

ORIGINAL INSTRUCTIONS - according to Directive 2006/42/EC, Annex I, 1.7.4.1

**CX19C**  
Mini Excavator

**OPERATOR'S MANUAL**

**Part number 90361750**  
1<sup>st</sup> edition English  
July 2020



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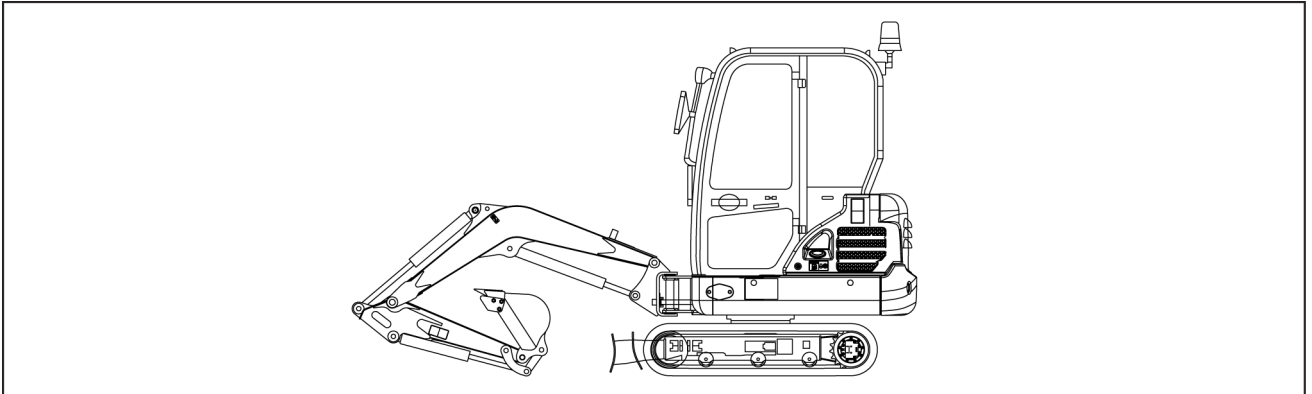


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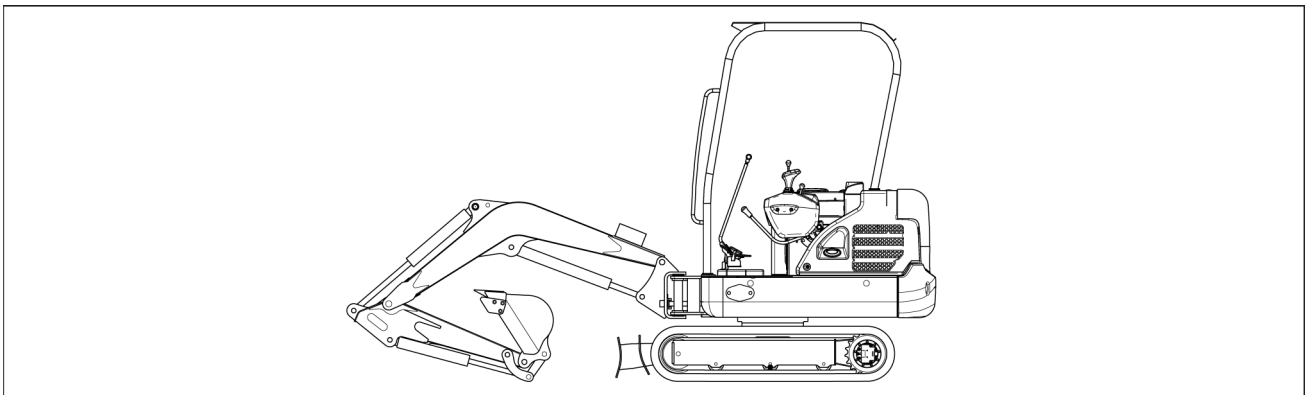
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## Product identification

Your machine is a hydraulic excavator. It consists of an undercarriage fitted with tracks and a swing bearing which supports the upper-structure frame. The upper-structure frame supports the attachment at the front end of the machine, plus the engine, hydraulics and the cab/canopy. When the operator works the controls, the engine-driven pump delivers hydraulic fluid to the control valves. The control valves distribute the hydraulic fluid to the various cylinders and hydraulic motors employed. A cooling system maintains the hydraulic fluid at normal operating temperature.



SML16MEX3242EA 1  
**Cab version**



SML20MEX0038EA 2  
**Canopy version**

When ordering parts, obtaining information, or seeking assistance, always supply your CASE CONSTRUCTION Dealer with the type and Product Identification Number (PIN) of your machine or accessories.

Write the following in the spaces below:

- Machine Type
- Machine PIN
- Machine year of manufacture
- Serial numbers of hydraulic and mechanical components

## 2 - SAFETY INFORMATION

### Signal word definitions


#### Personal safety





This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.

Throughout this manual you will find the signal words DANGER, WARNING, and CAUTION followed by special instructions. These precautions are intended for the personal safety of you and those working with you.

Read and understand all the safety messages in this manual before you operate or service the machine.

 DANGER indicates a hazardous situation that, if not avoided, will result in death or serious injury.

 WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.

 CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

**FAILURE TO FOLLOW DANGER, WARNING, AND CAUTION MESSAGES COULD RESULT IN DEATH OR SERIOUS INJURY.**

#### Machine safety

**NOTICE:** Notice indicates a situation that, if not avoided, could result in machine or property damage.

Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine or property damage. The word Notice is used to address practices not related to personal safety.

#### Information

**NOTE:** Note indicates additional information that clarifies steps, procedures, or other information in this manual.

Throughout this manual you will find the word Note followed by additional information about a step, procedure, or other information in the manual. The word Note is not intended to address personal safety or property damage.

## Ecology and environment

Soil, air, and water quality is important for all industries and life in general. When legislation does not yet rule the treatment of some of the substances that advanced technology requires, sound judgment should govern the use and disposal of products of a chemical and petrochemical nature.

Familiarize yourself with the relative legislation applicable to your country, and make sure that you understand this legislation. Where no legislation exists, obtain information from suppliers of oils, filters, batteries, fuels, anti-freeze, cleaning agents, etc., with regard to the effect of these substances on man and nature and how to safely store, use, and dispose of these substances. Your CASE CONSTRUCTION dealer can also provide assistance.

### Helpful hints

- Avoid the use of cans or other inappropriate pressurized fuel delivery systems to fill tanks. Such delivery systems may cause considerable spillage.
- In general, avoid skin contact with all fuels, oils, acids, solvents, etc. Most of these products contain substances that may be harmful to your health.
- Modern oils contain additives. Do not burn contaminated fuels and or waste oils in ordinary heating systems.
- Avoid spillage when you drain fluids such as used engine coolant mixtures, engine oil, hydraulic fluid, brake fluid, etc. Do not mix drained brake fluids or fuels with lubricants. Store all drained fluids safely until you can dispose of the fluids in a proper way that complies with all local legislation and available resources.
- Do not allow coolant mixtures to get into the soil. Collect and dispose of coolant mixtures properly.
- Do not open the air-conditioning system yourself. It contains gases that should not be released into the atmosphere. Your CASE CONSTRUCTION dealer or air-conditioning specialist has a special extractor for this purpose and can recharge the system properly.
- Repair any leaks or defects in the engine cooling system or hydraulic system immediately.
- Do not increase the pressure in a pressurized circuit as this may lead to a component failure.

