

ORIGINAL INSTRUCTIONS

CX350D
CX350D Long Reach
Crawler Excavator

OPERATOR'S MANUAL

Part number 51453037
1st edition English
April 2019



CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: www.heydownloads.com by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

Manual scope and required training level

Introduction to this manual

This manual gives information about the use of your CASE CONSTRUCTION machine as intended and under the conditions foreseen by CASE CONSTRUCTION during normal operation, routine service, and maintenance.

This manual does not contain all the information that relates to periodic service, conversions, and repairs that only trained service personnel can perform. Some of these activities may require appropriate facilities, technical skills, and/or tools that CASE CONSTRUCTION does not supply with the machine.

The manual contains the chapters as shown on the Contents pages. See the Index at the end of this manual to locate specific items about your CASE CONSTRUCTION machine.

Normal operation

Normal operation consists of the use of this machine for the purpose CASE CONSTRUCTION intends by an operator that:

- Is familiar with the machine and any mounted equipment or towed equipment
- Complies with the information on operation and safe practices as specified by CASE CONSTRUCTION in this manual and by the signs on the machine

Normal operation includes:

- Preparation and storage of the machine
- Addition and removal of ballast
- Connection and disconnection of mounted equipment and/or towed equipment
- Adjustment and configuration of the machine and equipment for the specific conditions of the job site, field, and/or crop
- Movement of components into and out of working positions

Routine service and maintenance

Routine service and maintenance consists of the daily activities necessary to maintain the proper machine function. The operator must:

- Be familiar with the machine characteristics
- Comply with the information on routine service and safe practices as specified by CASE CONSTRUCTION in this manual and by the signs on the machine

Routine service can include:

- Fueling
- Cleaning
- Washing

- Topping up fluid levels
- Greasing
- Replacing consumable items such as light bulbs

Periodic service, conversions, and repairs

Periodic service consists of activities that are necessary to maintain the expected life of the CASE CONSTRUCTION machine. These activities have defined intervals.

Trained service personnel familiar with the machine characteristics must perform these activities at the defined intervals. Trained service personnel must comply with the information on periodic service and safe practices as partly specified by CASE CONSTRUCTION in this manual and/or other company literature.

Periodic service includes:

- Oil change service for the engine, hydraulic circuits, or transmission
- Periodic exchange of other substances or components as required

Conversion activities rebuild the CASE CONSTRUCTION machine in a configuration that is appropriate for a specific job site, crop, and/or soil conditions (e.g., installation of dual wheels). Conversion activities must be done:

- By trained service personnel familiar with the machine characteristics
- By trained service personnel that comply with the information on conversion as partly specified by CASE CONSTRUCTION in this manual, assembly instructions, and/or other company literature

Repair activities restore proper function to a CASE CONSTRUCTION machine after a failure or degradation of performance. Dismantling activities occur during the scrapping and/or dismantling of the machine.

Trained service personnel familiar with the machine characteristics must perform these activities. Trained service personnel must comply with the information for repair as specified by CASE CONSTRUCTION in the service manual.

Before you operate

Read this manual before you start the engine or operate this CASE CONSTRUCTION machine. Contact your CASE CONSTRUCTION dealer if:

- You do not understand any information in this manual
- You need more information
- You need assistance

- Dispose of **DEF/AdBLUE®** and any filter accumulations in accordance with all applicable Federal, State, and local laws governing waste disposal.

US Environmental Protection Agency (EPA) Warranty Statement

CASE CONSTRUCTION warrants to the ultimate purchaser and each subsequent purchaser that the engine is designed, built and equipped so as to conform with US Environmental Protection Agency (EPA) regulations applicable at the time of manufacture and that it is free from defects in workmanship or material which would cause it not to meet these regulations for a period of:

- 2 years or 1,500 hours of operation, whichever occurs first, for engines less than **19 kW (25 Hp)**
- 5 years or 3,000 hours of operation, whichever occurs first, for engines greater than or equal to **19 kW (25 Hp)**

NOTE: *this warranty applies to all units operated in the United States or Canada.*

Coverage

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

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

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

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

Component coverage

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

Fuel injection system

- Fuel injection pump
- Fuel injectors
- Fuel injection lines

Air induction system

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

Positive Crankcase Ventilation (PCV) system (if applicable)

- PCV valve
- Oil fill cap

Exhaust after treatment Devices (if applicable)

- Diesel Oxidation Catalyst (DOC)
- Diesel Particulate Filter (DPF)
- Selective Catalytic Reduction (SCR)
- Diesel Exhaust Fluid (DEF) tank and dispensing systems

Exhaust Gas Recirculation Systems (EGR)

- EGR valve assembly
- EGR cooler

Cold Start Enrichment Systems

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

7. Make sure that the hoods and doors are properly latched.
8. Check that no part of the machine is encroaching on the highway. If this cannot be avoided, install the necessary regulation signaling equipment.

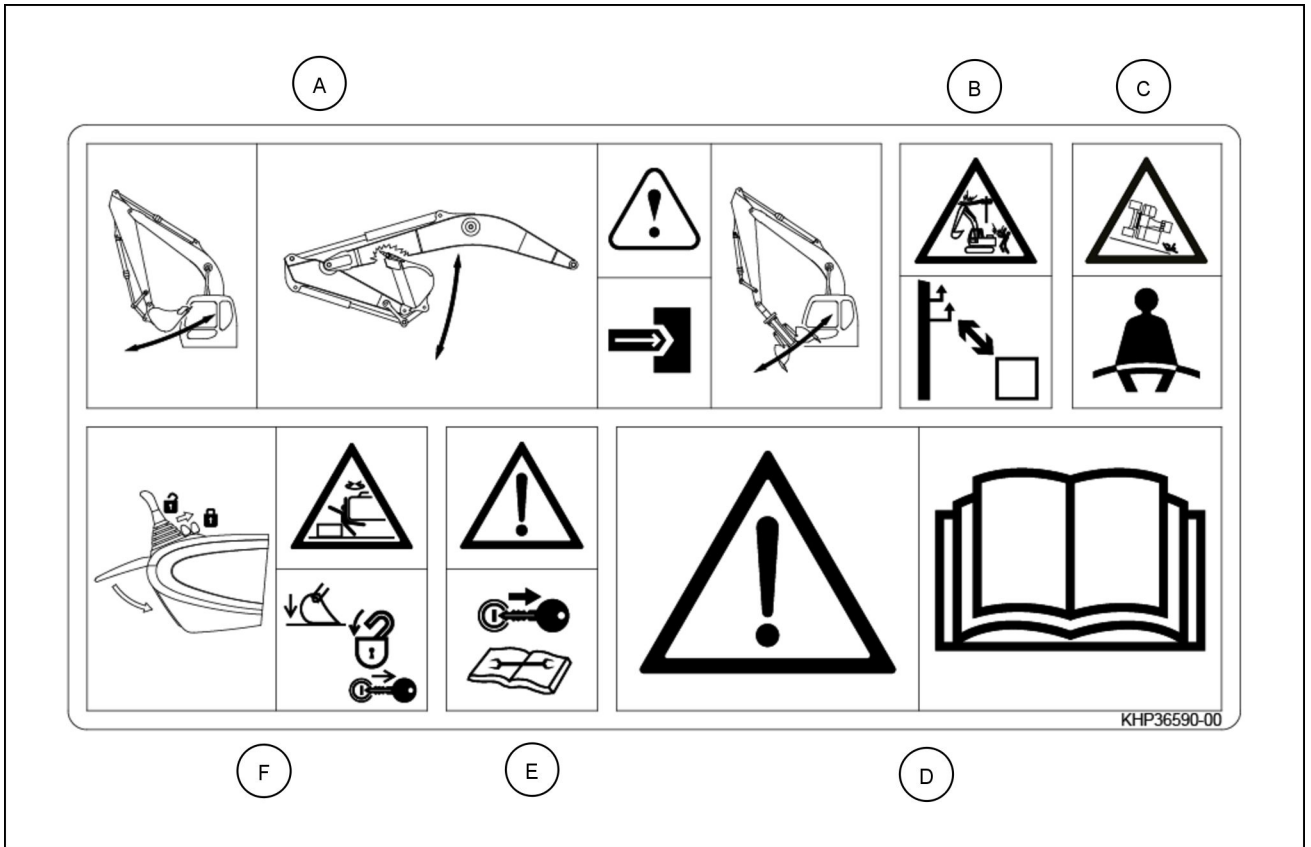
Maintenance and adjustments

- Do not try to service this machine unless you have first read and perfectly understood the safety messages and instructions featuring in this manual.
 - When carrying out service work always wear suitable dress. Avoid loose-fitting clothing.
 - Release pressure completely in the hydraulic system before disconnecting the hydraulic piping. Hydraulic oil escaping under pressure can cause serious injury.
 - Before doing maintenance work on the machine, shut down the engine and allow it to cool down. Otherwise, you could be burned.
 - Before commencing any work on the machine, place a "Do not operate" tag on the right-hand control arm.
 - Always wear eye protection when using a tool that might project metal particles. Use a hammer with a soft face, such as copper, for installing pins.
 - Badly carried out maintenance or adjustments can cause serious injuries. If you do not understand a servicing or adjustment procedure, consult your CASE CONSTRUCTION Dealer.
 - If the attachment is raised or if the machine moves without an operator, serious injury can result. Before carrying out maintenance on this machine, proceed as follows:
Park the machine on flat, level ground.
Lower the attachment until it is resting on the ground.
Lower the dozer blade (if equipped) until it rests on the ground.
Stop the engine and remove the ignition key.
Lock the tracks to prevent any machine movement.
 - Any unauthorized modifications made to this machine can cause serious injury. Do not undertake any modifications without first consulting your CASE CONSTRUCTION Dealer. Any modifications made must be in conformity with the technical specifications of the machine and any current safety legislation requirements.
 - Certain components of the machine are subject to type approval. When replacing such components, it is mandatory to make sure that they conform to regulations. For safety's sake, use genuine CASE CONSTRUCTION parts.
 - Pressurized hydraulic fluid or grease which penetrates the skin can cause serious injury. Take the necessary safety precautions (safety clothing and protection for face and hands) to avoid such risks. Also, before using these products, read the manufacturer's instructions concerning their use. If hydraulic fluid penetrates the skin, call a doctor immediately.
 - Coolant solution is toxic.
- Avoid contact with skin, eyes and clothing.
Antidote:
External: rinse thoroughly with water and remove soiled clothes.
Internal: do not induce vomiting. Rinse the mouth out with water. Seek medical advice.
Eyes: rinse thoroughly with water and seek medical advice.
- The pressure in the track tension cylinders is high. Follow the procedure described in this manual carefully for increasing or reducing track tension.
 - When carrying out a welding operation on the undercarriage or upperstructure carriage as authorized by the manufacturer and in accordance with his instructions, disconnect the batteries, disconnect the alternator B+ and D+ terminal wires and connect the welding apparatus earth cable to the component on which the welding operation is to be performed. Never connect the welding apparatus to the undercarriage when welding on the upperstructure (or vice-versa). Never connect the welding apparatus earth to a component of the hydraulic system.
 - When using compressed air, take the necessary precautions to protect your face.
 - Clean the machine regularly. Accumulations of grease, dirt and debris can cause injuries or damage the machine.
 - Periodically inspect the fastening of the main components, as part of the machine maintenance programme: counterweight, turntable bearing and operator's compartment. In the event of problems, consult your CASE CONSTRUCTION Dealer.
 - If the accumulator is not functioning correctly, consult your CASE CONSTRUCTION Dealer. Never try to carry out any servicing operation on the accumulator. If this instruction is not followed serious injury can result.
 - The accumulator is charged with nitrogen under high pressure. Do not weld or allow flames to come near to the accumulator.
 - There is high pressure fuel in the feed pipe when the engine is running and immediately after it has been shut down. Wait for 2 minutes after engine shut down before you do any maintenance or inspections to allow the pressure to drop in the pipe.
 - High-voltage is charged to the controller and/or to the injector while the engine is running and immediately after it has been shut down.
Do not touch the controller or the injector.
If it is necessary to touch them for maintenance purposes, consult your CASE CONSTRUCTION Dealer.

