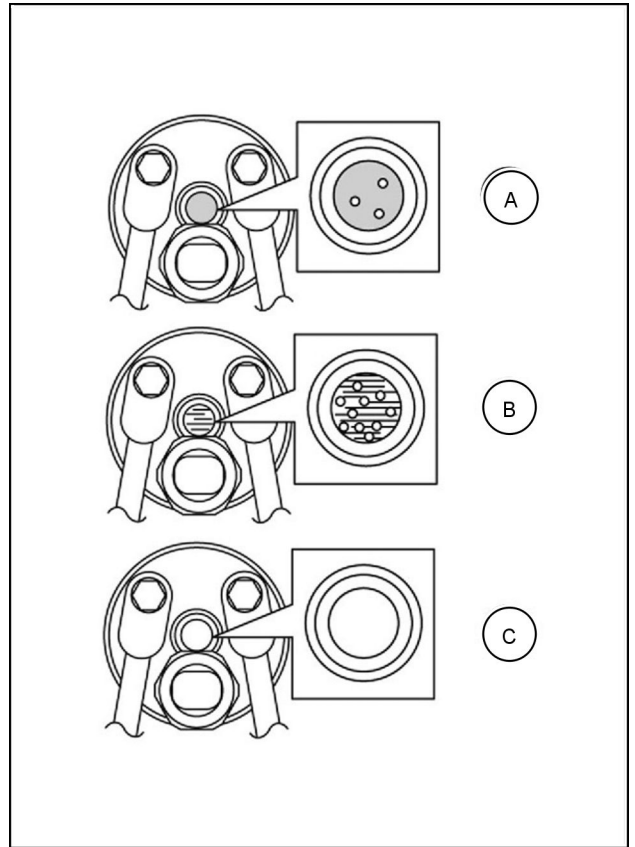
9K4QUU-001A 3

8. Perform this check approximately 1 minute after you turn on the air conditioning.

(A) Some bubbles observed. Initially clear and then opaque: "Normal".

(B) Numerous bubbles: Check the junctions. See an Authorized NEW HOLLAND CONSTRUCTION Dealer.

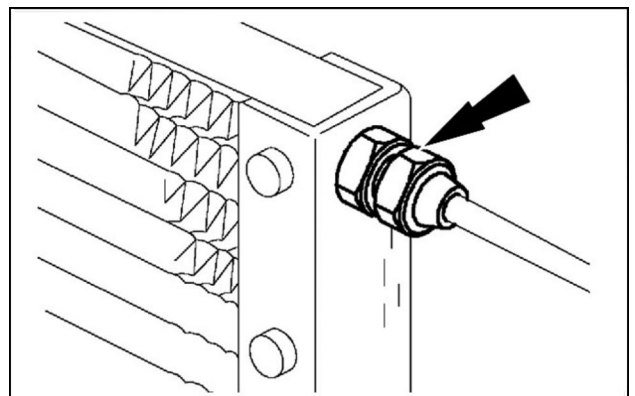
(C) No bubbles: Check the junctions. See an Authorized NEW HOLLAND CONSTRUCTION Dealer.



REE1U2-005 3

9. Check whether the air conditioning line and the hose connectors are dirty or dusty.

NOTE: Clean the line and connectors.



REE1U2-003 4

Hydraulic breather filter (Replacement of the element)

⚠ WARNING

Burn hazard!

Before performing any service on the hydraulic system, you must allow it to cool. Hydraulic fluid temperature should not exceed 40 °C (104 °F).

Failure to comply could result in death or serious injury.

W0241A

⚠ 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

⚠ 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

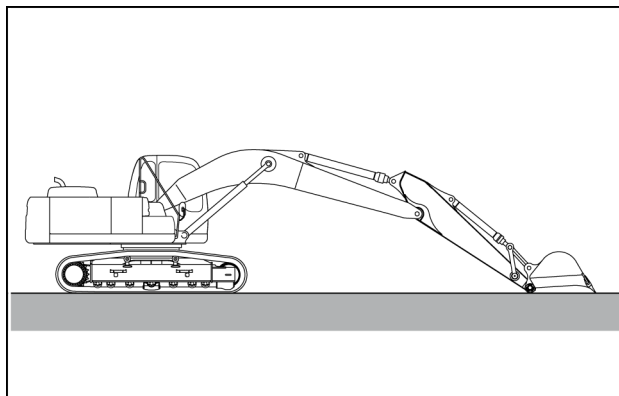
NOTICE: The hydraulic reservoir breather filter element must be cleaned or replaced every 1000 hours of operation, or more frequently (shorter periods) when you operate the machine in extreme conditions.

