

ORIGINAL INSTRUCTIONS

**CX245D SR**  
Crawler Excavator

**OPERATOR'S MANUAL**

**Part number 90393403**  
1<sup>st</sup> edition English  
April 2020



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## 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.

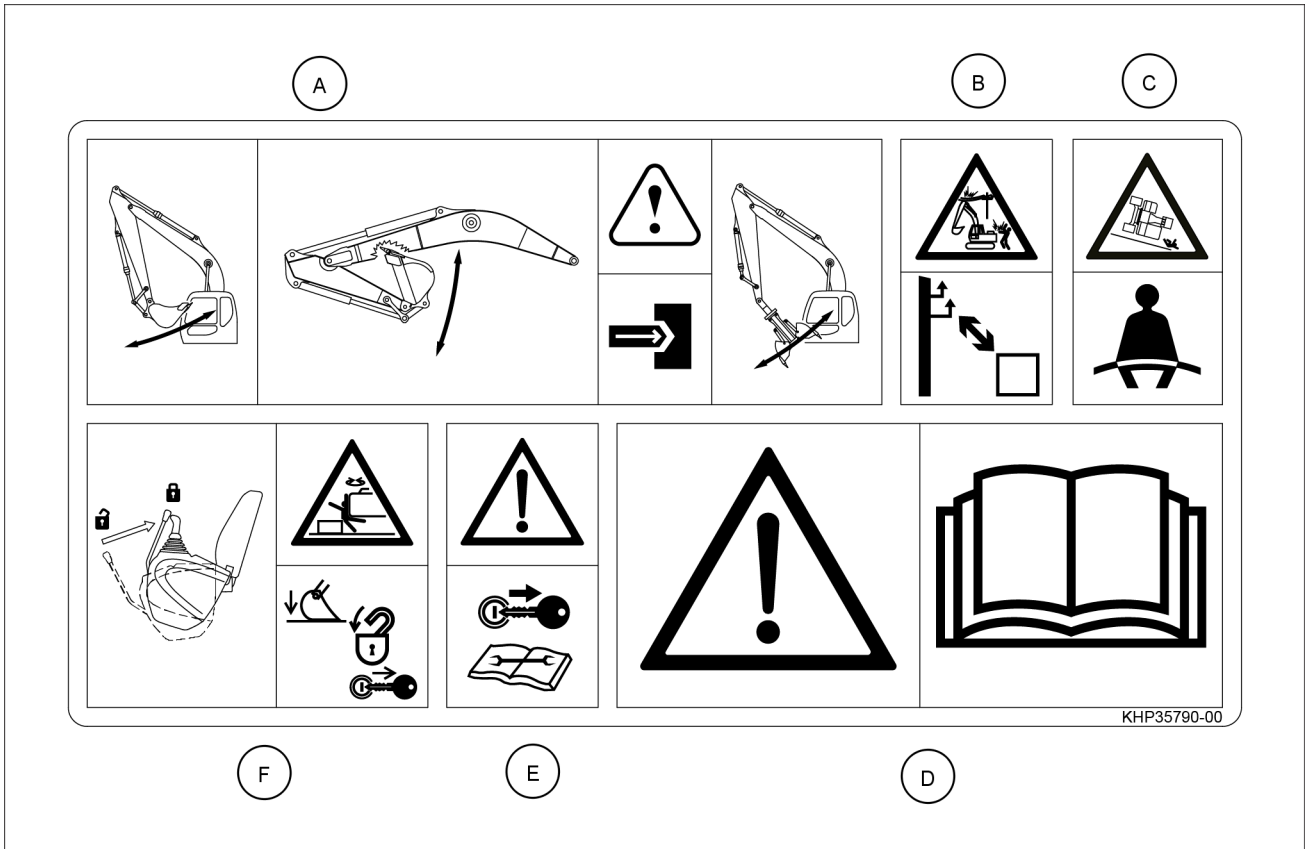
### Maintenance and adjustments

- 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: KHP35790



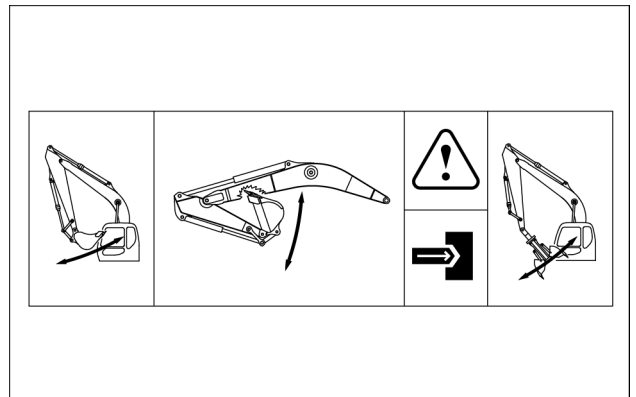
KHP35790 3

**(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.

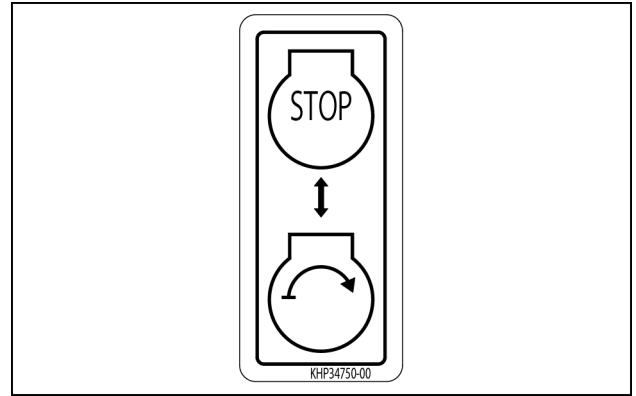


KHP35790\_A 4

**(33) Emergency Stop Switch operation**

Part number: KHP34750

Press the top side of the switch only if an emergency stop of the engine is necessary.



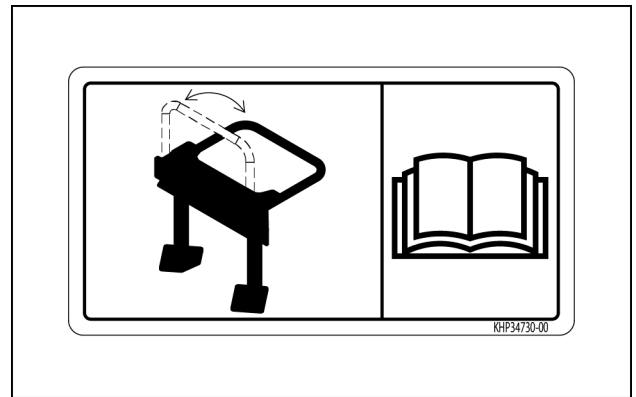
KHP34750 41

**(34) Foldable handrail**

Part number: KHP34730

The handrail on the top of the fuel tank shall be set and fixed in the horizontal position before a transport operation.

Make sure to read the Operator's manual to understand how to set the handrail according to the operating condition of the machine.



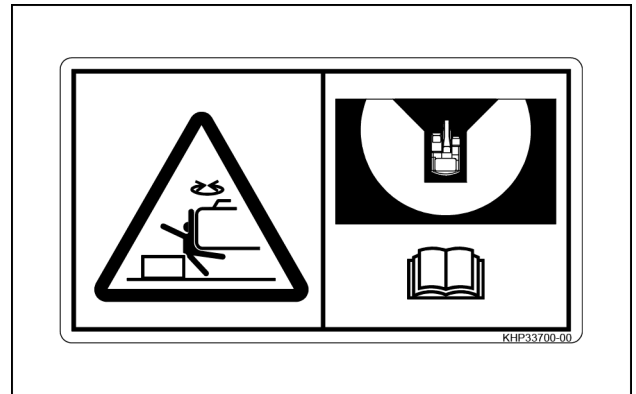
KHP34730 42

**(35) 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 43

**(36) 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 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.

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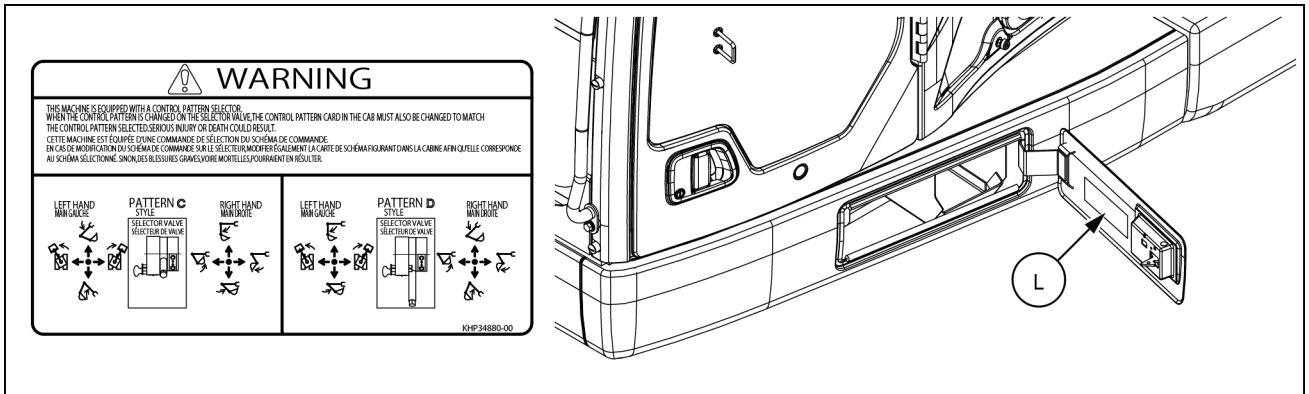
Selection of control pattern

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.

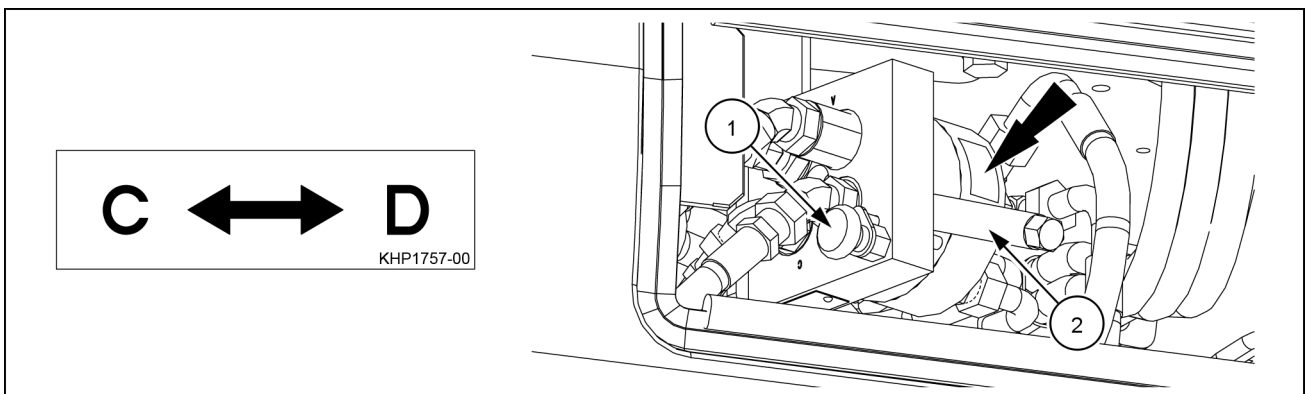
To select the desired control pattern proceed as follows:

1. Lower the attachment to the ground, and stop the engine.
2. Open the storage compartment located under the cab.
3. Read and understand the warning label (L) located on the inside of the compartment cover.