Decal placement diagrams

(1) Table of safety precautions

Part number: KHP36590



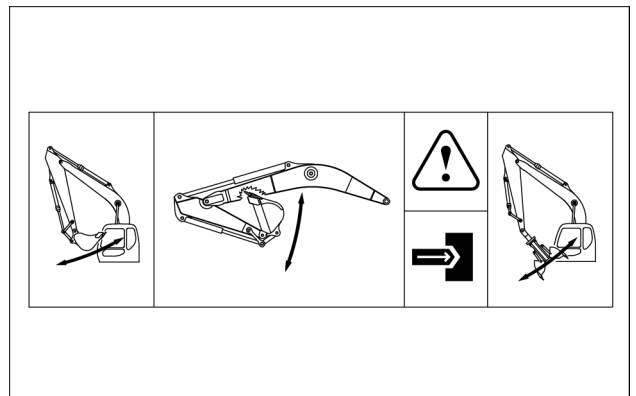
KHP36590 3

(1A) Interference with attachments

The end attachment used for machine operation (e.g. bucket, hydraulic breaker, clamshell..) may hit the cab and/or the boom depending upon the length of the arm, the size of the bucket or the installation of a quick coupler.

Always check the operating range of the machine with the specific attachment in use. Avoid abrupt operation in order to keep proper clearance between the attachment and the cab or boom or other significant parts of the machine.

Collisions between attachment and cab or boom or other significant parts of the machine can cause serious damages.



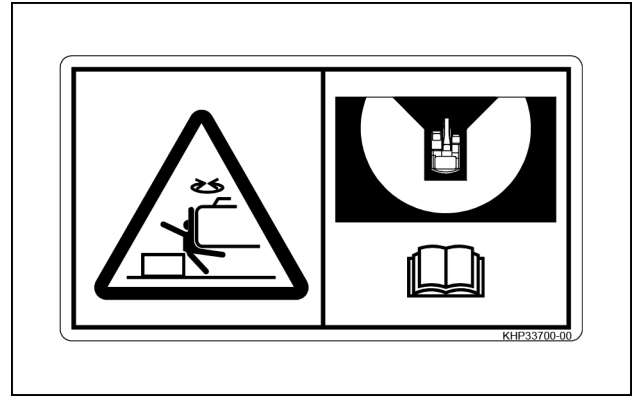
KHP35790_A 4

(33) Blind spot of Field View Monitor (Optional)

Part number: KHP33700

The Field View Monitor system does not ensure visibility on the closest area around the machine.

Make sure to read the operator's manual to understand proper practices and precautions to be tackled for machine operation with the Field View Monitor system (Optional).



KHP33700 41

(34) Global Warming Potential decal

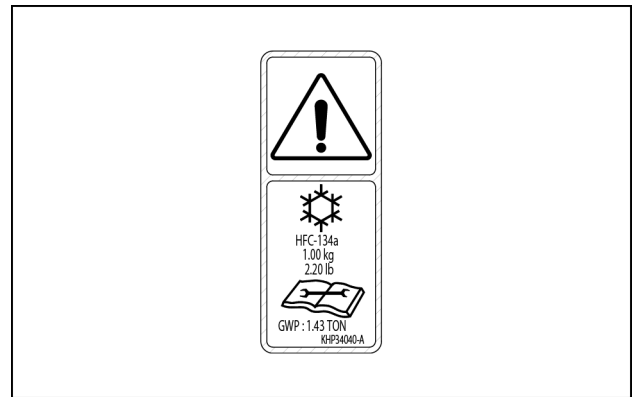
Part number: KHP34040

Greenhouse gas: HFC-134a

Quantity (A/C system charge): **1 kg (2.2 lb)**

Global Warming Potential (GWP): 1.43 Ton

Service, repair, or recharging must be performed only by trained service technician. Always contact your local authorized dealer. Failure to comply could result in death or serious injury.



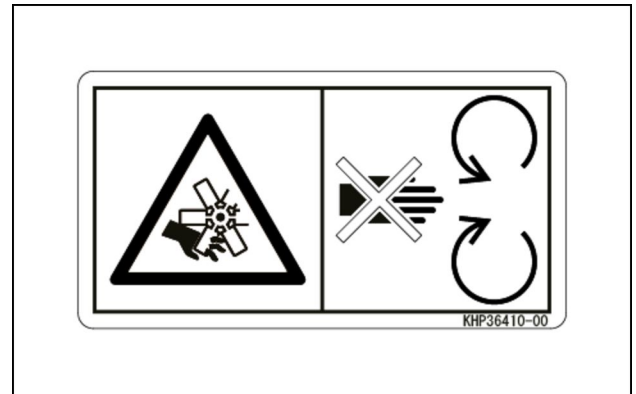
KHP34040 42

(35) Fan

Part number: KHP36410

When the engine is running, keep away from the engine cooling fan, from the fan belt and from the other rotating parts of the mechanical fan drive system.

The engine cooling fan and other rotating parts can cause serious injuries.



KHP36410 43

(36) Maintenance in engine compartment

Part number: KHP37310

Always stop and cool down the engine before making any maintenance operation in the engine compartment. The surfaces in the engine compartment are hot, and touching them can cause serious injuries to the operator.

Do not step on the engine or on the platform. This can cause serious damages to the engine components and serious injuries to the operator.

Make sure to read operator's manual to understand proper procedures to be used for maintenance in the engine compartment.



KHP37310 44

Forward controls

Forward controls

⚠ WARNING

Avoid injury!
 Inspect the work area or job site to make sure that machine operation can be done safely. Confirm that the lever operation is the same as indicated on the control pattern labels. If not, immediately change the machine control pattern or the label displayed to match the machine control pattern.
 Failure to comply could result in death or serious injury.

W1339A

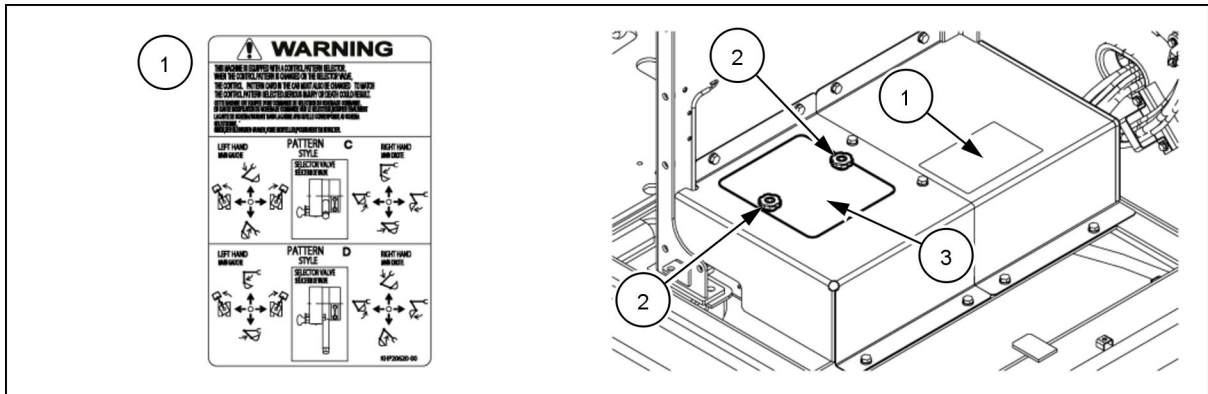
Selection of control pattern

The machine can be equipped with a selector valve that allows to set two different patterns of the hydraulic controls of the front equipment. The patterns are called C and D. Refer to the next pages for description of the patterns.

NOTICE: Before starting machine operation, check that the operating pattern of control levers is consistent with the position selected on the valve. Furthermore, check that the pattern shown on the control mapping sheet into the cab is consistent with the operating pattern of the control levers.

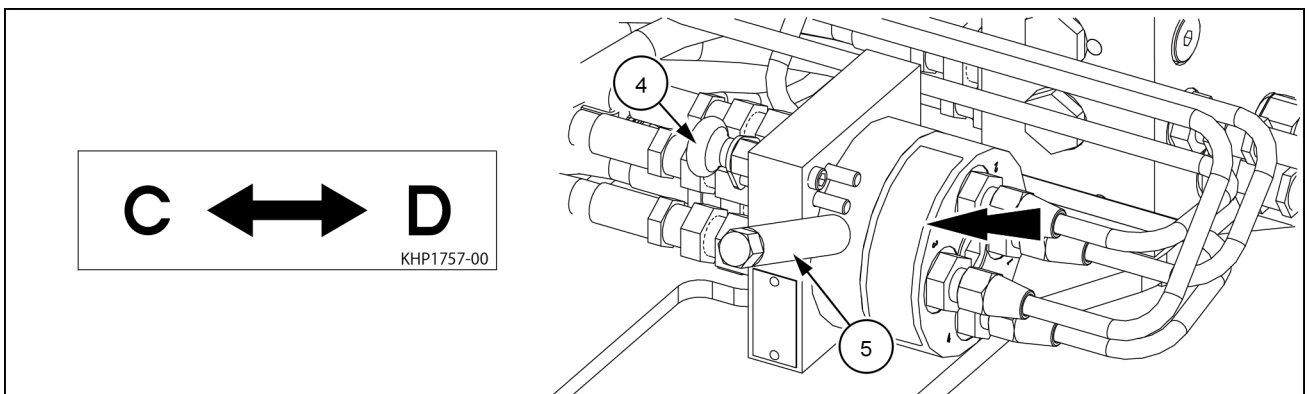
To select the desired control pattern proceed as follows:

1. Lower the attachment to the ground, and stop the engine.
2. Open the front left-hand door. Read and understand the warning label (1) located inside the compartment.
3. Loosen the screw knobs (2) and remove the cover (3).



SMIL19CEX0541EA 1

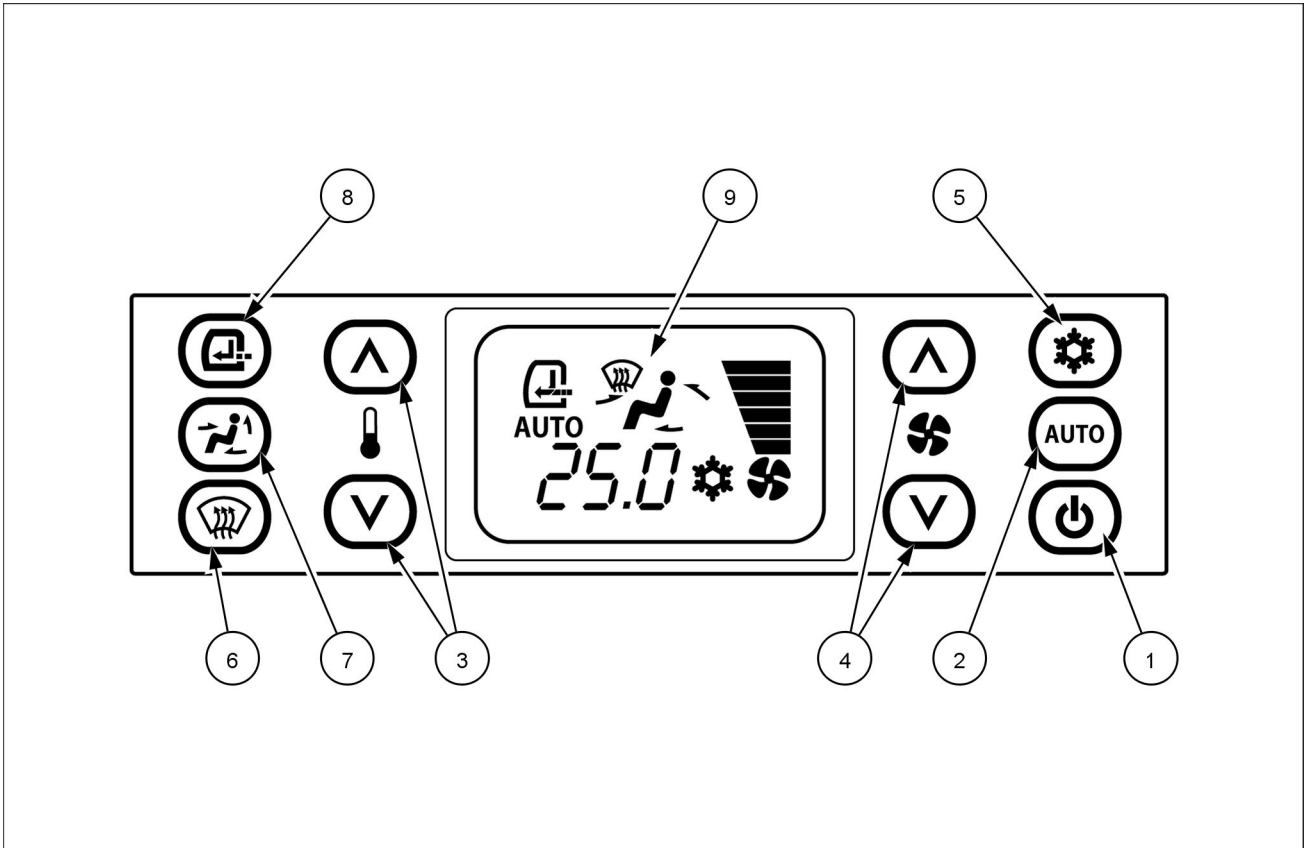
4. Pull the locking knob (4) and move the lever (5) to set the desired control pattern C or D. Release the locking knob.



