

3 - CONTROLS AND INSTRUMENTS

Access to operator's platform

Door and steps

⚠ CAUTION

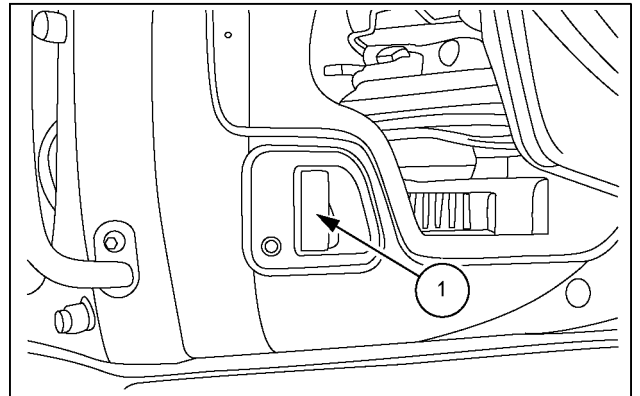
Pinch hazard!
Be careful not to get your hand, clothes, etc. caught in the door when closing it.
Failure to comply could result in minor or moderate injury.

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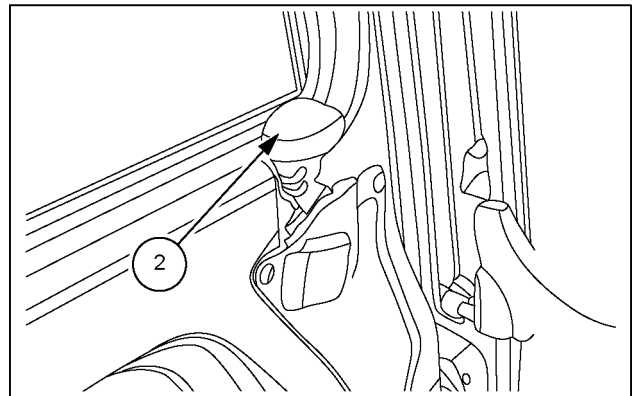
Cab door

To open the door, use the handle (1) from the outside and use the handle (2) from the inside.

NOTICE: Before opening the door from the inside, make sure to place the gate lock lever in central position. The left-hand control lever might be touched inadvertently when opening the door, and the machine may thus move suddenly and inadvertently causing severe incidents.



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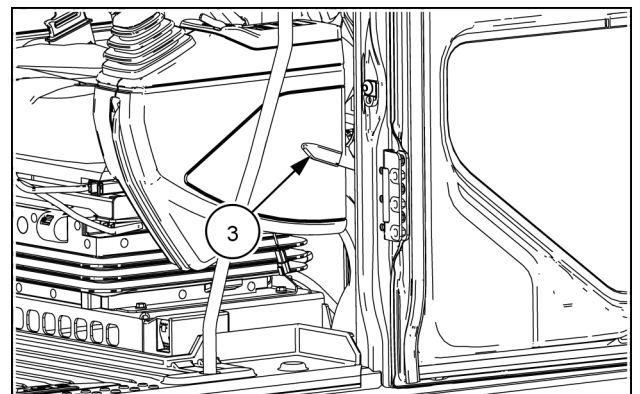


SMIL14CEX1650AB 2

The door can be latched in completely open position.

NOTICE: Never work leaving the door ajar. Before performing any work with the door open, make sure to lock it in the completely open position.

To unlatch the door, stop machine operation, set the gate lock lever to central position, and tilt the lever (3) downward.



SMIL22CEX3144AA 3

Steps and access handles

⚠ WARNING

Fall hazard!

In order to enter or exit the cab, the upper structure frame must be in line with the undercarriage.
Failure to comply could result in death or serious injury.

W0225A

⚠ WARNING

Fall hazard!

Jumping on or off the machine could cause an injury. Always face the machine, use the handrails and steps, and get on or off slowly. Maintain a three-point contact to avoid falling: both hands on the handrails and one foot on the step, or one hand on the handrail and both feet on the steps.
Failure to comply could result in death or serious injury.

W0141A

⚠ WARNING

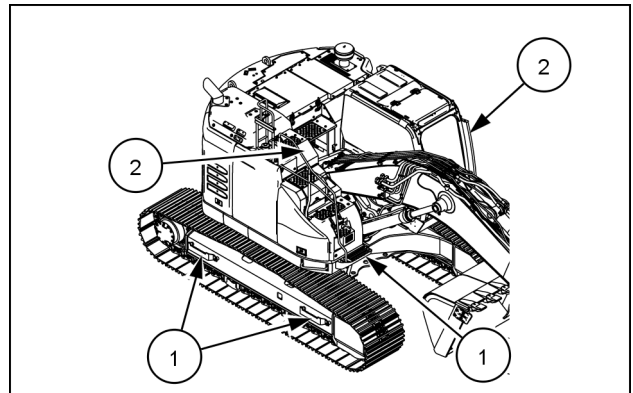
Fall hazard!

Clean the steps and access handles to remove all traces of grease, oil, mud, and ice (in winter).
Failure to comply could result in death or serious injury.

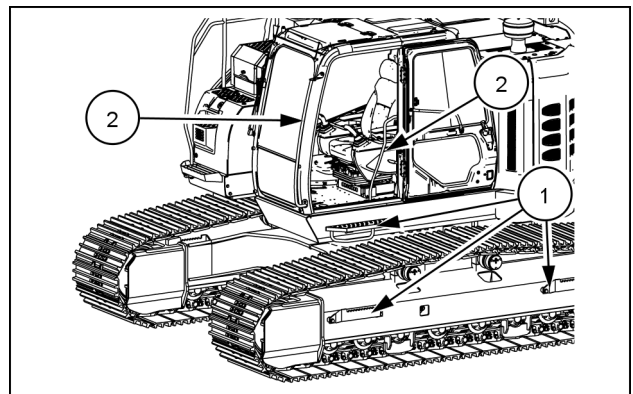
W0139A

To get in or out of the machine use the steps (1), the tracks and the access handles (2).

NOTICE: never use the left console, the left-hand control lever or the gate lock lever in place of the handles when getting on or off the operator's compartment.



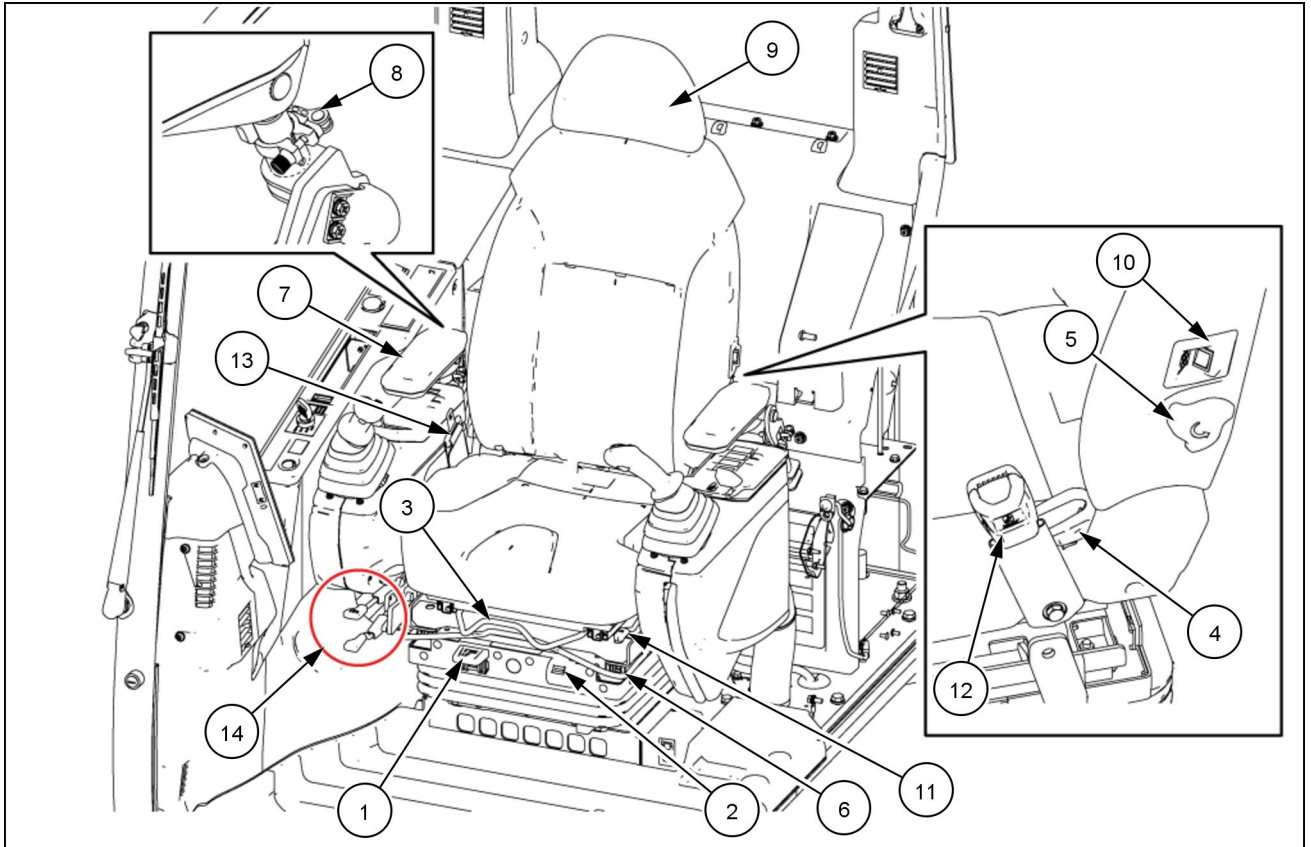
SMIL22CEX3227AA 4



SMIL22CEX3228AA 5

Operator's seat

Operator's seat



SMIL21CEX5534FA 1

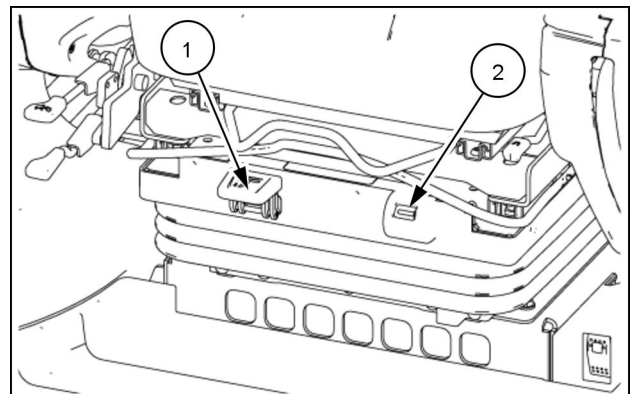
- | | |
|--|--|
| 1. Combined height and weight adjustment | 8. Adjustment Section |
| 2. Weight adjustment indicator | 9. Headrest adjustment |
| 3. Fore and aft adjustment | 10. Seat heater |
| 4. Seat back angle adjustment | 11. Seat angle adjustment |
| 5. Lumbar support adjustment | 12. Seat belt buckle |
| 6. Seat and control arm assembly fore and aft adjustment | 13. Seat belt |
| 7. Armrest angle adjustment | 14. Left-hand side console and right-hand side console tilt adjustment |

In order to operate the machine correctly and with maximum efficiency and comfort, adjust the seat to suit the weight and size of the operator.

Combined height and weight adjustment

- Lower the handle (1) to decrease the rigidity of the suspension.
- Raise the handle (1) to obtain harder suspension.

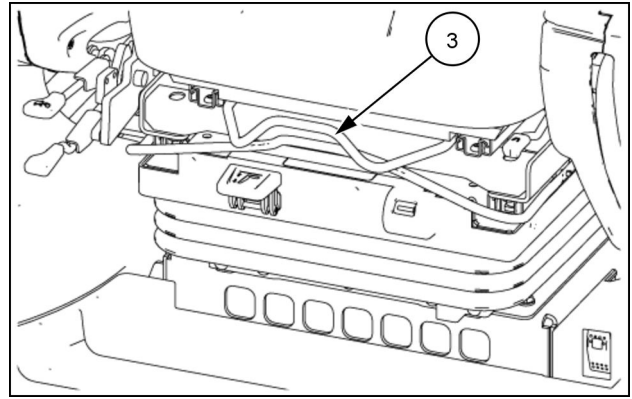
NOTICE: the indicator (2) must be green when the operator is sitting on the seat.



SMIL21CEX5535AA 2

Fore and aft adjustment

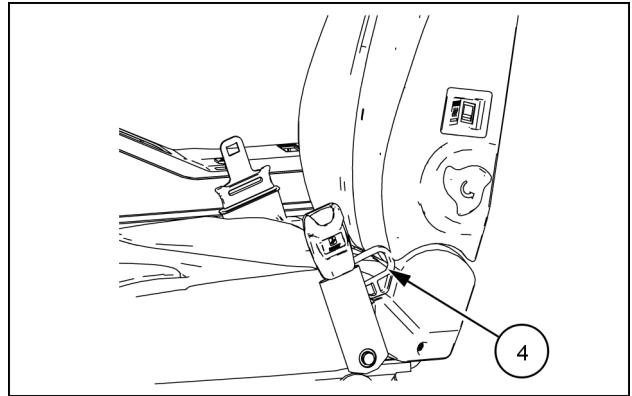
- Hold the control **(3)** in the raised position.
- Slide the seat to the required position.
- Release the control **(3)**.



SMIL21CEX5535AA 3

Seat back angle adjustment

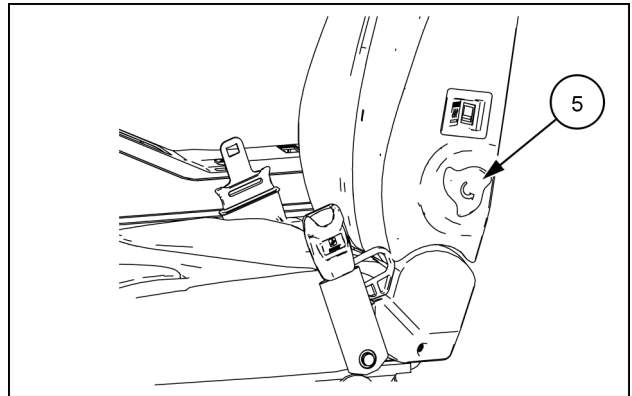
- Hold the lever **(4)** in the raised position.
- Move with the seat-back to the desired position.
- Release the lever **(4)**.



SMIL21CEX1377AA 4

Lumbar support adjustment

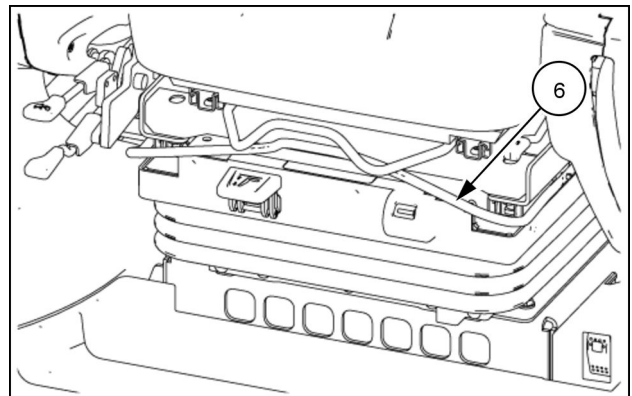
- Turn the dial **(5)** to adjust the bulge of the lumbar area in four levels.



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Seat and control arm assembly fore and aft adjustment

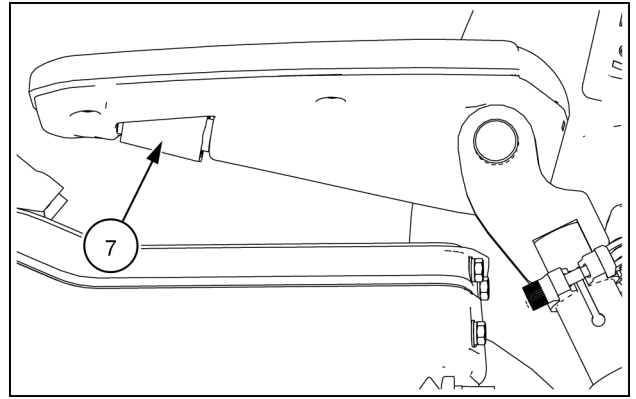
- Pull the control **(6)** upwards.
- Slide the seat and control arm assembly to the desired position.
- Release the control **(6)**.



SMIL21CEX5535AA 6

Armrest angle adjustment

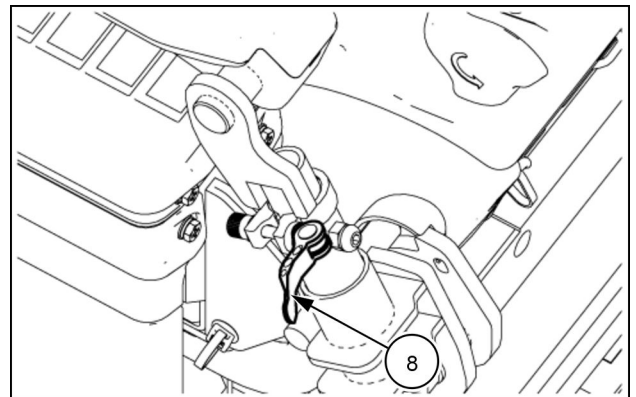
- Raise the armrest.
- Adjust the armrest to the desired angle using the knob (7).
- Lower the armrest.



SMIL22CEX1277AA 7

Adjustment Section

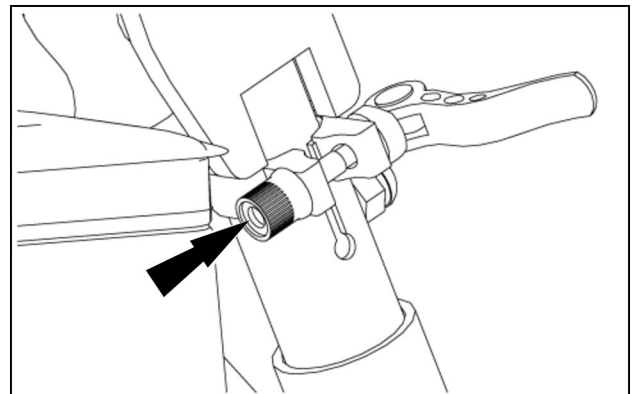
- With the height adjustment lever (8) open, adjust the height.
- After the adjustment, close the adjustment lever (8) to lock the armrest in place.



SMIL21CEX5536AA 8

- If the armrest is not firmly locked in place, tighten the bolt to adjust.

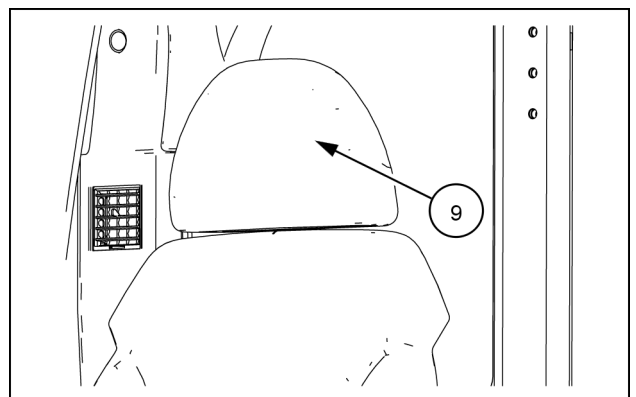
NOTE: Close the adjustment lever to lock the armrest in place. Do not lock the armrest in place by turning the adjustment lever.



SMIL21CEX5537AA 9

Headrest adjustment

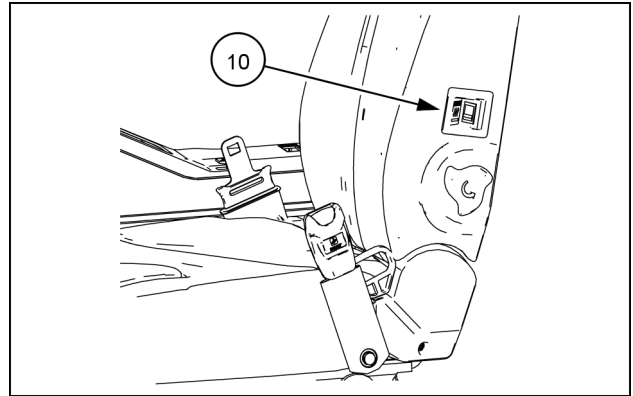
- The headrest (9) can be adjusted upwards and downwards.



SMIL21CEX1380AA 10

Seat heater (If equipped)

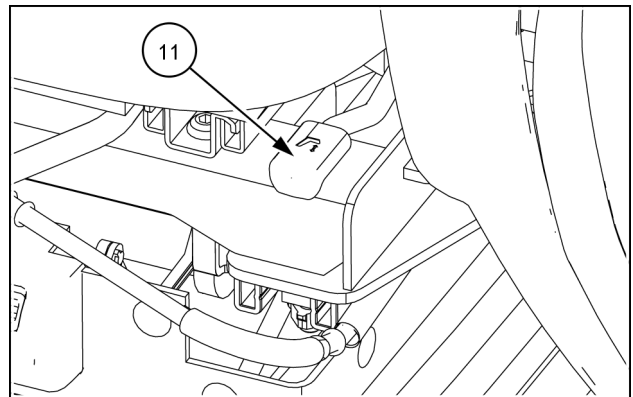
- When the switch (10) is turned on, both the backrest and the seat area will be warmed.



SMIL21CEX1377AA 11

Seat angle adjustment section (If equipped)

- The seat angle can be adjusted in 3 levels pulling the lever (11) up. When the seat reaches the proper angle, release the lever (6).
- When the seat reaches the proper angle, release the lever (11).

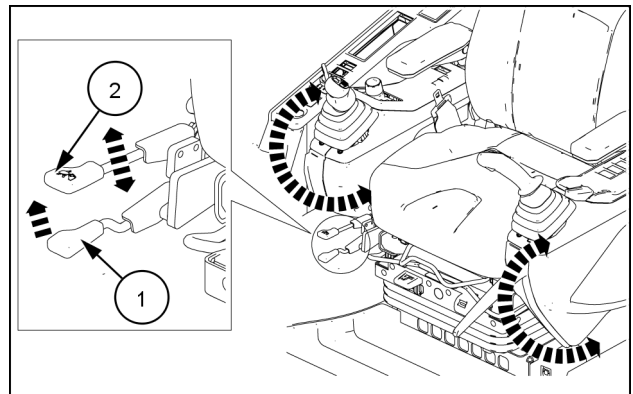


SMIL21CEX1382AA 12

Left-hand side console and right-hand side console tilt adjustment

The left-hand side console and right-hand side console can be tilted to the following angles: -5° , 0° , 5° and 10° .

- Pull upwards the gate release lever (1) to release the lock.
- Adjust the angle of the consoles using the tilt adjustment lever (2).
- Pull downwards the gate release lever (1) to lock the consoles in position.



SMIL22CEX1269AA 13

Seat belt

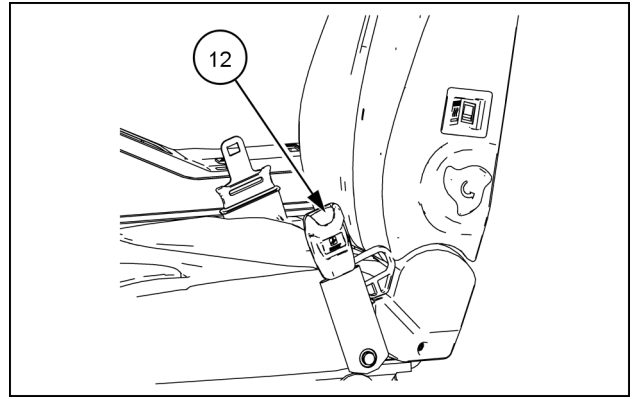
⚠ WARNING

Equipment failure could cause accident or injury!

Always fasten the seat belt securely before you operate the machine. Inspect seat belt parts for wear and damage. Replace any and all worn or damaged parts of the seat belt prior to operation.

Failure to comply could result in death or serious injury.

W0046C



SMIL21CEX1377AA 14

- Sit comfortably on the operator's seat.
- Pull out a long section of belt.
- Engage the belt in the fastening system (12).

NOTE: if the section of belt pulled out is not long enough, release it, so it rolls up and then pull it out again.

To release the seat belt press down the releasing lever of the fastening system (9).

NOTICE: the seat belt must be kept clean. Use only soap and water to clean the belt, do not use bleach or dyes.

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

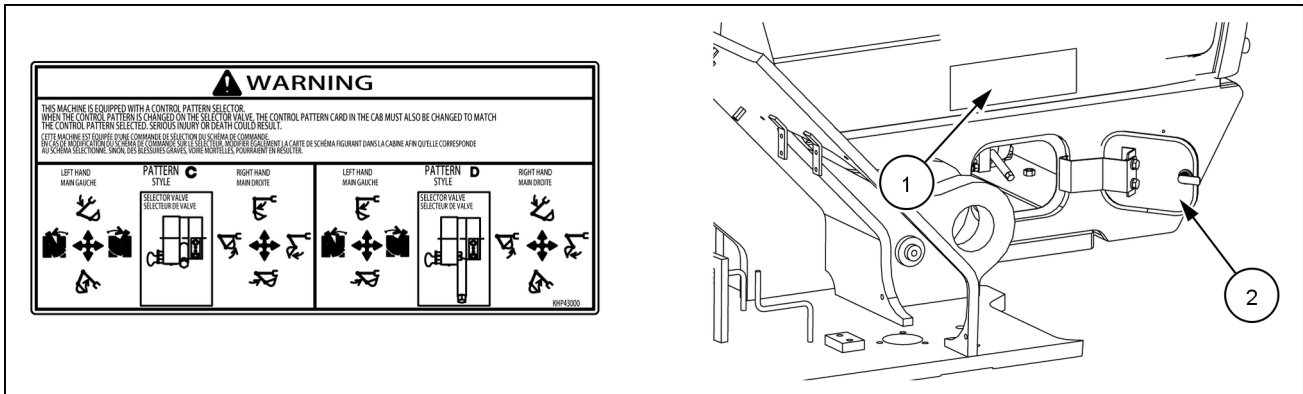
Selection of control pattern

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.

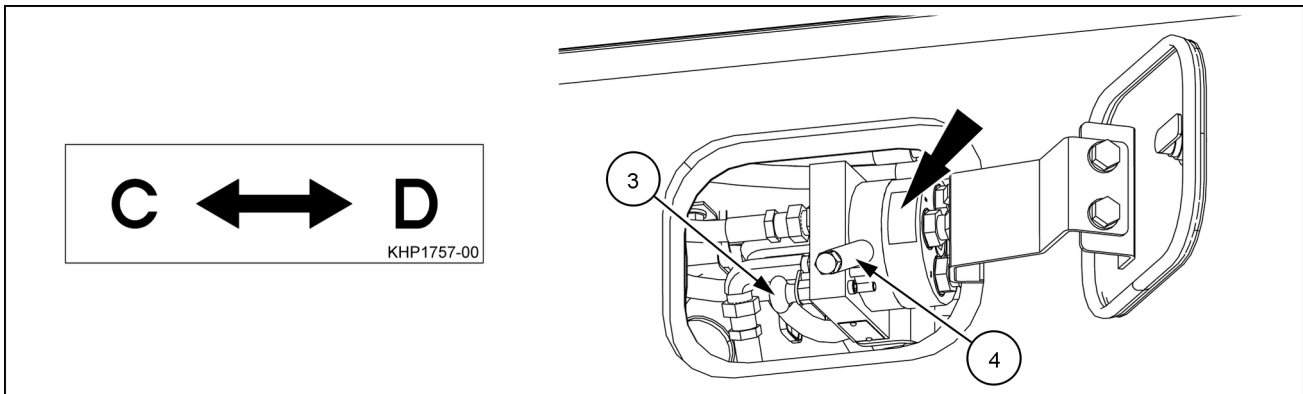
To select the desired control pattern proceed as follows:

1. Lower the attachment to the ground, and stop the engine.
2. Read and understand the warning label (1).
3. Open the door (2).



SMIL22CEX3229EA 1

4. Pull the locking knob (3) and move the lever (4) to set the desired control pattern C or D. Release the locking knob.



SMIL22CEX3230EA 2

5. Close the door (2).

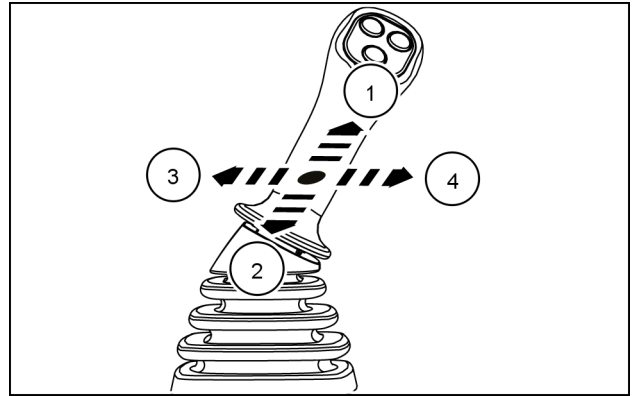
D position: ISO control pattern

Left-hand control lever:

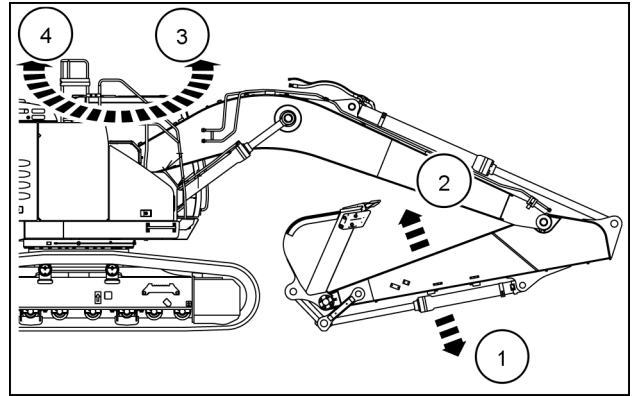
1. The arm extends.
2. The arm retracts.
3. The upper structure swings to the left.
4. The upper structure swings to the right.

NOTE: The speed of movement of the arm or the swing depends on the control lever tilt angle. In the intermediate position two movements can be obtained simultaneously.

NOTE: when the upper structure swing control is released, the upper structure may continue to rotate due to the force of inertia. In this event, make allowance for the extra movement by releasing the control slightly earlier.



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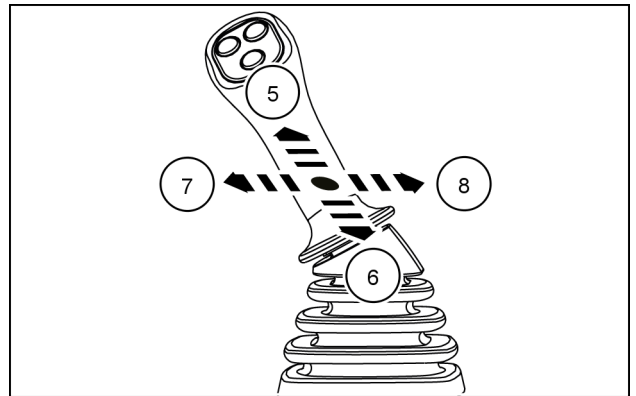


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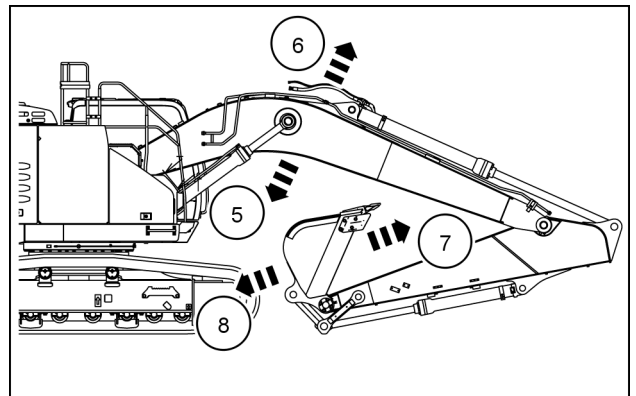
Right-hand control lever:

5. The boom lowers.
6. The boom raises.
7. The bucket retracts (filling).
8. The bucket extends (dumping).

NOTE: The speed of movement of the boom or the bucket depends on the control lever tilt angle. In the intermediate position two movements can be obtained simultaneously.



SMIL22CEX1942AA 5



SMIL22CEX4005AA 6

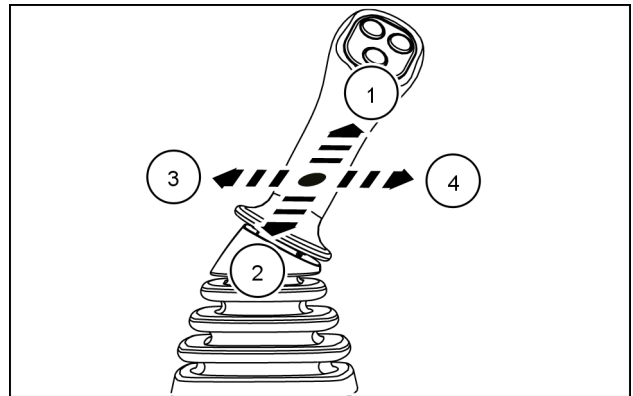
C position: BHL control pattern

Left-hand control lever:

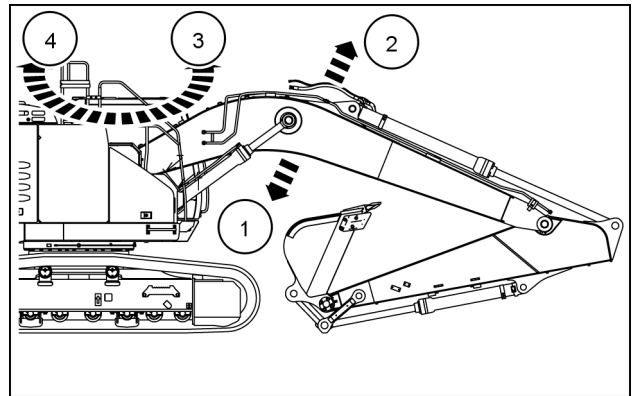
1. The boom lowers.
2. The boom raises.
3. The upper structure swings to the left.
4. The upper structure swings to the right.

NOTE: The speed of movement of the boom or the swing depends on the control lever tilt angle. In the intermediate position two movements can be obtained simultaneously.

NOTE: when the upper structure swing control is released, the upper structure may continue to rotate due to the force of inertia. In this event, make allowance for the extra movement by releasing the control slightly earlier.



SMIL22CEX1941AA 7

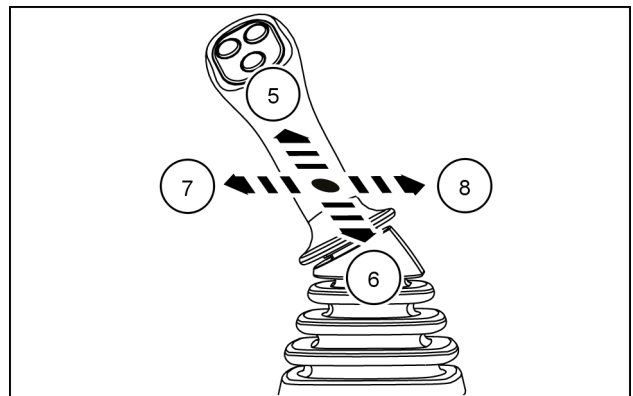


SMIL22CEX4006AA 8

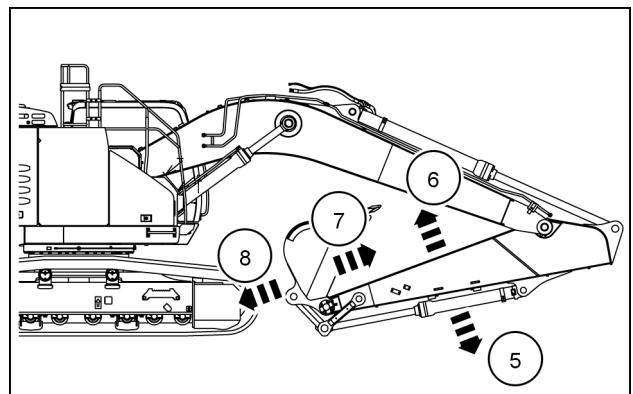
Right-hand control lever:

5. The arm extends.
6. The arm retracts.
7. The bucket retracts (filling).
8. The bucket extends (dumping).

NOTE: The speed of movement of the arm or the bucket depends on the control lever tilt angle. In the intermediate position two movements can be obtained simultaneously.



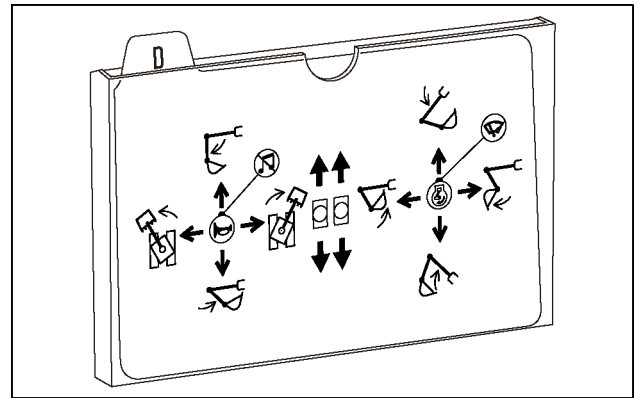
SMIL22CEX1942AA 9



SMIL22CEX4007AA 10

Confirmation of the control pattern selection

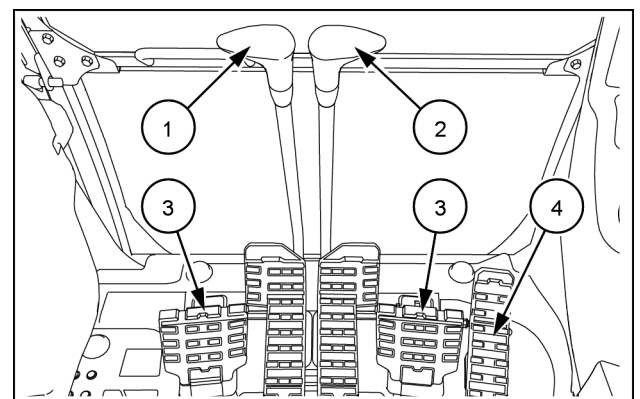
1. Get onto the cab and make sure to place the sheet that maps the operating controls to the side corresponding to the selected control pattern (C or D).
2. Start the engine and check that the operating pattern of control levers is consistent with the position selected on the valve and shown by the mapping sheet.



SMIL14CEX1671AA 11

Travel controls

1. Left-hand travel control lever and pedal
2. Right-hand travel control lever and pedal
3. Footrest
4. Single travel pedal



SMIL16CEX0262AA 12

The travel control levers and pedals are used to move the machine.

(N): neutral

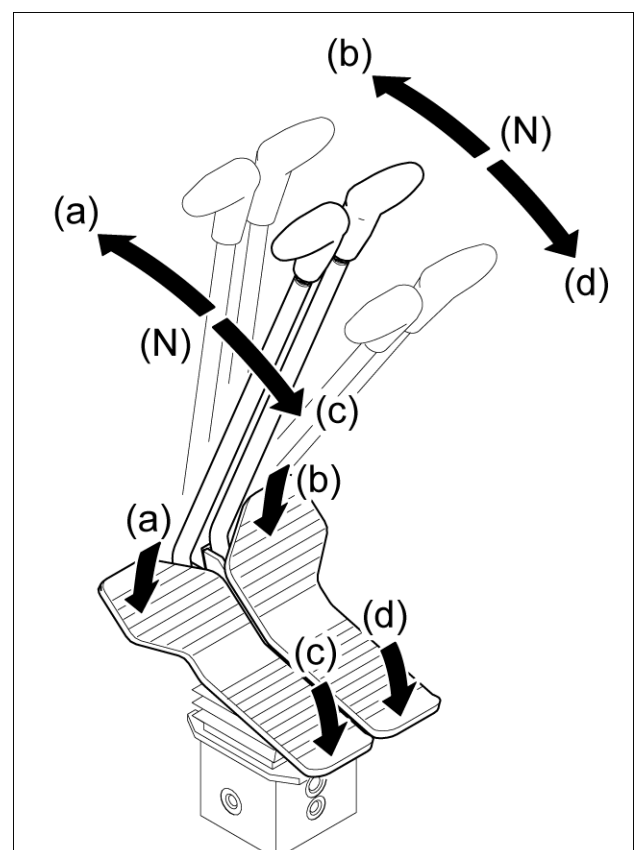
(a) + (b): machine moves forward.

(c) + (d): machine moves backward.

(b) + (c): opposite simultaneous rotation of the tracks with consequent counterclockwise rotation of the machine around its centre axis.

(a) + (d): opposite simultaneous rotation of the tracks with consequent clockwise rotation of the machine around its centre axis.

(a), (b), (c), (d): positions to move one track only. Consequently the machine steers pivoting on the stationary track.



NH0159 13

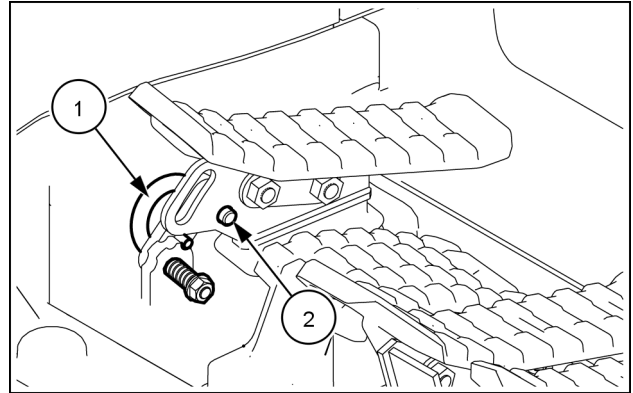
The single travel pedal allows to move the machine straight forward or straight backward.

NOTE: The single travel pedal shall not be used together with the travel control levers and pedals. The single travel pedal function is alternative to the (a) + (b) function and the (c) + (d) function obtainable with the travel control pedals and levers.

NOTICE: always lock the single travel pedal when not in use.

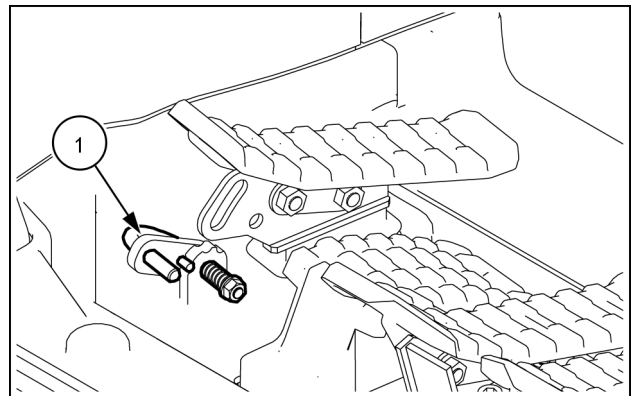
Locking the single travel pedal

To lock the single travel pedal, engage the locking pin (1) in the locking hole (2).



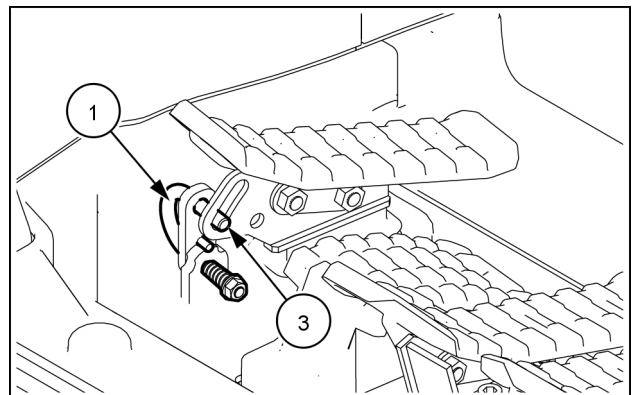
SMIL22CEX1962AA 14

To use the pedal, place the locking pin (1) in outward position.



SMIL22CEX1964AA 15

NOTE: if the locking pin (1) is in position (3), only the forward travel is possible



SMIL22CEX1963AA 16

Windshield

⚠ CAUTION

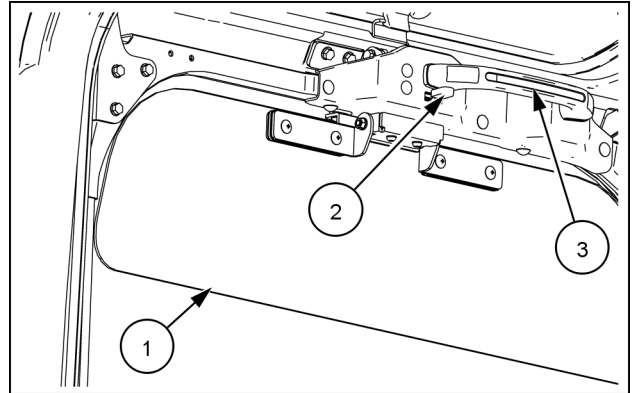
Pinch hazard!

Make sure you correctly follow the instructions in this manual when handling the windshield. If you do not handle the windshield correctly, it could slip and injure your fingers or hands. Failure to comply could result in minor or moderate injury.

C0045A

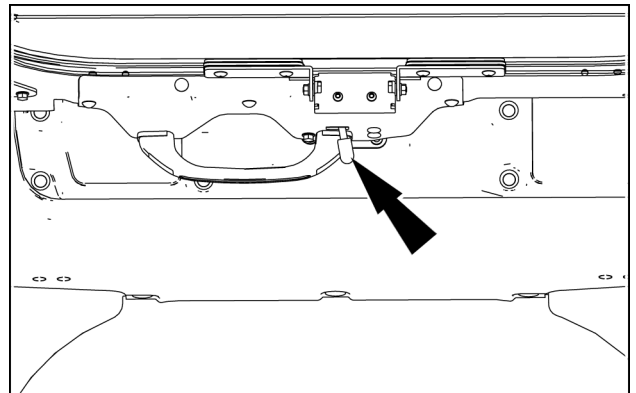
Opening

1. If sun shield (1) is equipped, fold it back against the windshield and operate the lever (2). Hold the lower and upper handles (3) and carefully raise the windshield.



SMIL21CEX1413AA 1

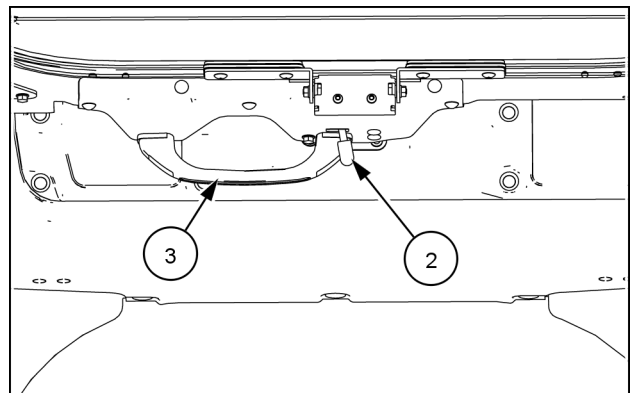
2. Pull the windshield to the rear until it engages perfectly behind the cab.



SMIL21CEX1414AA 2

Closing

1. Use the lever (2) to release the windshield.
2. Hold both handles (3) and carefully lower the windshield. Make sure the window is completely down.
3. Make sure the top of the windshield is correctly latched.

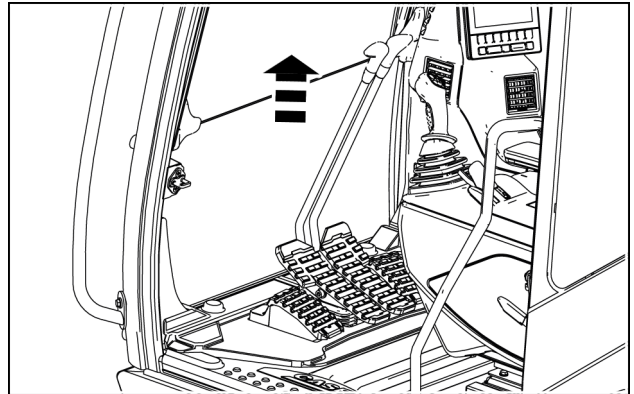


SMIL21CEX1414AA 3

Front lower window

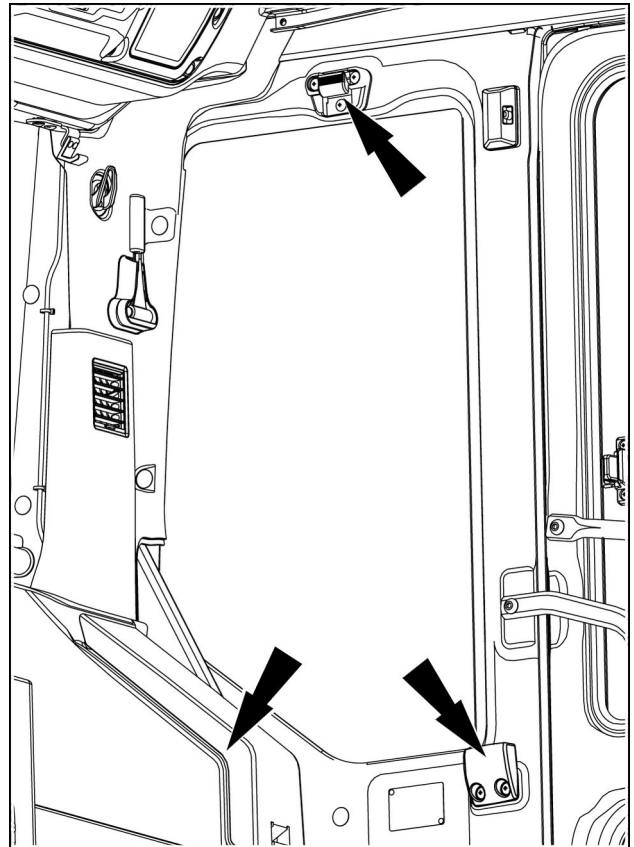
The front lower window may only be removed when the windshield is open.

1. Remove the front lower window from its housing by sliding it upward.



SMIL22CEX1934AA 1

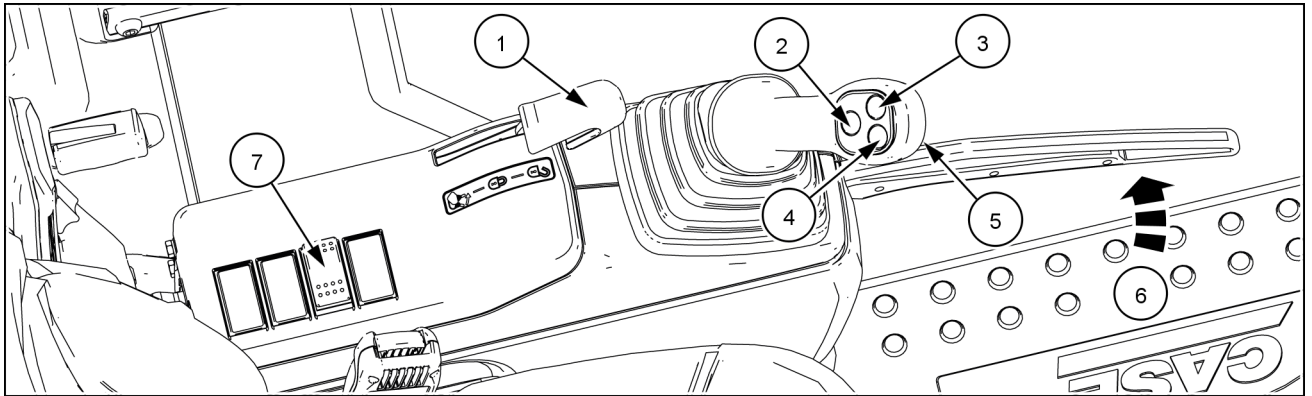
2. Place the front lower window in the storage position provided to the left of the operator's seat and then engage it correctly with the three glass holders.



SMIL22CEX1932BA 2

Left-hand side controls

Left-hand side controls



(1) Gate lock lever.

(2) Horn button.

NOTICE: make sure to sound the horn before starting the engine and resuming machine operation.

(3) Camera select button: press the button to change the camera visualization on the monitor.

(4) Hands-free phone button: if a mobile phone is connected to the radio Bluetooth, press the button to answer a call.

NOTE: the function of the buttons (3) , (4) , and (5) can be customized (refer to Instruments cluster section).

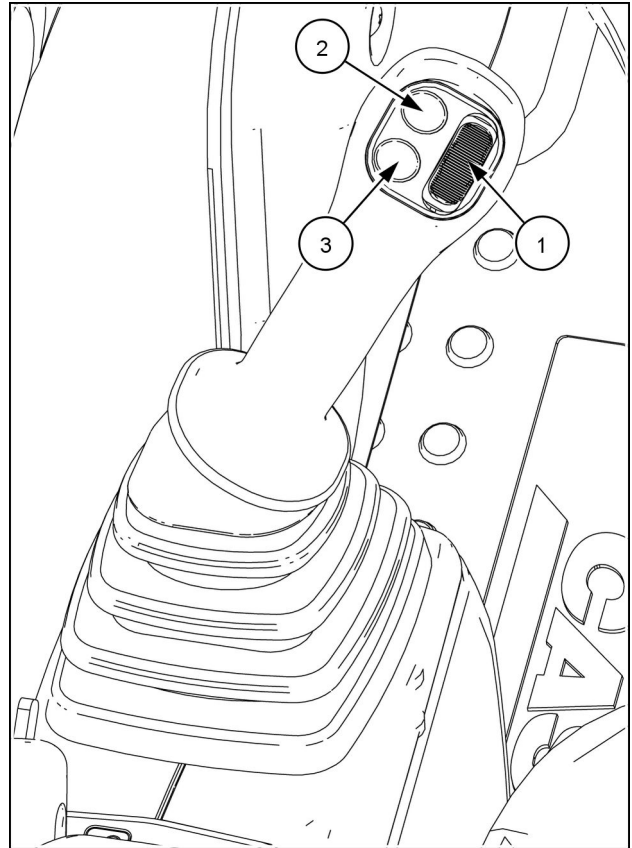
(5) Radio mute button: the radio mute button is located underneath the control lever. Push the button to mute the volume. Push it again to resume the volume.