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

Replacement of the hydraulic reservoir breather filter element

To replace the hydraulic reservoir breather filter element, proceed as follows:

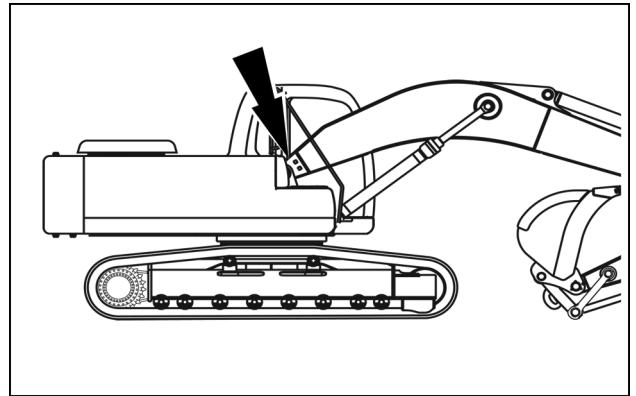
1. Keep all unauthorized personnel clear of the area.
2. Park the machine on a flat, level, firm surface, away from any obstacles.
3. Position the arm, boom and bucket or implement as shown.
4. Set the parking brake.
5. Place the safety lever in the function lockout position.
6. Place the ignition key in the "OFF" position to shut down the engine.
7. Remove the ignition key.
8. Put the safety lever in the locked position.
9. Wait until the machine cools down.



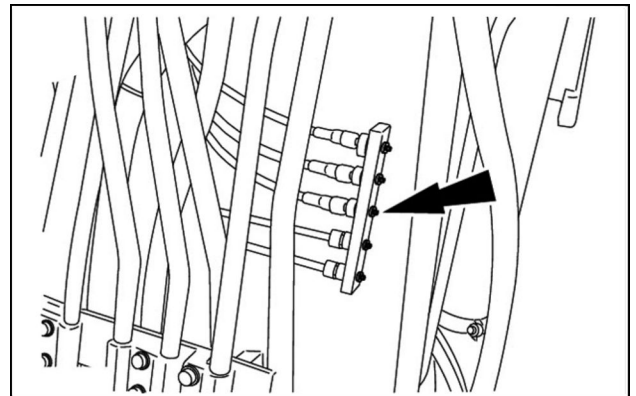
NHC0257 1

Boom bottom pin

There are 2 lubrication points.
Apply as necessary.



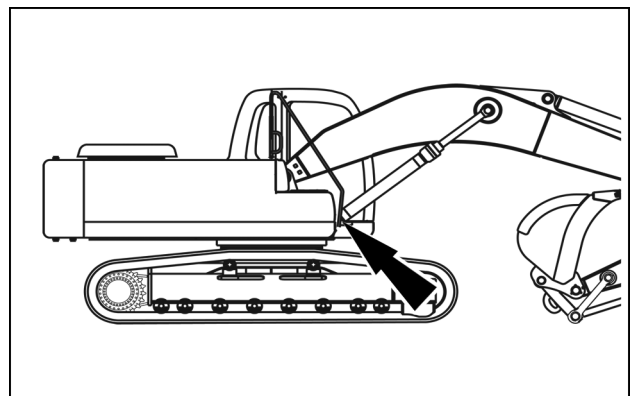
COIL15CEX0080AA 6



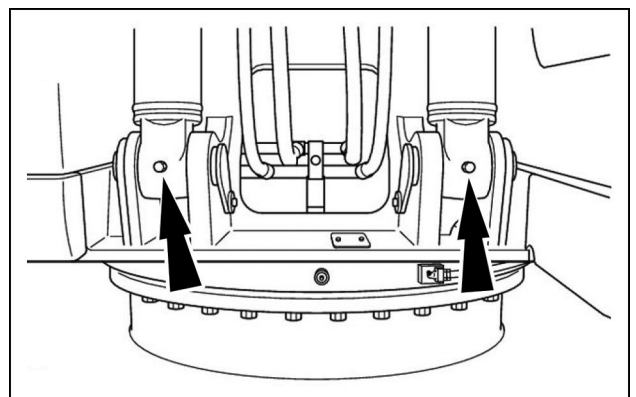
8U6DVD-001 7

Boom cylinder bottom pin

There are 2 lubrication points.
Apply as necessary.



COIL15CEX0080AA 8



COIL15CEX0077AA 9

Hydraulic fluid return filter (Replacement)

⚠ WARNING

Burn hazard!