SM17CEX0587EA 1

4. Pull the locking knob (1) and move the lever (2) to set the desired control pattern C or D. Release the locking knob.

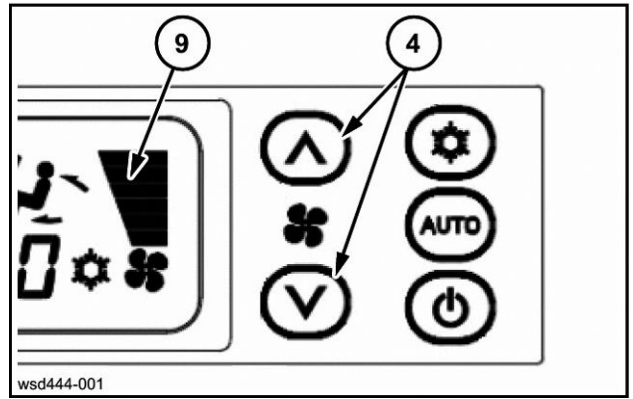


SM17CEX0588EA 2

5. Close the storage compartment.

### Ventilation

These push buttons (4) enable the air flow to be increased or reduced. To increase the flow of air, press the top button. To decrease the flow of air, press the lower button. The segments on the display screen (9) will increase or decrease depending on the flow selected.



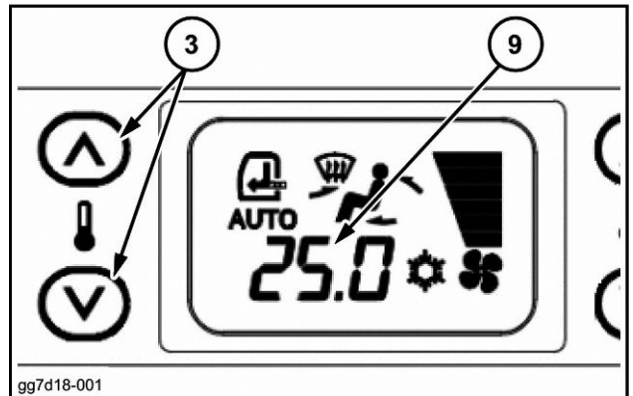
wsd444-001

WSD444-001 3

### Temperature

These push buttons (3) allow the temperature to be raised or lowered within an 18 °C (64.4 °F) and 32 °C (89.6 °F). To increase the temperature, press the up button. To lower the temperature, press the low button. The temperature reading will appear on the display screen (9).

**NOTICE:** The temperature reading can be displayed in degrees Celsius or degrees Fahrenheit. To select the scale required, press the two push buttons (3) simultaneously for five to ten seconds. The degrees Fahrenheit temperature will be followed by an "F".



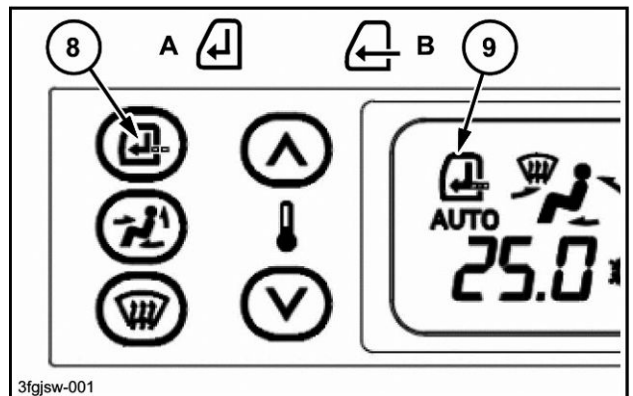
gg7d18-001

GG7D18-001 4

### Air recycling

This button (8) allows for two different types of air circulation to be selected. Fresh air from outside or recycled air from inside. The type of circulation will be changed each time the button is pressed. Indication of the type of flow direction selected will appear on the display screen (9).

- (A) Internal air circulated
- (B) External air enters

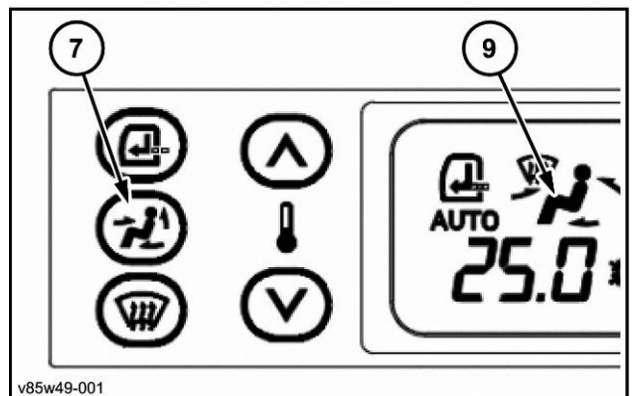


3fgjsw-001

3FGJSW-001 5

### Air flow direction

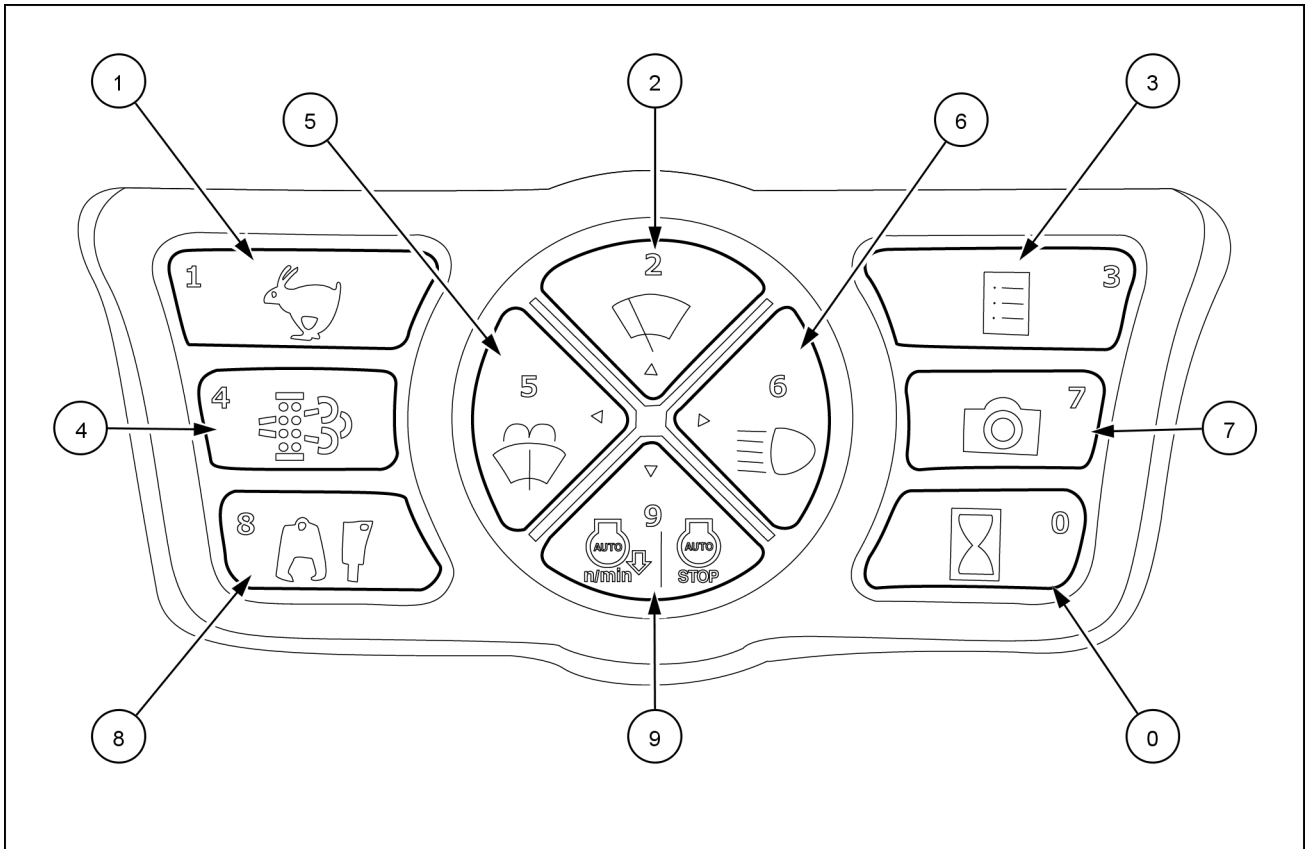
This button (7) allows four different types of air flow direction to be selected. To select the type of air flow direction, press the button (7) successively until the type of flow direction required is obtained. Indication of the type of flow direction selected will appear on the display screen (9).



v85w49-001

V85W49-001 6

**Control buttons**



SMIL15CEXY842FA 2

1. Travel mode selector button
2. Wiper button
3. Display mode selector button
4. SCR CLEANING button
5. Windshield washer button
6. Working lights button
7. Camera view selector button (\*)
8. Attachment selector button
9. Idle mode button
0. Hour meter button

(\*) The camera view selector button is active only if the Field View Monitor system is equipped. Refer to Chapter 9.

### Wiper button

The wiper operation cycles as follows every time the wiper button is pressed.

#### Slow speed

- from inactive wiper, the wiper is activated and moves at slow speed

#### Fast speed

- from wiper moving at slow speed, the wiper goes moving at fast speed

#### Stop

- from wiper moving at fast speed, the wiper is stopped.

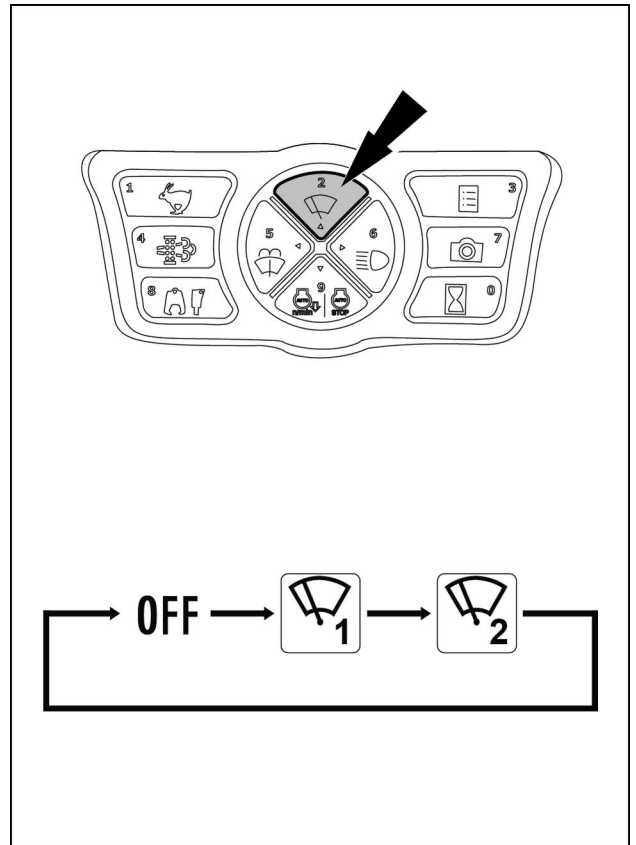
The wiper speed is indicated by a specific icon on the display:



The wiper is active at slow speed.