SMIL15CEX0440EA 2

5. Install the cover (3) and tighten the screw knobs (2).
6. Close the front left-hand door.

Heating, ventilation or air-conditioning control



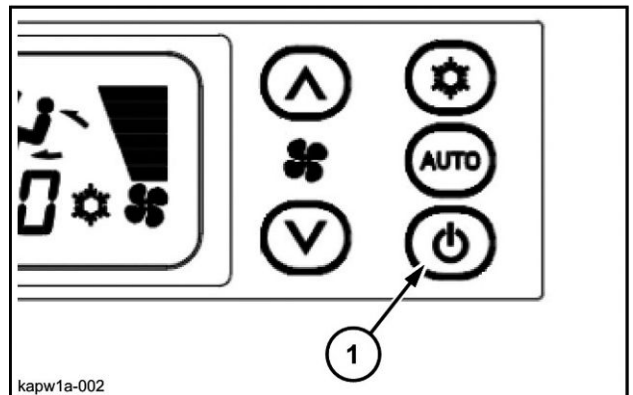
SMIL18CEX0530FB 1

- | | |
|---------------------|-------------------------|
| 1. On/Off | 6. Windshield defroster |
| 2. Automatic | 7. Air flow direction |
| 3. Temperature | 8. Air recycling |
| 4. Ventilation | 9. Display screen |
| 5. Air conditioning | |

On/Off

This push-button (1) is for turning the system On or Off.

NOTICE: When the system is turned On it will operate at the same setting as the one selected previously.



kapw1a-002

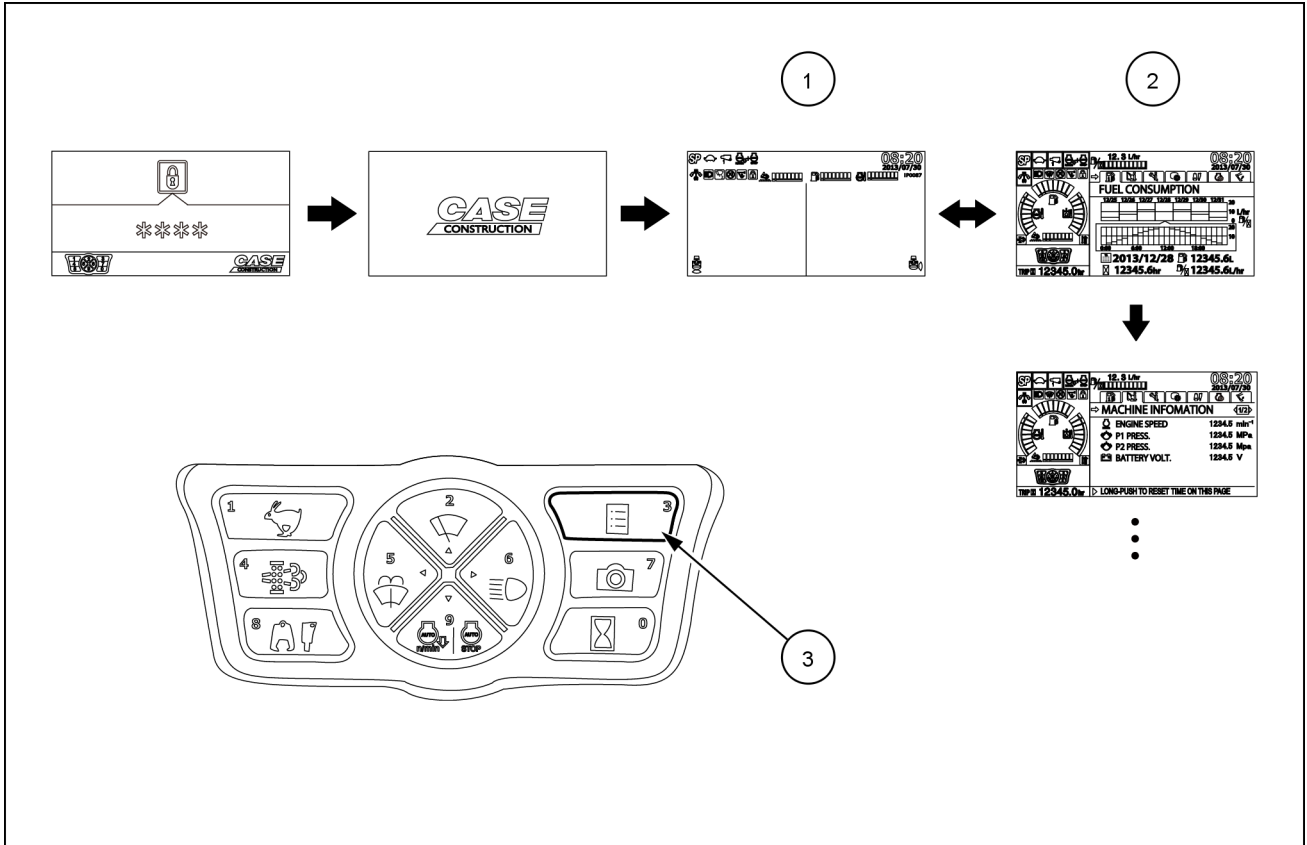
KAPW1A-002 2

Display

The display has two visualization modes:

- The operating mode (1) shows the images of the external cameras, along with the icons, warning and messages related to the functioning of the machine.
- The user information mode (2) shows the information tabs related to the machine operation history, and provides access to the configuration tabs for the set up of the main functionalities of the machine.

Press the display mode selector button (3) to switch the mode. The mode toggles every time the button is pressed.



SMIL16CEX0713FA 3

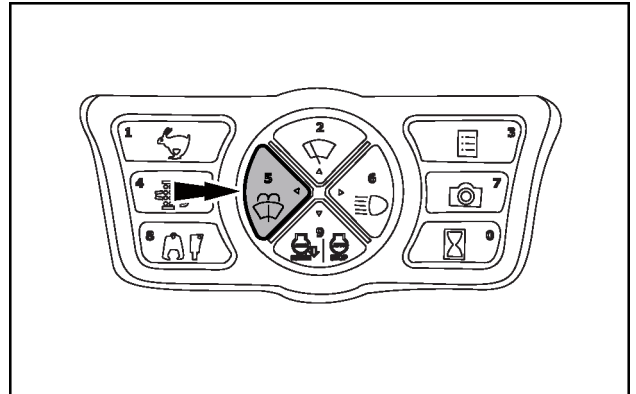
NOTICE: During machine operation, make sure to select the operating mode of the display in order to ensure proper visibility around the machine. If the display is switched to the user information mode during machine operation, the warning message *SELECT CAMERA SCREEN DURING OPERATION* will appear on the top of the display.

Windshield washer button

Press and hold the windshield washer button to activate the wiper and the washer to clean the windshield. Release the button to stop the cleaning operation.

NOTICE: Do not press the washer button and the wiper button simultaneously. Also, do not turn off the starter key while the washer button is pushed. It may cause failure.

NOTICE: Never operate the windshield washer when the reservoir is empty. This will damage the electric pump.



SMIL14CEX1737AA 14

Working lights button

Press the working lights button to turn on the working lights on the front of the machine. Press the button again to turn the working lights off.

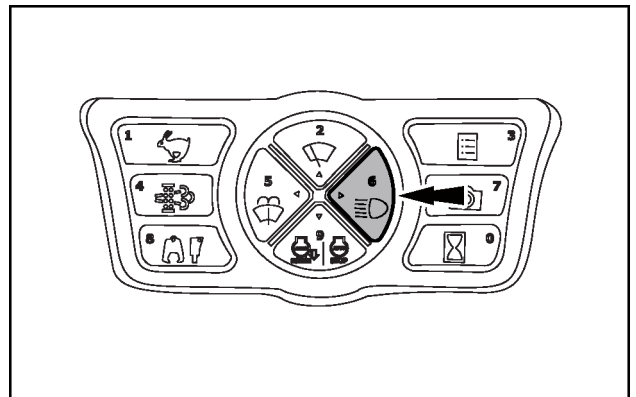
The activation of the working lights is indicated by a specific icon on the display:



The working lights are on.

NOTE: The working lights can be activated only when the engine is running.

NOTE: When the working lights are turned on, the brightness of the monitor is automatically adjusted.



SMIL14CEX1732AA 15

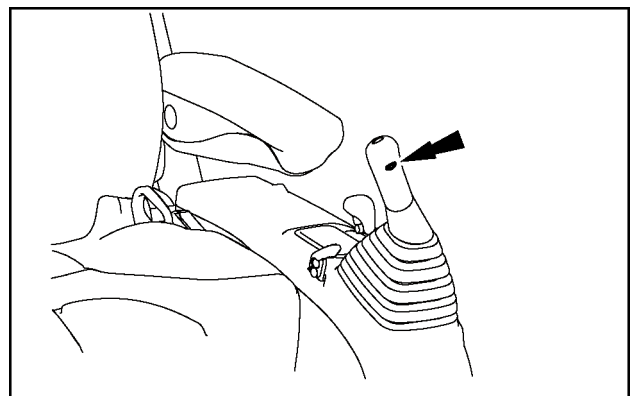
Radio mute

Push the radio mute button on the back of the left control lever to mute the volume. Push the radio mute button again to resume the volume.

The radio muting is indicated by a specific icon on the display:



Radio is muted



SMIL14CEX1739AA 16

Maintenance information



Information regarding the replacement intervals of periodic-replacement parts can be checked.

page	Replace maintenance time
1/3	FUEL-FILTER PRE
	FUEL-FILTER MAIN
	ENGINE-OIL
	ENGINE-OIL FILTER
	AIR-CLEANER ELEMENT
2/3	AIR-BREATHER ELEMENT
	PILOT-OIL FILTER
	RETURN FILTER
	SUCTION FILTER
	HYDRAULIC OIL
3/3	SWING REDUCTION GEAR-OIL
	TRAVEL REDUCTION GEAR-OIL
	AIR CONDITIONER FILTER
	SUPPLY MODULE FILTER

→

REPLACE REMAINING TIME ◀1/3▶

	FUEL FILTER PRE	88888/88888
	FUEL FILTER MAIN	88888/88888
	ENGINE OIL	88888/88888
	ENGINE OIL FILTER	88888/88888
	AIR CLEANER ELM.	88888/88888
▶ LONG-PUSH TO RESET TIME ON THIS PAGE		

SMIL14CEX2505AA 31

NOTICE: If any inspection and/or maintenance (service) is due shortly, the remaining time is shown in yellow and the buzzer is sounded to give warning. If the due date has passed, the remaining time field changes to red. In that case, perform maintenance immediately.