(6) Safety bar.

(7) Fan reverse switch (Optional). This switch is used to reverse the fan in order to remove debris clogging the radiator and oil cooler fins.

When the machine is equipped with the auxiliary low-flow hydraulic circuit, the left-hand control lever includes:

1. Proportional switch to operate double-acting hydraulic attachments.
2. ON/OFF button to operate the preferred operating direction of the double-acting hydraulic attachment
3. Horn button.



SMIL22CEX1296AA 2

Gate lock lever and safety bar

⚠ WARNING

Unexpected machine movement!

Before you leave the operator's compartment, the gate lock lever must be in the central position and the safety bar must be in the inward position.

Failure to comply could result in death or serious injury.

W1384A

The gate lock lever (1) allows to cancel the functioning of the control levers and pedals and operates the safety bar (2).

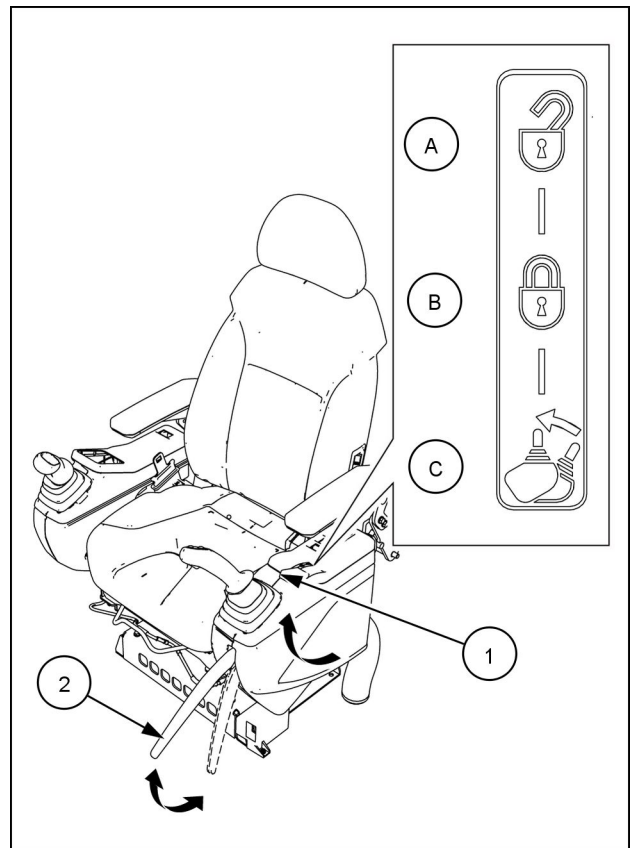
The safety bar prevents the operator from leaving the cab without previously operating the gate lock lever (1) to cancel the functioning of the control levers and pedals.

The gate lock lever operates on three positions:

- A. Forward position: when the gate lock lever (1) is in forward position, the safety bar (2) is in outward position. The attachment, the travel functions and the swing functions can be operated and the safety bar does not allow the operator to leave the cab.
- B. Central position: when the gate lock lever (1) is in central position, the safety bar (2) is in inward position inside the console. The attachment, the travel functions and the swing functions cannot be operated even if the engine is running. The operator may leave the cab if needed.
- C. Backward position: when the gate lock lever (1) is in backward position, the safety bar (2) is in inward position, all the functions are disabled and the left hand console is fully raised. The operator can thus easily get off the cab.

NOTE: set the gate lock lever to central position if just stopping machine operation without leaving the cab. Set the gate lock lever to backward position when ending machine operation and leaving the machine.

NOTE: the engine must be started with the gate lock lever in central position. If the gate lock lever in forward position, the engine does not start.

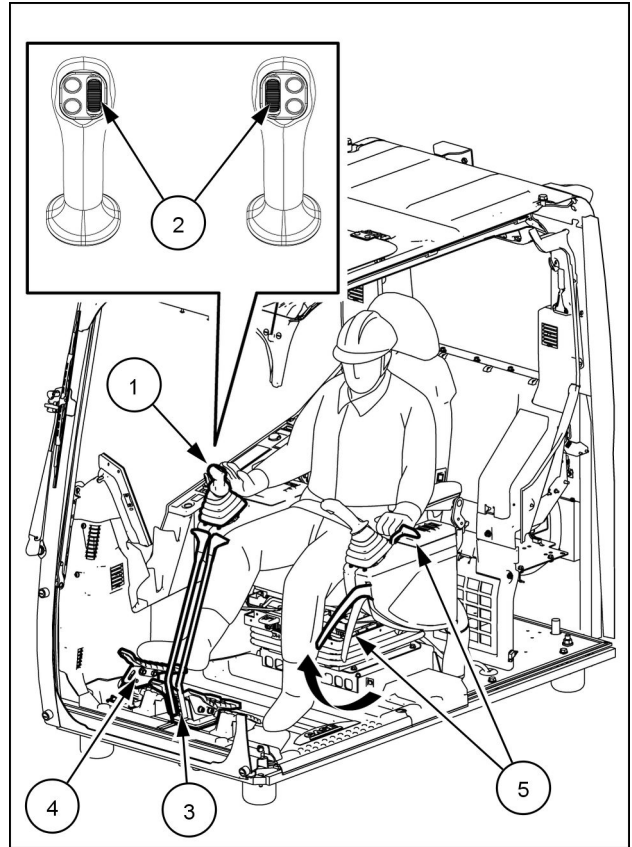


SMIL21CEX1390BA 1

Auto Operation Lever Lock Function

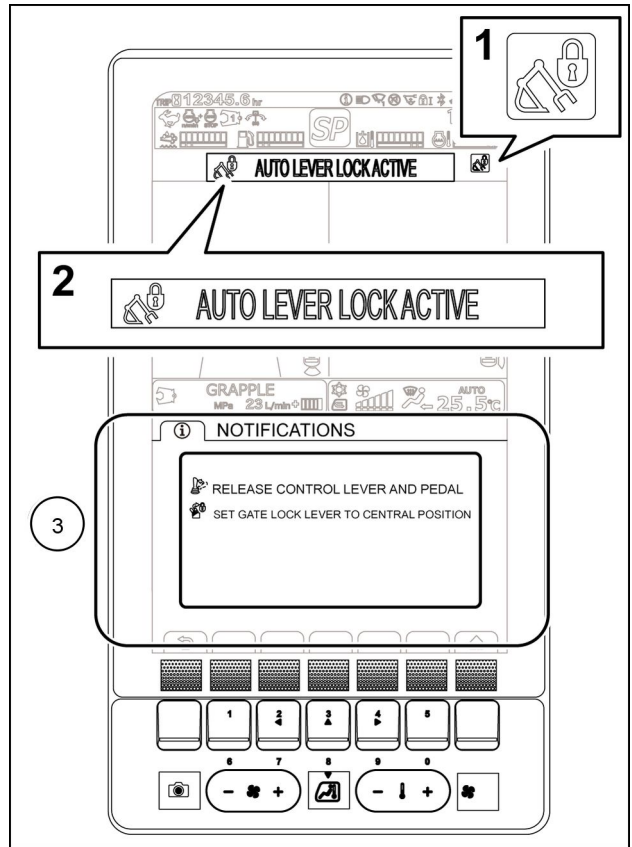
If the operator unintentionally released the gate lock (5) when the control levers (1), proportional switches (2), travel control levers and pedals (3), or special attachment operation pedal (4) is in operation, the pilot pressure supply is cut off to lock machine operations in order to prevent unexpected movements of the machine.

NOTICE: The purpose of the auto operation lever lock function is to reduce accidental damage by preventing the operator from performing any unintended operations. Regardless of whether it is intentional or not, this function is activated if any operations are performed before the gate lock is released. Ensure that the gate lock is released before operating the machine. In some cases, even when this function is activated, the machine may not stop immediately and move a little before it stops. Note that this function may not be activated under the following conditions. A machine failure has occurred. The hydraulic oil temperature is low. (Always warm up the engine before operating the machine.) The viscosity of the hydraulic oil in use is higher than that of the recommended genuine hydraulic oil. (Use a hydraulic oil with the correct viscosity.)



SMIL21CEX4351BA 2

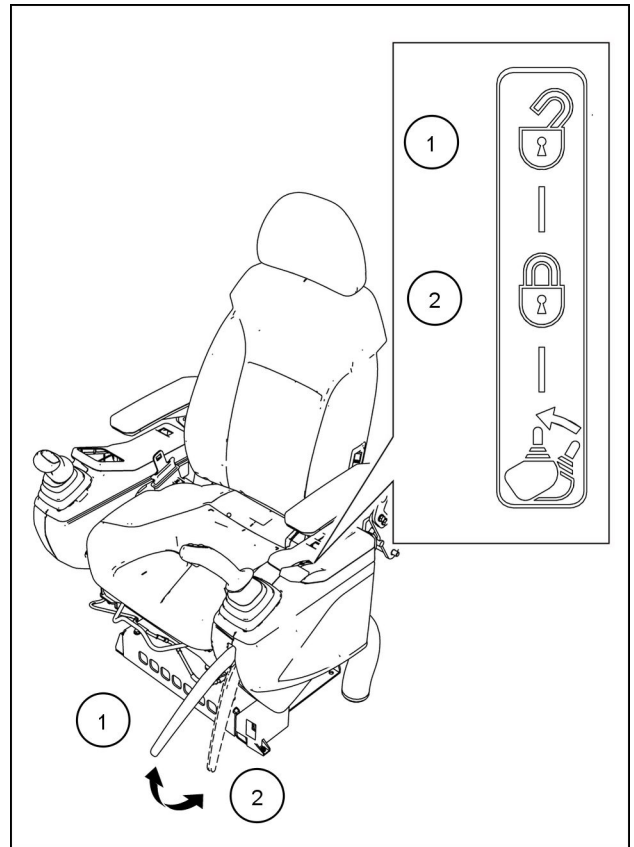
When the auto operation lever lock function is activated, an alarm sounds and the icon (1) and text message "AUTO LEVER LOCK ACTIVE" (2) are displayed. Also, the messages "RELEASE CONTROL LEVER AND PEDAL" and "SET GATE LOCK LEVER TO CENTRAL POSITION" are displayed on the NOTIFICATIONS screen (3). These remain displayed until this function is deactivated.



SMIL21CEX4352BA 3

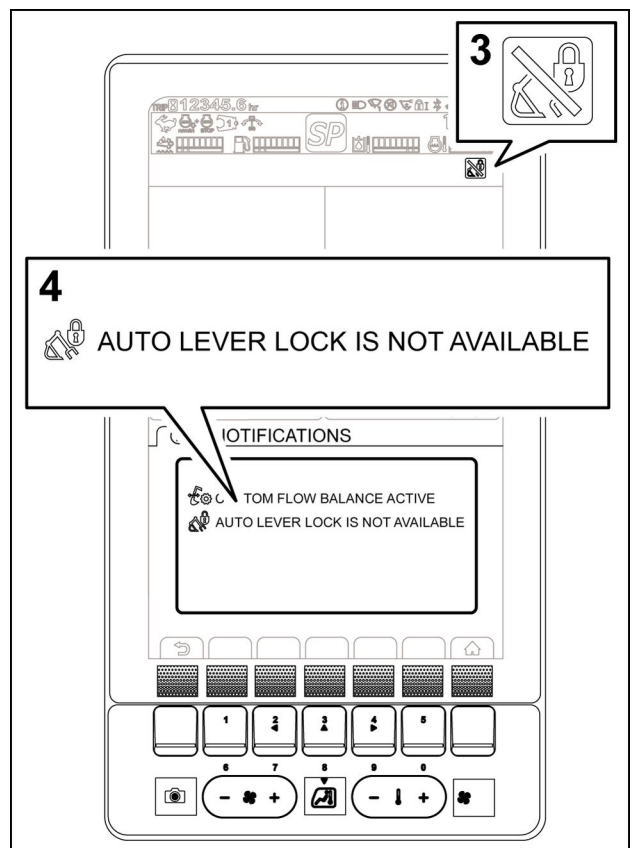
While this function is activated, the machine does not move even when the gate lock lever is in the normal operating position (1) (with the safety bar raised) and the control lever or operation pedal is operated. To enable the attachment, travel, and swing operation functions again, return the gate lock lever to the nonoperation position (2) (with the safety bar stored in the console) and check that the control levers and operation pedals are in the neutral position, then move the gate lock lever to the normal operating position (1) (with the safety bar raised) again. Also, if the machine is subjected to strong vibrations during operation, in rare cases, this function may be activated and the machine can stop suddenly. If that happens, return the gate lock lever to the non-operation position (2) (with the safety bar stored in the console) and check that the control levers and operation pedals are in the neutral position, then move the gate lock lever to the normal operating position (1) (with the safety bar raised) again.

NOTE: Before setting the gate lock lever to the normal operating position (1) (with the safety bar raised), check that all operation levers and operation pedals are in the neutral position. If any one of them is not in the neutral position, the machine may move suddenly, causing death or serious injury.



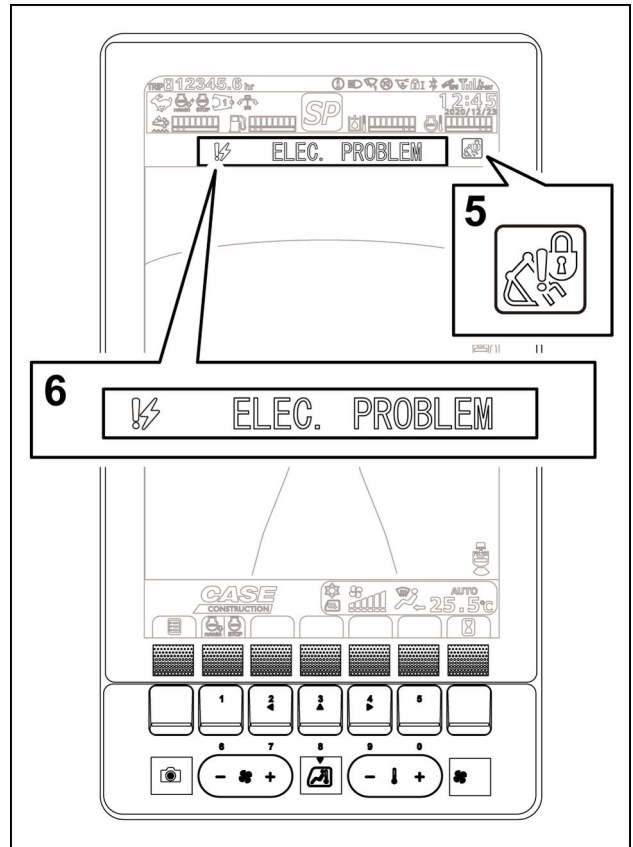
SML21CEX1390BA 4

NOTE: When the icon (3) and text message "AUTO LEVER LOCK IS NOT AVAILABLE" (4) are displayed, the auto operation lever lock function is temporary disabled. Our service engineer can disable the function. If this is displayed, contact your local dealer or the certified service plant.



SML21CEX4353BA 5

NOTE: When the icon (5) and text message "ELEC. PROBLEM" (6) are displayed, the auto operation lever lock function is not working properly. If this is displayed, contact your local dealer or the certified service plant.



SMIL21CEX4354BA 6

Cab internal lighting

The room lamp allows to have internal lighting inside the cab. The room lamp has a control switch with three operating positions:

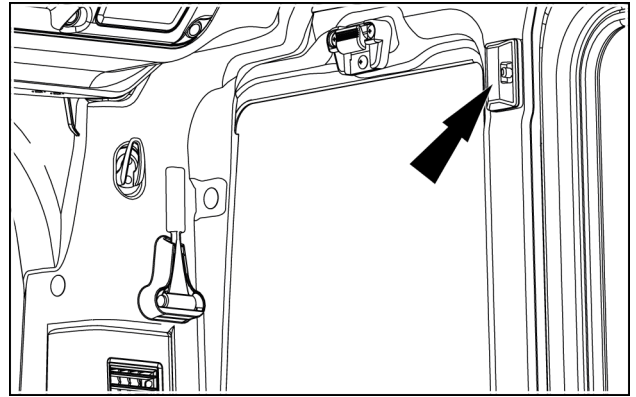
- OFF
- DOOR
- ON

When the switch is set in DOOR position, the room lamp turns on automatically when the door is opened, and turns off automatically when the door is closed.

NOTE: If the door is left open for more than 30 s, the lamp is forcedly turned off in order to prevent drain of the battery charge.

The ON position of the switch allows to turn on the room lamp only if the starter key is set in ACC or ON position.

NOTICE: Never leave the room lamp switch in ON position. The battery charge may be drained out. As the need for lighting ends, set the switch to OFF or DOOR position.



SMIL22CEX1282AA 1

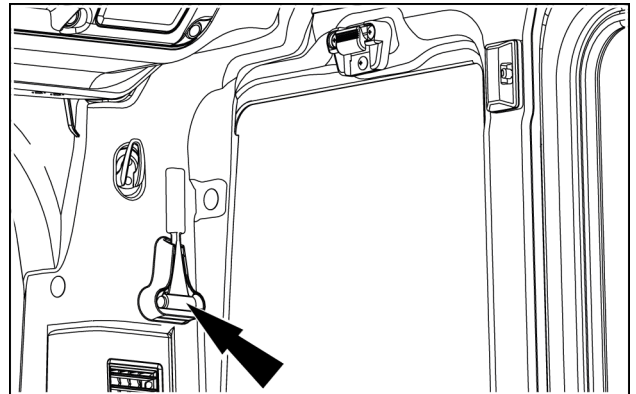
Emergency exit hammer

Located on the left-hand cab, use the hammer to break the rear window, and then push the window strongly and escape outside.

Consult your CASE CONSTRUCTION dealer for window installation.

NOTICE: Do not break the rear window except when it is absolutely necessary, such as to escape in an emergency.

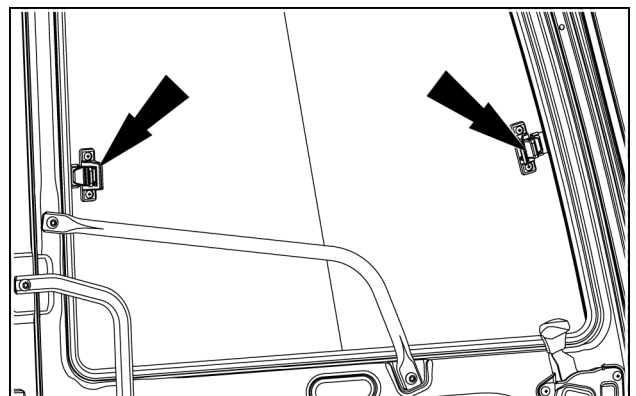
NOTICE: Do not place anything in front of the window. Doing so may obstruct an emergency escape.



SMIL22CEX1282AA 1

Sliding windows on door

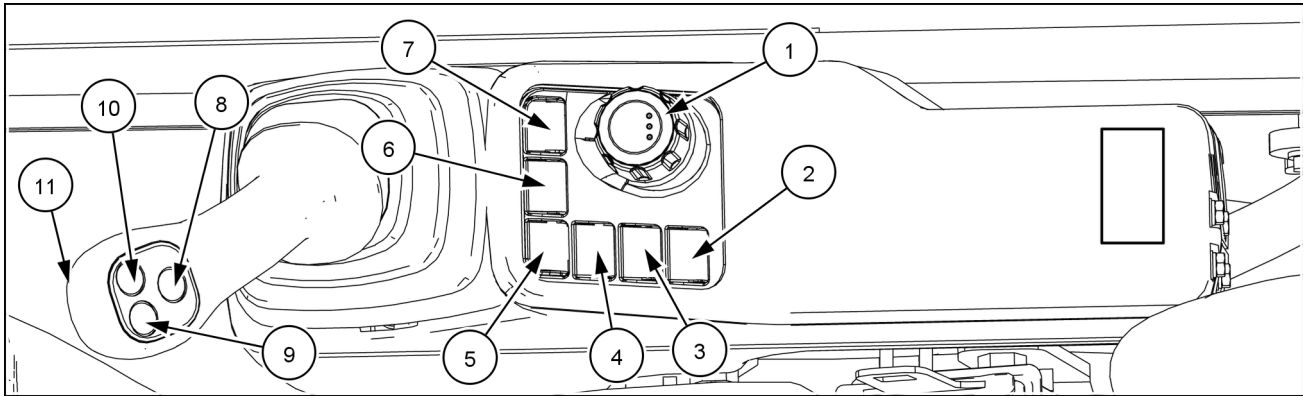
The two windows on the cab door can be opened singularly or simultaneously. Release the lock and slide each window in order to open it.



SMIL22CEX1933AA 1

Right-hand side controls

Right-hand side controls



SMIL21CEX1390EA 1

(1) Engine speed throttle and work mode selector (refer to "Instrument cluster" section).

(2) Windshield washer button (refer to "Instrument cluster" section).

(3) Wiper button (refer to "Instrument cluster" section).

(4) Working lights button (refer to "Instrument cluster" section).

(5) Travel mode button (refer to "Instrument cluster" section).

(6) Attachment select button (optional function, refer to Chapter 9).

(7) Lifting mode button (optional function, refer to Chapter 9).

(8) Engine low idle speed button: the engine low idle speed button enables to set the engine speed to low idle at a touch without moving the engine speed throttle. If operating at engine speed different from low idle, press and release the engine low idle speed button to get down the engine speed to low idle. Press and release the button again to resume the engine speed set by the engine speed throttle.

(9) Air conditioner button: press the button to turn the air conditioner ON or OFF.

(10) Windshield washer button.

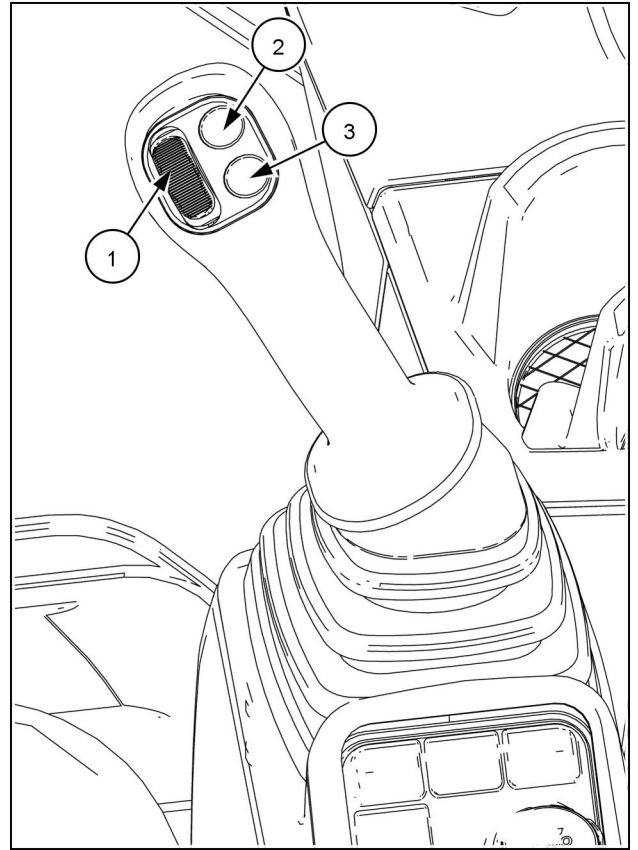
(11) One-touch wiper button: press and hold down the button to operate the wiper.

NOTE: the function of the buttons **(9)**, **(10)**, and **(11)** can be customized (refer to "Instruments cluster" section).

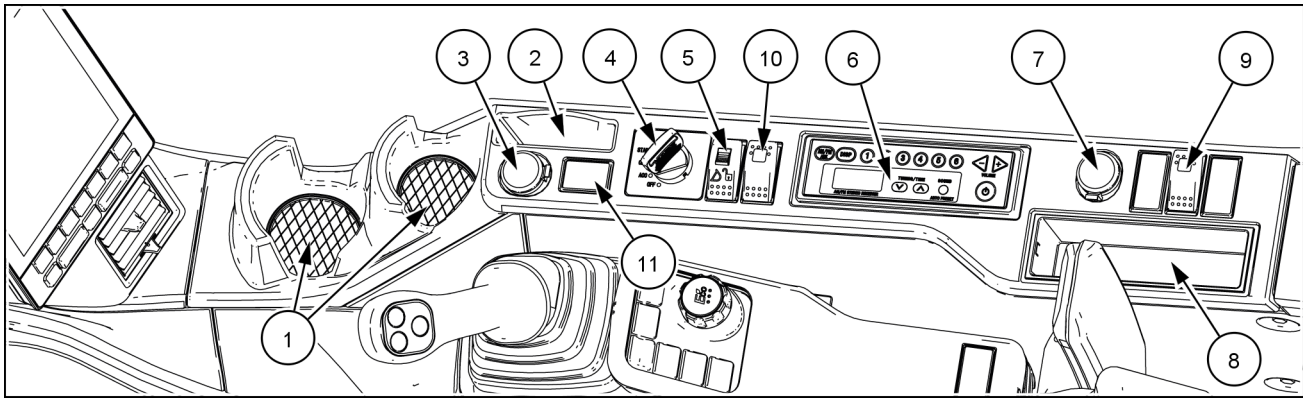
When the machine is equipped with an auxiliary high-flow hydraulic circuit, the right-hand control lever includes:

1. Proportional switch to operate double-acting hydraulic attachments.
2. ON/OFF button to operate single-acting hydraulic attachments.
3. Engine low idle speed button.

NOTICE: Do not operate controls for auxiliary high-flow hydraulic circuit without setting any flow rate/pressure combination. The circuit would work by default at maximum pressure, and this may lead to severe damages to the attachment. For the setting procedure of auxiliary high-flow hydraulic circuit, refer to Chapter 9.



SML22CEX1295AA 2



SMIL22CEX1938EA 3

(1) Cup holders

(2) Smartphone holder

(3) **12 V** power supply socket: the device is active with the starter key in ON position, or while the engine is running.

NOTICE: connect only **12 V** devices to the socket. Connecting devices functioning at different voltage can cause damages to the device itself and to the electrical system.

(4) Starter switch (4 positions): ON (contact), START (engine ignition), OFF (engine shut-down) and ACC (accessory current supply).

NOTICE: when the starter key is in ON position, if the security function is enabled, it will be necessary to enter the password. Refer to page 4-1.

NOTE: the starter key is also used to lock the cab door, the DEF/ADBLUE® tank cover, the engine hood, the front storage box, the side doors and the fuel tank cap.

(5) Hydraulic quick coupling system activation switch (optional, refer to Chapter 9).

(6) Radio.

(7) **24 V** power supply socket: the device is active with the starter key in ON position, or while the engine is running.

NOTICE: connect only **24 V** devices to the socket. Connecting devices functioning at different voltage can cause damages to the device itself and to the electrical system.

(8) Storage tray.

(9) Around lighting switch (optional): the around lighting switch allows to activate the around lighting system installed on the cameras. Press the back side of the switch to activate the lighting. Press the front side of the switch to deactivate the lighting.

NOTE: the around lighting system activates as the working lights are turned on.

(10) Free swing button: the button sets the condition of swing stop. If the free swing is activated the swing stop is delayed. Press the button to activate the free swing function. The free swing icon appears on the monitor. Press the button again to deactivate the function.

The free swing function is intended to be used especially for load handling application to avoid loads from slinging.

The free swing function is automatically disabled when stopping the engine.

NOTICE: avoid working on a slope with the free swing function active. The swing becomes hard to stop.

NOTICE: when parking on a slope, never activate the free swing function from the machine parking position. The machine may start to swing because the swing parking brake is released.

(11) USB port and AUX port.

Instrument cluster

(1) Solar radiation sensor

If you place anything on the solar radiation sensor (on the console at the front right of the operator's seat), accurate measurement of the temperature inside the operator cab becomes impossible. Do not place anything on the solar radiation sensor.

(2) Monitor display

Displays the clock, fuel gauge, coolant temperature gauge, and oil pressure/temperature gauge. Displays the function selection status. Displays the status of the machine. Displays camera images. Displays the service status of the machine.

(3) Monitor switches

Used to select the machine status. Used to switch the monitor display. Used to operate the air conditioner.

(4) Air conditioner vents

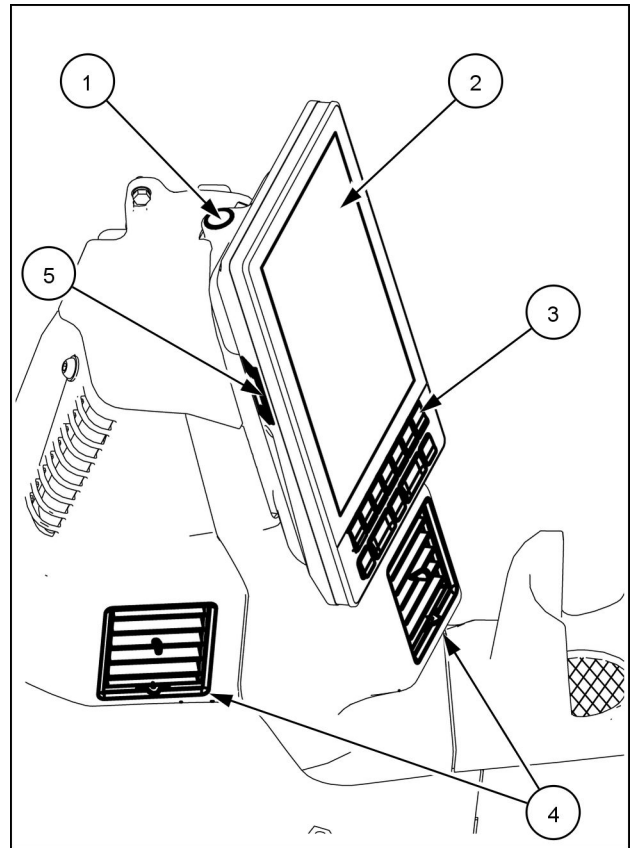
The air conditioner vents control the air flow circulation and direction. The air conditioner vents are opened/closed and their direction controlled manually.

NOTICE: While the air conditioner is being used, the air vents must be left open.

(5) USB external input

Used by service engineers for maintenance. Do not connect a commercially available USB flash drive.

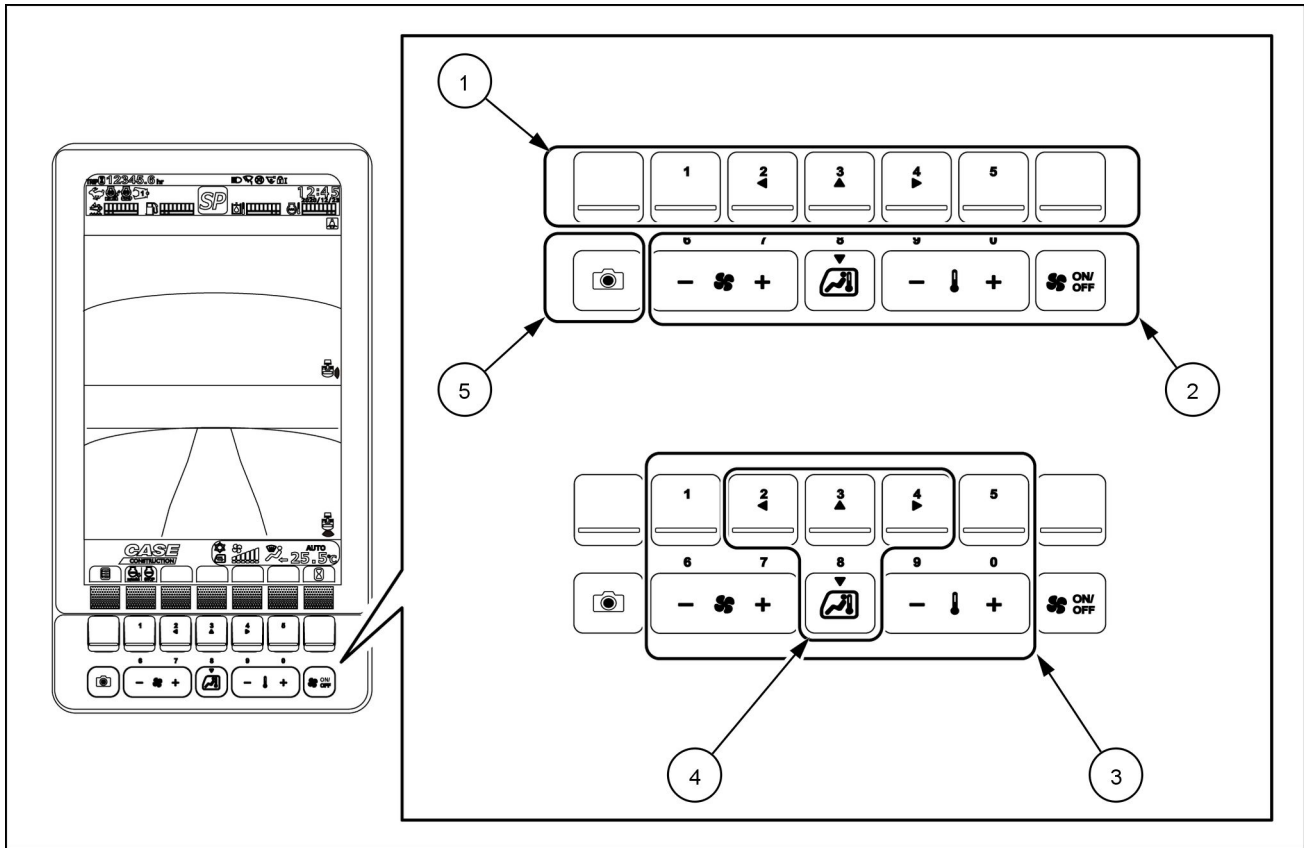
NOTICE: If the USB port cover is not securely fastened, water may enter the inside of the monitor and cause damage.



SMIL21CEX3489BA 1

Monitor switches

The monitor switches are used to operate or select the machine devices and monitor display or to operate the air conditioner.



SMIL21CEX3490FA 2

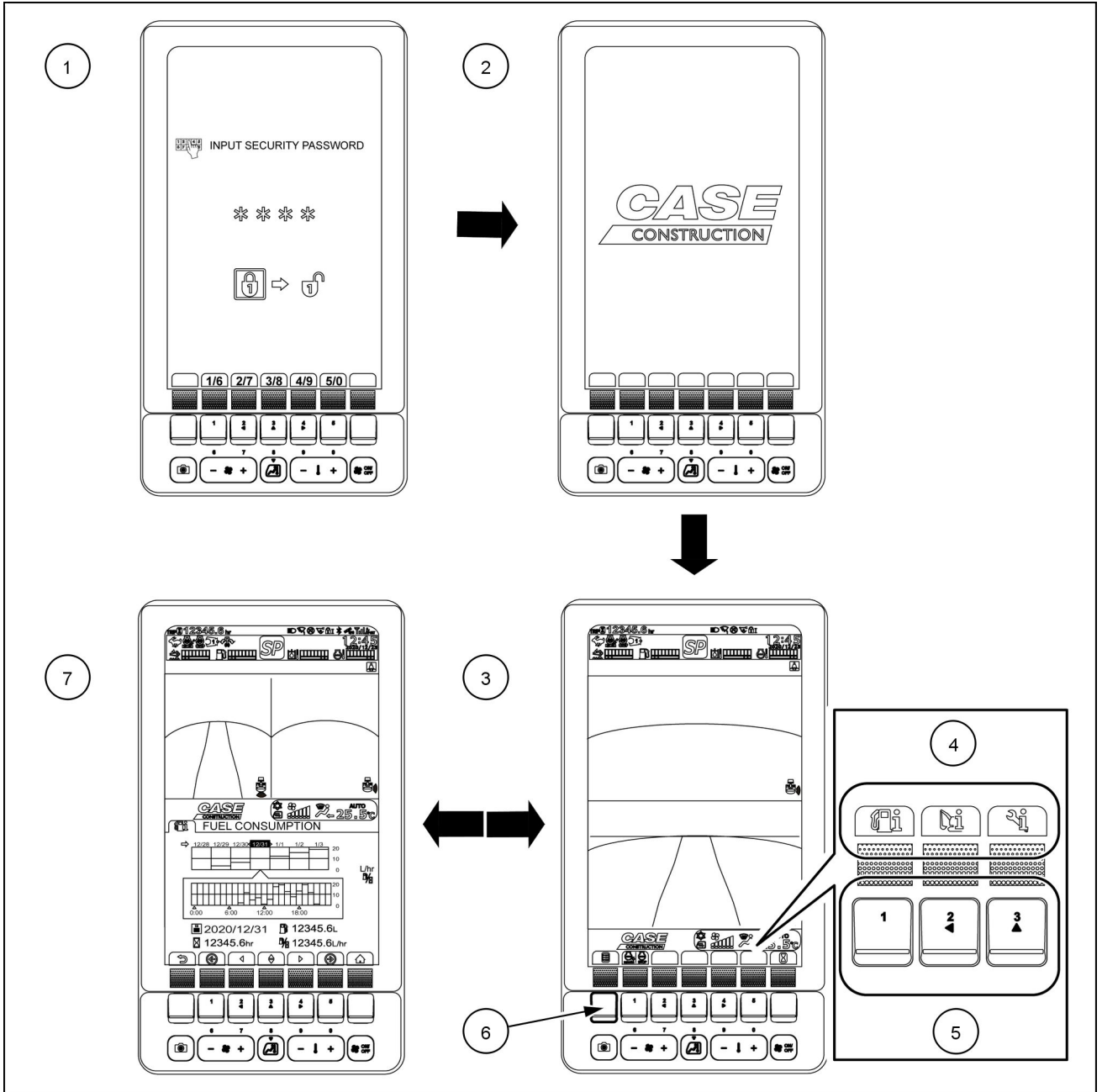
1. Area used when operating function keys (Switch icons are displayed on the monitor.)
2. Area used when operating the air conditioner
3. Area used when operating the numeric keys
4. Area used when operating the cursor keys
5. Camera select switch

Monitor display

There are 2 modes for monitor display:

Normal display mode: Displays the machine status and camera images during operation.

User information mode: Allows you to view machine information and to configure various settings.



SML21CEX3491GA 3

NOTE: The monitor displays the status of the machine during operation. If any abnormality occurs, it notifies the operator immediately with a message and the buzzer. It is not used in start-up inspections and service.

Screen transitions. If security is set up, the security password entry screen (1) is displayed.

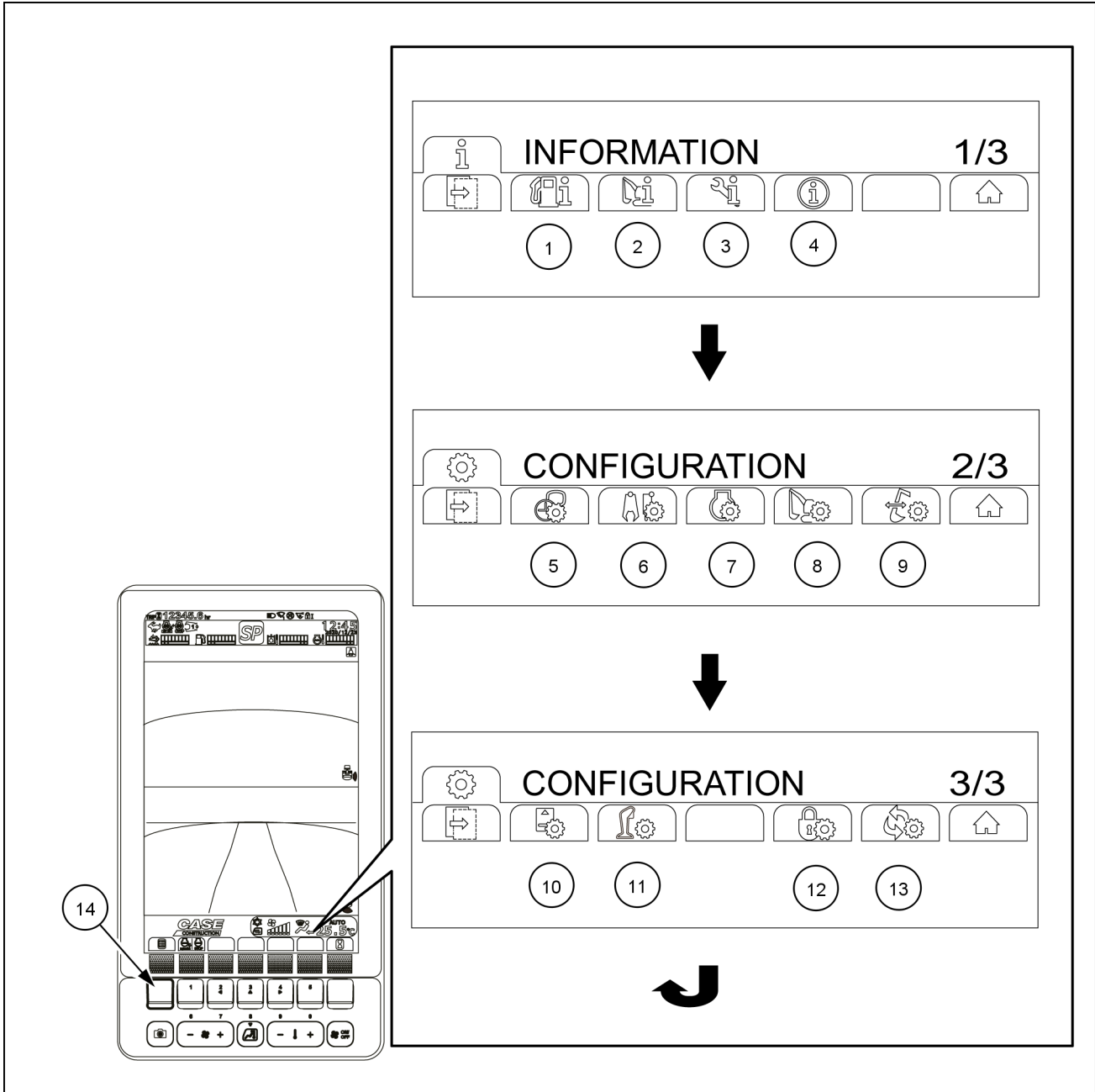
NOTE: For information on setting up security, consult your CASE CONSTRUCTION dealer.

When the security password is entered correctly, the initial screen (2) is displayed, then the system enters the normal display mode (3).

For details on how to enter the security password, refer to "Using Security Function". When you press the function switch (6) for displaying the menu items, menu items are displayed on the function switch tabs (4). Press the function switch (5) under the menu item you want to display to switch to the user information mode (7).

User information mode

Switching screens in user information mode: press the function switch **(14)** to change the icons displayed on the function switch tabs. When you press user information mode function switches **(1)** - **(13)** for the information you want to view or set, their respective information screen is displayed.



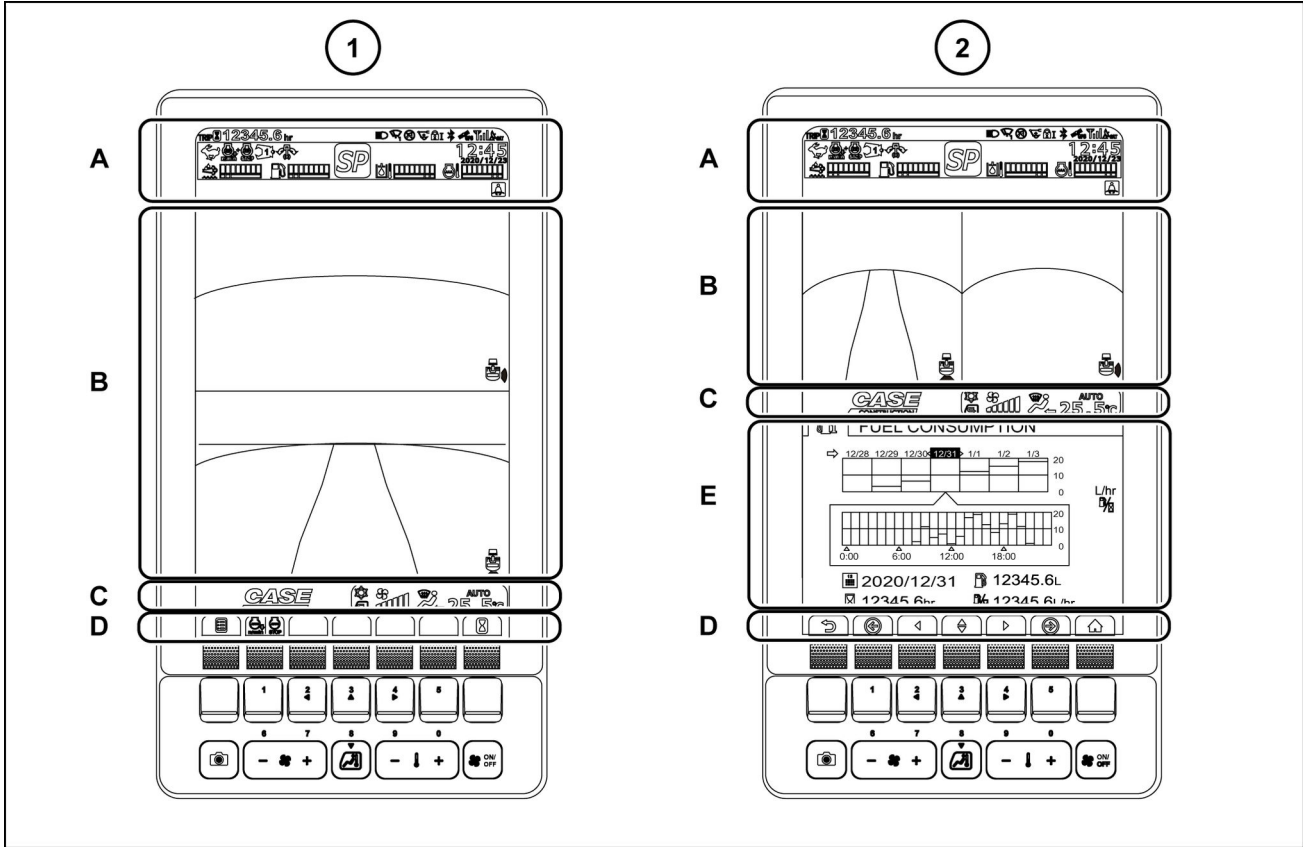
SMIL22CEX1965GA 4

3 - CONTROLS AND INSTRUMENTS

1	FUEL CONSUMPTION	Enables you to view the fuel economy for the past 7 days.
2	MACHINE INFORMATION	Enables you to view the machine status in detail.
3	TIME UNTIL REPLACEMENT	Enables you to view the information on the time for replacing the periodic replacement parts.
4	NOTIFICATIONS	Enables you to view the information that the operator needs to know.
5	DISPLAY CONFIGURATION	Enables you to configure the screen brightness, camera, and date/time settings.
6	AUXILIARY HYDRAULICS (refer to chapter 9)	Enables you to switch between Breaker and Crusher, manage operations according to the model, and set the pressure and flow rate (Refer to Chapter 9).
7	ATS CONFIGURATION	Enables you to view and change the ATS settings
8	FUNCTION CONFIGURATION	Enables you to configure settings for functions related to energy-saving and safety.
9	CUSTOM FLOW BALANCE	Enables you to adjust the flow balance according to the end attachment to be used.
10	MONITOR SWITCHES LAYOUT	Enables you to create shortcuts for frequently used menu screen items on the function switch tab in normal display mode.
11	KNOB SWITCHES LAYOUT	Enables you to change the switch function of the control levers switches.
12	PASSCODE SETTING	Enables you to change the passcode.
13	FACTORY SETTING	Enables you to reset the settings on the menu screen to the factory settings all at once.

Display area

There are 4 display areas in the [Normal display mode] (1) and 5 display areas in the [User information mode] (2).



SMIL21CEX3492FB 5

(A) Icon display area

(B) Camera display area

(C) Information display area

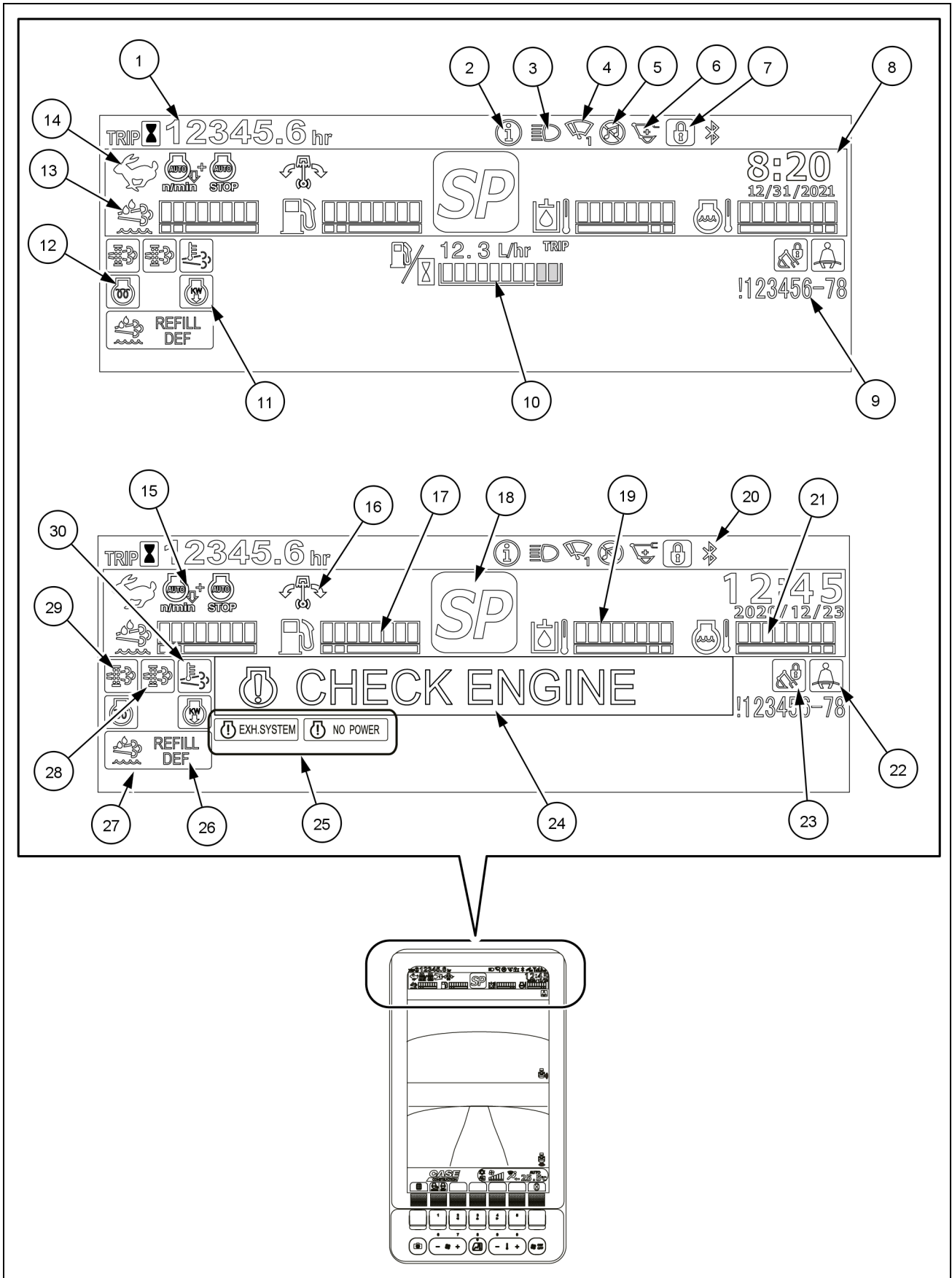
(D) Function switch tab display area

1. Displays operation switch icons

2. Displays user information modes. The function switch layout in normal display mode can be changed in MONITOR SWITCHES LAYOUT.