Before performing any service on the hydraulic system, you must allow it to cool. Hydraulic fluid temperature should not exceed 40 °C (104 °F).

Failure to comply could result in death or serious injury.

W0241A

⚠ 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

⚠ 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.

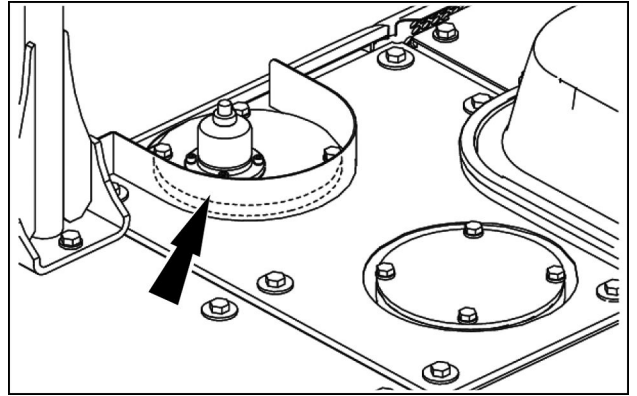
W0905A

NOTICE: The hydraulic fluid return filter must be replaced in the first 250 hours of operation on a new machine (break-in period) and then every 2000 hours of operation, or more frequently (shorter periods) when you operate the machine in extreme conditions.

NOTICE: If you use biodegradable hydraulic fluid, the hydraulic fluid return filter must be replaced in the first 50 hours of operation on a new machine (break-in period) and then every 1000 hours of operation, or more frequently (shorter periods) when you operate the machine in extreme conditions.

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

11. To avoid contamination of the system, clean the upper part of the hydraulic fluid reservoir.
12. Remove the reservoir cap.
13. Use a pump in a container of adequate capacity to remove the fluid from the reservoir.



COIL15CEX0067AA 2

14. Open the drain valve, located at the bottom of the hydraulic reservoir.
15. Drain the remainder of the hydraulic fluid from the tank into a suitable container.
16. Replace the suction filter. Refer to page 6-116.
17. Also replace the return filter. Refer to page 6-109.
18. Close the drain valve.
19. Fill the hydraulic reservoir with the specified new fluid.

NOTE: See Page 6-118

20. Install reservoir cap.

NOTE: If necessary, replace the O-ring.

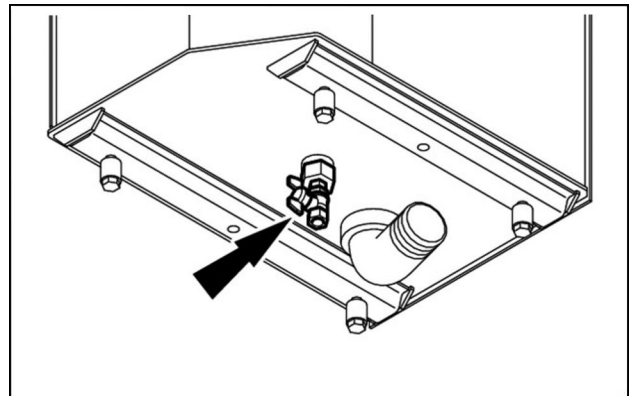
21. Bleed the air from all of the hydraulic components. Refer to page 6-120.

ATTENTION: This procedure is very important. You should perform this procedure before you start the engine after you replace the hydraulic fluid.

22. Start the engine. Let the engine run for a few minutes at idle speed.
23. Move each control several times to remove any air in the system.
24. Swing the upperstructure evenly left to right two complete turns or more.
25. Place the machine in position and then stop the engine.
26. Check for bubbles in the hydraulic reservoir.
27. Check for leaks.
28. Use the sight gauge to check the hydraulic fluid level.

NOTE: Refer to page 6-45.

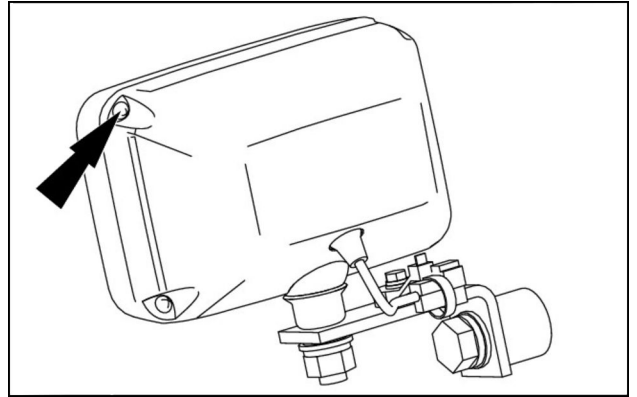
29. Add fluid if necessary.