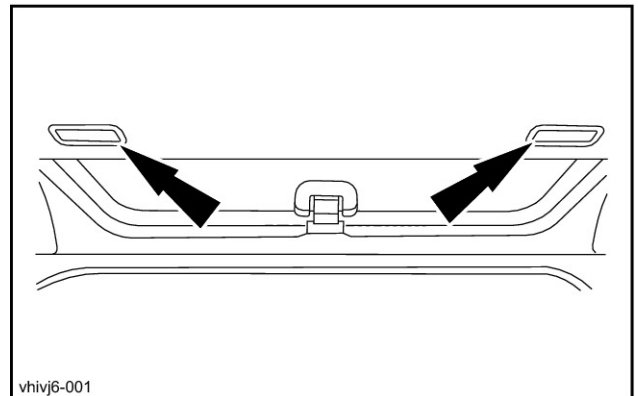
To reset the remaining time after replacement (change) of components, grease, etc., select the applicable item and then press and hold the right button for 3 s. An alarm will sound and the time will be reset.

To reset the remaining time for all the items displayed on the page, select the title on the applicable page and then press and hold the right button for 3 s. An alarm will sound and the time will be reset.

Overhead controls

Roof curtain

To open the roof curtain, slide it toward the rear using the handles. To close the curtain slide it toward the front.



vhivj6-001

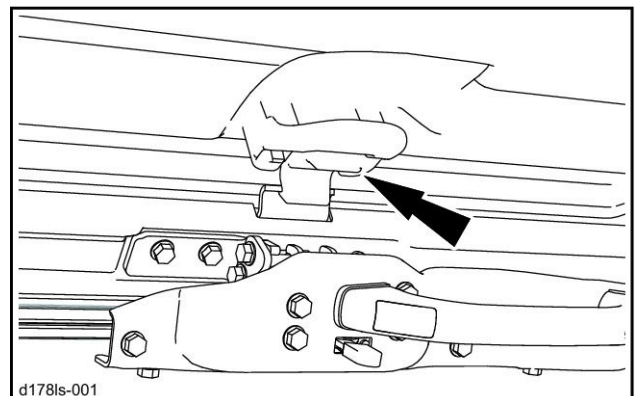
VHIVJ6-001A 1

Roof hatch

To open the roof hatch, operate the handle and push the handle.

To close the roof hatch, pull the handle until engagement.

NOTICE: Since roof hatch opening is assisted by two gas struts, simply follow through the closing movement without pulling or trying to hold it back.

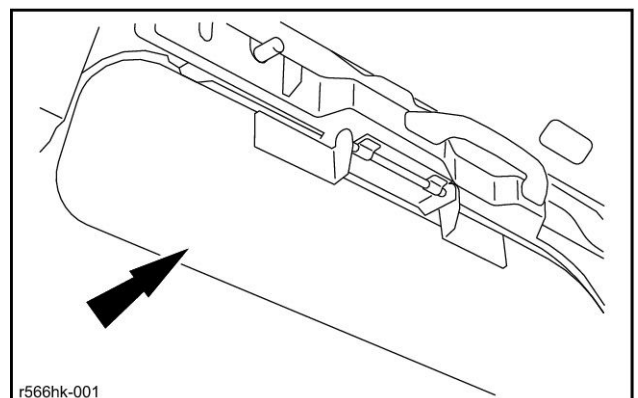


d178ls-001

D178LS-001A 1

Sun shield (optional)

The sun shield is fixed to the windshield and can easily be positioned as required.



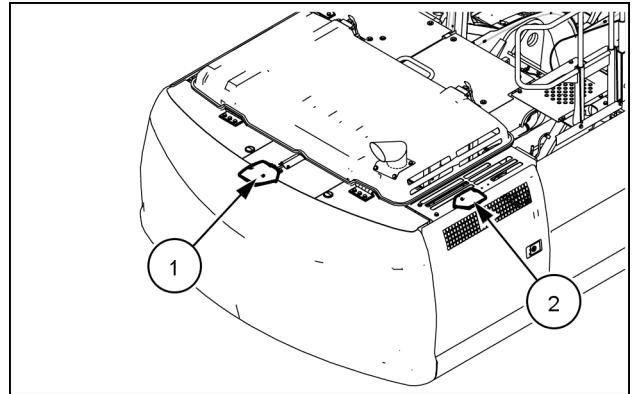
r566hk-001

R566HK-001A 1

Cameras

The external cameras, along with the external mirrors, ensure proper visibility around the machine during operation.

A rear camera (1) is installed on the counterweight. A right-side camera (2) is installed over the rear right-hand door.

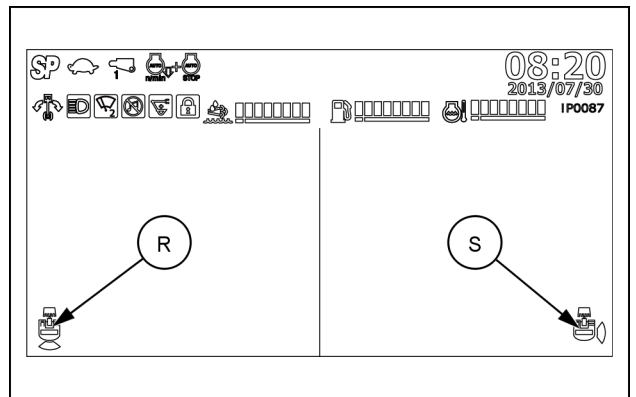


SMIL14CEX5589AA 1

The view of the rear camera (R) is shown on the left side of the display. The view of the right side camera (S) is shown on the right side of the display.

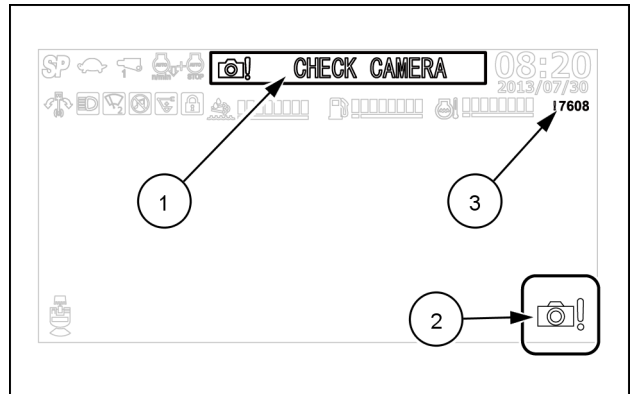
NOTICE: Never operate the machine while only looking at the images on the display. Make sure to check the area around the machine by the direct view or through the mirrors.

NOTICE: If any mud, raindrops, snow, etc. are adhered to the camera lens, the images on the display are deteriorated. Wipe away dirt with a wet and soft cloth, and then wipe it with a dry and soft cloth. Make sure not to scratch the cameras.



SMIL16CEX1248AA 2

If the cameras or the camera wirings have a failure, a warning buzzer sounds for about 5 s, the CHECK CAMERA message (1) and a DTC (3) appear, and the camera failure icon (2) is displayed. Moreover, the image of the failed camera is replaced by a grey background.



SMIL16CEX1075AA 3

Fuel tank filler pump (if equipped)

⚠ WARNING

Fire hazard!

When handling diesel fuel, observe the following precautions:

1. Do not smoke.
2. Never fill the tank when the engine is running.
3. Wipe up spilled fuel immediately.

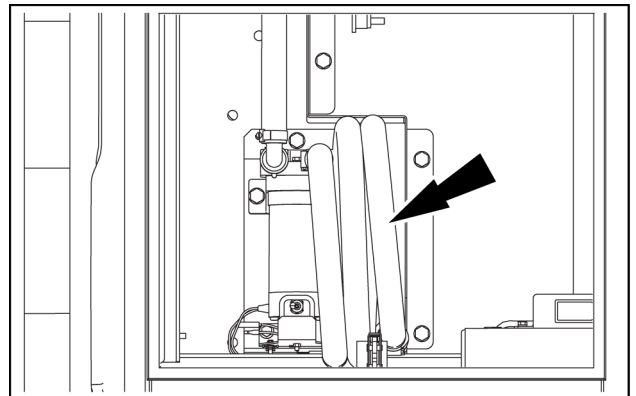
Failure to comply could result in death or serious injury.

W0099A

NOTICE: Do not put a moisture elimination product (water draining agent) in the fuel tank. It may damage the engine.

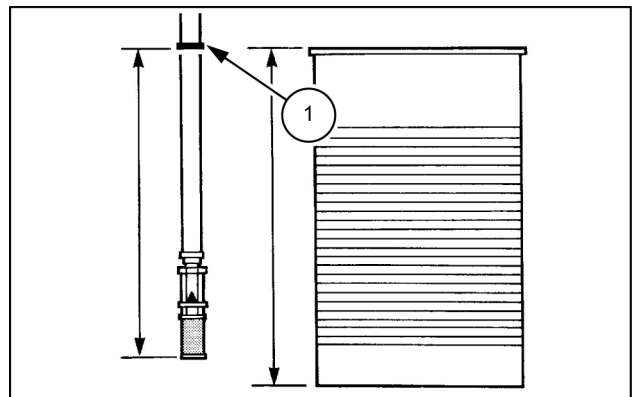
NOTICE: The fuel tank filler pump is located inside the storage box on the right front of the upperstructure. Use only for suitable fuel.

1. Park the machine on flat, horizontal ground, stop the engine and turn the starter key to ON position.
2. Take the inlet pipe out of the front storage box.



SMIL15CEX0045AA 1

3. Measure the height of the drum and place the identification clamp (1) of the suction tube at a length slightly less than that of the drum height.
4. Make sure that the end strainer of the suction tube is correctly attached and then insert the suction tube in the drum.



SMIL14CEX2515AB 2

5. Remove the fuel tank filler cap.

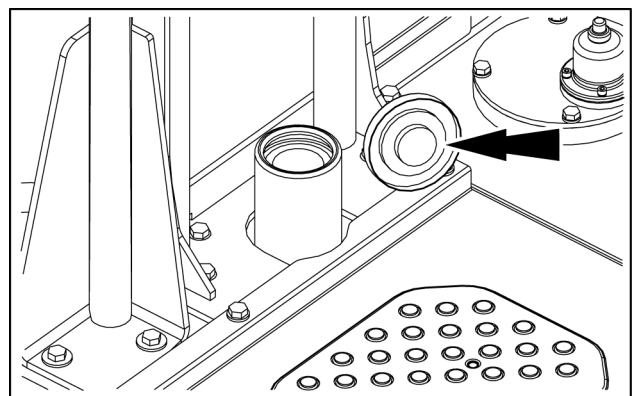
⚠ WARNING

Burn hazard!

If the filler cap remains on during the refueling process, removing the cap after refueling could cause an accident. To reduce this risk, ALWAYS remove the fuel tank filler cap before refueling with the fuel tank filling pump.

Failure to comply could result in death or serious injury.

W0247A



SMIL14CEX2516AA 3

DEF/AdBlue® thawing

When operating the machine in severe winter climates, and stopping for a while the normal operation (e.g. engine at low idle speed and any control activation) an automatic thawing procedure for **DEF/AdBlue®** is carried out by the machine control system in order to avoid freezing of the fluid. The **DEF/AdBlue®** anti freezing icon is displayed as this procedure is active.



DEF/AdBlue® is being thawed.

Resuming normal operation, the **DEF/AdBlue®** anti freezing procedure and the related icon will quickly disappear.

NOTE: during the automatic thawing procedure for **DEF/AdBlue®**, the engine speed and the engine load are automatically managed by the machine control system.

4 - OPERATING INSTRUCTIONS

Starting the unit

Anti-theft protection

A security function can be set up in order to prevent an undesired usage of the machine, or even the theft of the machine. The security function locks the display by a password when the machine is started. Furthermore, the security function limits the machine functionality as the engine is started without entering the password.

The set up of the security function is indicated by a specific icon on the display:



The security function is set up.