### Battery recycling

Batteries and electric accumulators contain several substances that can have a harmful effect on the environment if the batteries are not properly recycled after use. Improper disposal of batteries can contaminate the soil, groundwater, and waterways. CASE CONSTRUCTION strongly recommends that you return all used batteries to a CASE CONSTRUCTION dealer, who will dispose of the used batteries or recycle the used batteries properly. In some countries, this is a legal requirement.



NHIL14GEN0038AA 1

### Mandatory battery recycling

**NOTE:** The following requirements are mandatory in Brazil.

Batteries are made of lead plates and a sulfuric acid solution. Because batteries contain heavy metals such as lead, CONAMA Resolution 401/2008 requires you to return all used batteries to the battery dealer when you replace any batteries. Do not dispose of batteries in your household garbage.

Points of sale are obliged to:

- Accept the return of your used batteries
- Store the returned batteries in a suitable location
- Send the returned batteries to the battery manufacturer for recycling

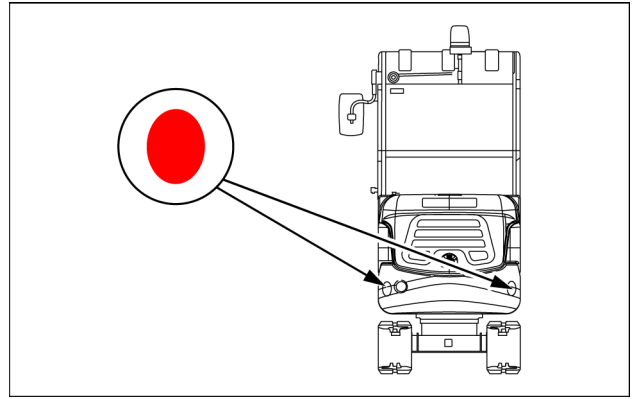
**(1) Reflecting sign**

Location: the two reflecting signs are located in the rear side of the machine, on the counterweight.

Quantity: 2

Part number: 91M9-04020

The reflecting sign increases the night-time visibility.



SMIL20MEX0077AA 3

**(2) Keep out of work range of upper structure**

**⚠ DANGER**

**Avoid injury!**

**Keep clear of the swing area. Ensure that any person near the working site is outside the swing area before you start or operate the machine. Sound the horn before you start or operate the machine.**

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

D0123A

Location: these signs are located on the right-hand and left-hand side of the machine.

Quantity: 2

Part number: 91M8-07021

This sign cautions the operator that entry into the work range of the upper structure is forbidden while the engine is running.



SMIL20MEX0078AA 4

**(3A) Engine access door support caution - Stop the engine**

**⚠ WARNING**

**Entanglement hazard!**

**Always stop the engine and engage the parking brake, unless otherwise instructed in this manual, before checking and/or adjusting any drive belt or chain.**

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

W0097A

Location: this sign is located in the engine compartment on the engine support.

Quantity: 1

Part number: 91MJ-07111

This sign indicates that you should stop the engine before opening the access door.



SMIL19MEX0701AA 5

**(20A) Functions of operation levers**

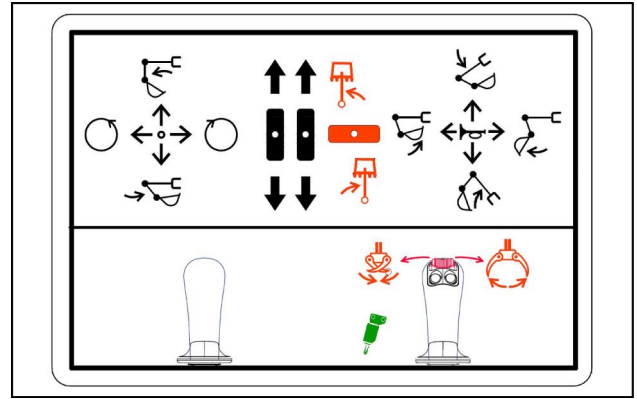
Canopy location: this sign is located on the left-hand side of the upper-structure.

Cab location: this sign is located on the right-hand side window.

Quantity: 1

Part number: 99MK-07280

This sign describes the functions of operation levers.



SMIL17MEX2754AA 24

**(20B) Functions of operation levers**

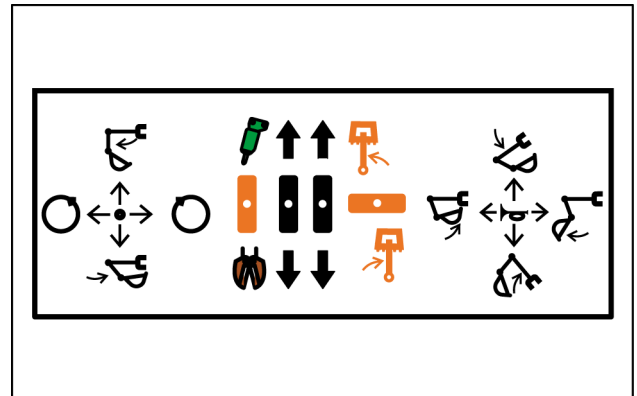
Canopy location: this sign is located on the left-hand side of the upper-structure.

Cab location: this sign is located on the right-hand side window.

Quantity: 1

Part number: 97MK-07220

This sign describes the functions of operation levers.



SMIL16MEX0022AA 25

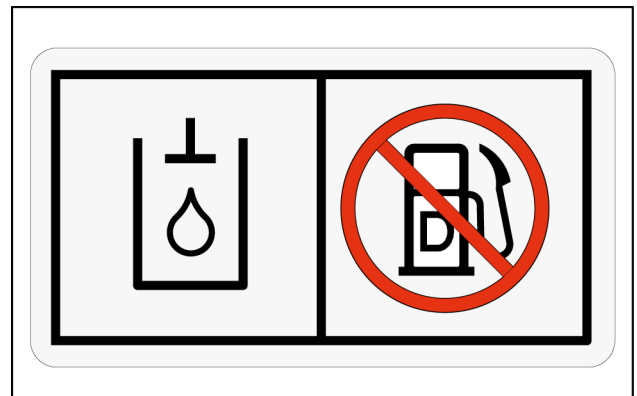
**(21) Hydraulic tank**

Location: this sign is located on the hydraulic tank.

Quantity: 1

Part number: 91Q6-03230

This sign warns you to fill only hydraulic oil and not to not fill the diesel fuel.



SMIL16MEX0014AA 26

**(22) Beacon light**

Location: this sign is located on the rear outside of the cab.

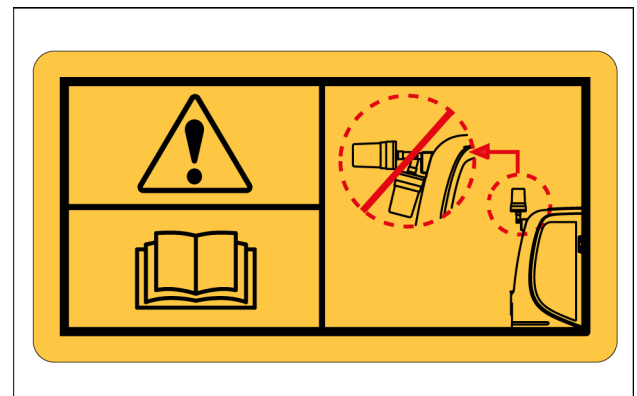
Quantity: 1

Part number: 91MK-02221

This sign indicates to make sure that the beacon light maintains a vertical position.