The wiper is active at fast speed.

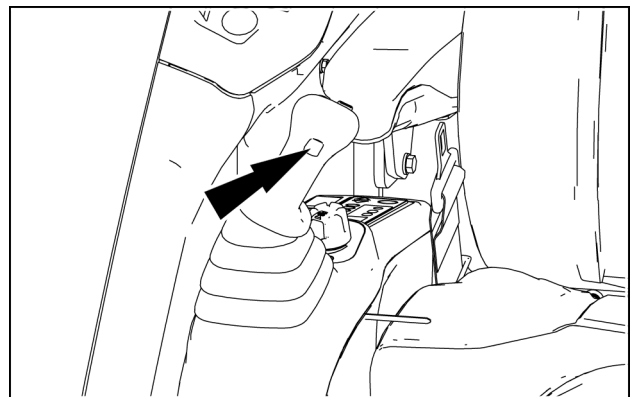


SMIL15CEXY886BB 12

The wiper can be intermittently operated by pressing and holding down the one-touch wiper button on the back of the right control lever.

**NOTICE:** do not operate the wiper when the windshield is dry. The wiper may crack.

**NOTICE:** if the wiper is operated when the glass is covered with mud or snow, the wiper may be damaged.



SMIL20CEX0009AA 13

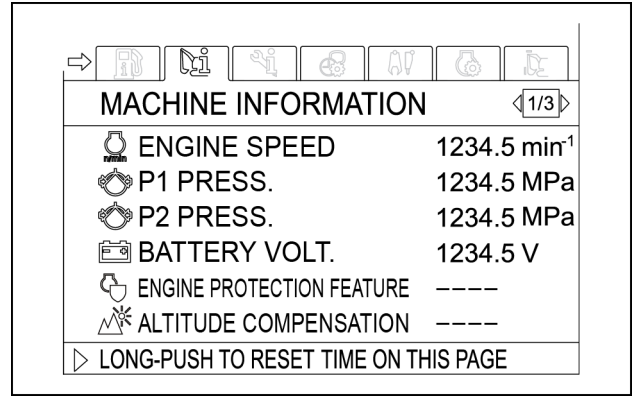
**Machine status**



Detailed machine conditions can be checked.

The following items can be checked:

page	Machine information
1/3	ENGINE SPEED (min-1)
	P1 PRESS. (MPa)
	P2 PRESS. (MPa)
	BATTERY VOLT. (V)
	ENGINE PROTECTION FEATURE
	ALTITUDE COMPENSATION
2/3	ACCUMULATED FUEL CONSUMPTION (L)
	ACCUMULATED DEF CONSUMPTION (L)
	COOLING DOWN REMAINING TIME (sec)
3/3	ENGINE OPERATION TIME (hr)
	MACHINE OPERATION TIME (hr)
	SWING OPERATION TIME (hr)
	TRAVEL OPERATION TIME (hr)
	BREAKER OPERATION TIME (hr)
	CRUSHER OPERATION TIME (hr)



SMIL15CEX0456AA 30

**NOTE:** press and hold the left and right buttons together for **10 s**, and the entire fuel history will be reset.

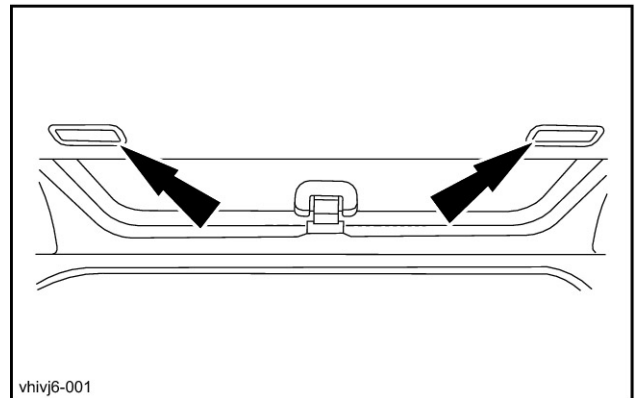
Engine protection feature: the machine monitors its engine operation and, in case excessive load is applied, controls the engine output for protection. "++++" indicates that this function has been activated, "----", not activated.

Altitude compensation: the machine is equipped with barometric sensor and, under the condition of extremely low atmospheric pressure (ex. high altitude area), optimize the engine operation. "++++" indicates that this function has been activated, "----", not activated.

## 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.



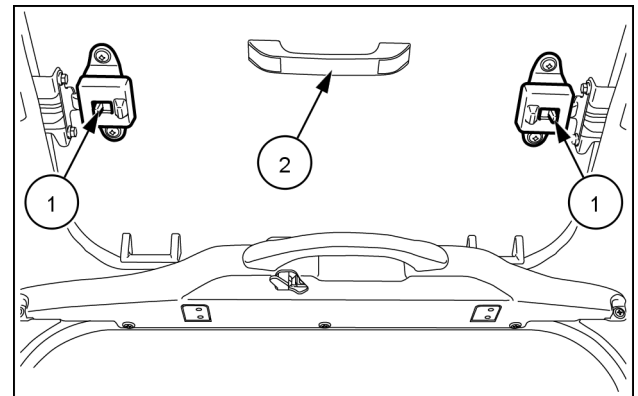
VHIVJ6-001A 1

### Roof hatch

To open the roof hatch, push the two locking levers (1) to the inside, and follow the opening movement by holding the handle (2).

**NOTICE:** The roof hatch is fitted with two gas struts, and the opening movement shall thus be followed through by hand in order not to damage the machine.

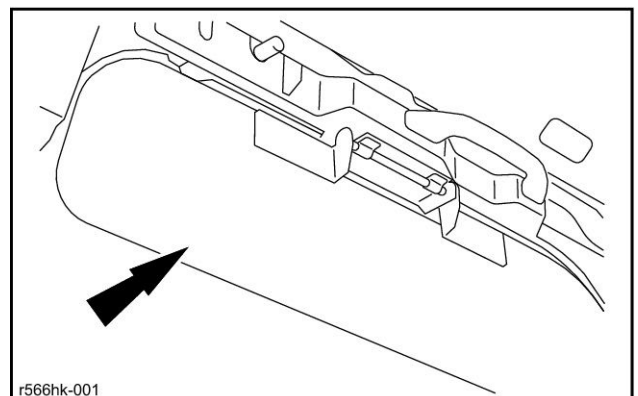
To close the roof hatch, pull it down until the two locking levers (1) are engaged.



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### Sun shield (optional)

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

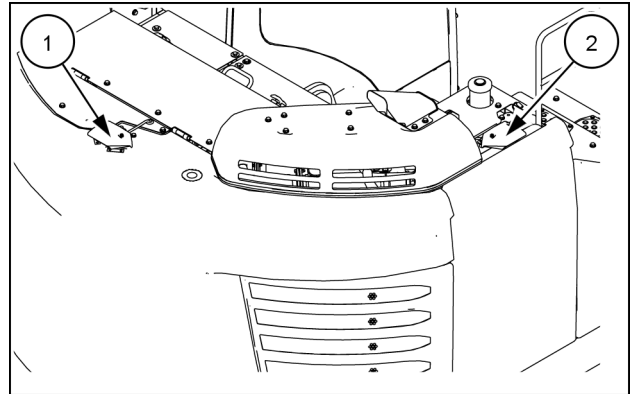


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## Cameras

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 on the fuel tank.

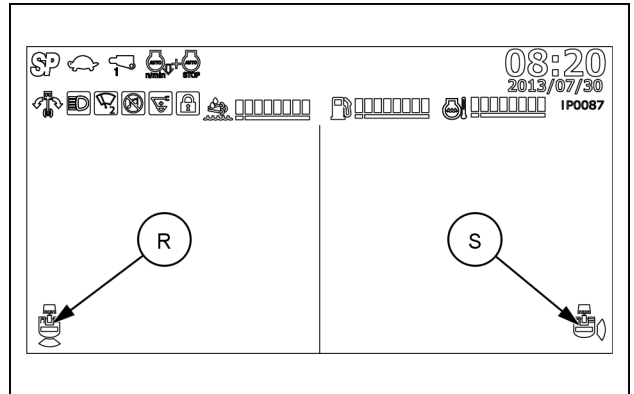


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The view of the rear camera (R) is shown on the left side of the display. The view of the right side camera (S) is shown on the right side of the display.

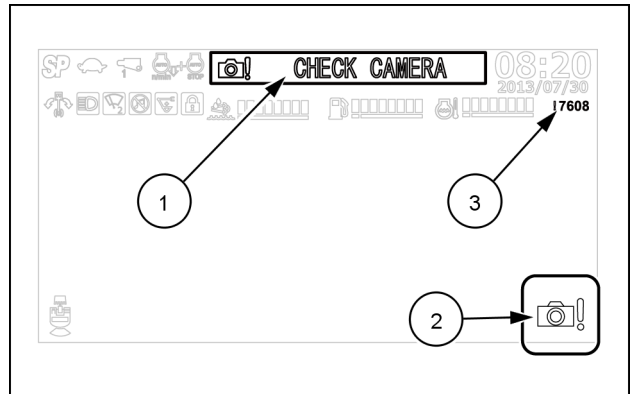
**NOTICE:** Never operate the machine while only looking at the images on the display. Make sure to check the area around the machine by the direct view or through the mirrors.

**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

### ⚠ 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

Fill the fuel tank with Ultra-Low Sulfur diesel fuel only. Refer to Chapter 6 for the detailed specifications and prescriptions about the fuel to be used.

**NOTICE:** Never put any moisture elimination product (water draining agent) in the fuel tank. Doing so may damage the fuel system, and thus the engine.

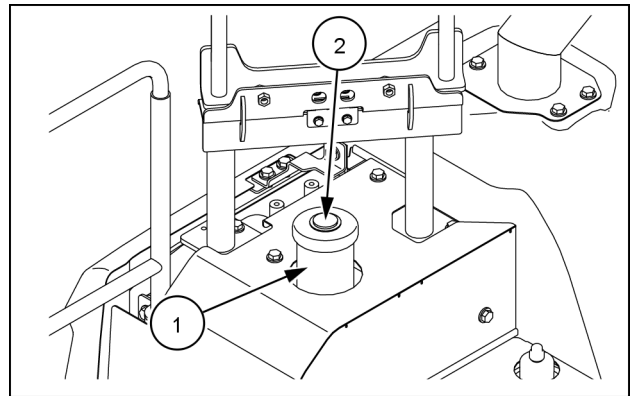
**NOTICE:** If the machine is operated in cold climate, fill the fuel tank at the end of each working day to prevent the formation of condensation.