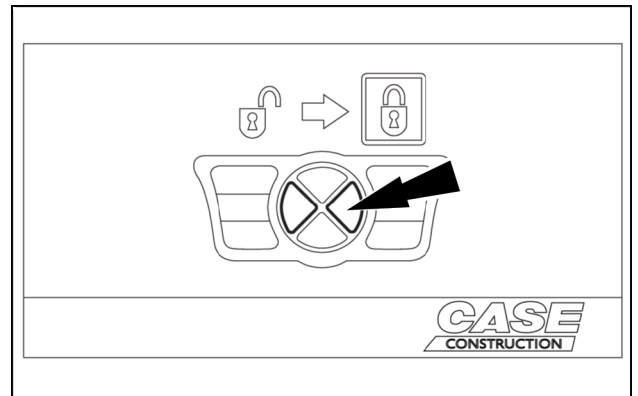
To set up the security function and the password, consult the CASE CONSTRUCTION dealer.

NOTICE: Consult the CASE CONSTRUCTION dealer in case of forgotten password.

Activation of the security function

Turning the starter key to OFF position, the option for activating the security function is displayed. Press the right button to activate the security function.

At the next machine start, the request for entering the password will be displayed.



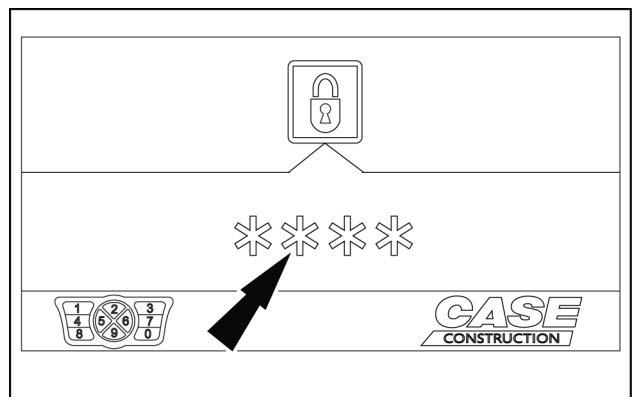
SMIL14CEX2877AA 1

As the key is turned to ON position, the request for entering the password is displayed. Enter the password using the buttons on the cluster as a numeric keypad.

As the password is properly entered, the display is unlocked, and the machine can be started.

If the password is wrongly entered for 3 times, or if the engine is started up without entering the password, the machine goes into an immobilized state:

1. A warning buzzer, and the travel alarm if equipped, sound continuously.
2. The engine speed is limited to low idle.
3. The swing function is disabled.
4. If any lever or pedal is operated, the engine stops automatically.



SMIL14CEX2878AA 2

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

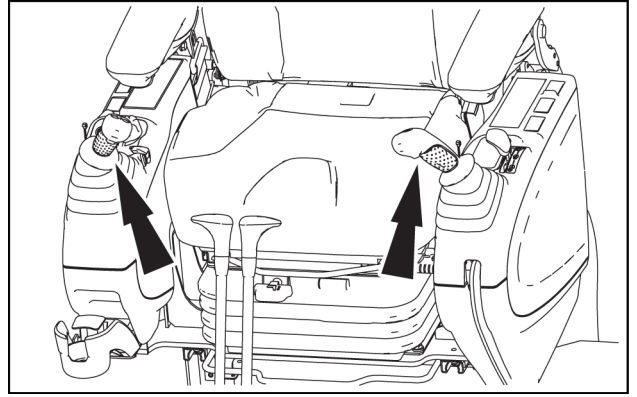
- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: www.heydownloads.com by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

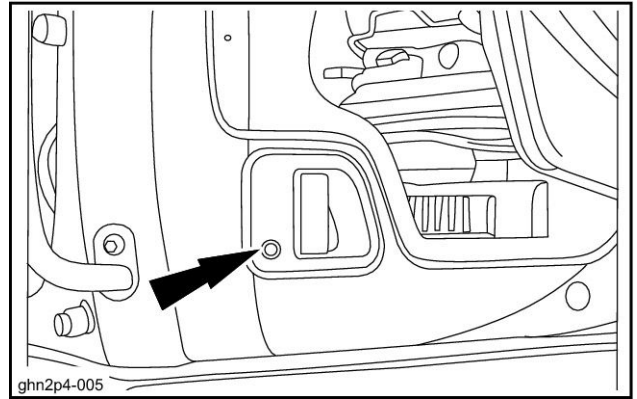
3. Slowly operate the control levers to lower the attachment to the ground.



SMIL14CEX2547AA 3

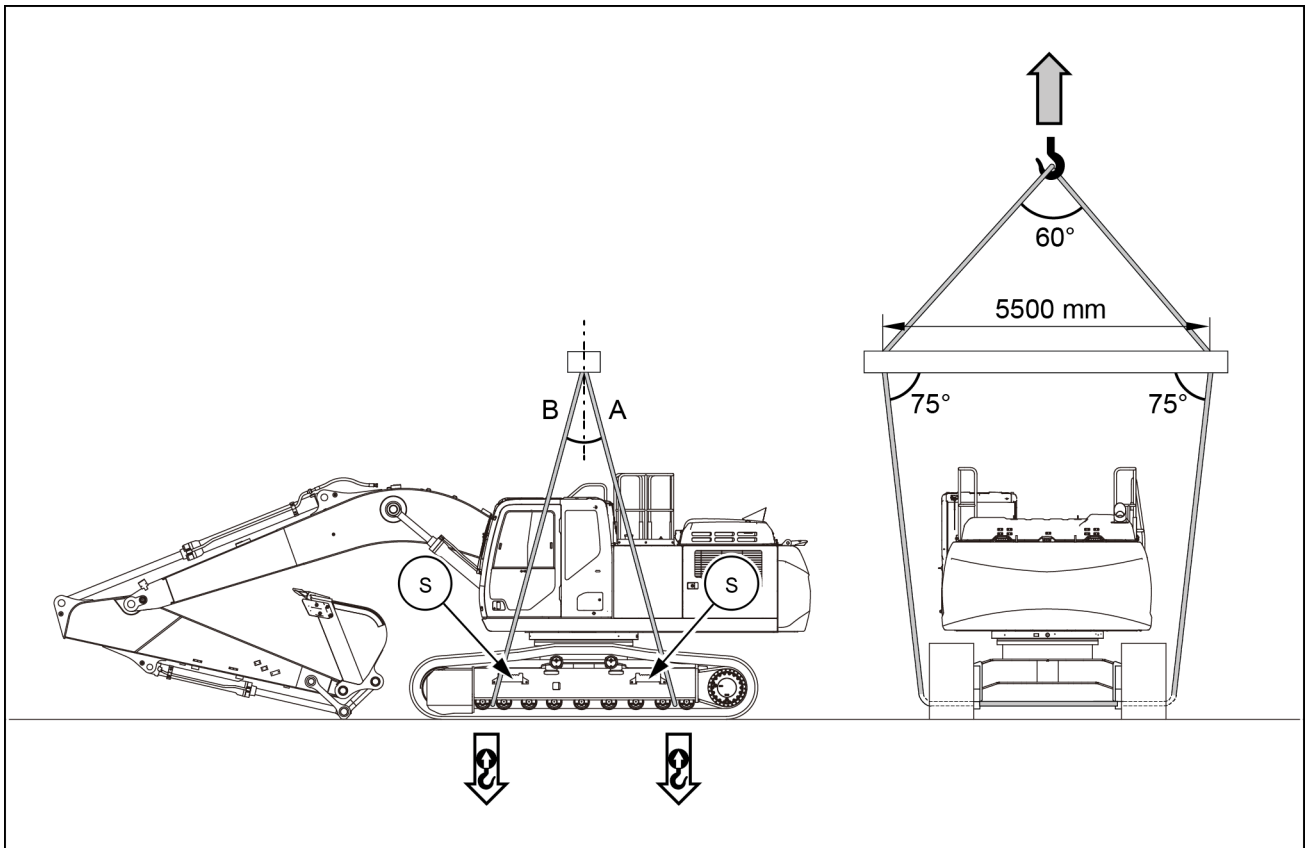
7. Remove the starter key, get off the cab and lock the cab door. Check that the hood and the side doors are properly locked, and that the lower panels are properly fixed.

NOTE: Make sure that any portion of the machine is interfering public road. Install appropriate traffic signs if any portion interferes public road.



GHN2P4-005A 4

Position the machine on a firm and level ground, and proceed as follows:



SMIL16CEX0454FA 1

1. Set the machine in the position for transport: fully retract the arm, curl the bucket and lower the boom. Place the gate lock lever in central position. Stop the engine and remove the starter key. Check the operator's compartment for any loose item, tools, etc. that could fall or cause a problem or injury during the procedure and remove or secure them. Get off the machine. Retract the radio antenna. Fold the rear view mirrors. Lock the cab door and the side panels. Remove the four side steps (S).
2. Check for lifting point decals on the undercarriage of the machine in order to know where the wire ropes shall be routed. Pass-through the first wire rope between the first two lower rollers on the front of the machine undercarriage. Pass-through the second wire rope between the two last lower rollers on the rear of the machine undercarriage.
3. Link the front wire rope and the rear wire rope to the expander. Slowly lift the expander to tension the wire ropes in order to reach the layout of the lifting devices shown in figure.
4. Carry out a final check of the linkages on the expander and then start lifting the machine.
5. Lift the machine slowly and vertically and make sure for its stability. If needed, lower the machine to the ground slowly and calibrate the layout of the wire ropes to tackle the actual machine configuration.

NOTICE: The overall angle $A+B$ shall be kept at $30 - 35^\circ$.

6. Complete the vertical lift up to the height of the platform where the machine has to be placed. Slowly move the crane laterally to get the machine right over the platform. Gently lower the machine to the platform.

NOTICE: always avoid sliding movements of the crane (lift and move laterally at the same time). Sliding movements definitely affect machine stability during lifting operation.

Engine oil recommended operating temperature range

	(H)	0W-40 CJ-4 UNITEK to MAT3521										
	(H)	API CJ-4 0W-40										
		(H)	10W-40 CJ-4 UNITEK to CNH MAT3521									
		(H)	API CJ-4 10W-40									
			(H)	15W-40 CJ-4 UNITEK to CNH MAT3521								
			(H)	API CJ-4 15W-40								
-40 °C -40 °F	-30 °C -22 °F	-20 °C -4 °F	-10 °C 14 °F	0 °C 32 °F	10 °C 50 °F	20 °C 68 °F	30 °C 86 °F	40 °C 104 °F	50 °C 122 °F			
(H) Engine oil pan or coolant block heater recommended in this range												

Hydraulic oil level

⚠ 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).

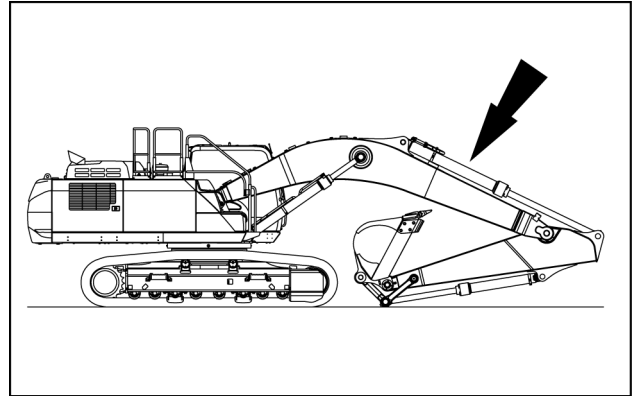
Failure to comply could result in death or serious injury.

W0241A

Check the hydraulic oil level every **10 h** or every day

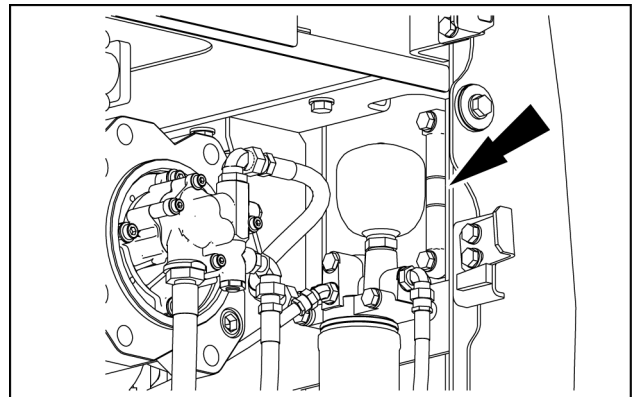
Fluid: **CASE AKCELA HYDRAULIC LL 46**

1. Park the machine on a flat and level place, and arrange the attachment as shown in the figure. Stop the engine, and remove the starter key.