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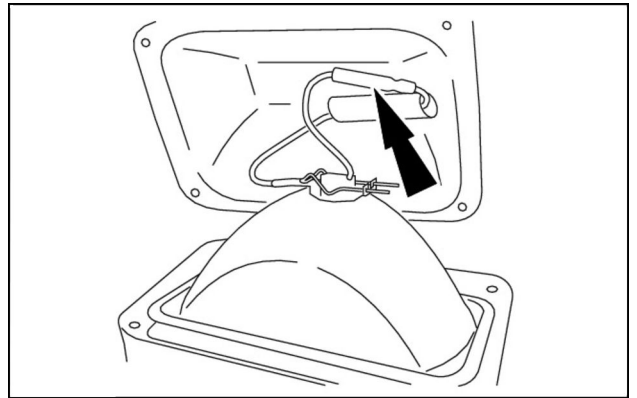
Accessory work light

1. Remove the 4 retaining screws.



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2. Tilt the working light. Disconnect the plug.

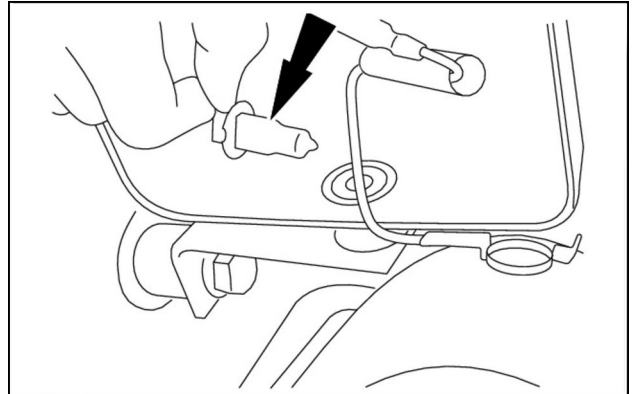


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3. Pull the clip outward. Remove the bulb. Install a bulb of the same wattage (**70 W**).

ATTENTION: *Never put your fingers on a tungsten iodide bulb.*

4. Install the clip. Reconnect the plug.
5. Put the work light back into position. Install the mounting bolts.



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Specifications (Bucket)

For models CX220C Series 2

1.1 m ³ (38.8 ft ³)GP Narrow Smart Fit
1.1 m ³ (38.8 ft ³)GP Wide Smart Fit
1.1 m ³ (38.8 ft ³)HD Narrow Smart Fit
1.1 m ³ (38.8 ft ³)HD Wide Smart Fit
1.3 m ³ (45.9 ft ³)GP Wide Smart Fit
1.3 m ³ (45.9 ft ³)HD Narrow Smart Fit
1.3 m ³ (45.9 ft ³)HD Wide Smart Fit
1.4 m ³ (49.4 ft ³)HD Narrow Smart Fit
1.5 m ³ (53.0 ft ³)GP Narrow Smart Fit
1.7 m ³ (60.0 ft ³)GP Narrow Smart Fit

For models CX240C (Mass Excavator)

1.4 m ³ (49.4 ft ³)HD Narrow Smart Fit
1.5 m ³ (53.0 ft ³)HD Wide Smart Fit
1.7 m ³ (60.0 ft ³)GP Narrow Smart Fit

For models E215C EVO

1.1 m ³ (38.8 ft ³)GP Narrow Smart Fit
1.1 m ³ (38.8 ft ³)GP Wide Smart Fit
1.1 m ³ (38.8 ft ³)HD Narrow Smart Fit
1.1 m ³ (38.8 ft ³)HD Wide Smart Fit
1.3 m ³ (45.9 ft ³)GP Wide Smart Fit
1.3 m ³ (45.9 ft ³)HD Narrow Smart Fit
1.3 m ³ (45.9 ft ³)HD Wide Smart Fit
1.4 m ³ (49.4 ft ³)HD Narrow Smart Fit
1.5 m ³ (53.0 ft ³)GP Narrow Smart Fit
1.7 m ³ (60.0 ft ³)GP Narrow Smart Fit

For models E245C EVO (Mass Excavator)

1.4 m ³ (49.4 ft ³)HD Narrow Smart Fit
1.5 m ³ (53.0 ft ³)HD Wide Smart Fit
1.7 m ³ (60.0 ft ³)GP Narrow Smart Fit

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