To refill the fuel tank proceed as follows:

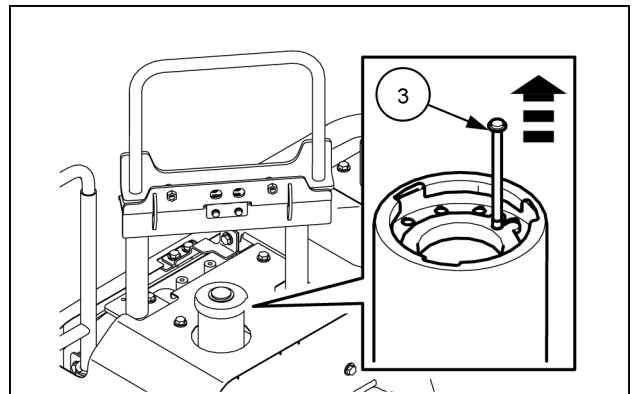
1. Stop the engine, and remove the starter key.
2. Get over the fuel tank. Clean the area around the fuel filler neck (1).
3. Slide the protective plate over the cap (2) of the fuel filler neck, and unlock the cap with the starter key.
4. Turn the cap (2) counterclockwise and open the filler neck.

**NOTICE:** Never remove the mesh filter inside the fuel filler neck. Doing so may damage the fuel system, and thus the engine.

5. Refill until the needle indicator (3) gets up from the filler neck.
6. Put the cap (2) on the filler neck. Turn the cap clockwise until it engages the stopper on the filler neck.
7. Lock the cap (2) with the starter key.



SMIL17CEX0589AA 1



SMIL19CEX2660AA 2

The MANUAL SCR CLEANING is stopped if any of the following is done:

- The operator sets the gate lock lever to unlock position.
- The operator changes the engine speed throttle position.
- The operator presses the SCR CLEANING button.

The SCR CLEANING icon starts to flash in orange and the message PUSH SCR SWITCH TO ACTIVATE is displayed.

**NOTICE:** Never restart normal machine operation with the MANUAL SCR CLEANING process being suspended. The SCR system will be damaged. Resume the MANUAL SCR CLEANING process immediately.

The MANUAL SCR CLEANING is disabled if any of the following occurs:

- The MANUAL SCR CLEANING process is not completed within **40 min** after it is started.
- The MANUAL SCR CLEANING is not started within **10 h** after the message to request MANUAL SCR CLEANING (PUSH SCR SWITCH TO ACTIVATE) is displayed.

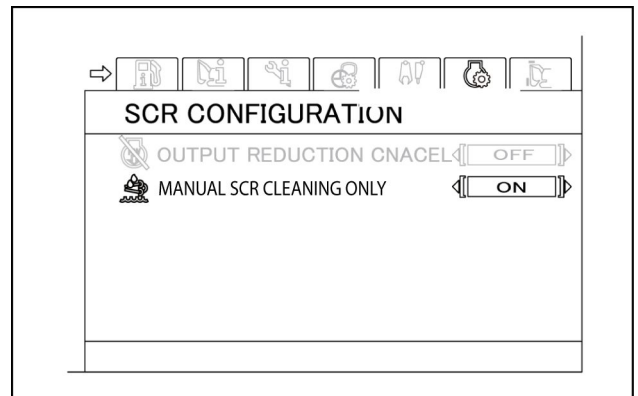
A warning alarm sounds for approximately **2 s** and the SCR CLEANING icon turns red. The message CHECK ENGINE and a DTC (Diagnostic Trouble Code) appear on the display. Immediately stop machine operation, and contact the CASE CONSTRUCTION dealer for machine repair.

### MANUAL SCR CLEANING ONLY function

The purpose of this function is to avoid high temperature exhaust in specific operating conditions:

- Operation inside building.
- Operation underground.
- Operation near combustibles or explosives.

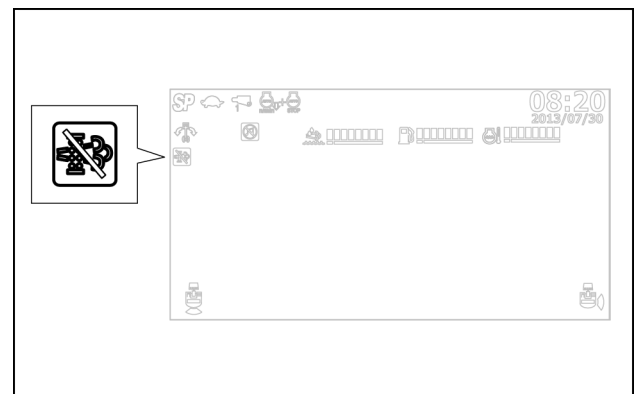
To enable the function, set MANUAL SCR CLEANING ONLY to ON in the SCR CONFIGURATION tab of the user information mode.



SMIL14CEX4935AA 8

Resuming the operating mode of the display, the SCR CLEANING icon appears green and slashed.

**NOTE:** This function is just suspending AUTO SCR CLEANING that occurs every 30 h. The system will request MANUAL SCR CLEANING if AUTO SCR CLEANING is suspended for 8 h. Use this function only when it is necessary to avoid AUTO SCR CLEANING for safety purpose.



SMIL16CEX0706AA 9

## 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.

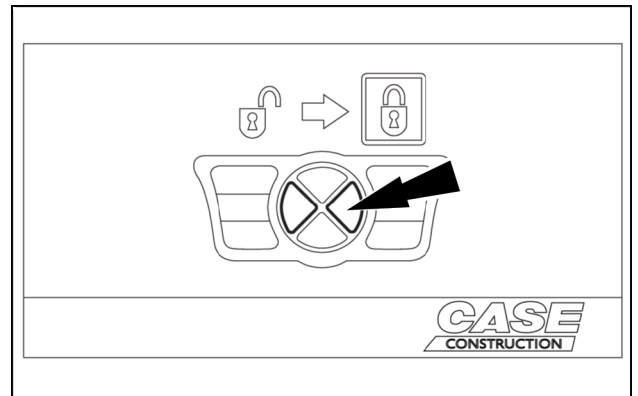
To set up the security function and the password, consult the CASE CONSTRUCTION dealer.

**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.



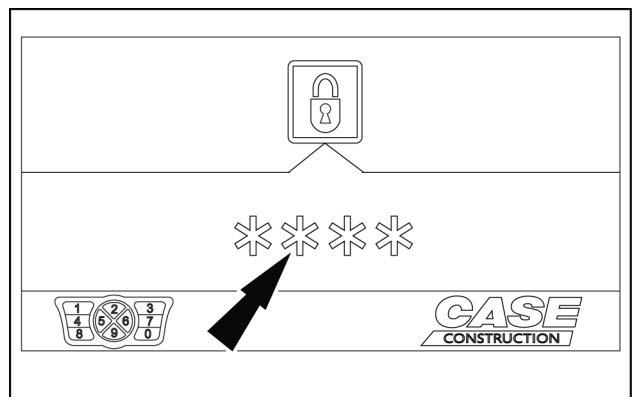
SMIL14CEX2877AA 1

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.

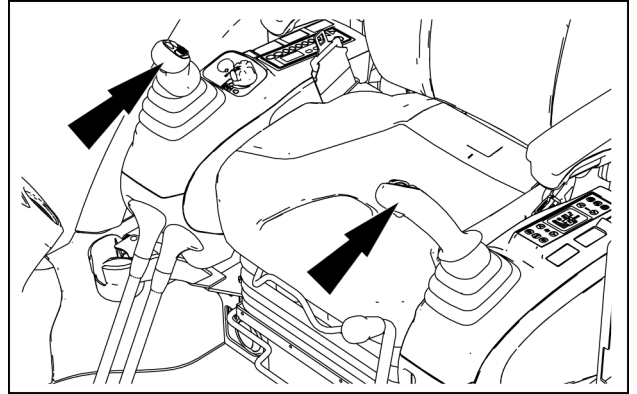
If the password is wrongly entered for 3 times, or if the engine is started up without entering the password, the machine goes into an immobilized state:

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

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



SMIL17CEX0109AA 3

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](http://www.heydownloads.com) by clicking the link below

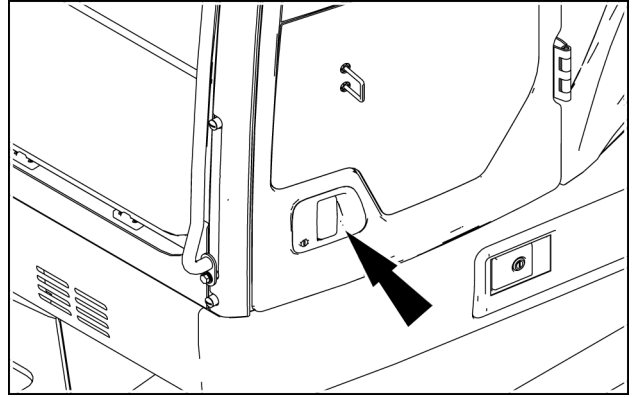


- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

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8. 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.