SMIL15CEX0176AA 1

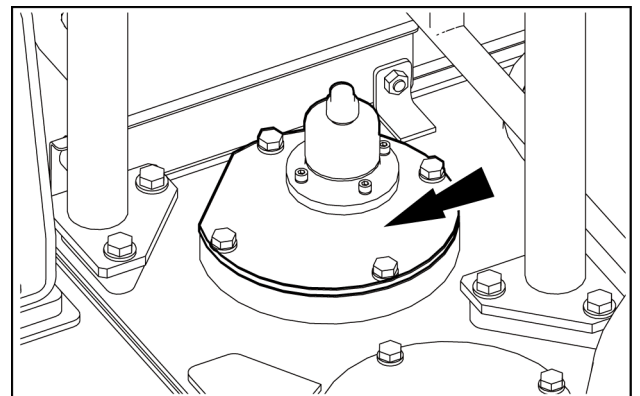
2. Open the right-hand door, and check the indicator of the hydraulic oil level. The oil level should be in the middle of the band indicated by the two lines.



SMIL15CEX0177AA 2

3. If the hydraulic oil level is not in range proceed as follows:
 - Release all pressure in the hydraulic tank. Refer to page **6-10**.
 - Clean the top surface of the hydraulic tank.
 - Remove the cover of the suction filter, and supply hydraulic fluid to the tank.
 - If necessary, replace the seal of the cover plate, and attach the cover of the suction filter.

NOTICE: Make sure that no contaminant (water, sand etc.) enters the reservoir during filling.



SMIL15CEX0178AA 3

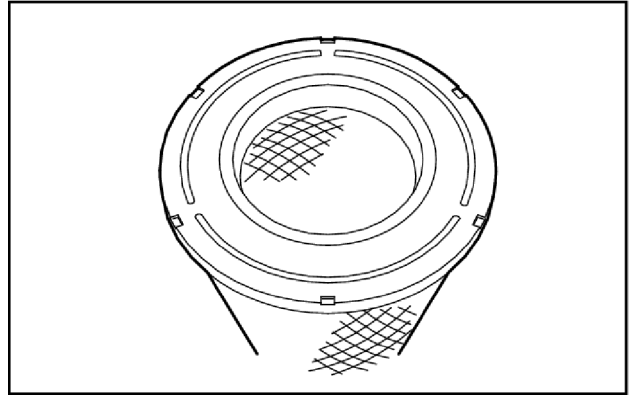
NOTE: Do not use compressed air if there is oil or soot in the element.

If the cartridge is greasy:

Clean it in water, with suitable detergent. (Consult your CASE CONSTRUCTION dealer).

Instructions for using the detergent are printed on the package.

NOTE: Dry the element out completely before installing it. It is advisable to keep a clean spare element ready that can be installed on the air cleaner while the cleaned element is drying.

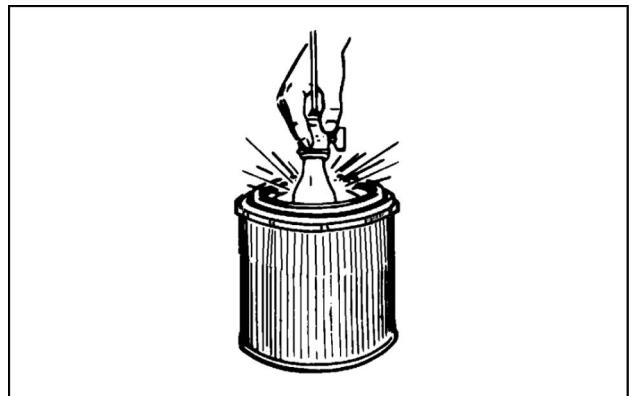


SMIL13CEX2757AA 4

Inspecting the element

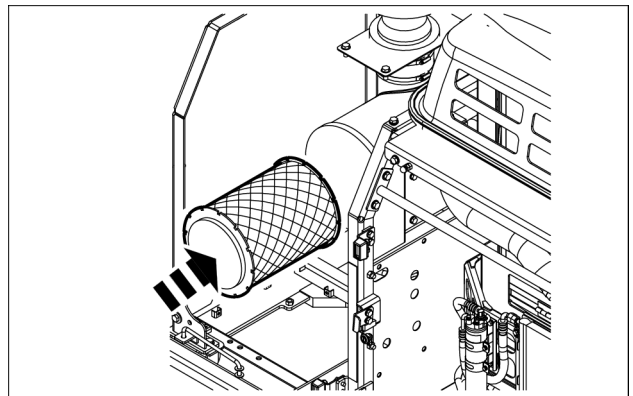
Check the element for damage by placing an inspection lamp inside the element.

NOTE: Change the element if light can be seen through a hole, however small.



SMIL14CEX2797AA 5

5. Clean the inside of the air cleaner case, and attach the primary element.
6. Attach the cover (with the "TOP" display facing up), and lock the fasteners.



SMIL18CEX0315AA 6

NOTICE: The mass air flow (MAF) sensor is mounted on the inlet duct of the air cleaner. Output of the engine may be restricted if any dust is attached to the MAF sensor or failure of sensing part of the MAF sensor due to usage of retailed cleaning fluid.

Pay attention not to allow dust to invade the inlet duct when replacing the air cleaner element. Also, pay attention not to spray retailed cleaning fluids to the MAF sensor when using them.

Every 500 hours

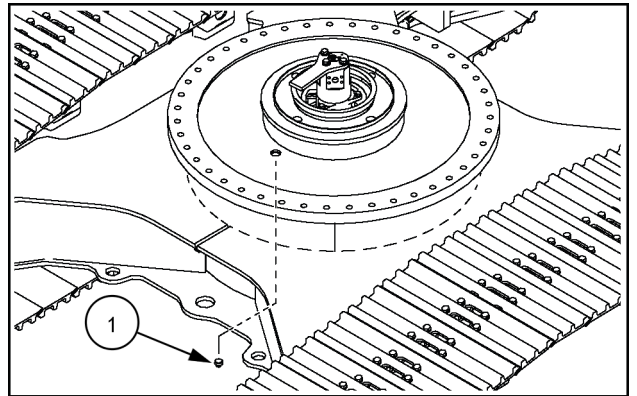
Turntable bearing

Check the greasing of the swing gears, and grease the turntable bearing every **500 h**.

Lubricant: **CASE AKCELA 251H EP MULTI-PURPOSE GREASE**

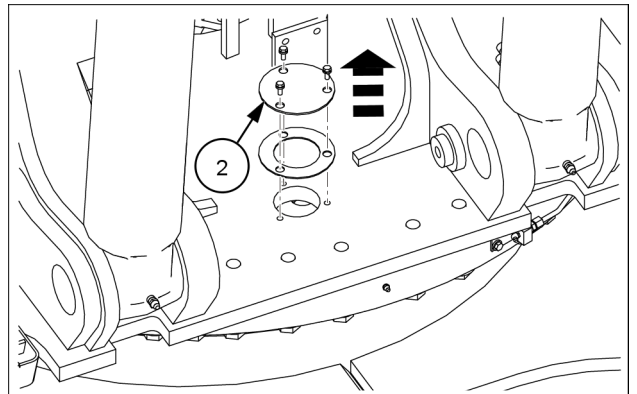
Prepare a can of loose and clean grease for checking the greasing of the swing gears. Prepare a gun and cartridges of clean grease for greasing the turntable bearing.

1. Park the machine on a hard and level ground. Orient the upper structure frame parallel to the undercarriage.
2. Operate the boom, arm, and attachment controls so that the arm stands vertical and the attachment rests on the ground.
3. Set the gate lock lever to central position, stop the engine, and remove the starter key.
4. Remove the cover in the bottom of the lower frame. Remove the plug (1) so to drain water, and greasy mud. Snug tighten the plug (1).



SMIL14CEX4312AB 1

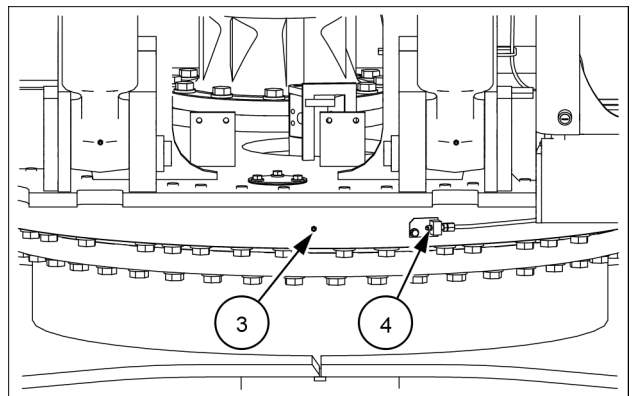
5. Check the greasing of the swing gears. Remove the inspection cover (2) on the front of the upper frame.
6. Remove all dirty grease.
7. Check the surfaces of the swing gears for excessive wearing or damages. If any excessive wearing or damage is found, immediately call the CASE CONSTRUCTION Dealer for inspection and repair.
8. Taking clean grease from the can, restore proper greasing of the surface of the teeth of the swing ring.



SMIL18CEX0060AA 2

NOTICE: do not grease the teeth at full height in order not to have too much grease spread beyond the swing ring.

9. Grease the turntable bearing. Remove the protective caps from the fittings (3) and (4) on the bearing.
10. Using the grease gun, inject clean grease into the fitting (3) so to push the old grease out from the lower sealing lip of the turntable bearing. Stop injecting as clean grease comes out from the lip.
11. Clean up the grease that exceeded the sealing lip, and reset the lip to its seating position.



SMIL18CEX0059AA 3

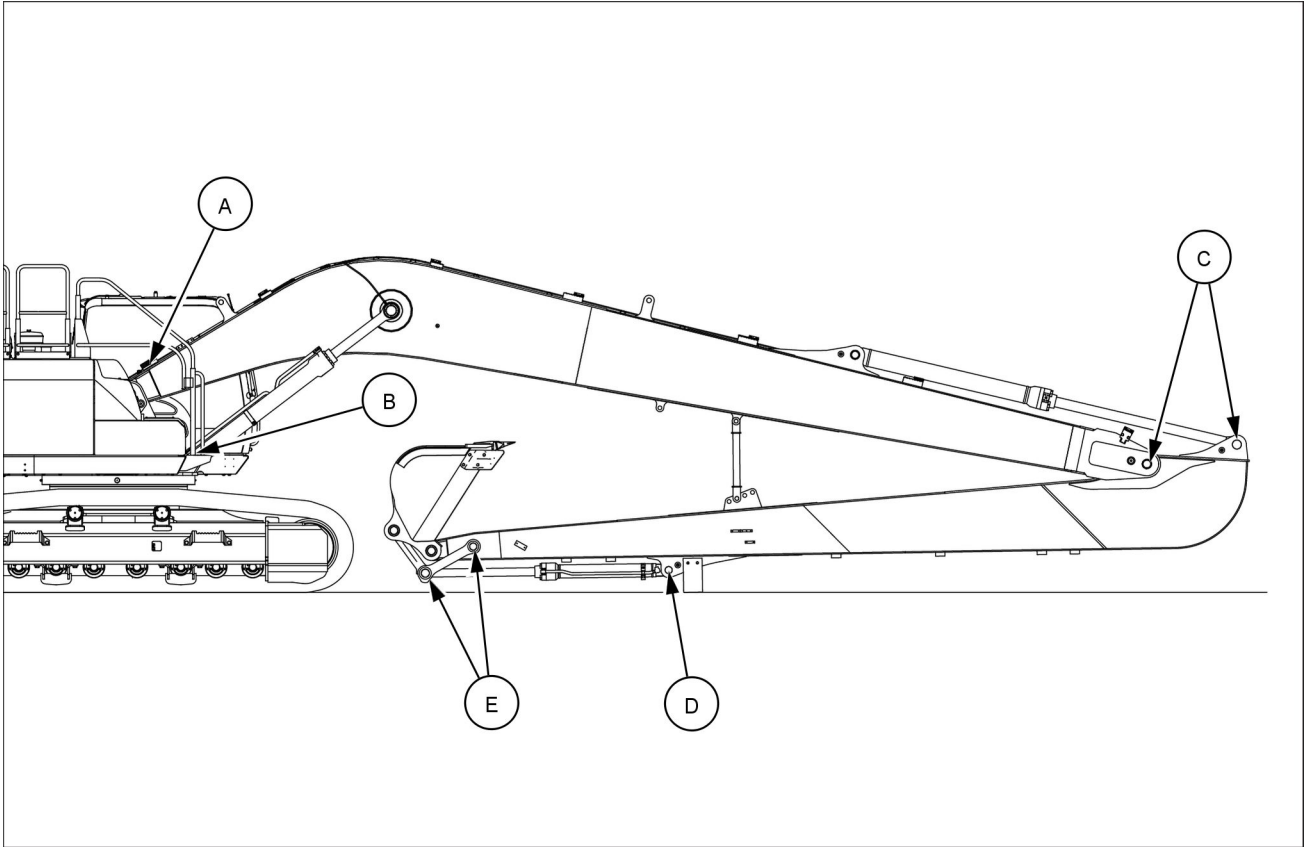
NOTICE: Always check the sealing lip for excessive wearing or damages. If any excessive wearing or damage is found, immediately call the CASE CONSTRUCTION Dealer for inspection and repair.