(E) User information screen display area

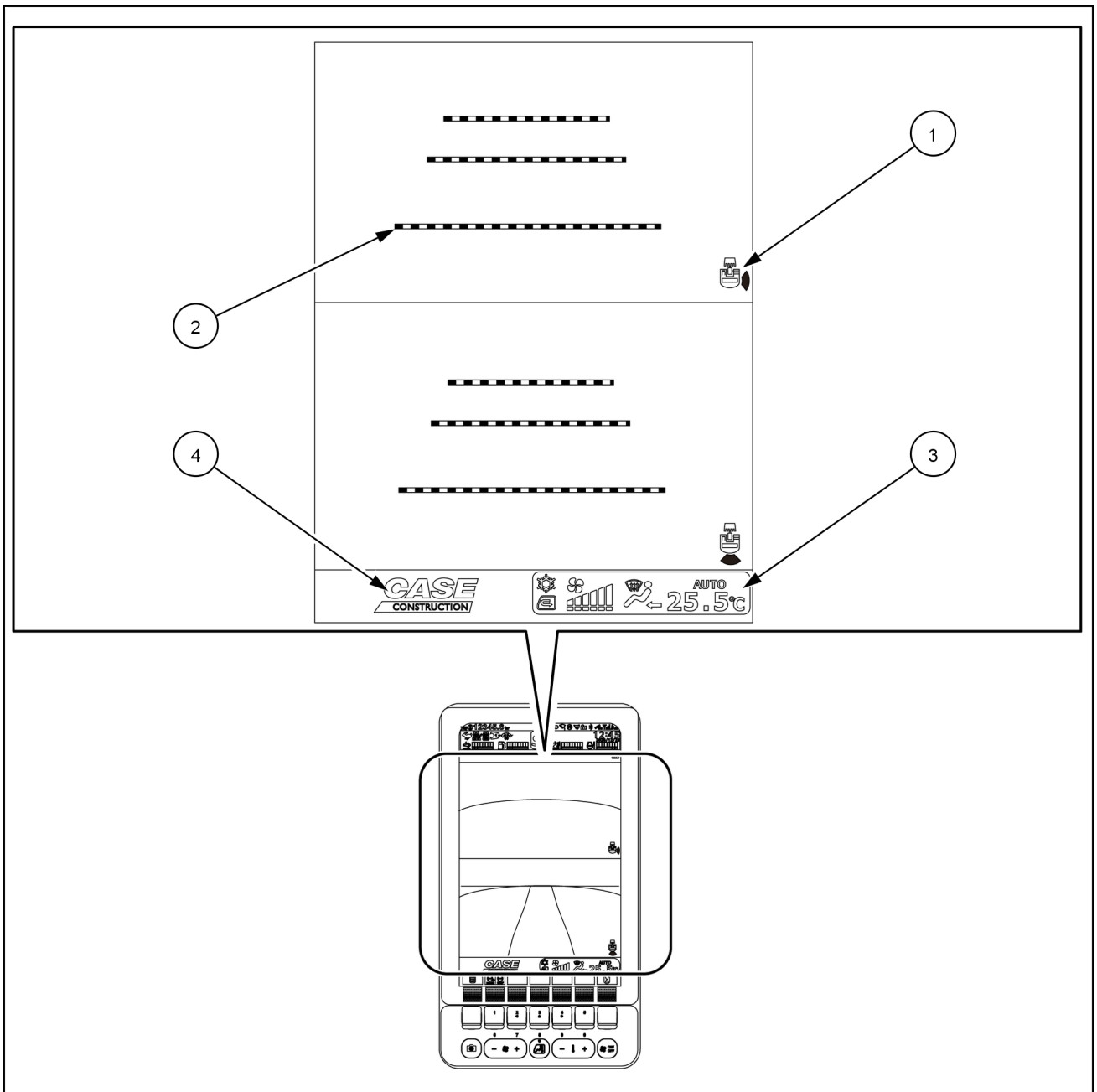
Icon display area



3 - CONTROLS AND INSTRUMENTS

1	Hour meter/trip meter
2	Notification
3	Working light
4	Front wiper
5	Radio mute
6	Auto pressure boost
7	Security function
8	Date and time
9	Diagnostic trouble code
10	Fuel consumption indicator/fuel economy gauge
11	Engine output reduction icon (Refer to After Treatment System section)
12	Engine preheat
13	DEF/AdBlue® level gauge
14	Travel mode
15	Idle mode
16	Free swing
17	Fuel gauge
18	Work mode
19	Oil temperature gauge
20	Bluetooth
21	Engine coolant temperature gauge
22	Not wearing seat belt
23	Auto operation lever lock function
24	Message screen
25	ATS related icons (Refer to After Treatment System section)
26	DEF/AdBlue® refill icon (Refer to After Treatment System section)
27	DEF/AdBlue® icon (Refer to After Treatment System section)
28	Manual ATS cleaning (Refer to After Treatment System section)
29	Automatic ATS cleaning (Refer to After Treatment System section)
30	Hot exhaust (Refer to After Treatment System section)

Camera display area/information display area



SML21CEX3494GA 7

1	Camera angle
2	Camera screen guide lines
3	Air conditioner information display
4	Brand logo/optional setting information

Work Modes



Super Power: displayed when the mode that prioritizes machine output is selected.



Power: displayed when the high-load work mode is selected. Select from levels 1 - 10 for this mode. P1: Low speed - P10: High speed



Eco: displayed when the mode that prioritizes fuel economy is selected. Select from levels 1 - 10 for this mode. E1: Low speed - E10: High speed

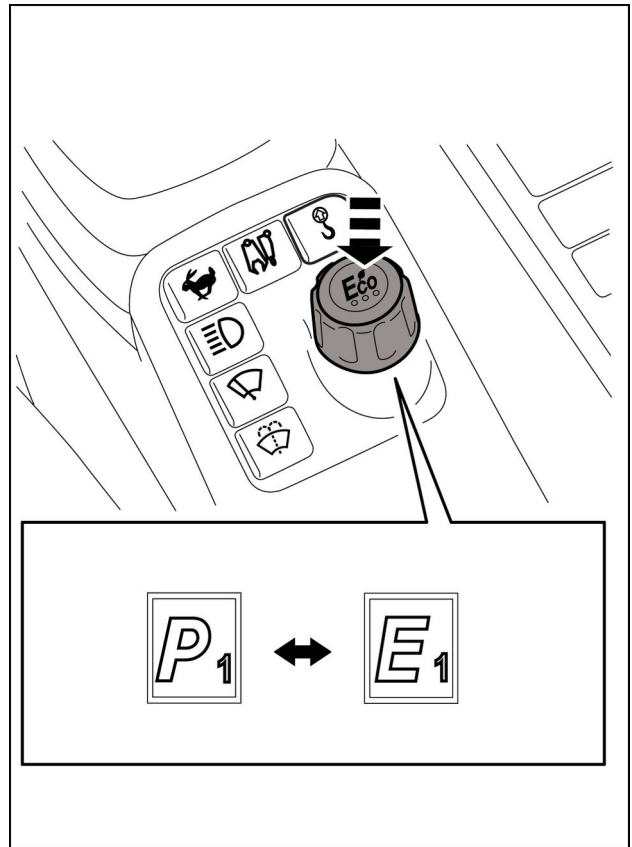


Lifting: displayed when the mode that prioritizes lifting operability is selected. Select from levels 1 - 6 for this mode. L1: Low speed - L6: High speed This mode can be selected only for machines with HBCV. With machines without HBCV, if the switch is pressed, the message "LIFTING MODE NOT ACTIVE" is displayed and this mode cannot be selected.

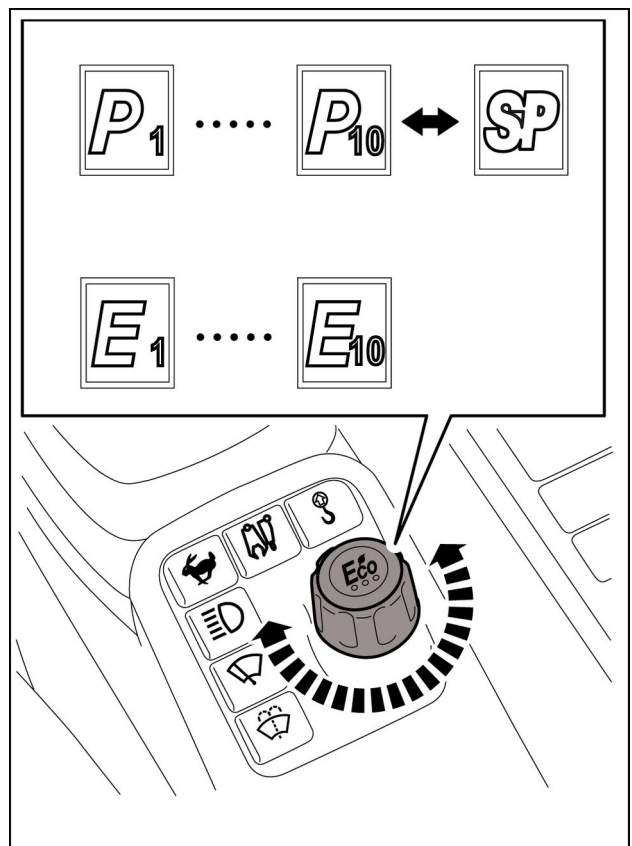
Machine administrators can set a limitation so that the operator does not perform operations in an inappropriate work mode or a limitation on the maximum engine speed.

Each time the engine throttle switch on the right console is pressed, the mode switches between "P" and "E".

Turn the engine throttle switch to change the engine speed. When you turn the engine throttle switch in "P" mode to increase the engine speed to the maximum, the mode switches to "SP".



SMIL21CEX3495BA 8



SMIL21CEX3496BA 9

Each time the lifting mode switch is pressed, the lifting mode turns ON or OFF.

The overload warning device operates when the lifting mode turns ON.

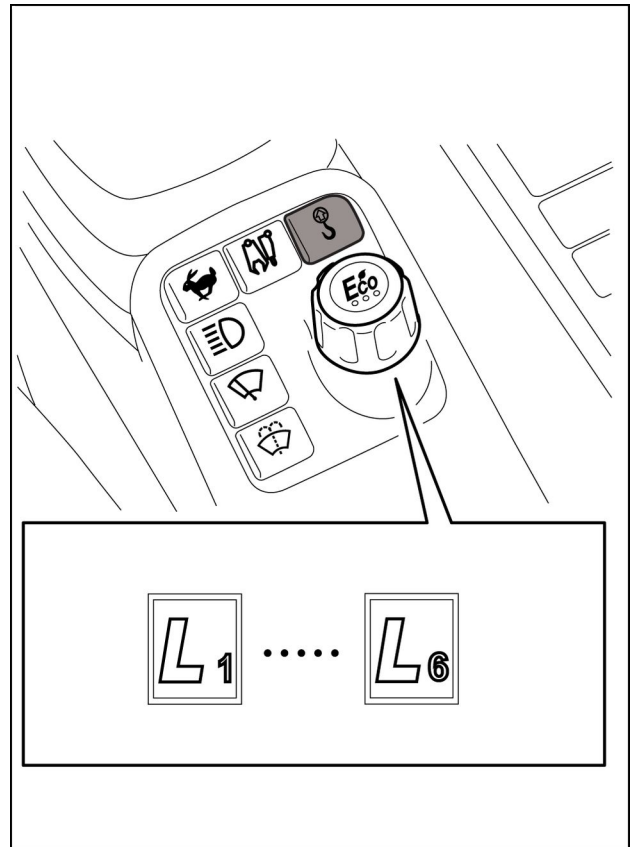
Turn the engine throttle switch to change the engine speed.

When the suspended load is excessive, the operator is notified by a warning message and alarm sound.

When performing lifting work, ensure that the machine is in lifting mode.

The lifting mode can be selected only for machines with HBCV.

With machines without HBCV, if the switch is pressed, the message "LIFTING MODE NOT ACTIVE" is displayed and the lifting mode cannot be selected.



Travel mode

Each time the "Travel mode select switch" on the switch panel is pressed, the speed switches between low speed and high speed.



Displayed when the low-speed travel mode is selected.



Displayed when the high-speed travel mode is selected.

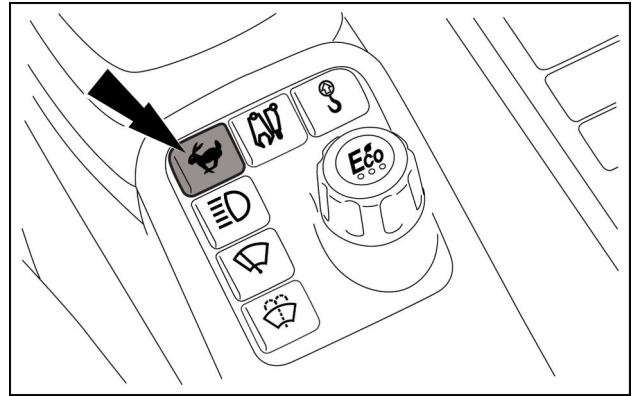
Low speed "Turtle": Use this mode when traveling on sloped, uneven, or soft ground.

High speed "Rabbit": Use this mode when traveling on hard, level, maintained ground.

NOTE: When the engine is started, low speed is selected automatically.

NOTE: When high speed is selected on the machine, if the load increases, for example when going uphill, the machine switches to low speed automatically and when the load drops, it returns to high speed automatically.

NOTE: Traveling direction may be shifted if the travel mode is changed while traveling. Stop traveling before switching the travel mode.



SMIL21CEX3498AA 11

Idle Modes

This indicates the selection status of auto idle and idle shutdown.



Displayed when auto idle is selected.

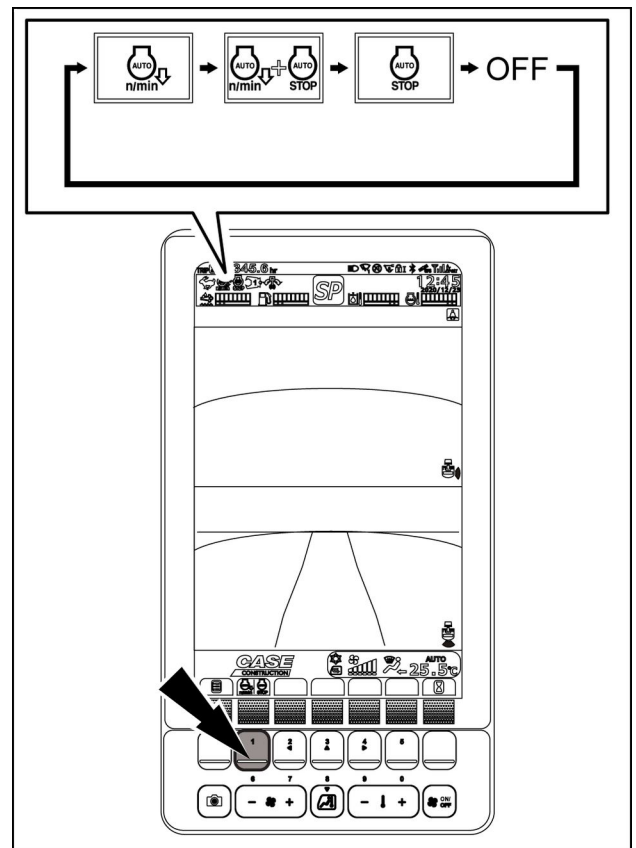


Displayed when auto idle and idle shutdown are selected.



Displayed when idle shutdown is selected.

The idle mode changes as follows each time the idle mode switch (function switch) is pressed. The image provided shows the factory settings.



SMIL21CEX3500BA 12

Auto idle: changes the engine speed to idle when the machine has been left unoperated for **5 s**. To return to the engine speed required by the throttle, either operate the machine or turn the engine throttle volume.

Idle shut down: with the gate lock lever in the non-operation position (locked), if the engine speed is 1200 rpm or less and the throttle is not operated for **3 min**, the message "IDLE SHUT DOWN" is displayed on the screen and an alarm sounds, then the engine stops in **10 s**.

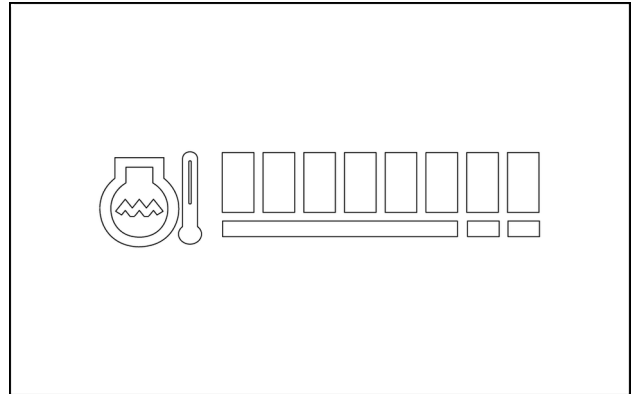
[Auto idle + idle shutdown] When this is selected, both the auto idle and idle shutdown modes are set. Changes the engine speed to idle when the machine has been left unoperated for **5 s**, then after another **3 min**, stops the engine. (The operation conditions are the same as the 2 items above.)

NOTE: To restart the engine after it has been stopped in an idle shutdown, first turn the starter switch key to "OFF", then start the engine.

NOTE: The idle mode settings can be changed on the "FUNCTION CONFIGURATION"

Engine coolant temperature gauge

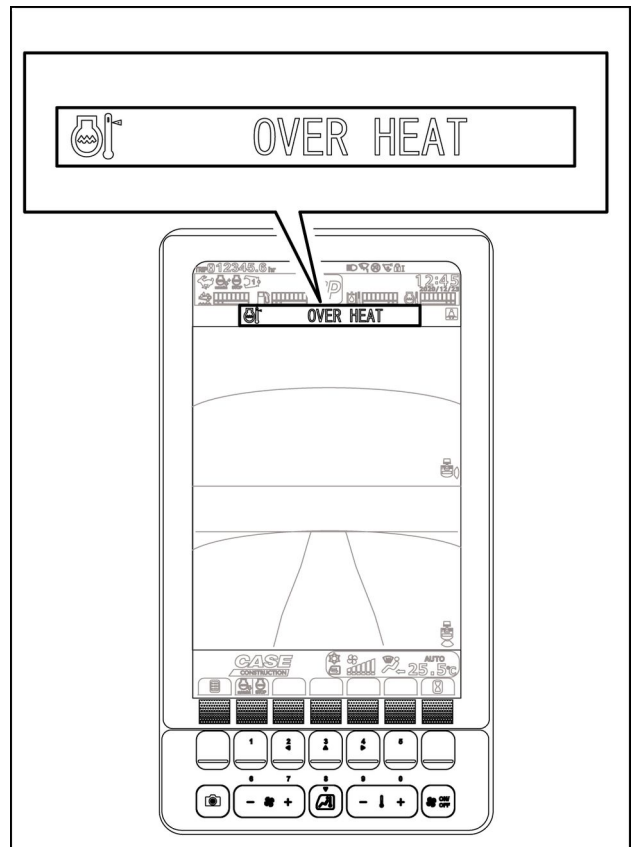
The number of lit segments indicates the temperature of the engine coolant. The greater the number of lit segments, the higher the coolant temperature is.



SMIL21CEX3601AA 13

If all segments are lit, an alarm sounds and the OVER HEAT message is displayed.

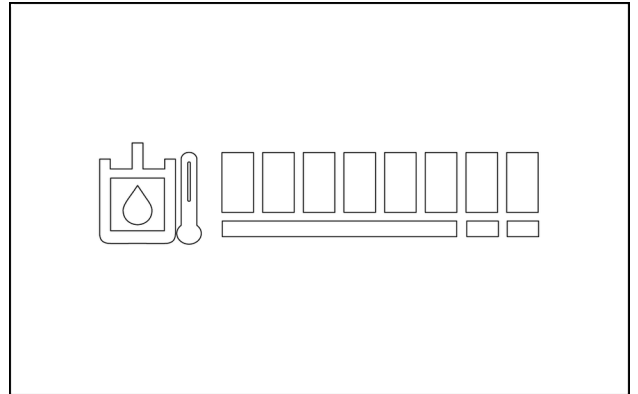
If the OVER HEAT message appears, lower the engine speed. If the temperature does not drop, stop the engine, remove the starter key, and call the CASE CONSTRUCTION dealer for machine inspection.



SMIL21CEX3602BA 14

Hydraulic oil temperature gauge

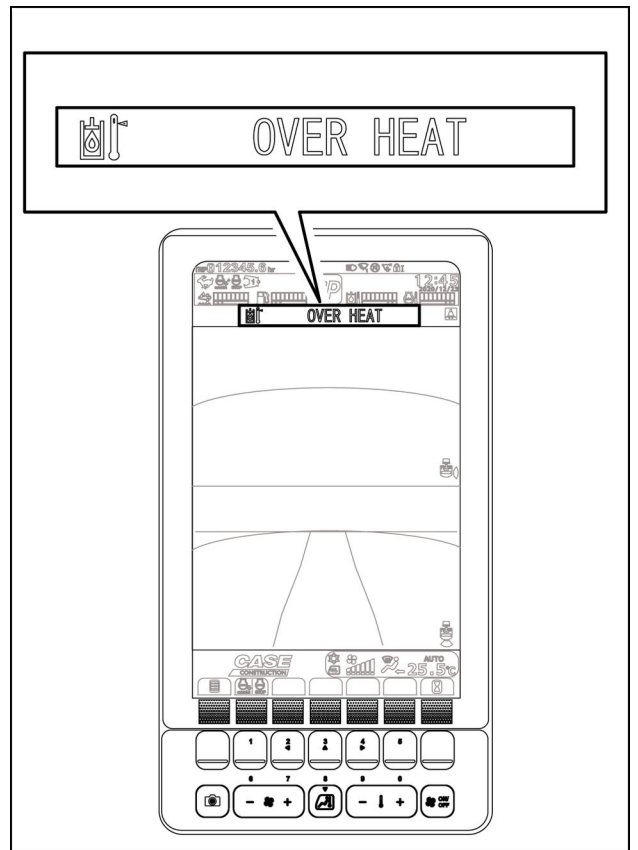
The number of lit segments indicates the temperature of the hydraulic oil. The greater the number of lit segments, the higher the hydraulic oil temperature is.



SMIL21CEX3603AA 15

If all segments are lit, an alarm sounds and the OVER HEAT message is displayed.

If the OVER HEAT message appears, lower the engine speed. If the temperature does not drop, stop the engine, remove the starter key, and call the CASE CONSTRUCTION dealer for machine inspection.



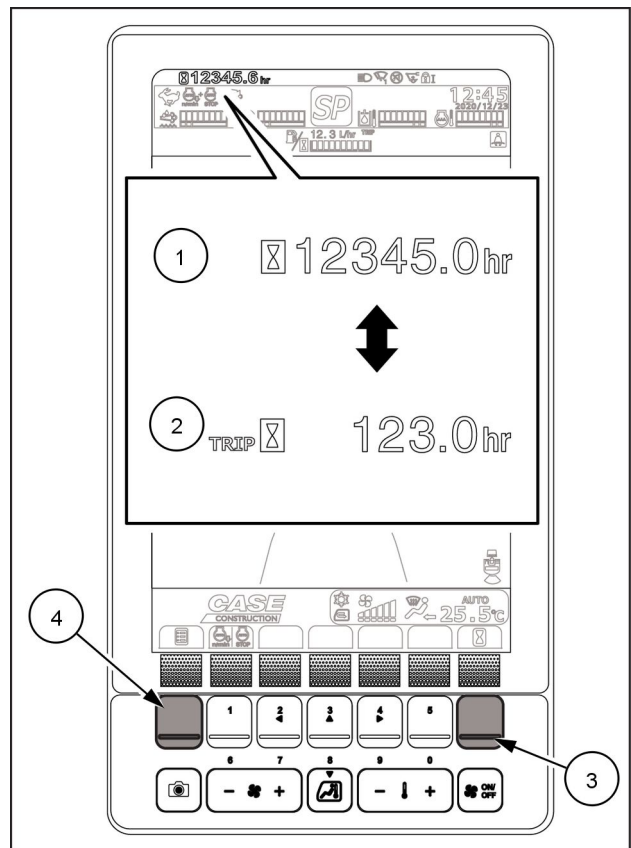
SMIL21CEX3604BA 16

Hour meter/trip meter

1. Hour meter: the hour meter displays the duration that the engine has operated in **0.1 h (6 min)** increments. The hour meter cannot be reset. The hourglass flashes while the engine is running.
2. Trip meter: the trip meter can be reset to "**0 h**" as desired. It displays the accumulated operating hours from the time of reset in **0.1 h (6 min)** increments.

If you press the hour meter switch **(3)** while the hour meter **(1)** is displayed, the display changes to the trip meter **(2)**. If the trip meter **(2)** is left as is, it switches back to the hour meter **(1)** after about **1 min**.

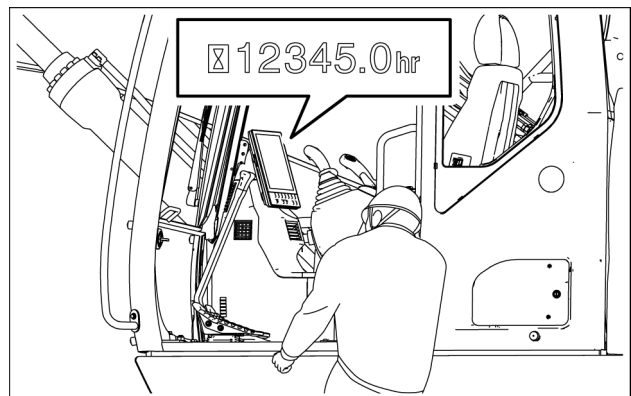
NOTE: Turning the starter switch key to the "OFF" position ends the hour meter **(1)** count. If the camera switch **(4)** is pressed after the key is turned to the "OFF" position, the hour meter **(1)** and clock are displayed for **30 s**.



SMIL21CEX3605BA 17

Even when the key is turned to the OFF position, the hour meter **(1)** is displayed on the monitor for **30 s** if a cab door is opened. The hour meter disappears when the door is closed.

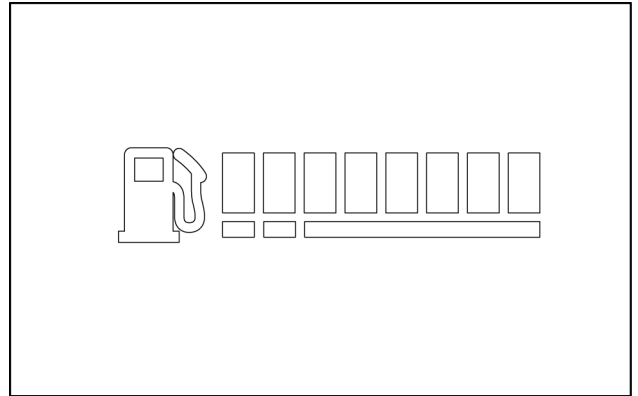
Press and hold the hour meter switch **(3)** while the trip meter **(2)** is displayed to reset the engine operating hours on the trip meter to "**0 h**".



SMIL21CEX3606AA 18

Fuel gauge

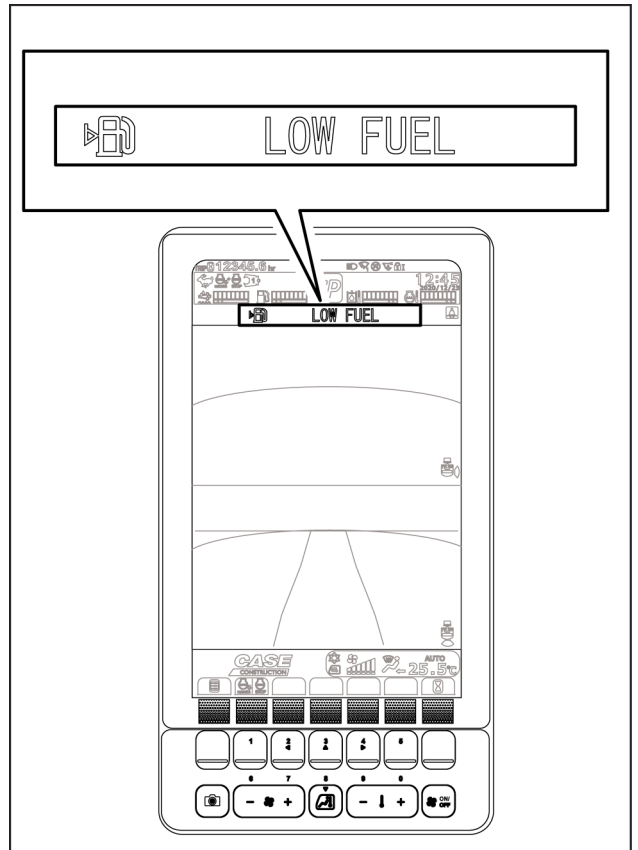
The number of lit segments indicates the remaining level of fuel. If all segments are lit, the fuel tank is full.



SMIL21CEX3607AA 19

If only one segment is lit, an alarm sounds and the LOW FUEL message is displayed.

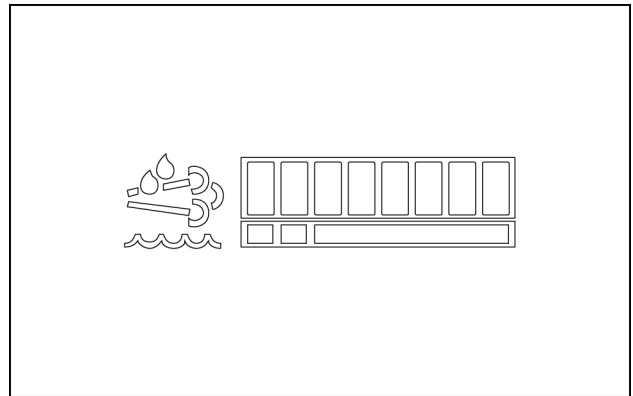
If the LOW FUEL message appears, stop machine operation, stop the engine, and add fuel to the fuel tank.



SMIL21CEX3608BA 20

DEF/AdBlue® level gauge

The number of segments lit up indicates the amount of DEF/AdBlue® remaining. When all the segments are lit up, the DEF/AdBlue® tank is full.



SMIL22CEX4523AA 21

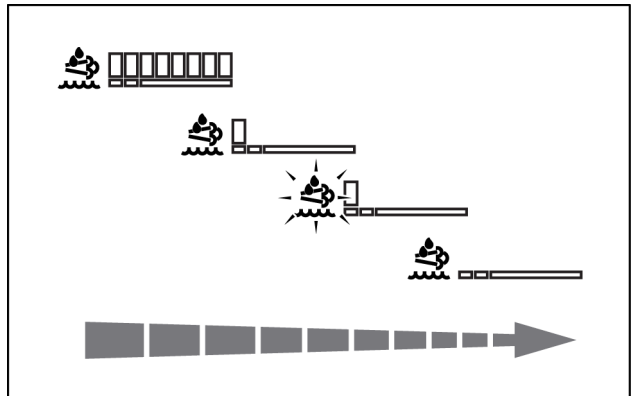
The segments light up as shown below according to the remaining amount.

DEF/AdBlue® level	10% or more	Less than 10%	Less than 5%	0%
Color	White	Yellow	Yellow (with icon flashing)	Red
Segments	8 - 2	1	1	0

NOTICE: Monitor the level and add DEF/AdBlue® in advance, before the DEF/AdBlue® level becomes lower than 10%.

We recommend adding DEF/AdBlue® at the same time when adding fuel. For details on the engine output restriction due to low DEF/AdBlue® level refer to the After Treatment System section.

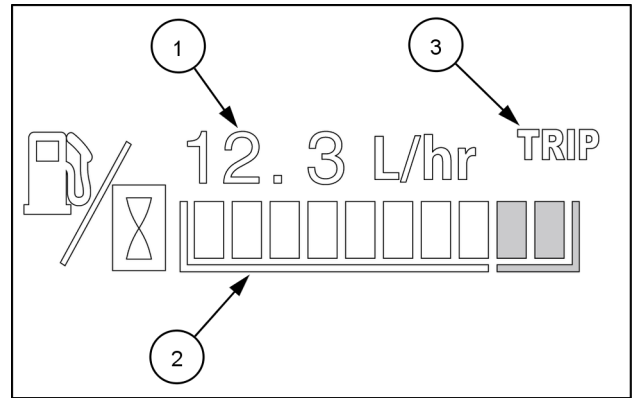
For details on the engine output reduction due to low DEF/AdBlue® level refer to the After Treatment System section.



SMIL21CEX3622AA 22

Fuel consumption Indicator/Fuel economy gauge

1. Fuel consumption indicator: the display of the fuel consumption indicator (1) changes depending on the selection of the hour meter or trip meter (3). Normally, it displays the fuel consumption for the accumulated time. When the trip meter is selected, it displays the fuel consumption for the time displayed on the trip meter.
2. Fuel economy gauge: the gauge shows the energy saving operation status. When the operation status is energy saving, the number of indicators on the gauge (2) decreases. For high-load operation, the number of indicators on the gauge (2) increases.



SMIL21CEX3609AA 23

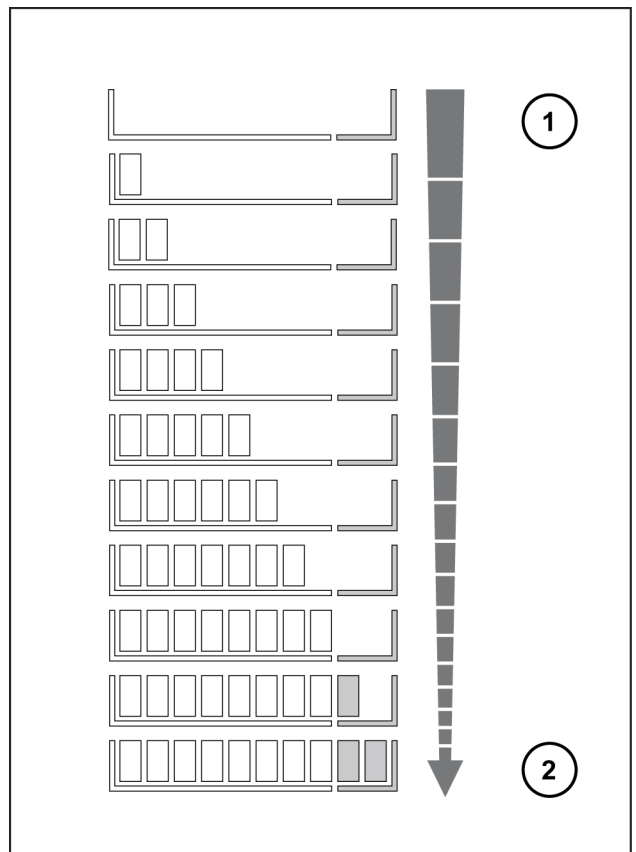
1. Good fuel economy
2. Bad fuel economy

Even if the number of indicators on the gauge decreases, this does not cause a machine failure. However, as long as energy saving operations do not interfere with work, use energy saving operation to protect the environment. Also, referring to the fuel consumption helps achieve energy saving operation.

- Use P mode or E mode instead of SP mode.
- Do not move the lever too abruptly.
- Do not operate the machine or relieve the pressure with high loads.
- Use auto idle and one-touch idle.

Also, use idle shutdown to stop unnecessary idling.






NOTE: Ask your local dealer or the certified service plant how to switch the fuel economy gauge display on and off.

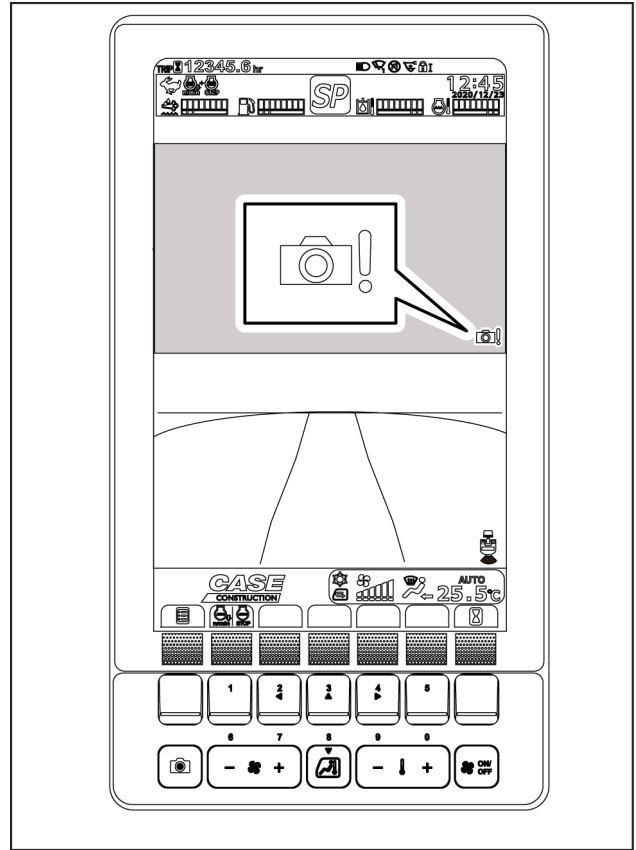


SMIL21CEX3610BB 24

Camera angle display

The camera angle display shows the angle of the camera images displayed on the monitor.

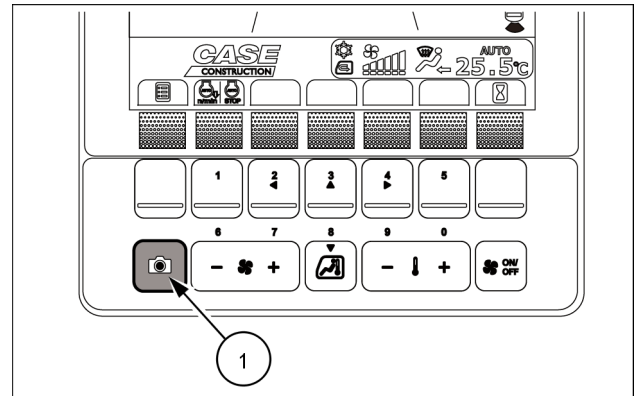
- 
Indicates that the images from the rear view camera are displayed on the monitor.
- 
Indicates that the images from the side camera (right) are displayed on the monitor.
- 
Indicates that the images from the side camera (left) are displayed on the monitor. (If equipped)
- 
Displayed so that the operator can see if a position or angle of any of the cameras, which are facing 3 different directions, has shifted. (If equipped with Field View Monitor)
- 
Indicates that there is a problem in the monitor camera connections, such as short or disconnection.



SMIL21CEX3612BA 25

On the monitor

Press the camera select button (1) on the monitor to change the camera image. (If equipped with FVM)

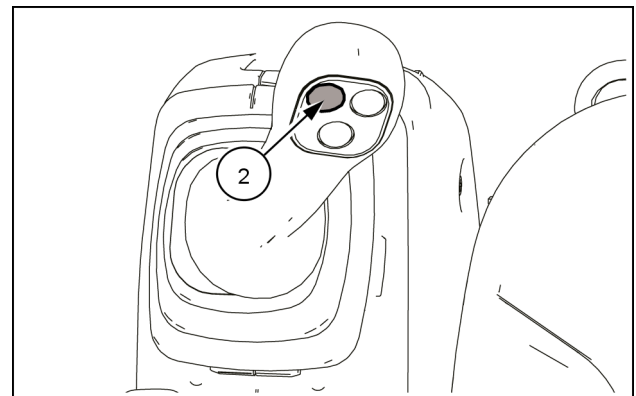


SMIL21CEX3613AA 26

On the left-hand control lever

Press the camera select switch (2) on the left-hand control lever to change the camera image. (If equipped with FVM)

NOTE: the function of the switch (2) can be customized (refer to "KNOB SWITCHES LAYOUT").

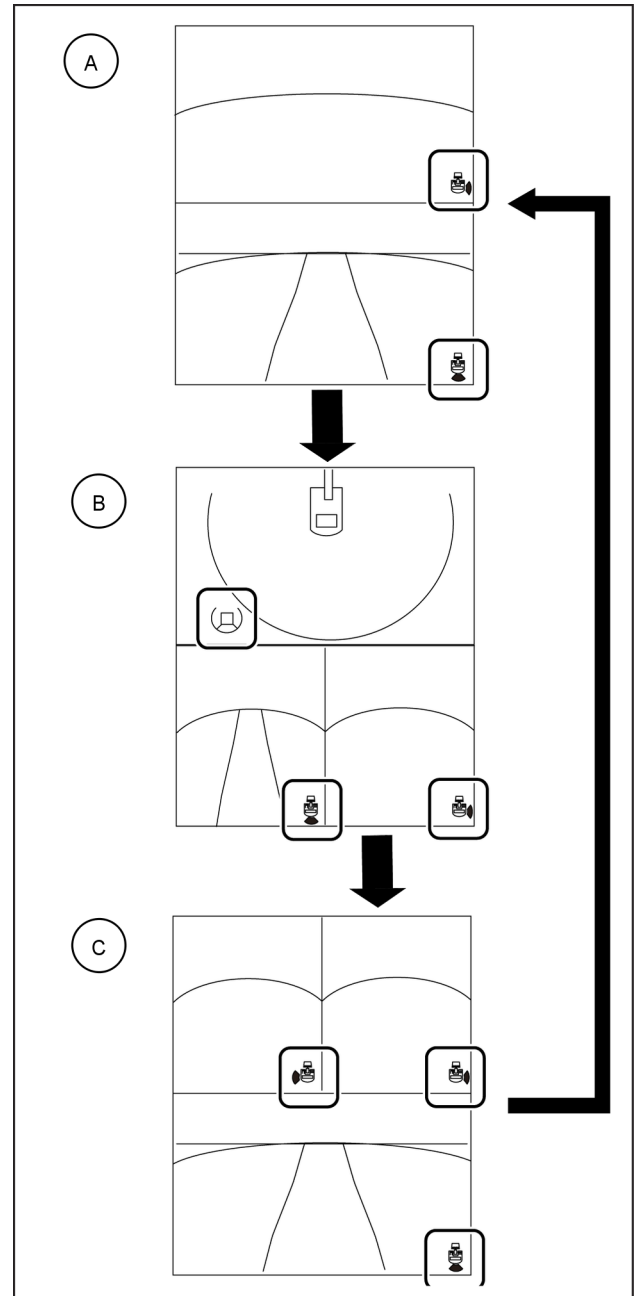


SMIL22CEX1986AA 27

(A) Rear view camera screen (lower) + right camera screen (upper)

(B) Rear view camera screen (lower left) + right camera screen (lower right) + FVM screen (upper) (if equipped)

(C) Rear view camera screen (lower) + right camera screen (upper right) + left camera screen (upper left) (if equipped)



Working lights

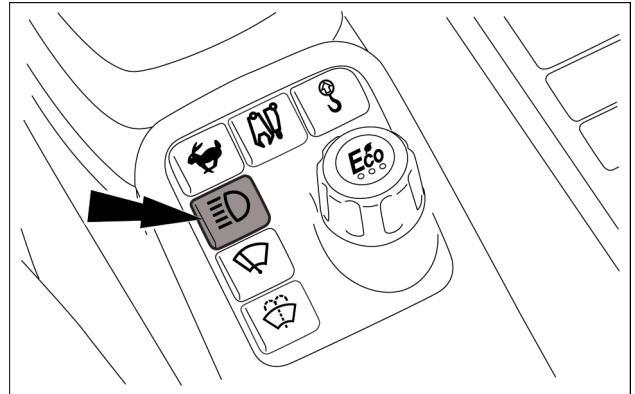


Displayed when the working lights are ON.

Press the working light switch on the switch panel to turn the working light "ON" or "OFF". When you press the switch, the icon on the monitor display and the working light I up. When you press this switch again, they go out. When you turn the key to the "OFF" position with the working light ON, the light goes out in about **30 s**. The time until the light goes out can be changed in the settings.

When the key switch is turned "ON", the working light is "OFF".

When the working light is turned "ON", the monitor brightness is automatically adjusted.



SMIL21CEX3615AA 29

Front wiper

This indicates the operation status of the front wiper.

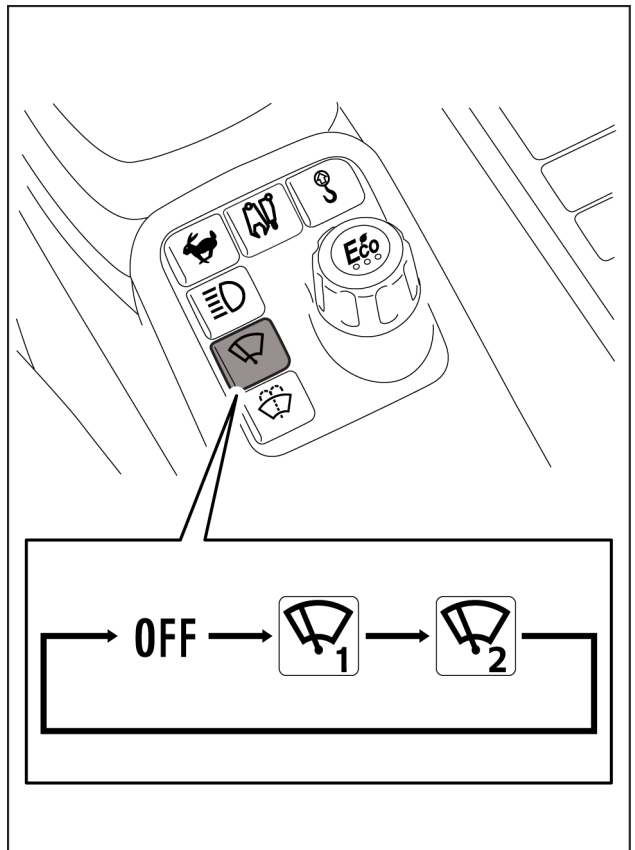


Displayed when the wiper is operating intermittently.



Displayed when the wiper is operating continuously.

The operation status changes as follows each time the front wiper switch on the switch panel is pressed.



SMIL21CEX3616BA 30

If visibility is compromised by water droplets during operation, press the one-time wiper switch on the right operation lever to activate the wiper.

One time wiper is a function that moves the wiper blade back and forth while the switch is held down.

The wiper icon is not displayed on the monitor while one-time wiper is activated.

NOTICE: Do not operate the wipers when the windshield is dry. Doing so could cause cracks in wiper blades.

NOTICE: Working with mud or snow on the front wipers can damage them.

On the switch panel

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

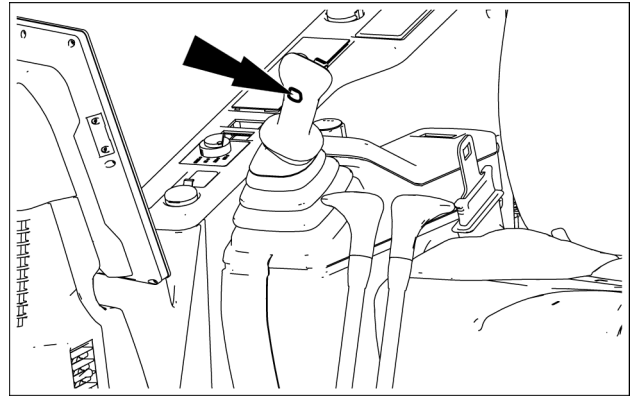
NOTICE: Do not press the windshield washer switch and the windshield wiper switch at the same time. Also, do not turn the starter key to OFF position while holding down the windshield washer switch. Doing so could result in failures.

NOTICE: Do not operate the windshield washer if the reservoir tank is empty. This could break the electric pump.

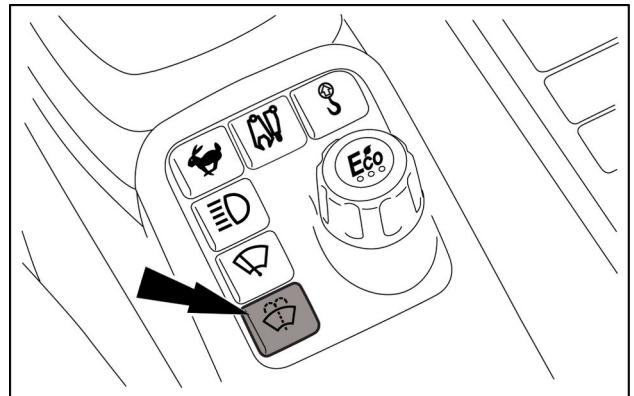
On the right-hand control lever

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

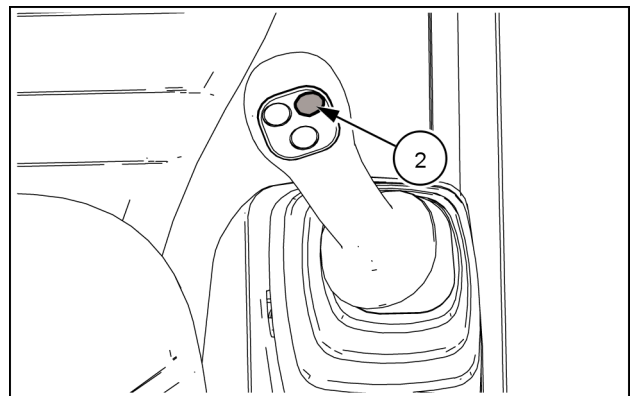
NOTE: the function of the switch (2) can be customized (refer to "KNOB SWITCHES LAYOUT").



SMIL21CEX3617AA 31



SMIL21CEX3618AA 32



SMIL22CEX1991AA 33

Radio mute

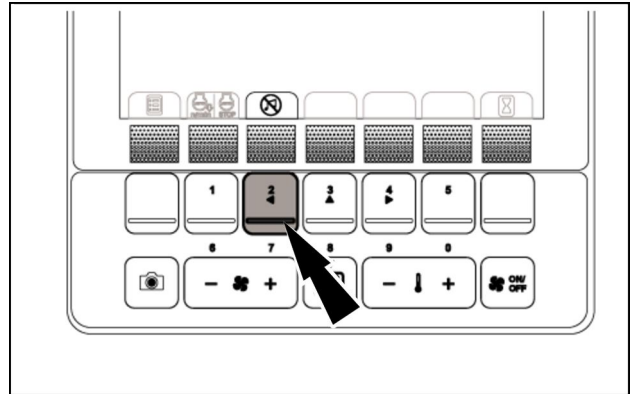


Indicates that the radio volume is muted.

On the monitor

Press the radio mute control switch (function switch) to mute the radio volume.

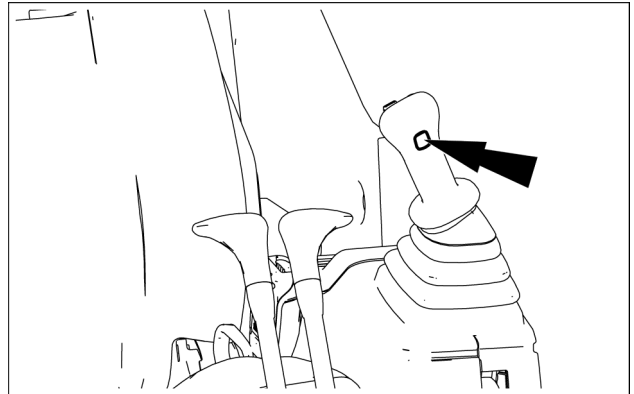
The illustration provided shows the factory settings.



SMIL22CEX1241AA 34

On the left-hand control lever

Press the radio mute control switch to mute the radio volume.



SMIL21CEX3619AA 35

Seat belt

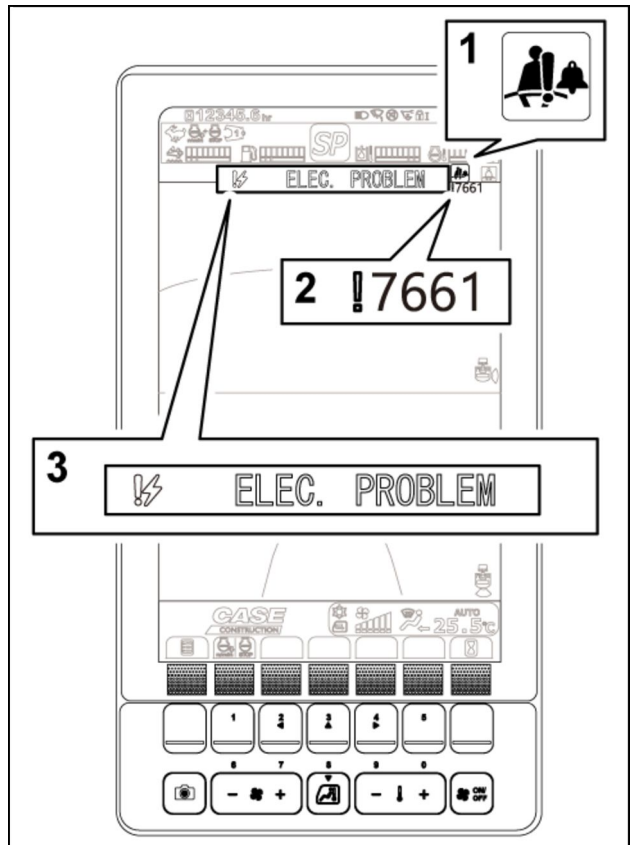


Lights up when the seat belt is not fastened. Turns off after the seat belt is fastened.

If there is a problem in the system, the icon indicating a failure lights up.

If the icon lights up, consult your local dealer and the certified service plant.

1	"Seat belt alarm disabled" icon lights up
2	Diagnostic trouble code 7661
3	"ELEC. PROBLEM" lights up



SMIL22CEX1242BA 36

Auto pressure boost



This icon is displayed when the pressure in the hydraulic circuits is boosted.

To increase the digging force during attachment operations, hydraulic drive force is increased automatically to improve operability and work efficiency.

Security device



This icon is displayed when the security function is enabled.

The security function is available to prevent the machine from being stolen. If this function is enabled, you need to enter the security passcode to operate the machine. (Refer to chapter 4)

DEF/AdBlue® thawing



This icon is displayed when the urea solution is being thawed or kept warm.

Engine preheating



This icon is displayed when the engine is preheating.

When using the machine in winter or when cold, turn the key switch to ON position, and the engine will be preheated automatically. Wait for the icon to disappear, and then start the engine.

Engine cooling down



This icon is displayed when the cooling down of turbocharger is completed. Check that this icon is displayed and then stop the engine.

Auto operation lever lock function



Indicates that the auto operation lever lock function is activated.



Indicates that the auto operation lever lock function is limited. Contact your local dealer or the certified service plant.



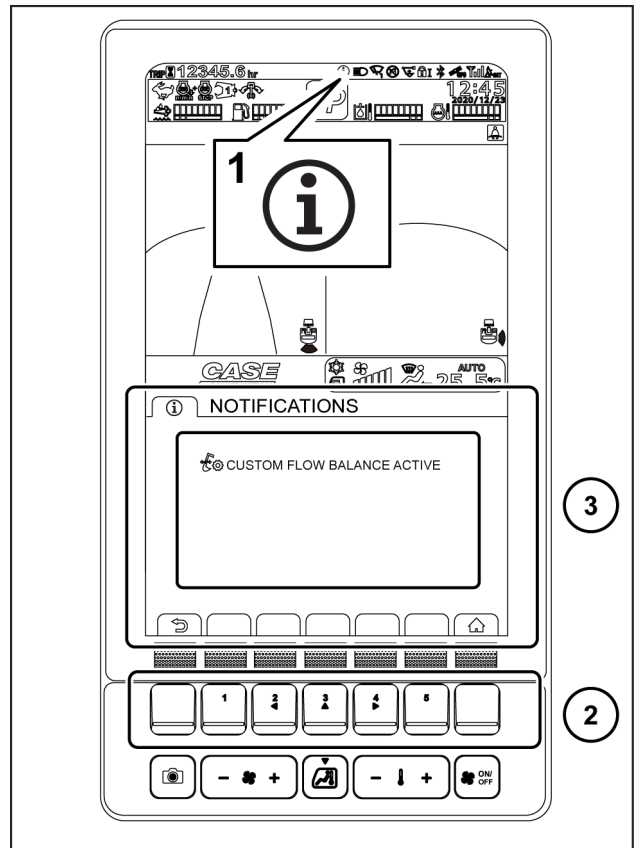
Indicates that the auto operation lever lock function is disabled. Only a service engineer can configure the setting to disable this function. If this icon is displayed, contact your local dealer or the certified service plant.

Information notification



This indicates that there is information that the operator needs to know.

When there is information the operator needs to know, the information notification icon **(1)** is displayed. Press the applicable function switch **(2)** to display the NOTIFICATIONS screen **(3)**.



SML21CEX3620BB 37

Free Swing



Indicates that the free swing function is activated.

Bluetooth



Displays when there is a Bluetooth connection.

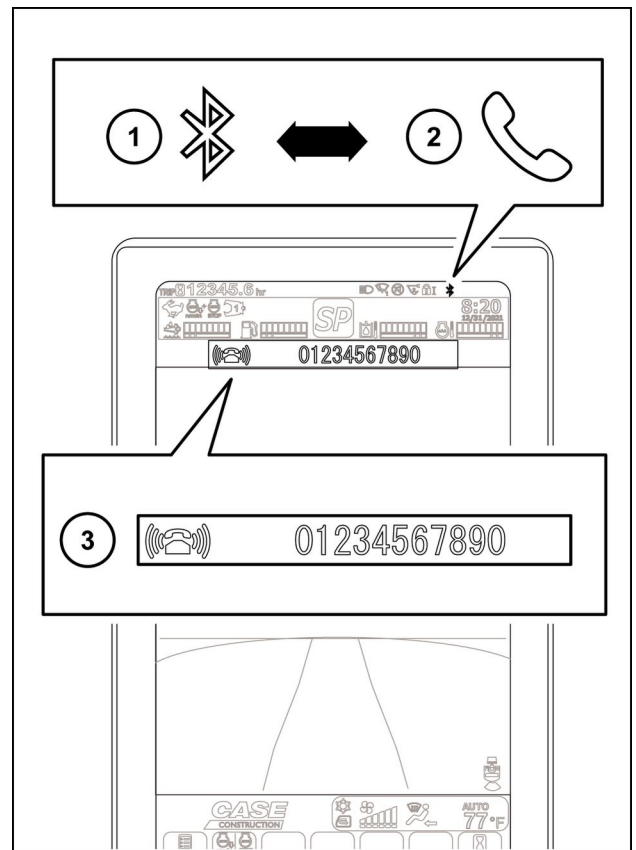
When the mobile phone owned by operator is connected to a Bluetooth-enabled radio and make calls, the screen display will change depending on the call status.

(1) Standby mode / Outgoing / Incoming

(2) In a call

(3) Incoming number (Displays only on incoming)

- If there are other warning messages during an incoming call, incoming number is displayed alternating with the warning message.
- During a call or outgoing call, phone number you called is not displayed.
- Even if the radio volume is muted, it will be unmuted when it is not in standby mode (incoming, outgoing, or in a call). When the call ends and the phone returns to standby mode, the radio volume returns to the mute.
- Some calling apps, incoming call detection may not work or the phone number may not be displayed correctly.



SMIL22CEX1967BA 38

Message icon descriptions

The message screen displays (1) information icons and (2) messages. Some message icons convey messages by itself and others convey messages by displaying multiple messages repeatedly. When there are multiple messages, they are displayed from the newest message to the oldest repeatedly. Some messages cause an alarm to sound when they are displayed. This section explains icons, messages, and actions to take.

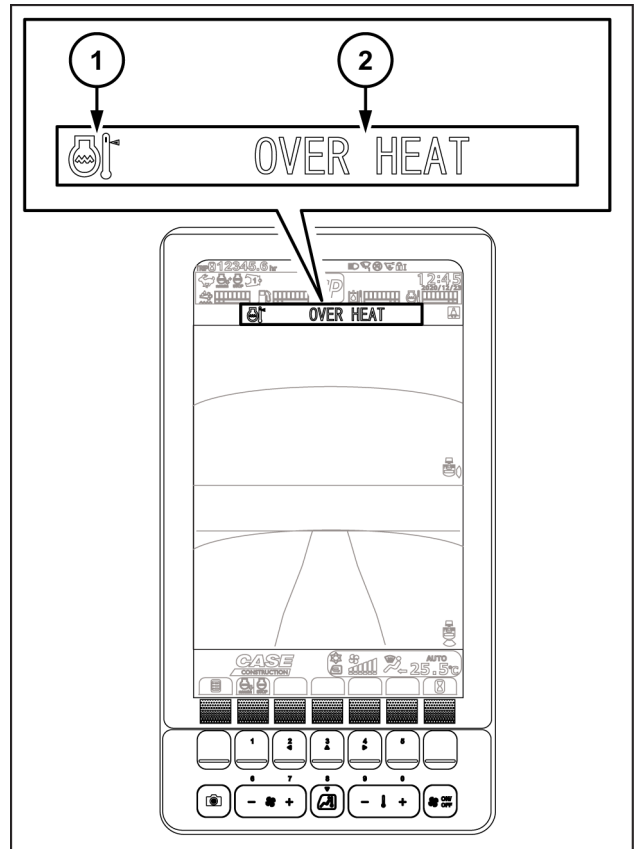
NOTICE: The message area is color coded in red, orange, and green according to the emergency and importance levels.

Red	Warning	Warning for a failure or for a dangerous condition.
Orange	Caution	Caution for an operation.
Green	Check	Operation checks.

When a red or orange message area is displayed, take the following actions to solve the problem.












NOTE: If the message is still displayed after the actions are taken, consult the CASE CONSTRUCTION dealer or the certified service plant.





NOTE: The language of the messages can be changed. To change the message language, consult the CASE CONSTRUCTION dealer.













SMIL21CEX3621BB 39












Messages with red background

Icon and text	Explanation	Action
 LOW OIL PRESSURE	LOW OIL PRESSURE: Indicates that the engine oil pressure is low. When this message is displayed, the engine stops automatically.	Stop the engine, and check for oil leaks. If any leak is found, a failure in the hydraulic system can be suspected. Stop the engine, and contact the CASE CONSTRUCTION dealer immediately.
 OVER HEAT	OVER HEAT: The temperature of the engine coolant is too high. The engine goes automatically to low idle. If the high-temperature condition is not promptly addressed, the engine automatically stops.	Let the engine run at low idle to decrease the temperature of coolant. If the coolant level is found low, stop the engine and check for coolant leaks. If any leak is found, start the engine, and if the message remains displayed, contact the CASE CONSTRUCTION dealer immediately.
 BOOST TEMP. HIGH	BOOST TEMP HIGH: The temperature of the air flowing into the engine is abnormally high. The engine goes automatically to low idle. If the high-temperature condition is not promptly addressed, the engine automatically stops.	Let the engine run at low idle to decrease the temperature of the turbocharger. If the message remains displayed, contact the CASE CONSTRUCTION dealer immediately.
 OVER HEAT	OVER HEAT: The temperature of the hydraulic oil is too high.	Let the engine run at low idle to decrease the temperature of the hydraulic oil. If the message remains displayed, contact the CASE CONSTRUCTION dealer immediately.
 ALTERNATOR	ALTERNATOR: The battery or the alternator have a problem.	Stop the engine, and contact the CASE CONSTRUCTION dealer immediately.
 CHECK ENGINE	CHECK ENGINE: An electric part related to the engine has a problem.	Stop the engine, and contact the CASE CONSTRUCTION dealer immediately.
 ELEC. PROBLEM	ELEC. PROBLEM: The electrical system has a problem.	Stop the engine, and contact the CASE CONSTRUCTION dealer immediately.
 CHECK CAMERA	CHECK CAMERA: The cameras or the camera wirings have a failure.	Stop the engine, and contact the CASE CONSTRUCTION dealer immediately.
 LOW COOLANT	LOW COOLANT: The level of the coolant in the engine cooling system is low.	Stop the engine, and refill the reserve tank with coolant. Start the engine, and check for coolant leaks. If any leak is found, or if the message persists, contact the CASE CONSTRUCTION dealer immediately.
 AIR FILTER	AIR FILTER: The air filter element is clogged. When this message is displayed and no action is taken, the engine can no longer deliver proper output.	Stop the engine, and clean or replace the air cleaner element.
 HYD. OIL FILTER	HYD. OIL FILTER: The hydraulic return filter is clogged.	Stop the engine and check the hydraulic oil return filter. Replace it if any clogging is found.





Icon and text	Explanation	Action
 FUEL FILTER	FUEL FILTER: The fuel main filter is clogged. If no action is taken after this message appears, the engine goes into idle at low speed to protect the engine.	Stop the engine, and replace the filter element.
 CHECK AIR CONDITIONER	CHECK AIR CONDITIONER: Indicates that the air conditioner has broken down.	Stop the engine, and contact the CASE CONSTRUCTION dealer immediately.
 CHECK ATS	CHECK ATS: the ATS has detected that the exhaust emission standards are not satisfied.	Stop the engine and contact the CASE CONSTRUCTION dealer immediately.
 REFILL DEF	REFILL DEF: Indicates that the DEF/AdBlue® level is too low.	Stop the engine and add DEF/AdBlue® into the tank.

Messages with orange background

Icon and text	Explanation	Action
 ENGINE STOP	ENGINE STOP: the engine has been stopped by the emergency stop switch.	To start the engine again, press on the back of the emergency stop switch, turn the starter key to OFF position, and then restart the engine.
 IMPROPER SHUT DOWN	IMPROPER SHUT DOWN: The engine has been stopped without cooling it down.	Restart the engine, and keep it at a low idle for at least 5 min .
 FAN IS REVERSED	FAN IS REVERSED: the cooling fan is operating in reverse mode to clean up the radiators. The message is active if the machine is equipped with the hydraulic fan reversing system.	Do not operate the machine.
 LOW FUEL	LOW FUEL: The fuel level in the tank is low.	Stop the engine, and add fuel to the fuel tank.
 AUXILIARY SET-UP REQUIRED	AUXILIARY SET-UP REQUIRED: The operation with the hydraulic attachment is attempted without any set up of the auxiliary hydraulics.	Check the specifications of the attachment currently in use, and set up the auxiliary hydraulics accordingly.
 SERVICE DUE	SERVICE DUE: Displayed when the time for replacing the periodic replacement parts has been reached. (These parts are displayed on the TIME UNTIL REPLACEMENT screen.)	Replace the periodic replacement parts in a timely manner.
 IDLE SHUT DOWN	IDLE SHUT DOWN: Displayed just before the engine is stopped automatically with the idle shutdown selected.	
 CHECK CALIBRATION	CHECK CALIBRATION: A message for service engineers.	Stop the engine and contact the CASE CONSTRUCTION dealer immediately.
 OUTPUT REDUCTION CANCELED	OUTPUT REDUCTION CANCELED: the engine derating is temporarily overridden.	Do not operate the machine for more than 30 min .
 DRAIN WATER IN FUEL FILTER	DRAIN WATER IN FUEL FILTER: Indicates that there is water accumulation in the fuel prefilter.	Drain water out of the fuel prefilter.

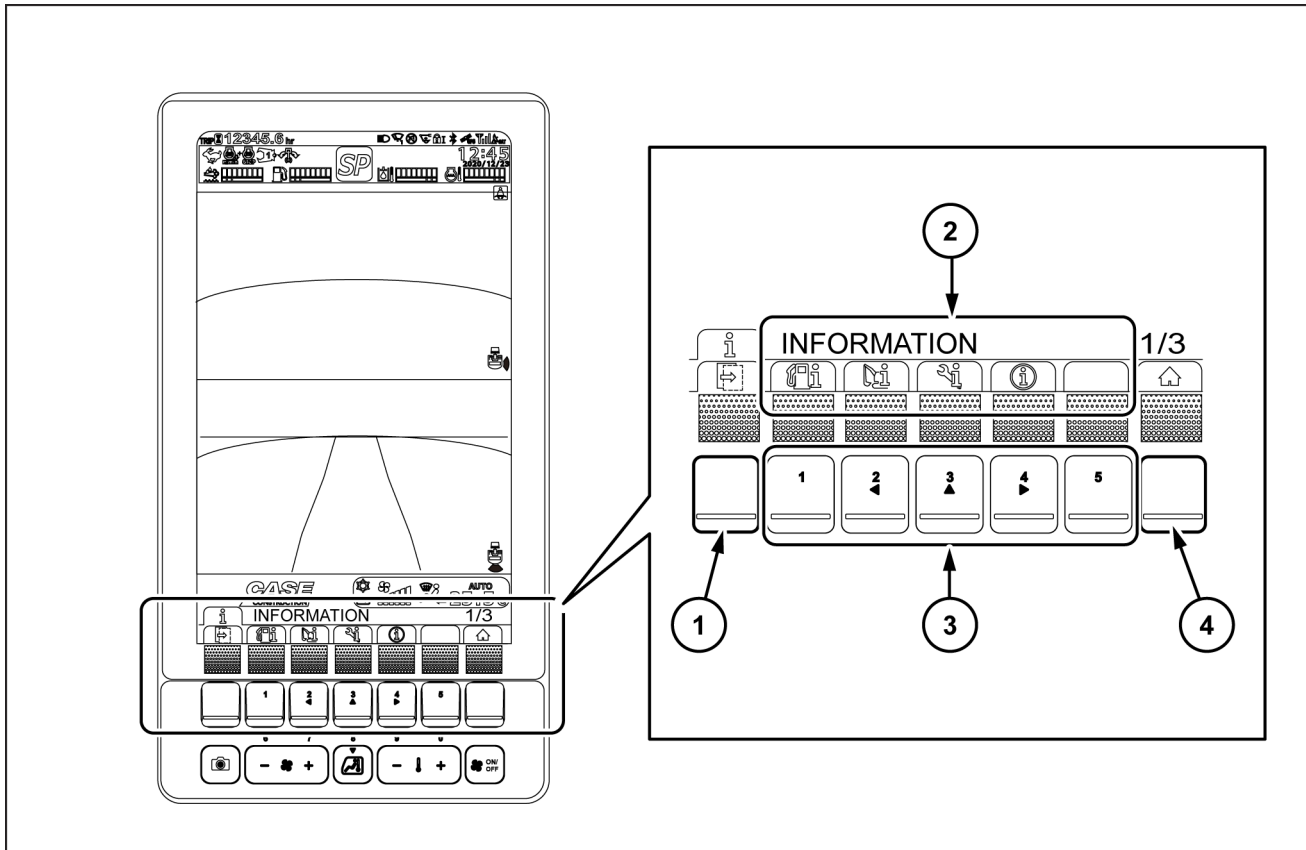
Icon and text	Explanation	Action
 DO NOT OPERATE   DO NOT OPERATE	DO NOT OPERATE: this message is displayed during manual ATS cleaning.	Stop the machine operation.
 MANUAL ATS CLEANING	MANUAL ATS CLEANING: this icon indicates that the MANUAL ATS CLEANING is in operation.	
 SET GATE LOCK LEVER TO CENTRAL POSITION	SET GATE LOCK LEVER TO CENTRAL POSITION: Displayed when gate lock is disabled while MANUAL ATS CLEANING is stopped or working when MANUAL ATS CLEANING is required.	Set the gate lock lever in central position and start ATS cleaning.
 PUSH ATS SWITCH TO ACTIVATE	PUSH ATS SWITCH TO ACTIVATE: Displayed when the automatic of the manual ATS cleaning is stopped or when manual cleaning is requested.	Press the ATS cleaning button to resume ATS cleaning.
 AUTO LEVER LOCK ACTIVE	AUTO LEVER LOCK ACTIVE: Indicates that the auto lever lock function is enabled.	For details, refer to "Auto Operation Lever Lock Function"
 CHECK ATS	CHECK ATS: the ATS has detected that the exhaust emission standards are not satisfied.	Stop the engine and contact the CASE CONSTRUCTION dealer immediately.
 REFILL DEF   REFILL DEF	REFILL DEF: Indicates that the DEF/AdBlue® level is too low.	Stop the engine and add DEF/AdBlue® into the tank.

Messages with green background

 AUTO WARM UP	AUTO WARM UP: The auto warm-up of the machine systems is in progress.	
 THROTTLE LIMITATION ACTIVE	THROTTLE LIMITATION ACTIVE: Indicates that throttle restrictions are activated.	
 WORK MODE LIMITATION ACTIVE	WORK MODE LIMITATION ACTIVE: Indicates that the WORK MODE LIMITATION setting is enabled (work mode restrictions are activated).	
 01234567890	Displays the phone number when you receive an incoming call. (Some calling apps may not display the phone number correctly.)	

User information mode

In user information mode, the following information can be viewed and display settings can be configured.



SMIL21CEX3625FB 40

Press the function switch **(1)** to navigate between pages. Information icons are displayed on the function switch tab **(2)**. Press the corresponding function switch **(3)** to move to the selected information page. Use the function switch **(4)** to return to the normal screen. The following items can be viewed.

3 - CONTROLS AND INSTRUMENTS

Icon	Icon name	Description
	FUEL CONSUMPTION	Enables you to view the fuel economy for the past 7 days.
	MACHINE INFORMATION	Enables you to view the vehicle status in detail.
	TIME UNTIL REPLACEMENT	Enables you to view the information on the time for replacing the periodic replacement parts.
	NOTIFICATIONS	Enables you to view the information that the operator needs to know.
	DISPLAY CONFIGURATION	Enables you to configure the screen brightness, camera, and date/time settings.
	AUXILIARY HYDRAULICS (refer to chapter 9)	Enables you to switch between Breaker and Crusher, manage operations according to the model, and set the pressure and flow rate.
	ATS CONFIGURATION	Enables you to view and change the ATS configuration.
	FUNCTION CONFIGURATION	Enables you to configure settings for functions related to energy-saving and safety.
	CUSTOM FLOW BALANCE	Enables you to adjust the operation balance according to the end attachment to be used.
	MONITOR SWITCHES LAYOUT	Enables you to create shortcuts for frequently used menu screen items on the function switch tab in the normal display mode.
	KNOB SWITCHES LAYOUT	Enables you to change the switch function of the control levers switches.
	PASSCODE SETTING	Enables you to change the passcode.
	FACTORY SETTING	The settings on the menu screen can be reset to the factory settings all at once.

FUEL CONSUMPTION







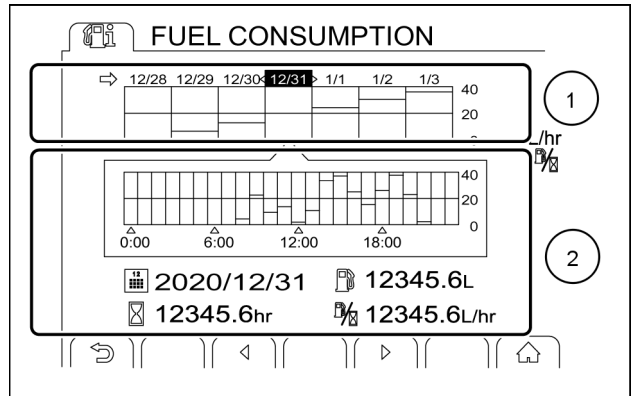
The fuel economy for the past 7 days can be viewed.

The average fuel economy for the past 7 days can be viewed by date with a simple graph in (1). If you select a date in (1), detailed information on the fuel consumption, operation hours, and average fuel economy of the date selected in (2) can be viewed in numeric values.

Descriptions of icons on the FUEL CONSUMPTION screen.

NOTE: When the unit is changed on the DISPLAY CONFIGURATION screen, the value is displayed in the specified unit and the date is displayed in the specified format.

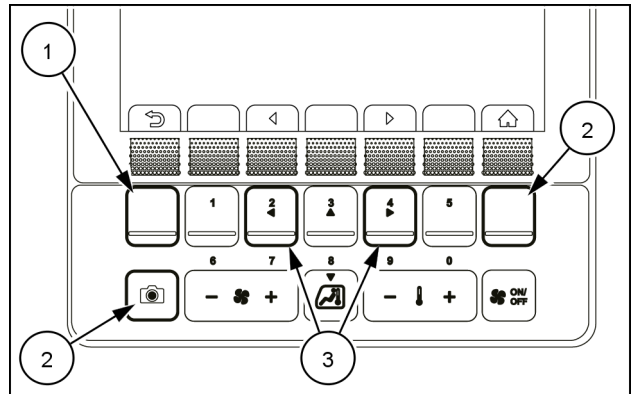
-  Year/month/day of cursor specified date is displayed.
-  Fuel consumption of cursor specified date is displayed.
-  Operating hour of cursor specified date is displayed.
-  Fuel cost (fuel consumption / operating hour) of cursor specified date is displayed.



SMIL21CEX3118AA 41

Operation explanation for function switches

Press (1) to return to the menu selection screen. (If the function switch on the normal screen was used to open the FUEL CONSUMPTION screen, the screen returns to the normal screen). Press (2) to return to the normal screen. Press (3) to move the cursor to the left or to the right to select the date.



SMIL21CEX3120AA-01 42

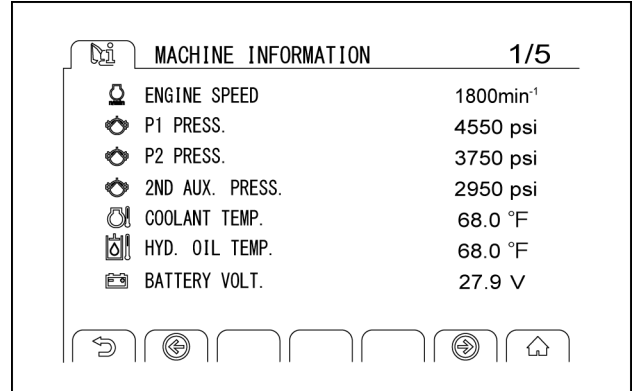
MACHINE INFORMATION



Detailed machine conditions can be checked.

The items displayed on page 1 show various machine information. View this page when you need to tell a service engineer the machine condition.

- **ENGINE SPEED**
Shows the engine speed (min-1).
- **P1 PRESS.**
Shows the pump P1 pressure value (MPa, psi, kgf/cm2).
- **P2 PRESS.**
Shows the pump P2 pressure value (MPa, psi, kgf/cm2).
- **2ND AUX. PRESS.**
Shows the 2nd option pump pressure value (MPa, psi, kgf/cm2).
This is displayed only when "2nd option" is selected in the settings. Contact the CASE CONSTRUCTION dealer or the certified service plant to set "2nd option".
- **COOLANT TEMP.**
Shows the coolant temperature (°C/°F).
- **HYD. OIL TEMP.**
Shows the hydraulic oil temperature (°C/°F).
- **BATTERY VOLT.**
Shows the battery voltage (V).



SMIL22CEX1987AA 43

The items displayed on page 2 show the information related to the engine.

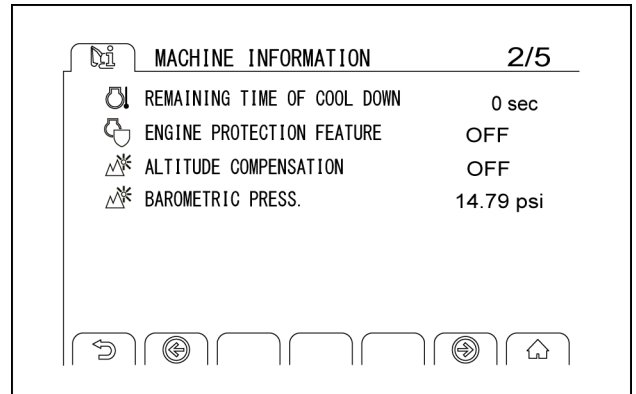
- **REMAINING TIME OF COOL DOWN**
Shows the time remaining until the turbocharger cools down (sec).
- **ENGINE PROTECTION FEATURE**
Shows the status of engine protection feature (ON/OFF).

NOTE: the machine monitors its engine operation and, in case excessive load is applied, controls the engine output for protection.

- **ALTITUDE COMPENSATION**
Shows the status of altitude compensation (ON/OFF).

NOTE: this machine is equipped with barometric sensor and, under the condition of extremely low atmospheric pressure (ex. high altitude area), optimize the engine operation.

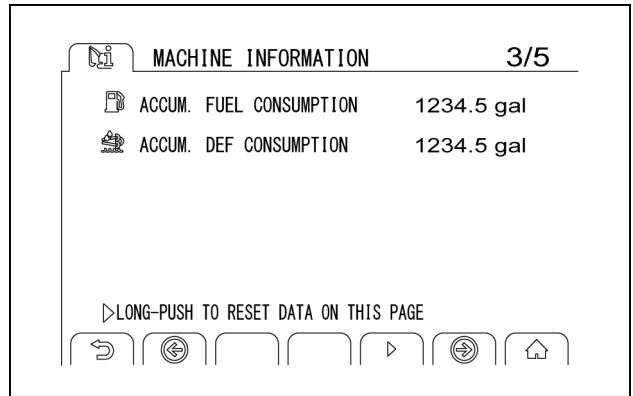
- **BAROMETRIC PRESS.**
Shows the barometric pressure value (kPa, psi, kgf/cm2).



SMIL22CEX4524AA 44

The items displayed on page 3 show the fuel economy of the machine.

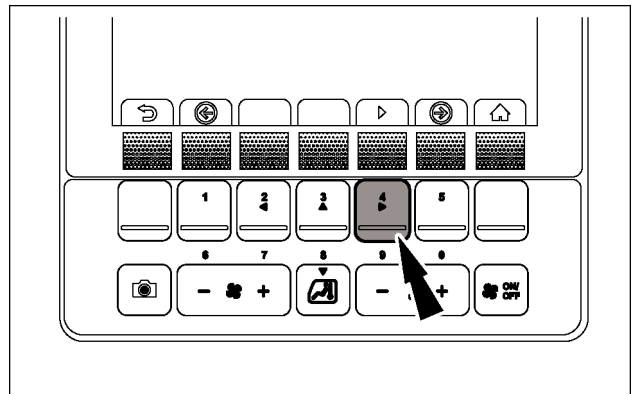
- **ACCUM. FUEL CONSUMPTION**
Shows the cumulative fuel consumption (L/gal).
- **ACCUM. DEF CONSUMPTION**
Shows the cumulative DEF consumption (L/gal).



SMIL22CEX4525AA 45

Press and hold the right function switch for **3 s**.

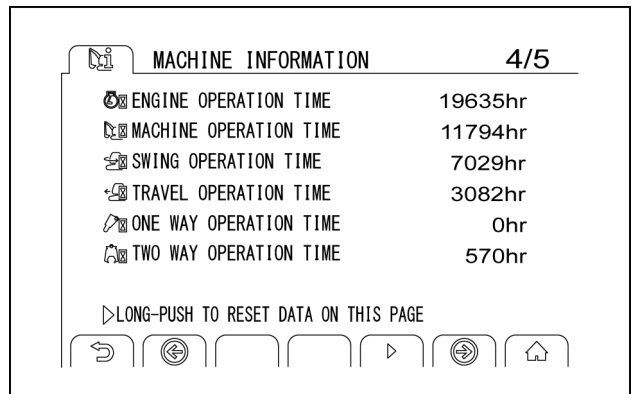
An alarm sounds and the information on this page is reset all at once.



SMIL21CEX3257AA 46

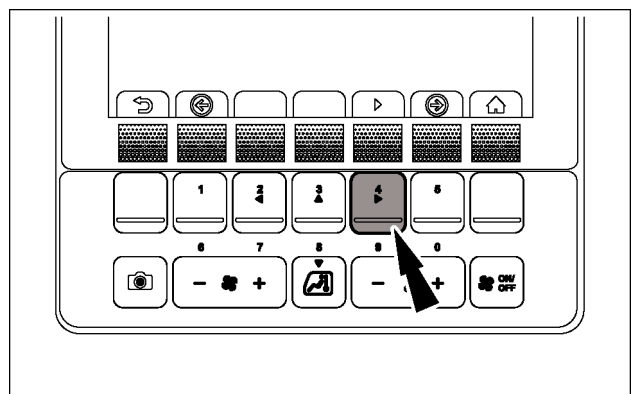
The items displayed on page 4 show the machine usage log.

- **ENGINE OPERATION TIME**
Shows the engine hours (hr).
- **MACHINE OPERATION TIME**
Shows the machine operating hours (hr).
- **SWING OPERATION TIME**
Shows the swing operation hours (hr).
- **TRAVEL OPERATION TIME**
Shows the travel operation hours (hr).
- **ONE WAY OPERATION TIME**
Shows the hours the machine was operated in ONE WAY mode (hr).
- **TWO WAY OPERATION TIME**
Shows the hours the machine was operated in TWO WAY mode (hr).



SMIL22CEX1990AA 47

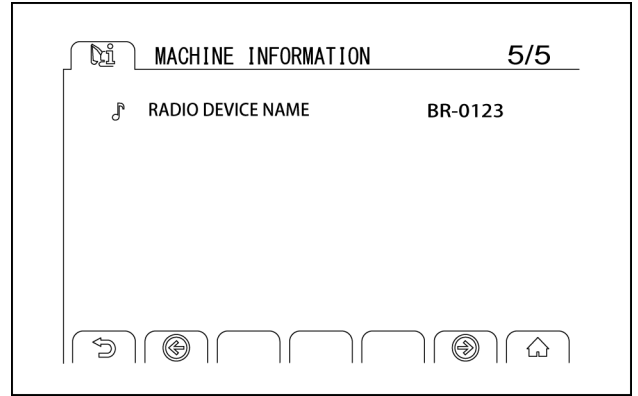
Press and hold the right function switch for **3 s**. An alarm sounds and the information on this page is reset all at once.



SMIL21CEX3259AA 48

The items displayed on page 5 show the name of the Bluetooth-connected device.

RADIO DEVICE NAME: Shows the identification name of the Bluetooth module in the radio unit.



SMIL22CEX1992AA 49

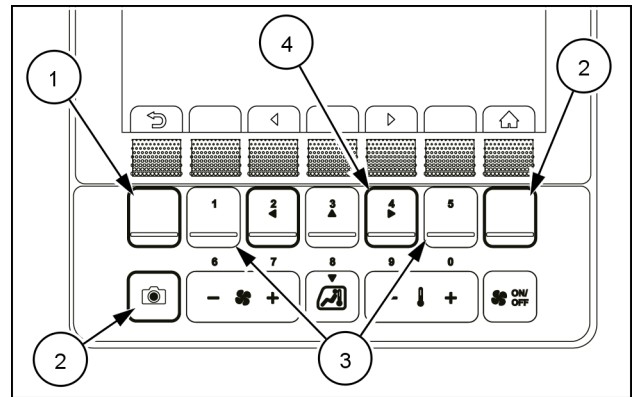
Operation explanation for function switches

Press **(1)** to return to the menu selection screen. (If the function switch on the normal screen was used to open the MACHINE INFORMATION screen, the screen returns to the normal screen.)

Press **(2)** to return to the normal screen. Press **(3)** to go forward or back 1 page.

Press and hold **(4)** for **3 s** to reset the information on the page all at once.

NOTE: When the screen lock is ON, the information on the page cannot be reset all at once.



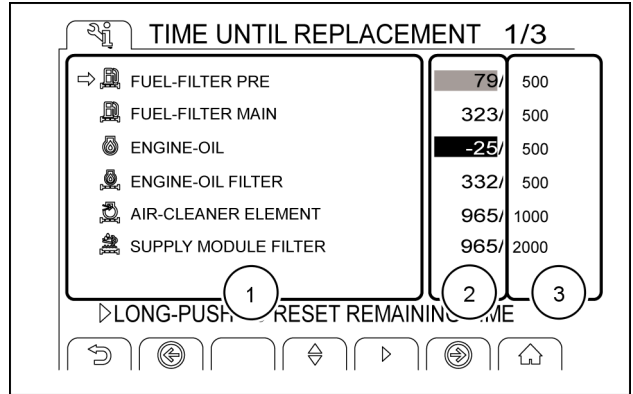
SMIL21CEX3120AA 50

TIME UNTIL REPLACEMENT



Enables you to view the information on the time for replacing the periodic replacement parts.

On the TIME UNTIL REPLACEMENT screen, each page has consumable part items (1) displayed. A replacement cycle (3) is set for each consumable part. The time remaining until replacement is displayed at (2).

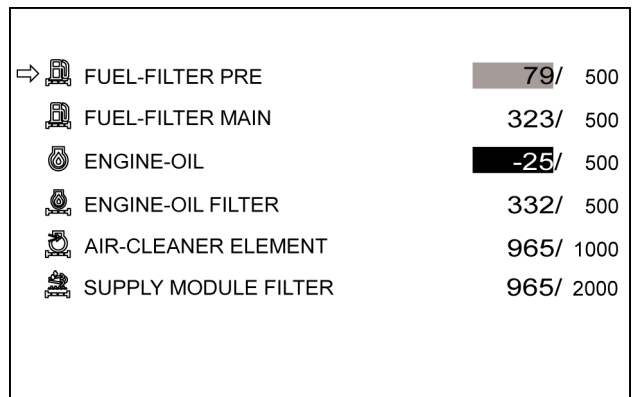


SMIL22CEX4526AA 51

When the time remaining has become **100 h** or less, it is displayed in yellow (1).

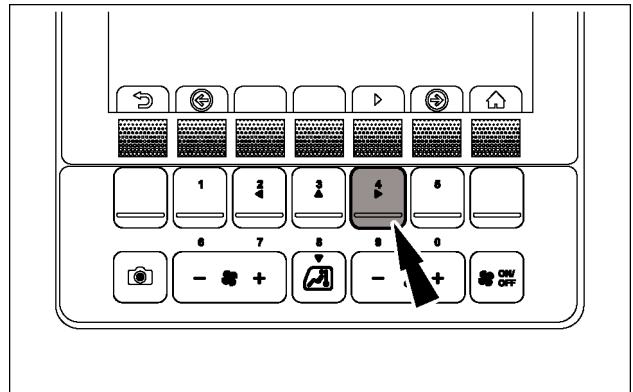
When the time remaining has passed **0 h**, it is displayed in red (2).

If this happens, perform service immediately.



SMIL22CEX4527AA 52

Replace the parts, lubricants, etc. To reset the remaining time, select an item, then press and hold the function switch on the right for **3 s**. An alarm sounds and the time is reset.



SMIL21CEX3259AA 53

You can check the following consumable part items (3 pages):

1/3	FUEL-FILTER PRE
	FUEL-FILTER MAIN
	ENGINE-OIL
	ENGINE-OIL FILTER
	AIR-CLEANER ELEMENT
	SUPPLY MODULE FILTER
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

Press (1) to return to the menu selection screen. (If the function switch on the normal screen was used to open the TIME UNTIL REPLACEMENT screen, the screen returns to the normal screen.)

Press (3) to go forward or back 1 page.

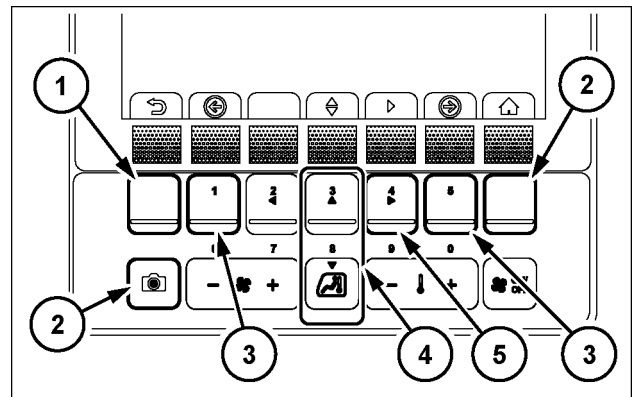
Press (4) to move the cursor up or down to select an item.

Press and hold (5) for 3 s. An alarm sounds and the replacement time for the selected item is reset.

Press (2) to return to the normal screen.

NOTE: When the screen lock is ON, the cursor cannot be moved up or down to select an item for which you want to reset the remaining time.

NOTE: When the screen lock is ON, the function switch tabs related to (4) and (5) are not displayed.



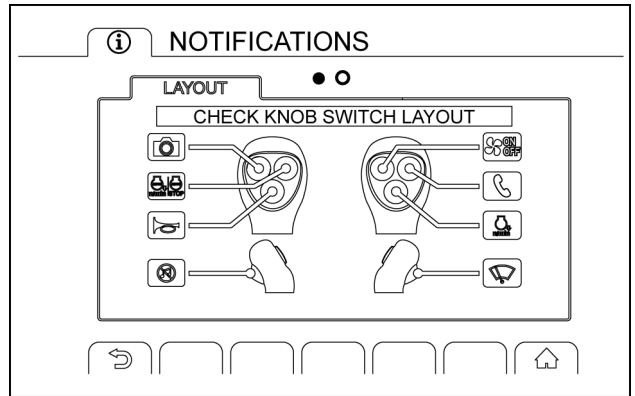
SMIL21CEX3262AA 54

NOTIFICATIONS



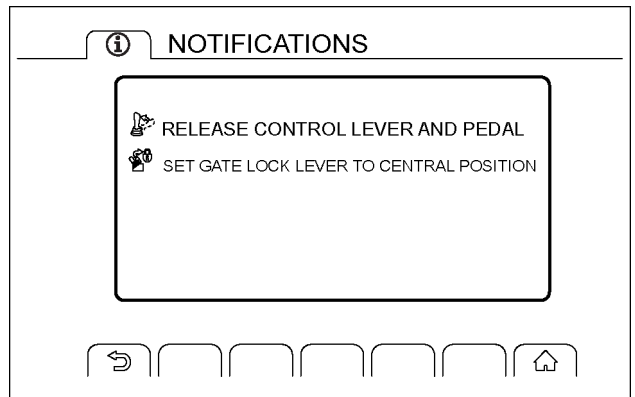
Enables you to view the information that the operator needs to know.

- Information always notified at start up. This function notifies the operator of the functions assigned to the control levers switches when the system starts up in order to prevent operator error. If there is any other information to be notified, it will be displayed alternately with the notifications screen.



SMIL22CEX1995AA 55

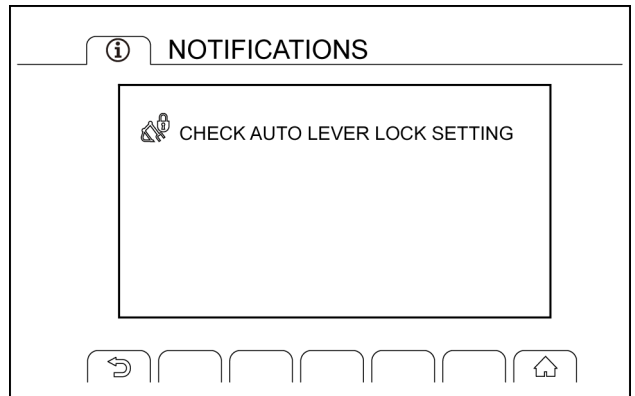
- When there is information to be notified The messages "RELEASE CONTROL LEVER AND PEDAL" and "SET GATE LOCK LEVER TO CENTRAL POSITION" are displayed when the auto operation lever lock is activated. These messages remain displayed until the auto operation lever lock is released.



SMIL21CEX3264AA 56

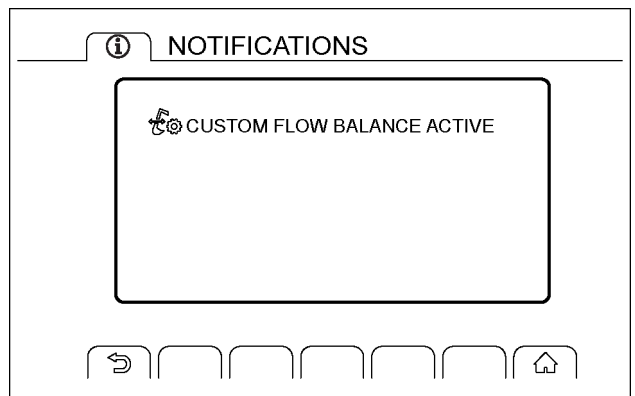
When the auto operation lever lock function setting is OFF, the message "CHECK AUTO LEVER LOCK SETTING" is displayed.

Only a service engineer can turn this setting OFF. If this message is displayed, contact your local dealer or the certified service plant.



SMIL22CEX1243AA 57

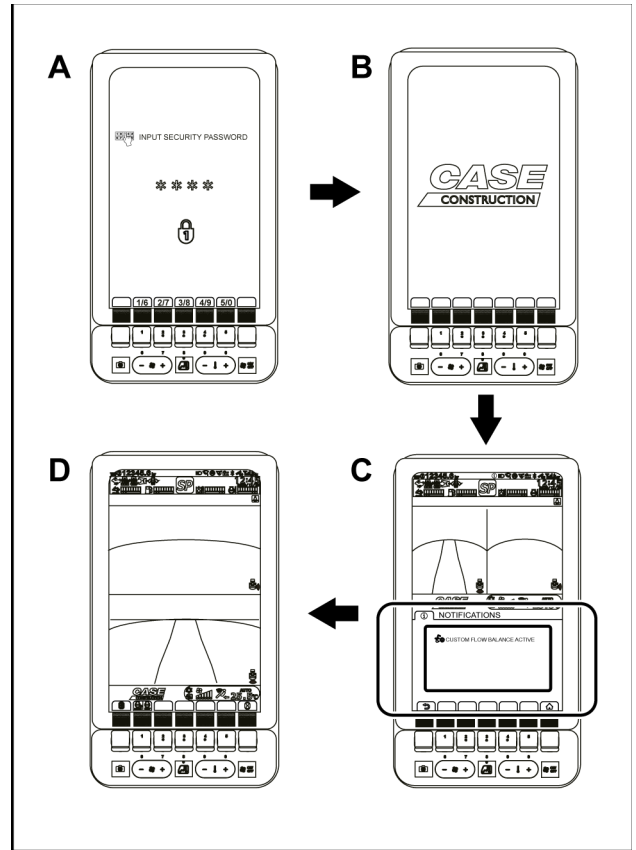
If any flow balance settings have been changed from the standard setting positions (factory settings) with the flow balance customization function, the message "CUSTOM FLOW BALANCE ACTIVE" is displayed when the system is started.



SMIL21CEX3266AA 58

As an example, this section explains the case in which the flow balance customization function is enabled.

- A. Password screen (when manual lock is set up)
- B. Start screen
- C. Notification screen (displayed for **10 s**)
- D. Normal screen



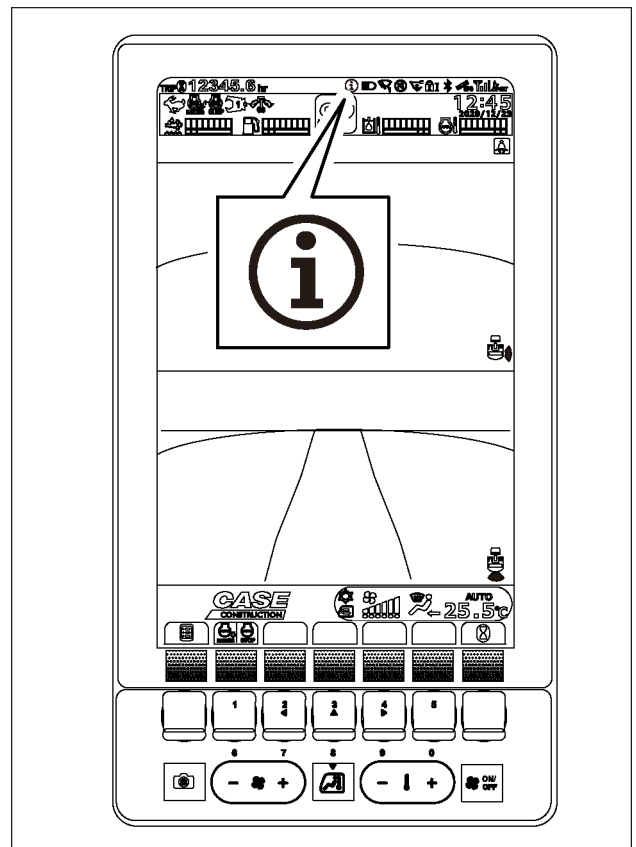
SMIL21CEX3129BA 59

If the flow balance setting has been changed with the flow balance customization function, a buzzer sounds and the notification screen is displayed for **10 s** every time the system is started.

NOTE: The notification screen displays the event that last occurred. If the auto operation lever lock is activated while the flow balance customization function notification is displayed on the screen, the auto operation lever lock notification is displayed on the screen.

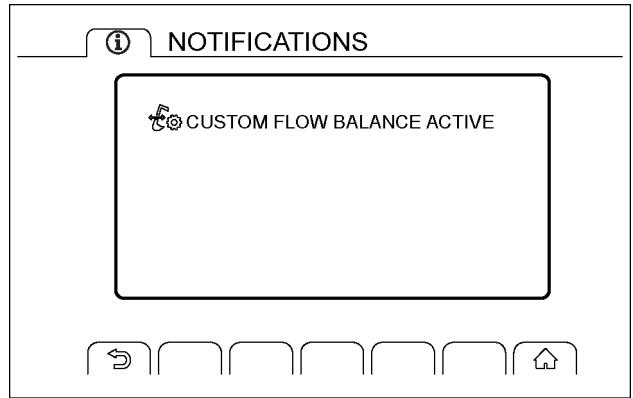
In normal screen mode, an icon is displayed at the top of the monitor screen to indicate that there is information that the operator needs to know.

NOTE: The icon remains displayed even after the message is viewed on the NOTIFICATIONS screen.



SMIL21CEX3267BA 60

The message "CUSTOM FLOW BALANCE ACTIVE" is displayed on the NOTIFICATIONS screen, which indicates that the flow balance customization function is enabled.

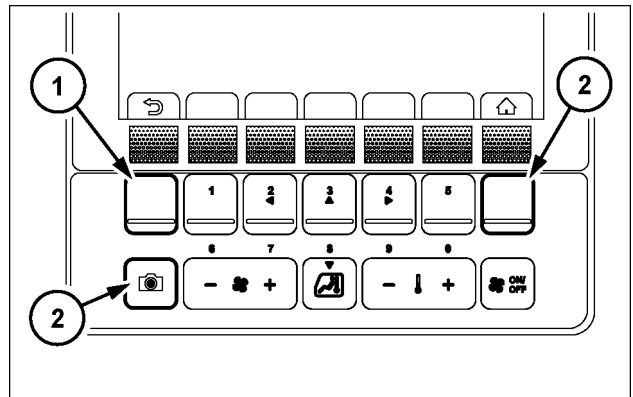


SMIL21CEX3266AA 61

Operating the function switches when the NOTIFICATIONS screen is displayed

Press **(1)** to return to the original screen.

Press **(2)** to return to the normal screen.



SMIL21CEX3268AA 62

DISPLAY CONFIGURATION

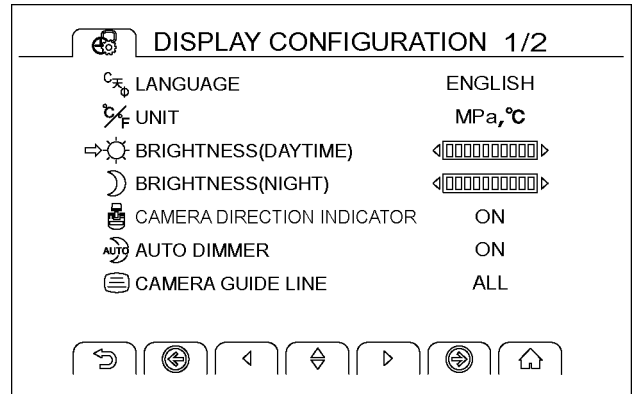


Enables you to configure the screen brightness, camera, and date/time settings.

Items displayed on page 1:

- **LANGUAGE:** the language displayed on the monitor can be changed. Select from the following languages (in selection order): English, Japanese, German, French, Italian, Spanish, Portuguese, Dutch, Danish, Norwegian, Swedish, Finnish, Russian, Canadian French, Polish, Latin American Spanish, Romanian, Czech, Serbian, Croatian, Arabic, Hebrew, Hungarian, Pictographs only.
- **UNIT**
The unit displayed on the monitor can be changed (MPa, °C/psi, °F/kgf/cm², °C).
- **BRIGHTNESS (DAYTIME)**
The monitor brightness during the daytime can be adjusted in 11 levels from 0 to 10.
- **BRIGHTNESS (NIGHT)**
The monitor brightness during night time can be adjusted in 11 levels from 0 to 10.
- **CAMERA DIRECTION INDICATOR**
Whether or not the camera angle on the monitor is displayed can be selected (ON/OFF).
- **AUTO DIMMER**
When this is set to ON, the solar radiation sensor detects the ambient light and if it is bright, the monitor brightness is controlled not to decrease even when the working light is turned ON (ON/OFF)
- **CAMERA GUIDE LINE**
Whether or not the camera guide lines are displayed on camera images can be selected (ALL/REAR/OFF).

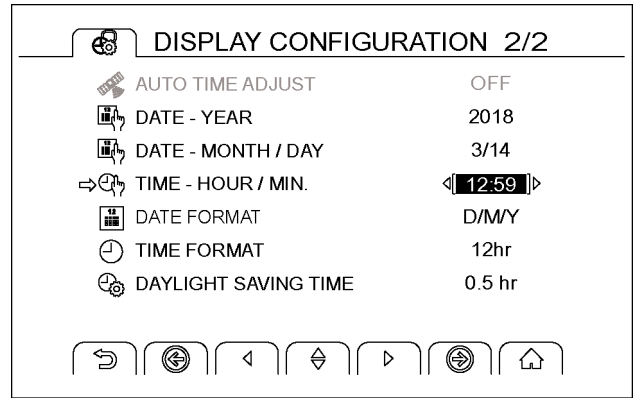
NOTE: Camera guide lines are not displayed on FVM (if equipped) camera images.



SMIL21CEX3269AA 63

Items displayed on page 2:

- **AUTO TIME ADJUST**
With this model, this item is grayed out and cannot be selected.
- **DATE - YEAR**
Enter the year.
- **DATE - MONTH/DAY**
Enter the month and day.
- **TIME - HOUR/MIN.**
Enter the time.
- **DATE FORMAT**
The date display format can be changed. Select from the following formats. Year/Month/Date – Month/Date/Year – Date/Month/Year (Y/M/D, M/D/Y, D/M/Y)
- **TIME FORMAT**
The time display format can be changed. Select from the following formats. 12-hour format – 24-hour format (12hr/24hr)
- **DAYLIGHT SAVING TIME**
When this is set to ON, daylight-saving time is used (ON/OFF)



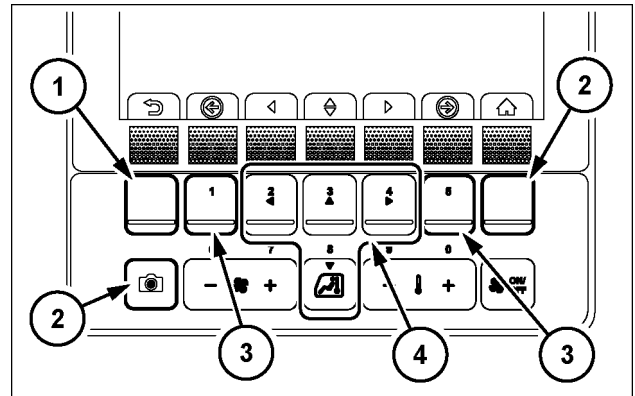
SMIL21CEX3270AA 64

Press **(1)** to return to the menu selection screen. (If the function switch on the normal screen was used to open the DISPLAY CONFIGURATION screen, the screen returns to the normal screen.)

Press **(2)** to return to the normal screen.

Press **(3)** to go forward or back 1 page.

Use the switches **▲▼ (4)** to move the cursor up and down to select an item, then use the switches **◀▶** to change the setting.



SMIL21CEX3271AA 65

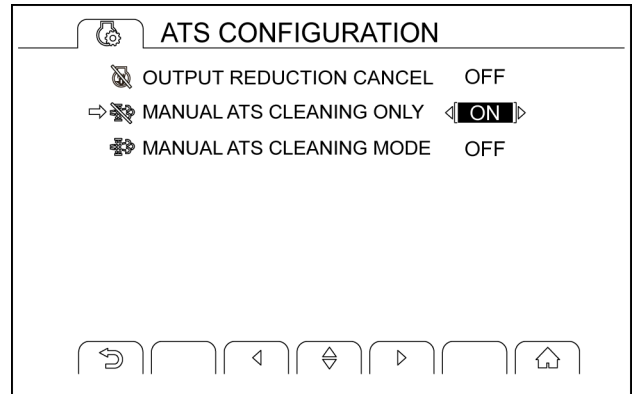
ATS CONFIGURATION



Enables you to view and change the ATS settings.

The following items can be configured or viewed.

- OUTPUT REDUCTION CANCEL**
 Set this function to "ON" to override the engine output reduction due to "REFILL DEF" warning or "CHECK ATS" warning for just **30 min** to address an emergency situation, such as avoiding danger. Use this function only in an emergency, and after using it, make sure to refill DEF/AdBlue® and/or take the actions needed, immediately (ON/OFF). Refer to After Treatment System section.
- MANUAL ATS CLEANING ONLY**
 If this function is set to "ON", AUTO ATS CLEANING will not be performed. Use when excavators are used inside buildings (including tunnels) or in other locations where a rise in exhaust temperature poses a risk of fire or explosion (ON/OFF). Refer to After Treatment System section.
- MANUAL ATS CLEANING MODE**
 If this function is set to "ON", ATS cleaning will be performed manually (ON/OFF). Refer to After Treatment System section.



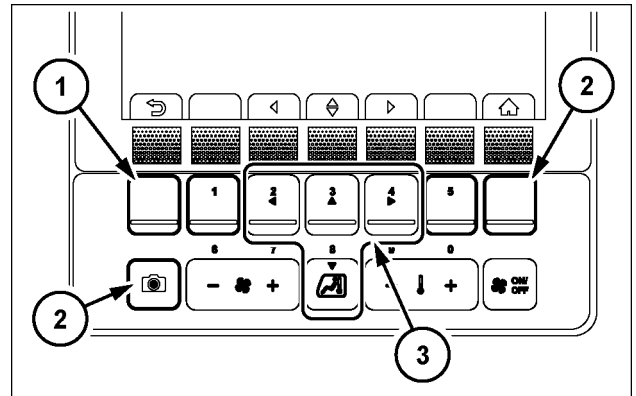
SMIL22CEX4517AA 66

Operation explanation for function switches

Press **(1)** to return to the menu selection screen.

Press **(2)** to return to the normal screen

Use the switches **▲▼ (3)** to move the cursor up and down to select an item, then use the switches **◀▶** to change the setting.



SMIL21CEX3292AA 67

FUNCTION CONFIGURATION



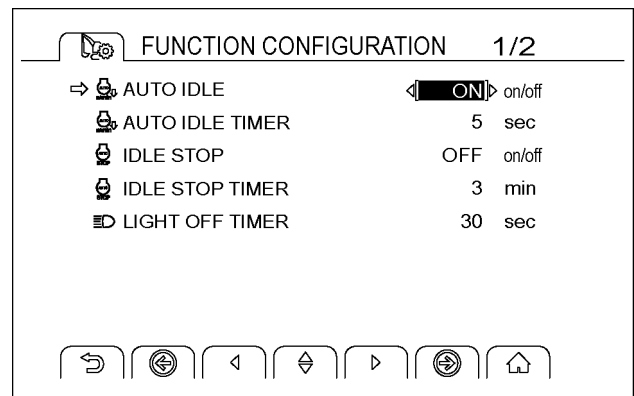
Enables you to configure settings for functions related to energy-saving and safety.

Items displayed on page 1:

- **AUTO IDLE**
Reduces the engine speed when the machine has been left unoperated longer than the set time in seconds (ON/OFF).
- **AUTO IDLE TIMER**
Allows you to set the time in seconds until the system enters the auto idle mode (**5 s/ 10 s/ 15 s/ 30 s**).
- **IDLE STOP**
Non-operation position (with the safety bar stored in the console) The engine speed is **1200 RPM** or less. The throttle operation has not been performed longer than the set time in minutes. When the above conditions are met, the message "IDLE SHUT DOWN" is displayed on the screen and an alarm sounds, then the engine stops in **10 s** (ON/OFF).
- **IDLE STOP TIMER (3 min/ 5 min/ 7 min/ 10 min)**
Allows you to set the time in minutes until idle shutdown occurs.
- **LIGHT OFF TIMER**
Allows you to set the time until the lights go out after the working light is turned OFF (**0 s/ 15 s/ 30 s/ 60 s/ 90 s/ 120 s/ 150 s/ 180 s**).

NOTE: When **AUTO IDLE** is set to **OFF**, **AUTO IDLE TIMER** cannot be set.

NOTE: When **IDLE STOP** is set to **OFF**, **IDLE STOP TIMER** cannot be set.

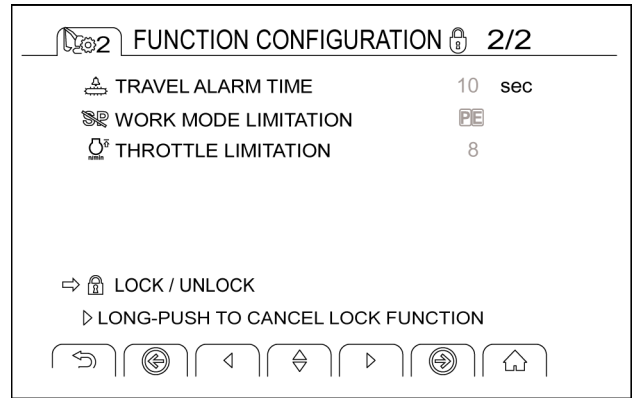


SML21CEX3293AA 68

Items displayed on page 2:



NOTE: Page 2 is for machine administrators and the settings can be locked with a passcode.

- TRAVEL ALARM TIME
Allows you to set how long the warning buzzer sounds in seconds during travel operation (10 s/ 20 s/ 30 s/ 60 s/ ∞ s)
- WORK MODE LIMITATION
Allows you to set a limitation so that the operator does not perform operations in an inappropriate work mode (SP P E/P E/E)




SMIL21CEX3134AA 69

Descriptions of icons for WORK MODE LIMITATION

-  Allows you to use all work modes. When this mode is selected, the maximum speed setting cannot be changed with "THROTTLE LIMITATION".
-  Prevents you from using the SP mode. When this mode is selected, the maximum speed settings for the P mode and E mode can be changed with "THROTTLE LIMITATION".

NOTE: When the SP mode is selected, a buzzer sounds and the text message "WORK MODE LIMITATION ACTIVE" is displayed for 3 s.

-  Allows you to use all work modes. When this mode is selected, the maximum speed setting cannot be changed with "THROTTLE LIMITATION".

NOTE: When the SP mode or P mode is selected, a buzzer sounds and the text message "WORK MODE LIMITATION ACTIVE" is displayed for 3 s.

- THROTTLE LIMITATION
Allows you to change the maximum speed setting for the work mode (6/7/8/9/10).

NOTE: If you attempt to increase the speed with the engine throttle volume beyond the set maximum speed, a buzzer sounds and the message "THROTTLE LIMITATION ACTIVE" is displayed for 3 s.

NOTE: When "SP P E" is selected for "WORK MODE LIMITATION", this item cannot be selected.

Locking/unlocking with a passcode

Select "LOCK/UNLOCK" (1) displayed on page 2, then press and hold the right function switch for 3 s.

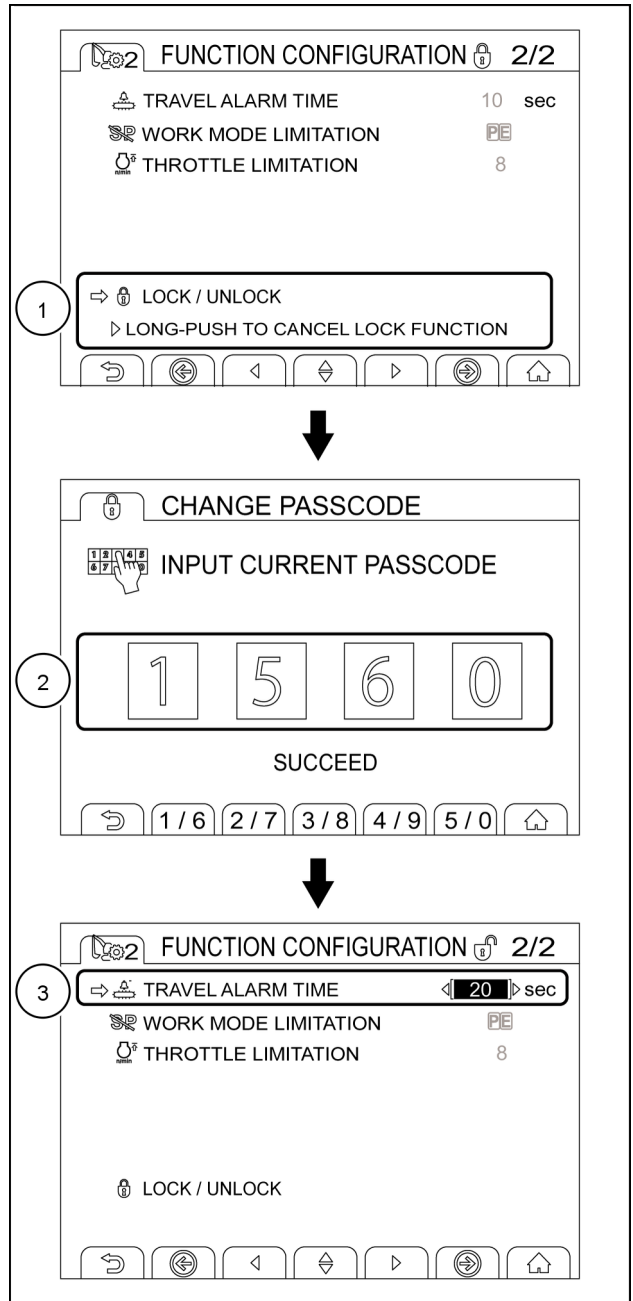
An alarm sounds and the passcode entry screen opens.

After the passcode (2) is successfully entered, you can set whether to lock or unlock items.

Use the switches ▲▼ to move the cursor up and down to select the item (3) you want to change the setting for, then use the switches ◀▶ to change the setting.

NOTICE: The factory setting for the passcode is "1560".

NOTICE: If you forgot the set passcode, consult your local dealer or the certified service plant.



SMIL22CEX1244CA 70

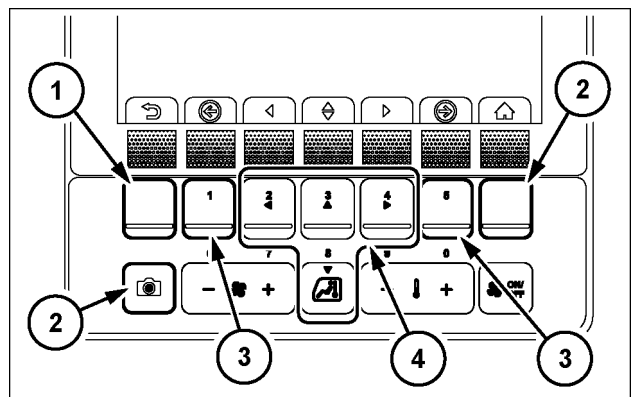
Operation explanation for function switches

Press (1) to return to the menu selection screen. (If the function switch on the normal screen was used to open the FUNCTION CONFIGURATION screen, the screen returns to the normal screen.)

Press (2) to return to the normal screen.

Press (3) to go forward or back 1 page.

Use the switches ▲▼ (4) to move the cursor up and down to select an item, then use the switches ◀▶ to change the setting.



SMIL21CEX3271AA 71

CUSTOM FLOW BALANCE



Enables you to adjust the flow balance according to the end attachment to be used. Adjusting the flow balance can contribute to smoother operation and improved operability for leveling work.

When you select CUSTOM FLOW BALANCE, the message "HYDRAULIC FLOW BALANCE WILL BE CUSTOMIZED IN THIS MENU" is displayed on the screen. Select "CONTINUE" to change the settings.

NOTICE: The flow balance changes when the settings are changed. Perform operational checks before operating the machine after changing the setting.

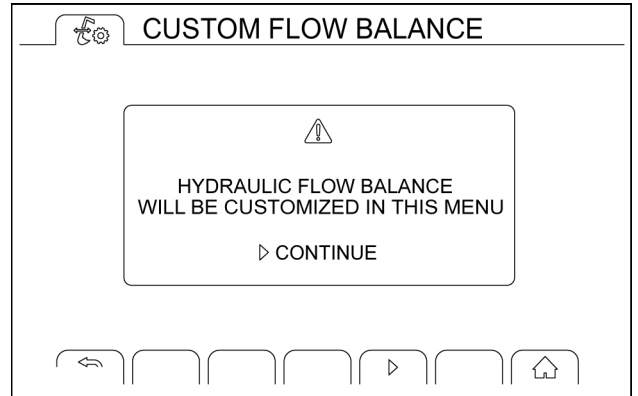
The following items can be configured:

Page 1/2: ARM IN AND BOOM UP COMBINATION LEVELING (11 levels)

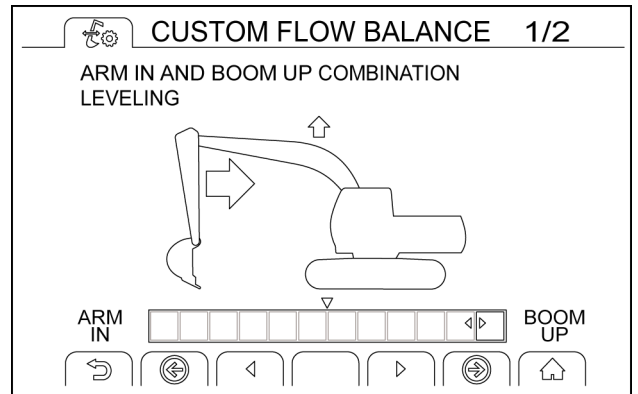
Page 2/2: ARM IN AND SWING COMBINATION (11 levels)

ARM IN AND BOOM UP COMBINATION LEVELING

Adjusting the flow balance changes the pump flow balance between arm-in and boom-up operations, which allows you to select your desired flow balance.



SMIL21CEX3132AA 72

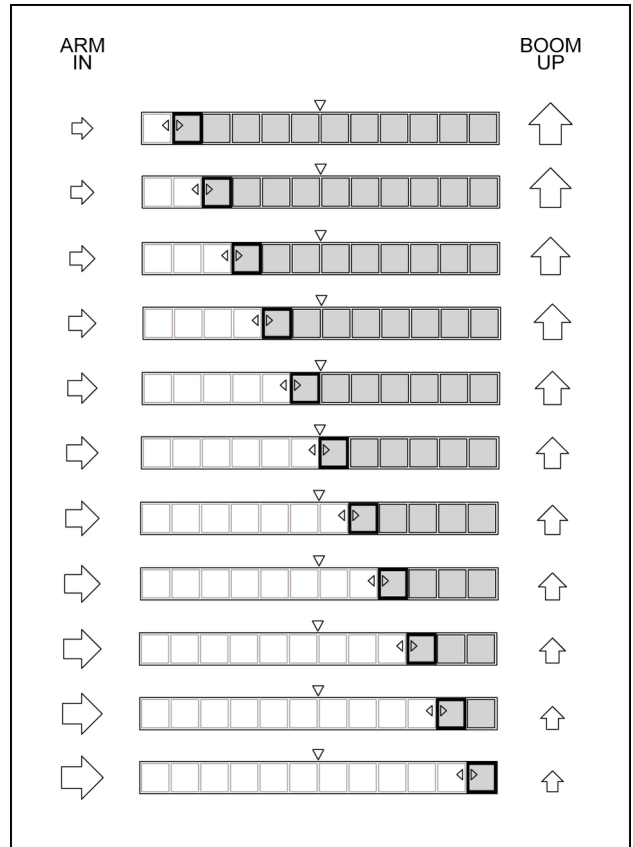


SMIL22CEX1996AA 73

Flow balance gauge

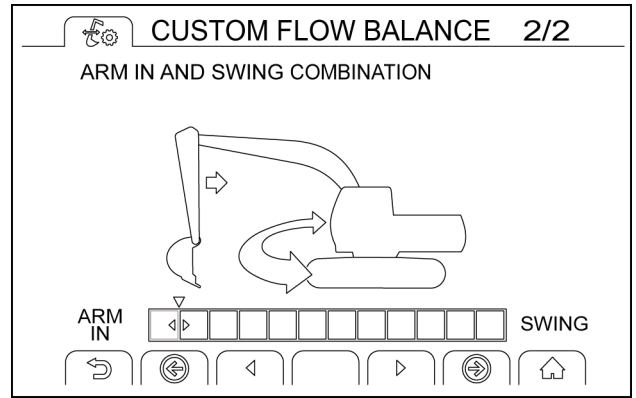
The size of the arrow icon displayed changes as the flow balance gauge increases or decreases.

NOTICE: The white ▽ mark at the top of the flow balance gauge shows the standard setting position (factory setting). The flow balance changes when the setting is changed to a position significantly away from the standard setting position. Perform operational checks before operating the machine after changing the setting.



ARM IN AND SWING COMBINATION

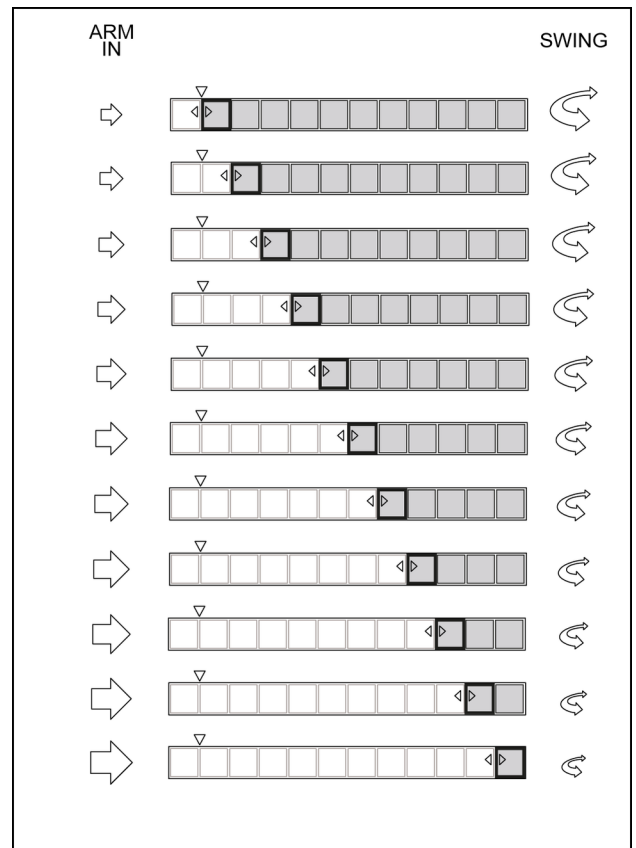
Adjusting the flow balance changes the pump flow balance between arm-in and swing operations, which allows you to select your desired flow balance.



Flow balance gauge

The size of the arrow icon displayed changes as the flow balance gauge increases or decreases.

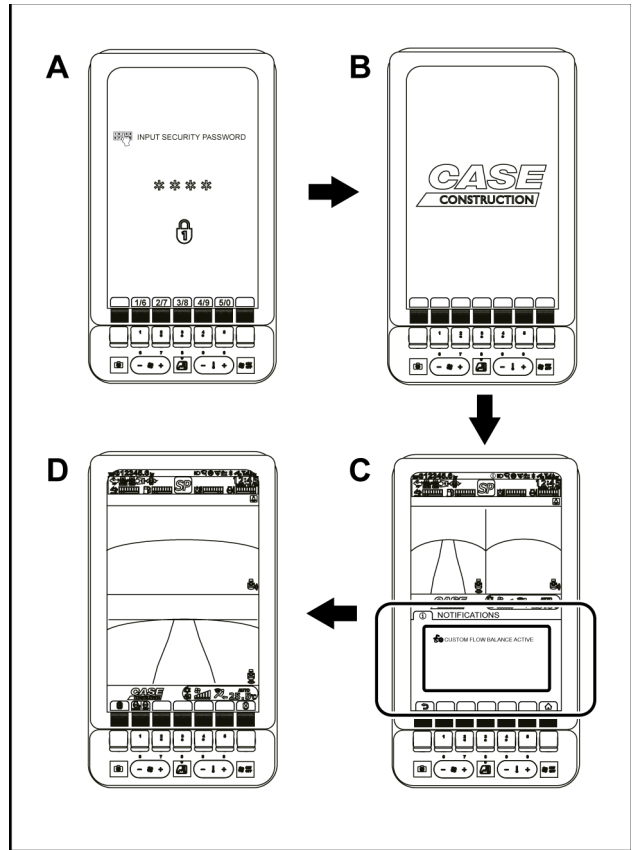
NOTICE: The white ▽ mark at the top of the flow balance gauge shows the standard setting position (factory setting). The flow balance changes when the setting is changed to a position significantly away from the standard setting position. Perform operational checks before operating the machine after changing the setting.



After changing the setting, the notification screen is displayed every time the system is started.

- A. Passcode screen (when manual lock is set up)
- B. Start screen
- C. Notification screen (displayed for **10 s**)
- D. Normal screen

If the flow balance setting has been changed with the flow balance customization function, the notification screen is displayed for **10 s** every time the system is started.



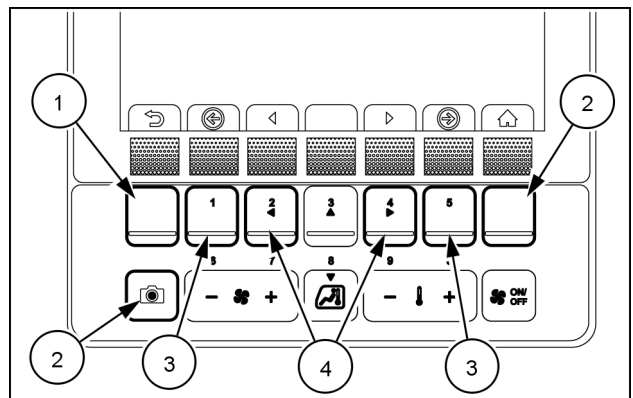
SMIL21CEX3129BA 77

Press **(1)** to return to the menu selection screen. (If the function switch on the normal screen was used to open the DISPLAY CONFIGURATION screen, the screen returns to the normal screen).

Press **(2)** to return to the normal screen.

Press **(3)** to return to go forward or back 1 page.

Press **(4)** to move the cursor to change the setting.



SMIL21CEX4355AA 78

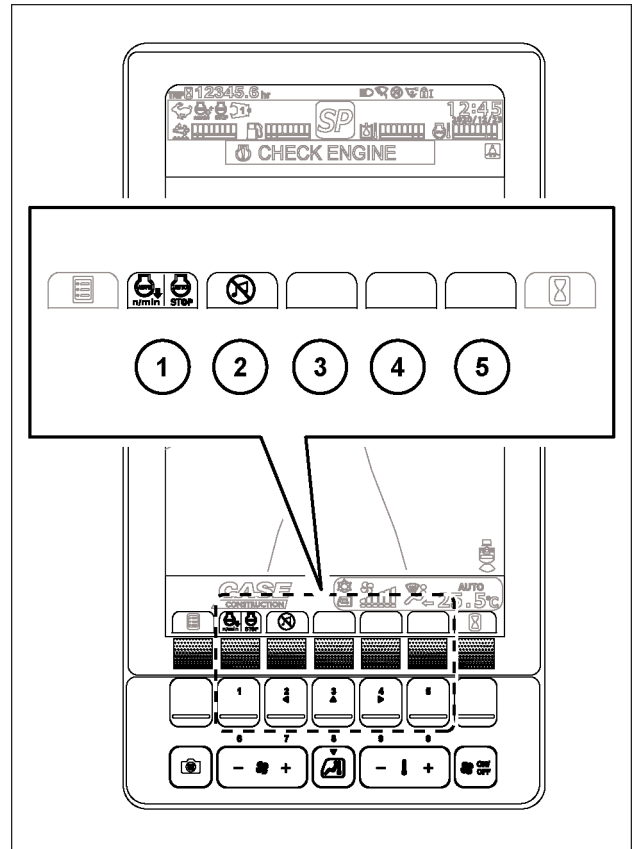
MONITOR SWITCHES LAYOUT



Enables you to create shortcuts for frequently used menu screen items on the function switch tab in normal display mode.

NOTE: The illustration provided shows the factory settings.

No.	Name
1	IDLE MODE SETTING
2	RADIO MUTE
3 - 4	BLANK

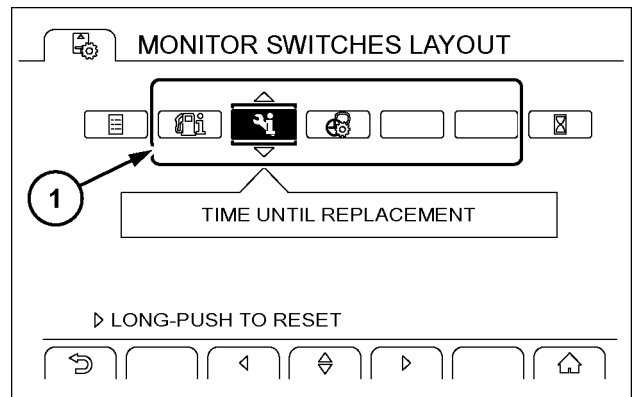


SMIL21CEX3296BA 79

In user information mode, select Monitor Switches Layout and follow the steps below to change the settings.



Use the function switches ◀▶ to select the tab (1) you want to change, then use the function switches ▲▼ to select an icon.

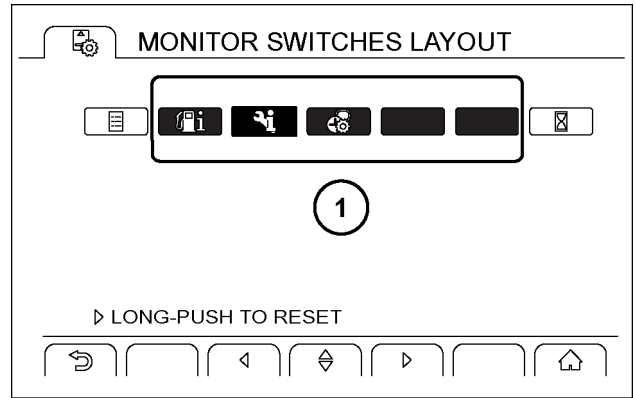
NOTE: The settings for the function switch tabs on both ends are fixed and cannot be changed.



SMIL21CEX3297AA 80

Resetting the settings

When you press the function switch , the tab **(1)** to be reset is highlighted in yellow and then the callout disappears. Then, press and hold the function switch  for **3 s**. An alarm sounds to complete the reset. The settings are reset to the factory settings.



SMIL21CEX3298AA 81

Descriptions of icons for MONITOR SWITCHES LAYOUT



FUEL CONSUMPTION: Enables you to view the fuel economy for the past 7 days.



MACHINE INFORMATION: Enables you to view the machine status in detail.



TIME UNTIL REPLACEMENT: Enables you to view the information on the time for replacing the periodic replacement parts.



NOTIFICATION: Enables you to view the information that the operator needs to know.



DISPLAY CONFIGURATION: Enables you to configure the screen brightness, camera, and date/time settings.



AUXILIARY HYDRAULICS: Enables you to switch between Breaker and Crusher, manage operations according to the model, and set the pressure and flow rate.



ATS CONFIGURATION: Enables you to view and change the ATS settings.



FUNCTION CONFIGURATION Enables you to configure settings for functions related to energy-saving and safety.



CUSTOM FLOW BALANCE Enables you to adjust the flow balance according to the end attachment to be used.



MONITOR SWITCHES LAYOUT: Enables you to create shortcuts for frequently used menu screen items on the function switch tab in normal display mode.



FACTORY SETTINGS: Enables you to reset the settings on the menu screen to the factory settings all at once.



PASSCODE SETTING
Enables you to change the passcode.



IDLE MODE SETTING: Switches the idle mode settings.



RADIO MUTE: Turns ON or OFF the radio audio output.

BLANK: Leaves a tab blank.

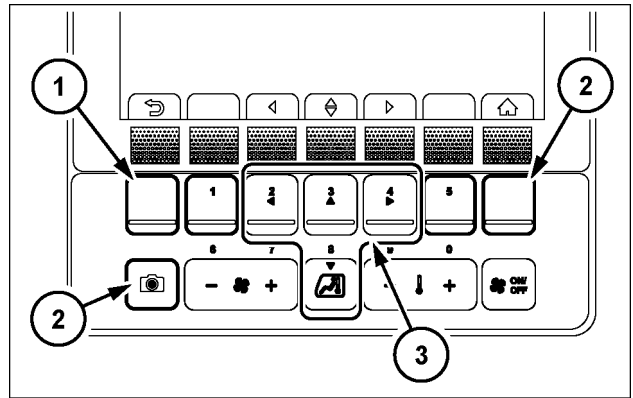
Operation explanation for function switches

Use the switches ▲▼ (3) to move the cursor up and down to select an item, then use the switches to change the setting.

Press and hold the switch ◀▶ for 3 s to reset the settings.

Press (1) to return to the menu selection screen. (If the function switch on the normal screen was used to open the DISPLAY CONFIGURATION screen, the screen returns to the normal screen.)

Press (2) to return to the normal screen.



KNOB SWITCHES LAYOUT

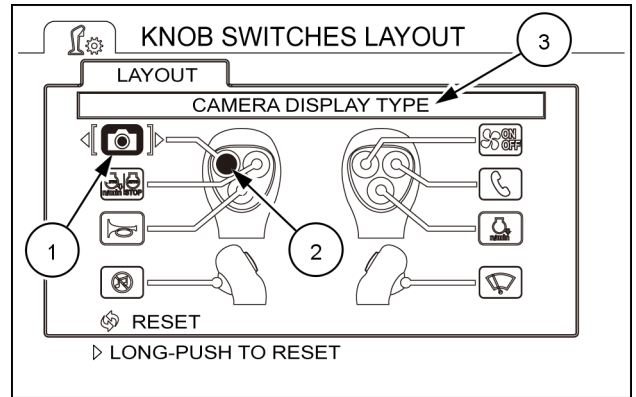


Enables you to change the switch function of the control levers.

How to set the Knob Switches Layout from User Information Mode:

Use the function switches ▲▼ to select the switch (2) you want to change, then use the function switches ◀▶ to select the function (1) you want to change. The selected function name is displayed in (3).

NOTE: The grayed-out icon is a fixed setting and cannot be changed.



SMIL22CEX1968AA 83

Descriptions of Knob Switches Layout functions



ONE TOUCH WIPER: the wiper blade moves back and forth while the switch is held down.



RADIO MUTE: press this switch to turn the radio sound output ON or OFF.



HANDS FREE PHONE: by connecting your cellular phone via Bluetooth, you can answer calls with the knob switches.



CAMERA DISPLAY TYPE: press this switch to switch the camera display type.



WINDSHIELD WASHER: washer and wipers operate while the switch is held down. When you let go of the switch, they stop.



A/C POWER: press this switch to turn air conditioner ON or OFF.



A/C AUTO MODE: press this switch to switch to the auto mode of the air conditioner.



HOUR METER AND TRIP: press this switch to switch between the hour meter display and trip display.



A/C DEFROSTER: press this switch to switch to defroster mode.



IDLE MODE: press this switch to switch the idle mode.

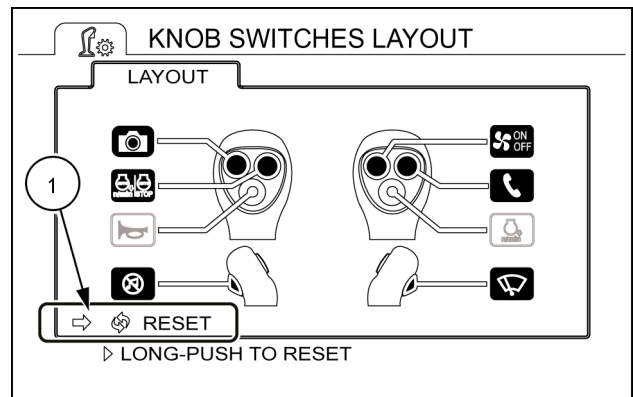


BLANK: set as blank.

Reset the settings

When you select the RESET item (1) and press the function switch, all the icons to be reset are highlighted in yellow.

Press and hold the function switch for **3 s** to sound an alarm and complete the reset. After resetting, the settings will be the factory settings.

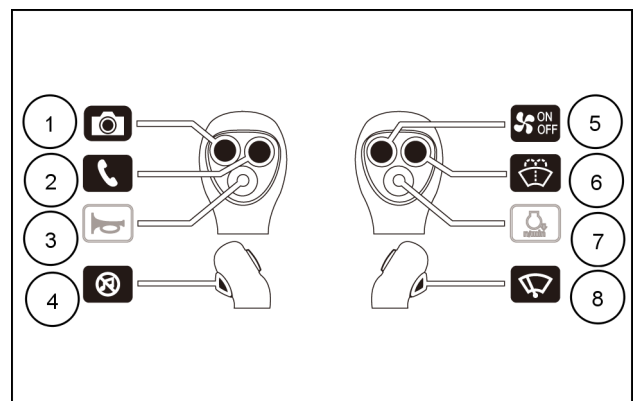


SMIL22CEX1983AA 84

Factory settings

4 switches control levers

	Function name	Remarks
(1)	CAMERA DISPLAY TYPE	Press this switch to switch the camera display type.
(2)	HANDS FREE PHONE	By connecting your cellular phone via Bluetooth, you can answer calls with knob switches.
(3)		Press this switch to sound the horn.
(4)	RADIO MUTE	Press this switch to turn the radio sound output ON or OFF.
(5)	A/C POWER	Press this switch to turn air conditioner ON or OFF.
(6)	WINDSHIELD WASHER	Washer and wipers operate while the switch is held down. When you let go of the switch, they stop.
(7)		Press this switch to shift to/to recover from idle mode.
(8)	ONE TOUCH WIPER	The wiper blade moves back and forth while the switch is held down.

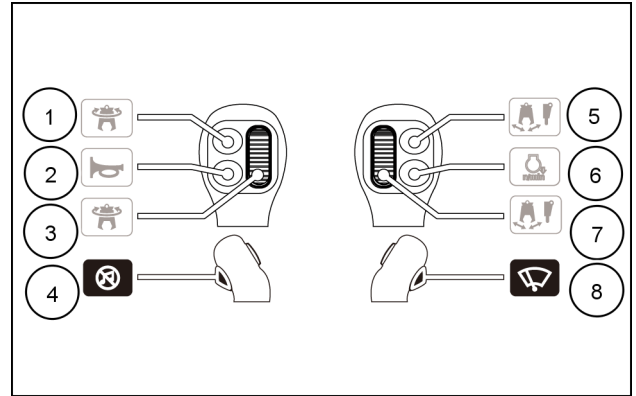


SMIL22CEX1970AA 85

NOTE: The grayed out icon is fixed and only the icon will be displayed without displaying the function name.

Proportional control levers

	Function name	Remarks
(1)		Press this switch to operate the optional devices.
(2)		Press this switch to sound the horn.
(3)		Press this switch to operate the optional devices.
(4)	RADIO MUTE	Press this switch to turn the radio sound output ON or OFF.
(5)		Press this switch to operate the optional devices.
(6)		Press this switch to shift to recover from idle mode.
(7)		Press this switch to operate the optional devices.
(8)	ONE TOUCH WIPER	The wiper blade moves back and forth while the switch is held down.



SMIL22CEX1971AA 86

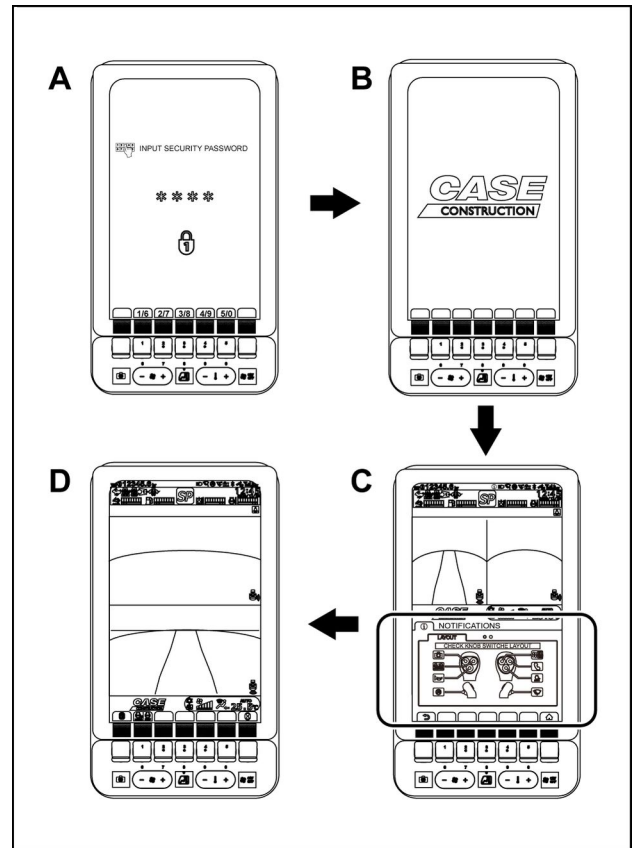
NOTE: The grayed out icon is fixed and only the icon will be displayed without displaying the function name.

Knob switches notification screen

Notifications are made at system startup to correctly notify the functions assigned to knob switches and to prevent operator error.

If there is any other information to be notified, it will be displayed at system startup alternately with the information notification screen at system startup.

- A. Password screen (if manual lock is set)
- B. Start screen
- C. Notification screen: Display for **10 s** for single notification. If there are other notifications to be made using the information screen, they are displayed alternately for **5 s** each, and displayed in two rounds.
- D. Normal screen



SMIL22CEX1972BA 87

PASSCODE SETTING



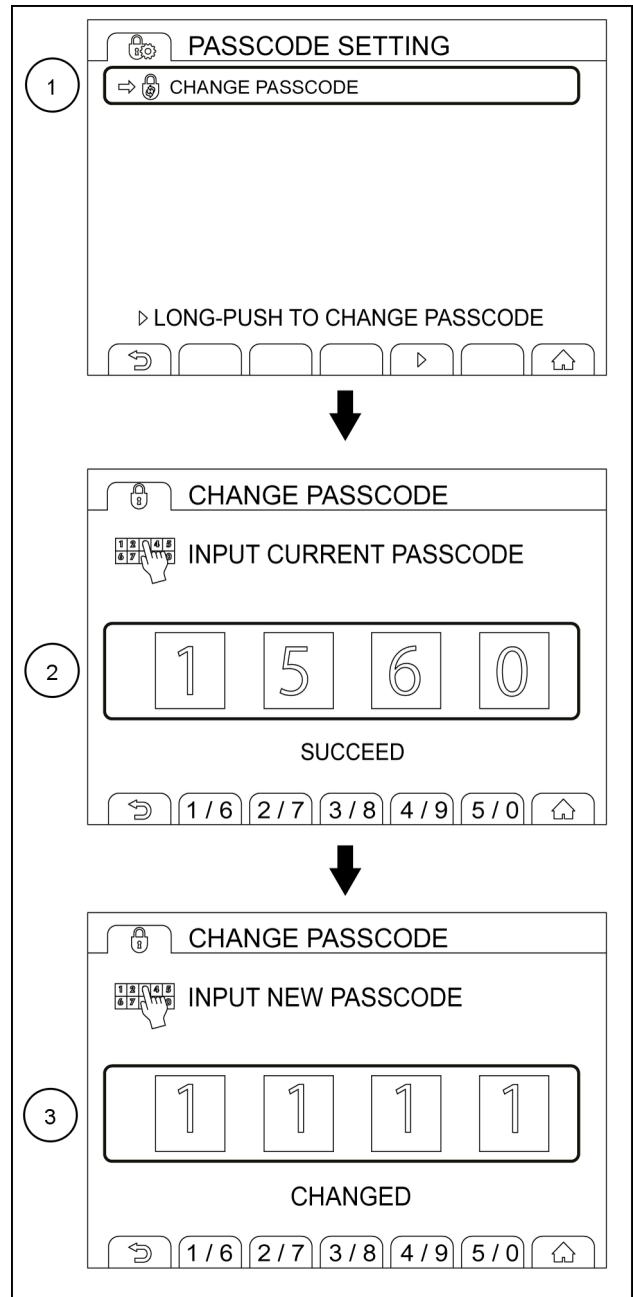
Enables you to change the passcode.

- Change the passcode.
Select "CHANGE PASSCODE" (1), then press and hold the switch on the right for **3 s** to open the passcode entry screen.
Use the function switch to enter the passcode on the entry screen (2). When the correct passcode is entered, "SUCCEED" is displayed and the CHANGE PASSCODE screen is displayed.

If the passcode is incorrect, "FAILED" is displayed for **1 s** and the screen returns to the passcode entry screen.
Use the function switch to enter a new passcode on the entry screen (3). "CHANGED" is displayed for **1 s** and the screen returns to the PASSCODE SETTING screen. This completes the passcode change.

NOTICE: The factory setting for the passcode is "1560".

NOTICE: If you forgot the set passcode, consult your local dealer or the certified service plant.



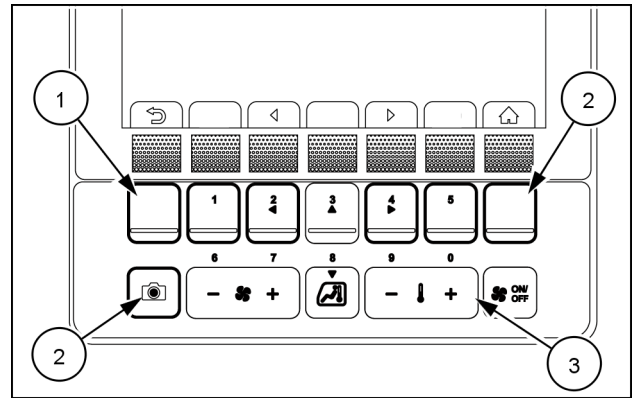
SMIL22CEX1999CA 88

Use the function switches to enter a new passcode on the entry screen **(3)**. This completes the passcode change. To enter numeric values, use the function switches as numeric keys.

Press **(1)** to return to the menu selection screen. (If it is pressed during passcode entry, the passcode entered is discarded and the screen returns to the menu screen.)

Press **(2)** to return to the normal screen. (If it is pressed during passcode entry, the passcode entered is discarded and the screen returns to the normal screen.)

Press **(3)** to enter the passcode. (Press and hold the No.4 key on the PASSCODE SETTING screen for **3 s**. The CHANGE PASSCODE screen is displayed.)



SMIL21CEX4355AA 89

FACTORY SETTING

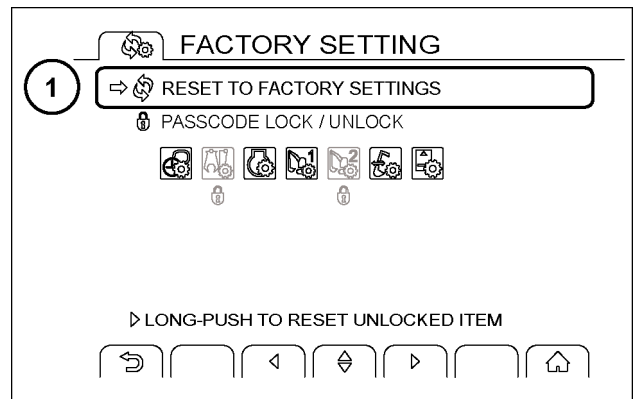


The settings on the menu screen can be reset all at once.

- Reset the settings

Use the up or down switch to select "RESET TO FACTORY SETTINGS" (1), then press and hold the switch on the right for **3 s**. An alarm sounds and the settings are reset.

NOTE: When the screen is locked, the icon is grayed out and reset cannot be performed.



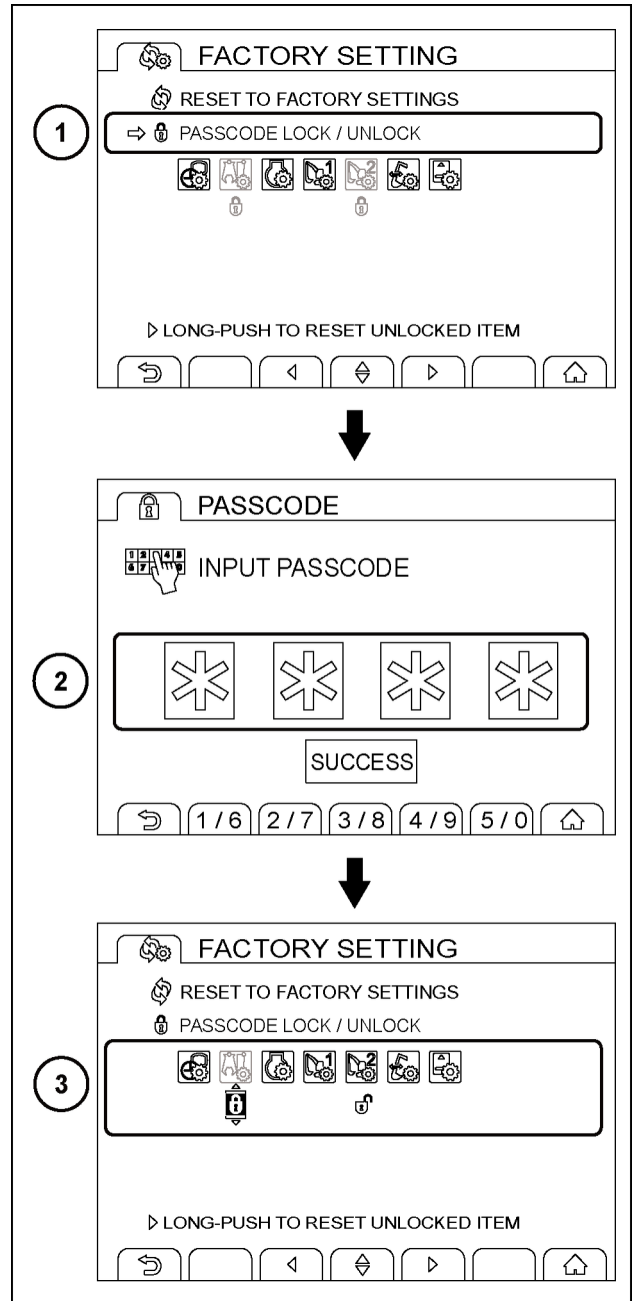
SMIL21CEX3300AA 90

- Lock/unlock the passcode

Use the up or down switch to select "PASSCODE LOCK/ UNLOCK" (1), then press and hold the switch on the right for 3 s. An alarm sounds and the passcode entry screen is displayed. When the correct passcode is entered, a screen opens where you can lock or unlock the settings. Use the left or right switch to select an item and use the up or down switch to change the lock icon between lock and unlock (3).

Press the return switch to return to the first page of the FACTORY SETTING screen.

NOTE: When the screen is locked, the icon is grayed out and reset cannot be performed.



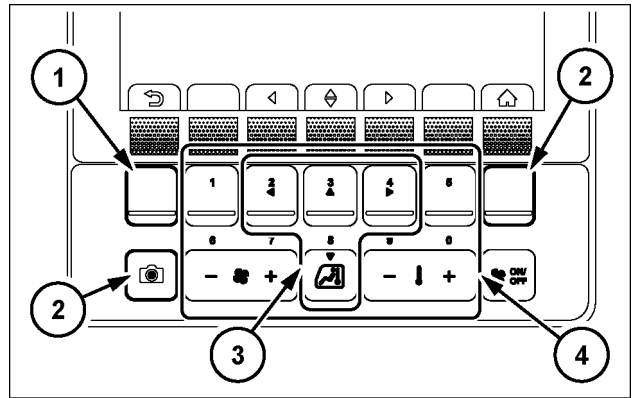
Press **(1)** to return to the menu selection screen. (If the function switch on the normal screen was used to open the FACTORY SETTING screen, the screen returns to the normal screen.)

Press **(2)** to return to the normal screen.

Press **(3)** to select an item or change settings.

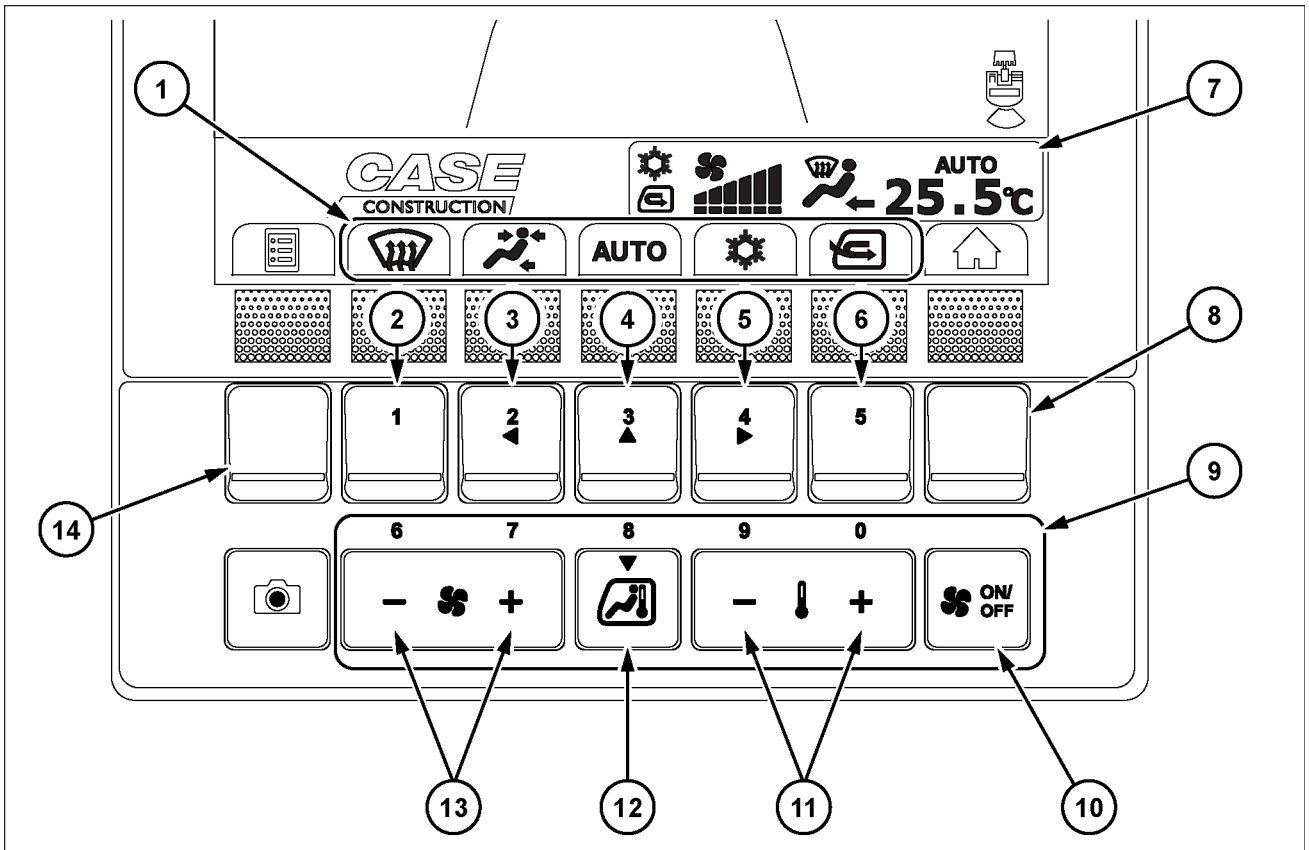
Press **(4)** to enter the passcode.

NOTE: When the screen is locked, the up and down function switches and left function switch cannot be used.



Heating, ventilation, or air-conditioning control

Air conditioner control



SML21CEX4303FA 1

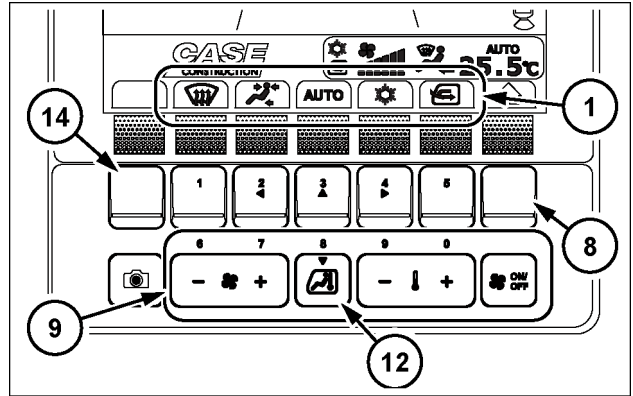
- | | |
|--|-------------------------------------|
| 1. Function switch tab for operating the air conditioner | 8. Home |
| 2. Windshield defroster | 9. Switches for the air conditioner |
| 3. Air flow direction | 10. Blower ON/OFF |
| 4. Auto | 11. Temperature |
| 5. Air conditioner | 12. Air conditioner mode |
| 6. Air circulation | 13. Blower air flow |
| 7. Display screen | 14. Menu |

Air conditioner operation mode

When you press one of the air conditioner switches (9), the system enters the air conditioner operation mode and the blue function switch tab (1) for air conditioner operations is displayed.

When the air conditioner mode switch (12) or function switches (8) and (14) are pressed or 10 s have passed without any operations performed, the air conditioner operation mode is canceled.

- When the system is turned "ON", it operates with the same setting as the one selected previously.
- When a menu screen or menu selection bar is displayed, the function switch tabs for air conditioner operations are not displayed.



SMIL21CEX4304AA 2

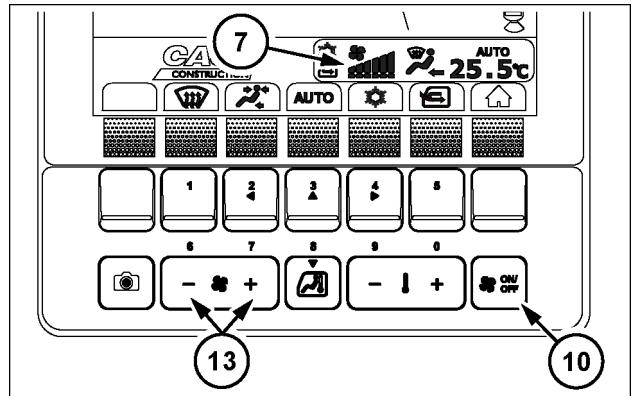
Air flow

Press the blower switch (10) to turn the blower ON or OFF. Press the 2 switches (13) to adjust the strength of the air flow.

Press the right switch to increase the air flow.

Press the left switch to decrease the air flow.

The selected air flow is shown on the display screen (7).



SMIL21CEX4305AA 3

Temperature

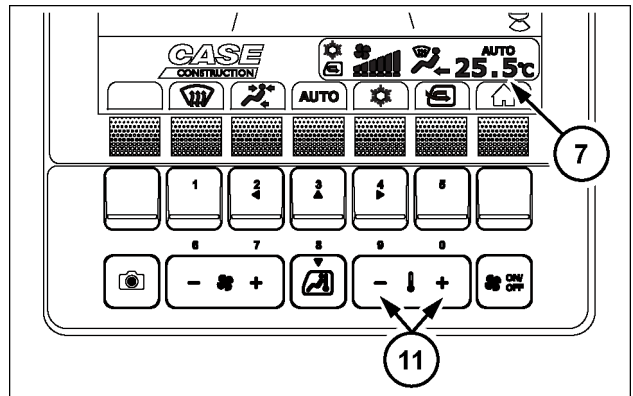
The temperature can be set from 18.5 – 31.5 °C (65.3 – 88.7 °F) by using the 2 switches (11).

Press the right switch to increase the set temperature.

Press the left switch to decrease the set temperature.

The set temperature is shown on the display screen (7).

NOTICE: The temperature can be displayed in Celsius or Fahrenheit. The display can be changed in the monitor display settings.



SMIL21CEX4306AA 4

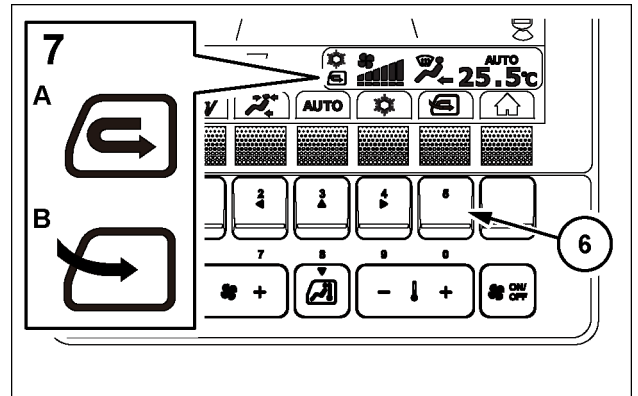
Air circulation

Press the function switch (6) to select either of 2 types of air circulation, refresh or recirculate.

The air circulation type changes each time this switch is pressed.

The selected air circulation type is shown on the display screen (7).

- A. Recirculate
- B. Refresh



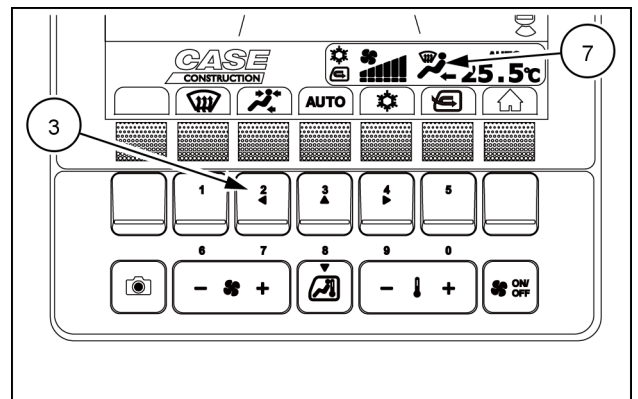
SML21CEX4307AA 5

Air flow direction

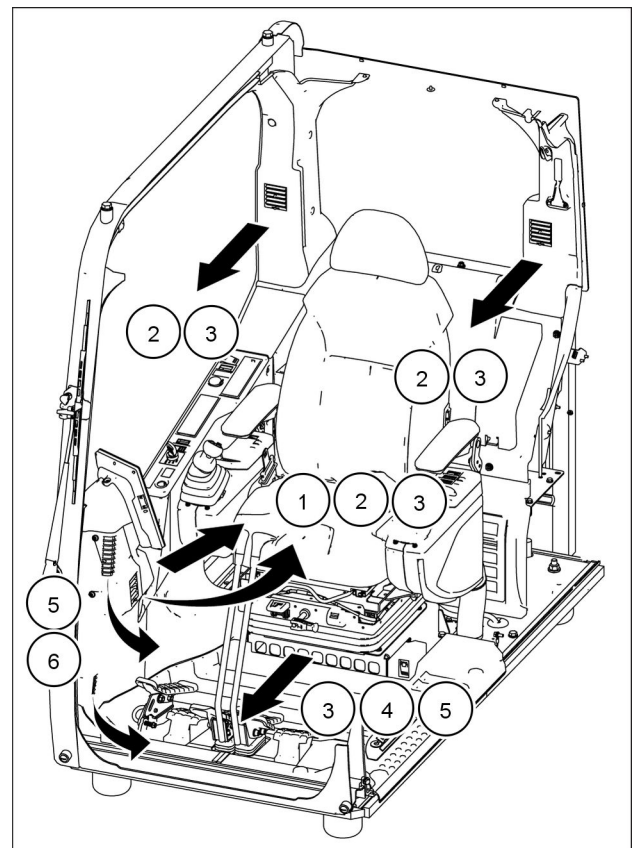
Press the function switch (3) to select an air flow direction from ① to ⑤ in the table.

The air flow direction type changes each time the switch is pressed.







The selected direction type is shown on the display screen (7).



SML21CEX4356AA 6



SML21CEX3122BA 7

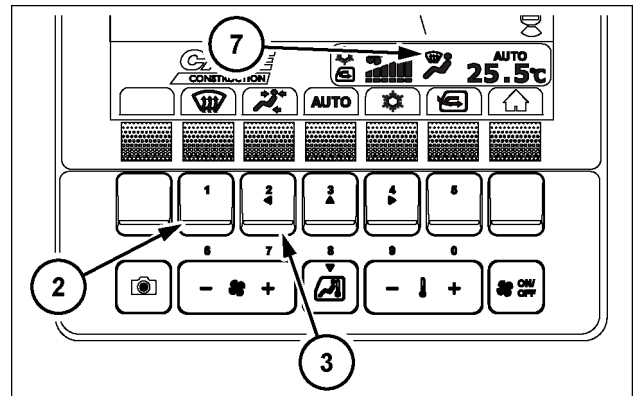
	LCD display	Air vent	Air vent direction
①		Face 1	Front of upper half of body
②		Face 2	Front and rear of upper half of body
③		Bi-level	Front and rear of upper half of body Feet
④		Foot	Feet
⑤		Foot/defroster	Windshield Feet
⑥		Defroster	Windshield

Windshield defroster

Press the function switch (2) to activate the defroster to clear fogging from the windshield.

When the defroster is activated, the icon is shown on the display screen (7).

Press the function switch (3) to cancel the defroster and return to the blower mode.



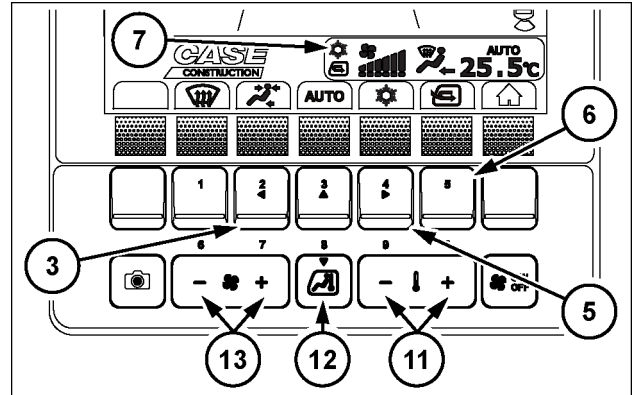
SMIL21CEX4309AA 8

Air conditioning

NOTE: When using the air conditioning, it is essential for all the operator's compartment windows, the windshield and the cab door to be kept closed. The air vents must be kept in open position.

The air conditioning can be used in two different ways: manual or automatic air conditioning.

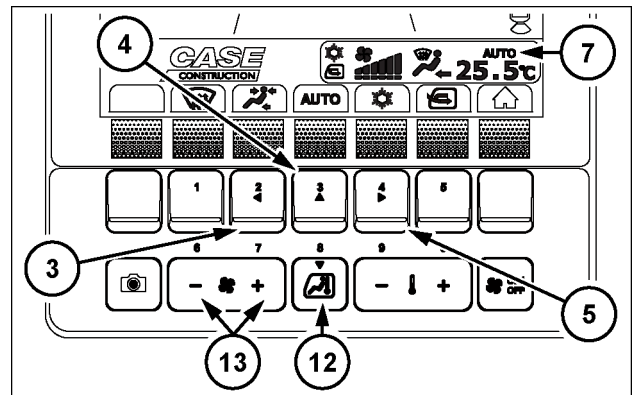
Manual: press the air conditioner mode switch (12) or use the function switch (5) in air conditioner operation mode to turn ON or OFF the air conditioner. When the air conditioner is operating, its operating state is displayed on the display screen (7). For manual operation, use function switches (3), (6), (11) and (13) to adjust the air conditioner.



SMIL21CEX4310AA 9

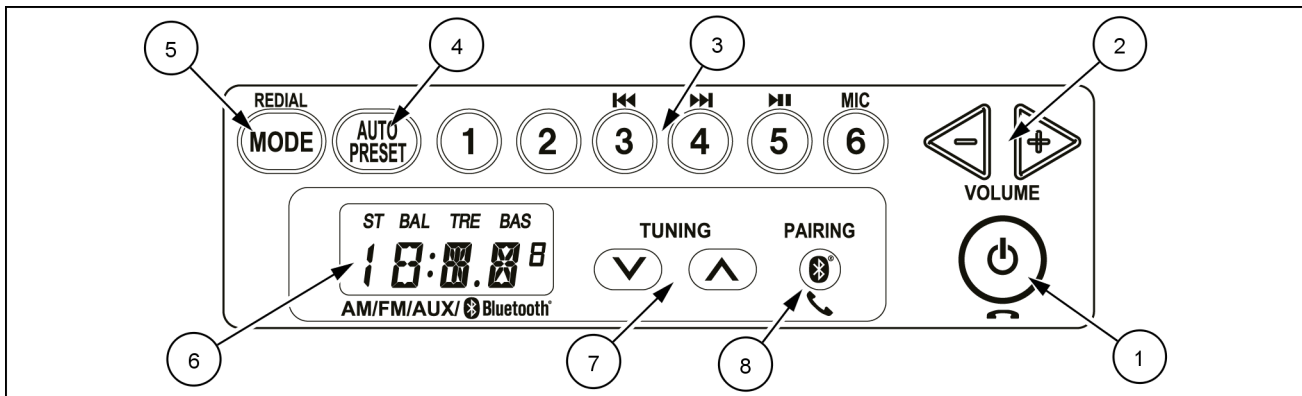
Auto: press and hold the air conditioner mode switch (12) or press the function switch (4) in air conditioner operating mode to adjust the air flow and air flow direction or turn the air conditioner ON or OFF automatically. "AUTO" is shown on the display screen (7). Even when in auto mode, the air conditioner can be adjusted with function switches (3), (5) and (13). When you do so, the auto mode is canceled and the "AUTO" on the display screen (7) disappears.

NOTE: For the air conditioner system to operate correctly and function adequately, it needs to be operated at least once a week, even for a short period of time.



SMIL21CEX4311AA 10

Radio



SMIL22CEX1981EA 1

NOTICE: If water gets into a speaker case or the radio, it can cause an unexpected breakdown. Do not let water get on or in them. In particular, keep the window closed when it rains and when washing the machine. Do not use benzene, paint thinner, or any other solvent to clean the display. Use a dry and soft cloth for wiping. Do not disassemble the radio.

(1) Power button and hands-free function

- Press the button to turn on the radio. The band name is displayed followed by the frequency. Press the button again to turn off the radio.
- Press this button to reject an incoming call, to cancel a redial call, to end a call, and to cancel pairing.

(2) Volume adjustment buttons

- Press the VOLUME- button to lower the volume.
- Press the VOLUME+ button to raise the volume.
- Holding down either button changes the volume continuously.

NOTE: Volume levels are stored separately for Radio (AM/FM), AUX, and Bluetooth Audio.

(3) Preset buttons and hands-free function

- One FM and one AM station can be preset for each button. To preset a station, select its frequency, then hold down the desired preset button.
- The preset button 6 allows to turn off the microphone function.

NOTE: The OFF setting of the microphone function is not retained and is canceled every time.

(4) AUTO PRESET button

- Keep pressed the AUTO PRESET button to memorize the receivable broadcast stations to the preset buttons 1 through 6.

(5) MODE button and REDIAL function

- Press the MODE button to switch the band between AM, FM, AUX, BT.
- Regardless of the current band, if you hold down the MODE button, RE is displayed for 3 s and redialing is performed. After redialing, DL flashes and ring sounds are output from the speaker. Even when the radio is OFF, during redial operation, the radio is automatically turned ON and redialing is started.

(6) Display

- Radio frequency band name and character/numeric information are displayed.

(7) TUNING buttons

- When TUNE button is held down for at least 1 s, the radio begins to search automatically for a receivable station and stops when it finds a station. Press the up button to increase the frequency. Press the down button to lower the frequency. Hold down either button to change the frequency continuously.

(8) PAIRING button and hands-free function

- Keep pressed the PAIRING button to search for a Bluetooth device and pair it.
- When receiving a call, press the button to answer.

To listen to the radio

1. Turn the starter key to ACC or ON, then press the power button to turn on the radio .
2. Press the MODE button to select either AM or FM.
3. Select a station with the six preset buttons or with the tuning buttons.
4. Adjust the volume with the volume adjustment buttons.
5. Press the power button to turn off the radio.

Manual tuning

Press the TUNING buttons once to raise or lower the reception frequency one step.

Automatic tuning

Keep pressed the TUNING buttons to raise or lower the frequency automatically.

When a receivable broadcasting station is found, searching stops at that frequency and it is received.

Preset a station

1. Press the MODE button to select AM or FM and press the TUNING buttons to select a broadcasting station.
2. Hold down the desired numbered preset button until the preset button number flashes three times on the display. The preset TUNING button is now set to the selected station.
3. Repeat steps 1 and 2 to preset other broadcasting stations.

Auto preset

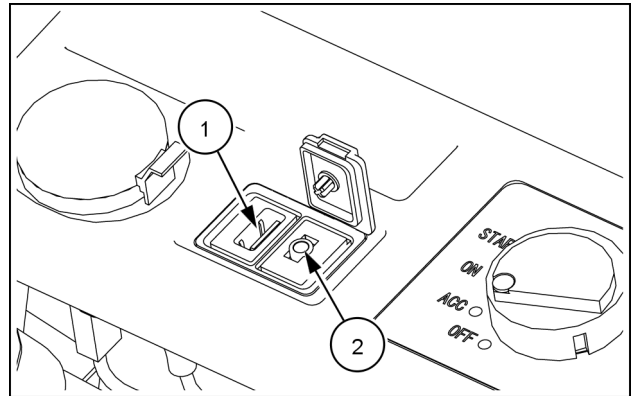
- By holding down the AUTO PRESET button, frequencies with good reception are detected and registered on the preset memories 1 to 6 automatically.

NOTE: When the auto preset function is used, the registered broadcasting stations will be eliminated. To register them on the desired buttons, use the preset function.

External input

- Audio can be output from the speakers on the machine by connecting a commercially-available portable audio device.
- Always keep appropriate volume for the portable audio device.

- 1 USB port
- 2 AUX port



SMIL22CEX1285AA 2

AUX

- Press the MODE button to switch the audio source and check that AUX is shown on the display.
- Connect from the headphone terminal of your portable audio device using a commercially-available cord (without resistance).
- Use any commercially-available stereo mini-plug cord (D3.5) for external input terminal side. Do not use a connection cord with the wrong size or wrong shape jack.
- The volume also can be adjusted with the VOLUME buttons on the radio unit.

USB

- You can charge USB devices (cell phones or audio devices) connected to the USB.

Bluetooth

- Can be used when a Bluetooth unit is connected.
- Press the MODE button to switch the audio source and check that BT is shown on the display.
- To use the Bluetooth function, perform pairing of the devices to be connected with a wireless connection.

Bluetooth pairing

To use Bluetooth audio devices, the devices to be connected with a wireless connection must be registered in advance. This registration is called pairing. If a device has never been paired, pairing must be performed.

1. Keep pressed the PAIRING button while the unit is turned on to shift the unit into pairing mode.
2. During pairing, the display will alternately show BR- and **** (**** is the last four digits of the radio serial number). The unit will be in a state of waiting for pairing, so please search and pair from a device you want to connect wirelessly, such as a mobile phone or portable audio device.

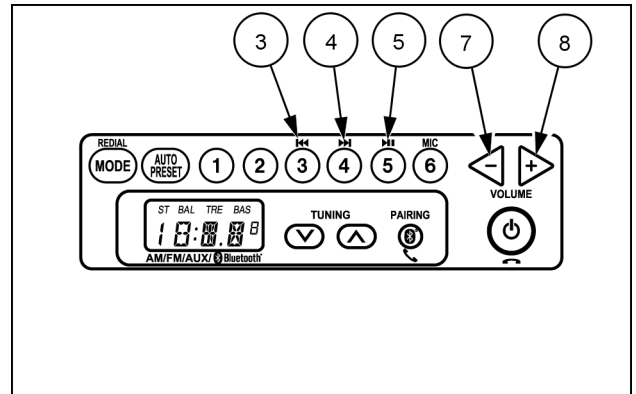
NOTE: If you search for the radio you are pairing with, you will find two types of devices, BR-XXXX and BRXXXX-LE. Choose BR-XXXX.

3. When the pairing is completed successfully, P_o appears on the display.

NOTE: If the pairing is not completed within the time limit of **180 s** or if any abnormality occurs, P_x appears on the display. If the pairing fails, retry the pairing procedure from step 1.

Use of Audio Device Connected via Bluetooth

- Press the MODE button until BT is shown on the display.



SML22CEX1286AA 3

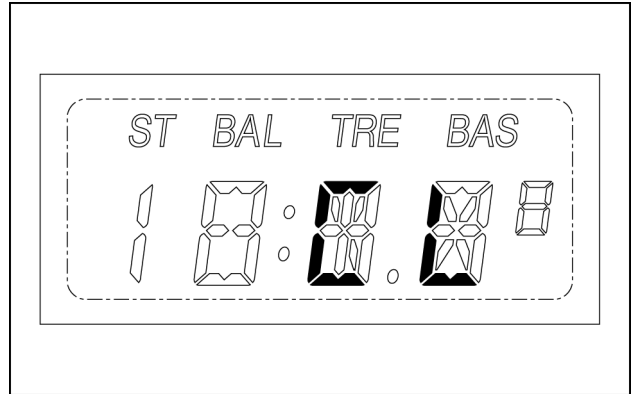
Buttons functions

No.	Button name	Function
(3)	PRESET 3	Play previous track
(4)	PRESET 4	Play next track
(5)	PRESET 5	Play /pause the track
(7)	VOLUME-	Lower the volume. Holding down the button changes the volume continuously.
(8)	VOLUME +	Raise the volume. Holding down the button changes the volume continuously.

NOTE: Depending on the playback application, pressing PRESET 3 may return to the beginning of the track. The track number will not be displayed. Volume levels are stored separately for Radio (AM/ FM), AUX, and Bluetooth Audio.

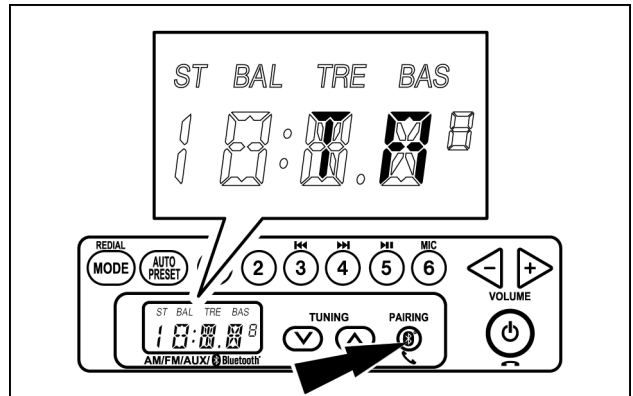
Use of cellular phone connected via bluetooth

- When the paired cellular phone gets a call, CL will blink on the display and the speaker will output the ringtone. Even if power to this system is off, its power will turn on automatically and CL will appear when it gets a call.



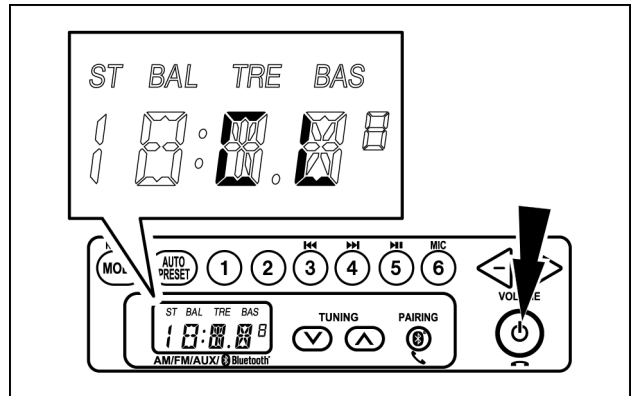
SMIL22CEX1287AA 4

- Press the PAIRING button to answer a call.
NOTE: During a call, TA appears on the display.



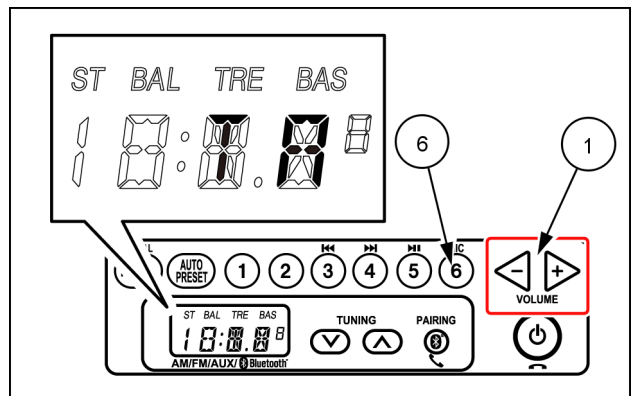
SMIL22CEX1288AA 5

- To reject a call, press the power button. The call will be interrupted, and the band will be restored to its original state.



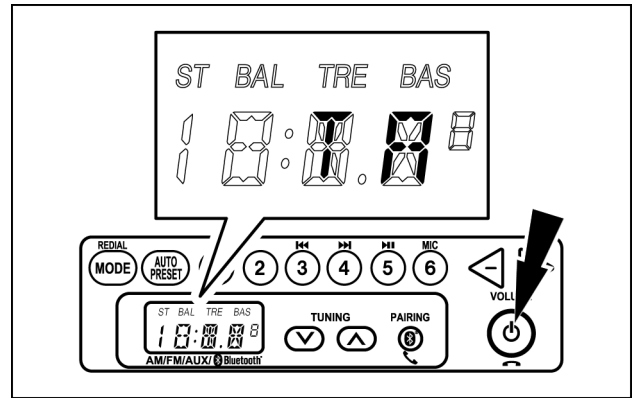
SMIL22CEX1289AA 6

- While talking, you can adjust the speaker volume by using the volume adjustment buttons (1). The preset button (6) allows you to turn on and off the microphone function.



SMIL22CEX1291AA 7

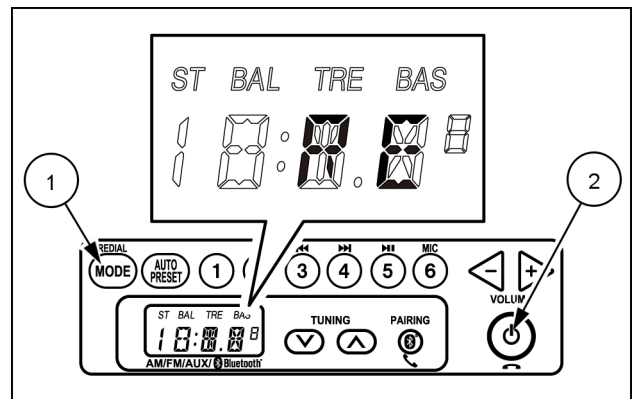
- To finish talking, press the power button. The band will be restored to its original state.



SMIL22CEX1288AA 8

- Even when the radio is turned off, by holding down the MODE button (1), RE will appear on the display for 3 s. After redialing, DL will appear, and the speaker will output the ringing tone.
- Press the power button (2) while making a redial call to cancel the call.

NOTE: Depending on the mobile phone, you may not be able to dial if the incoming call time is too short.



SMIL22CEX1290AA 9

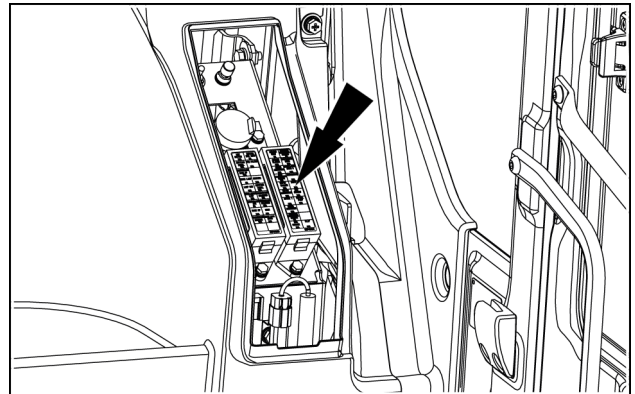
Memory erasure

If the battery disconnect switch is turned to the "OFF" position or the battery connection is cut off, for example for machine service or radio removal, the memory for the preset buttons will be lost. If this happens, set the preset stations again.

Rearward controls

Fuse box

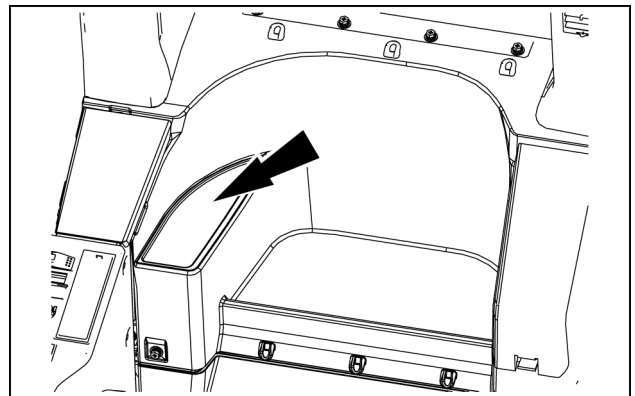
Located on the left-hand side, behind the operator's seat. The fuse boxes can be readily accessed by opening the protective cover.



SMIL22CEX1300AA 1

Magazine rack

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



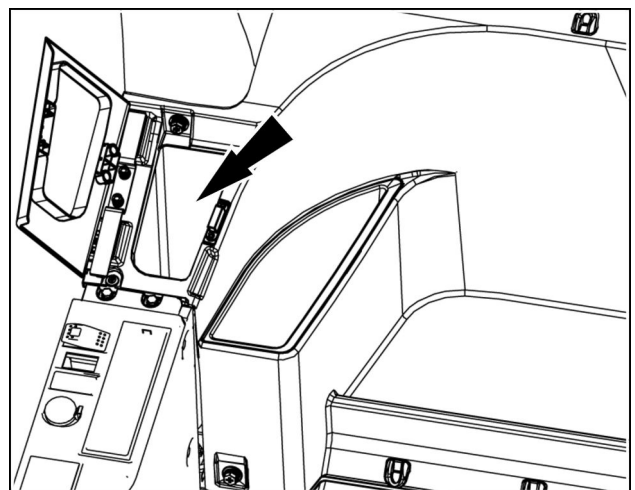
SMIL21CEX1393AA 1

Refrigerated/heated compartment

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

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

NOTE: This is an insulated compartment. The compartment may not cool or heat depending on the conditions.

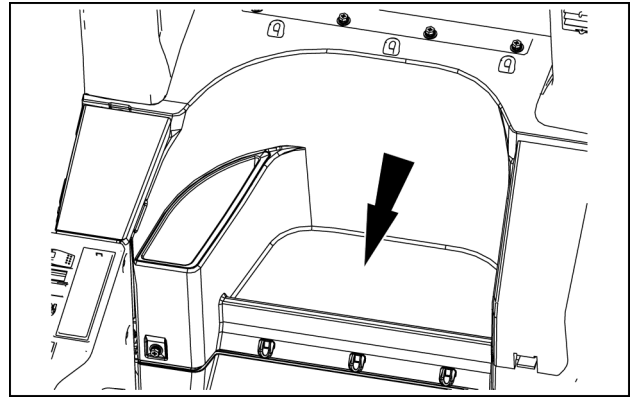


SMIL21CEX1395AA 1

Storage compartment

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

NOTICE: Make sure that the weight of the stored objects is less than **10 kg (22.0 lb)**.

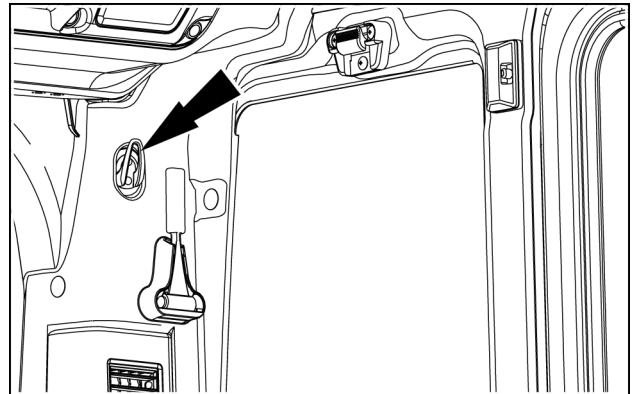


SMIL21CEX1393AA 1

Coat hanger hook

The hook is on the rear left-hand cab upright.

NOTICE: Take care not to obscure the view with clothes that are too bulky.

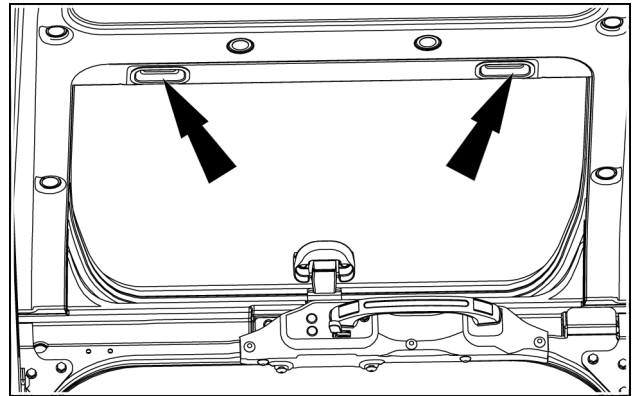


SMIL22CEX1282AA 1

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.



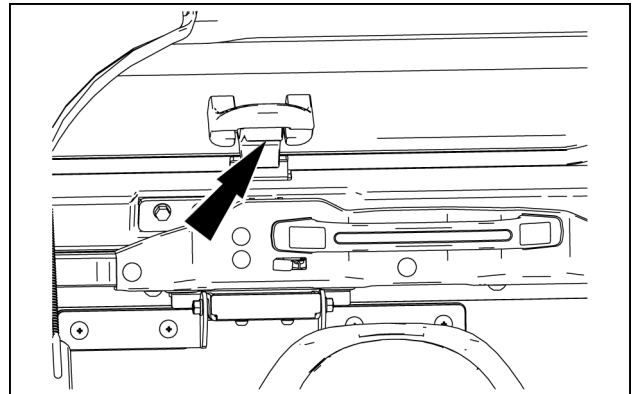
SMIL22CEX1956AA 1

Roof hatch

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

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

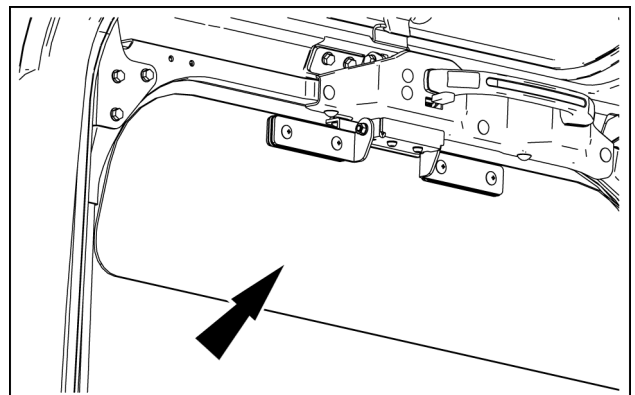
NOTICE: Since roof hatch opening is assisted by two gas struts, simply follow through the closing movement without pulling or trying to hold it back.



SMIL21CEX1416AA 1

Sunshield

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



SMIL21CEX1417AA 1

Exterior controls

Cab protection (ROPS and FOPS)

▲ DANGER

Crushing hazard!

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

Failure to comply will result in death or serious injury.

D0037A

▲ WARNING

Roll-over hazard!

After an accident, fire, tip over, or roll over, a qualified technician MUST replace the Roll-Over Protective Structure (ROPS) before returning the machine to the field or job site operation.

Failure to comply could result in death or serious injury.

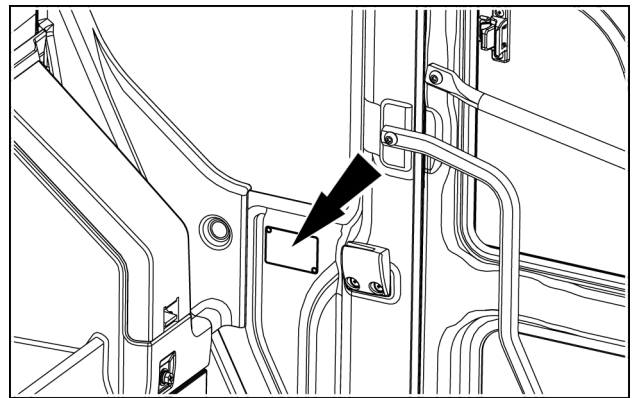
W0134A

This machine is equipped with a cab Roll-Over Protective Structure (ROPS).

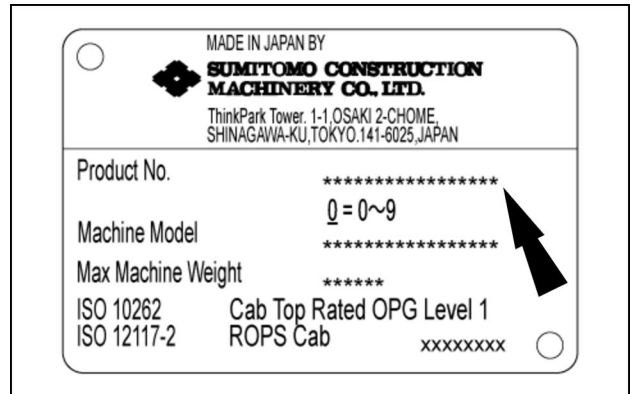
NOTICE: *If the cab's ROPS (guaranteed high-strength member) is damaged, replace the cab. When replacing the cab, check the parts list for the part number of the cab appropriate for the model. If the wrong cab is mounted, the cab could be damaged when the machine rolls over, which could result in the death or serious injury to the operator or damage to the machine.*

This machine is equipped with a Cab Falling Object Protective Structure (FOPS) compliant to Level 1 as defined by ISO 10262.

Level 1 is intended for protection from small objects, e.g. small rocks, small debris and other small objects encountered in operations such as highway maintenance, landscaping and other construction site services.



SMIL22CEX1239AA 1



SMIL20CEX2489AA 2

In case of operations where protection from large objects, e.g. large rocks, large debris and other large objects encountered in applications such as construction and demolition a FOPS Level 2 is required and available as option.

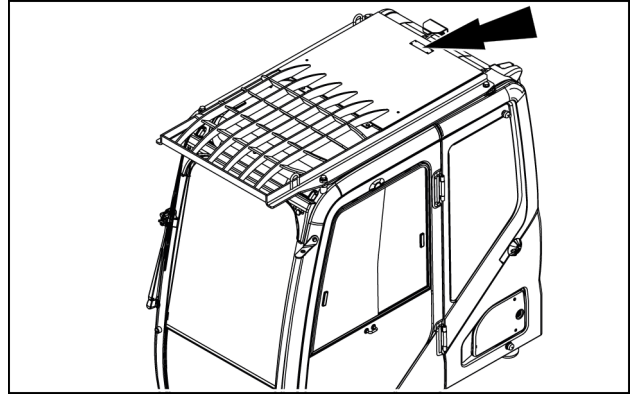
The protective structure, the fitting supports and fastening elements on the machine are an integral part of the structure.

After a fire, corrosion or collisions, any possible damage to the cab protection structure must be carefully evaluated by specialised and qualified personnel.

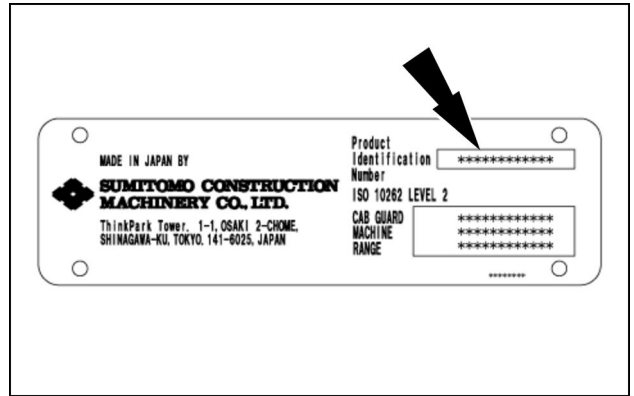
In any case, all damaged parts must be replaced with genuine spare parts, in order to return the machine to its original conditions.

For an inspection of the functions of the cab's protective structures or to get parts or entire structures replaced, please consult your CASE CONSTRUCTION Dealer.

Match the part number. Do not perform modifications.



SMIL22CEX1240AA 3

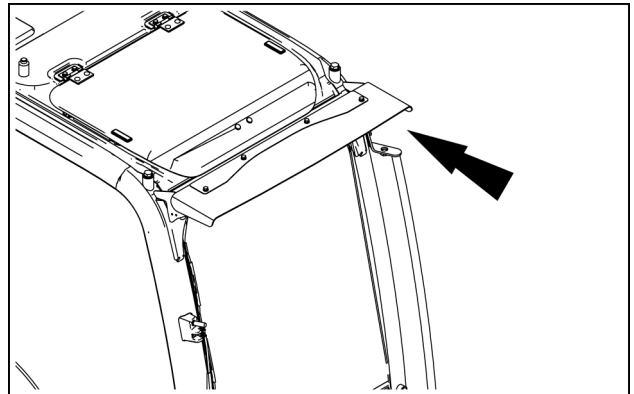


SMIL20CEX2490AA 4

Rain deflector (if equipped)

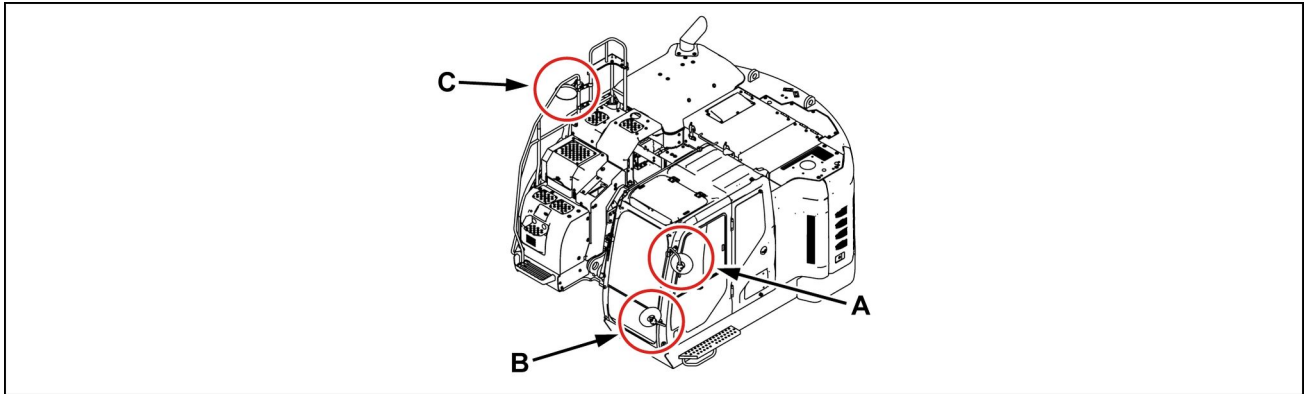
The rain deflector reduces the amount of rain on the upper part of the windshield and protects the cab lights.

NOTICE: The rain deflector is not compatible with Front Guard Protective Structure.



SMIL20CEX2409AA 1

Mirrors



SMIL22CEX3971EA 1

(A) Left mirror — (B) Left-front mirror — (C) Right-front mirror

Installation and positioning of the mirrors

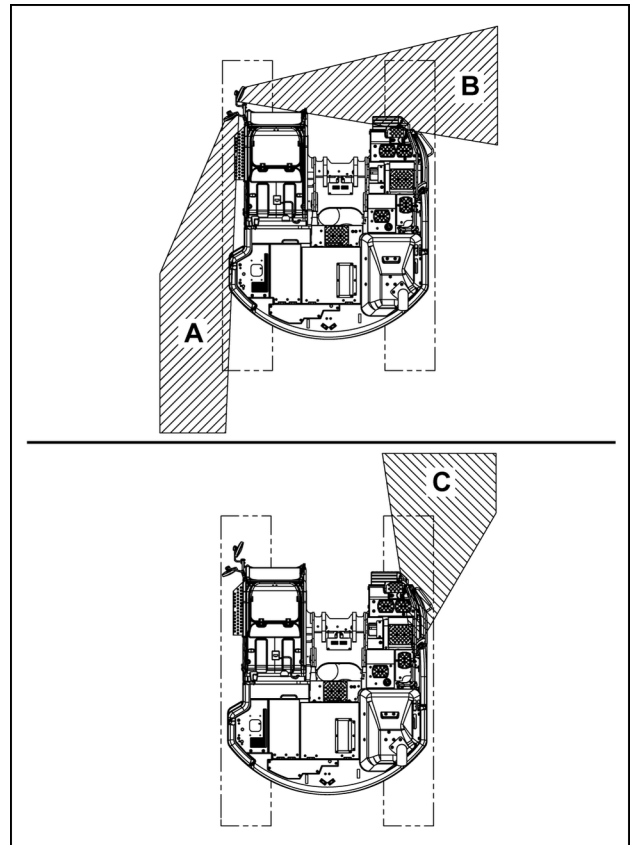
⚠ WARNING

Avoid injury and/or machine damage!
Keep the mirrors clean and properly adjusted.
Failure to comply could result in death or serious injury.

W1078A

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

The hatched areas in the pictures indicate the zones that can be viewed by each mirror.



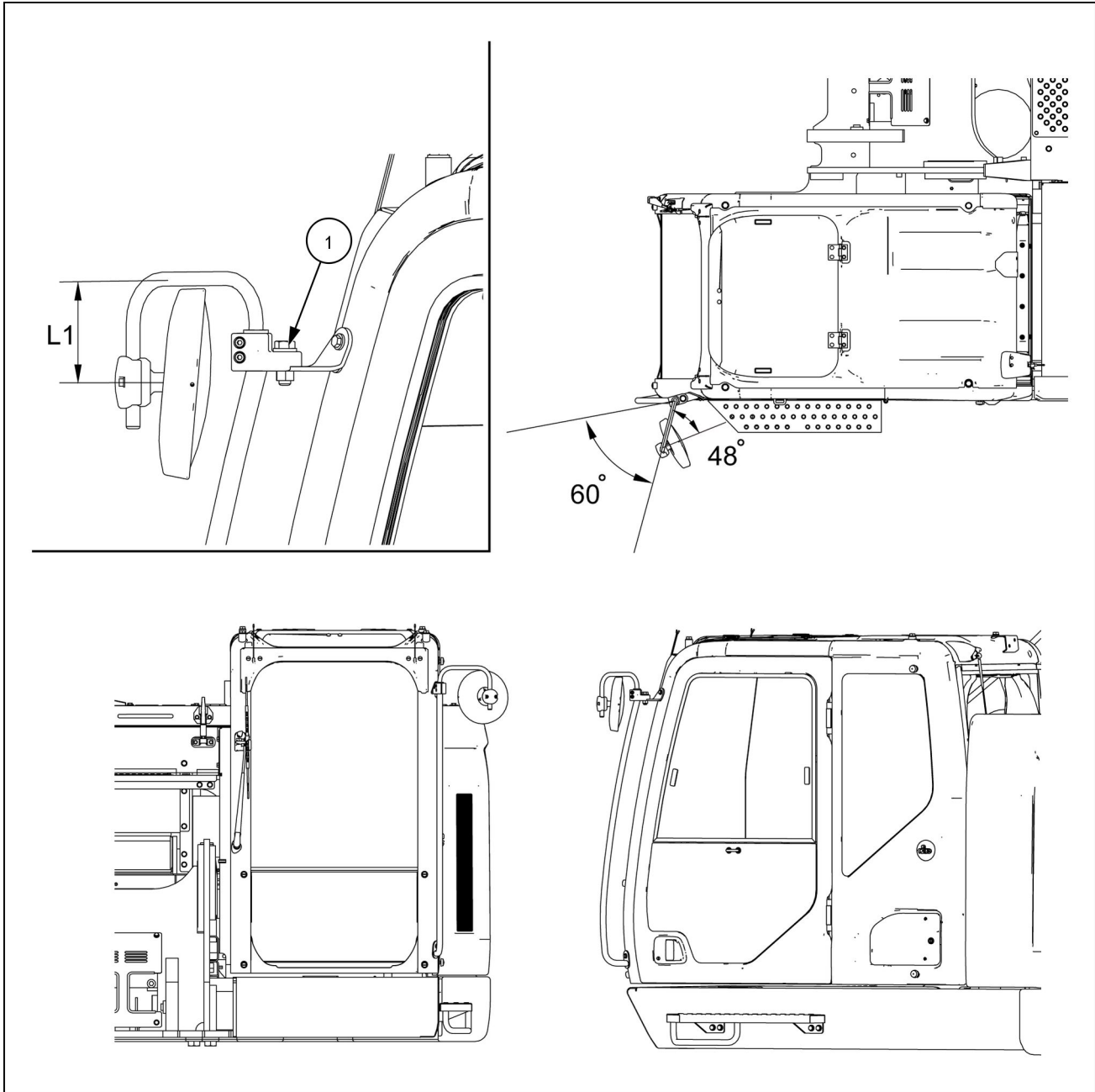
SMIL22CEX3972BA 2

Left mirror (A)

The mirror shall be installed as shown in the picture.

The dimension (L) is **140 mm (5.5 in)**.

The tightening torque of the bolt (1) is **72 – 90 N·m (53.1 – 66.4 lb ft)**.

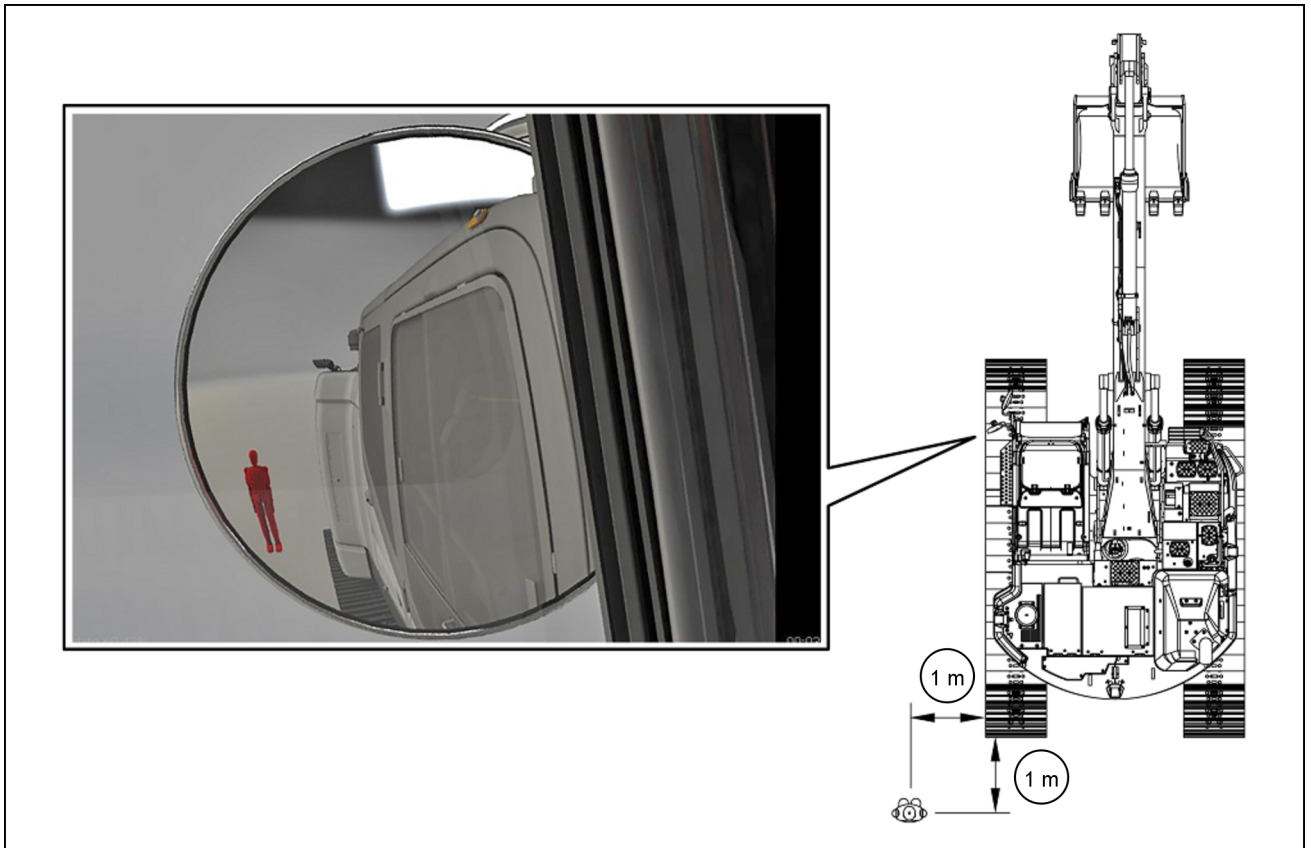


SMIL22CEX3973GA 3

The mirror shall be positioned according to the references shown in picture:

The side on the rear left of the machine shall be visible.

The area around a reference body positioned **1 m (39.4 in)** back from the edge of the left track and **1 m (39.4 in)** leftward the machine shall be visible.



SMIL22CEX3974FA 4

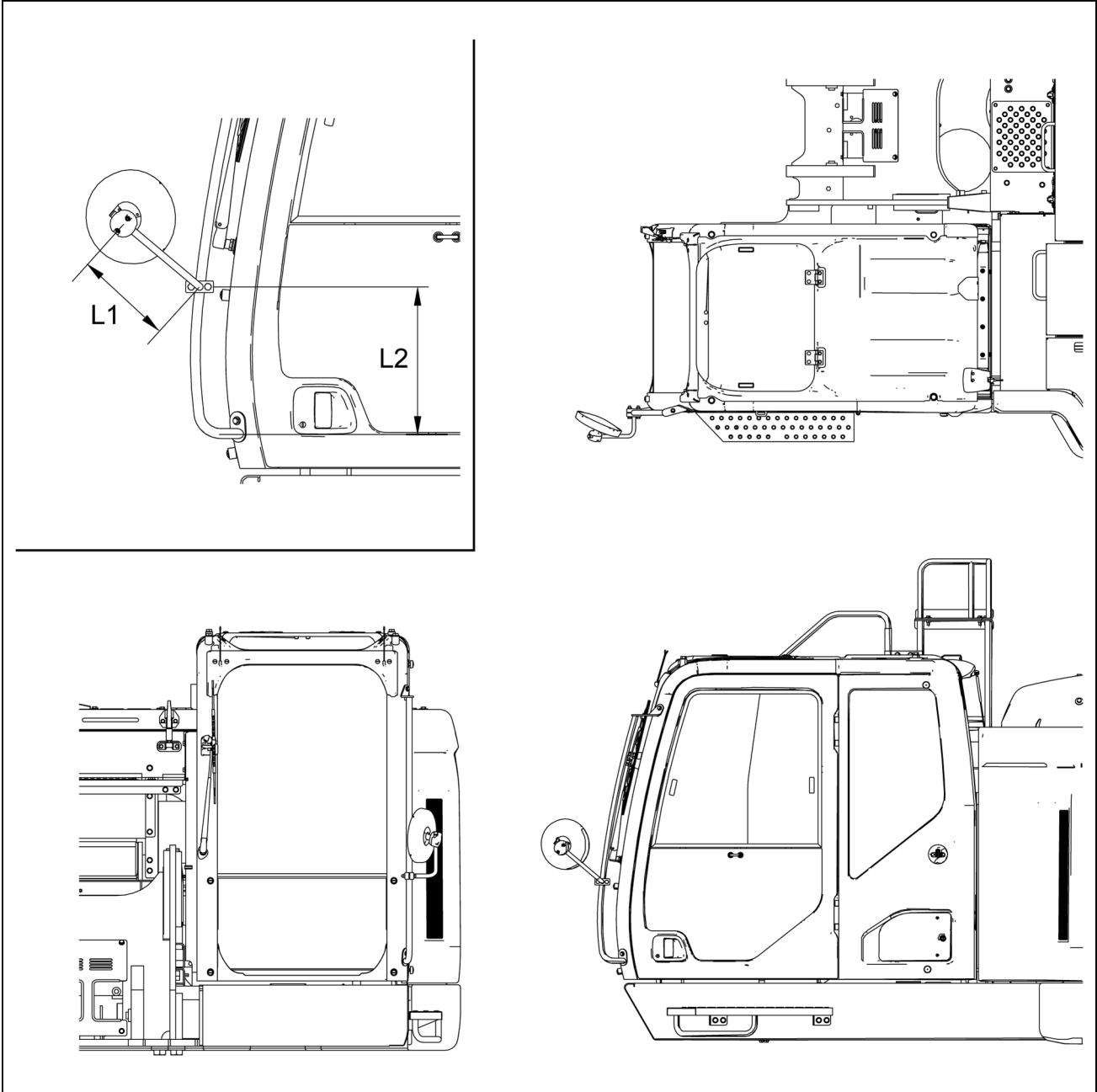
NOTICE: After installing and positioning all the mirrors, the visibility around the machine shall be checked from the operator's seat. Set the seat into the desired position, and make sure to confirm all the reference views in the mirrors. If necessary, fine tune the positioning of the mirrors in order to ensure proper visibility around the machine.

Right-front mirror (B)

The mirror shall be installed as shown in the picture.

The dimension (L1) is 272 mm (10.7 in).

The dimension (L2) is 404 mm (15.9 in).

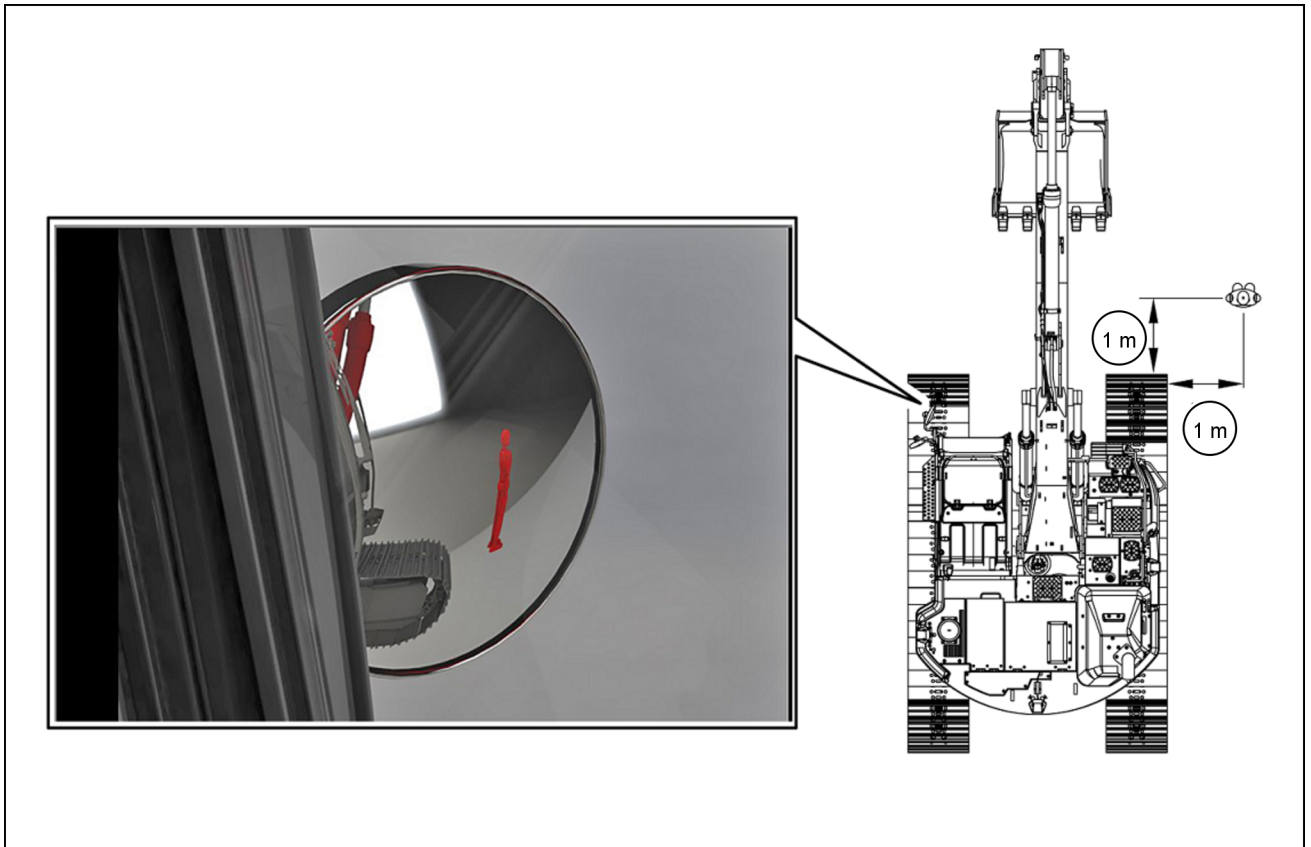


SMIL22CEX3975GA 5

The mirror shall be positioned according to the references shown in picture:

The side on the rear right of the machine shall be visible.

The area around a reference body positioned **1 m (39.4 in)** ahead from the edge of the right track and **1 m (39.4 in)** rightward the machine shall be visible.



SML22CEX3976FA 6

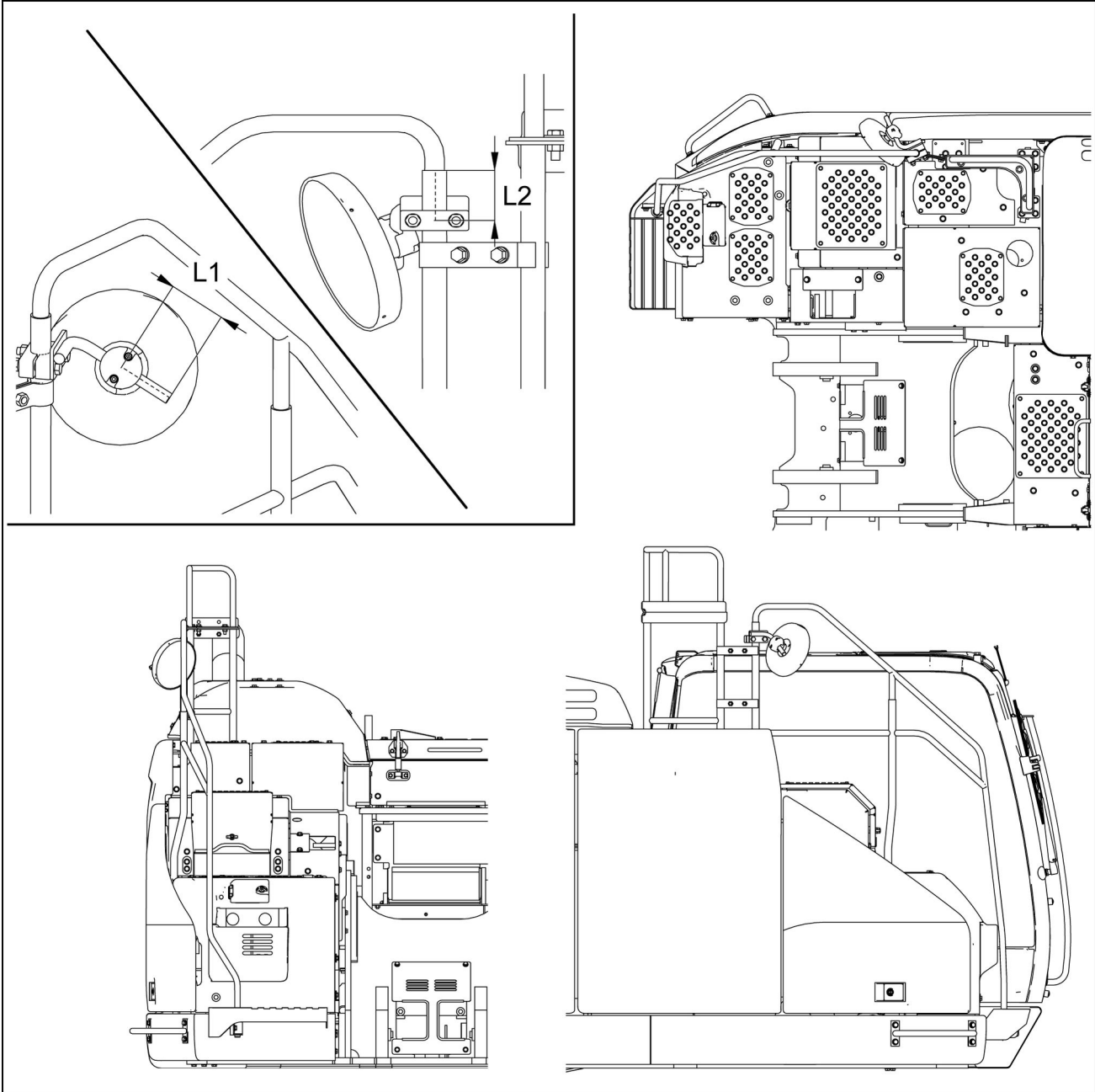
NOTICE: After installing and positioning all the mirrors, the visibility around the machine shall be checked from the operator's seat. Set the seat into the desired position, and make sure to confirm all the reference views in the mirrors. If necessary, fine tune the positioning of the mirrors in order to ensure proper visibility around the machine.

Right-front mirror (C)

The mirror shall be installed as shown in the picture.

The dimension (L1) is 95 mm (3.7 in).

The dimension (L2) is 80 mm (3.1 in).

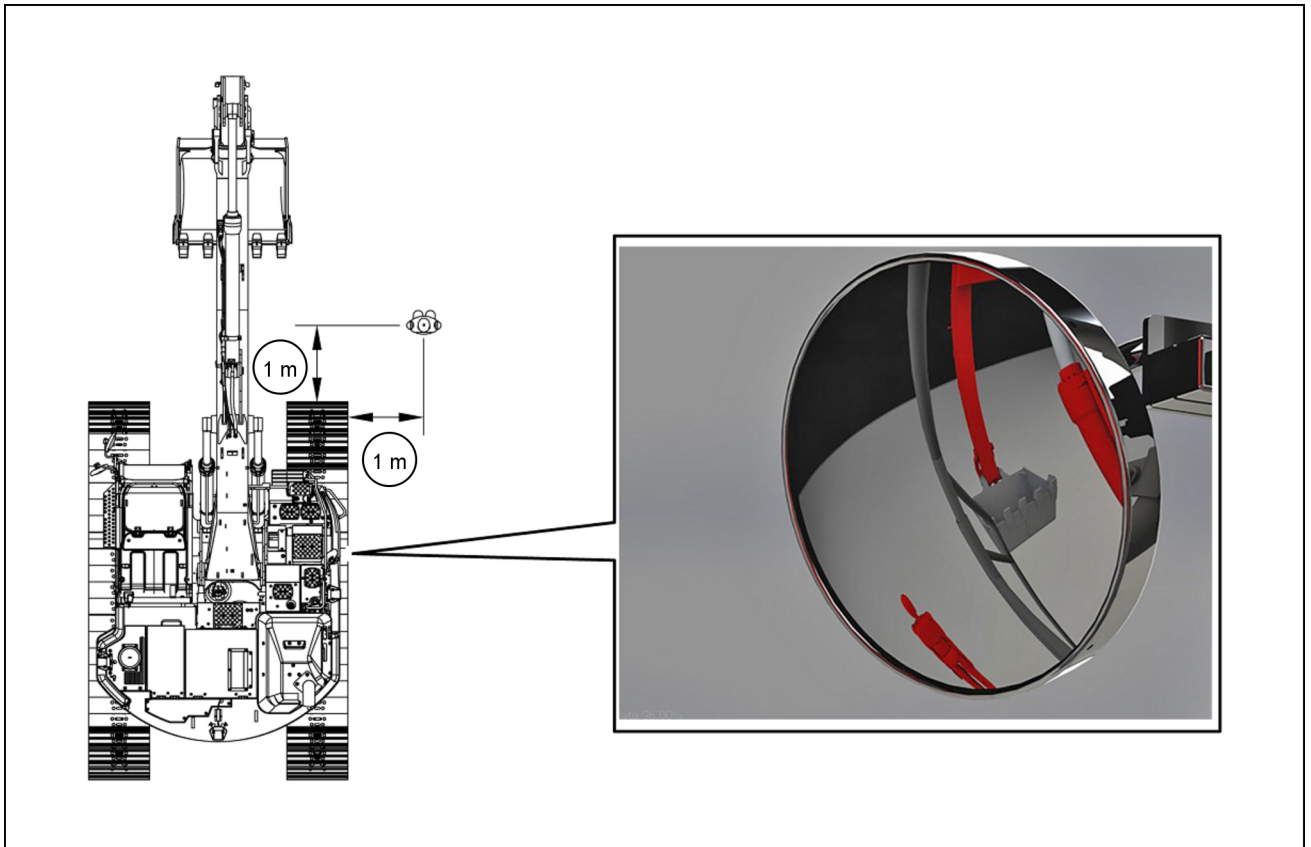


SML22CEX4045GA 7

The mirror shall be positioned according to the references shown in picture:

The side on the rear right of the machine shall be visible.

The area around a reference body positioned **1 m (39.4 in)** ahead from the edge of the right track and **1 m (39.4 in)** rightward the machine shall be visible.



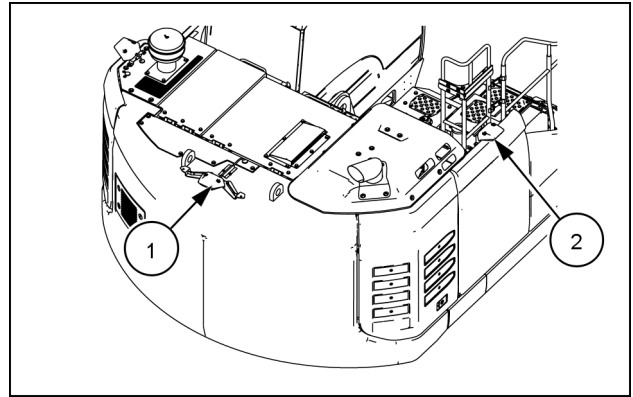
SMIL22CEX4046FA 8

NOTICE: After installing and positioning all the mirrors, the visibility around the machine shall be checked from the operator's seat. Set the seat into the desired position, and make sure to confirm all the reference views in the mirrors. If necessary, fine tune the positioning of the mirrors in order to ensure proper visibility around the machine.

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 fuel tank.

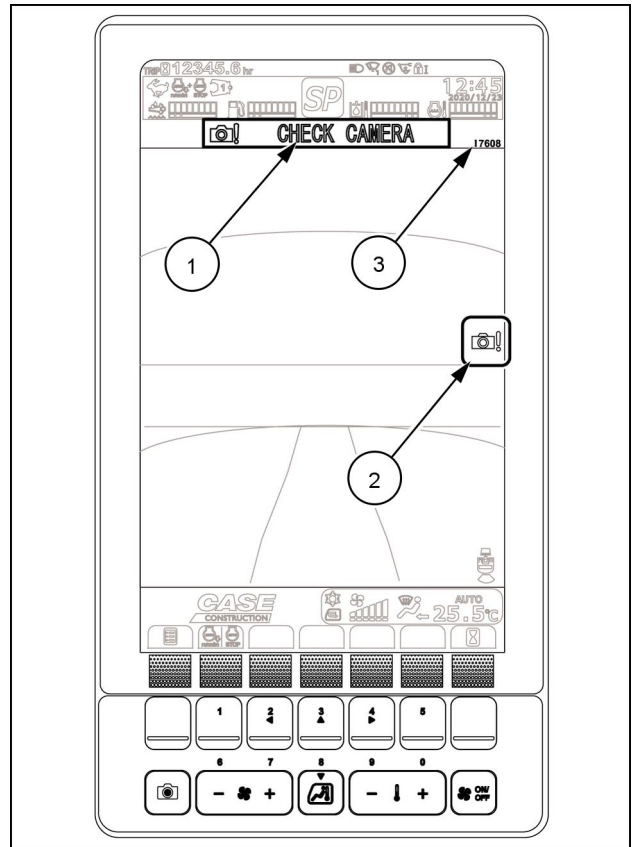


SMIL22CEX3977AA 1

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.

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.

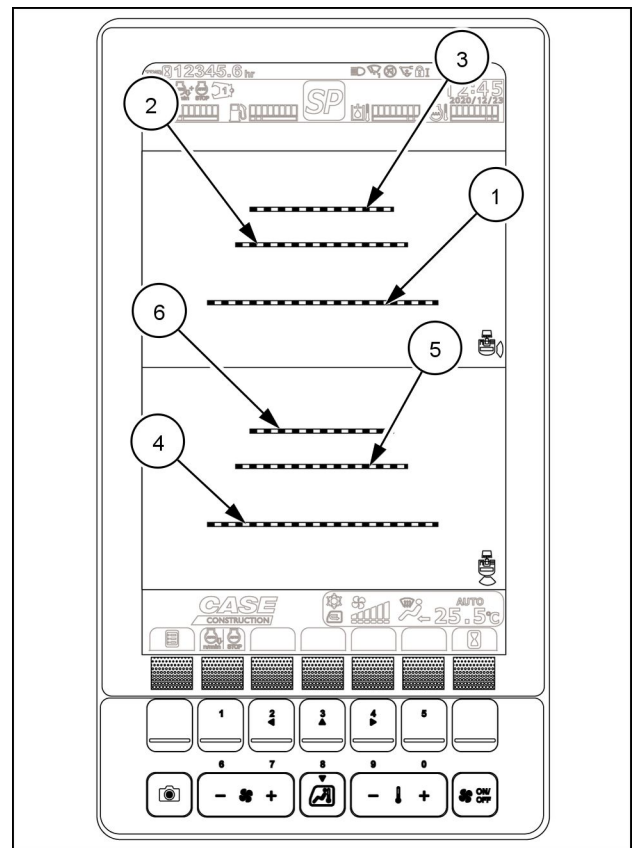


SMIL21CEX1404BA 2

Camera guidelines

Guidelines can be set up on the camera views in order to support a primary check of the area around the machine.

- (1) Guideline indicating a distance of about **1 m (39.37 in)** from the rear of the machine.
- (2) Guideline indicating a distance of about **2 m (78.74 in)** from the rear of the machine.
- (3) Guideline indicating a distance of about **3 m (118.11 in)** from the rear of the machine.
- (4) Guideline indicating a distance of about **1 m (39.37 in)** from the right-side of the machine.
- (5) Guideline indicating a distance of about **2 m (78.74 in)** from the right-side of the machine.
- (6) Guideline indicating a distance of about **3 m (118.11 in)** from the right-side of the machine.

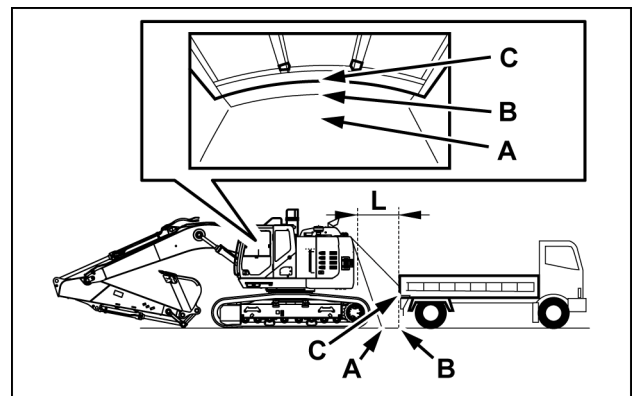


SMIL21CEX1405BA 3

Cautions for the rear view

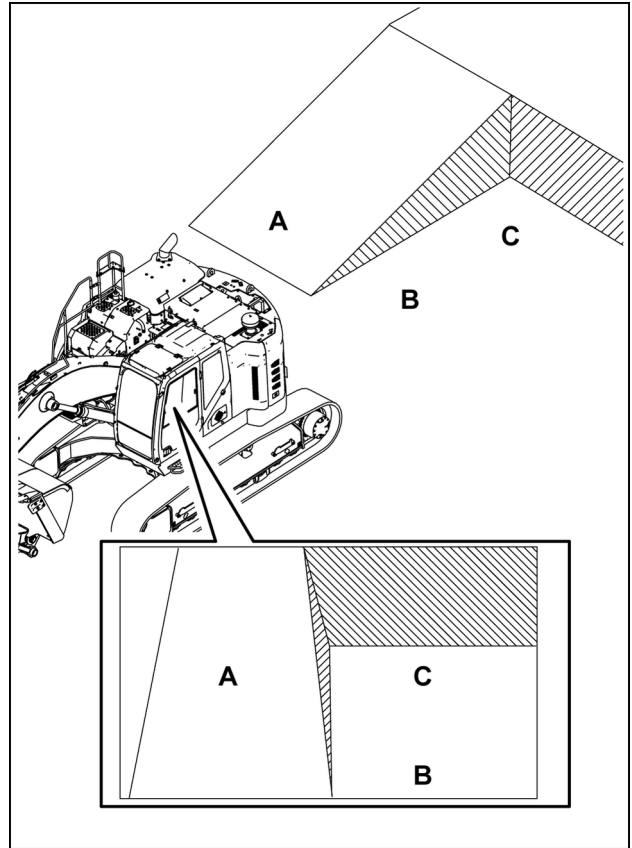
A distance guideline targets a planar object (e.g. the ground). Therefore, if a three-dimensional object with an overhang is approaching, in particular at low distance, the distance of the overhang is not displayed properly.

The picture provides an example. The machine gets rearward, and approaches an object at a distance (**L**) of about **1 m (3.3 ft)**: on the display, the overhang (**C**) of the object appears aligned to the position (**B**) on the ground. Actually, the position (**B**) on the ground is beyond the overhang (**C**) of the object: the overhang (**C**) is rather aligned to the position (**A**) on the ground. Therefore, there is a risk of collision between the machine and the object if the machine is backed referring to the position (**B**).



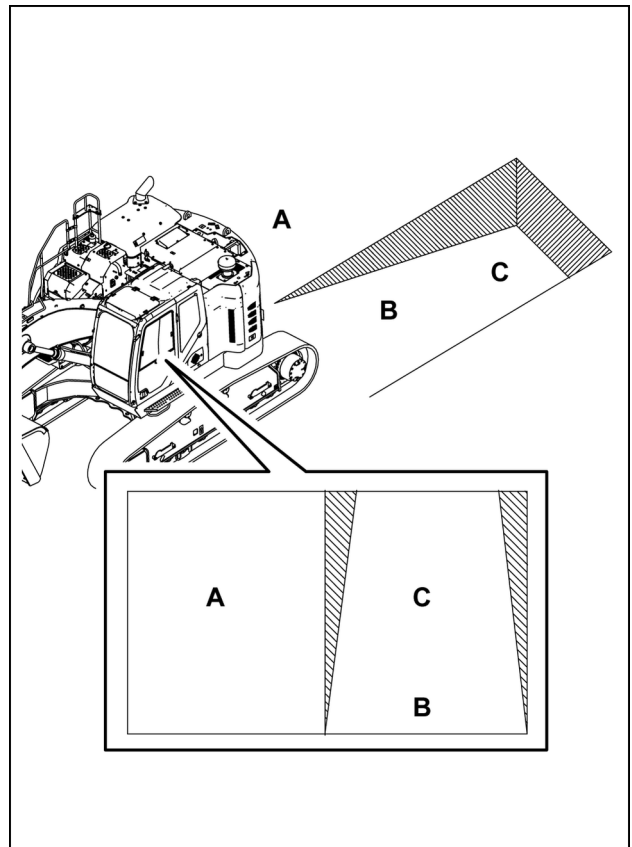
SMIL22CEX3978AA 4

Moreover, if the machine gets rearward and approaches an uphill road, an object in the position (A) appears aligned to the position (C) on the ground. Actually, the position (C) on the ground is beyond the position (A): the position (A) is rather aligned to the position (B) on the ground. Therefore, there is a risk of collision between the machine and the object if the machine is backed referring to the position (A).



SMIL22CEX3979BA 5

Similarly, if the machine gets rearward and approaches a downhill road, an object in the position (A) appears aligned to the position (C) on the ground. Actually, the position (C) on the ground is beyond the position (A): the position (A) is rather aligned to the position (B) on the ground. Therefore, there is a risk of collision between the machine and the object if the machine is backed referring to the position (A).

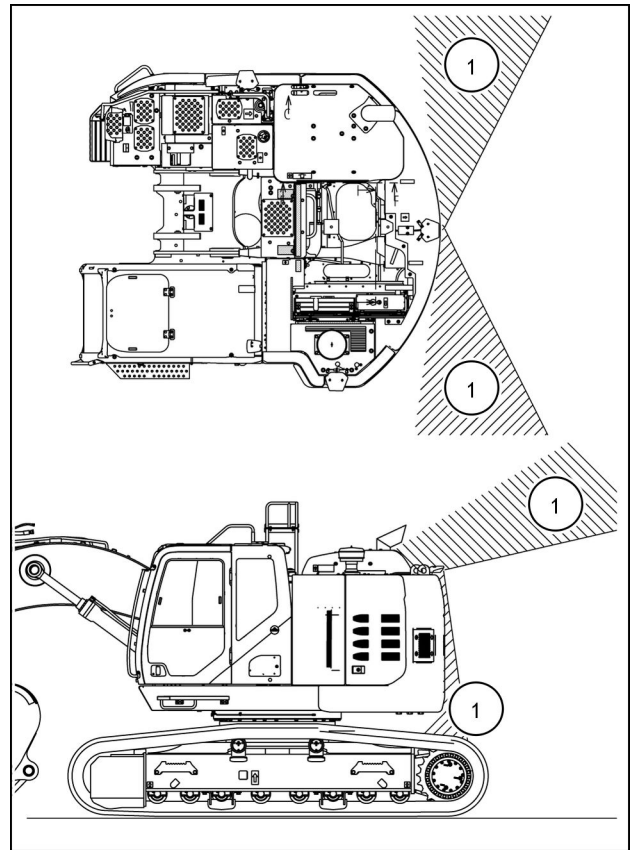


SMIL22CEX3980BA 6

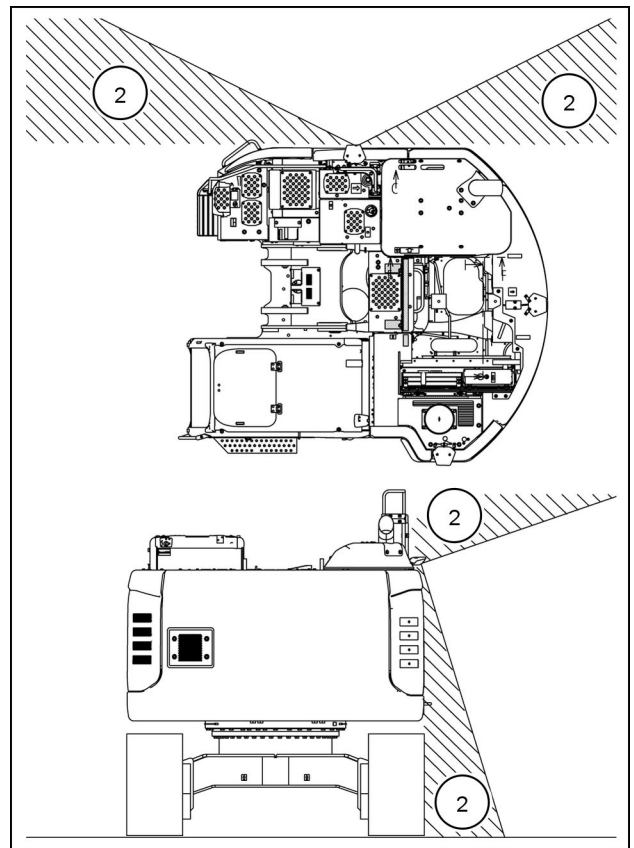
3 - CONTROLS AND INSTRUMENTS

The camera system has a range where no image is displayed (blind spots):

- (1) Range where no image from the rear camera is displayed.
- (2) Range where no image from the right-side camera is displayed.



SMIL22CEX3981BA 7



SMIL22CEX3982BA 8

Side doors

⚠ WARNING

Moving parts!

Make sure all entry and mechanical access doors are properly closed before operating the machine.
Failure to comply could result in death or serious injury.

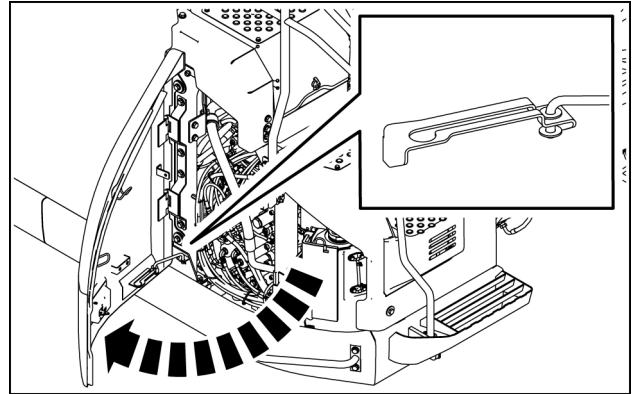
W0238A

Open the side doors until they are fixed by the stays. Close the side doors unlocking the stays. Make sure to close the doors firmly. Use the starter key to lock the doors.

Front right-hand door

The front right-hand door allows to access the compartment including the control valve and the fuel tank filler pump (if equipped).

NOTE: Never leave tools inside the compartment.

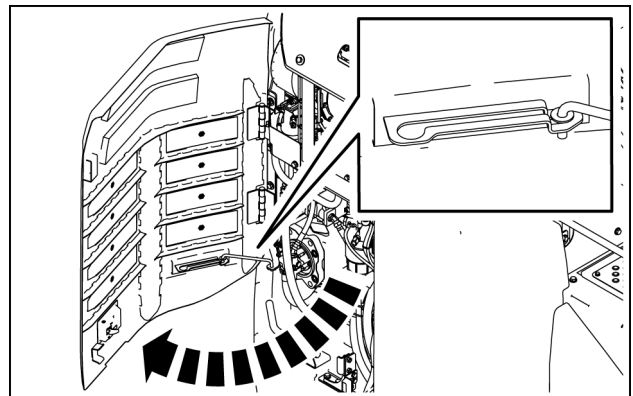


SMIL22CEX4511AA 1

Rear right-hand door

The rear right-hand door allows to access the compartment including the engine oil filter, the fuel filters, the fuel feed pump, the hydraulic pilot filter, the hydraulic accumulator and the hydraulic pump.

NOTE: Never leave tools inside the compartment.

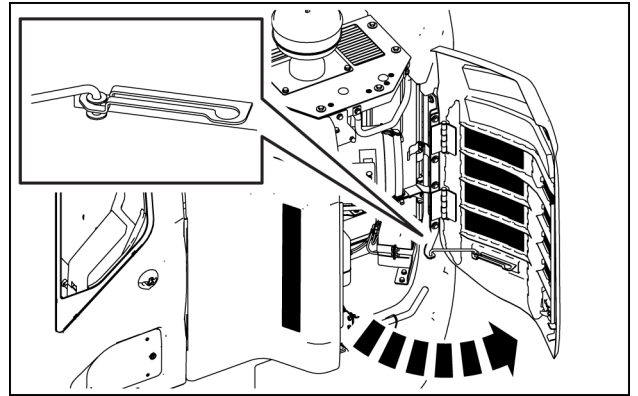


SMIL22CEX4512AA 2

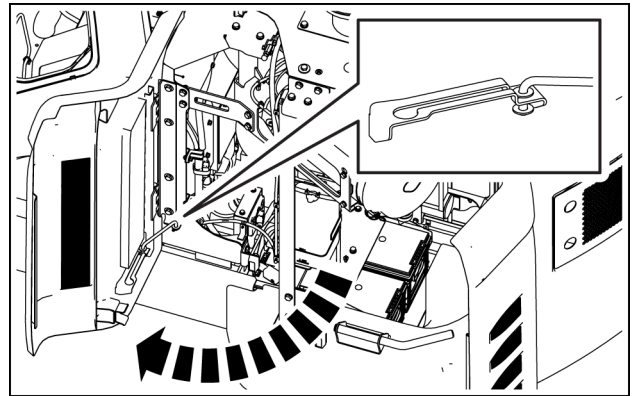
Rear left-hand doors

The rear left-hand doors allow to access the compartments including the radiators, the engine air filters, the batteries, the battery disconnect switch, the engine coolant reserve tank, the windshield washer reservoir, and the air conditioning condenser.

NOTE: *Never leave tools inside the compartment.*



SMIL22CEX4513AA 3



SMIL22CEX4514AA 4

Battery disconnect switch

⚠ WARNING

Electrical shock hazard!

Before you work on any part of the electrical system, disconnect the battery ground cable or turn the battery disconnect switch off (if equipped).

Complete all electrical work before you reconnect the cable.

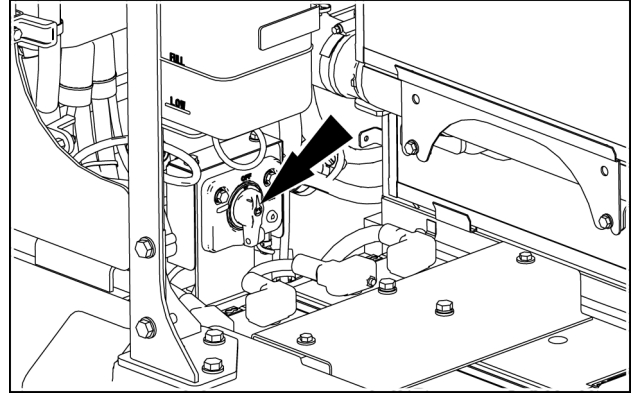
Failure to comply could result in death or serious injury.

W1393A

The battery disconnect switch is located near the batteries. It can thus be reached by opening the rear left-hand door.

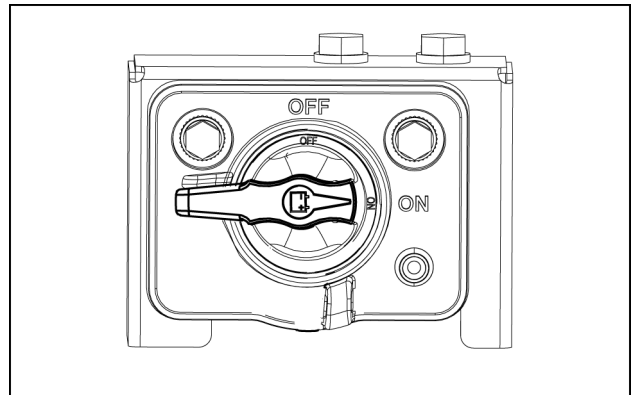
The battery disconnect switch allows to cut off any power supply in the electrical system of the machine.

NOTE: When the switch is turned to OFF position, the stations stored on the radio presets and the time set for the clock will be cleared.



SMIL22CEX4064AA 1

The battery disconnect switch should be in ON position for normal operation.



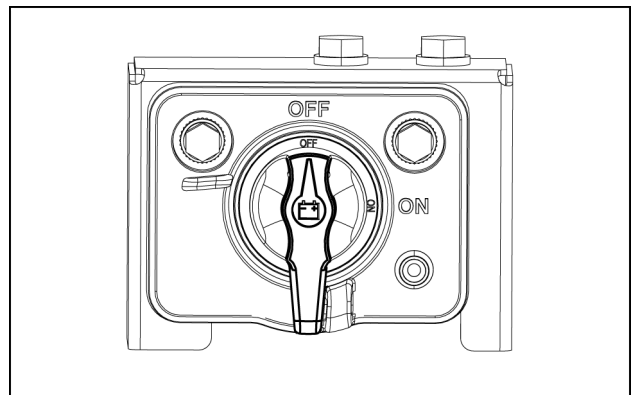
SMIL21CEX3163AA 2

The battery disconnect switch should be turned to OFF position only when the actions below must be done:

1. Service on the electrical system.
2. Batteries removal.
3. Long-term storage.

Before turning the battery disconnect switch to OFF position, make sure to park the machine and to stop the engine.

NOTICE: If the battery disconnect switch is turned to OFF position when the engine is running, the machine electrical system, the machine control system and the engine control system will be severely damaged.



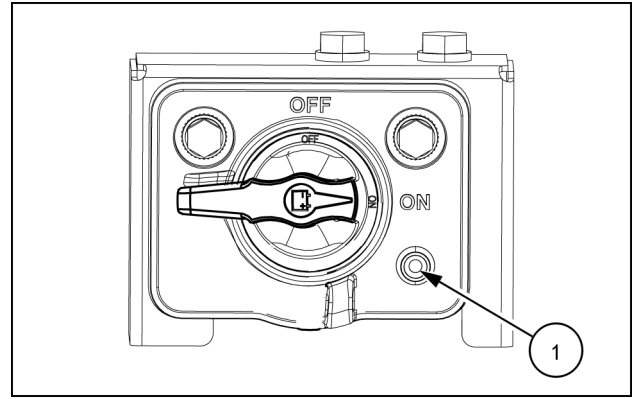
SMIL21CEX3162AA 3

The LED indicator **(1)** close to the battery disconnect switch is lit up in yellow as the main control systems are operating.

After the engine stop, the LED indicator will be active for some minutes. If the battery disconnect switch has to be turned to OFF position, wait the LED indicator **(1)** to turn off.

NOTICE: Never turn the battery disconnect switch to OFF position when the LED indicator **(1)** is lit up in yellow. The machine control system and the engine control system will be severely damaged.

NOTICE: The ATS system continues to operate for approximately **3 min** after the starter key is turned off in order to suck **DEF/AdBLUE®** back into the tank. **DEF/AdBLUE®** expands when freezing, and it will thus damage the lines of the ATS.



SMIL21CEX3163AA 4

Engine hood

⚠ WARNING

Unexpected machine movement!
Before you operate the machine, check that the engine hood is securely closed.
Failure to comply could result in death or serious injury.

W1486A

⚠ WARNING

Falling object hazard!
Risk of injury from FALLING ENGINE HOOD. Latch the hood in the fully open position prior to working within the engine compartment.
Failure to comply could result in death or serious injury.

W1090B

⚠ WARNING

Rotating parts!
Shut off the engine before opening the engine hood.
Failure to comply could result in death or serious injury.

W1059A

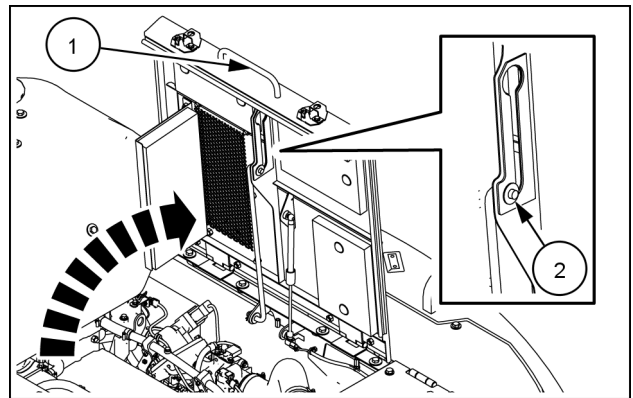
Opening

Unlock the latches with the starter key.

Disengage the latches, grab the hood handle (1), and raise the engine hood.

Follow the hood movement until the stay (2) reaches the end of the guide. The engine hood is thus fixed in the open position.

NOTICE: Do not open the engine hood during strong wind. The wind pressure on the hood surface will generate an excessive pushing force. Failing to comply may cause severe damage to the machine components, and serious injury to the operator.

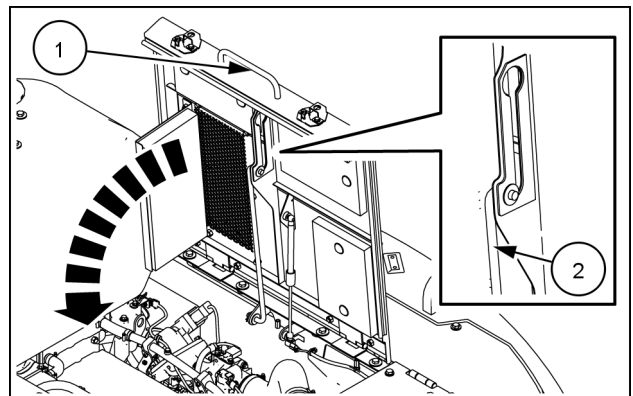


SMIL22CEX4507AA 1

Closing

Grab the hood handle (1) with the left hand, and the stay handle (2) with the right hand. Raise a little the engine hood, and lead the stay into the guide so to unlock it. Close the engine hood.

Engage the latches firmly, and lock them with the starter key.



SMIL22CEX4510AA 2

NOTE: follow the same procedures to open and close the radiator hood.

Lower panels

⚠ WARNING

Moving parts!

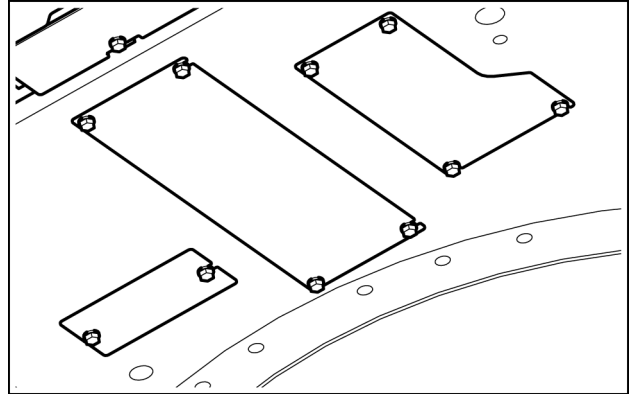
**Make sure the lower panels are properly closed before driving the machine.
Failure to comply could result in death or serious injury.**

W0910A

The lower panels are located on the bottom side of the upper frame.

The lower panels give access to the following maintenance points:

- Engine oil drain plug.
- Hydraulic tank drain valve.
- Fuel tank drain valve.
- Swing reduction unit oil drain plug.
- Engine coolant drain valve.
- **DEF/AdBLUE®** tank drain plug.
- Turntable bearing drain plug (located under the lower frame).



SMIL22CEX3983AA 1

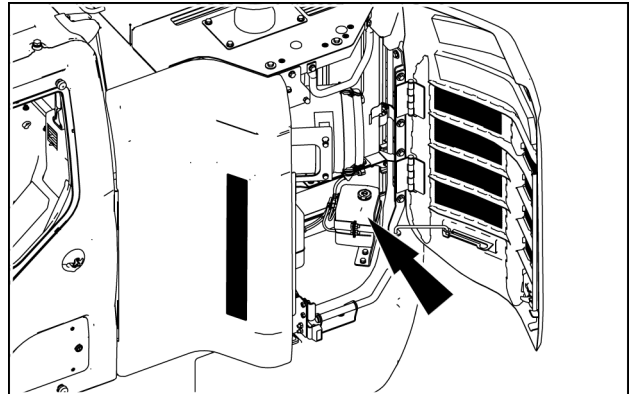
Windshield washer reservoir

The windshield washer reservoir is located inside the rear left-hand compartments behind the cab.

Make sure to check the reservoir level each day in order not to let the windshield washing fluid run out completely.

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

NOTE: In cold weather, add anti-freeze to the windshield washing fluid.



SMIL22CEX3984AA 1

Towing holes

⚠ WARNING

Misuse hazard!

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

Failure to comply could result in death or serious injury.

W0286A

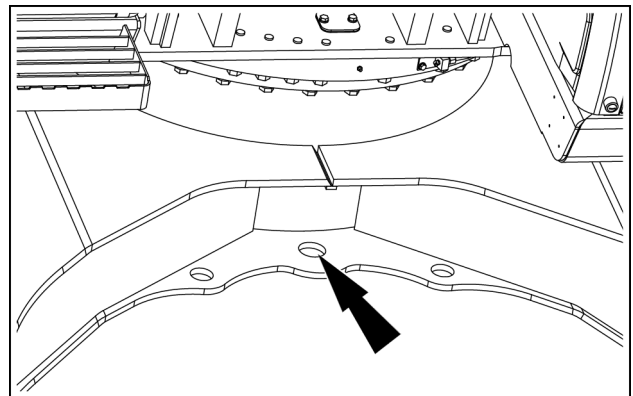
The towing holes are located at the front and rear of the undercarriage.

The towing holes are used to tow heavy objects, up to **10 t (22046.23 lb)**.

Make sure that the slings, chains and accessories are in perfect condition and can bear the load to be moved.

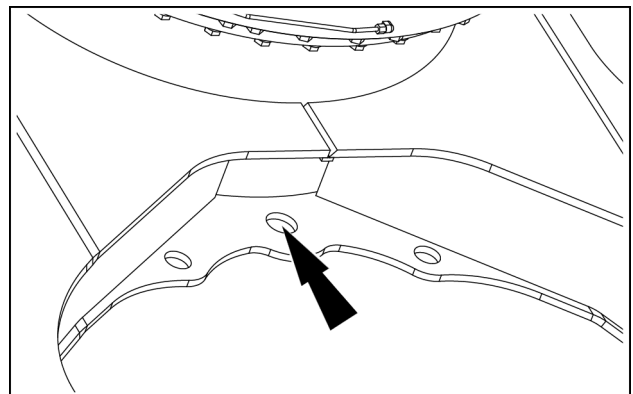
NOTICE: Towing must always be done in alignment with the undercarriage.

Front towing hole.



SMIL21CEX4999AA 1

Rear towing hole.



SMIL21CEX5005AA 2

Front storage box

⚠ WARNING

Moving parts!

**Make sure the storage box cover is closed properly before driving the machine.
Failure to comply could result in death or serious injury.**

W0288A

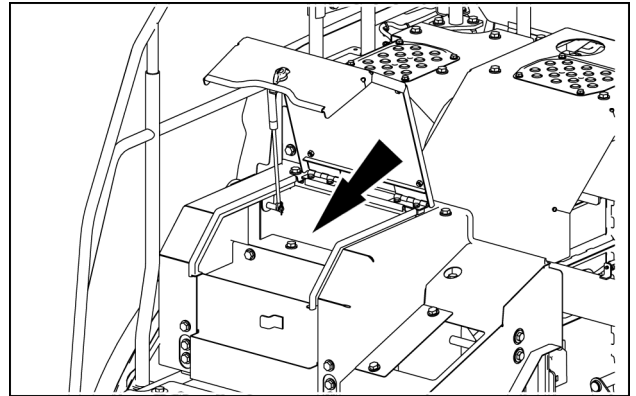
The storage box is located in the right front of the upper-structure. It is intended for storage of emergency tools and of small spare parts. The storage box also gives access to the fuel tank filler pump (if equipped) and to the right-hand working light.

Unlock the pushrod of the box cover with the starter key, and press the pushrod to open the box.

NOTE: The box cover is fitted with a gas strut. Open by hand to avoid damage to the machine.

Pull down the cover to close the box, and lock the pushrod of the box cover with the starter key.

NOTICE: Make sure to close and lock the box before starting machine operation. Leaving the box open can cause serious damages to the machine, and may cause serious injuries to the bystanders.



SMIL22CEX3985AA 1

Fire extinguisher

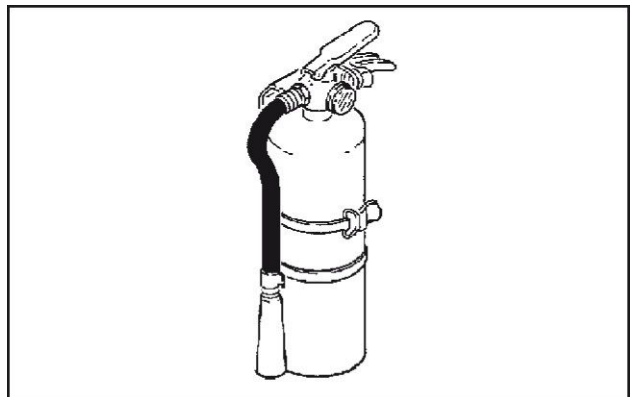
It is strongly recommended to have a fire extinguisher available and to keep it inside the front storage box.

Service specifications:

Every month: examine the fire extinguisher and make sure it is not damaged.

Every six months: have an approved specialist empty and refill the powder in the fire extinguisher.

Every year: have an approved specialist examine the fire extinguisher.



CS98M573TBP1 1

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.

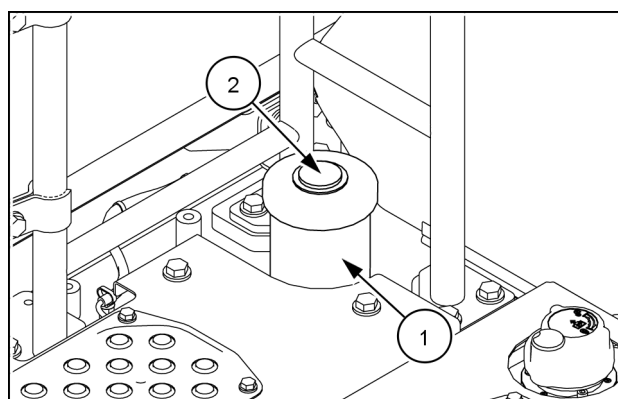
NOTICE: If the machine is operated in cold climate, fill the fuel tank at the end of each working day to prevent the formation of condensation.

To refill the fuel tank proceed as follows:

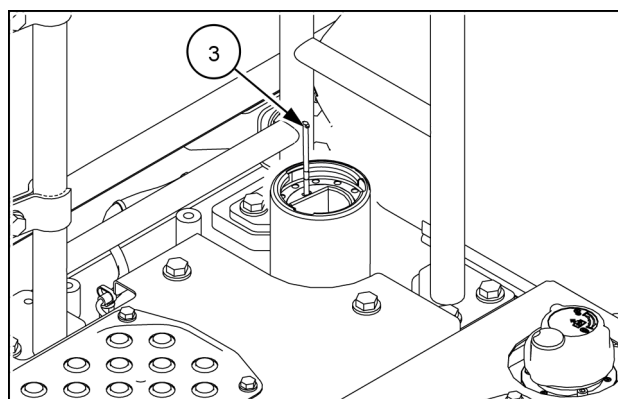
1. Stop the engine, and remove the starter key.
2. Get over the fuel tank. Clean the area around the fuel filler neck (1).
3. Slide the protective plate over the cap (2) of the fuel filler neck, and unlock the cap with the starter key.
4. Turn the cap (2) counterclockwise and open the filler neck.

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.



SMIL22CEX4058AA 1



SMIL22CEX4528AA 2

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.

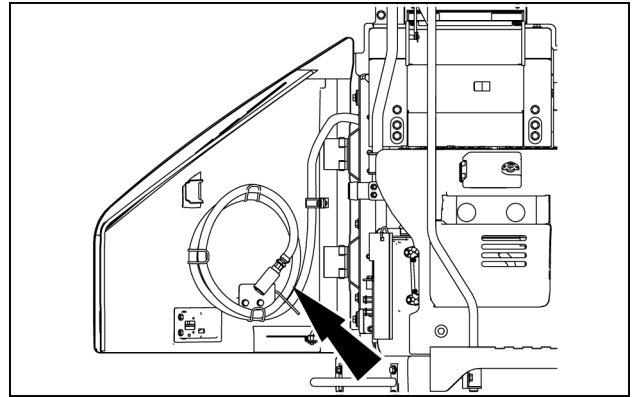
W0099A

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 compartment on the right front of the upperstructure. Use only for suitable fuel.

Park the machine on flat, horizontal ground, stop the engine and turn the starter key to ON position.

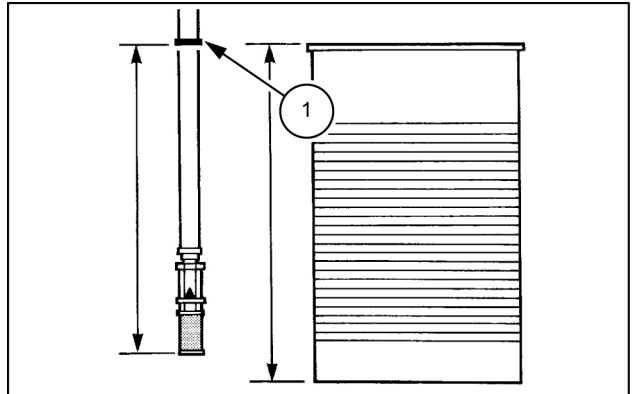
Take out the inlet hose from the front right-hand door.



SMIL22CEX3986AA 1

Measure the height of the drum and place the identification clamp (1) of the inlet hose at a length slightly less than that of the drum height.

Make sure that the end strainer of the inlet hose is correctly attached and then insert the inlet hose in the drum.



SMIL14CEX2515AB 2

Remove the fuel tank filler cap.

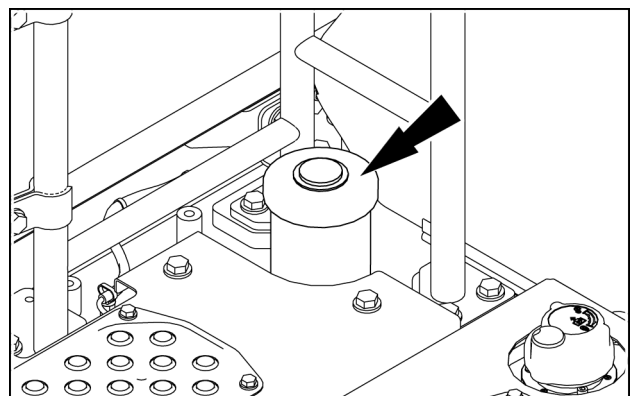
⚠ WARNING

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

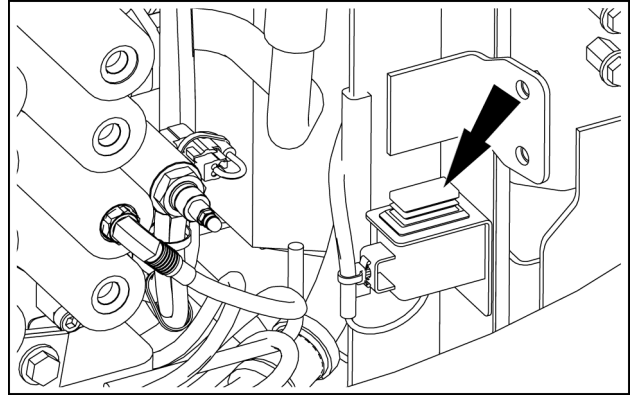


SMIL22CEX4058AA 3

Select the filling method using the selector switch located inside the compartment:

Auto mode: the pump stops filling automatically and the alarm sounds when the fuel tank is full.

Manual mode: monitor the filling from the fuel tank gauge. Stop when the fuel reaches the maximum level.



SMIL22CEX3988AA 4

Turn the main switch of the pump to ON position. Filling begins.

When the fuel tank is full, turn the main switch of the pump to OFF position. In Auto mode, the audible alarm device will cease to function.

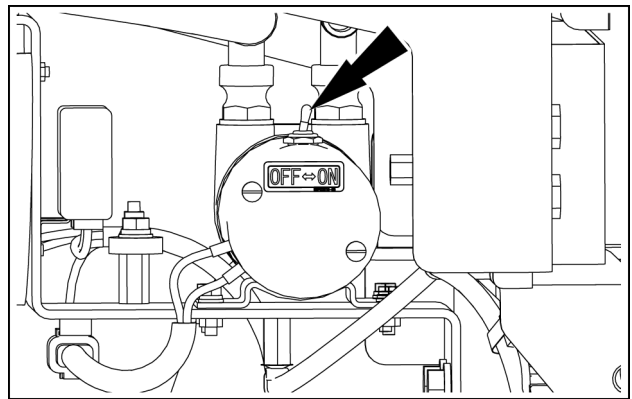
NOTE: It is possible to stop filling at any time by turning the main switch of the pump to OFF position.

Run the pump for a few moments to empty the pipe outside the drum. Clean and replace the inlet pipe in the front storage box.

Refit the fuel tank filler cap.

Turn the starter key to OFF position.

NOTE: The pump is equipped with a **10 A** fuse.

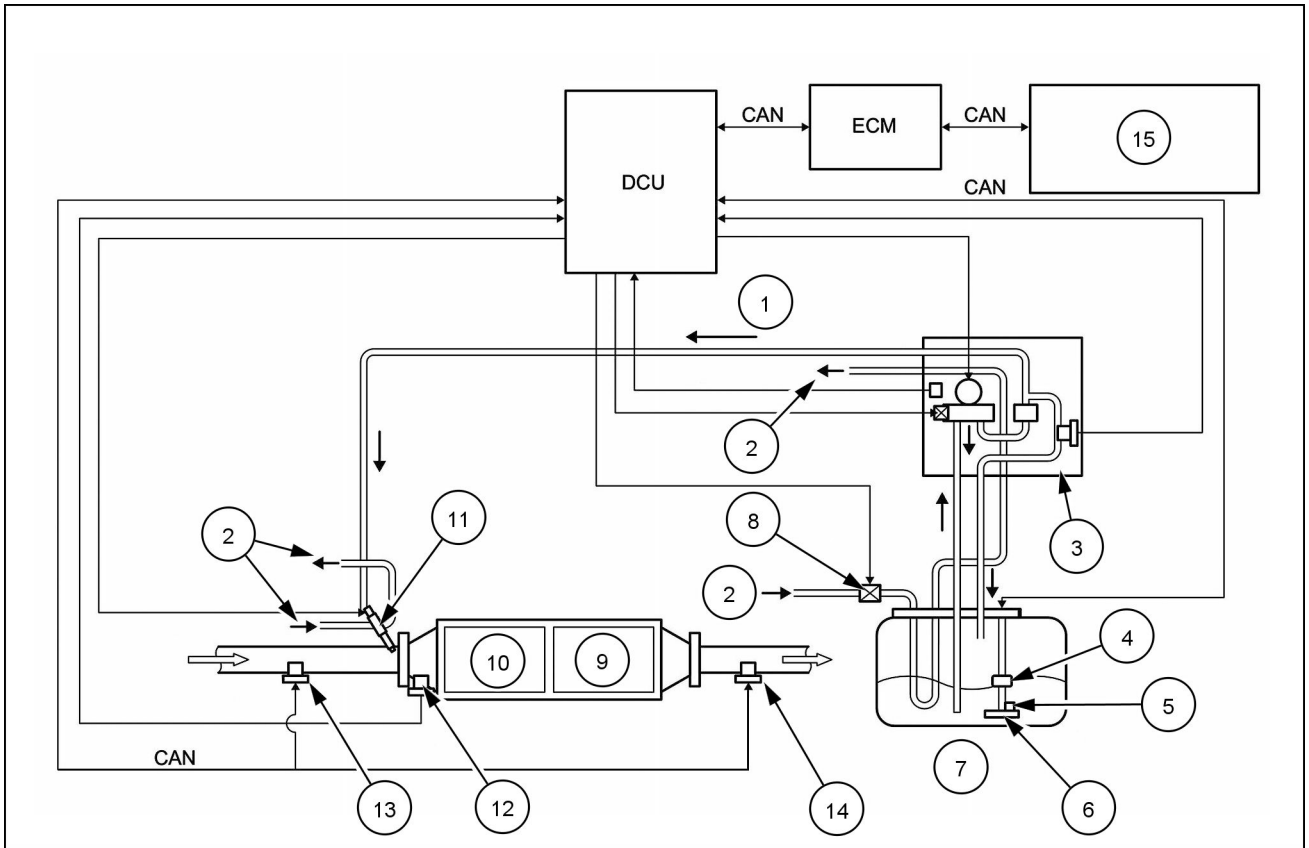


SMIL22CEX3989AA 5

After Treatment System

The After Treatment System converts NOx contained in the exhaust gas emitted from diesel engines into harmless nitrogen through a reduction reaction. This system facilitates the reaction in the SCR catalyst, using the DEF/AdBlue® that causes the reduction reaction.

Using the information sent by the engine control module (ECM), NOx sensors, etc., the dosing control unit (DCU) calculates the desired DEF/AdBlue® injection quantity, and then injects DEF/AdBlue® pressurized by the DEF/AdBlue® supply module, from the dosing module installed in the exhaust pipe. DEF/AdBlue® injected into the muffler is hydrolyzed to ammonia with heat of the exhaust gas, and the generated ammonia causes the reduction reaction with emitted NOx. Through this reaction, the ammonia decomposes the NOx into water and nitrogen, and reduces the amount of NOx.



SMIL22CEX4047FA 1

- | | |
|--|--|
| 1. DEF/AdBlue® | 9. Ammonia slip catalyst |
| 2. Engine coolant | 10. SCR catalyst |
| 3. DEF/AdBlue® supply module | 11. DEF/AdBlue® injector |
| 4. DEF/AdBlue® tank level sensor | 12. Exhaust gas temperature (EGT) sensor 3 |
| 5. DEF/AdBlue® quality sensor | 13. NOx sensor 1 |
| 6. DEF/AdBlue® tank temperature sensor | 14. NOx sensor 2 |
| 7. DEF/AdBlue® tank | 15. Warning lights, warning buzzer, DEF/AdBlue® tank gauge |
| 8. DEF/AdBlue® tank heater coolant control valve | |

NOTE: Monitor the level and add DEF/AdBlue® in advance, before the DEF/AdBlue® level becomes lower than **10%**.

NOTICE: Do not kick or hit the muffler. The oxidation catalyst in the muffler may get damaged.

NOTICE: Do not change the length or orientation of the exhaust pipe, muffler, or air cleaner line. The function of the ATS may be negatively affected. Do not remove or modify components of equipment related to the exhaust emission control system.

NOTICE: Do not touch the water released from the muffler. This water is slightly acidic due to the action of the oxidation catalyst built into the muffler. If the water from the muffler has come in contact with your skin, etc., rinse the affected area with ample water.

Refilling DEF/AdBlue®

The ATS requires the usage of **DEF/AdBlue®**. **DEF/AdBlue®** is stored into a specific tank installed on the machine.

Refill **DEF/AdBlue®** only after the related gauge on the display decreases.

NOTICE: *If the tank is always filled to the FULL level, the **DEF/AdBlue®** level sensor may be diagnosed as malfunctioning.*

NOTICE: *The **DEF/AdBlue®** actual consumption is highly dependent on engine loads, engine speed, ambient conditions.*

The recommended operating practice is to check **DEF/AdBlue®** level every time the fuel tank is being refilled, and to refill **DEF/AdBlue®** when four segments of the **DEF/AdBlue®** level gauge are lit.

Use only **DEF/AdBlue®** that complies with **ISO 22241-1**. **DEF/AdBlue®** is available from CASE CONSTRUCTION dealers, authorized **DEF/AdBlue®** dealers or truck stations.

NOTICE: ***DEF/AdBlue®** is a transparent liquid with no color. Never use **DEF/AdBlue®** featuring any color as this indicates poor quality of the fluid.*

NOTICE: *Do not put any fluid other than **DEF/AdBlue®** in the **DEF/AdBlue®** tank. If anything other than **DEF/AdBlue®** is put in the tank, the quality of **DEF/AdBlue®** will drop and lead to the "CHECK ATS" message. Never put diesel fuel or gasoline in the **DEF/AdBlue®** tank. Fire may occur, and the ATS will be damaged.*

It is recommended to use a **DEF/AdBlue®** filling equipment having a fill nozzle/pump with the proper length and diameter, triggered by the magnet in the tank filler neck and with overflow flow cut out. This will ensure that:

- The screen in the filler neck will not be damaged.
- Impurities are not entering the **DEF/AdBlue®** tank. The standardized **DEF/AdBlue®** nozzle matches the filler neck diameter.
- The **DEF/AdBlue®** tank is not overfilled, as the **DEF/AdBlue®** pump will stop when the **DEF/AdBlue®** tank is full.

NOTICE: *Refilling with a funnel is not recommended as this may lead to damage of the screen in the filler neck.*

Follow the steps below to add **DEF/AdBlue®**:

1. Stop the engine and remove the starter key. Wait **5 min** for ATS to completely suck **DEF/AdBlue®** back into the tank.
2. Unlock the front right-hand door **(1)** with the starter key. Open the door until it is fixed by the stay.
3. Unlock the **DEF/AdBlue®** tank cover **(2)** with the starter key. Turn the cover handle, and draw open the cover leftward.
4. Wipe the inlet on the **DEF/AdBlue®** tank clean of dirt, mud, and foreign objects.

NOTICE: some white powder deposits may form when **DEF/AdBlue®** adheres and dries in places such as the supply inlet. Wipe off these deposits to prevent them from entering the **DEF/AdBlue®** tank.

5. Turn the **DEF/AdBlue®** tank cap **(3)** counterclockwise and open the filler neck.

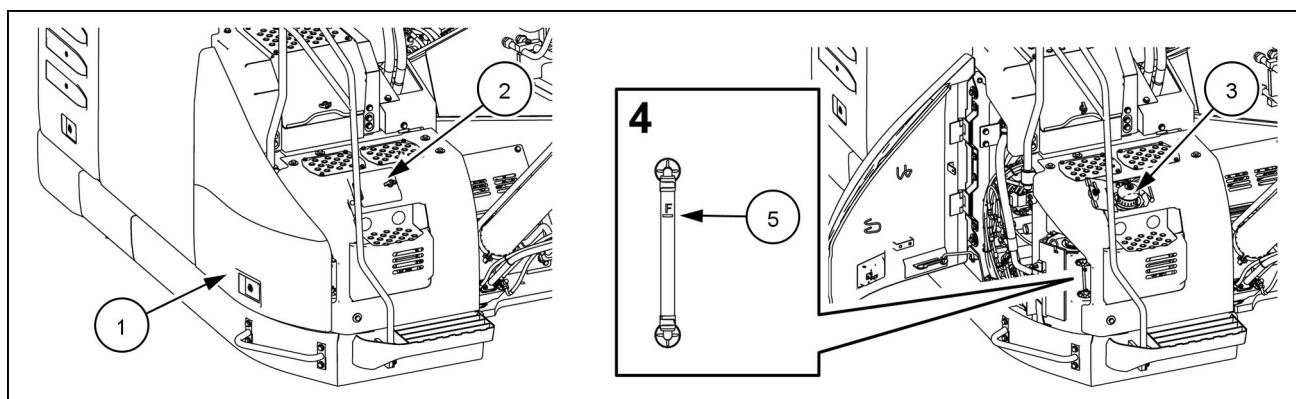
NOTICE: **DEF/AdBlue®** may emit an odor when the tank cap is opened. Do not attempt to smell inside the tank from the supply inlet.

6. Refill up to the F (upper limit) mark **(5)** on the level gauge **(4)**.

NOTICE: never refill **DEF/AdBlue®** over the F (upper limit) mark on the level gauge. Adequate air volume must be present in the top of the tank for proper functionality of the ATS.

NOTICE: if **DEF/AdBlue®** spills while adding, wipe off the spillage with a cloth and then rinse the area with fresh water. **DEF/AdBlue®** will cause corrosion on painted and unpainted metallic surfaces, and may distort some plastic and rubber components.

7. Install the **DEF/AdBlue®** cap **(3)** on the filler neck. Turn the cap clockwise to close the filler neck.



SMIL22CEX3990EA 2

1. Front right-hand door
2. **DEF/AdBlue®** tank cover
3. **DEF/AdBlue®** tank cap
4. Upper limit level of **DEF/AdBlue®** to be refilled.

NOTE: The level gauge on the **DEF/AdBlue®** tank is showing just whether the tank is already full (indicated as the mark with "F") or not. As for the remaining **DEF/ADBLUE®** amount to the tank, refer to the gauge level shown on the monitor.

ATS (operation explanation)

If a problem occurs in the ATS, the machine displays a text message according to the problem type, prompting the operator to take necessary actions.

- "REFILL DEF" message: The **DEF/AdBlue®** level is lower than the required level.
- "CHECK ATS" message: The ATS is not working.

Operations will be restricted until necessary actions are taken. If no measures are taken, operations will be even more restricted and the engine can only run at idle. Refer to the explanation below and take necessary actions immediately.

"REFILL DEF" Message (DEF/AdBlue® level is lower than required level)

When the **DEF/AdBlue®** level becomes lower than **10%**, a warning buzzer sounds (once for **5 s**) and the machine enters the state shown in **(B)**.

The text message (REFILL DEF) and the REFILL DEF icon are displayed. The DEF/AdBlue® level gauge turns orange.

This message prompts the operator to add **DEF/AdBlue®**. Ensure that **DEF/AdBlue®** is added before this message is displayed.

If the **DEF/AdBlue®** level becomes lower than **5%**, a warning buzzer sounds (5 times for **1 s** intermittently) and the machine enters the state shown in **(C)**.

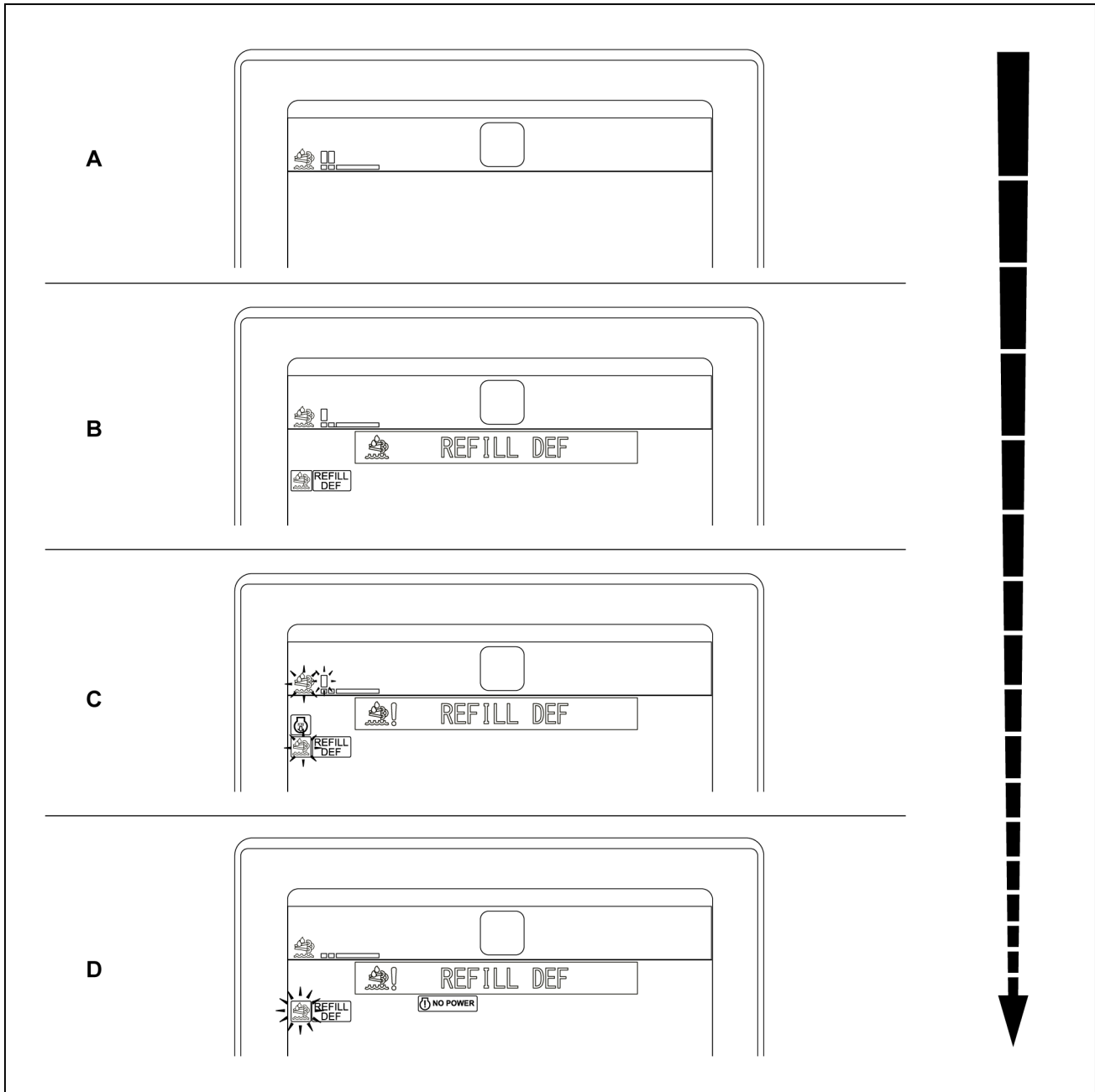
The engine output reduction icon is added on the display and the text messages (!REFILL DEF) is displayed. The left portion of the REFILL DEF icon and the **DEF/AdBlue®** level gauge start flashing.

In this condition, operations are restricted. The engine output is reduced to **75%**.

When the DEF/AdBlue® level reaches **0%**, a warning buzzer sounds (continuously for **1 s** intermittently) and the machine enters the state shown in **(D)**.

The machine will display an additional message icon (NO POWER), the flashing speed of the left portion of the REFILL DEF icon will increase, and the **DEF/AdBlue®** level gauge will turn red.



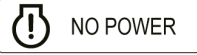



In this condition, machine operation is limited further. The engine output is reduced to **60%**, and the engine speed will be fixed at idling speed.



SML22CEX4037GA 3

- (A) Normal condition
- (B) Warning to the operator
- (C) Moderate inducement
- (D) Severe inducement

3 - CONTROLS AND INSTRUMENTS

		(A)	(B)	(C)	(D)
DEF/AdBlue® level		10% or more	Less than 10%	Less than 5%	0%
Engine output		Normal	Normal	75%	60%
Engine speed		Unaffected	Unaffected	Unaffected	Idling speed
Level gauge	Segments	2 or more	1	1 (flashing)	0
	Color	White	Orange	Orange (flashing)	Red
REFILL DEF icon		None	Steady	Flashing	Fast flashing
Engine output reduction icon		None	None	Displayed	None
NO POWER message icon		None	None	None	Displayed
Warning buzzer sound		None	Once for 5 s	5 times for 5 s intermittently	Continuously for 1 s intermittently
Text message		None			

"CHECK ATS" Message (ATS needs to be repaired)

When the system judges that the ATS is failing to meet the requirements of the exhaust emission regulation due to factors other than remaining **DEF/AdBlue®**, the machine will go into condition **(B)** and a diagnostic trouble code will be displayed.

The diagnostic trouble code determines how the problem should be handled. If the diagnostic trouble code P207F is displayed then the system detects the **DEF/AdBlue®** quality is not good enough for the system to work.

Completely drain the **DEF/AdBlue®** tank (refer to page **6-90**). Fill the tank with **DEF/AdBlue®** that complies with the quality requirements.

If any other code is displayed you should stop the engine and contact your local dealer or the certified service plant.

When the system judges that the ATS is failing to meet the requirements of the exhaust emission regulation, the machine will go into condition **(B)** with warning buzzer (Sounds once for **5 s**).

The **DEF/AdBlue®** icon, the message icon (EXH.SYSTEM), the text message (CHECK ATS), and the text message (CHECK ENGINE) are displayed. The purpose is to prompt the operator to take the required actions.

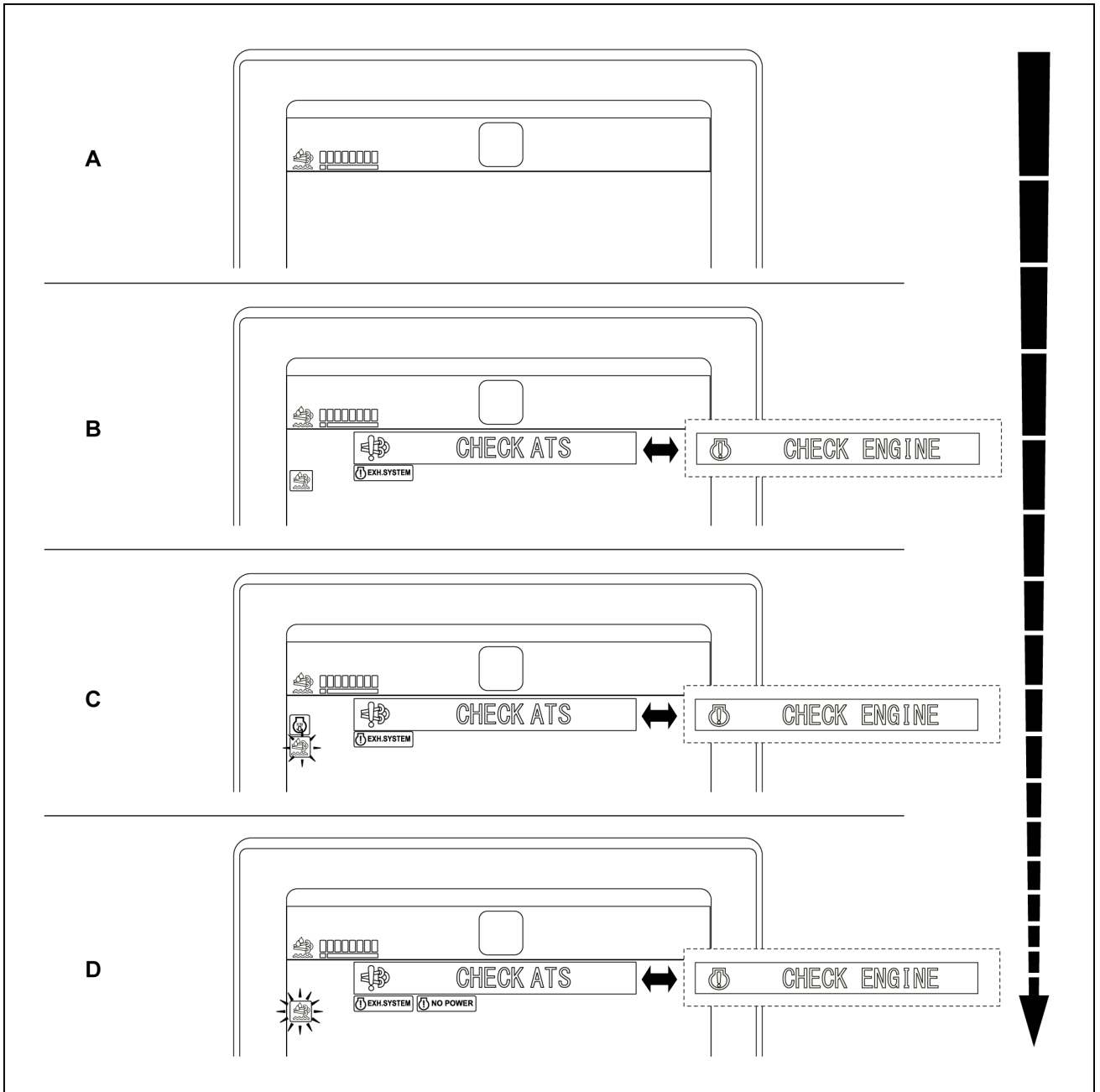
Write down the error code, and contact our dealer or authorized service shop.

If 3 hours have passed in condition **(B)** without any measure taken, the machine goes into condition **(C)** with warning buzzer (Sounds 5 times for **1 s** intermittently).

The engine output reduction icon is displayed and the **DEF/AdBlue®** icon will start to flash. In this condition, machine operation is limited. The engine output is reduced to **75%**.

If 30 more minutes pass in condition **(C)** without any measure taken, the machine will go into condition **(D)** with warning buzzer (Sounds continuously for **1 s** intermittently).











This machine displays the additional message icon (NO POWER). Also, the flashing speed of the **DEF/AdBlue®** icon increases. In this condition, machine operation is limited further. The engine output is reduced to **60%** and only idling is allowed.



SMIL22CEX4036GA 4

- (A) Normal condition
- (B) Warning to the operator
- (C) Moderate inducement
- (D) Severe inducement

3 - CONTROLS AND INSTRUMENTS

		(A)	(B)	(C)	(D)
DEF/AdBlue® quality abnormality / ATS system abnormality		—	Detection	3 h from state (B)	30 min from state (C)
Engine output		Normal	Normal	75%	60%
Engine speed		Unaffected	Unaffected	Unaffected	Idling speed
Level gauge	Color	White	White	White	White
DEF/AdBlue® icon		None	Displayed	Flashing	Fast flashing
Engine output reduction icon		None	None	Displayed	None
NO POWER message icon		None	None	None	Displayed
EXH. SYSTEM message icon		None	Displayed	Displayed	Displayed
Warning buzzer sound		None	Once for 5 s	5 times for 1 s intermittently	Continuously for 1 s intermittently
Text message		None			
					

ATS Detects Repeat Problem

There is mandatory control required by law for the purpose of preventing attempts to avoid the operational limitations.

If any of the following occurs again within **40 h** after completion of repair or **DEF/AdBlue®** replacement, the system immediately starts to limit machine operations:

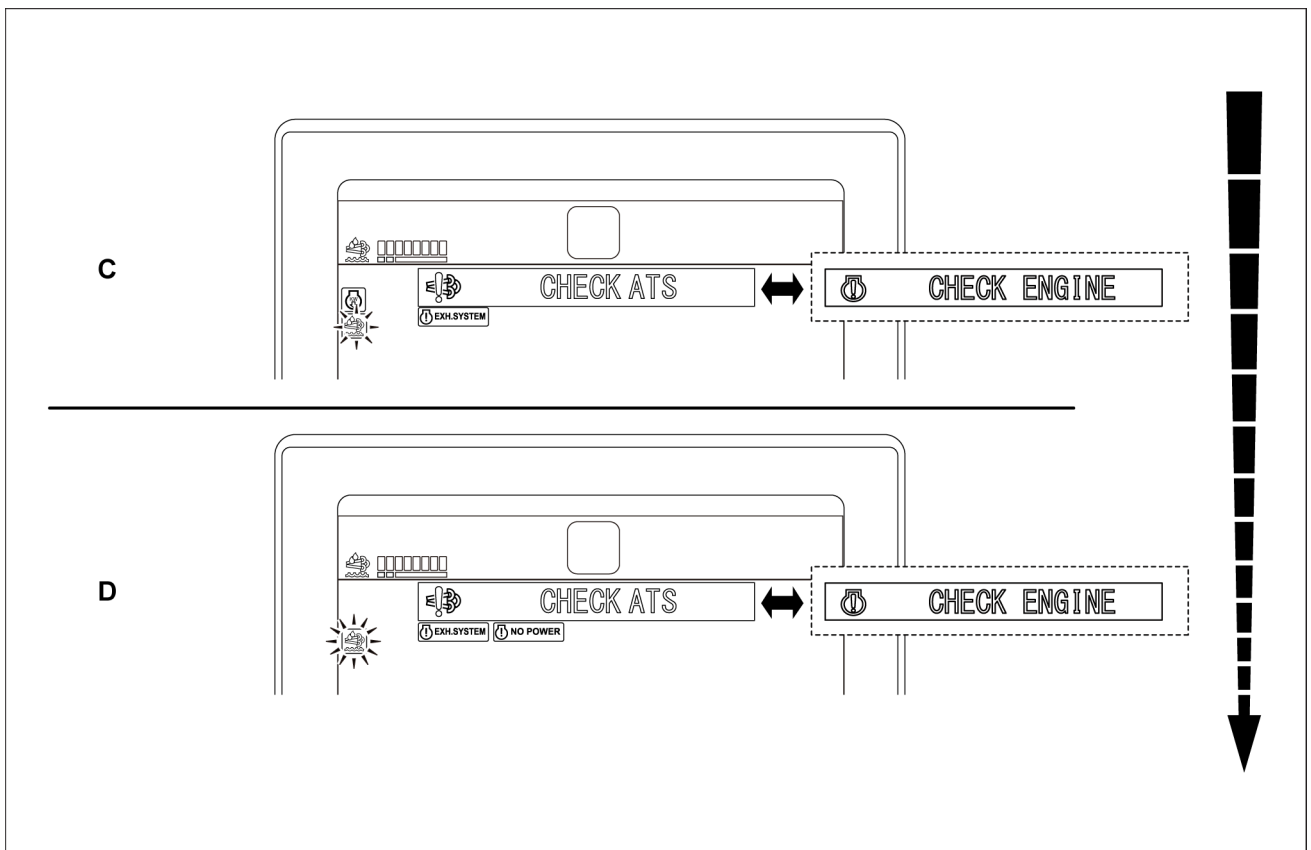
- An ATS abnormality is detected and the detection lasts for **10 s**.
- The quality of **DEF/AdBlue®** is abnormal and the detection lasts for **10 s**.

If an abnormality is detected, the machine enters the state **(C)** immediately.

The engine output reduction icon is displayed and the **DEF/AdBlue®** icon will start to flash. In this condition, machine operation is limited. The engine output is reduced to **75%**.

If **30 min** or more have elapsed in the state **(C)** without any action, the machine enters the state **(D)**.

The machine displays the additional message icon (NO POWER). Also, the flashing speed of the **DEF/AdBlue®** icon increases. In this condition, machine operation is limited further. The engine output is reduced to **60%**, and the engine speed will be fixed at idling speed.



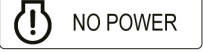







SMIL22CEX4051FA 5

(C) Moderate inducement

(D) Severe inducement

3 - CONTROLS AND INSTRUMENTS

		(C)	(D)
After completion of repair or DEF/AdBlue® replacement, detection status of abnormality in ATS system is detected within 40 h		10 s since the abnormality is detected	30 min passed since (C)
Engine output		75%	60%
Engine speed		Unaffected	Idling speed
DEF/AdBlue® icon		Flashing	Fast flashing
Engine output reduction icon		Displayed	None
NO POWER message icon		None	Displayed
EXH.SYSTEM message icon		Displayed	Displayed
Warning buzzer sound		5 times for 1 s intermittently	Continuously for 1 s intermittently
Text message			
			

OUTPUT REDUCTION CANCEL

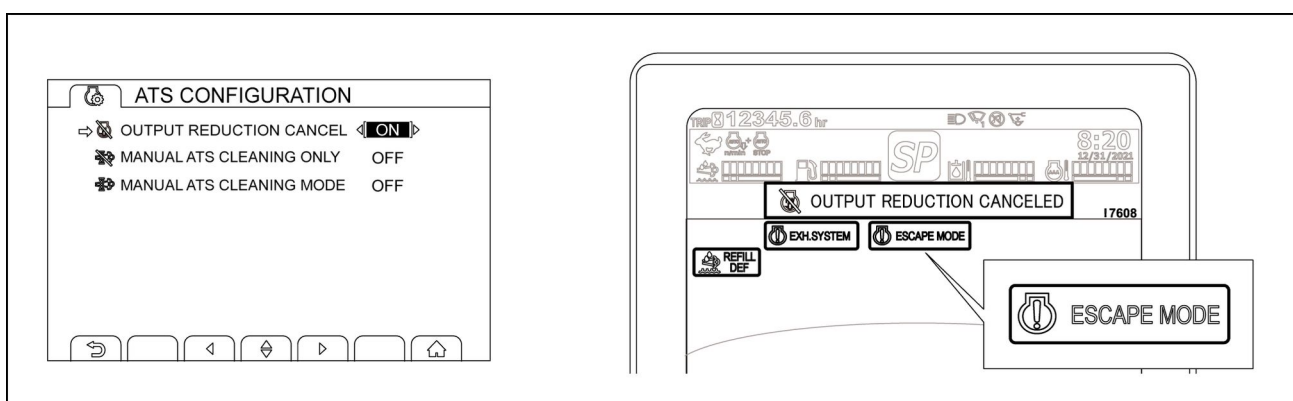
The machine is equipped with a function that overrides the engine output reduction due to "REFILL DEF" warning and "CHECK ATS" warning for just **30 min** to address an emergency situation, such as avoiding danger.

Use this function only in an emergency, and after using it, make sure to refill **DEF/AdBlue®** and/or take the actions needed, immediately.

Follow the steps below to enable output reduction cancel:

With the machine in condition **(C)**, set the function OUTPUT REDUCTION CANCEL to "ON" in the ATS CONFIGURATION tab of the user information mode.

- The message icon (ESCAPE MODE) and the text message (OUTPUT REDUCTION CANCELED) are displayed. In this condition, the limitation on engine output is cancelled for just **30 min**.
- This function is NOT available in condition **(D)** (engine output is reduced to **60%** and only idling is allowed).
- After **30 min**, the output will be limited again if the required actions are not taken.



SMIL22CEX4038EA 6

ATS Cleaning

The After Treatment System performs ATS cleaning at certain operating hour intervals to maintain its function.

Comply with the following instructions in order to prevent a decreased function of the ATS and damage to the components. Also, do not turn off the engine during ATS cleaning.

- Always use the recommended engine oil.
- Always use the recommended fuel.
- Always use the recommended **DEF/AdBlue®**.

Always place the excavator in a well-ventilated location during automatic or manual ATS cleaning.

NOTICE: Check that the engine hood is securely closed. If the engine hood is not closed, the insulation and other materials in the engine hood may melt due to the exhaust gas generated during automatic ATS cleaning, which may damage the excavator.

NOTICE: Put the machine into the transport position during manual ATS cleaning

ATS CLEANING icon

During AUTO ATS CLEANING, icon is displayed to indicate the status of the operation. According to the ATS CLEANING status, the color and display pattern will be changed.

NOTICE: Do not leave the excavator unattended during AUTO ATS CLEANING.

NOTICE: Keep away from and do not touch the ATS component, exhaust pipe, tail pipe and the exhaust gas when the engine is running, during ATS CLEANING and immediately after the ATS CLEANING process. Their temperatures may get high enough to burn people, ignite or melt materials.

NOTICE: During AUTO ATS CLEANING, make sure that the machine are away from any flammable and explosive. Those flammables such as dried grass, paper scraps and any easily burned material near the machine could cause a fire. Stop the engine while inspecting and carrying out maintenance on machine. Those activities during AUTO ATS CLEANING can result in serious personal injury.

AUTOMATIC ATS CLEANING

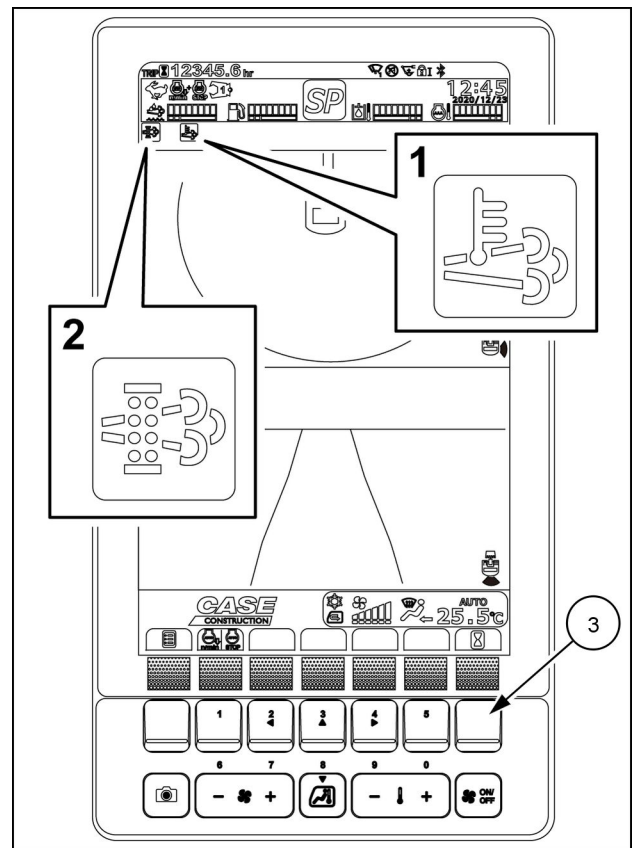
The excavator can and should be operated during automatic ATS cleaning. The load from the excavator in operation helps reduce the time for automatic ATS cleaning.

Automatic ATS cleaning is performed automatically every **30 h** and does not require any operator interaction.

The high temperature exhaust icon **(1)** and ATS cleaning icon (green) **(2)** are displayed and an alarm sounds for about **2 s**.

Automatic ATS cleaning starts when the machine meets the following conditions:

- The engine coolant temperature is higher than **70 °C (158 °F)**.
- The engine coolant temperature is lower than **90 °C (194 °F)**.



SMIL21CEX3145BA 7

Automatic ATS cleaning takes about **10 min**. The duration of automatic ATS cleaning varies with outside air temperature, engine coolant temperature, and engine load. When the outside air temperature and engine coolant temperature are low, the automatic ATS cleaning takes longer to be completed.

When the auto ATS cleaning completes, the high temperature exhaust icon **(1)** and the ATS cleaning icon **(2)** disappears.

Automatic ATS cleaning stops in the following situations:

- The ATS cleaning switch **(3)** is pressed by the operator. The ATS cleaning icon disappears and the message PUSH ATS SWITCH TO ACTIVATE is displayed. Pressing the ATS cleaning switch **(3)** again will resume the process.
- The coolant temperature drops below **65 °C (149 °F)**. When the engine coolant temperature is above the **70 °C (158 °F)**, the automatic ATS cleaning will be resumed.
- The coolant temperature rises above **100 °C (212 °F)**. Lower the engine speed throttle to idle and check the coolant temperature. When the engine coolant temperature drops below **90 °C (194 °F)**, the automatic ATS cleaning will be resumed.

NOTE: Do not continue operating the machine with automatic ATS cleaning stopped. If you continue operating the machine, it can damage the ATS system. Resume automatic ATS cleaning as soon as possible. If automatic ATS cleaning is stopped or remains uncompleted for **8 h**, the ATS cleaning icons flashes in orange and manual ATS cleaning is requested.

NOTICE: If you operate the excavator as usual when the ATS cleaning icon is flashing in orange, the engine or exhaust system may be damaged. Move the excavator to a well ventilated location and start manual ATS cleaning as soon as possible.

MANUAL ATS CLEANING

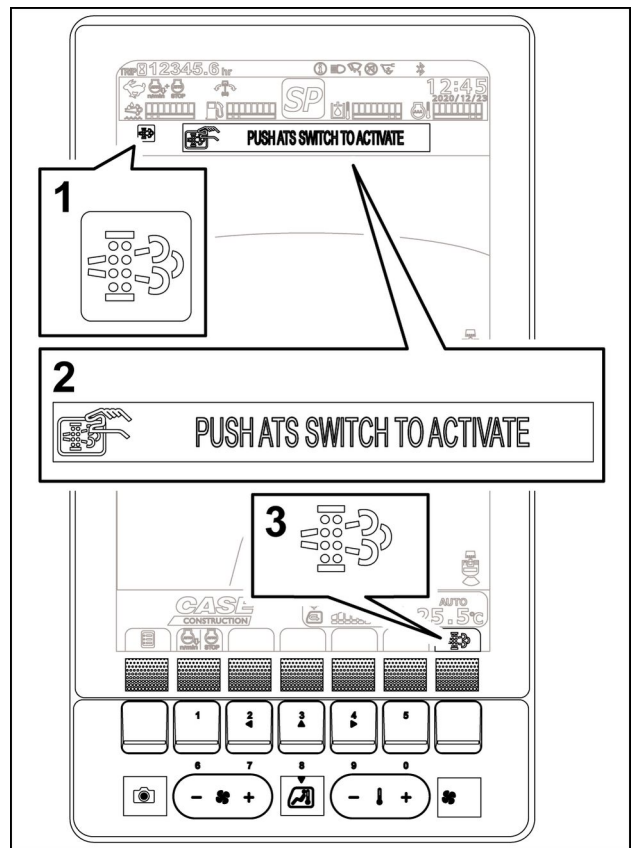
MANUAL ATS CLEANING is requested by the machine control system and should be activated by the operator.

During the MANUAL ATS CLEANING, the excavator cannot be operated.

The MANUAL ATS CLEANING process should take around **18 min.**

When the MANUAL ATS CLEANING is requested, the ATS CLEANING icon (1) flashes in orange, a warning alarm sounds for approximately **2 s** and the message PUSH ATS SWITCH TO ACTIVATE (2) is displayed.

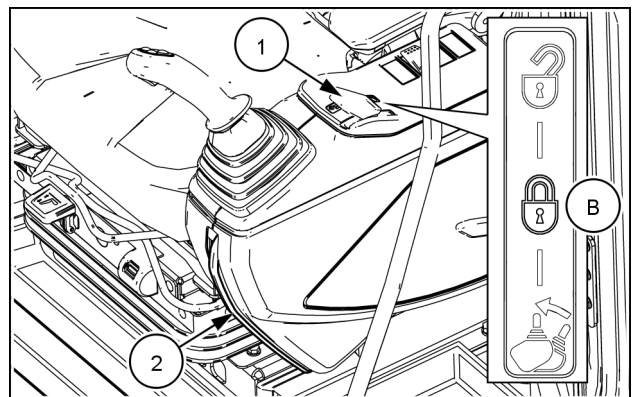
The ATS CLEANING icon (3) is displayed on the function switch tab.



SMIL22CEX4052BA 8

To start the MANUAL ATS CLEANING process proceed as follows:

1. Move the excavator to a well ventilated location.
2. Put the machine into the transport position.
3. Set the gate lock lever (1) in central position (B) (the safety bar (2) is in inward position).
4. Lower the engine speed to low idle.

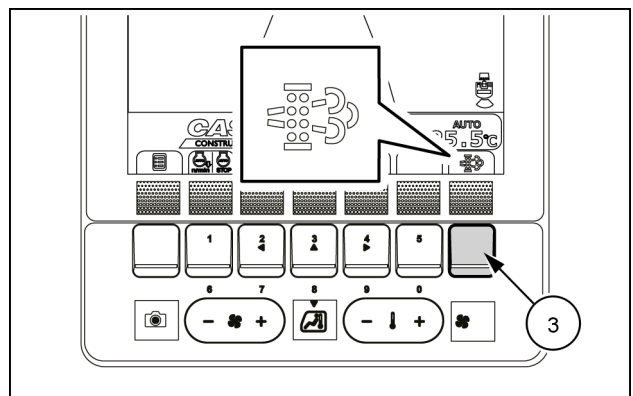


SMIL22CEX1957AA 9

5. Start the MANUAL ATS CLEANING process.

In Normal Display mode:

Press the switch (3) underneath the ATS CLEANING icon to start manual ATS cleaning.

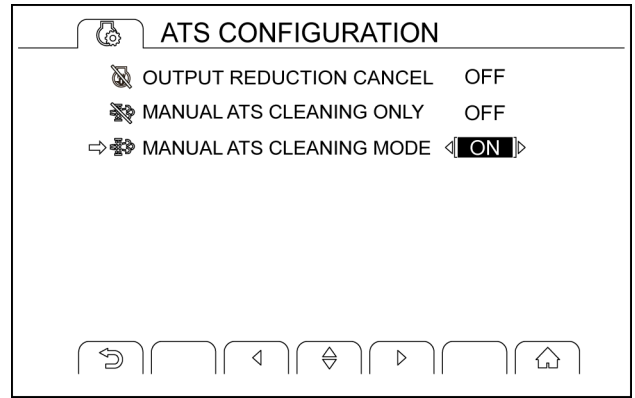


SMIL22CEX4515AA 10

In User Information mode:

Set the function MANUAL ATS CLEANING MODE to "ON" in the ATS CONFIGURATION tab of the user information mode.

NOTE: when MANUAL ATS CLEANING is requested, item switching will be enabled. When MANUAL ATS CLEANING is completed, the item will be grayed out and cannot be switched.



SMIL22CEX4516AA 11

When MANUAL ATS CLEANING starts, the orange ATS cleaning icon (2) and the orange high temperature exhaust icon (1) are displayed. An alarm sounds for about 2 s, and the text messages (MANUAL ATS CLEANING) and (DO NOT OPERATE) (3) are displayed alternately.

When manual ATS cleaning is complete, the ATS cleaning icon (2), the high temperature exhaust icon (1), and the messages (3) disappear.

Manual ATS cleaning stops in the following situations:

1. The gate lock lever is set to the normal operating position (with the safety bar raised).
2. The engine speed throttle position is changed.
3. The ATS CLEANING switch is pressed.
4. MANUAL ATS CLEANING MODE is set to "OFF" in the ATS CONFIGURATION tab.

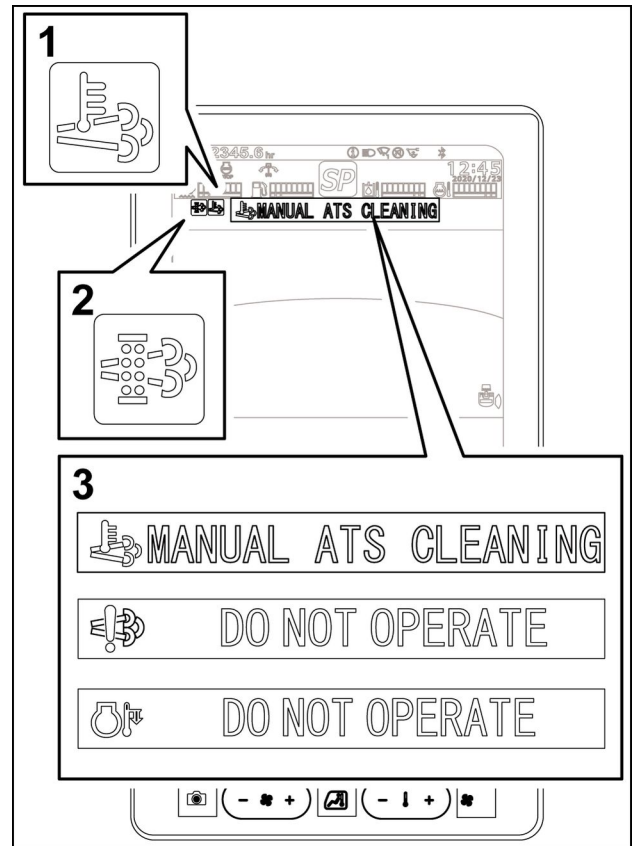
The ATS CLEANING icon (2) starts to flash in orange and the text message (PUSH ATS SWITCH TO ACTIVATE) is displayed.

NOTICE: Do not continue operating the machine with manual ATS cleaning stopped. If you continue operating the machine, it can damage the ATS system. Resume MANUAL ATS CLEANING process as soon as possible.

MANUAL ATS CLEANING will be disabled if any of the following occurs:

1. MANUAL ATS CLEANING is not started within 10 h after the message to request MANUAL ATS CLEANING ("PUSH ATS SWITCH TO ACTIVATE") is displayed.
2. MANUAL ATS CLEANING process is not completed within 40 min after it is started.

An alarm sounds for 2 s and ATS CLEANING icon turns red. The text message (CHECK ENGINE) and the error code are displayed on the monitor. This condition indicates failure, which requires repair. Contact your local dealer or the certified service plant.



SMIL22CEX4054BA 12

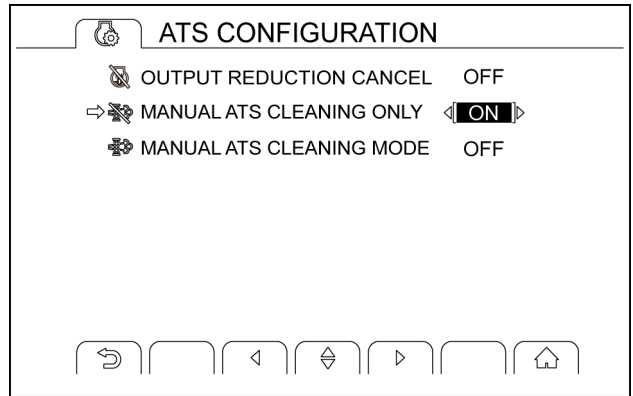
MANUAL ATS CLEANING ONLY

The purpose of this function is to prevent fires and explosions. The temperature of the exhaust gas produced during automatic ATS cleaning is high, therefore it is dangerous to perform automatic ATS cleaning inside a building (including tunnels) or other locations with fire and explosion risks.

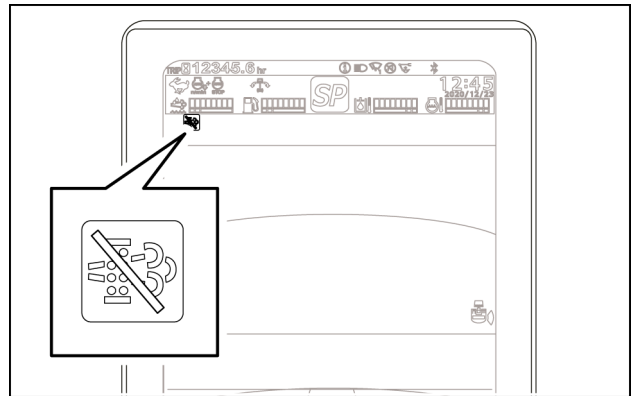
Set the function MANUAL ATS CLEANING ONLY to "ON" in the ATS CONFIGURATION tab of the user information mode.

NOTE: This function is only used for stopping the automatic ATS cleaning. For that reason, even when this function is used, if automatic ATS cleaning has been stopped for **8 h**, the system requests manual ATS cleaning. Use this function only when you need to stop automatic ATS cleaning for safety reasons.

When "MANUAL ATS CLEANING ONLY" is set to "ON", the icon is displayed.



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