A horizontal position can result in a decrease in life time of the lamp due to the infiltration of foreign substances such as dust or water.

During the machine transfer, change the position of the lamp to the horizontal position.

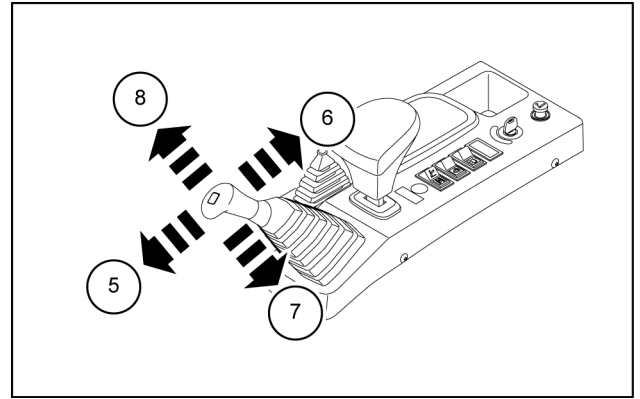


SMIL19MEX0711AA 27

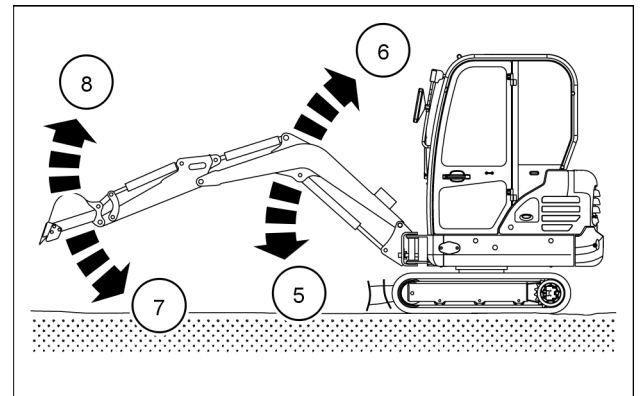
Right-hand control lever:

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

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



SMIL16MEX2269AB 3



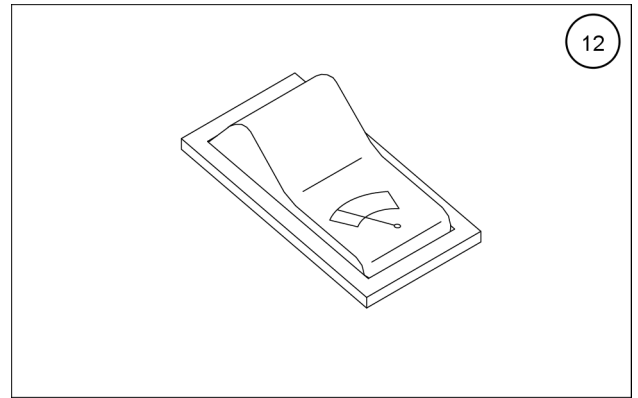
SMIL20MEX0030AA 4

### Washer/wiper switch (cab version only)

The washer/wiper switch (12) activates the wiper and the washer in two steps.

First step: wiper activation.

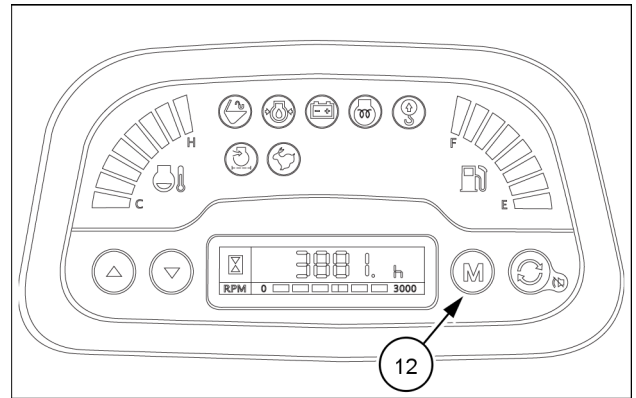
Second step: washer activation. The washer liquid is sprayed and the wiper is operative only while the switch is pressed. If the washer/wiper switch is released, it returns to first step.



SML16MEX0392AA 5

## 12. Menu button

Press the button (12) to show the next display on the main display.

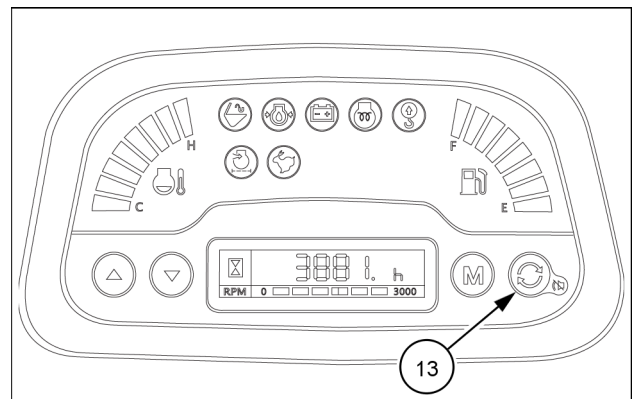


SMIL19MEX0731AA 13

## 13. Enter and buzzer stop button

Press the button (13) to select the menu.

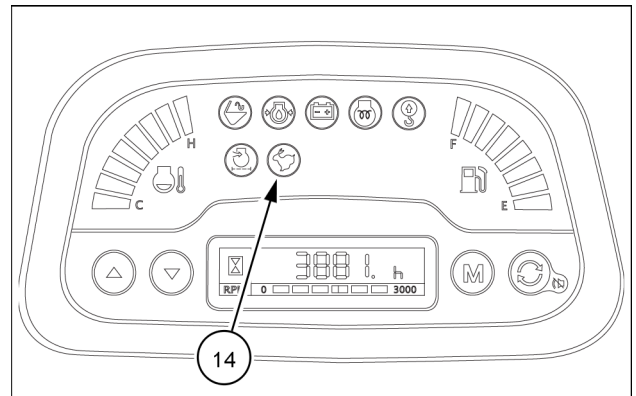
Press the button (13) to stop the buzzer when the buzzer sounds.



SMIL19MEX0731AA 14

## 14. High speed travel light

The high speed travel light (14) is ON when the high speed mode is selected by means of the travel mode selector switch located on the right-hand travel lever.



SMIL19MEX0731AA 15

## (6) Pre-set scan (SCAN) / Best Station Memory (BSM) button

Pre-set scan (SCAN).

Press the SCAN button **(A)** momentarily to scan the 6 pre-set station stored the memories on each band (AM/FM).

The unit will stop at each pre-set station (the pre-set number on the LCD screen will flash during pre-set scan operation) and remain on the selected frequency.

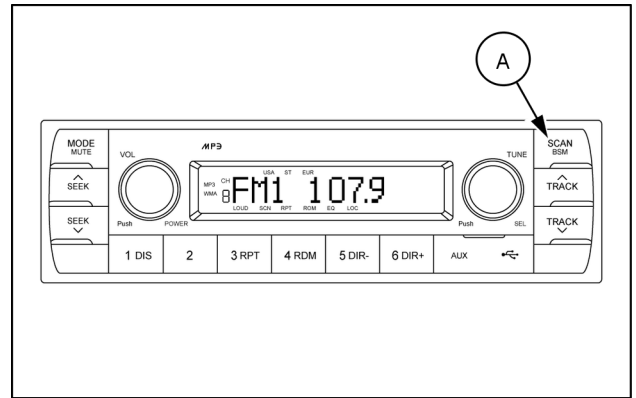
Press the SCAN button **(A)** momentarily again to remain on the station currently being heard.

Best station memory (BSM)

Press the BSM button **(A)** for longer than **2 s** to activate the BSM tuning feature which will automatically scan and enter each station into memory.

If you have already set the pre-set memories to your favorite stations, activating the BSM tuning feature will erase those stations and enter the new ones.

This BSM feature is most useful when traveling in a new area where you are not familiar with the local stations.



SMIL17MEX2806AA 8

# 4 - OPERATING INSTRUCTIONS

## Starting the unit

### Anti-theft protection

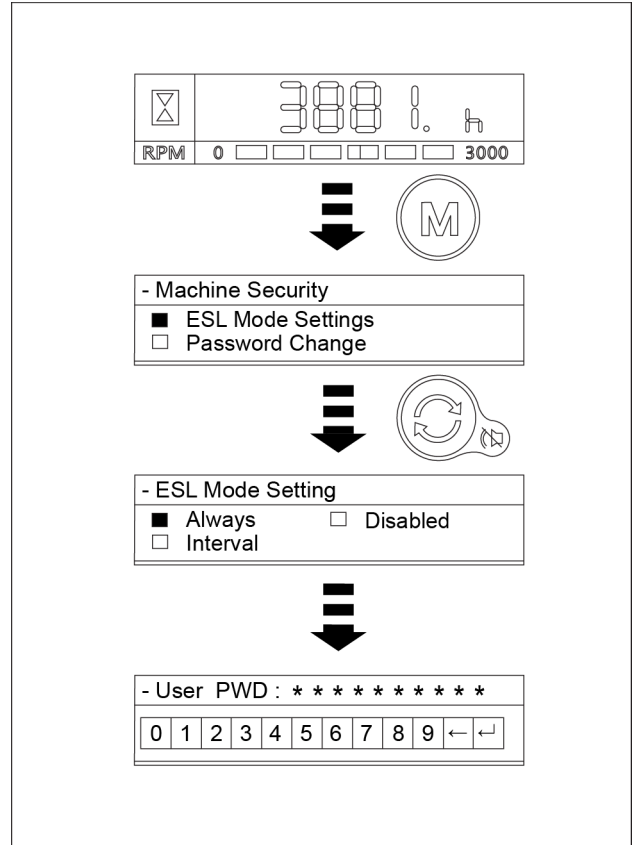
#### Engine Starting Limit (ESL) mode setting

ESL mode is designed to be a theft deterrent and prevent the unauthorized operation of the machine.

If the ESL mode is selected in "Always" mode, the password is required when the starter switch is turned ON.

- Disabled mode: the ESL function is not used.
- Always mode: the password is required whenever the operator start the engine.
- Interval mode: the password is required when the operator starts the engine first. The operator can restart the engine within the interval time without inputting the password. The interval time can be set maximum 2 days.

For example, if the operator sets 5 minutes interval time, the ESL system is re-activated after 5 minutes time. If the engine is running, after 5 minutes the engine does not need to be restarted, but the password will be required starting from the subsequent engine start.



SMIL16MEX0383AA 1

## Lowering the attachment in the event of a failure

### ⚠ WARNING

#### Unexpected machine movement!

Only use the following procedure in case of machine failure. Always use extreme caution during operations. Keep other persons away from the bucket, attachment, and boom. The bucket or attachment can move unexpectedly during operations due to weight of the bucket, attachment, arm, or boom. Failure to comply could result in death or serious injury.

W1364A

### ⚠ WARNING

#### Crushing hazard!

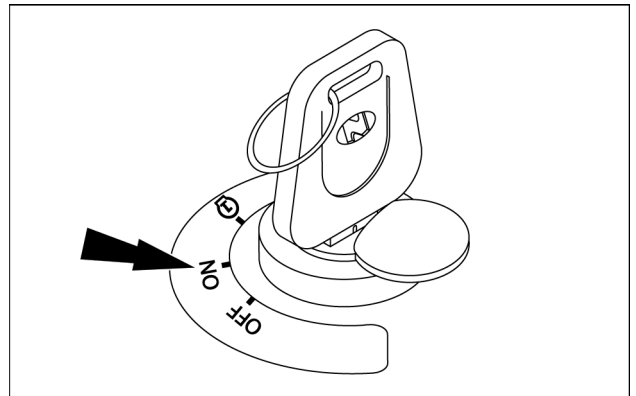
Keep away from the space under the bucket or attachment when lowering the bucket or attachment. In cases where the machine fails and the engine stops, lower the attachment using the procedure described in this manual. Failure to comply could result in death or serious injury.

W1468A

**NOTICE:** the procedure should be completed within five minutes after the engine stops. The accumulator pressure will gradually fall, which will disable the ability to lower the attachment.

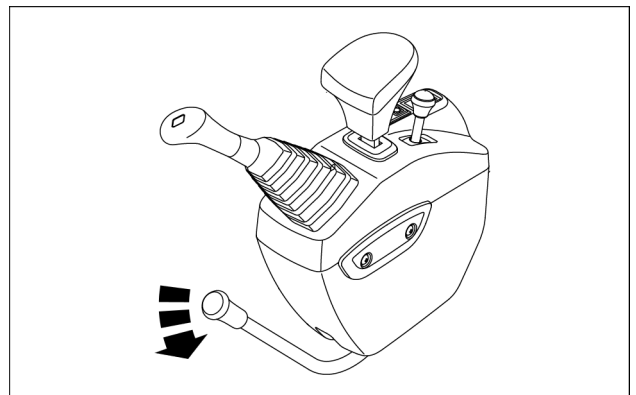
If the engine breaks down, use the following procedure to lower the attachment:

1. Turn the starter key to ON position.



SMIL20MEX0510AA 1

2. Set the safety lock lever in forward position (UNLOCK position).
3. Slowly operate the control levers to lower the attachment to the ground.



SMIL16MEX0398AA 2

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### Gradual turn on the move

Press one of the pedals or push one of the levers and, at the same time, press the other pedal or push the other lever in the same direction, but slightly harder.

### Stopping travel

To come to a complete halt, release the levers or pedals and they will return to neutral.

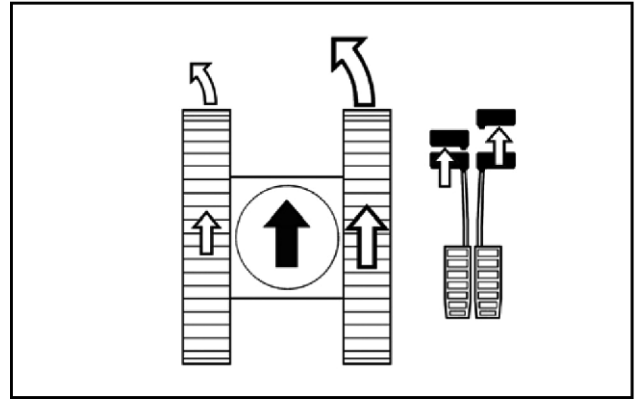
**NOTICE:** allow as much time as possible to stop the machine.

**NOTICE:** avoid abrupt stopping as much as practicable.

**NOTICE:** park or stop the machine on level solid ground in safe area.

### Cautions for traveling

1. Check the location of the travel unit before you start traveling.
2. Select ground as flat and solid as possible for traveling.
3. Bypass obstructions during travel.
4. Travel with decreased traveling speed on rough ground.
5. Encourage a large turn for changing direction and avoid abrupt pivoting turns or spinning turns as much as possible.
6. Check the route to travel in advance.
7. Prepare a person to signal the operator whenever moving the machine in a location with poor visibility. Pay attention to permissible weight of bridge when crossing the bridge.
8. Take necessary measures such as placing plates so as not to damage surface of paved road.
9. Slow down and loosen tension of the track shoes when traveling on place with gravels and cobbles.



SMIL13CEX2687AB 11

## Shipping transport

### Handling the machine

**⚠ WARNING**

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

W0287A

**⚠ WARNING**

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

W0256A

**⚠ WARNING**

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

W0283A

**⚠ WARNING**

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

W0245A

## Fluids and lubricants

System	Quantity	Fluid	CASE CONSTRUCTION specification	Reference specification
Fuel tank	21 L (5.5 US gal)	—	—	ASTM D975 EN 590
Engine oil	3.7 L (1.0 US gal)	CASE AKCELA NO. 1™ ENGINE OIL CI-4 SAE 15W-40 Temperate climates (****)	MS 1121	SAE 15W-40 ACEA E7/E5 API CI-4
		CASE AKCELA NO. 1™ ENGINE OIL CI-4 SAE 10W-30 Cold climates (***)	MS 1121	SAE 10W - 30 ACEA E7/E5 API CI-4
Travel reduction unit	0.33 L (0.09 US gal) x2	CASE AKCELA GEAR LUBE 135 H EP 80W-90	MAT3511	SAE 80W90 API GL-5
Engine coolant	4 L (1.1 US gal)	CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT CONCENTRATE (**)	MAT3624 Grade OAT-EG1	ASTM D6210 TYPE I-FF
		CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT 50/50 PREMIXED	MAT3624 Grade OAT-EG2	ASTM D6210 TYPE III-FF
Hydraulic oil tank (*)	20 L (5.3 US gal)	CASE AKCELA HYDRAULIC LL 46	—	ISO 6743-4 L-HV 46 (ISO 11158)
		BIODEGRADABLE OIL ISO VG 46 (****)	—	ISO 6743-4 L-HEES 46 (ISO 15380)
Grease (Attachment)	—	CASE AKCELA MOLY GREASE	MAT3550	NLGI 2
Grease (Swing bearing)	—	CASE AKCELA 251H EP MULTI-PURPOSE GREASE	MAT3550 Grade A	NLGI 2

(\*) The total capacity of the hydraulic system is 30 L (7.9 US gal).

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

(\*\*\*) Cold climates - Temperature operating range: -25 – 25 °C (-13 – 77 °F).

(\*\*\*\*) Temperate climates - Temperature operating range: -15 – 40 °C (5 – 104 °F).

(\*\*\*\*\*) For CASE CONSTRUCTION genuine lubricating oil please contact CASE CONSTRUCTION dealers.

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

**NOTICE:** using any lubricating oils other than CASE CONSTRUCTION genuine products may lead to a deterioration of performance and cause damage to major components.

**NOTICE:** do not mix CASE CONSTRUCTION genuine oil with any other lubricating oil as it may result in damage to the systems of major components.

**NOTICE:** if the machine was bought filled with mineral hydraulic oil and you want to change to biodegradable hydraulic oil, this operation must be carried out by the Dealer personnel. In fact, it is necessary to thoroughly drain mineral oil and flush the entire hydraulic system. Remember that mineral hydraulic oil must not be mixed with biodegradable hydraulic oil.

## Maintenance planning

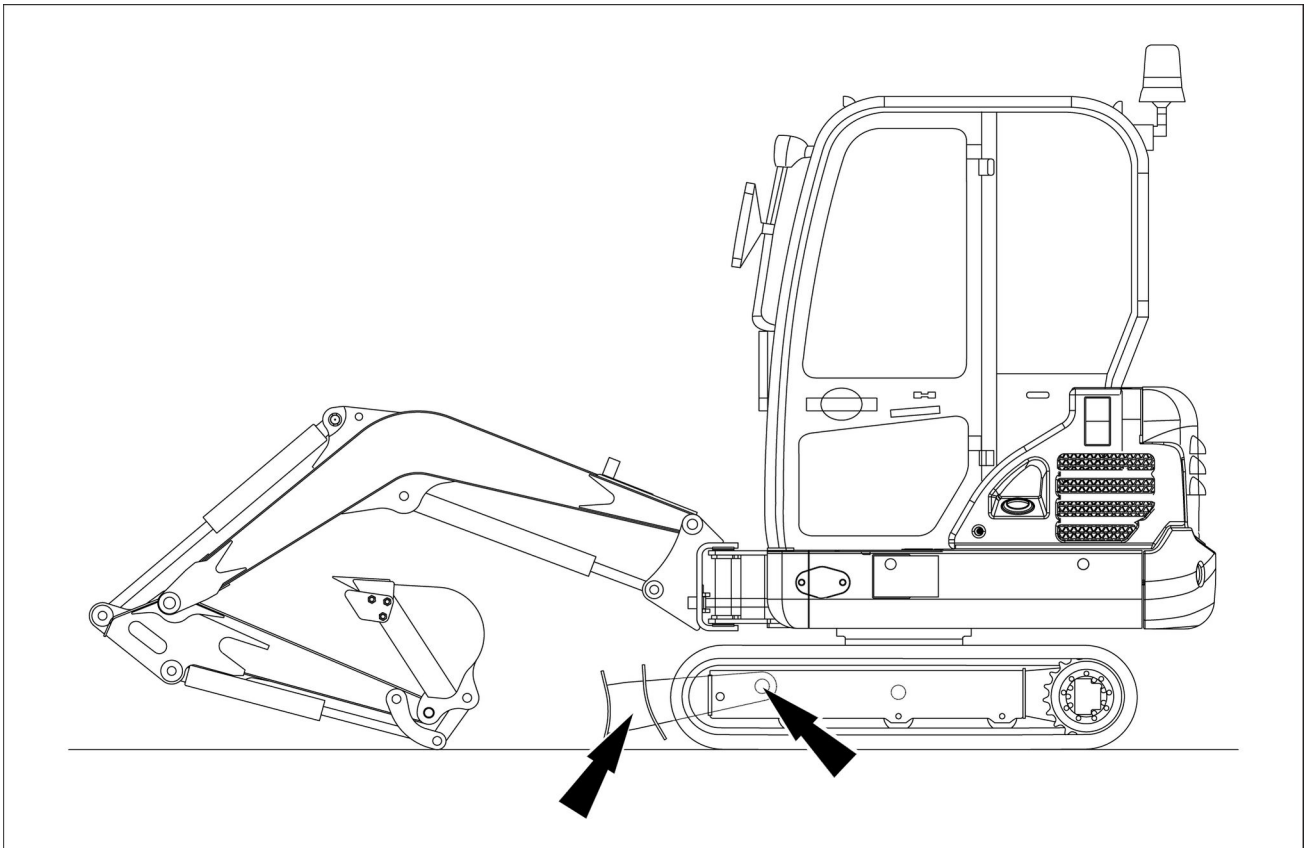
## Maintenance chart

Maintenance action	Check					Drain fluid					Page no.
	Grease					Adjust					
	Change fluid					Cleaning					
	Replace										
Break-in period											
Fuel filter	x										6-19
Travel reduction gears		x									6-19
Grease points (Bucket)			x								6-19
Grease points (Boom and arm)			x								6-19
Grease points (Blade)			x								6-19
Grease points (Boom swing cylinder)			x								6-19
Grease points (Extension cylinder)			x								6-20
Tightening torques				x							6-20
Every 10 hours											
Engine oil level				x							6-21
Engine coolant level				x							6-22
Hydraulic oil level				x							6-23
Fuel filter water separator					x						6-25
Every 50 hours											
Grease points (Bucket)			x								6-26
Grease points (Blade)			x								6-27
Grease points (Extension cylinder)			x								6-28
Track tension				x							6-29
Swing ring gear			x								6-31
Fuel tank					x						6-32
Fan and alternator drive belt						x					6-33
Every 100 hours											
Fuel filter water separator								x			6-34
Every 250 hours											
Engine oil and filter		x									6-35
Battery				x							6-38
Grease points (Boom and arm)			x								6-44
Swing bearing			x								6-45
Boom swing cylinder			x								6-46
Hydraulic oil return filter	x										6-47
Tightening torques				x							6-49
Every 400 hours											
Fuel filter	x										6-50
Every 500 hours											
Radiator and coolers								x			6-51
Air cleaner								x			6-53
Every 750 hours											
Valve clearance				x							6-56
Every 1000 hours											
Travel reduction gears		x									6-56
Every 1500 hours											
Injection nozzle				x							6-57
Every 2000 hours											
Engine coolant		x									6-58
Hydraulic oil suction filter								x			6-61
Oil reservoir - Check				x							6-62

## Grease points (Blade)

Grease the blade every **50 h** (after the break-in period).

Lubricant: **CASE AKCELA MOLY GREASE**



SMIL20MEX0044FA 1

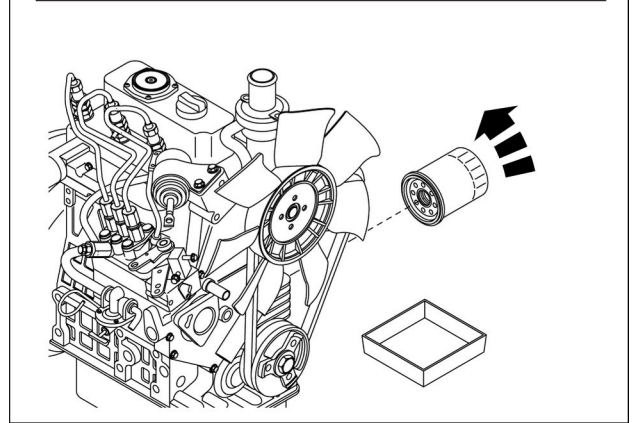
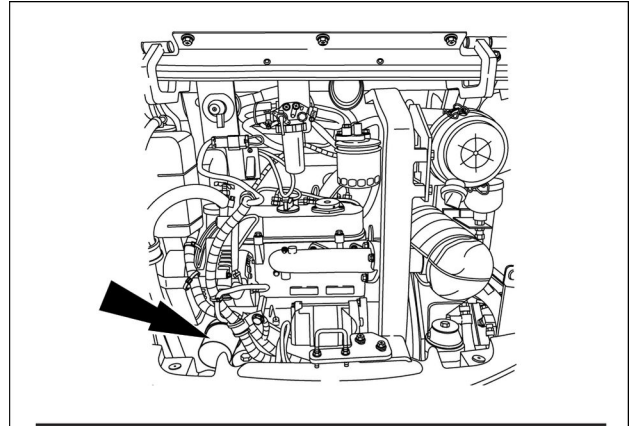
Dozer blade connection pin: two grease fittings

Dozer blade cylinder pin: two grease fittings

**NOTICE:** if you operate the machine in water or mud, you must lubricate the dozer blade connection pin and the dozer blade cylinder pin every **10 h**.

9. Attach a new filter. Turn the filter until the seal touches the filter head, and then tighten it further a half turn by hand.

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

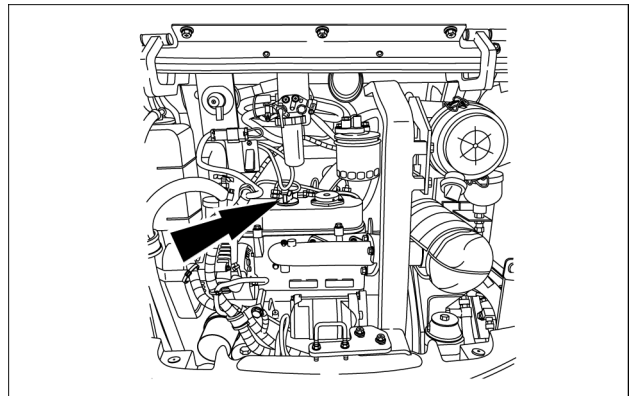


SMIL20MEX0105BA 5

10. Add new engine oil to the engine. Install the filling plug.
11. Run the engine for several minutes to check that there are no leaks at the filter and at the drain plug.
12. Stop the engine and check the oil level with the dipstick. Add oil if necessary.

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

13. Install the cover of the drain plug.



SMIL20MEX0104AA 6

## Hydraulic oil return filter

### ⚠ WARNING

#### Burn hazard!

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

Failure to comply could result in death or serious injury.

W0241A

### ⚠ WARNING

#### Pressurized system!

Never attempt to drain fluids or remove filters when the engine is running. Turn off the engine and relieve all pressure from pressurized systems before servicing the machine.

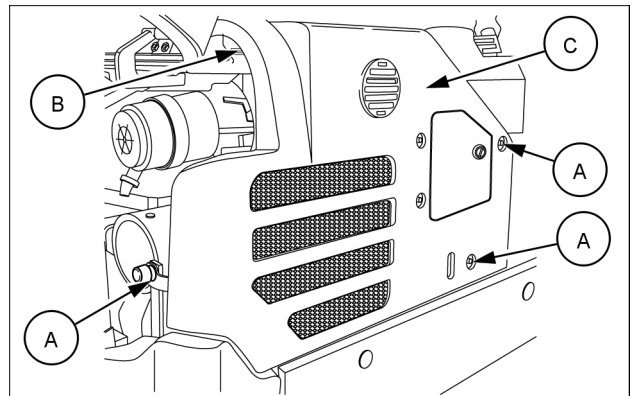
Failure to comply could result in death or serious injury.

W0905A

Replace the hydraulic oil return filter every **250 h**.

**NOTICE:** when using the breaker, reduce the interval of the hydraulic oil return filter replacement. Refer to page 9-21.

1. Park the machine on a flat and level place.
2. Release all the pressure in the hydraulic tank. Refer to page 6-11.
3. Stop the engine, remove the starter key, and wait **15 min** before proceed with the following steps.
4. By using the starter key and the handle, open and secure the engine access door.
5. Unscrew the three bolts **(A)** loosen the nut **(B)** and then remove the right-hand side panel **(C)** in order to gain the access to the hydraulic oil tank.



SMIL20MEX0513AA 1

**Every 1500 hours**

## **Injection nozzle**

Check the injection nozzle pressure every **1500 h**.

**NOTICE:** *to check the injection nozzle pressure refer to your CASE CONSTRUCTION dealer.*

**Every 3000 hours**

## **Injection pump**

Check the injection pump pressure every **3000 h**.

***NOTICE:** to check the injection pump pressure refer to your CASE CONSTRUCTION dealer.*

## **Fuel injection system**

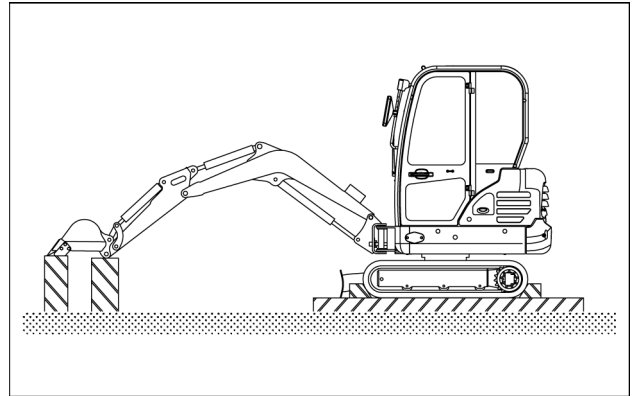
Check the fuel injection system timing every **3000 h**.

***NOTICE:** to check injection timing refer to your CASE CONSTRUCTION dealer.*

## Storage

### Preparing for storage

- The following procedure applies when the machine is to be stored for a month or more. Store the machine on flat, level ground, inside a building or, if not possible, outside and covered with a tarpaulin. Before storing the machine, carry out the following operations:



SMIL20MEX0073AA 1

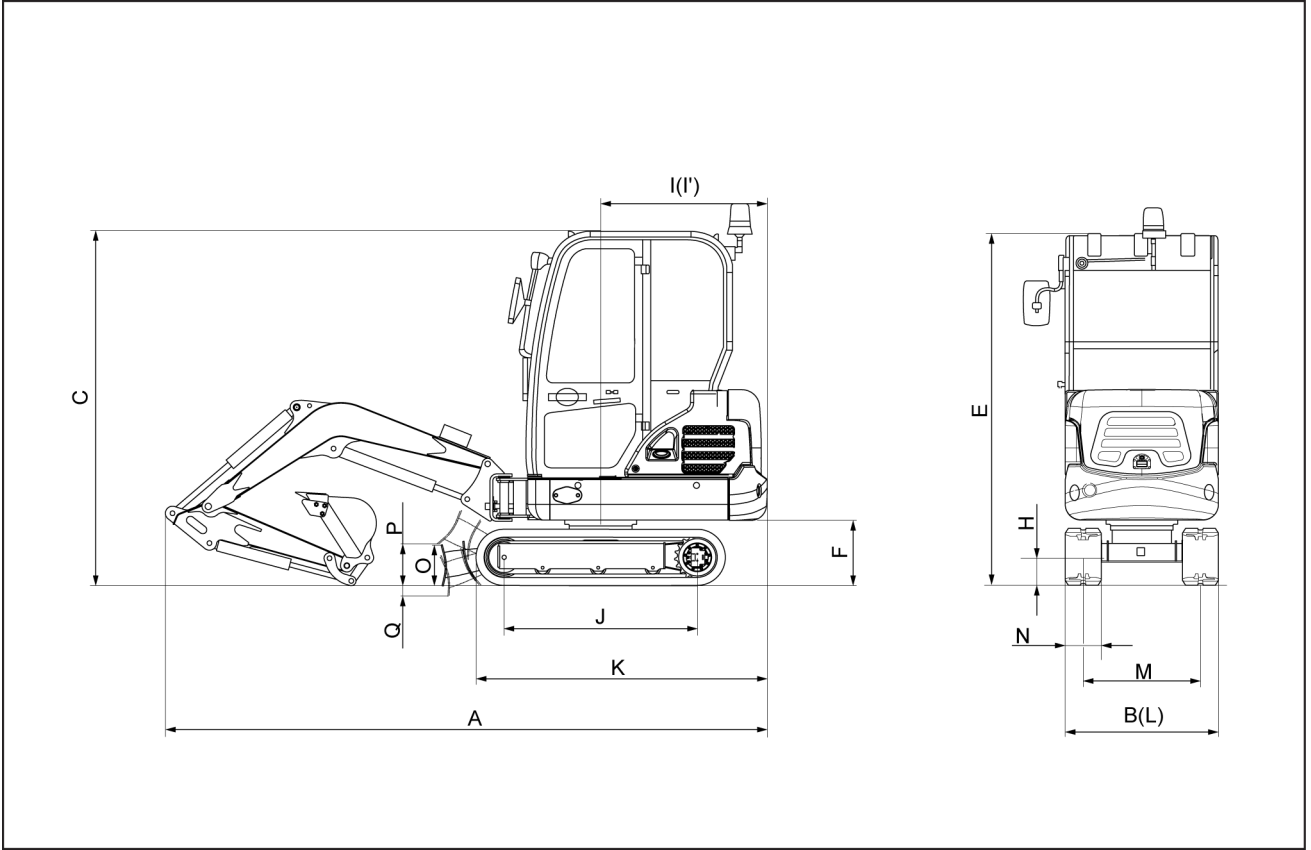
1. Clean the machine.
2. Make sure that the machine has no damaged or missing parts. Replace them if necessary.
3. Retract the cylinder rods as far as possible and lower the boom until the attachment is resting on the ground. Lower the dozer blade to the ground.
4. Grease the machine thoroughly. The exposed surfaces of the cylinder rods should be greased or covered with a protective film. Consult your CASE CONSTRUCTION Dealer.

**NOTE:** when the machine resumes service, the film will disappear automatically.

5. While the engine is still warm, drain the oil sump, replace the oil filter and fill with specified oil. Check the oil level and add more if necessary.
6. Clean or replace the air filter element.
7. Check the level of coolant solution. If the machine is within **100 h** of the next scheduled coolant change, change the coolant now.
8. Remove the battery, clean the battery housing, and check that there is no adhesion of battery fluid. Store the battery safely in a cool and dry place where temperature is **0 °C (32 °F)** or more. Alternatively, cut-off the cable from the negative (-) terminal of the battery, or turn the battery disconnect switch to the OFF position.
9. Plug the air cleaner inlet and the exhaust pipe.
10. Remove the starter key, put the decal "NO OPERATION" on the console, and set the safety lock lever to rearward position (LOCK position).
11. Lock the engine door, and the cab door.
12. Prevent dust and moisture by keeping the machine dry. Store the machine setting wood on the ground.

# Dimensions

## Cab version



SMIL17MEX0035FA 1

<b>(A)</b> Overall length	<b>3840 mm (151.2 in)</b>
<b>(B)</b> Overall width, with <b>230 mm (9.1 in)</b> shoe (extension track)	<b>980 – 1250 mm (38.6 – 49.2 in)</b>
<b>(C)</b> Overall height	<b>2255 mm (88.8 in)</b>
<b>(E)</b> Overall height of cab	<b>2255 mm (88.8 in)</b>
<b>(F)</b> Ground clearance of counterweight	<b>415 mm (16.3 in)</b>
<b>(H)</b> Minimum ground clearance	<b>150 mm (5.9 in)</b>
<b>(I)</b> Rear-end distance	<b>1065 mm (41.9 in)</b>
<b>(I')</b> Rear-end swing radius	<b>1065 mm (41.9 in)</b>
<b>(J)</b> Distance between tumblers	<b>1230 mm (48.4 in)</b>
<b>(K)</b> Undercarriage length	<b>1590 mm (62.6 in)</b>
<b>(L)</b> Undercarriage width (extension track)	<b>980 – 1250 mm (38.6 – 49.2 in)</b>
<b>(M)</b> Track gauge (extension track)	<b>750 – 1020 mm (29.5 – 40.2 in)</b>
<b>(N)</b> Track shoe width, standard	<b>230 mm (9.1 in)</b>
<b>(O)</b> Height of blade	<b>250 mm (9.8 in)</b>
<b>(P)</b> Ground clearance of blade up	<b>170 mm (6.7 in)</b>
<b>(Q)</b> Depth of blade down	<b>240 mm (9.4 in)</b>

Boom length: **1.8 m (70.9 in)**

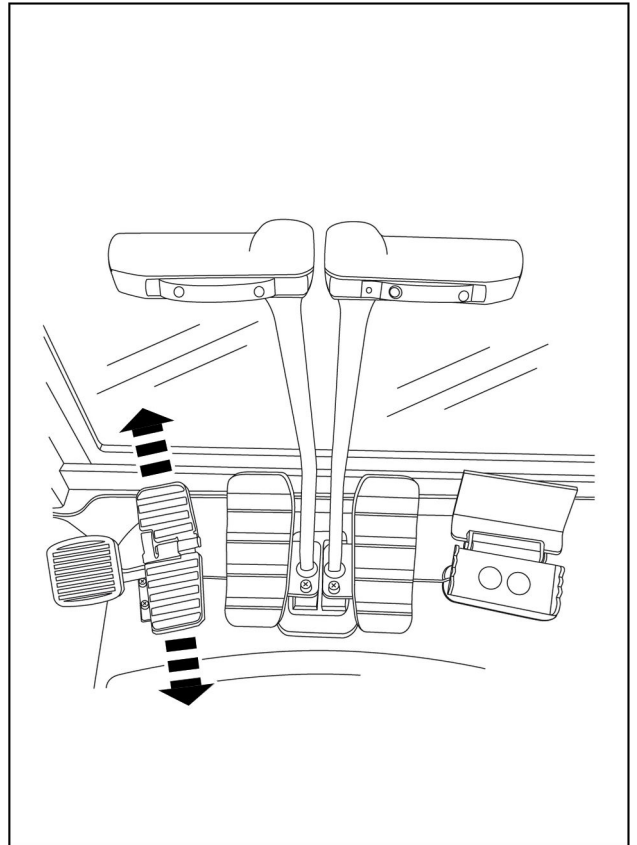
Arm length: **0.96 m (37.8 in)**

With boom swing post

## Operating controls

If the machine is equipped with the auxiliary pedal (A) proceed as follows:

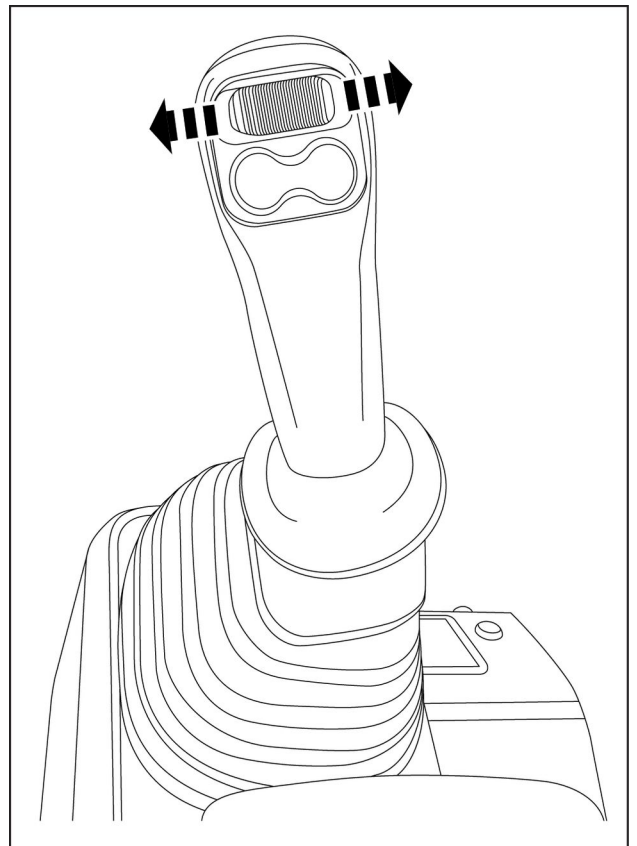
- 1-way: press the front side of pedal to full stroke to operate a single-acting hydraulic attachment
- 2-way: press the front side and rear side of pedal to full stroke to operate a double-acting hydraulic attachment.



SMIL19MEX0775BA 5

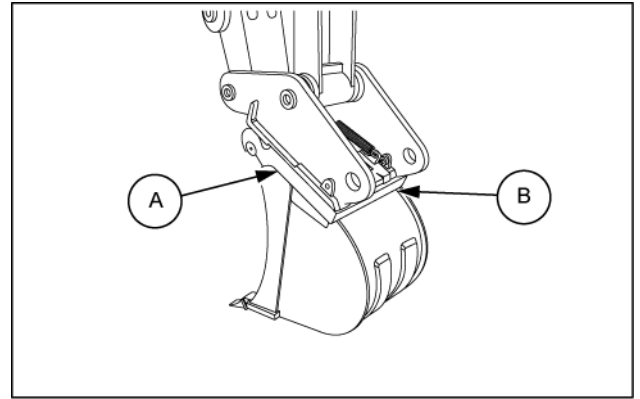
If the right-hand control lever is equipped with a proportional switch, proceed as follows:

- 1-way: slide to the left-hand side the switch to operate the single-acting hydraulic attachment.
- 2-way: slide the switch to the left-hand to “clamp” the double-acting hydraulic attachment; slide the switch to the right-hand to “release” the double-acting hydraulic attachment.



SMIL19MEX0128BA 6

7. Check the coupling between the bucket and the quick coupler.
  - **(A)** there must be no play between the alignment profiles. Lock all machine controls, get off the machine, go near to the quick coupling system and check the coupling status.
8. Coupling is completed when the locking plate is aligned with the back surface of the coupler.
  - **(B)** Bucket locking is not complete if the mobile plate is not aligned with the quick coupling system: extend the bucket cylinder, lock all machine controls, get off the machine, go near to the quick coupling system and check the coupling status.



SMIL17MEX0061AB 7

**NOTICE:** check the coupling status before performing any operation. If no visual check is possible from the operator's seat, lock all machine controls, get off the machine and check the coupling status.

9. Before commencing any work operations, get on the machine, unlock the machine controls, and operate the arm, boom and bucket controls to maintain the bucket against the ground.

**NOTE:** this operation is known as "BUMP TEST".

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