12. Inject the same amount of grease into the fitting (4). Reach the opposite side of the turntable bearing, clean up the grease that exceeded the sealing lip, and reset the lip to its seating position.
13. Get onto the cab, start the engine, and set the gate lock lever in forward position.

Grease points (Boom and arm) Long Reach version

Grease the boom and arm every **1000 h**.

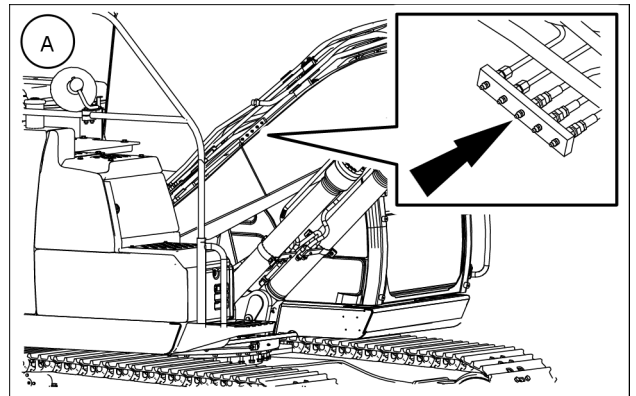
Lubricant: **CASE AKCELA 251H EP MULTI-PURPOSE GREASE**



SMIL19CEX0526FB 1

NOTE: the boom and the arm shall be lubricated every **50 h** if non-genuine grease is used.

- Boom bottom pin: two grease fittings.
- Boom cylinder top pin: two grease fittings.
- Arm cylinder bottom pin: one grease fitting.



SMIL17CEX5107AA 2

Hydraulic oil suction filter

⚠ 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

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

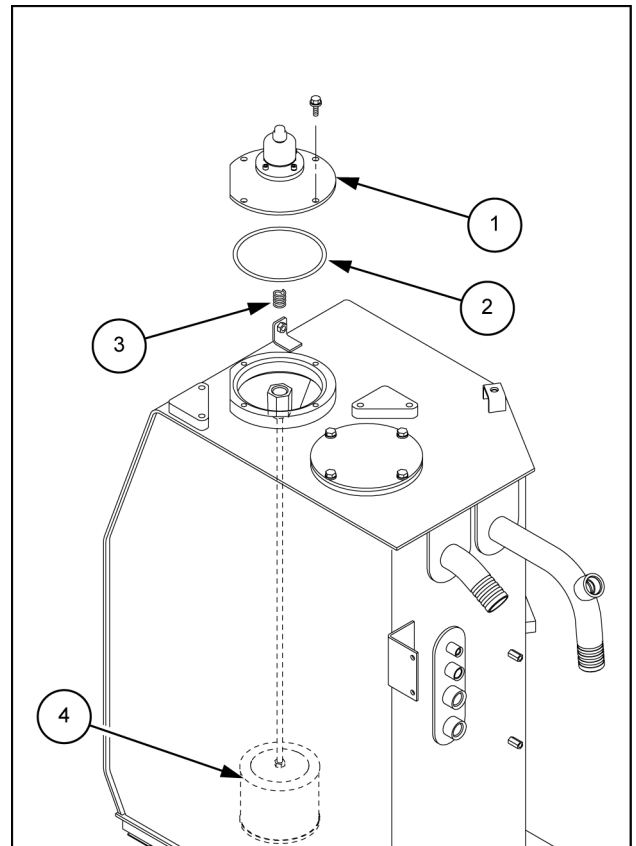
Clean the hydraulic oil suction filter every **2000 h**

NOTICE: If any attachment other than a bucket is used, reduce the interval of the hydraulic oil suction filter cleaning. Refer to Chapter 9.

NOTICE: If you find any metal particles on the old filters, consult the CASE CONSTRUCTION dealer.

NOTICE: Replace the hydraulic oil suction filter every **5000 h** of operation or when hydraulic fluid is replaced.

1. Release all the pressure in the hydraulic tank. Refer to page 6-10.
2. Clean the top of the hydraulic tank, and clean the cover of the suction filter.
3. Remove the cover (1), the O-ring (2), and the spring (3) located on top of the rod assembly of the suction filter.
4. Remove the oil suction filter (4), and clean it with a solvent. Let it dry completely, and check for damage. If any damage is found on its surface, replace it with a new component.
5. Attach the suction filter (4) and the rod assembly.
6. Attach the spring (3).
7. Replace the O-ring (2).
8. Attach the cover (1).
9. Check the hydraulic fluid level, and supply it if necessary.



SMIL15CEX0202BB 1

Pump outlet hoses

Check the outlet hose of main pump: Every 2 years or every **4000 h** (whichever comes first)

Checking the hydraulic system piping

Make sure there are no leaks from the hydraulic system hoses, pipes, plugs, connections and fittings and check that all nuts and screws are correctly tightened. In the event of problems, repair, change or tighten the component (s) concerned.

Hydraulic hoses

Check the boom, arm, and bucket cylinder hose: Every 2 years or every **4000 h** (whichever comes first)

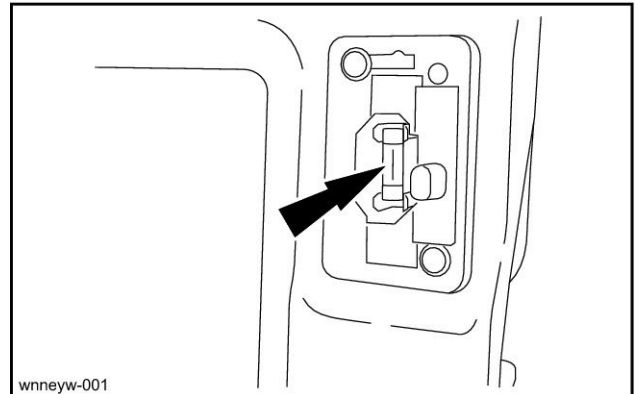
Checking the hydraulic system piping

Make sure there are no leaks from the hydraulic system hoses, pipes, plugs, connections and fittings and check that all nuts and screws are correctly tightened. In the event of problems, repair, change or tighten the component (s) concerned.

Bulb replacement

Lighting in the operator compartment:

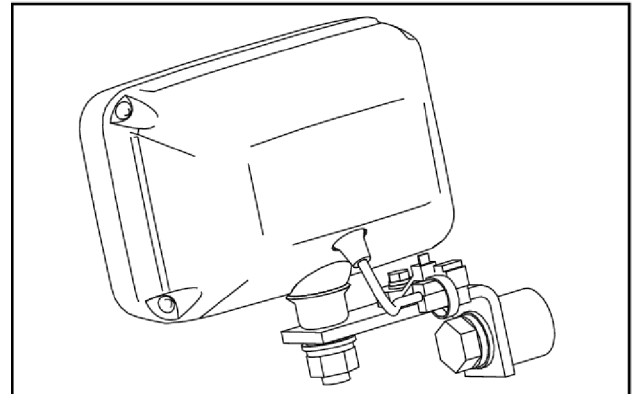
1. Remove the cover.
2. Remove the light bulb, then install a new light bulb of the same wattage (**10 W**).
3. Install the cover.



8YHY9K-001A 1

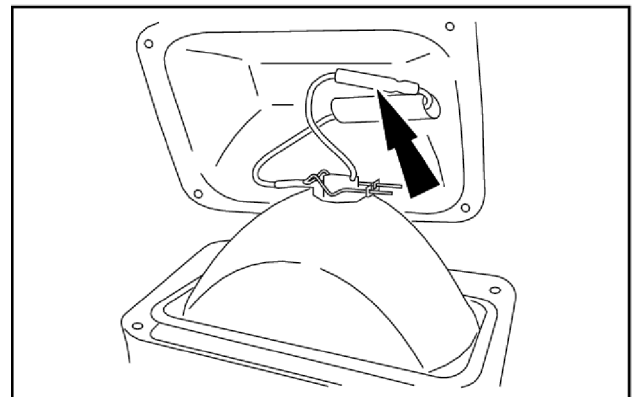
Attachment working lights:

1. Remove the 4 retaining screws.



SMIL13CEX2830AB 2

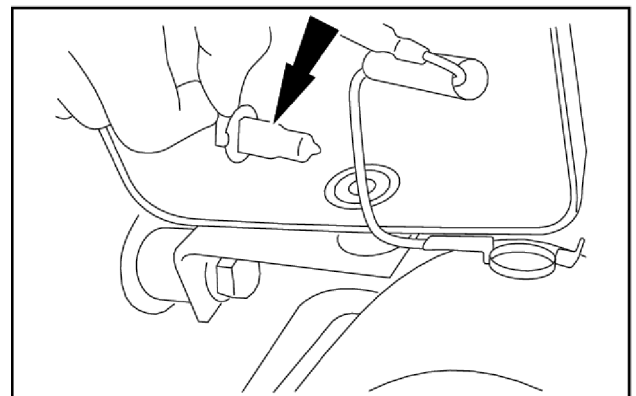
2. Tilt the working light and disconnect the plug.



SMIL13CEX2831AB 3

3. Pull the clip outwards, remove the bulb and install a bulb of the same wattage (**70 W**).
4. Install the clip and reconnect the plug.
5. Put the working light back into position and install the mounting screws.

NOTICE: never put your fingers on a tungsten iodide bulb.



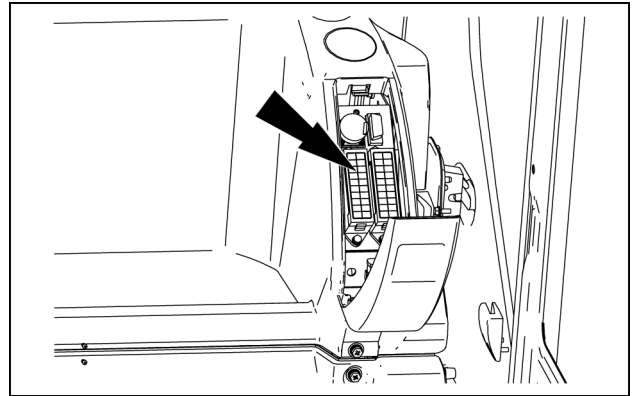
SMIL13CEX2832AB 4

Fuse and relay locations

Fuses

To replace a fuse proceed as follows:

1. Turn the starter key to OFF position.
2. Open the protective cover of the fuse box located behind the operator's seat.