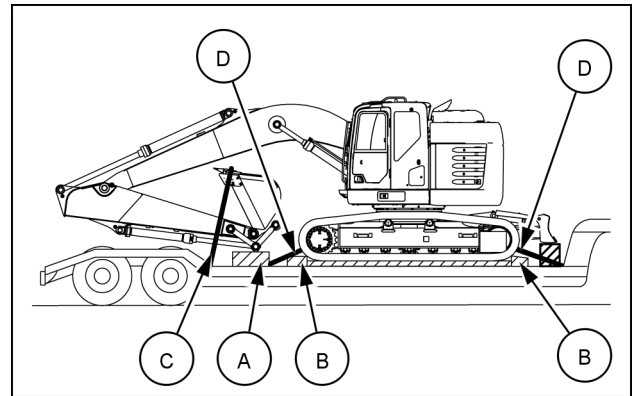
SMIL19CEX2700AA 4

**CX245D SR LC with blade**

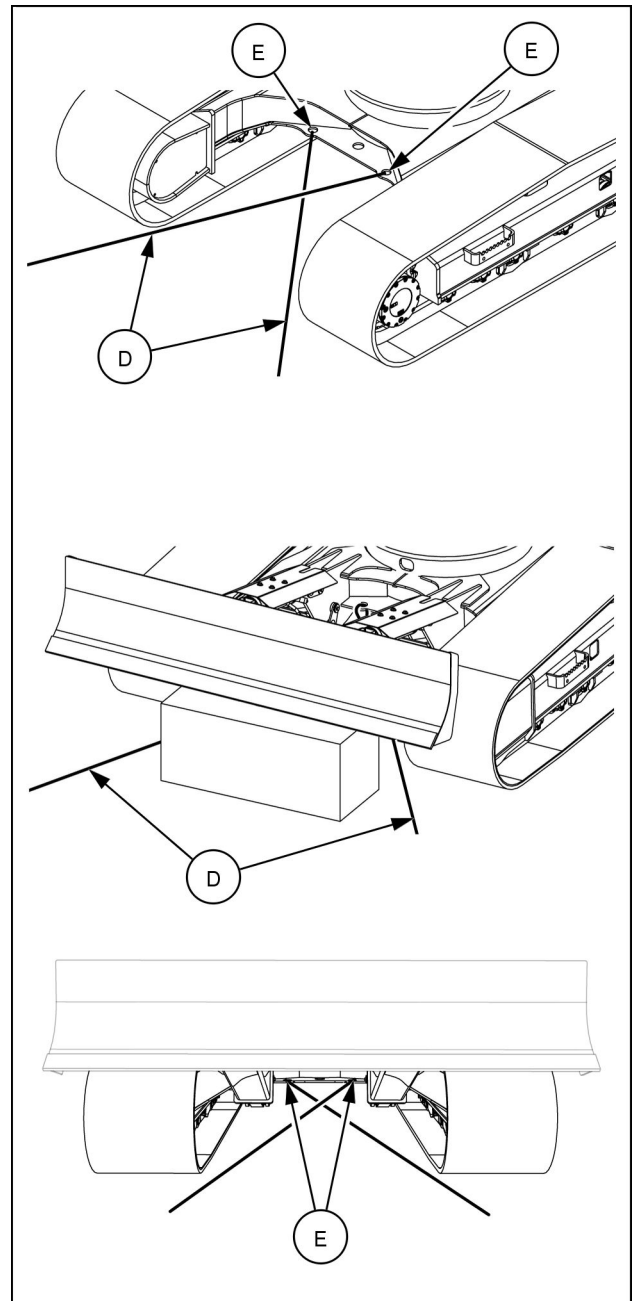
1. Set the machine in the position for transport: fully retract the arm and curl the bucket slowly.

**NOTICE:** The CASE CONSTRUCTION Heavy Duty High Capacity buckets have an extended tip radius. Therefore, the bucket cannot be fully curled after the arm has been fully retracted. Remove the bucket before transport in order not to affect the overall height of the machine, and not to hit the back of the boom.

2. Place the block **(A)** on the trailer floor as show in the picture, and lower the boom slowly until the bucket linkage lays on the block.
3. Check the overall height between the ground and the highest point of the machine and check the overall width of the machine. Make sure to be within the size limits defined before transport, in order to confirm documents and permissions already got to comply to the local traffic regulations.
4. Place the gate lock lever in lock position. Stop the engine and remove the starter key.
5. Get off the machine. Retract the radio antenna. Fold the rear view mirrors.
6. Lock the cab door and the side panels.
7. Check the condition of the tie-down points on the trailer.
8. Put chocks **(B)** against the edges of the tracks.
9. Pass a wire rope **(C)** around the bucket to secure the front equipment to the trailer.
10. Fix one end of a tie-down chain **(D)** to each of the four lashing points **(E)** identified on the inside of the lower frame.
11. Set the chains in an X shape as shown in the picture, and fix them to the tie-down points on the trailer. Tension the chains evenly to secure the machine to the trailer.
12. Carry out a final check of the tie-down condition.
13. If a rear loading type trailer is used for road transport, lift or remove the loading ramps.
14. Remove blocks from the tires of the trailer.



SMIL19CEX2623AE 4



SMIL20CEX0035CA 5

Attachment

- Check the cylinders are not leaking oil.
- Check the condition of all lines.
- Check the condition of the bucket and its tools.

After starting the engine

- Did the engine start correctly? Are the exhaust fumes normal? Any strange noises?
- Check for abnormal noise on the hydraulic components.
- Check the components for signs of leaking oil or water.
- Check the audible alarm devices, working lights and windshield wipers.
- Check that all circuits (travel, swing and tool) are functioning correctly.

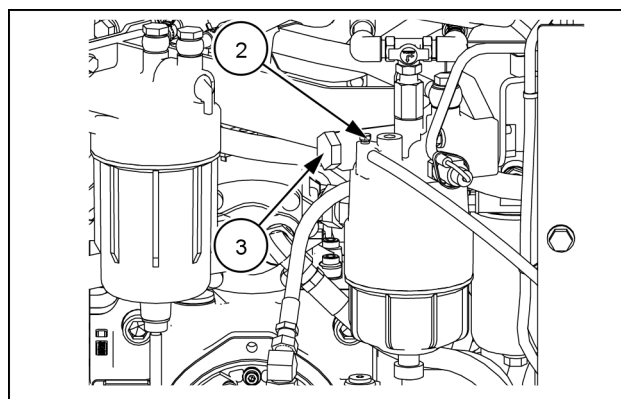
**NOTICE:** *if the slightest defect is found, repair it immediately before using the machine or consult your CASE CONSTRUCTION Dealer.*

4. Loosen the air bleed plug **(2)** of the fuel main filter.
5. Turn the starter key to ON position.

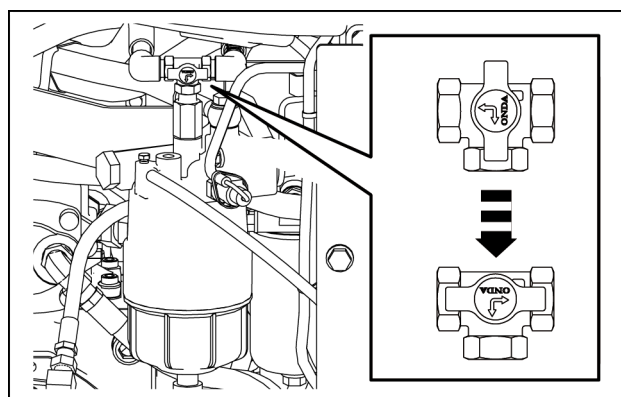
**NOTICE:** Do not keep the starter key to ON position for more than **5 min**. Failing to comply will result in serious damages to the fuel feed pump and to the electric system of the machine. If air bleeding is not completed after **5 min**, stop the procedure and turn the starter key to OFF position for **2 min**. Then turn the starter key to ON position again and complete the bleeding procedure.

6. Turn the head of the priming piston **(3)** to the left. The piston is thus unlocked. Pump against the priming piston to help fuel flow into the filter body.
7. After some seconds, snug tighten the air bleed plug **(2)**, then restart pumping against the priming piston to fill the filter body. As the priming piston becomes hard to pump, loosen the air bleed plug to force fuel with air trapped inside to go out through the bleeding hose **(1)**.
8. Repeat the procedure of point 7 until fuel with no air goes out from the bleeding hose. Tighten the air bleed plug **(2)**.  
The tightening torque of the air bleed plug must be **8 – 12 N·m (5.9 – 8.9 lb ft)**.
9. Push the priming piston **(3)** fully inward and turn its head to the right. The piston is thus locked.
10. Turn the starter key to OFF position.

11. Switch the valve of the fuel main filter to the engine side.
12. Wipe off any spilled fuel around the air bleed plug **(2)** and at the end of the bleeding hose **(1)**.
13. Start the engine, and keep the speed to low idle. If the engine does not start at this stage, repeat the steps from 1 to 12, and then try to start it again.
14. Reach the pump compartment, and check for any fuel leak from the components of the fuel supply line.
15. Get onto the cab, and gradually increase the engine speed to the maximum. Keep max speed for **2 min**, then set the engine speed to low idle position.
16. Reach the pump compartment, and check for any fuel leak from the components of the fuel supply line.



SMIL17CEX0492AA 3



SMIL17CEX0493AA 4

Every 50 hours

## Air conditioner filters

### ⚠ CAUTION

**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 minor or moderate injury.**

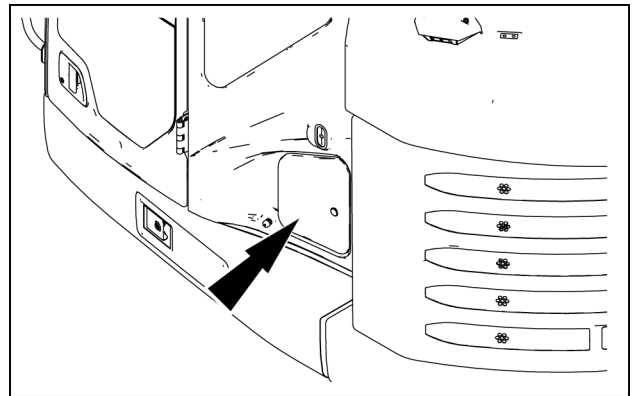
C0049A

Clean the air inlet filter every **50 h**

Clean the air circulation filter every **50 h**

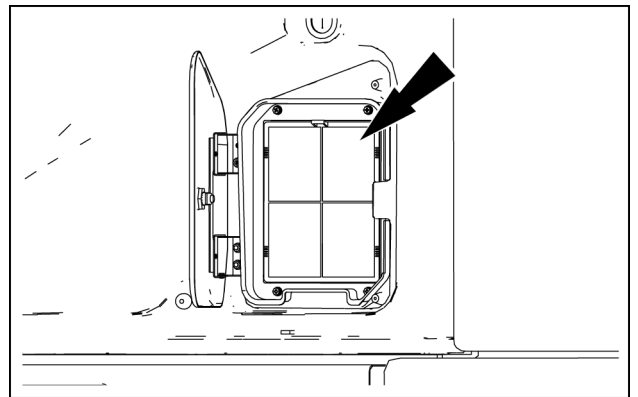
### Air inlet filter

1. Open the cover of the air inlet filter with the starter key.



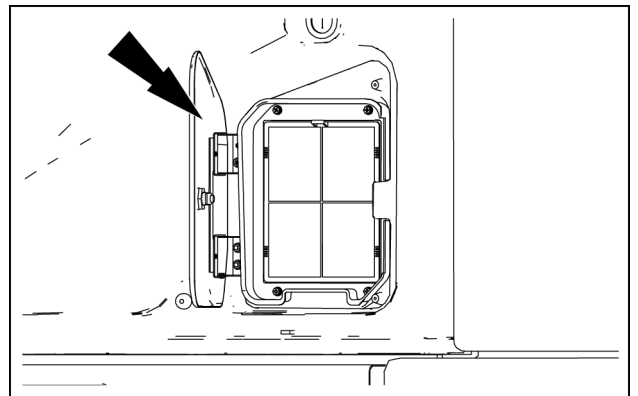
SMIL17CEX0110AA 1

2. Remove the filter and clean it with compressed air. If the filter is damaged, replace it.



SMIL17CEX0111AA 2

3. Install the air inlet filter.
4. Close the cover and lock it with the starter key.

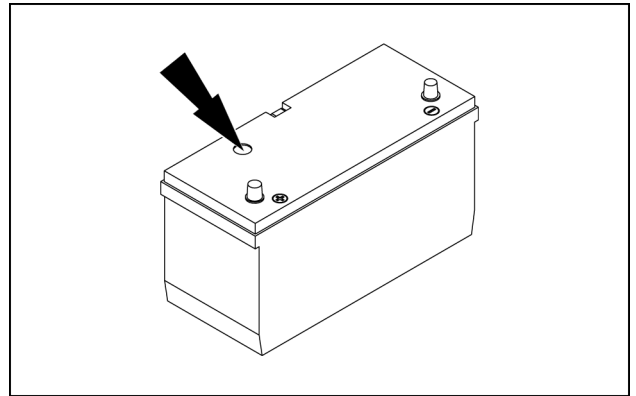


SMIL17CEX0111AA 3

## Inspection of maintenance-free battery charge state

The charge indicator on the battery shows the state of charge of the battery:

- If the color is green the charge is correct.
- If the color is black the charge is insufficient. Recharge the battery until the indicator turns green.
- Transparent (colorless): replace the battery as soon as possible.



SMIL17CEX0428AA 2

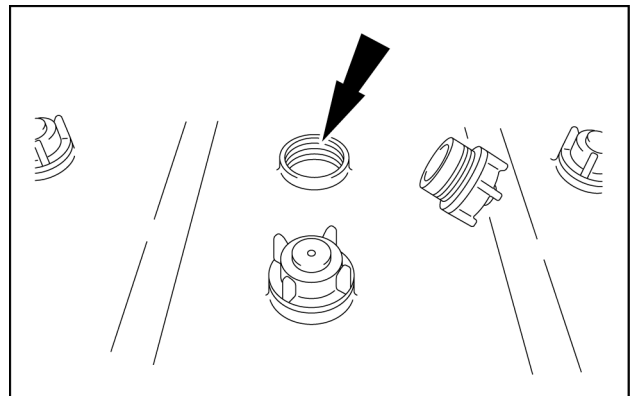
## Checking the electrolyte level of a maintenance-free battery

Remove the cell caps and check the level in each battery cell.

- The level should be between **10 mm (0.4 in)** and **15 mm (0.6 in)** above the plates.
- Add distilled water if necessary, then install the cell caps.

**NOTE:** When adding distilled water at temperatures below **0 °C (32 °F)**, the batteries must be charged or the engine run for two hours approximately in order to ensure that the distilled water and the electrolyte are properly mixed.

**NOTE:** Make sure the battery terminals are clean and coated with grease and that the cables are properly tightened.

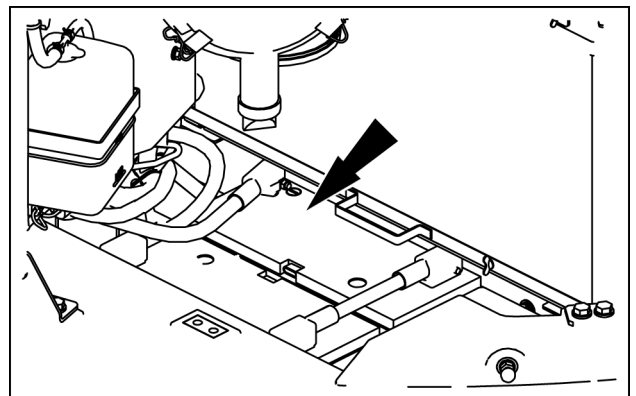


SMIL14CEX2831AA 3

## Replacement of the battery

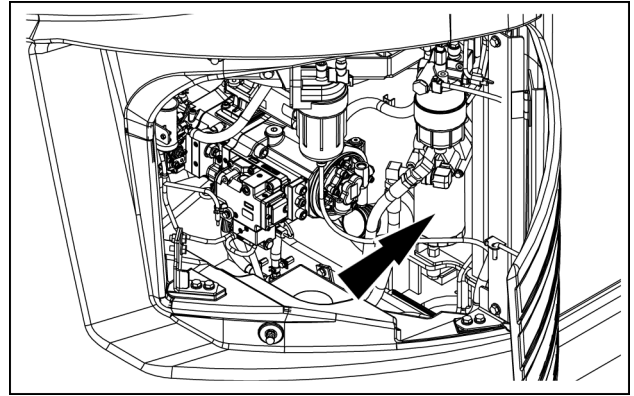
To replace the battery proceed as follows:

1. Set the battery disconnect switch to the OFF position. Remove the terminal protection caps, and cut-off the negative-terminal cable. Next, cut-off the positive-terminal cable. Remove the anti-sulfuration pellets and the battery clips.
2. Attach a new battery, and return the clips to their original positions.
3. Clean the cables and the battery terminals, and apply grease.
4. Attach new anti-sulfuration pellets, and connect the positive and the negative cable to the positive and the negative terminal of the battery respectively. Attach the terminal protection caps. Set the battery disconnect switch to the ON position.
5. Attach the skid plate.



SMIL17CEX0429AA 4

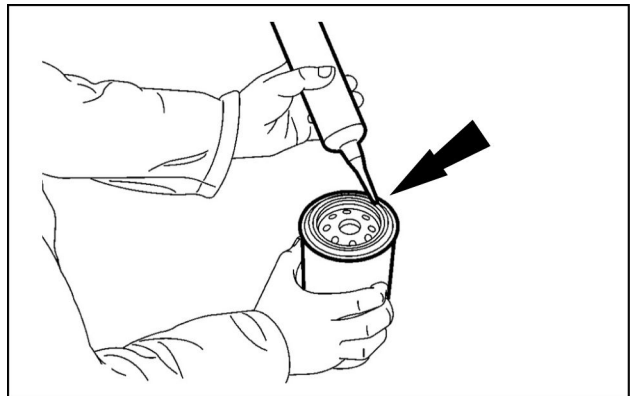
8. Open the rear right-hand door. Clean the area around the engine oil filter and remove it with the specific tool provided with the machine.



SMIL17CEX0136AA 4

9. Apply an oil film finely to the seal of a new filter.
10. Attach a new filter. Turn the filter until the seal touches the filter head, and then tighten it further a half turn by hand.

**NOTE:** Do not use a filter wrench for tightening the filter. Overtightening can damage the filter and its seal.

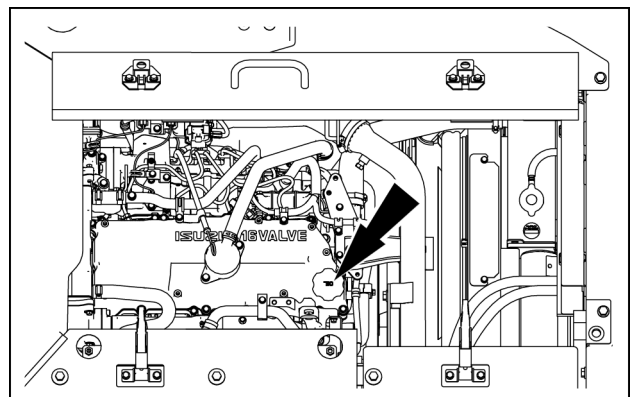


SMIL14CEX2751AA 5

11. Add new engine oil to the engine. Attach the filling plug.
12. Run the engine for several minutes to check that there is no leak.

Recheck the level, and add oil if necessary.

**NOTE:** always wait **15 min** to allow the oil to return to the sump before checking the oil level.



SMIL17CEX0116AA 6

## Hydraulic fluid analysis

Check the hydraulic oil condition every **1000 h**

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

Ask your CASE CONSTRUCTION Dealer to analyze the hydraulic oil condition.

## Engine valve rocker clearance adjustment

Check the clearance of the engine valve rocker every **1000 h**

Ask your CASE CONSTRUCTION Dealer to check the engine valve rocker clearance.

Every 4000 hours

## Engine coolant

### ⚠ WARNING

**Hazardous chemicals!**

Coolant can be toxic. Avoid contact with skin, eyes, and clothing. Antidotes:

**EXTERNAL** - Rinse thoroughly with water. Remove soiled clothing.

**INTERNAL** - Rinse the mouth with water. **DO NOT** induce vomiting. Seek immediate medical attention.

**EYES** - Flush with water. Seek immediate medical attention.

Failure to comply could result in death or serious injury.

W0282A

### ⚠ WARNING

**Burn hazard!**

Hot coolant can spray and scald if you remove the radiator or deaeration tank cap while the system is hot. To remove the cap: allow the system to cool, turn the cap to the first notch, and wait for all pressure to release. Remove the cap only after all pressure has released.

Failure to comply could result in death or serious injury.

W0367A

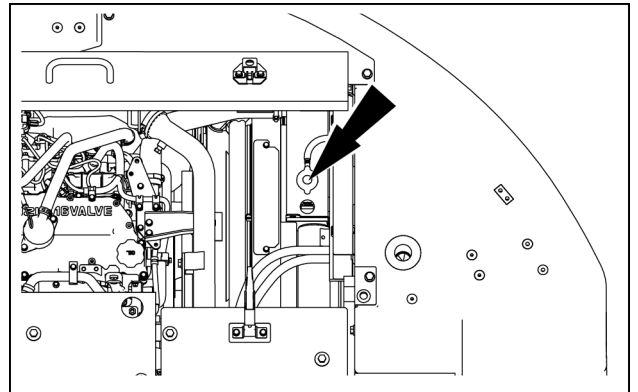
Replace the engine coolant every **4000 h** or every 2 years

Fluid: **CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT**

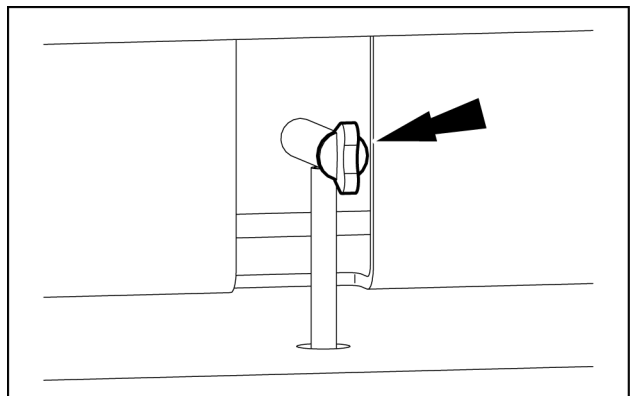
Quantity (50/50 antifreeze/deionized water mixture): **32 L (8.5 US gal)**

### Draining the engine cooling system

1. Stop the engine and let it cool down.
2. Reach the service platform in the center of the machine. Refer to page **6-4**.
3. Disengage the latches and raise the engine hood. Fix the engine hood with the stay.
4. Remove the radiator cap.
5. Open the coolant drain cock of the radiator. Drain coolant from the radiator.



SMIL17CEX0215AA 1



SMIL14CEX2754AA 2

## When necessary

### Fuel feed pump

#### ⚠ WARNING

**Flying debris!**

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

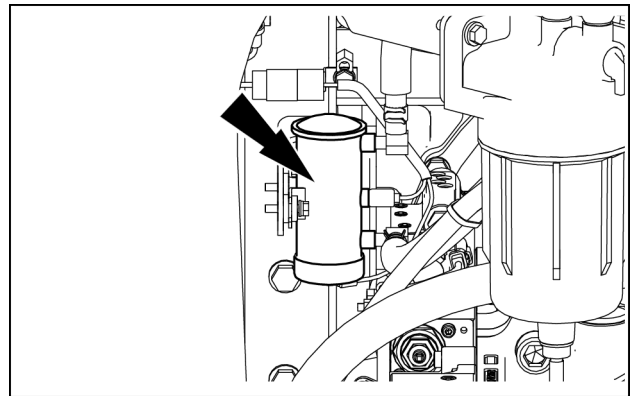
**Failure to comply could result in death or serious injury.**

W0307A

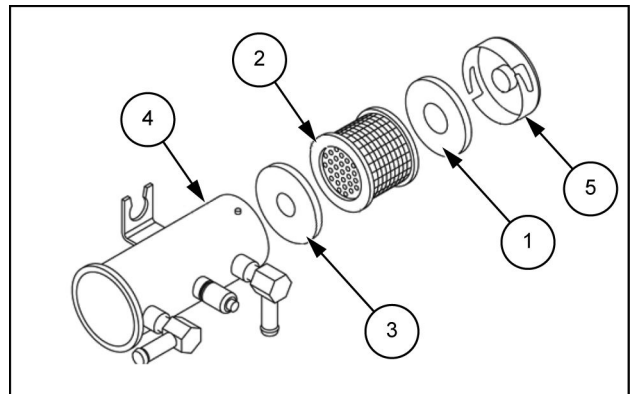
Clean the electromagnetic fuel feed pump periodically

The fuel feed pump is located behind the fuel pre-filter. To clean the feed pump proceed as follows:

1. Place a container with an appropriate capacity under the feed pump.
  2. Close the valve of the fuel pre-filter.
  3. Disconnect the electric cable from the feed pump. Carefully disconnect the fuel lines from the feed pump.
  4. Remove the mounting screws and take out the feed pump for cleaning.
- 
5. Open the pump body, and pull out the filter **(2)** and the seals **(1)** and **(3)**.
  6. Clean the filter by compressed air. Check the filter, and replace it if necessary.
  7. Replace the seals **(1)** and **(3)**.
  8. Clean the body **(4)** and the cover **(5)** carefully.
- Make sure that the feed pump is free from the accumulation of dirt.
9. Attach the seals **(1)** and **(3)** to the filter **(2)** in the correct order, then carefully insert the seals and the filter into the pump body. Close the cover **(5)** onto the pump body **(4)**.
  10. Install the feed pump with the mounting screws.
  11. Connect the fuel lines to the feed pump. Connect the electric cable to the feed pump.
  12. Bleed the fuel system. Refer to page **6-12**.



SMIL17CEX0427AA 1



SMIL14CEX2767AB 2

## Cylinders

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

1. Wipe clean the rod and bearing on the cylinder to be cleaned.
2. Operate normally for **5 – 10 min.**
3. Extend the cylinder rod.
4. Carry out the leak test.

ROD APPEARANCE	TEST	CONCLUSION
Dry	Slight traces of oil when a piece of paper is wiped over <b>20 cm (7.9 in)</b> 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.	Consult your CASE CONSTRUCTION Dealer
Leakage	Each time the rod retracts, the excess oil drips from the gland.	

## Plastic and resin parts

Use a soft, slightly humid, cloth to clean the panels, the consoles, and the switches. Use a soft, dry cloth to clean the instrument cluster.

**NOTICE:** *do not use gasoline, kerosene, paint solvents. The use of gasoline, kerosene, paint solvents, etc. will cause discoloration, cracks or deformation of the parts.*

## 7 - TROUBLESHOOTING

### Fault code resolution

### Engine - Troubleshooting

**NOTE:** This chapter describes the easy diagnostic methods for engine-related problems and the remedies for them. If you cannot find the cause of a problem or solve a problem, consult the CASE CONSTRUCTION dealer.

Problem	Possible Cause	Correction
<b>The engine does not start</b>	Defect in starter switch (Deactivation of starter)	Check the starter switch
	Poor running of starter (Starter running slowly)	Discharged battery, defect in starter, dirt or looseness of connectors
	Poor viscosity of engine oil	Inspect and, as necessary, replace
	Poor air bleeding for fuel system	Bleed it of air completely
	Cold engine (in cold weather)	Preheat suction air, or warm coolant
	No fuel in fuel tank	Add
	Low-quality fuel	Inspect and, as necessary, replace
	Clogging in fuel filter	Clean or replace
	Engine stuck	Consult the CASE CONSTRUCTION dealer
	Low compression	Consult the CASE CONSTRUCTION dealer
	Defect in fuel injection pump	Consult the CASE CONSTRUCTION dealer
	Battery disconnect switch is OFF	Set to ON
	No urea solution remaining in urea solution tank	Add
	Other urea solution than that of specified concentration added	Consult the CASE CONSTRUCTION dealer
<b>The engine stops during operation</b>	No fuel in fuel tank	Add
	Clogging in fuel filter	Clean or replace
	Air entry in fuel system	Retighten the connections of fuel lines
<b>Abnormal oil pressure</b>	Low oil level	Add
	Clogging in oil filter	Replace the oil filter
	Low oil viscosity	Replace with the oil of suitable viscosity for temperature
	Oil leaks from connections	Tighten the connections
	Defect in oil pressure switch	Consult the CASE CONSTRUCTION dealer
	Malfunction in oil pump	Consult the CASE CONSTRUCTION dealer
<b>Exhaust gas from the engine is white or blue</b>	Excess oil	Give an overhaul or replace components
	Very low oil viscosity	Replace with the oil of correct viscosity
	Overcooling by radiator	Adjust
	Incorrect fuel injection timing	Consult the CASE CONSTRUCTION dealer
	Low compression	Consult the CASE CONSTRUCTION dealer
<b>Exhaust gas from the engine is black or deep gray</b>	Wrong fuel	Replace with the correct fuel
	Incorrect valve clearance	Adjust
	Poor suction (Clogging in air cleaner)	Clean or replace the air cleaner
	Defect in fuel injection pump	Consult the CASE CONSTRUCTION dealer
	Low compression	Consult the CASE CONSTRUCTION dealer

8 - SPECIFICATIONS

	Arm	2.40 m (94.49 in)	2.94 m (115.75 in)
<b>(A)</b> Max digging reach		9.37 m (368.90 in)	9.85 m (387.80 in)
<b>(B)</b> Max digging reach at ground level <b>(GL)</b>		9.18 m (361.42 in)	9.67 m (380.71 in)
<b>(C)</b> Max digging depth		6.12 m (240.94 in)	6.65 m (261.81 in)
<b>(D)</b> Max dump height		7.63 m (300.39 in)	7.97 m (313.78 in)
<b>(E)</b> Max dump distance		4.64 m (182.68 in)	5.06 m (199.21 in)
<b>(F)</b> Max working height		10.52 m (414.17 in)	10.86 m (427.56 in)
<b>(G)</b> Reach at max working height		3.35 m (131.89 in)	3.79 m (149.21 in)
<b>(H)</b> Min equipment swing radius		2.55 m (100.39 in)	2.31 m (90.94 in)
<b>(I)</b> Height at min equipment swing radius		8.32 m (327.56 in)	8.28 m (325.98 in)
<b>(L)</b> Min clean up distance		2.97 m (116.93 in)	2.26 m (88.98 in)
<b>(M)</b> Max clean up distance		6.99 m (275.20 in)	7.48 m (294.49 in)
<b>(N)</b> Max digging depth on a vertical face		5.48 m (215.75 in)	5.92 m (233.07 in)
<b>(O)</b> Reach at max digging depth on a vertical face		5.71 m (224.80 in)	5.91 m (232.68 in)
<b>(P)</b> Max flat-bottomed trenching depth		5.91 m (232.68 in)	6.48 m (255.12 in)
<b>(Q)</b> Distance of flat-bottomed trench		2.73 m (107.48 in)	2.73 m (107.48 in)
<b>(R)</b> Flat-bottomed trench reference length		2.44 m (96.06 in)	
<b>(S)</b> Swing tail radius		1.79 m (70.47 in)	
<b>(T)</b> Maximum blade lift		0.54 m (21.26 in)	
<b>(U)</b> Maximum blade depth		0.37 m (14.57 in)	

**NOTE:** the dimensions of the working range are defined basing on the two reference lines **(GL)** (ground level) and **(CL)** (center line, i.e. rotation axis of the machine). All the dimensions related to the **(GL)** are defined with the grousers indented into the ground.

**Setting ranges for Multi-function auxiliary high-flow hydraulic circuit**

The setting ranges of the Multi-function auxiliary high-flow hydraulic circuit are related to the circuit mode selected by the specific page. If breaker page has been selected (Single-acting mode), the maximum flow rate can be selected within Level 1 and Level 10 in the table below. If crusher page has been selected (Double-acting mode), the maximum flow rate can be selected within Level 1 and Level 20 in the table below.

Level	1 pump flow	Level	2 pumps flow
1	47 L/min (12.4 US gpm)	11	245 L/min (64.7 US gpm)
2	70 L/min (18.5 US gpm)	12	268 L/min (70.8 US gpm)
3	89 L/min (23.5 US gpm)	13	287 L/min (75.8 US gpm)
4	105 L/min (27.7 US gpm)	14	303 L/min (80.0 US gpm)
5	122 L/min (32.2 US gpm)	15	320 L/min (84.5 US gpm)
6	138 L/min (36.5 US gpm)	16	336 L/min (88.8 US gpm)
7	157 L/min (41.5 US gpm)	17	355 L/min (93.8 US gpm)
8	172 L/min (45.4 US gpm)	18	370 L/min (97.7 US gpm)
9	185 L/min (48.9 US gpm)	19	383 L/min (101.2 US gpm)
10	198 L/min (52.3 US gpm)	20	396 L/min (104.6 US gpm)

The maximum flow rate for Breaker 1 combination and the maximum flow rate for Crusher 1 combination are set from factory:

Multi-function circuit	Breaker 1: <b>172 L/min (45.4 US gpm)</b>
	Crusher 1: <b>370 L/min (97.7 US gpm)</b>

If the circuit is set in the Single acting mode, the message CHECK FLOW RATE appears at the bottom of the setting tab if a value above Level 10 is selected. If attachment operation is anyway started with this setting, the message CHECK FLOW RATE will appear on the top of the display, and a warning buzzer will sound.



Stop attachment operation, and make sure to select a value of maximum flow rate that does not exceed Level 10.

The maximum working pressure of the circuit can be set according to the mode selected by the specific page. If breaker page has been selected (Single-acting mode), the maximum working pressure can be set within the following range:

Multi-function circuit (Breaker mode)	<b>14.0 – 34.5 MPa (2030.7 – 5004.2 psi)</b> (in 0.5 increments)
---------------------------------------	--

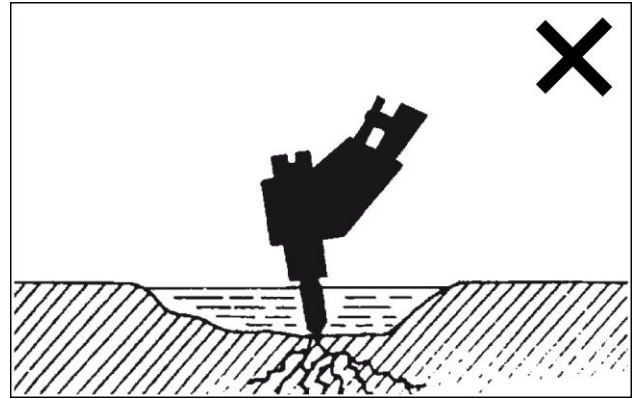
If crusher page has been selected (Double-acting mode), the maximum working pressure can be set within the following range:

Multi-function circuit (Crusher mode)	<b>16.5 – 34.5 MPa (2393.3 – 5004.2 psi)</b> (in 0.5 increments)
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The maximum working pressure for Breaker 1 combination and the maximum working pressure for Crusher 1 combination are set from factory:

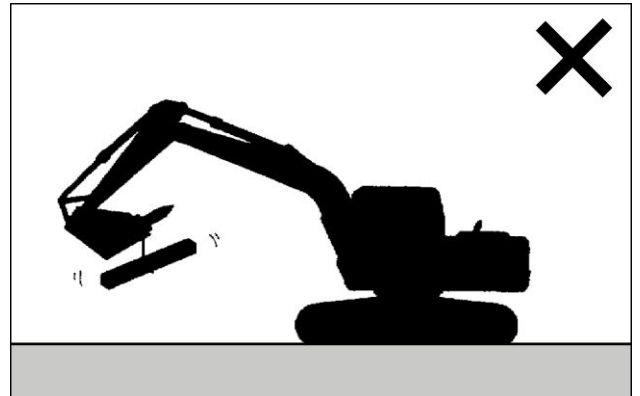
Multi-function circuit	Breaker 1: <b>14.0 MPa (2030.70 psi)</b>
	Crusher 1: <b>16.5 MPa (2393.33 psi)</b>

Do not operate the hydraulic breaker in water. Doing so will cause rust and seal damage, resulting in damage to the hydraulic system components.



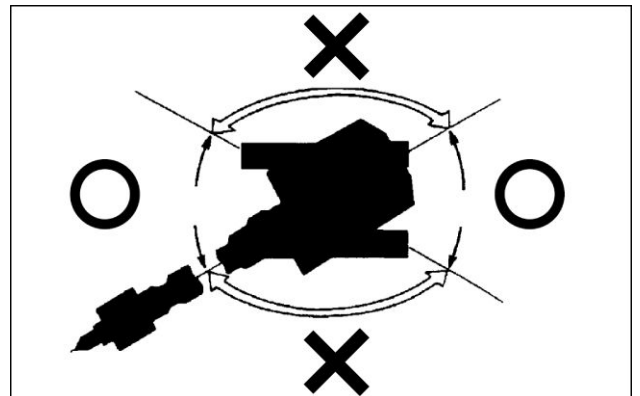
NH0199 23

Do not use the hydraulic breaker to move objects. The excavator might overturn and/or the hydraulic breaker may be damaged.



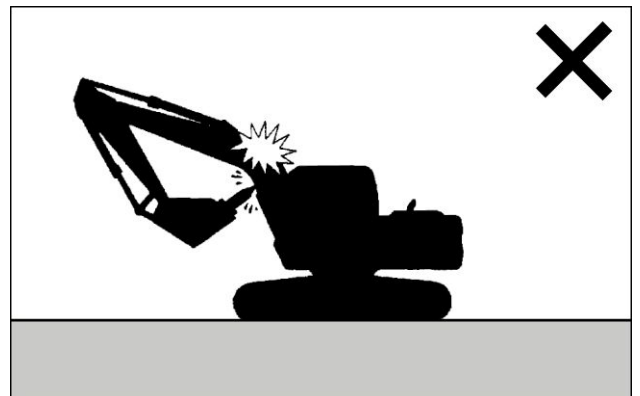
NH0200 24

Do not operate the breaker to the side of the machine. The machine may become unstable and undercarriage components life may be reduced.



NH0201 25

Operate the excavator carefully to avoid hitting the boom with the hydraulic breaker.



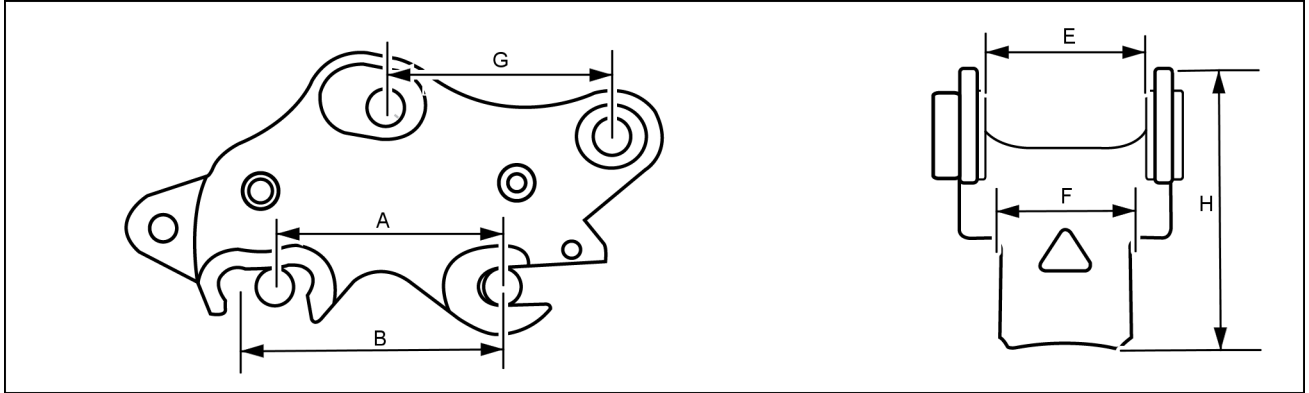
NH0202 26

## Quick coupler buckets

### CASE CONSTRUCTION quick coupler

CASE CONSTRUCTION can provide a hydraulic quick coupler and a dedicated range of Coupler buckets.

The CASE CONSTRUCTION Coupler buckets are designed to optimize the fitting to the CASE CONSTRUCTION quick coupler, and are designed to optimize the operating performance of the CASE CONSTRUCTION excavators in most of construction works.



SML15CEX3064EA 1

#### Main dimensions

(E)	307 mm (12.1 in)
(G)	470 mm (18.5 in)
(H)	576 mm (22.7 in)
Weight	310 kg (683 lb)

**NOTICE:** usage of buckets other than CASE CONSTRUCTION Coupler buckets is strictly limited to the condition that the bucket hangers match with the dimensions indicated in the table below. Contact your CASE CONSTRUCTION dealer for checking the buckets intended for usage.

#### Bucket fitting dimensions

Bucket pin diameter	80 mm (3.1 in)
Minimum pin spread (A)	430 mm (16.9 in)
Maximum pin spread (B)	520 mm (20.5 in)
Seating width (F)	315 mm (12.4 in)

### Quick coupler identification plate

The identification plate of the CASE CONSTRUCTION quick coupler is located on the inside of the top hangers.

Serial number:

Weight:

Working pressure:

Type/Model:

Part number:

Year of manufacture:

SWL (Safe Working Load):

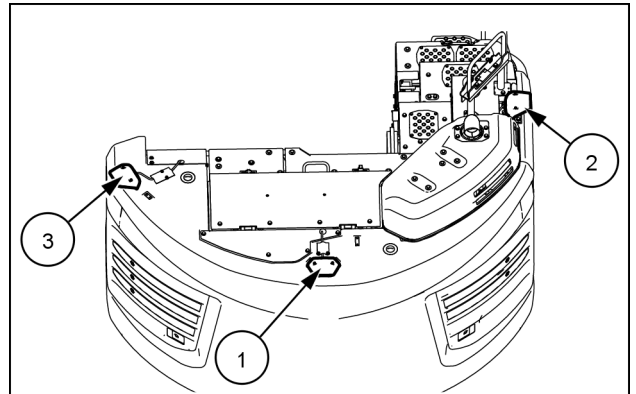
## Field view monitor

The CASE CONSTRUCTION Field View Monitor (FVM) is a system that ensure proper visibility during operation by displaying a comprehensive visualization of the area around the machine.

The comprehensive visualization is based on the combination of the views of three external cameras: a rear camera (1) installed on the counterweight, a right-side camera (2) installed on the fuel tank, a left-side camera (3) installed above the left-hand door.

**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.

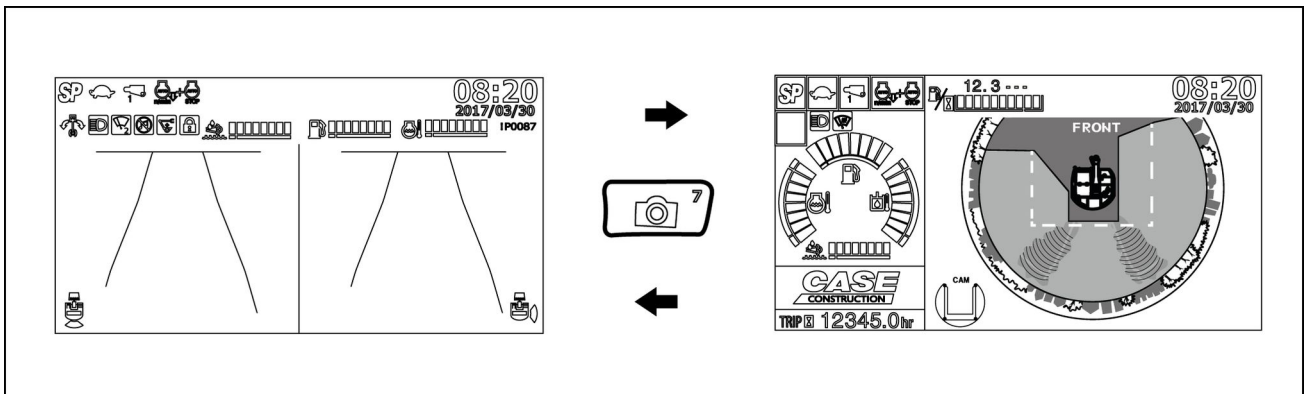
**NOTICE:** If any mud, raindrops, snow, etc. are adhered to the camera lens, the images on the display are deteriorated. Wipe away dirt with a wet and soft cloth, and then wipe it with a dry and soft cloth. Make sure not to scratch the cameras.



SML17CEX1335AA 1

## FVM mode of the display

The FVM mode of the display is alternative to the normal operating mode. Press the camera view selector button on the instrument cluster to select the FVM mode. The operating mode of the display toggles every time the button is pressed.



SML20CEX0667EA 2

**NOTICE:** During machine operation, make sure to select either one 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.

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