SMIL18CEX0782AA 1

3. Identify the fuse to be replaced. Refer to the fuse map on the following page.

NOTE: The fuse map is also reported on labels applied on the fuse box.

NOTICE: Make sure to replace the failed fuse with one of the same amperage. Failing to comply will result in serious damages to the electric system of the machine.

4. Open the fuse box that contains the fuse to be replaced.
5. Use the provided jigs to remove the failed fuse, and to install the new fuse.
6. Close the fuse box and the protective cover.

Fluids and lubricants

By using appropriate fluids and lubricants the excavator can operate in ambient temperatures ranging from **-20 °C (-4 °F)** to **45 °C (113 °F)**. Refer to the list of fluids and lubricants contained in this manual.

NOTICE: When operating the machine in ambient temperatures outside the above mentioned range, consult your **CASE CONSTRUCTION Dealer** for specific machine provision and for specific fluids and lubricants to be used.

	Quantity		CASE CON- STRUCTION specification	Reference specification
Fuel tank	580 L (153 US gal)	—	—	ASTM D975
DEF/AdBLUE® tank	152 L (40.2 US gal)	—	—	ISO 22241-1
Engine oil	48 L (12.7 US gal)	CASE AKCELA UNITEK NO. 1™ SBL CJ-4	MAT3521	SAE 10W40 ACEA E9 API CJ-4
Swing reduction unit	5 L (1.3 US gal)	TUTELA HYPOIDE EP GEAR LUBE SAE 80W-90	MAT3511	SAE 80W/90 API GL-5
Travel reduction unit	9.5 L (2.5 US gal)	TUTELA HYPOIDE EP GEAR LUBE SAE 80W-90	MAT3511	SAE 80W/90 API GL-5
Engine coolant	38 L (10.0 US gal)	CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT CONCENTRATE (*)	MAT3624 Grade OAT-EG1	ASTM D6210 TYPE I-FF
		CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT 50/50 PREMIXED	MAT3624 Grade OAT-EG2	ASTM D6210 TYPE III-FF
Hydraulic oil tank (**)	175 L (46.2 US gal)	CASE AKCELA HYDRAULIC LL 46	—	ISO 11158 L-HV46
Grease	—	CASE AKCELA 251H EP MULTI-PURPOSE GREASE	MAT3550 Grade A	NLGI 2

(*) Concentrate antifreeze to be mixed 50/50 with distilled (deionized) water.

(**) The total capacity of the hydraulic system is **350 L (92.5 US gal)**.

9 - ACCESSORIES

Direct fit buckets

CASE CONSTRUCTION direct fit buckets are designed to optimize the operating performance of the CASE CONSTRUCTION excavators in main construction works and in special jobsites.

NOTICE: CASE CONSTRUCTION direct fit buckets are designed for best performance when they are installed directly to the excavator arm. If the excavator is equipped with a quick coupler, specific CASE CONSTRUCTION Coupler buckets are available and should be used. Refer ahead in this Chapter.

CASE CONSTRUCTION Heavy Duty direct fit buckets ensure excavating performance and payload for most of construction works. They are recommended for digging and trenching in compacted and slightly abrasive soil. They are also suitable for scoop loading of sand and gravel.

CASE CONSTRUCTION Heavy Duty High Capacity direct fit buckets feature a higher capacity/width ratio for special construction works that do not require top excavating performance. They are recommended for productive trenching in uncompacted soil. They are also suitable for scoop loading of topsoil, coal, and other loose light materials.

CASE CONSTRUCTION Severe Duty direct fit buckets feature reinforced frames and thicker wear bars for tough construction and quarry works. They are recommended for digging and trenching in packed and abrasive soil mixtures. They are also suitable for scoop loading of stones and shot rocks.

NOTE: All the CASE CONSTRUCTION direct fit buckets may be equipped with bolt-on side cutters in order to enhance the penetration effect and to reduce the wearing of the base frames of the bucket.

CASE CONSTRUCTION Ditch Cleaning direct fit buckets feature a compact shell, a wide front and a bolt-on straight cutting edge. They are suitable for light digging and dredging, and for leveling or fine grading of slopes or beds.

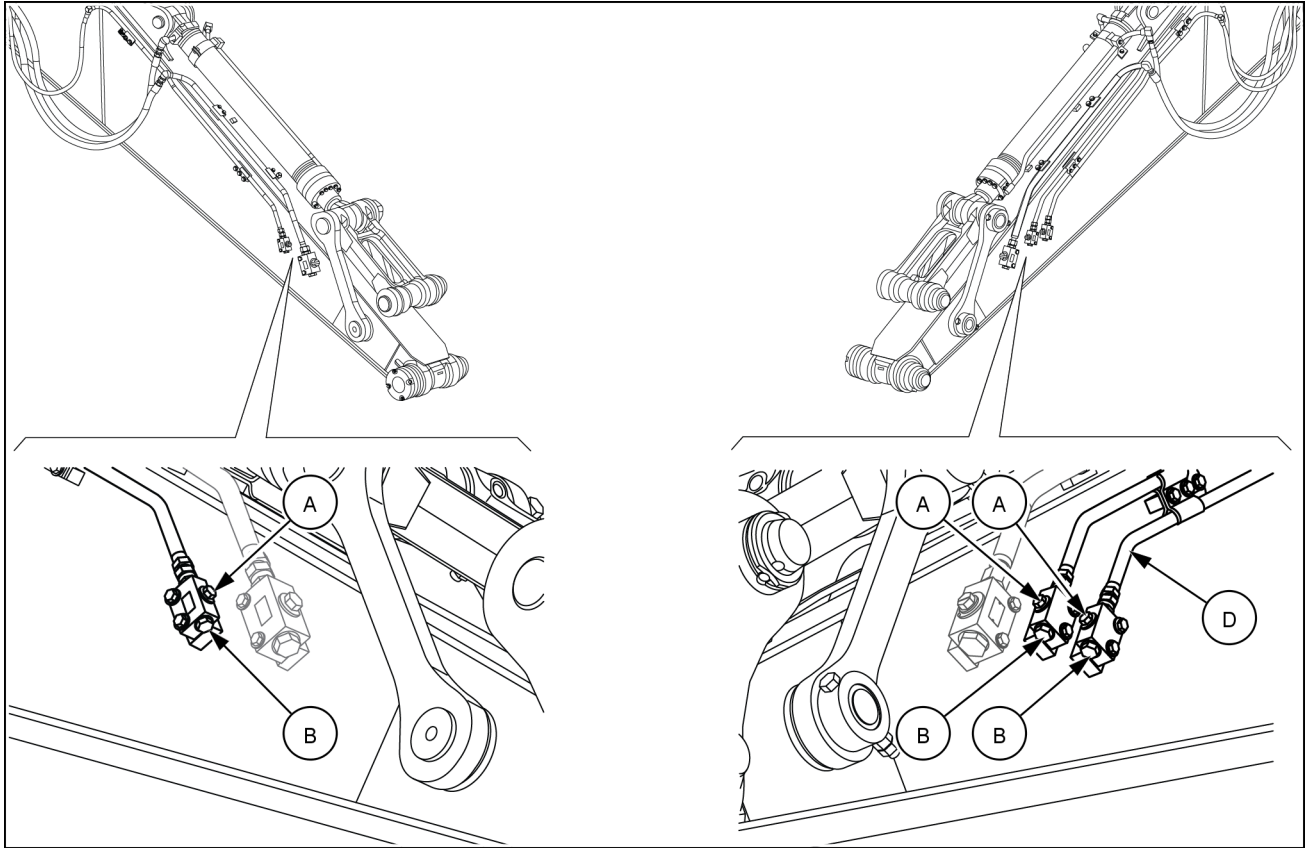
CASE CONSTRUCTION defines application rules in order to match each bucket type and size with the most suitable configuration of the machine, and to refer bucket application to specific working conditions.

Auxiliary low-flow hydraulic circuit

The machine can be equipped with an additional auxiliary low-flow hydraulic circuit to operate attachments featuring secondary hydraulic actuation for positioning, such as rotating grabs or tiltable buckets.

Hydraulic connections

The feed valves at the top of the arm allow to install properly and safely the hoses to connect the hydraulic attachment to the lines of the auxiliary low-flow hydraulic circuit.



SMIL15CEXY958FB 11

Open/Close tool (A)	24 mm wrench
Hydraulic connection (B)	G 3/4" female port with O-Ring seat

NOTE: the maximum flow rate of the auxiliary low-flow hydraulic circuit using the SP work mode is 63 L/min (16.6 US gpm). The maximum working pressure of the auxiliary low-flow hydraulic circuit is 20.6 MPa (2988 psi).

NOTE: an additional drainage line (D) is located on the left side of the arm. The drainage line (D) is intended to allow external drainage from the hydraulic motor which rotates the grab or the crusher.

NOTICE: Always keep each connecting hose on the same side of the arm. Never cross-over the connecting hoses between the two sides of the arm.

CASE CONSTRUCTION hydraulic breakers

CASE CONSTRUCTION CH hydraulic breakers are designed to optimize the operating performance of the CASE CONSTRUCTION excavators in infrastructural works, in primary and secondary site demolition, and in quarry breaking.

CASE CONSTRUCTION defines application rules in order to match each breaker model with the most suitable configuration of the machine, and to refer breaker application to specific working conditions.

Direct fit application as function of the arm (CX350D)

CH BREAKER						
Model	Install Weight	Reference machine settings		Arm		
		Flow	Relief Pressure	2.63 m (103.54 in)	3.25 m (127.95 in)	4.04 m (159.06 in)
CH-230	2770 kg (6107 lb)	210 L/min (55 US gpm)	21 – 23 MPa (3046 – 3336 psi)	○	○	x

- Suitable application
- x Not applicable

NOTICE: for site demolition or for operation in quarry, the machine must be equipped with Heavy Duty boom, 2.63 m (103.54 in) arm, 700 mm (28 in) tracks with Triple Grouser shoes, and integral track guards.

NOTICE: CASE CONSTRUCTION will not take into account any condition of application that is out of the ones defined in the table above.

Servicing instructions

⚠ WARNING

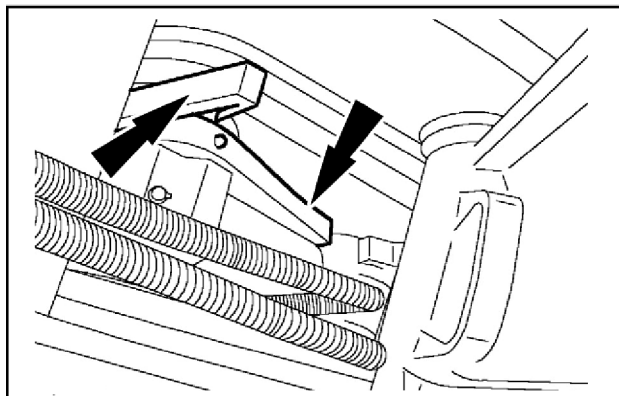
**Improper operation or service of this machine can result in an accident.
If you do not understand a maintenance procedure, or doubt your ability to perform a maintenance procedure correctly, see your authorized dealer.
Failure to comply could result in death or serious injury.**

W0157A

Modification of the quick coupler without prior authorization can cause serious injury. Do not carry out any modification without authorization. Consult your CASE CONSTRUCTION Dealer.

Daily checks:

- Check that the locking bar functions correctly and that it is not fouled by foreign matter.
- Check the quick coupler cylinder hoses for free movement.
- Check for any signs of cracks.



SMIL13CEX2822AB 2

Incorrect functioning

NOTICE: *make sure that the attachment is in full contact with the ground before carrying out the following checks.*

If the quick coupler does not work correctly, check the following items:

- That no pin is broken, bent or lost.
- That no foreign matter is fouling the safety device.
- That the cylinder is not damaged or bent.
- That there are no leaks from hydraulic hoses, etc.

If the problem persists after all these checks, consult your CASE CONSTRUCTION Dealer.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: www.heydownloads.com by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL