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

CX75C SR
Crawler Excavator

OPERATOR'S MANUAL

Part number 51464186
1st edition English
March 2018

CASE CONSTRUCTION

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Break-in period

Every 10 hours

Every 50 hours

Every 250 hours

Every 500 hours

Every 1000 hours

Every 2000 hours

Every 4000 hours

Every 5000 hours

When necessary

1 - GENERAL INFORMATION

Note to the Owner

Improper operation of this machine can cause injury or death. Before using this machine, make certain that every operator:

- Is instructed in safe and proper use of the machine.
- Reads and understands the Manual(s) pertaining to the machine.
- Reads and understands ALL Safety Decals on the machine.
- Clears the area of other persons.
- Learns and practises safe use of machine controls in a safe, clear area before operating this machine on a job site.

It is your responsibility to observe pertinent laws and regulations and follow CASE CONSTRUCTION instructions on machine operation and maintenance.

Your machine has been designed and built to the highest standards of quality. It conforms to all current safety regulations. However, the risk of accidents can never be completely excluded. That is why it is essential to observe elementary safety rules and precautions.

Read this manual carefully, paying particular attention to the instructions concerning safety, operation and maintenance so as to avoid the risk of injury while operating or servicing the machine.

The standard attachments and tools of this machine are designed to carry out all kinds of earthmoving and rehandling operations. If you want to use this machine to handle a load (pipes, culverts, formwork, etc.), make sure that it is designed to carry out this kind of work. For this type of application, the machine must be equipped with safety valves, an overload indicator, a load handling chart corresponding to the type of machine and its attachment and a load fixing point. All legal requirements must also be strictly observed.

Do not use this machine for any application or purpose other than those described in this manual. If the machine is to be used for work involving the use of special attachments, accessories or equipment, consult your CASE CONSTRUCTION Dealer in order to make sure that any adaptations or modifications made are in keeping with the machine's technical specifications and with prevailing safety requirements.

Any modification or adaptation which is not approved by the manufacturer may invalidate the machine's initial conformity with safety requirements.

The machine must undergo regular inspections, the frequency of which varies according to the type of use. Consult your CASE CONSTRUCTION Dealer.

NOTICE: *The engine and fuel system on your machine is designed and built to government emissions standards. Tampering by dealers, customers, operators and users is STRICTLY PROHIBITED BY LAW. Failure to comply could result in government fines, rework charges, invalid warranty, legal action and possible confiscation of the machine until rework to original condition is completed. Engine service and/or repairs must be done by a certified technician only.*

Your CASE CONSTRUCTION Dealer is at your disposal for any further information. He will also provide any after-sales service you may require, and genuine CASE CONSTRUCTION spare parts, your guarantee of quality and match.

You can obtain manuals on the operation, maintenance and repair of your machine from your CASE CONSTRUCTION Dealer. To ensure quick and efficient service, consult your CASE CONSTRUCTION Dealer for assistance in ordering the correct manuals for your machine.

Your CASE CONSTRUCTION Dealer can deal with orders for operator's manuals, parts catalogues and service manuals.

Always give the type and serial number of your machine so that your CASE CONSTRUCTION Dealer can supply you with the right manuals for your machine.

CASE CONSTRUCTION reserves the right to make changes in the specification and design of the machine without prior notice and without incurring any obligation to modify units previously sold.

The description of the models shown in this manual has been made in accordance with the technical specifications known as of the date of design of this document.

All data given in this manual is subject to production variations. Dimensions and weights are provided with approximate values and the machine fitting shown in the illustrations may not correspond with standard models. For precise information on specific machine models and versions, please consult your CASE CONSTRUCTION Dealer.

Intended use

NOTICE: *do not use the excavator for operations which are foreign to its specifications and not included in this manual in order to prevent serious injury to persons or damage to the machine. The manufacturer/dealer is not responsible for damage caused by improper use.*

The excavator has been designed to carry out digging and earth moving operations through the use of a bucket. Operations that involve the use of hydraulic hammers are also possible. Other operations, such as moving suspended loads, are only possible if the specific variant approved by the manufacturer is present.

Using the excavator and its equipment for different operations, such as towing, transporting and lifting people, is considered inappropriate and is prohibited.

Electro-Magnetic Compatibility (EMC)

This machine complies strictly with the European Regulations on electro-magnetic emissions. However, interference may arise as a result of add-on equipment which may not necessarily meet the required standards. As such interference can result in serious malfunction of the unit and/or create unsafe situations, you must observe the following:

- Ensure that each piece of non- CASE CONSTRUCTION equipment fitted to the machine bears the CE mark.
- The maximum power of emission equipment (radio, telephones, etc.) must not exceed the limits imposed by the national authorities of the country where you use the machine.
- The electro-magnetic field generated by the add-on system should not exceed **24 V/m** at any time and at any location in the proximity of electronic components.

Failure to comply with these rules will render the CASE CONSTRUCTION warranty null and void.

Telematics (optional)

NOTE: *the CASE CONSTRUCTION* ***SiteWatch™*** *website (www.casesitewatch.com) will not be accessible until the CASE CONSTRUCTION* ***SiteWatch™*** *subscription for this machine is registered by an authorized CASE CONSTRUCTION dealer. Contact an authorized CASE CONSTRUCTION for details.*

This machine can be equipped with a telematics system. This is an asset-monitoring system that combines Internet, cellular, and GPS technologies. A transponder unit is mounted on the equipment that wirelessly communicates with the user interface CASE CONSTRUCTION **SiteWatch™** at www.casesitewatch.com. Using cellular technology, the transponder can send equipment data, including location, on/off status, usage and production metrics, diagnostic data, movement alarms, and unauthorized usage to the interface. The system will help cut costs and keep accurate records. See the furnished guide for operating your telematics system.

Manual scope and required training level

Introduction to this manual

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

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

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

Normal operation

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

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

Normal operation includes:

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

Routine service and maintenance

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

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

Routine service can include:

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

Periodic service, conversions, and repairs

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

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

Periodic service includes:

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

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

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

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

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

Before you operate

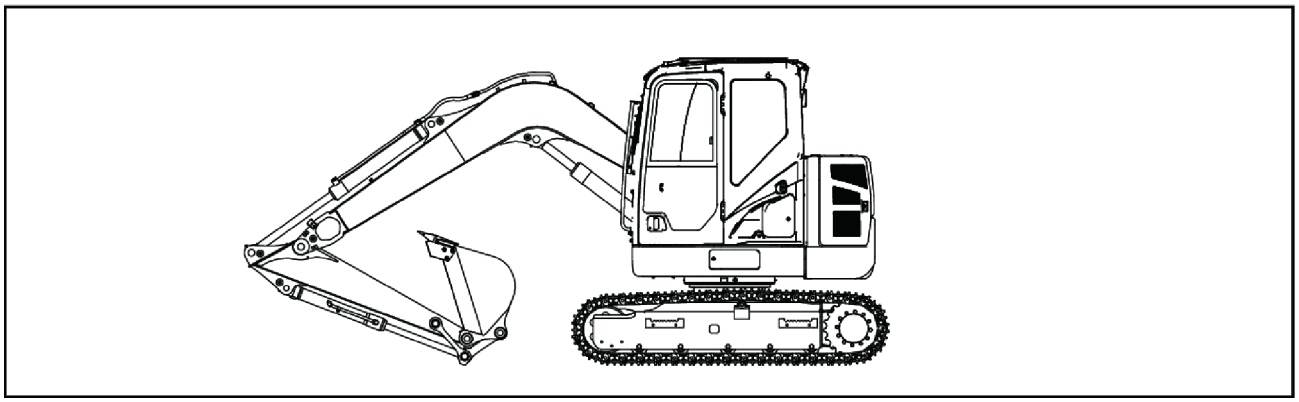
Read this manual before you start the engine or operate this CASE CONSTRUCTION machine. Contact your CASE CONSTRUCTION dealer if:

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

All persons training to operate, or who will operate this CASE CONSTRUCTION machine should be old enough to possess a valid local vehicle operating permit (or meet other applicable local age requirements). These persons must demonstrate the ability to operate and service the CASE CONSTRUCTION machine in a correct and safe manner.

Product identification

The CX75C SR is a crawler hydraulic excavator. It consists of an undercarriage fitted with tracks and a turntable bearing which supports the upperstructure frame. The upperstructure frame supports the attachment, at the front end of the machine, plus the engine, hydraulics and cab. 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.



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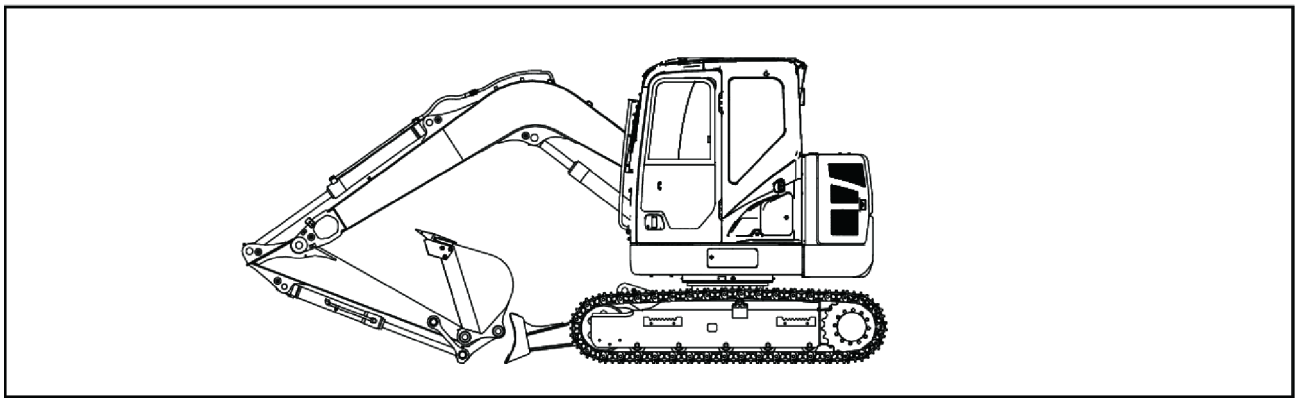
CX75C SR



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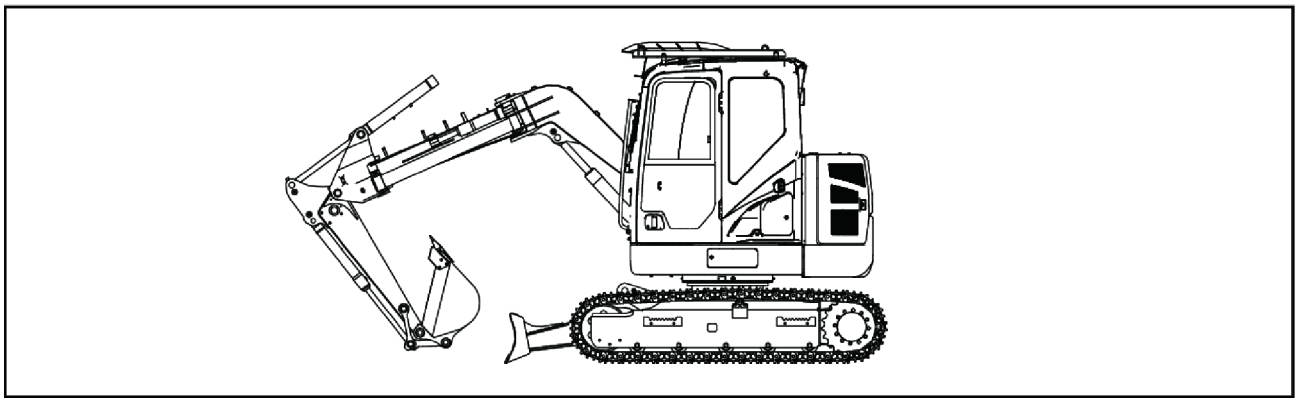
CX75C SR with blade



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CX75C SR Offset Boom with blade

When ordering parts, obtaining information or assistance, always supply your CASE CONSTRUCTION Dealer with the type and serial number of your machine or accessories. Write the following in the spaces below: the type, serial number and year of manufacture of your machine, accessories and the serial numbers of the various hydraulic and mechanical components.

Machine

(1) Designation/Model
Hydraulic Excavator CX75C SR

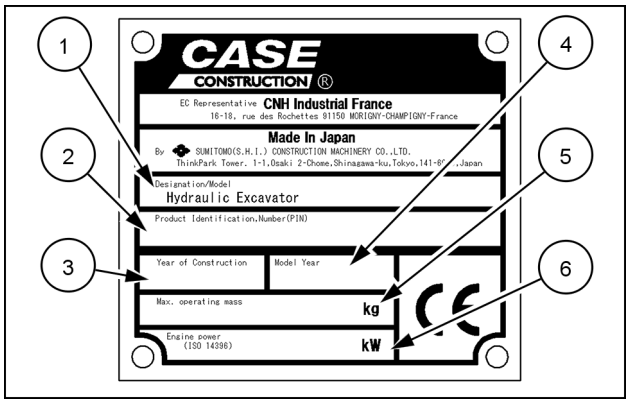
(2) Product Identification Number (PIN)

(3) Year of Construction:

(4) Model Year

(5) Maximum operating mass
(the weight shown on the manufacturer's plate is the value using the heaviest configuration and that it does not always correspond to the transport configuration)

(6) Engine power **ISO 14396**



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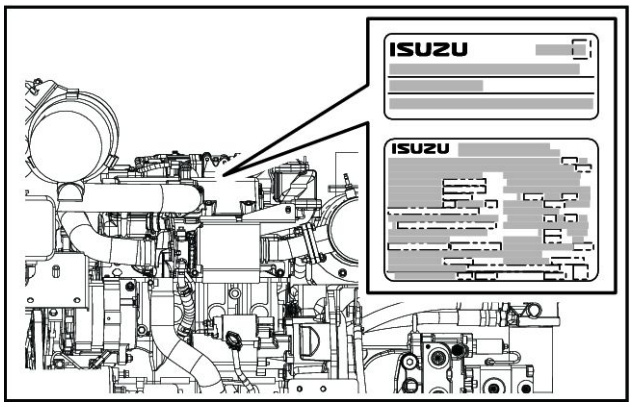
Engine

Manufacturer and type: ISUZU AP-4LE2X

Serial number:
(stamped on the right front of the cylinder block)



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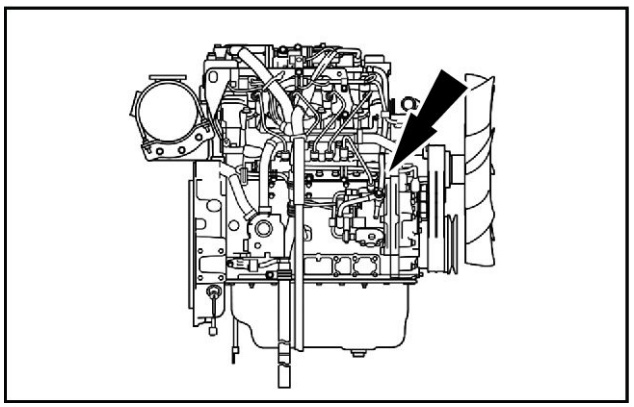

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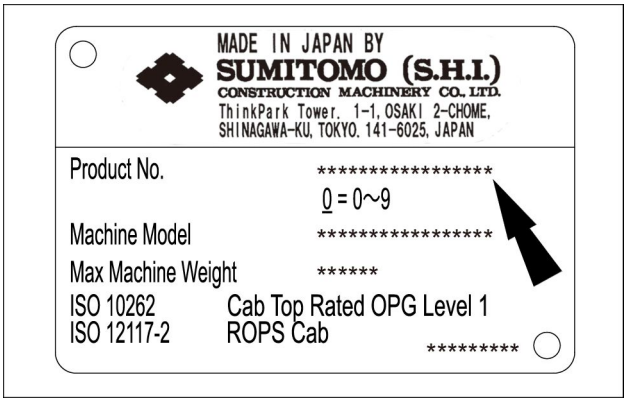
Cab protection ROPS (Roll Over Protective Structure)

Complies with ISO 12117-2.

Product identification number:



SMIL17CEX5115AA 7

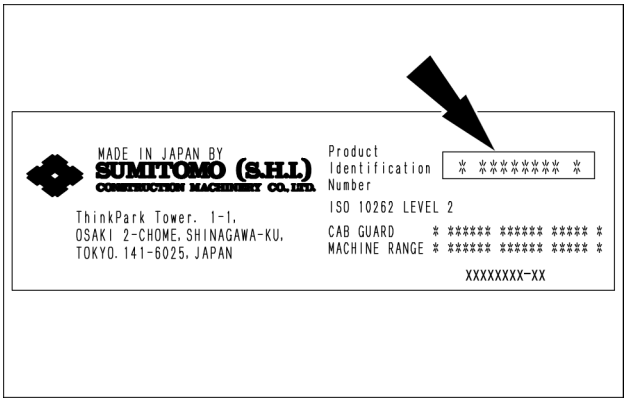
Cab protection FOPS (Falling Objects Protective Structure)

Complies with ISO 10262 level 1 (cab roof).

Complies with ISO 10262 level 2 (with optional bolt-on top guard).

Product identification number:

NOTICE: *The bolt-on top guard is standard for CX75C SR Offset Boom with blade.*



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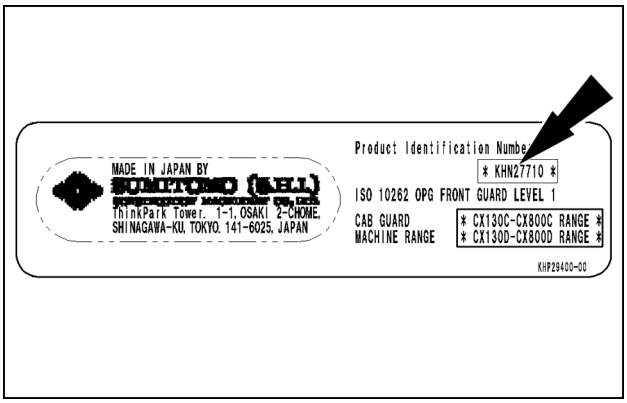
Cab protection FGPS (Front Guard Protective Structure)

Complies with ISO 10262 level 1 (with optional double frame bolt-on front grid).

Product identification number:



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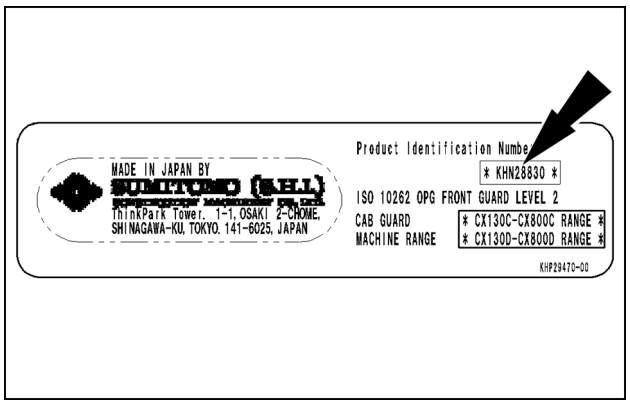
Complies with ISO 10262 level 2 (with optional single frame bolt-on front grid).

Product identification number:



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Component serial numbers

Hydraulic pump:

Swing reduction gear:

Travel reduction gears:

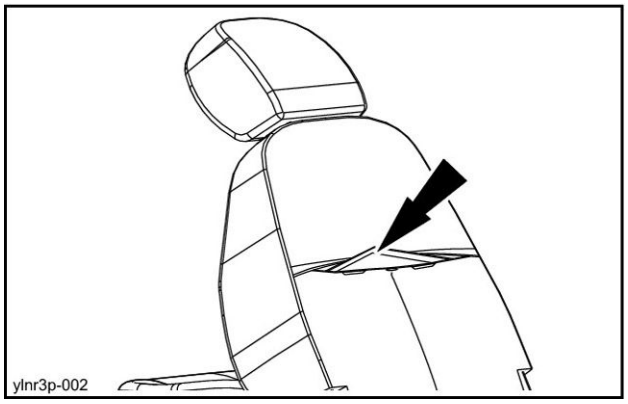
Travel control valve:

Attachment control valve:

Swing control valve:

Operator's manual storage on the machine

Always keep the manual in the location provided for that purpose (behind the operator’s seat). Make sure it is always complete and in good condition. If you wish to obtain extra copies, or copies in languages other than that of the country of use, consult your CASE CONSTRUCTION Dealer.



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Machine orientation

The terms "Right-hand", "Left-hand", "Front" and "Rear" are used in this manual to indicate the sides as they are seen from the operator's seat when the cab is over the idler wheels.

NOTE: *the illustration opposite shows the machine in normal travel position. In normal travel position, the cab is over the idler wheels. The travel reduction gears are at the rear of the upperstructure.*

(A) Front

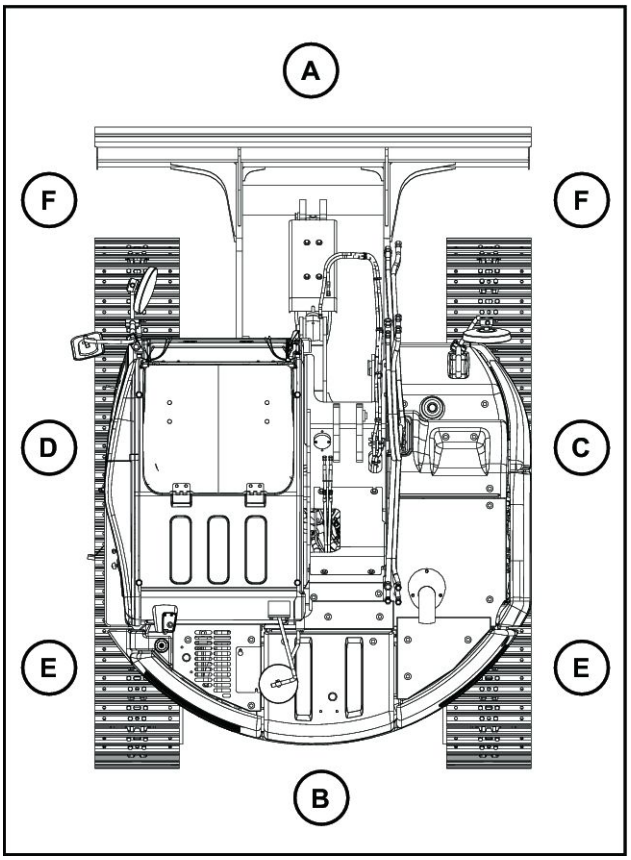
(B) Rear

(C) Right-hand side

(D) Left-hand side

(E) Travel motors

(F) Idler wheels



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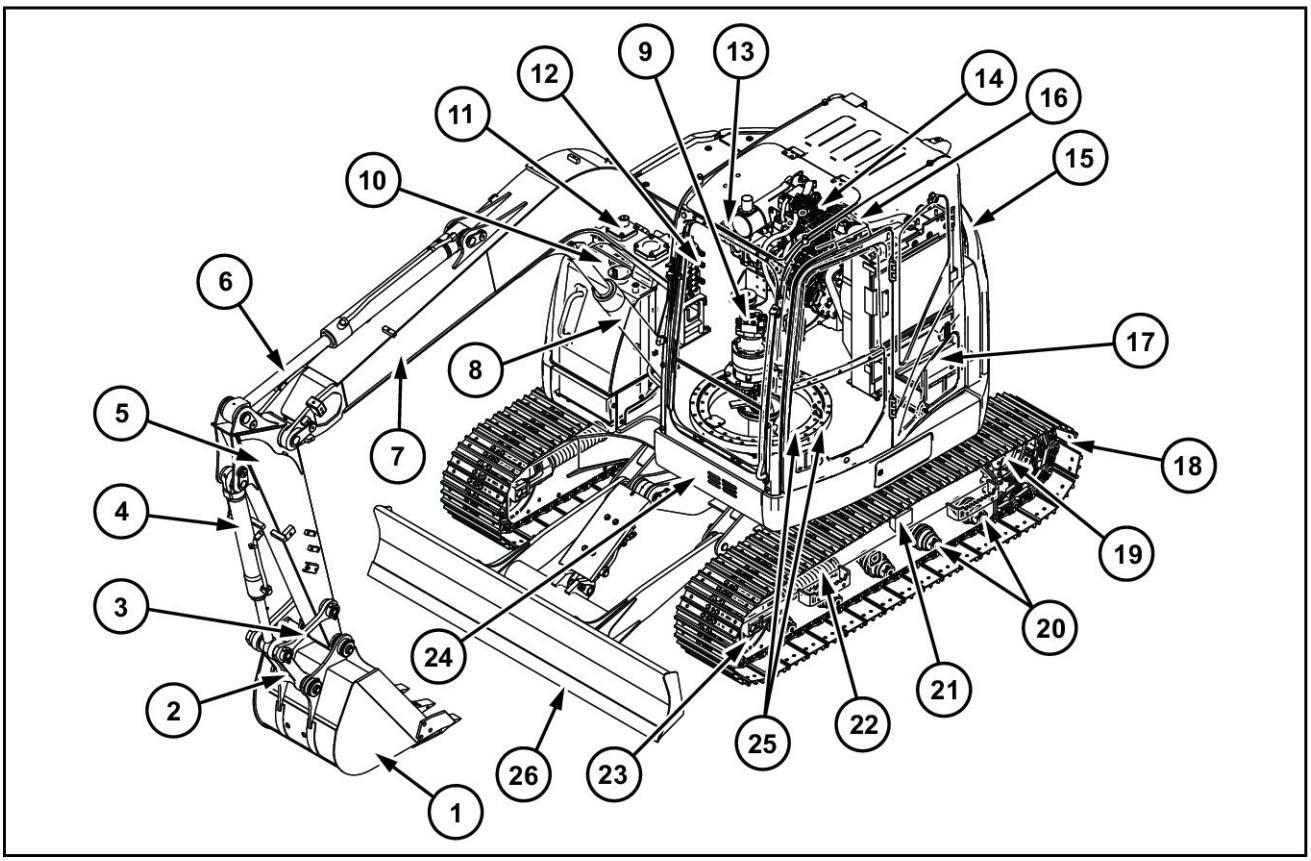
Machine components



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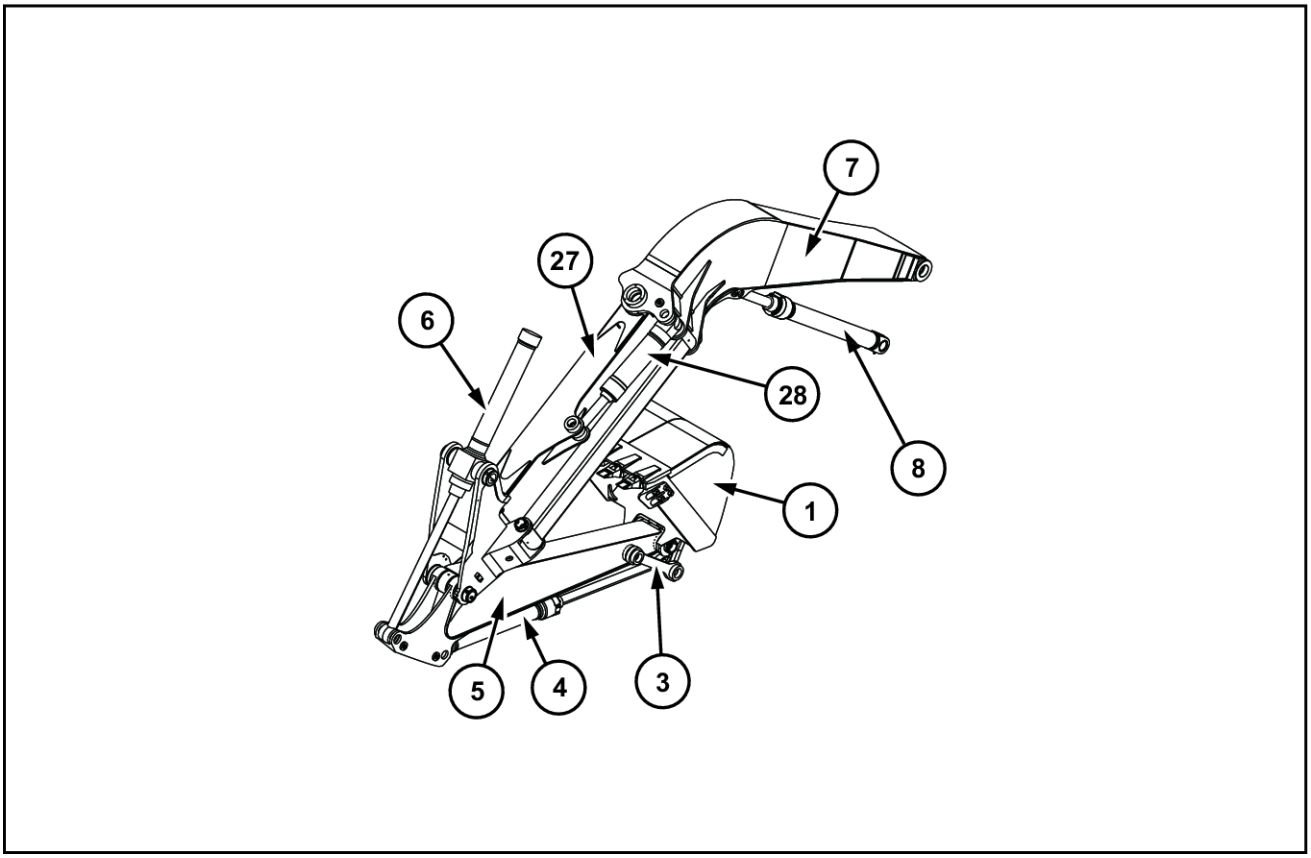

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1. Bucket
2. Bucket link
3. Arm link
4. Bucket cylinder
5. Arm
6. Arm cylinder
7. Boom
8. Boom cylinder
9. Swing reduction gear
10. Fuel tank
11. Hydraulic tank
12. Control valve
13. Hydraulic pump
14. Engine compartment
15. Counterweight
16. Air cleaner
17. Battery
18. Tracks
19. Travel reduction gears
20. Lower rollers
21. Upper roller
22. Recoil spring
23. Idler wheel
24. Cab/Operator's compartment
25. Swing components
26. Blade (blade version)
27. Offset boom (Offset Boom version)
28. Offset cylinder (Offset Boom version)

EC Declaration of Conformity

NOTE: *An original of this EC declaration is supplied with each machine and must be kept carefully by the owner.*

NOTE: *The official documents supplied with the machine must be kept by the owner so as to be able to present them to any inspecting authority which may request them.*

On the following page is provided copy of the EC Declaration of Conformity (EC Declaration of Conformity). The EC Declaration of Conformity is the manufacturer's declaration about equipment compliance to relevant EU provisions. Please keep the original document in a safe place. Local authorities may require you to show this document in order to assure compliance of your equipment.

Translation of this declaration in your own country language is provided on the reverse page of the original document. For your better and easier understanding of the document hereafter you'll find some explanatory notes.

1. Under section 1.2 of this copy, are listed those options or variants which have safety related functions. Some of them are standard provided, like FOPS (Falling Objects Protective Structure) or ROPS (Roll Over Protective Structure). Others, like object handling kit required to lift loose objects, are available upon customer request.
2. Under point 2 of this copy, are listed all information required by EU "Outdoor Noise" Directive **2000/14/EC**. Please refer your own original EC Declaration of Conformity for specific equipment information. On the same page are indicated information about operators station noise level (LpA) which is not matter of above mentioned EU Directive and therefore not indicated on it.
3. Generic serial number for this equipment type. Sequence of letters and numbers may vary depending on equipment configuration.
4. EC Declaration of Conformity serial number. Please make reference to this number when requiring information or support to CASE CONSTRUCTION about EC Declaration of Conformity.
5. Signature of a person authorised to sign the document on behalf of the company.

CASE CONSTRUCTION

SUMITOMO (S.H.I) CONSTRUCTION MACHINERY CO. Ltd

"EC" DECLARATION OF CONFORMITY

The undersigned declare that the machine described below has been designed and manufactured in compliance with the following European Directives, as amended, and the regulations transposing them into national laws:

1. 2006/42/EC "Safety of machinery"

1.1 European Harmonised standards under which conformity is declared: **EN 474-1:2006+A4:2013; EN 474-5:2006+A3:2013**

		Yes	No
1.2	Main safety components installed and supplied with the machine		
1.2.1	Falling Object Protective Structure (F.O.P.S.)	☒	☐
1.2.2	Object handling application kit (EN 474-5 §5.6.4; EN 474-1 Annex E) (1)	☐	☒
1.2.3	Roll Over Protective Structure (R.O.P.S.)	☒	☐
1.2.4	Cab front guard	☐	☒
1.2.7	# # #	☐	☒

1.4 Name and address of the person authorised to compile the technical file:
CNH Industrial France - Route Nationale 330, Penchard - 77122 MONTHYON - FRANCE

2. 2000/14/EC "Noise emission"

2.1 Conformity assessment procedure followed: Annex XXXXXXXXXX

2.2 Name and address of the Notified Body involved: XXXXXXXXXX

2.3 Measured sound power level LWA (ref. 1 pW): (2) 0 dB(A)

2.4 Guaranteed sound power level LWA (ref. 1 pW): 0 dB(A)

2.5 Engine power (as defined by ISO 14396): 0 kW

2.6 Holder of the technical documentation: XXXXXXXXXX

3. 2004/108/EC "Electromagnetic compatibility"

3.1 European Harmonised standards under which conformity is declared: **EN 13309:2010**

4. Other applicable Directive/s: # # #

5. Manufacturer: SUMITOMO (S.H.I) C.M. CO. Ltd
ThinkPark Tower 1-1, Osaki 2-Chome,
Shinagawa-ku, Tokyo 141-6025 - JAPAN

6. Category: **Hydraulic excavator**

7. Type: **CX75C SR**

8. Serial n°: **DCH075R6NFE6A0000** (3)

9. EC Representative: **CNH Industrial France**
16-18, Rue des Rochettes – 91150 Morigny-Champigny – France

(4) **NFE6A0000**

Chiba, Japan 12/03/2015

Signature (Name and Function) (5)

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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.

Safety rules

⚠ General safety rules ⚠

Use caution when you operate the machine on slopes. Raised equipment, full tanks and other loads will change the center of gravity of the machine. The machine can tip or roll over when near ditches and embankments or uneven surfaces.

Never permit anyone other than the operator to ride on the machine.

Never operate the machine under the influence of alcohol or drugs, or while you are otherwise impaired.

When digging or using ground-engaging attachments, be aware of buried cables. Contact local utilities to determine the locations of services.

Pay attention to overhead power lines and hanging obstacles. High voltage lines may require significant clearance for safety.

Hydraulic oil or diesel fuel leaking under pressure can penetrate the skin, causing serious injury or infection.

- DO NOT use your hand to check for leaks. Use a piece of cardboard or paper.
- Stop the engine, remove the key, and relieve the pressure before you connect or disconnect fluid lines.
- Make sure that all components are in good condition. Tighten all connections before you start the engine or pressurize the system.
- If hydraulic fluid or diesel fuel penetrates the skin, seek medical attention immediately.
- Continuous long term contact with hydraulic fluid may cause skin cancer. Avoid long term contact and wash the skin promptly with soap and water.

Keep clear of moving parts. Loose clothing, jewelry, watches, long hair, and other loose or hanging items can become entangled in moving parts.

Wear protective equipment when appropriate.

DO NOT attempt to remove material from any part of the machine while it is being operated or while components are in motion.

Make sure that all guards and shields are in good condition and properly installed before you operate the machine. Never operate the machine with shields removed. Always close access doors or panels before you operate the machine.

Dirty or slippery steps, ladders, walkways, and platforms can cause falls. Make sure these surfaces remain clean and clear of debris.

A person or pet within the operating area of a machine can be struck or crushed by the machine or its equipment. DO NOT allow anyone to enter the work area.

Raised equipment and/or loads can fall unexpectedly and crush persons underneath. Never allow anyone to enter the area underneath raised equipment during operation.

Never operate the engine in enclosed spaces as harmful exhaust gases may build up.

Before you start the machine, be sure that all controls are in neutral or park lock position.

Start the engine only from the operator's seat. If you bypass the safety start switch, the engine can start with the transmission in gear. Do not connect or short across terminals on the starter solenoid. Attach jumper cables as described in the manual. Starting in gear may cause death or serious injury.

Always keep windows, mirrors, all lighting clean to provide the best possible visibility while you operate the machine.

Operate controls only when seated in the operator's seat, except for those controls expressly intended for use from other locations.

Before you leave the machine:

1. Park the machine on a firm, level surface.
2. Lower the attachment to the ground.
3. Put all controls in neutral position.
4. Turn off the engine and remove the key.
5. Place the gate lock lever (safety bar) in the upward position.

⚠ General maintenance safety ⚠

Keep the area used for servicing the machine clean and dry. Clean up spilled fluids.

Service the machine on a firm, level surface.

Install guards and shields after you service the machine.

Close all access doors and install all panels after servicing the machine.

Do not attempt to clean, lubricate, clear obstructions, or make adjustments to the machine while it is in motion or while the engine is running.

Always make sure that working area is clear of tools, parts, other persons and pets before you start operating the machine.

Unsupported hydraulic cylinders can lose pressure and drop the equipment, causing a crushing hazard. Do not leave equipment in a raised position while parked or during service, unless the equipment is securely supported.

Jack or lift the machine only at jack or lift points indicated in this manual.

Incorrect towing procedures can cause accidents. When you tow a disabled machine follow the procedure in this manual. Use only rigid tow bars.

Stop the engine, remove the key, and relieve pressure before you connect or disconnect fluid lines.

Stop the engine and remove the key before you connect or disconnect electrical connections.

Scalding can result from incorrect removal of coolant caps. Cooling systems operate under pressure. Hot coolant can spray out if you remove a cap while the system is hot. Allow the system to cool before you remove the cap. When you remove the cap, turn it slowly to allow pressure to escape before you completely remove the cap.

Replace damaged or worn tubes, hoses, electrical wiring, etc.

The engine, transmission, exhaust components, and hydraulic lines may become hot during operation. Take care when you service such components. Allow surfaces to cool before you handle or disconnect hot components. Wear protective equipment when appropriate.

When welding, follow the instructions in the manual. Always disconnect the battery before you weld on the machine. Always wash your hands after you handle battery components.

⚠ Fire and explosion prevention ⚠

Fuel or oil that is leaked or spilled on hot surfaces or electrical components can cause a fire.

Crop materials, trash, debris, bird nests, or flammable material can ignite on hot surfaces.

Always have a fire extinguisher on or near the machine.

Make sure that the fire extinguisher(s) is maintained and serviced according to the manufacturer's instructions.

At least once each day and at the end of the day, remove all trash and debris from the machine especially around hot components such as the engine, transmission, exhaust, battery, etc. More frequent cleaning of your machine may be necessary depending on the operating environment and conditions.

At least once each day, remove debris accumulation around moving components such as bearings, pulleys, belts, gears, cleaning fans, etc. More frequent cleaning of your machine may be necessary depending on the operating environment and conditions.

Inspect the electrical system for loose connections and frayed insulation. Repair or replace loose or damaged parts.

Do not store oily rags or other flammable material on the machine.

Do not weld or flame cut any items that contain flammable material. Clean items thoroughly with non-flammable solvents before welding or flame-cutting.

Do not expose the machine to flames, burning brush, or explosives.

Promptly investigate any unusual smells or odors that may occur during operation of the machine.

Before performing maintenance for electrical systems or electric welding, always place the key of the battery master switch in "O" (Off) position or disconnect the negative — terminal of the batteries, in order to cut off the electric circuit.

⚠ General battery safety ⚠

Always wear eye protection when you work with batteries.

Do not create sparks or have open flame near a battery.

Ventilate the area when you charge a battery or use a battery in an enclosed area.

Disconnect the negative — terminal first and reconnect the negative — terminal last.

When you weld on the machine, disconnect both terminals of the battery.

Do not weld, grind, or smoke near a battery.

When you use auxiliary batteries or connect jumper cables to start the engine, use the procedure shown in the operator's manual. Do not short across terminals.

Follow the manufacturer's instructions when you store and handle batteries.

Battery post, terminals, and related accessories contain lead and lead compounds. Wash hands after handling. This is a California Proposition 65 warning.

Battery acid causes burns. Batteries contain sulfuric acid. Avoid contact with skin, eyes, or clothing. Antidote (external): Flush with water. Antidote (eyes): flush with water for 15 minutes and seek medical attention immediately. Antidote (internal) : Drink large quantities of water or milk. Do not induce vomiting. Seek medical attention immediately.

Keep out of reach of children and other unauthorized persons.

⚠ Seat belts ⚠

Seat belts must be worn at all times.

Seat belt inspection and maintenance:

- Keep seat belts in good condition.
- Keep sharp edges and items than can cause damage away from the belts.
- Periodically check belts, buckles, retractors, tethers, slack take-up system, and mounting bolts for damage and wear.
- Replace all parts that have damage or wear.
- Replace belts that have cuts that can make the belt weak.
- Check that bolts are tight on the seat bracket or mounting.
- If the belt is attached to the seat, make sure that the seat or seat brackets are mounted securely.
- Keep seat belts clean and dry.
- Clean belts only with soap solution and warm water.
- Do not use bleach or dye on the belts because this can make the belts weak.

⚠ Operator protective structure ⚠

Your machine is equipped with an operator protective structure, such as: a Roll Over Protective Structure (ROPS), Falling Objects Protective Structure (FOPS), or a cab with a ROPS. A ROPS may be a can frame or a two-posted or four-posted structure used for the protection of the operator to minimize the possibility of serious injury. The mounting structure and fasteners forming the mounting connection with the machine are part of the ROPS.

The protective structure is a special safety component of your machine.

DO NOT attach any device to the protective structure for pulling purposes. DO NOT drill holes to the protective structure.

The protective structure and interconnecting components are a certified system. Any damage, fire, corrosion, or modification will weaken the structure and reduce your protection. If this occurs, THE PROTECTIVE STRUCTURE MUST BE REPLACED so that it will provide the same protection as a new protective structure. Contact your dealer for protective structure inspection and replacement.

After an accident, fire, tip over, or roll over, the following MUST be performed by a qualified technician before returning the machine to field or job-site operations:

- The protective structure MUST BE REPLACED.
- The mounting or suspension for the protective structure, operator's seat and suspension, seat belts and mounting components, and wiring within the operator's protective system MUST be carefully inspected for damage.
- All damaged parts MUST BE REPLACED.

DO NOT WELD, DRILL HOLES, ATTEMPT TO STRAIGHTEN, OR REPAIR THE PROTECTIVE STRUCTURE. MODIFICATION IN ANY WAY CAN REDUCE THE STRUCTURAL INTEGRITY OF THE STRUCTURE, WHICH COULD CAUSE DEATH OR SERIOUS INJURY IN THE EVENT OF FIRE, TIP OVER, ROLL OVER, COLLISION, OR ACCIDENT.

Seat belts are part of your protective system and must be worn at all times. The operator must be held to the seat inside the frame in order for the protective system to work.

⚠ Air-conditioning system ⚠

The air-conditioning system is under high pressure. Do not disconnect any lines. The release of high pressure can cause serious injury.

The air-conditioning system contains gases that are harmful to the environment when released into the atmosphere. Do not attempt to service or repair the system.

Only trained service technicians can service, repair, or recharge the air-conditioning system.

⚠ Personal Protective Equipment (PPE) ⚠

Wear Personal Protective Equipment (PPE) such as hard hat, eye protection, heavy gloves, hearing protection, protective clothing, etc.

⚠ Do Not Operate tag ⚠

Before you start servicing the machine, attach a 'Do Not Operate' warning tag to the machine in an area that will be visible.

⚠ Hazardous chemicals ⚠

If you are exposed to or come in contact with hazardous chemicals you can be seriously injured. The fluids, lubricants, paints, adhesives, coolant, etc. required for the function of your machine can be hazardous. They may be attractive and harmful to domestic animals as well as humans.

Material Safety Data Sheets (MSDS) provide information about the chemical substances within a product, safe handling and storage procedures, first aid measures, and procedures to take in the event of a spill or accidental release. MSDS are available from your dealer.

Before you service your machine check the MSDS for each lubricant, fluid, etc. used in this machine. This information indicates the associated risks and will help you service the machine safely. Follow the information in the MSDS, and on manufacturer containers, as well as the information in this manual, when you service the machine.

Dispose of all fluids, filters, and containers in an environmentally safe manner according to local laws and regulations. Check with local environmental and recycling centers or your dealer for correct disposal information.

Store fluids and filters in accordance with local laws and regulations. Use only appropriate containers for the storage of chemicals or petrochemical substances.

Keep out of reach or children or other unauthorized persons.

Applied chemicals require additional precautions. Obtain complete information from the manufacturer or distributor of the chemicals before you use them.

⚠ Utility safety ⚠

When digging or using ground-engaging equipment, be aware of buried cables and other services. Contact your local utilities or authorities, as appropriate, to determine the locations of services.

Make sure that the machine has sufficient clearance to pass in all directions. Pay special attention to overhead power lines and hanging obstacles. High voltage lines may require significant clearance for safety. Contact local authorities or utilities to obtain safe clearance distances from high voltage power lines.

Retract raised or extended components, if necessary. Remove or lower radio antennas or other accessories. Should a contact between the machine and an electric power source occur, the following precautions must be taken:

- Stop the machine movement immediately.
- Apply the parking brake, stop the engine, and remove the key.
- Check if you can safely leave the cab or your actual position without contact with electrical wires. If not, stay in your position and call for help. If you can leave your position without touching lines, jump clear of the machine to make sure that you do not make contact with the ground and the machine at the same time.
- Do not permit anyone to touch the machine until power has been shut off to the power lines.

⚠ Electrical storm safety ⚠

Do not operate machine during an electrical storm.

If you are on the ground during an electrical storm, stay away from machinery and equipment. Seek shelter in a permanent, protected structure.

If an electrical storm should strike during operation, remain in the cab. Do not leave the cab or operator's platform. Do not make contact with the ground or objects outside the machine.

⚠ Mounting and dismounting ⚠

Mount and dismount the machine only at designated locations that have handholds, steps, and/or or ladders.

Do not jump off of the machine.

Make sure that steps, ladders, and platforms remain clean and clear of debris and foreign substances. Injury may result from slippery surfaces.

Face the machine when you mount and dismount the machine.

Maintain a three-point contact with steps, ladders, and handholds.

Never mount or dismount from a moving machine.

Do not use the controls or accessories as handholds when you enter or exit the cab.

⚠ Working at heights ⚠

When the normal use and maintenance of the machine requires you to work at heights:

- Correctly use installed steps, ladders, and railings.
- Never use ladders, steps, or railings while the machine is moving.
- Do not stand on surfaces that are not designated as steps or platforms.

Do not use the machine as a lift, ladder, or platform for working at heights.

⚠ Lifting and overhead loads ⚠

Never use loader buckets, forks, etc. or other lifting, handling, or digging equipment to lift persons.

Do not use raised equipment as a work platform.

Know the full area of movement of the machine and equipment and do not enter or permit anyone to enter the area of movement while the machine is in operation.

Never enter or permit anyone to enter the area underneath raised equipment. Equipment and/or loads can fall unexpectedly and crush persons underneath it.

Do not leave equipment in raised position while parked or during service, unless securely supported. Hydraulic cylinders must be mechanically locked or supported if they are left in a raised position for service or access.

Loader buckets, forks, etc. or other lifting, handling, or digging equipment and its load will change the center of gravity of the machine. This can cause the machine to tip on slopes or uneven ground.

Load items can fall off the loader bucket or lifting equipment and crush the operator. Care must be taken when lifting a load. Use proper lifting equipment.

Do not lift load higher than necessary. Lower loads to transport. Remember to leave appropriate clearance to the ground and other obstacles.

Equipment and associated loads can block visibility and cause an accident. Do not operate with insufficient visibility.

⚠ Before using the machine⚠

- Avoid loose fitting clothing, loose or uncovered long hair, jewelry or any other items which could get caught up in machinery.
- Different types of job will require different types of protective equipment. Items such as hard hats, safety shoes, heavy gloves, reflector type jackets, respirators, ear protection and eye protection may be required. Before starting a job, determine what protective equipment will be necessary. Use this equipment at all times.
- Do not attempt to operate this machine unless you have first read and perfectly understood the safety messages and instructions appearing in this manual.
- Operating the machine requires full attention and care on the part of the operator can avoid accidents. Get to know the machine's possibilities and limitations and the working space required. There are areas of poor visibility in the working range of the machine. Have someone guide you for all areas where visibility is not perfect.
- Grease, oil, mud or (in winter) ice on the steps and access handles can cause accidents. Make sure they are kept clean at all times.
- Every day, inspect the machine to detect any signs of hydraulic fluid leakage. Tighten the connections or replace any defective components as necessary.
- Remove any obstructions which hinder visibility. Keep the windshield, rear view mirror and windows clean at all times.
- Make sure the windshield wiper works correctly.
- Make sure you are perfectly familiar with hand signals in daily use on the worksite so as to be able to obtain help with tight manoeuvres or when carrying out operations where visibility is poor.

- Before undertaking any travel or working operations during hours of darkness, make sure the lighting and signalling equipment is fully operative.
- Before any travel operation, make sure that the doors and hoods are properly latched.
- Check that no tools or other items have been left on the machine (be it on the undercarriage or the upperstructure) or in the operator's compartment.
- The operator must be alone on the machine at all times. Do not allow anyone to stand on or around the machine.
- To get in or out of the cab, it is imperative that the upperstructure frame is in line with the undercarriage.
- When alighting from or getting into the operator's compartment, always face the machine and use the steps and access handles.
- Be sure you know the position and function of each control. Incorrect operation of the controls can cause serious injuries.
- Check all controls and safety devices in a safe, open area before starting work.
- Keep away from dangerous areas such as ditches, overhangs, rocky areas, etc. Make a survey of the work-site and determine the possible dangers before using the machine.
- Before parking the machine, make sure that the ground is stable. Plan the worksite so that the ground is flat, hard and level.
- Before moving the machine to work in a new area, walk around to determine all possible causes of accidents there. Holes, obstacles, debris and other danger risks in the working area can cause serious injury.
- Be ready to meet emergencies. Always carry a first aid kit and if possible, fire extinguisher (not supplied) within easy reach on board. Make sure the fire extinguisher is regularly serviced in conformance with the manufacturer's instructions.
- Check the fastening of the main components: counterweight, turntable bearing and operator's compartment. In the event of problems, consult your CASE CONSTRUCTION Dealer.
- Make sure you understand the symbols used on the machine safety decals. Keep the decals clean so that they are perfectly legible at all times.
- Work out a means of convenient escape from the machine (emergency exit via the windshield or the rear window glass) in the event of the machine turning over or tipping over or the cab door being jammed.
- Make sure you are perfectly familiar with traffic regulations and special safety equipment requirements before transporting this machine on a public highway.
- When loading trucks, never swing the load over the truck cab.
- Before undertaking any travel on the job site, make sure the itinerary to be followed is completely safe. If bridges are to be crossed, make sure they are perfectly capable of supporting the weight of the machine.
- Always steer round large obstacles such as boulders, big trees, etc.

Quick coupler (optional)

- It is mandatory for the switch to be in the locked position when operating the machine.
- Every day, check that the locking bar functions correctly and that it is not fouled by foreign matter. Clean the locking system if necessary.
- If you are obliged to use the quick coupler with buckets not manufactured by CASE CONSTRUCTION, make sure the diameter of the pins and the width between the bucket lugs meet the dimensions needed to fit the quick coupler (pins, washers, bushings, etc.). Consult your CASE CONSTRUCTION Dealer.

⚠ Operating the machine⚠

- When working on a public highway, use standard traffic signs and take into consideration the working range of the upperstructure and its attachments. Local or national regulations stipulate the number, type and location of reflector strips.
- Avoid running the engine in a confined space. If there is no alternative, proper ventilation must be provided at all times.
- Do not allow anyone else on the machine. The passenger could fall or cause an accident.
- Never operate the working or travel controls unless you are properly seated in the operator’s seat with the seat belt correctly fastened.
- Before starting the engine, check the direction of travel (in forward drive, the reduction gears should be to the rear of the machine).
- Do not work near overhead high-voltage electric lines without checking beforehand that all necessary measures have been taken to respect the minimum distances:
  Less than 57000 volts: **3 m** (**9.8 ft**).
  More than 57000 volts: **5 m** (**16.4 ft**).
- Study the position of any existing pipelines or conduits before starting work. Electrical cables, gas and water pipes and other underground installations can cause serious injury.
- Always make allowance for working conditions (sloping or rough ground), the site and weather conditions when driving the machine.
- Do not allow anyone to stand in the machine working area. Accidental operation of the upperstructure swing control or of an attachment control could cause an ac-

cident. Stop all operations until everyone has moved away.

- Before operating the dozer blade (if equipped) make sure that there is no one in the working area of the latter.
- Operate all controls gradually to ensure smooth machine operation.
- Whenever load handling operations are to be carried out, it is imperative to adhere strictly to the instructions given in this manual and local legislation.
- It is forbidden to use the machine to carry out tasks other than those for which it is intended. Never use the equipment for sweeping the ground to level out rubble or push objects (transversal stress on the attachment).
- Stop the engine and remove the ignition key when the machine is not in use, even for short periods of time.
- The working area of the end attachment that is mounted may interfere with the machine. Interference may be caused due to the type of end attachment or installation of parts such as a cab guard. Always maintain a safe margin of distance. (Be careful of tool swing or accidental operations.)
- To access or exit the operator's compartment, the left-hand control arm must be in the raised position. Never forget this basic requirement.
- Never leave the operator's compartment while the engine is running.
- To get in or out of the cab, it is imperative that the upperstructure frame is in line with the undercarriage.
- Dust, smoke or mist can reduce visibility and cause an accident. Reduce speed or come to a complete halt until visibility has improved.
- Never jump down from the machine. When alighting from the machine or the upperstructure, always face the machine and use the steps and access handles.
- In the event of an operating problem or failure, move the machine to a safe place, lower the attachment to the ground, shut down the engine and remove the ignition key. Locate the problem, report it if necessary and take the necessary steps to warn others not to attempt to operate the machine.
- Before tilting the seat back forward, it is mandatory to raise the armrests to avoid any accidental operation of the control levers.
- Never turn the key of the battery master switch in "O" (Off) position when engine is running, the electrical systems can be damaged.
- When the engine is stopped, always wait three minutes minimum before to place the key of the battery master switch in "O" (Off) position, otherwise the computer program of the hydraulic will not exit successfully.

⚠ Preventing risks caused by vibrations⚠

The machine's vibration affects the comfort and in some cases the health and safety of the operator. To reduce vibration risks to a minimum:

1. Make sure that the machine, the equipment and the tool are suitable for the work to be carried out.
2. Make sure that the machine is in good condition and that servicing intervals are complied with.
3. Check the track tension adjustment and the play in equipment linkages.
4. Make sure that the operator's seat and is adjustment controls are in good condition and then adjust the seat to suit the operator's size and weight. The operator's seat complies with the ISO 7096, 2000 standard, EM 6 class.

During work:

1. Operate all controls gradually to ensure smooth machine operation.
2. Modify the machine's operation to suit the working conditions.
3. During travel, adjust the machine's speed, reducing it if necessary.
4. Make sure that the machine's operating radius is in good condition, and free of obstacles and holes.

⚠ Quick coupler (optional)⚠

- Never place the control switch in the unlocked position when the machine is working.
- Each time a bucket is installed on the quick coupler, close the bucket and raise the attachment so as to be able to make a visual check that the bucket pin is correctly engaged in the latching hook.
- The quick coupler modifies the working range of the machine. In certain attachment positions the tool may foul the machine. Always leave a safety distance.
- Never carry out load handling using the front or rear anchoring points used to install the tool on the quick coupler.
- Never put your hands inside the quick coupler and never attempt to adjust or repair the quick coupler if the engine is running.

⚠ Parking the machine⚠

When parking the machine, proceed as follows:

1. Position the machine on flat, level ground, away from soft ground, excavations or poorly shored cavities.
2. Place the upperstructure and the attachment in line with the undercarriage, retract the attachment and dig the bucket into the ground.
3. Lower the dozer blade (if equipped) until it rests on the ground.
4. Stop the engine and remove the ignition key.
5. You must place the function cancellation lever in the central position (safety bar in inward position) before leaving the operator's compartment.
6. Lock the cab door.
7. Make sure that the hoods and doors are properly latched.
8. Check that no part of the machine is encroaching on the highway. If this cannot be avoided, install the necessary regulation signalling equipment.

⚠ Maintenance and adjustments⚠

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

carry out any servicing operation on the accumulator. If this instruction is not followed serious injury can result.

- The accumulator is charged with nitrogen under high pressure. Do not weld or allow flames to come near to the accumulator.
- There is high pressure fuel in the feed pipe when the engine is running and immediately after it has been shut down. Wait for 2 minutes after engine shut down before you do any maintenance or inspections to allow the pressure to drop in the pipe.
- High-voltage is charged to the controller and/or to the injector while the engine is running and immediately after it has been shut down.
  Do not touch the controller or the injector.
  If it is necessary to touch them for maintenance purposes, consult your CASE CONSTRUCTION Dealer.

⚠ Using an Implement other than a bucket⚠

- When using a special implement (hydraulic breaker, cutter crusher etc.), refer to the operator's manual provided with the implement.

⚠ Implement operation and maintenance ⚠

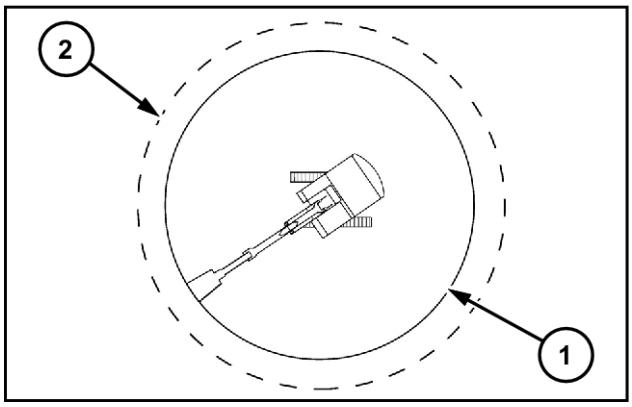
- For the implement operation and maintenance, refer to the operator's manual provided with the implement.

⚠ Safety area ⚠

The safety area is the space necessary for the machine to operate at the maximum range of the tool and at full swing **360°** plus **2 m**.

(1) Working area.

(2) Safety area.



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Ecology and the 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.

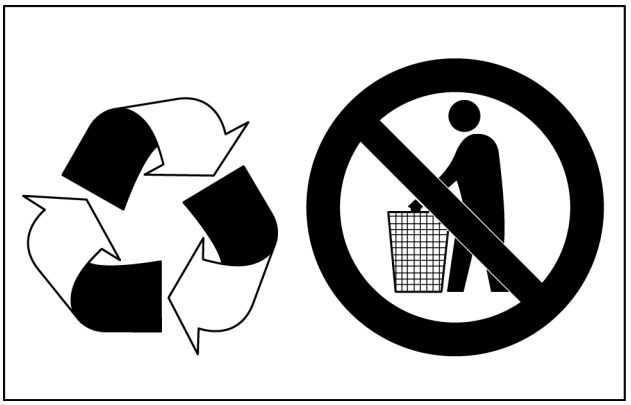
Familiarize yourself with the relative legislation applicable to your country, and make sure that you understand this legislation. Where no legislation exists, obtain information from suppliers of oils, filters, batteries, fuels, anti-freeze, cleaning agents, etc., with regard to the effect of these 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.
- Protect hoses during welding. Penetrating weld splatter may burn a hole or weaken hoses, allowing the loss of oils, coolant, etc.

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.



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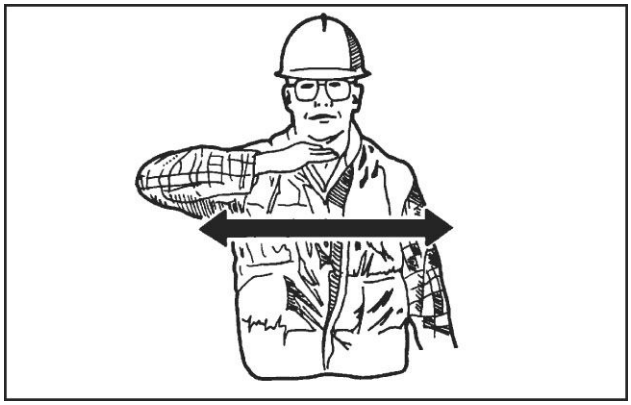
Hand signals

When operating the machine, never attempt to carry out tasks calling for fine control or working in areas where visibility is poor or impaired without seeking the assistance of a signalman. Make perfectly sure that you and the signalman understand the signals to be used.

Start the engine

PDE0002ATBP1 1

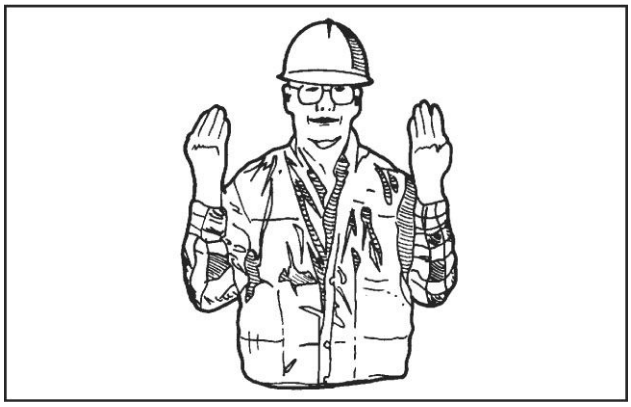
Shut down the engine



PDE0002TBP1 2

Come to me

Wave hands back and forth (palms inwards).



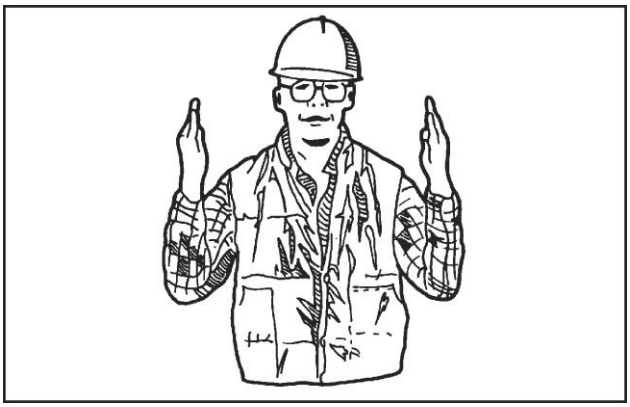
PDE0003ATBP1 3

Move away from me

Wave hands back and forth (palms outwards).

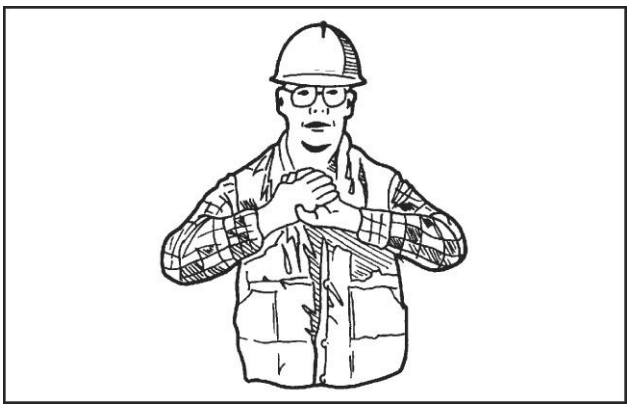
PDE0003TBP1 4

Go this far



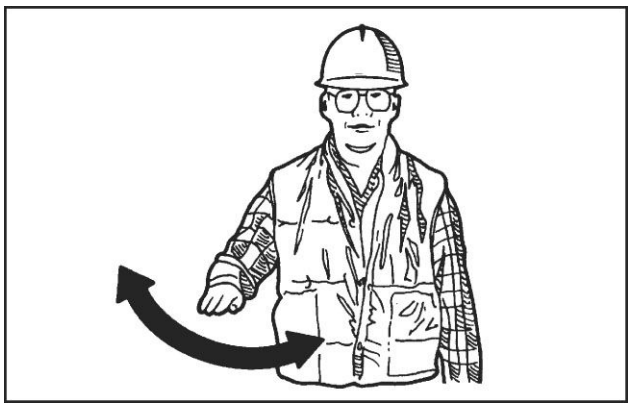
PDE0004ATBP1 5

All stop and hold



PDE0004TBP1 6

Stop
Wave one hand back and forth.



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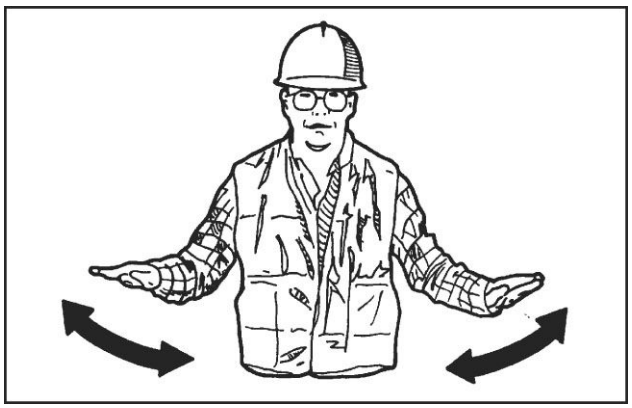
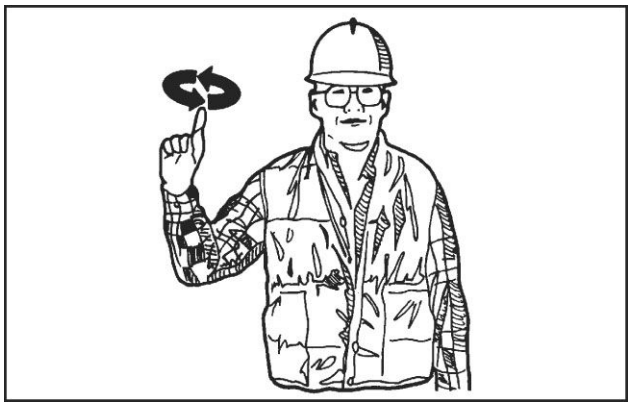
Emergency stop
Wave hands back and forth.



PDE0005TBP1 8

Raise load or tool

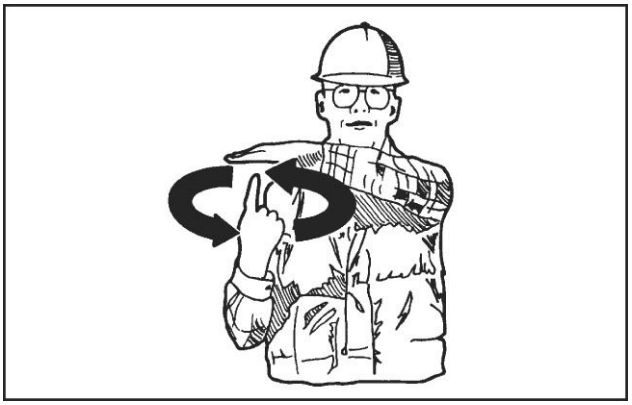


PDE0006ATBP1 9

Lower load or tool

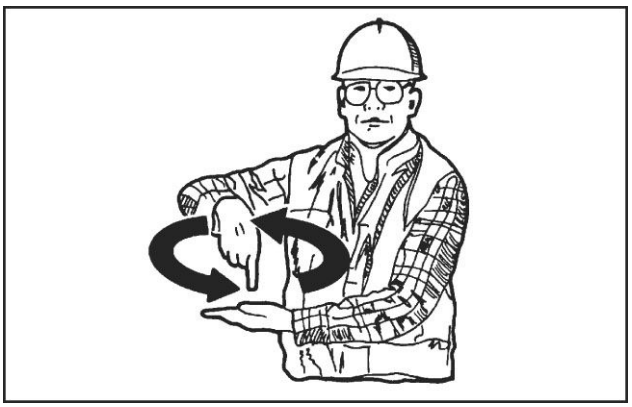
PDE0006TBP1 10

Slowly raise the load or tool



PDE0007ATBP1 11

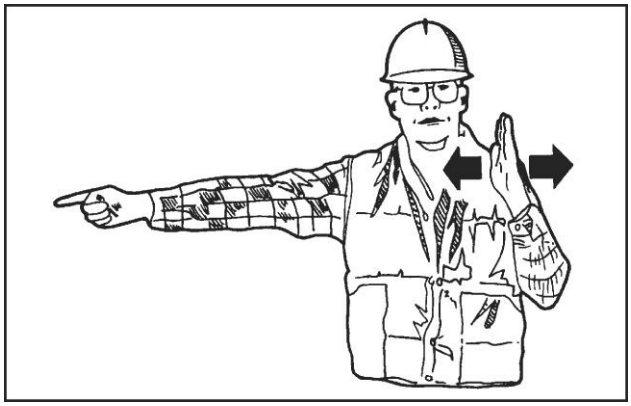
Slowly lower the load or tool



PDE0007TBP1 12

Turn machine left (swing load left)

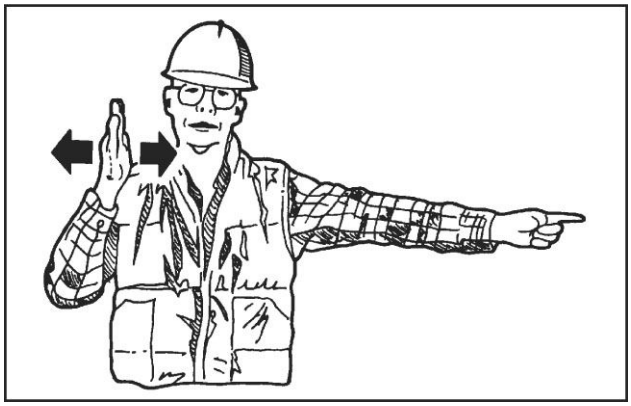
To stop movement, stop moving hand and clench fist.



PDE0008ATBP1 13

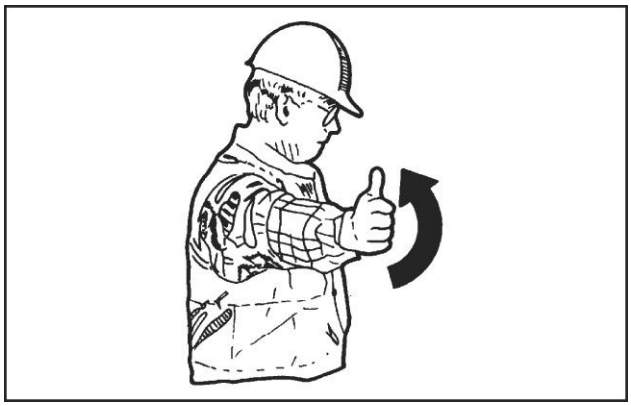
Turn machine right (swing load right)

To stop movement, stop moving hand and clench fist.



PDE0008TBP1 14

Raise tool

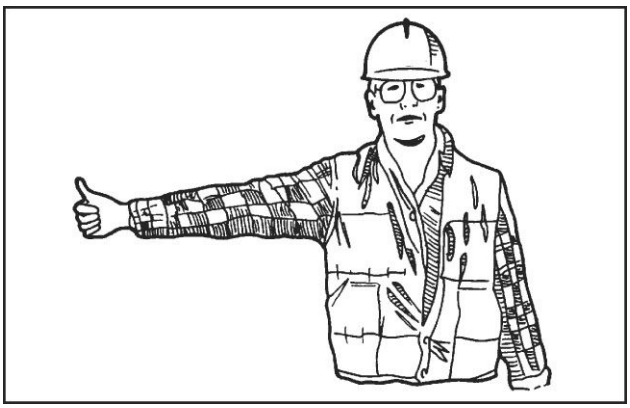


PDE0009ATBP1 15

Lower tool

PDE0009TBP1 16

Lift boom



PDE0010ATBP1 17

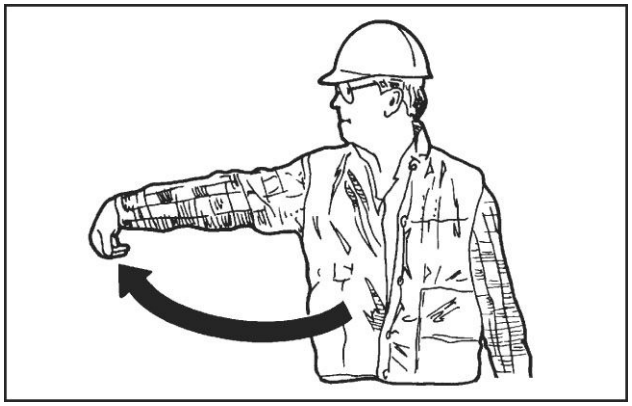
Lower boom

PDE0010TBP1 18

Retract dipper

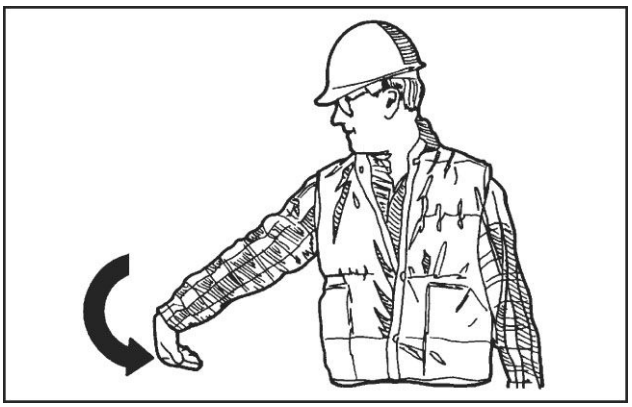
PDE0011ATBP1 19

Extend dipper



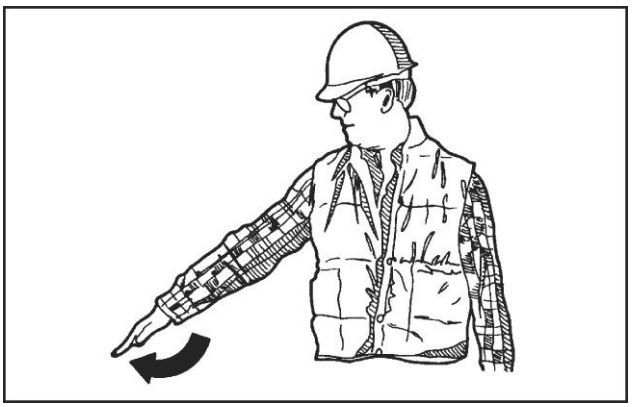
PDE0011TBP1 20

Fill tool



PDE0012ATBP1 21

Empty tool



PDE0012TBP1 22

Noise emission

Sound power level

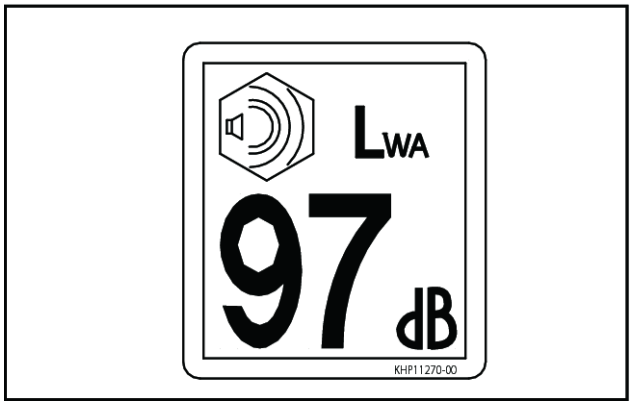
LWA= **97 dB** (A)

Sound power level guaranteed, determined in compliance with European Directive **2000/14/EC**.

Sound pressure level at operator's compartment

LpA= **73 dB** (A)

Sound pressure level measured in the cab with door and windows closed and the heating/conditioning fan in operation at mid-range speed, measured on identical machine, in accordance with **ISO 6396:2008**.



SMIL13CEX2518AA 1

Vibration levels

The vibration level transmitted to the operator depends mainly upon the conditions of the ground on which operations take place, the mode of operation of the machine and its equipment. The exposure to vibrations can be considerably reduced when the following recommendation are complied with:

- use equipment compatible with the machine and the type of work do be done;
- adjust and lock the seat in the correct position; also inspect regularly the suspensions of the seat, performing the adjustments and repairs as required;
- perform regularly the current maintenance operations of the machine at the prescribed intervals;
- operate the equipment in a uniform manner, preventing, as far as possible, sharp movements or excessive loads;
- when travelling, avoid, as far as possible, particularly rough terrain or the impact against possible obstacles.

This machine is equipped with an operator's seat complying with the requisites of standard **ISO 7096:2008**. This ensures that the exposure of the operator's body to vibrations comply with the protection requisites for the protection against vibrations when the machine operates as required by the operational scopes, in accordance with the prescriptions of this Manual. The operator's seat has been tested in accordance with EM6 input spectral class and has a SEAT transmissibility factor < 0.7.

- The weighted average quadratic acceleration value to which the operator's arms are subjected does not exceed **2.5 m/s²** (**8.20 ft/s²**)
- The weighted average quadratic acceleration value to which the operator's body is subjected does not exceed **0.5 m/s²** (**1.64 ft/s²**). These results were obtained using an acceleration gauge while digging ditches.

NOTE: *the Whole-Body exposure value is determined under particular operating and terrain conditions and therefore may not be representative for all the possible operating conditions within the intended use of the machine. Consequently this single Whole-Body vibration emission value is not intended to determine the Whole-Body vibration exposure as required by European Directive* ***2002/44/EC****. For this purpose it is recommended to conduct working conditions measurement. If this is not feasible use of information provided in the table below from* ***ISO/TR 25398:2006*** *(*).*

Working conditions	Basic emissions value			Standard deviation		
	1.4*aw,eqx	1,4*aw,eqy	aw,eqz	1.4*sx	1.4*sy	sz
Excavation	**0.44 m/s²** (**1.44 ft/s²**)	**0.27 m/s²** (**0.89 ft/s²**)	**0.30 m/s²** (**0.98 ft/s²**)	**0.24 m/s²** (**0.79 ft/s²**)	**0.16 m/s²** (**0.52 ft/s²**)	**0.17 m/s²** (**0.56 ft/s²**)
Hydraulic hammer	**0.53 m/s²** (**1.74 ft/s²**)	**0.31 m/s²** (**1.02 ft/s²**)	**0.55 m/s²** (**1.80 ft/s²**)	**0.30 m/s²** (**0.98 ft/s²**)	**0.18 m/s²** (**0.59 ft/s²**)	**0.28 m/s²** (**0.92 ft/s²**)
Mine	**0.65 m/s²** (**2.13 ft/s²**)	**0.42 m/s²** (**1.38 ft/s²**)	**0.61 m/s²** (**2.00 ft/s²**)	**0.21 m/s²** (**0.69 ft/s²**)	**0.15 m/s²** (**0.49 ft/s²**)	**0.32 m/s²** (**1.05 ft/s²**)
Travel	**0.48 m/s²** (**1.57 ft/s²**)	**0.32 m/s²** (**1.05 ft/s²**)	**0.79 m/s²** (**2.59 ft/s²**)	**0.19 m/s²** (**0.62 ft/s²**)	**0.20 m/s²** (**0.66 ft/s²**)	**0.23 m/s²** (**0.75 ft/s²**)

(*) **ISO/TR 25398:2006** Mechanical vibrations – Guidelines for assessment of exposure to whole-body vibration of ride-on machine – Use of harmonized data measured by international institutes, organizations and manufacturers.

Safety signs

⚠ WARNING

Avoid injury!
An illegible or missing decal can have far-reaching consequences. Inspect decals daily.
Failure to comply could result in death or serious injury.

W0228A

⚠ WARNING

Avoid injury!
Make sure decals are perfectly legible. Clean decals regularly. Replace all damaged, missing, painted over, or illegible decals. See your dealer for replacement decals. When replacing parts bearing decals, be sure to put new decals on each new part.
Failure to comply could result in death or serious injury.

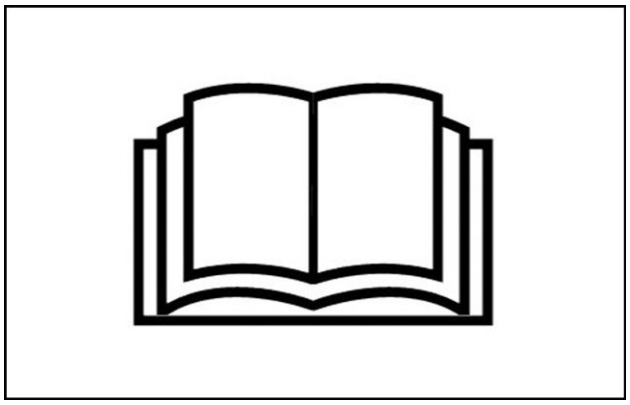
W0229A

The following safety decals are placed on your machine as a guide for your safety and for those working with you. Walk around the machine and note the content and location of these safety decals before operating your machine.

Keep safety decals clean and legible. Clean safety decals with a soft cloth, water, and a gentle detergent. Do not use solvent, gasoline, or other harsh chemicals. Solvents, gasoline, and other harsh chemicals may damage or remove safety decals.

Replace all safety decals that are damaged, missing, painted over, or illegible. If a safety decal is on a part that is replaced, make sure the safety decal is installed on the new part. See your CASE CONSTRUCTION Dealer for replacement safety decals.

Safety decals that display the “Read Operator’s Manual” symbol are intended to direct the operator to the operator’s manual for further information regarding maintenance, adjustments, or procedures for particular areas of the machine. When a safety decal displays this symbol, refer to the appropriate page of the operator’s manual.

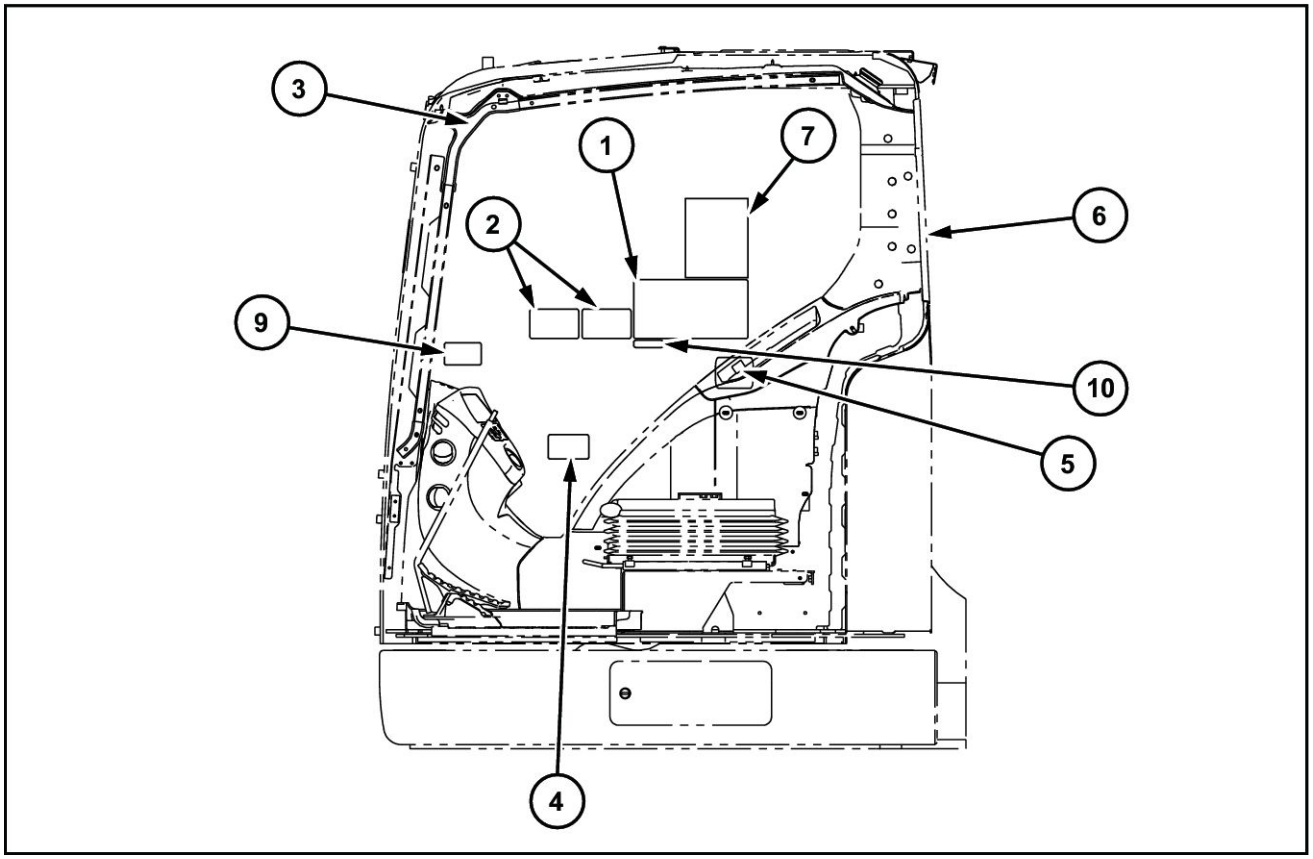


OM0000 1

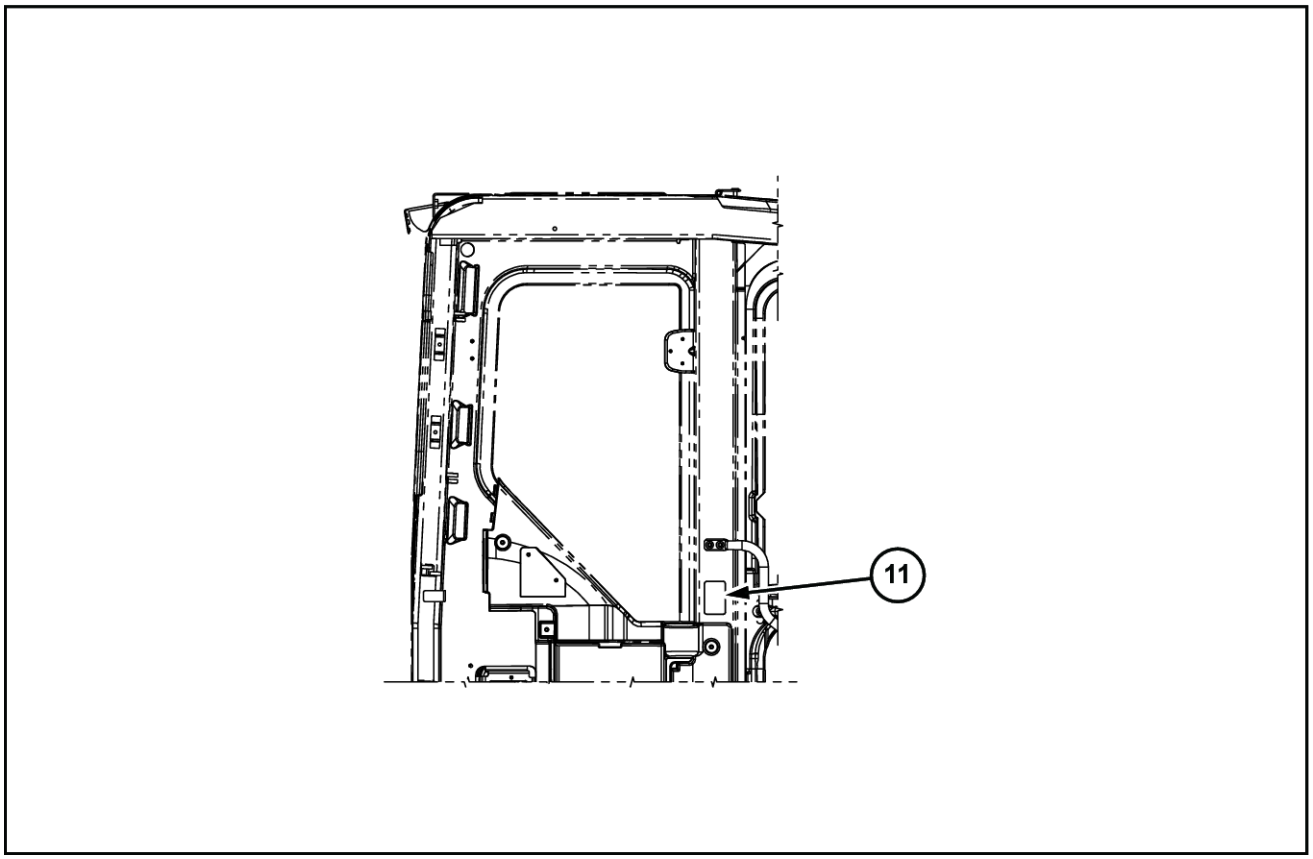
NOTE: *this chapter only covers decals relating to safety and machine operation and servicing. For information on all decals on the machine, consult the spare parts catalogue.*

Position of decals

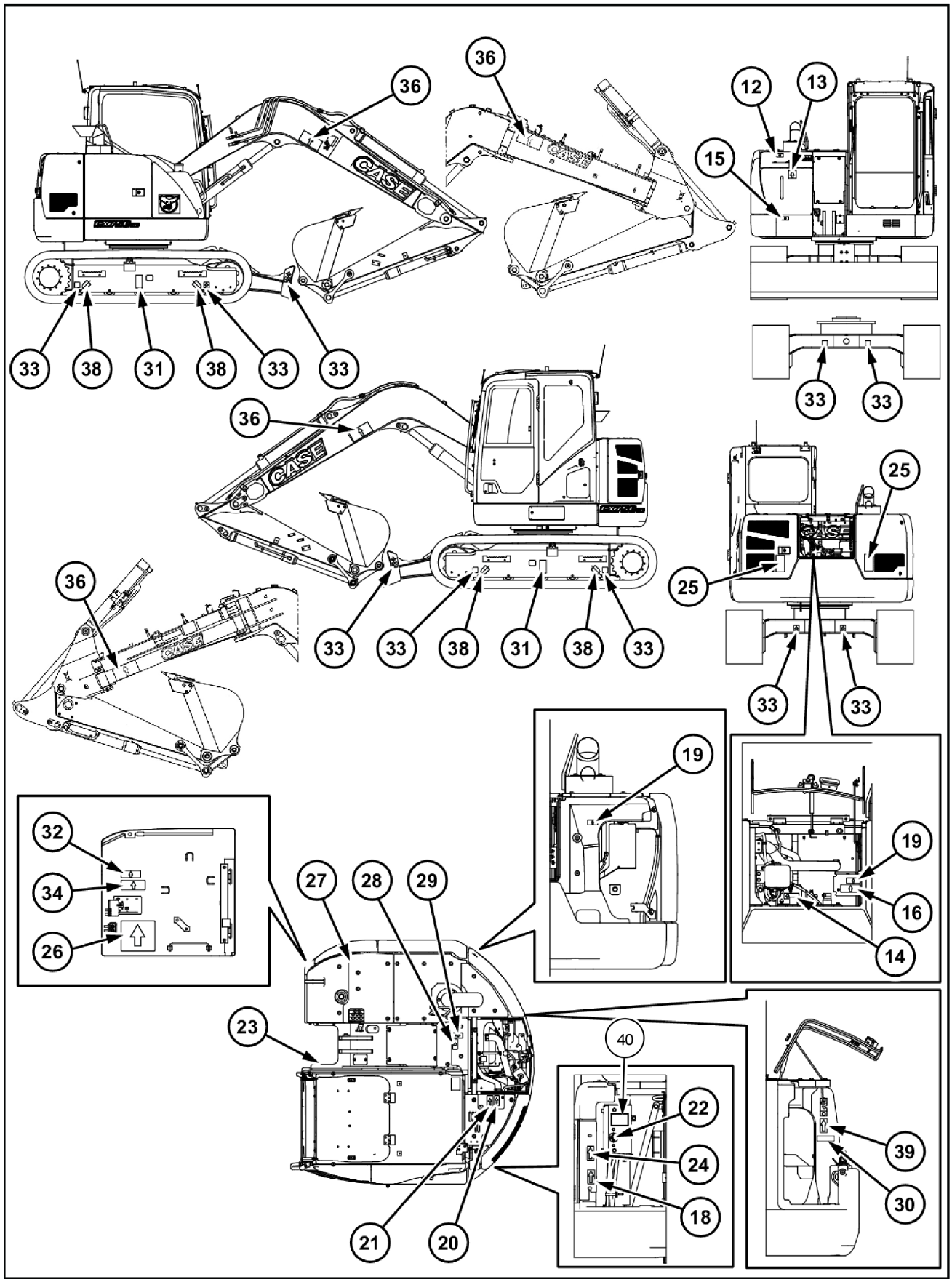
When replacing a decal, make sure it is located as shown below.



SMIL13CEX2918FB 2



SMIL13CEX2520FB 3

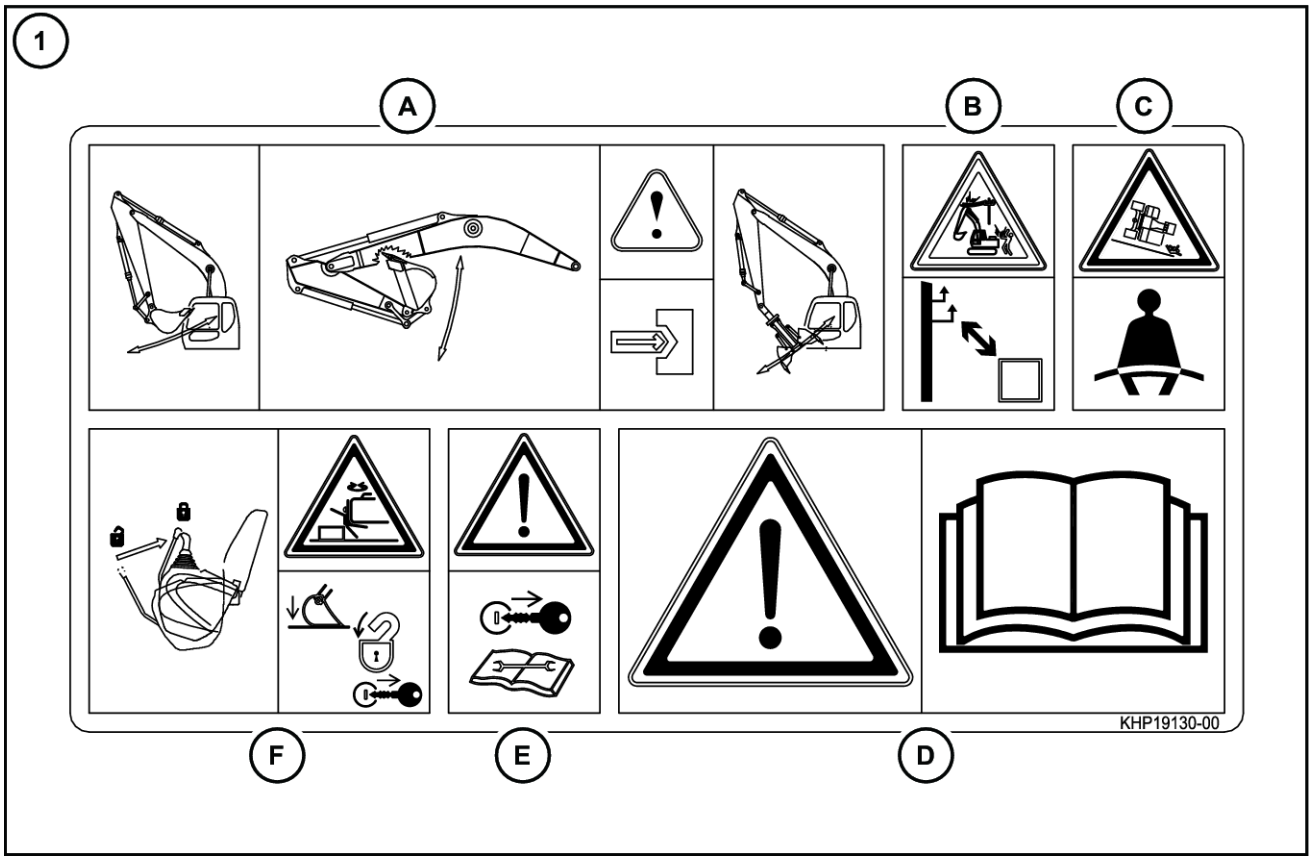


SMIL13CEX2907HB 4

Illustration of decals

Table of safety precautions

Part number: KHP35790



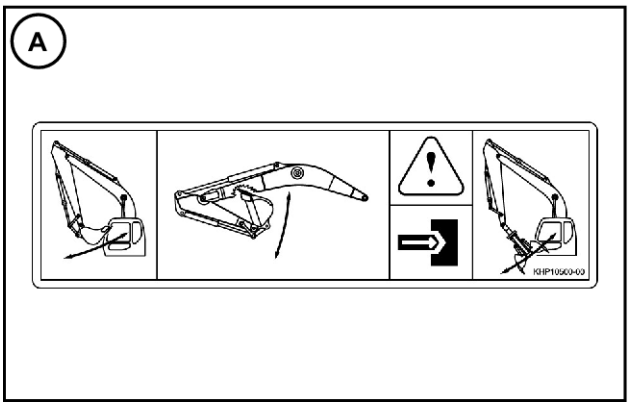
SMIL13CEX2522FB 5

Interference with attachments

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

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

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

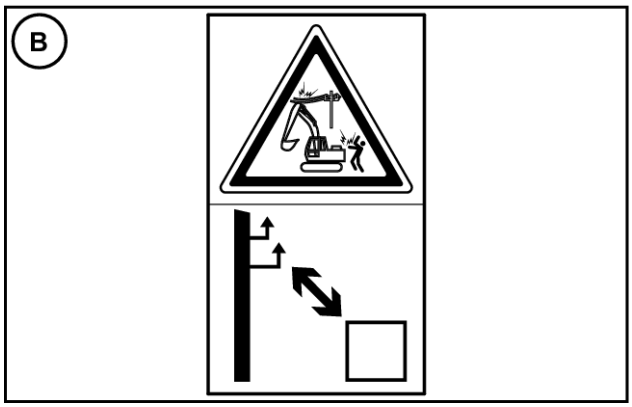


SMIL13CEX2523AB 6

Danger electric line

When working near overhead high-voltage electric lines, there is a high risk of electric shocks.

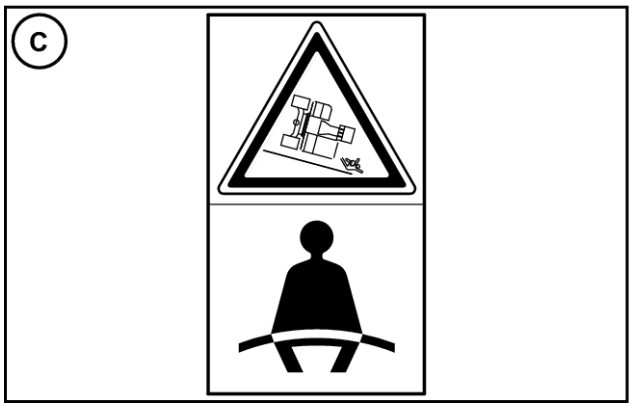
Always keep minimum distances to the electric lines in order to avoid serious damages to the machine, and to avoid serious injuries to the bystanders.



SMIL13CEX2524AB 7

Seat belt

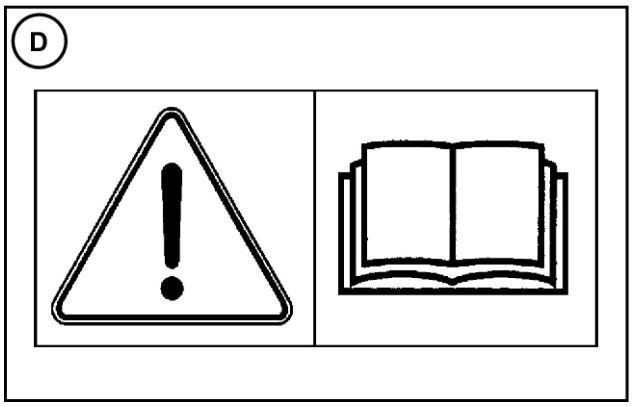
Always fasten the seat belt before starting machine operation.



SMIL13CEX2525AB 8

Operator’s manual

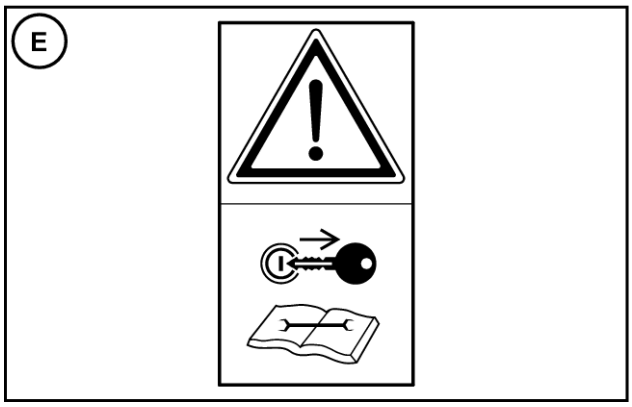
Make sure to read the Operator's manual to understand how operate the machine properly and safely.



SMIL13CEX2526AB 9

Maintenance or inspection

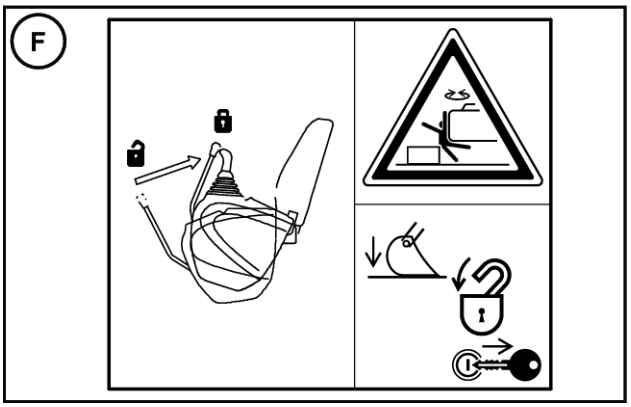
Always stop the engine and remove the starter key before any maintenance operation or inspection of the machine.



SMIL13CEX2527AB 10

Parking the machine

Before leaving the operator's compartment, the bucket and the dozer blade must be lowered to the ground, the gate lock lever must be activated, the engine stopped and the starter key removed in order to prevent any movement of the machine.

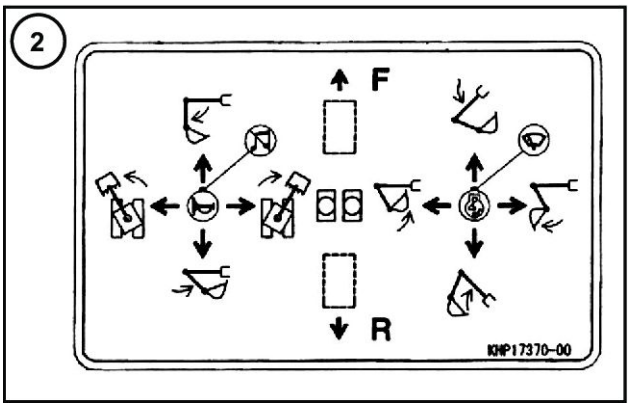


SMIL13CEX2528AB 11

Functions of operation levers

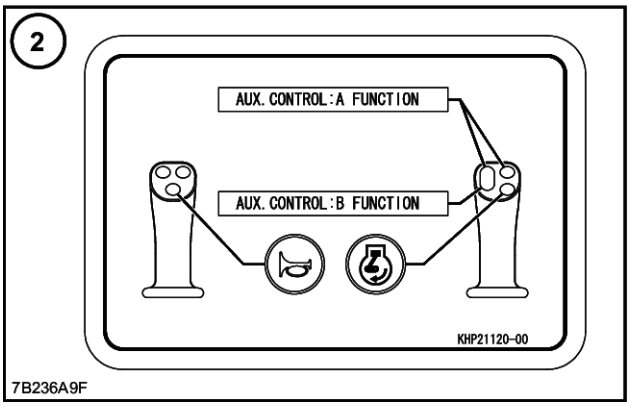
Part number: KHP17370

Functions of the left control lever and the right control lever.



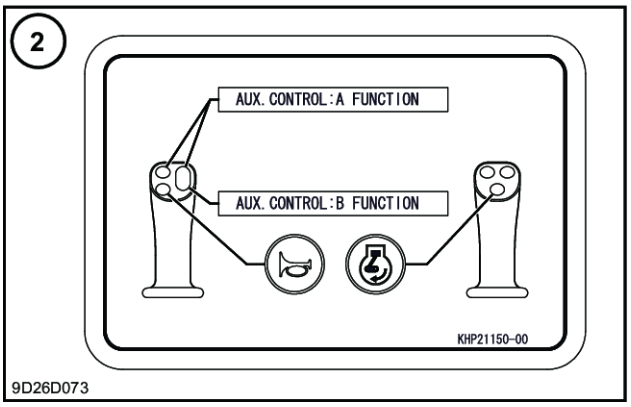
SMIL13CEX2529AB 12

Part number: KHP21120 (with right-hand option)



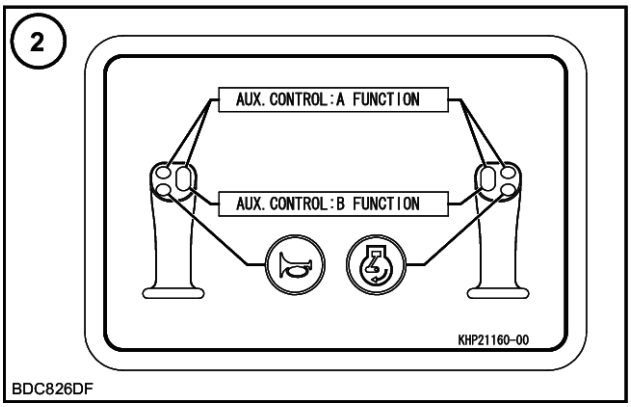
7B236A9F 13

Part number: KHP21150 (with left-hand option)



9D26D073 14

Part number: KHP21160 (with right-hand and left-hand option)



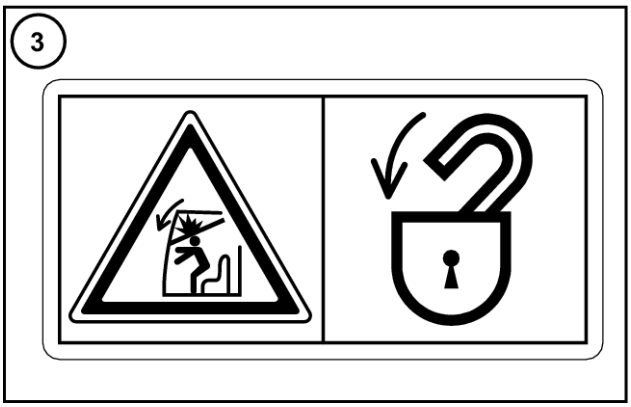
BDC826DF 15

Windshield locking

Part number: KHP35800

Always lock the windshield when it is set in open position.

Windshield not locked may fall down and can affect safe and proper operation of the machine, and can even cause injuries.

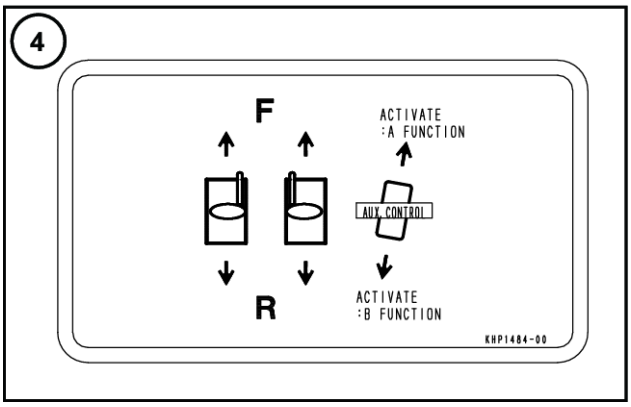


SMIL13CEX2530AB 16

Function of the levers and pedals

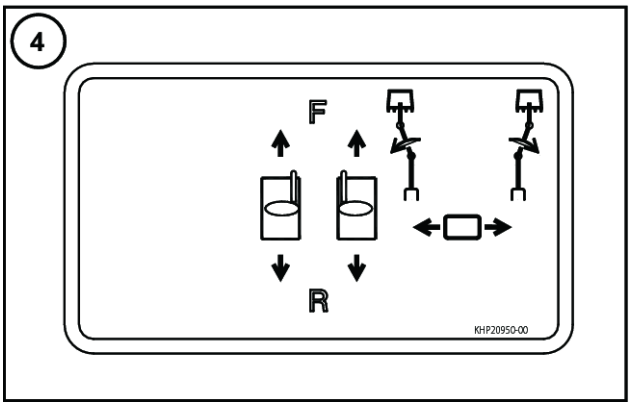
Part number:
KHP1484 (with right-hand option)
KHP1510 (with left-hand option)
KHP1511 (with right and left-hand options)

This decal shows the function of the travel control levers and pedals.



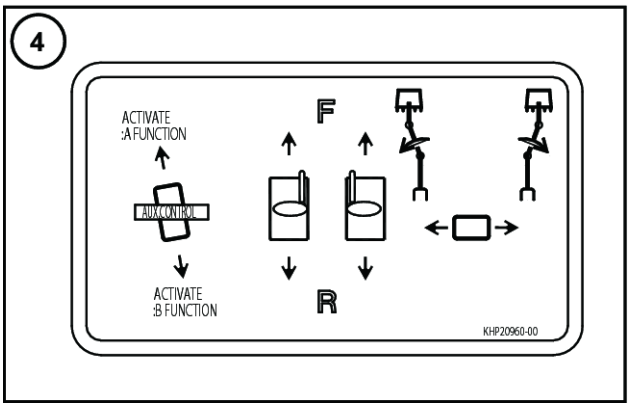
SMIL13CEX2531AB 17

KHP20950 (foot control) (offset boom)



SMIL13CEX2927AB 18

KHP20960 (foot control) (offset boom — option)



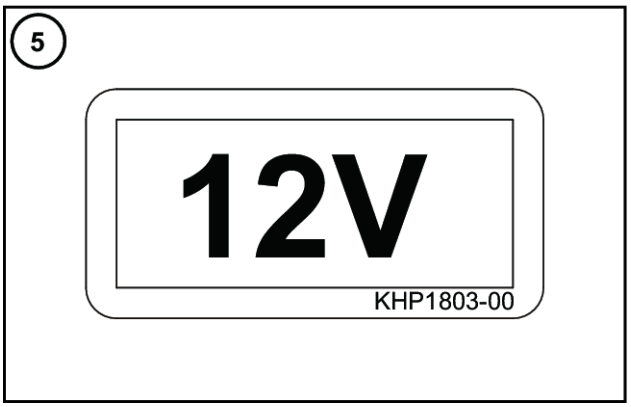
SMIL13CEX2928AB 19

Cigarette lighter socket (**12 V**)

Part number: KHP1803

14V electric socket. Connect only **12 V** devices to this socket.

Connecting devices functioning at different voltage can cause damages to the device itself and to the electrical system of the machine.

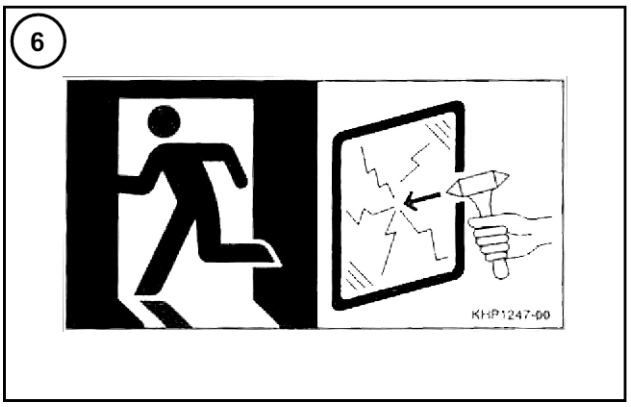


SMIL13CEX2919AB 20

Emergency exit

Part number: KHP1247

In case of emergency, use the emergency hammer to break the rear window and get out from the machine.



SMIL13CEX2532AB 21

(7) Pocket for maximum handling limits table

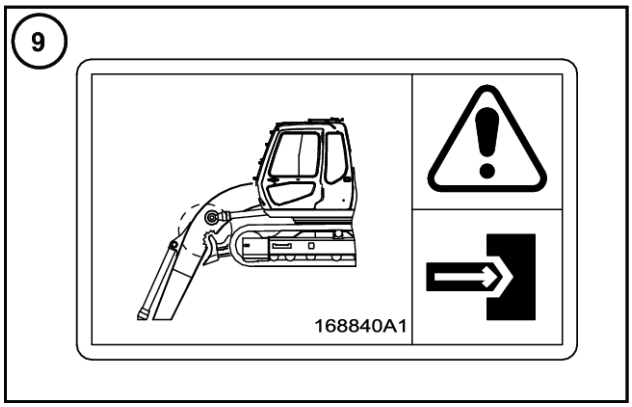
Part number: KHP1344

This pocket is provided for the table showing maximum handling limits corresponding to the attachment installed on the machine.

Caution to the blade

Part number: KHP1384

Be careful of the interference with the attachment.

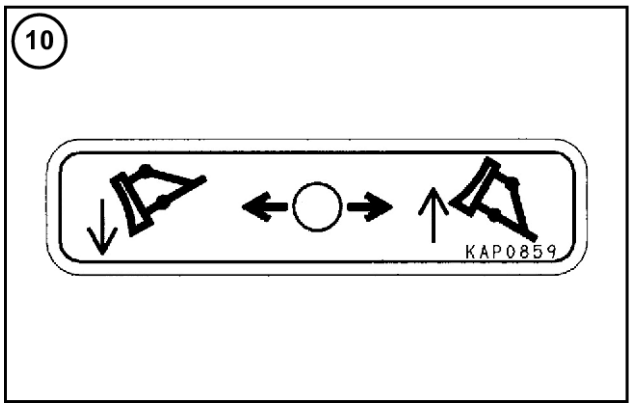


SMIL13CEX2533AB 22

Blade operation (blade type)

Part number: KAP0859

This decal shows the blade operation.



SMIL13CEX2534AB 23

Handling precautions in operation compartment

Part number: KHP35810

Welding or modification to the cab structure is strictly forbidden.

Welding or modification to the cab structure affects cab's strength, and compromises operator's protection.

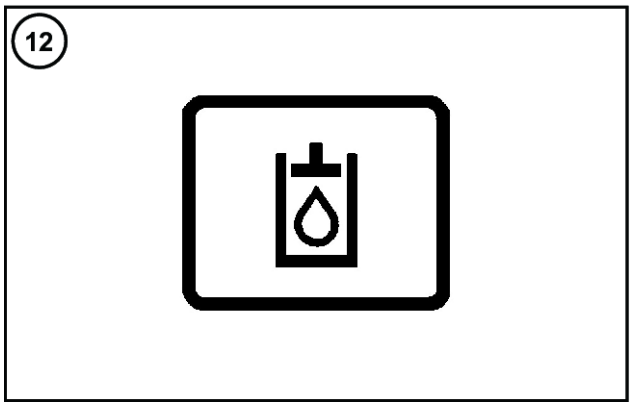
SMIL13CEX2535AB 24

Hydraulic tank

Part number: KHP1330

Hydraulic tank contains pressurized hot fluid that can cause serious injuries.

Always shut down the engine, cool down the machine and release pressure in the hydraulic tank before doing any maintenance operation to the hydraulic tank or to the hydraulic system.



SMIL13CEX2536AB 25

Fuel tank

Part number: KHP36400

This decal shows the location of the fuel tank and that suitable fuel must be used.

SMIL13CEX2537AB 26

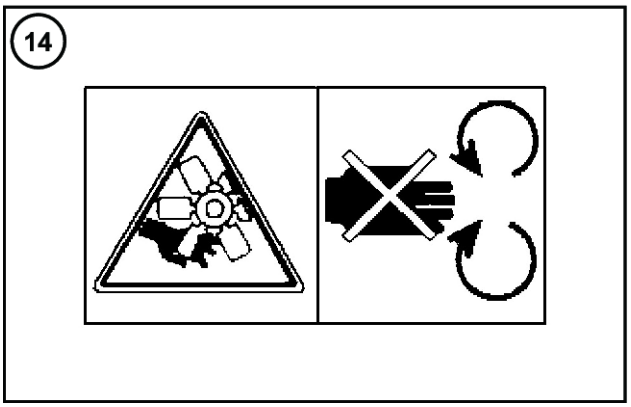
Fan

Part number: KHP36410

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

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

Always stop and cool down the engine before making any maintenance operation in the engine compartment.

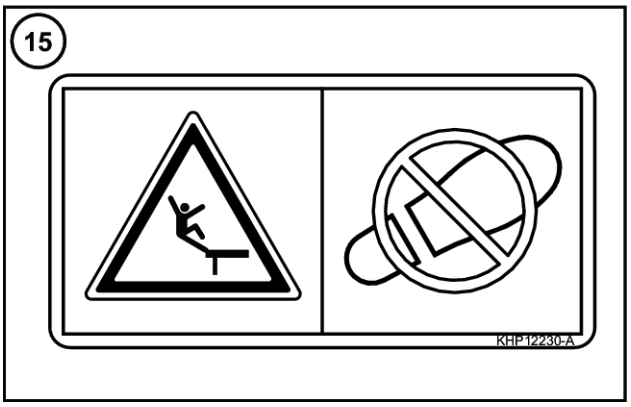


SMIL13CEX2538AB 27

Engine hood

Part number: KHP35870

Do not step over platforms that are not guarded by handrails in order to avoid the risk of falling.

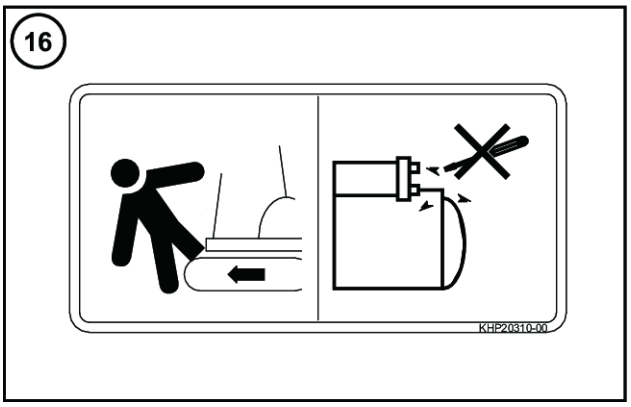


SMIL13CEX2539AB 28

Starting the engine

Part number: KHP20310

Do not try to start the engine by auxiliary tools. Machine may start to move suddenly and unintendedly causing serious injuries to the operator and to the bystanders.

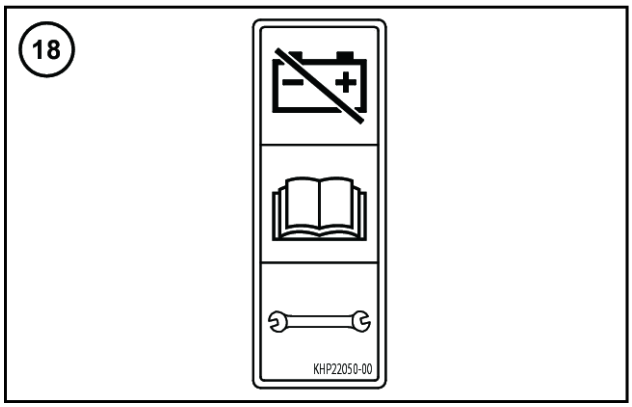


SMIL13CEX2540AB 29

Handling precautions for battery disconnect switch

Part number: KHP22050

Make sure to read Operator's manual to understand proper procedures for usage of the battery disconnect switch.

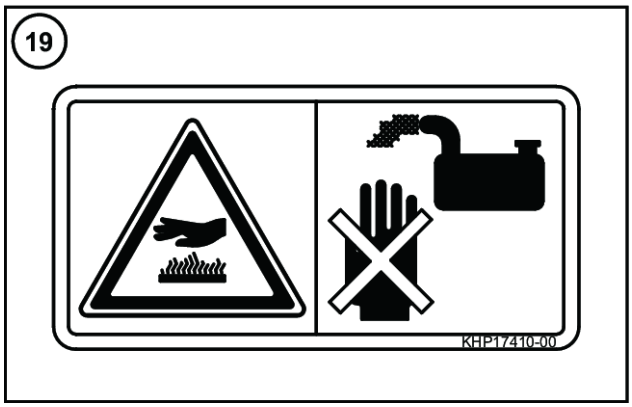


SMIL13CEX2541AB 30

Muffler

Part number: KHP36430

Do not touch the muffler right after engine stop. Muffler surface is hot and touching it can cause serious injuries.



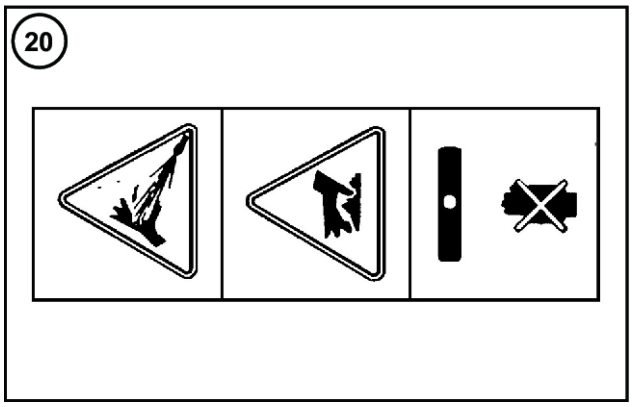
SMIL13CEX2542AB 31

Radiator

Part number: KHP35860

Do not loosen or open the radiator cap when coolant is hot and under pressure, it can cause serious injuries.

Cool down the engine before opening the radiator cap, then loosen the radiator cap slowly to relieve pressure in the coolant circuit.

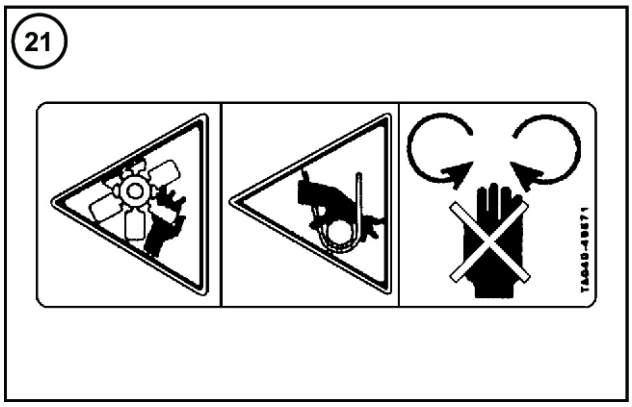


SMIL13CEX2543AB 32

Fan belt

Part number: KHP36420

This decal warns that the fan and the fan belt must never be touched while the engine is running. Stop the engine before performing any operation.

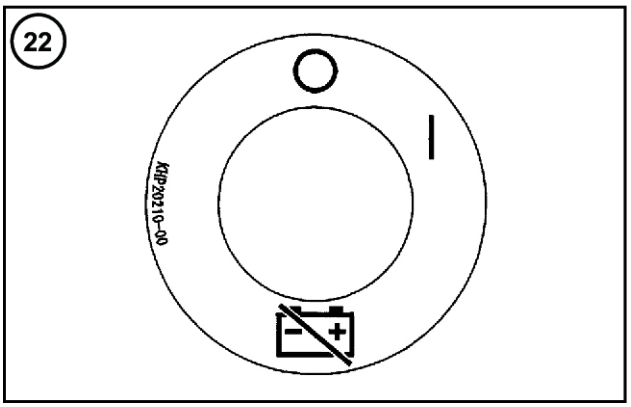


SMIL13CEX2544AB 33

Battery master switch

Part number: KHP20210

This switch shuts off the battery when turned off position. Refer to the operator manual for the detailed instructions. The switch is exclusively for the service purpose such as welding and electrical repair work.

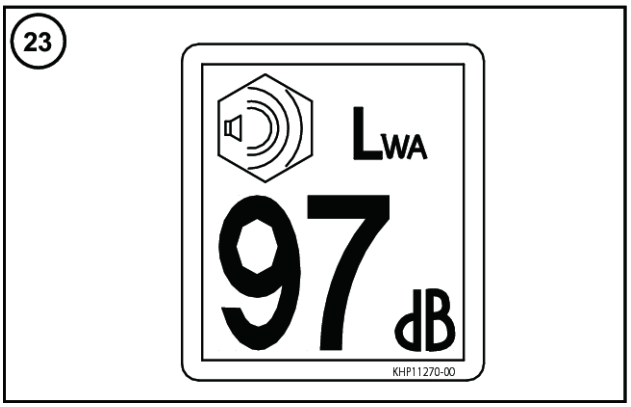


SMIL13CEX2545AB 34

Noise level

Part number: KHP11270

Sound power level guaranteed, determined in compliance with European Directive **2000/14/EC**.



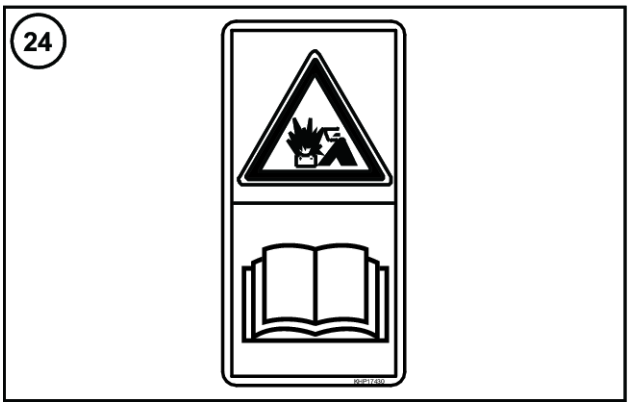
SMIL13CEX2546AB 35

Batteries

Part number: KHP35900

Prevent battery explosion by keeping sparks, open flames and cigarettes away from the batteries.

Always make sure to read Operator's manual to understand proper practices and precautions to be tackled for maintenance of batteries.



SMIL13CEX2547AB 36

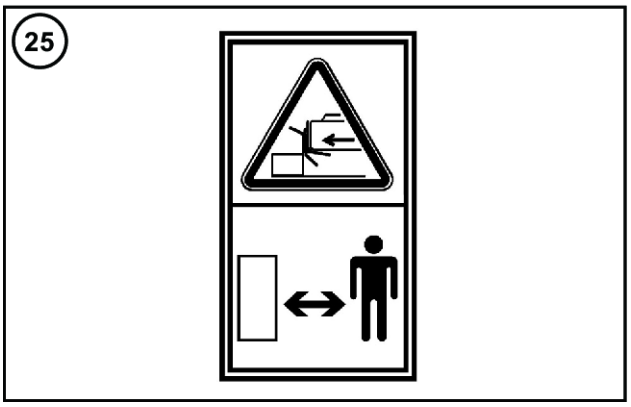
Keep out of work range of upper structure

Part number: KHP35820

Always make sure to keep the working range of the machine upper structure clear from obstacles and from bystanders.

Always sound the horn before start operating the machine.

The machine upper structure may hit or crush the bystanders causing serious injuries.



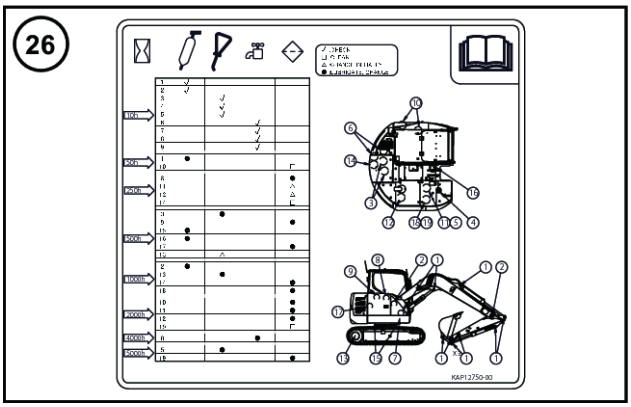
SMIL13CEX2548AB 37

Servicing table (Standard model)

Part number: KAP12750

Reference chart indicating proper timing for machine maintenance.

Make sure to read Operator's manual to understand proper procedures for servicing the machine.



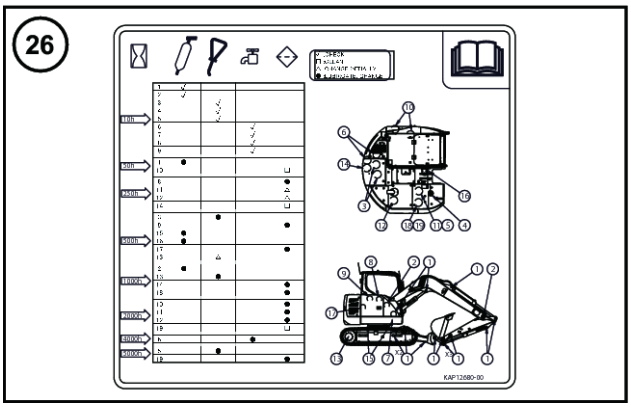
SMIL13CEX2549AB 38

Servicing table (Blade type)

Part number: KAP12680

Reference chart indicating proper timing for machine maintenance.

Make sure to read Operator's manual to understand proper procedures for servicing the machine.



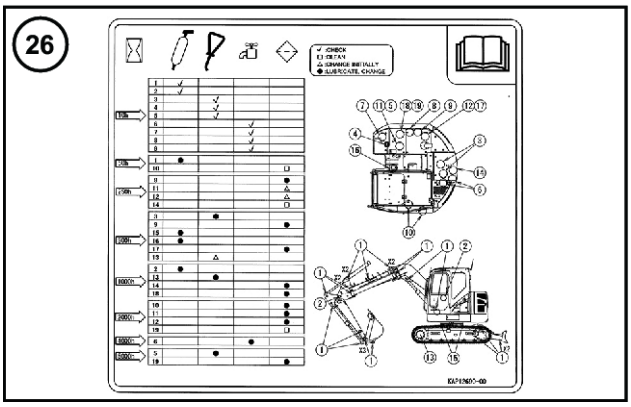
SMIL13CEX2550AB 39

Servicing table (Offset boom type)

Part number: KAP12690

Reference chart indicating proper timing for machine maintenance.

Make sure to read Operator's manual to understand proper procedures for servicing the machine.



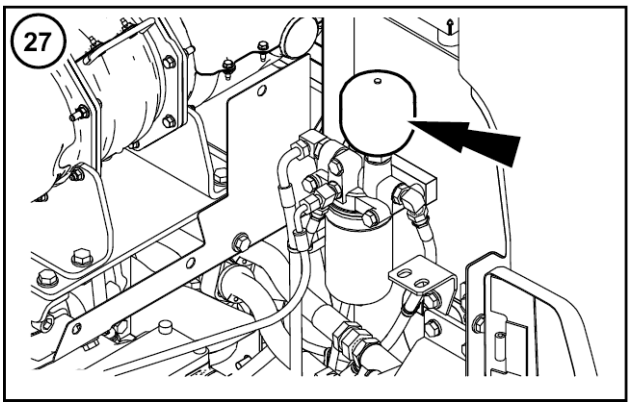
SMIL13CEX2908AB 40

Accumulator

Pneumatic accumulator on the pilot circuit contains high pressure gas.

Do not perform welding and avoid any operation generating sparks and high temperature close to the pneumatic accumulator.

Gas is explosive and explosion can cause fatal injuries.



SMIL13CEX2551AB 41

Common rail high pressure decal

Part number: KHP36450

Common rail injection system contains fuel under extreme pressure that can cause fatal injuries. Do not open the common rail pump, or loosen the common rail high pressure lines, or touch any other component of the common rail injection system.

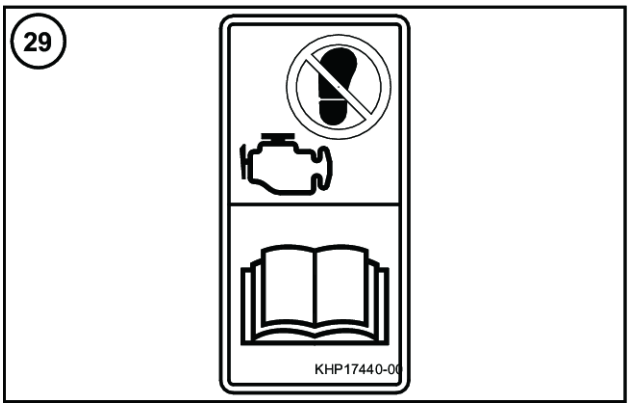
Consult the CASE CONSTRUCTION dealer for service.

SMIL13CEX2552AB 42

Engine operation

Part number: KHP36470

This decal warns the operator not to step on the engine. It indicates that engine maintenance must be performed correctly after reading the operator's manual.

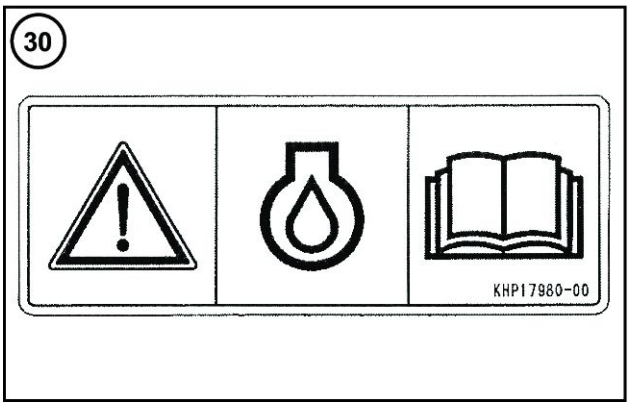


SMIL13CEX2553AB 43

Engine oil

Part number: KHP36440

This decal gives cautions about usage of the engine oils other than the one specified. Using the engine oil other than the one specified can damage the engine. Please be aware that trouble resulting from use of another type of engine oil is not covered by the warranty.



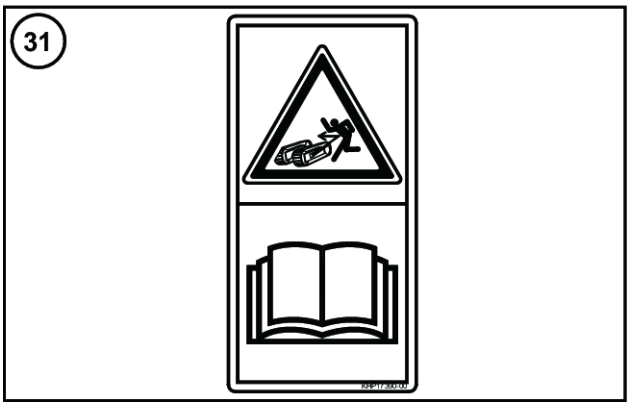
SMIL13CEX2554AB 44

Check valve

Part number: KHP35930

Track tensioning cylinder contains pressurized fluid. During maintenance of the track tensioning cylinder, fluid may spray out from the check valve on the tensioning cylinder and can cause serious injuries.

Always make sure to read Operator's manual to understand proper practices and precautions to be tackled for maintenance of the track tensioning system.

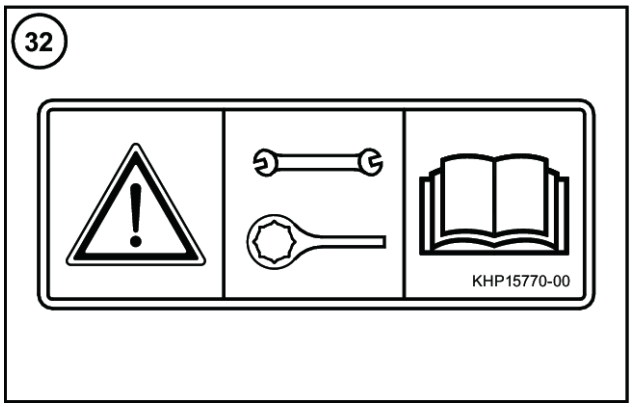


SMIL13CEX2555AB 45

Fuel filter replacement

Part number: KHP36460

This decal indicates that fuel filter replacement must be performed correctly after reading the operator's manual.

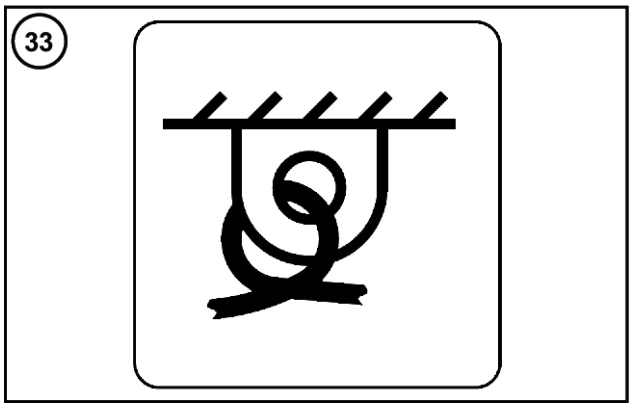


SMIL13CEX2556AB 46

Lashing point decal

Part number: KHP15201

Point on machine structure for securing the machine during transport.

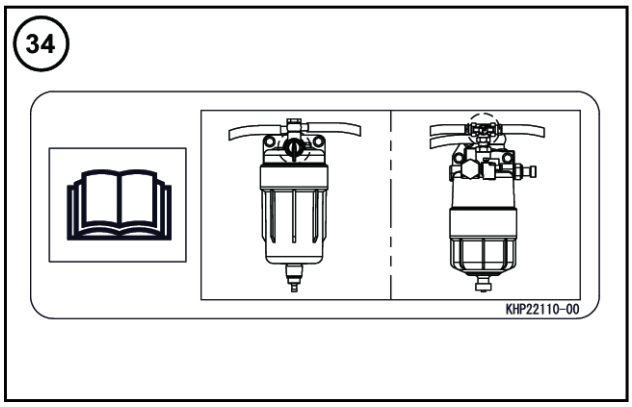


SMIL13CEX2557AB 47

Fuel line valve

Part number: KHP22110

For the usage of valve, refer to fuel system



SMIL13CEX2558AB 48

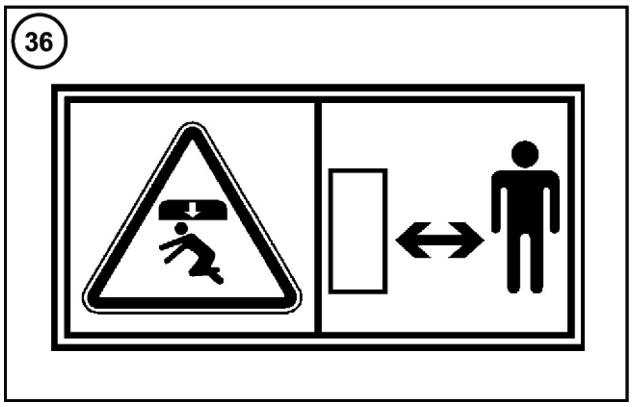
Keep out of work range of attachment

Part number: KHP35940

Always make sure to keep the working range of the machine front equipment clear from obstacles and from bystanders.

Always sound the horn before start operating the machine.

The machine front equipment may hit or crush the bystanders causing serious injuries.

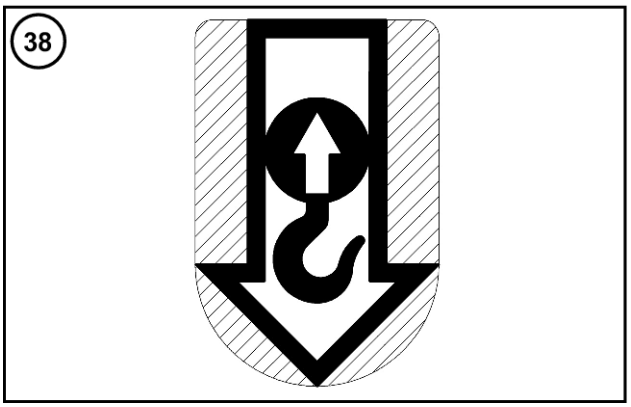


SMIL13CEX2559AB 49

Lifting location

Part number: KHP19380

Machine area where the lifting devices shall be routed.



SMIL13CEX2560AB 50

Opening the engine hood

Part number: KHP22020

This decal indicates that the engine hood may be lower and cause the operator to be injured. When opening the engine hood, always lock it to prevent from lowering.

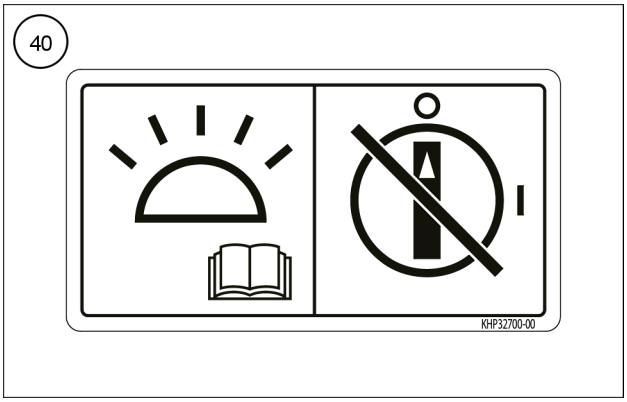
SMIL13CEX2880AB 51

Precautions for Battery Disconnect Switch

Part number: KHP32700

Never turn the battery disconnect switch to OFF position when the indicator lamp is lit.

Make sure to read the Operator's manual to understand warning signs and icons related to the functioning of the battery disconnect switch.



KHP32700 52

3 - CONTROLS AND INSTRUMENTS

ACCESS TO OPERATOR'S PLATFORM

Door and steps

⚠ CAUTION

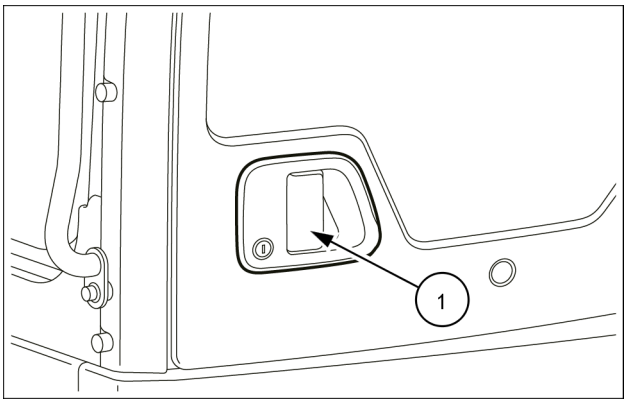
Pinch hazard!
Be careful not to get your hand, clothes, etc. caught in the door when closing it.
Failure to comply could result in minor or moderate injury.

C0046A

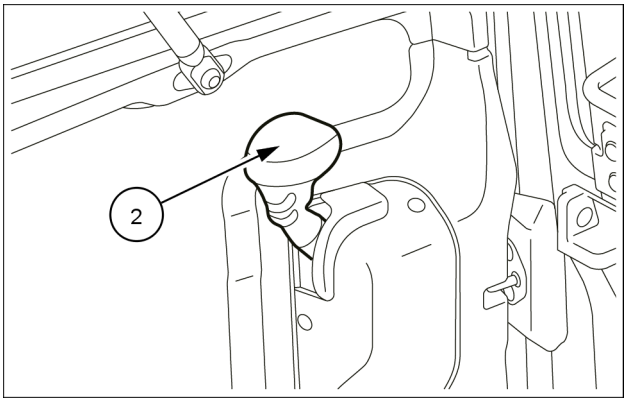
Cab door

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 lock 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.*



SMIL17CEX7680AA 1

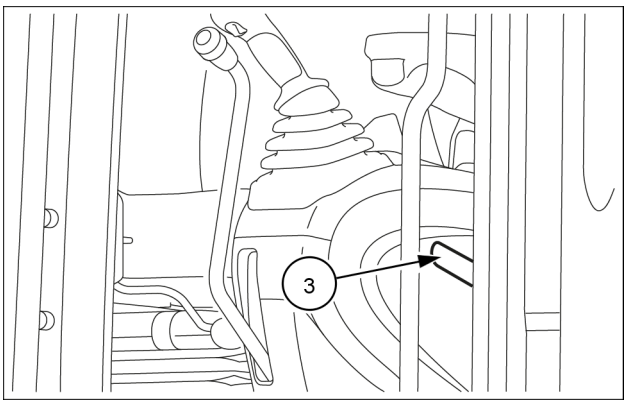


SMIL17CEX7681AA 2

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 in lock position, and tilt the lever **(3)** downward.



SMIL17CEX7682AA 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!
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

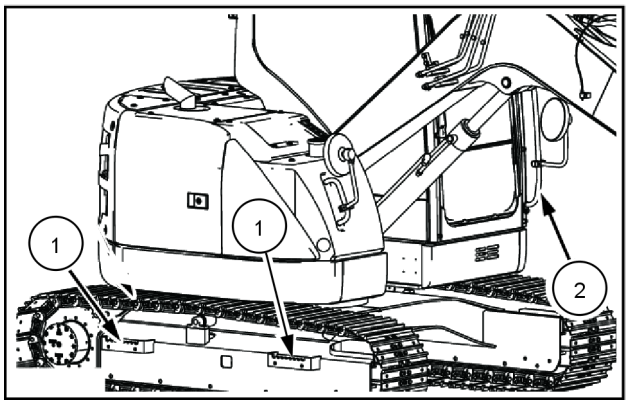
⚠ WARNING

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.

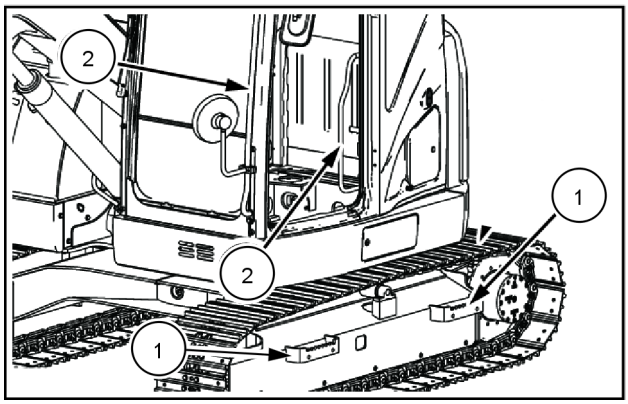
W0141A

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.*



SMIL13CEX2567AB 4



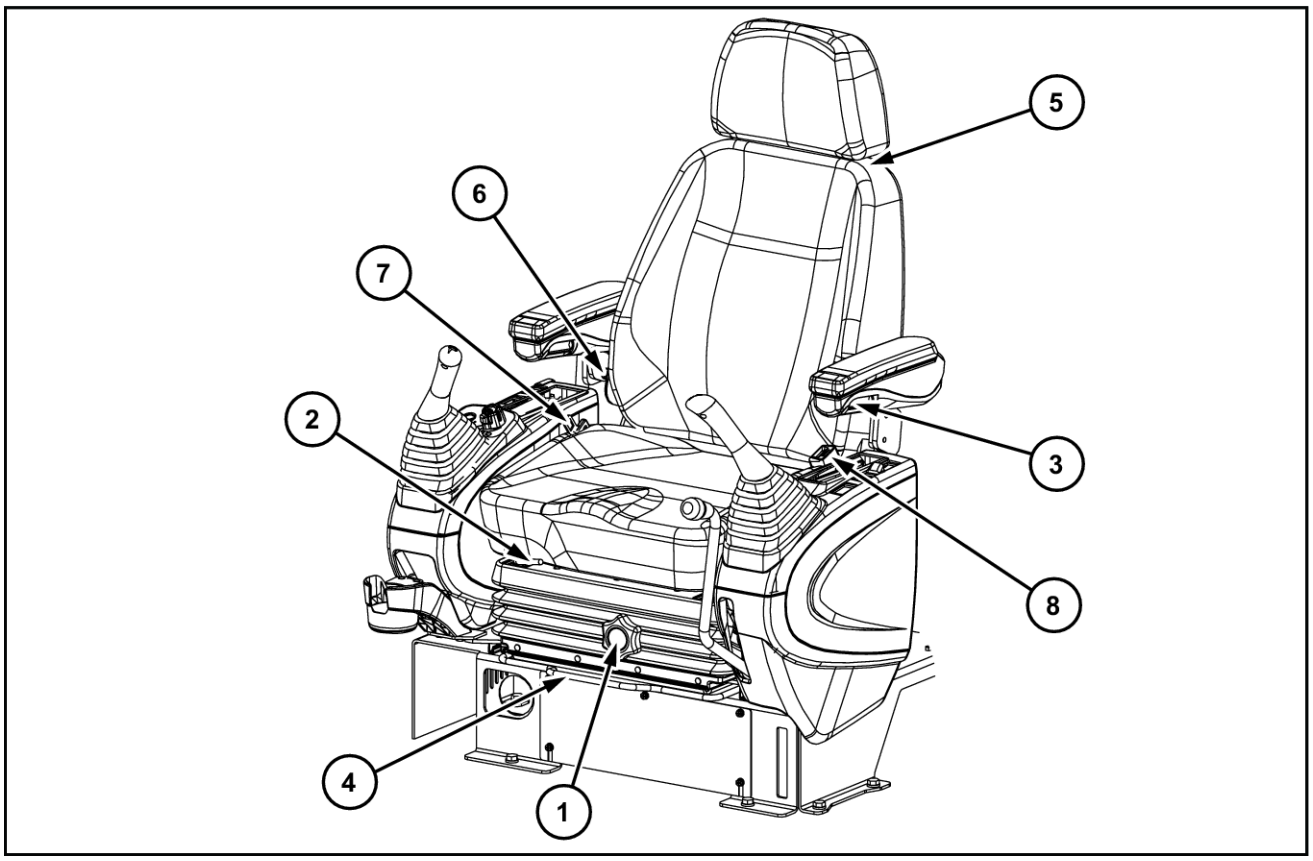
SMIL13CEX2568AB 5

OPERATOR'S SEAT

Operator's seat

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.

NOTE: *the adjustment of the seat can only be carried out when the operator is seated in the seat and the engine is shut down.*

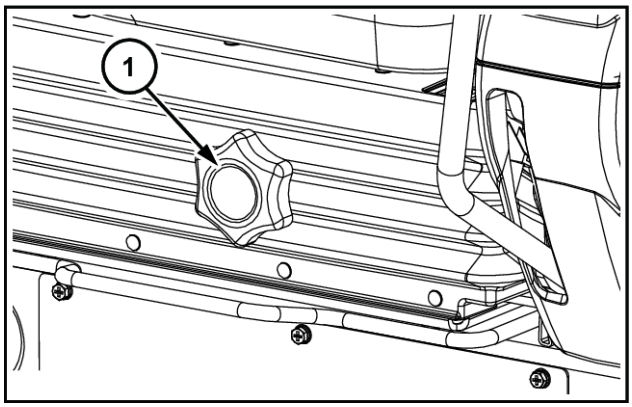


SMIL13CEX2569FA 1

1. Height and weight adjustment section
2. Forward and back position adjustment section
3. Armrest angle adjustment section
4. Seat / control arm assembly forward-back adjustment section
5. Headrest adjustment section
6. Seatback angle adjustment section
7. Seat belt
8. Buckle

Height and weight adjustment section

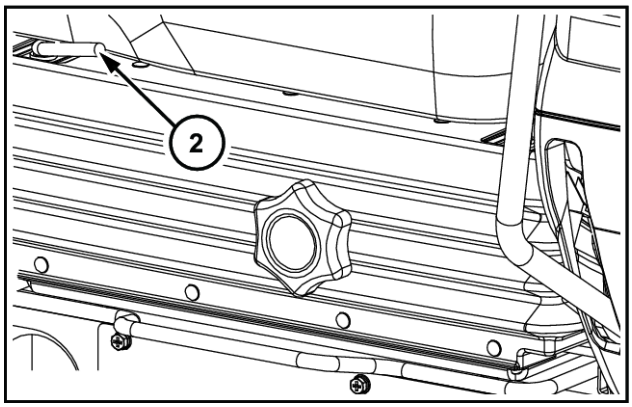
Turning the dial **(1)** counter-clockwise softens the suspension.
Turning the dial **(1)** clockwise hardens the suspension.



SMIL13CEX2570AB 2

Forward and back position adjustment section

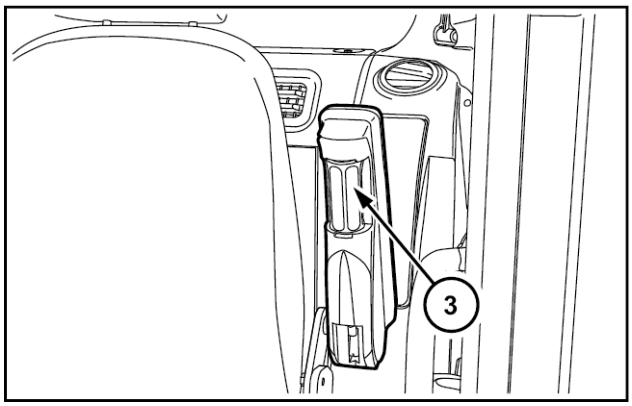
With the slide lever **(2)** pulled up, move the seat forward and back. When the seat reaches the proper position, release the slide lever **(2)**.



SMIL13CEX2571AB 3

Armrest angle adjustment section

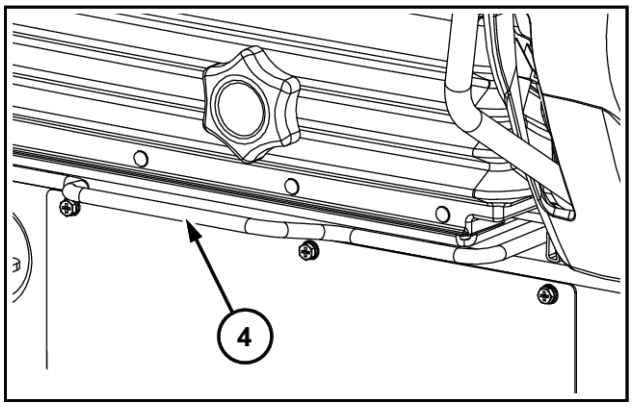
Raise the armrest, turn the dial **(3)** to adjust the angle, then lower the armrest.



SMIL13CEX2572AB 4

Seat / control arm assembly forward-back adjustment section

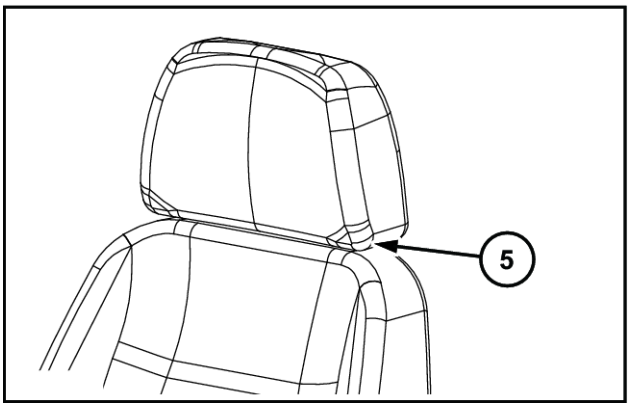
Pull up the slide lever **(4)** and move the seat/control arm assembly to the desired position, then release the slide lever **(4)**.



SMIL13CEX2573AB 5

Headrest adjustment section

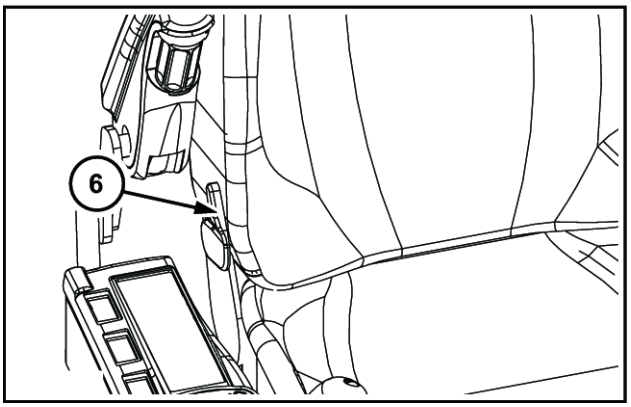
Press the lock switch **(5)** on top of the seat backrest to adjust the headrest up and down.



SMIL13CEX2574AB 6

Seatback angle adjustment section

To adjust the angle of the backrest, pull up the lever **(6)**. Move the backrest to the desired position, then release the lever **(6)**.



SMIL13CEX2575AB 7

Seat belt

Sit on the operator's seat in a comfortable posture, pull out the belt **(7)**, then insert it into the buckle **(8)**.

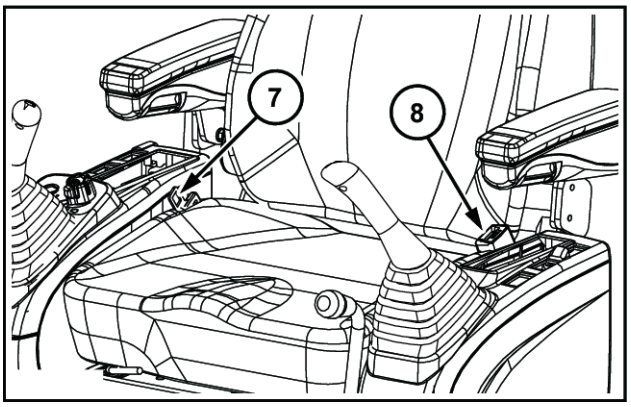
NOTE: *if the pulled-out portion of the belt is too short, let the seat belt go. After the belt is rewound, pull it out again.*

To undo the seat belt, press the release lever **(8)**.

⚠ WARNING

Equipment failure could cause accident or injury!
Always fasten seat belt securely before operating the machine. Inspect seat belt parts for wear and/or damage. To ensure operator safety, replace any and all damaged parts of the seat belt prior to operation.
Failure to comply could result in death or serious injury.

W0046A



SMIL13CEX2576AB 8

NOTE: *inspect the seat belt. Check that the seat belt is not damaged and all the installation screws are securely tightened. Replace any parts with problems.*

Always keep the seat belt clean. Use only soap and water to clean the seat belt. Do not use bleach or dye.

FORWARD CONTROLS

Forward controls

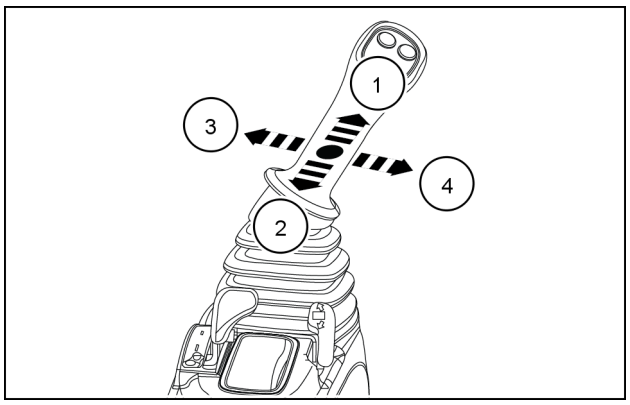
Control levers

Left-hand control lever:

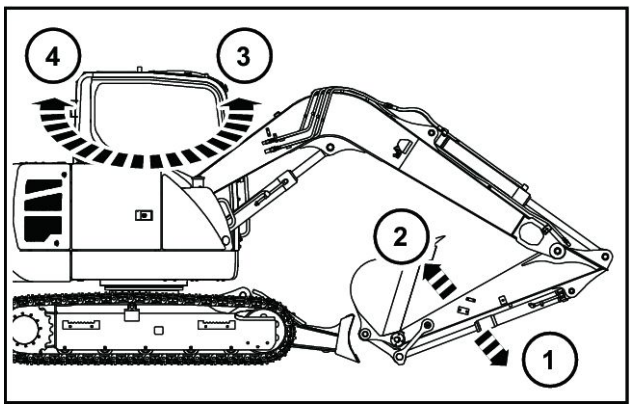
1. The arm extends.
2. The arm retracts.
3. The upper structure swings to the left.
4. The upper structure swings to the right.

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.*



SMIL15CEXY854AA 1

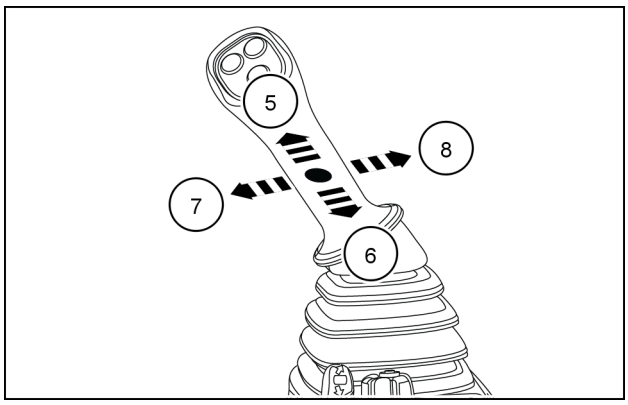


SMIL13CEX2578AB 2

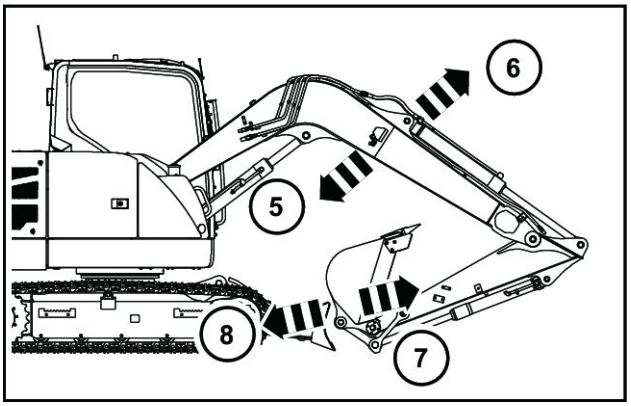
Right-hand control lever:

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.*



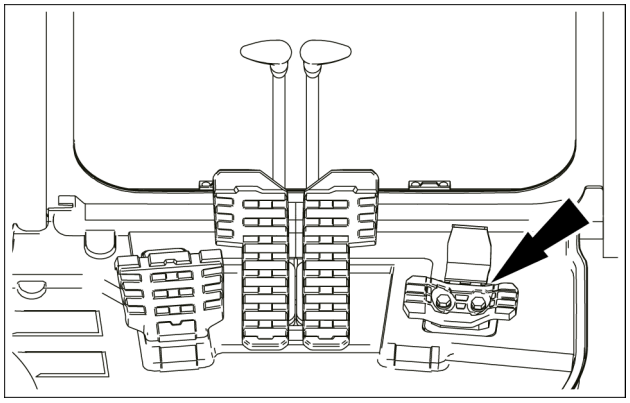
SMIL15CEXY853AA 3



SMIL13CEX2580AB 4

Positioner pedal (Offset Boom version)

In the Offset Boom front equipment, a positioner arm is linked to a short primary boom by a vertical pivoting pin. The positioner arm can swing horizontally, and is linked at the other end to a front bracket that supports the digging arm and the arm cylinder. The linkage between boom, positioner, and front bracket allows to offset the axis of the digging arm from the axis of the boom, keeping them parallel to each other.



SMIL17CEX7668AA 5

The offset between the boom and the arm can be thus set before starting the digging or leveling application in order to adapt the operating range of the whole front equipment.

NOTICE: *Never change the offset between the boom and the arm during digging or leveling application. Failing to comply will cause severe damages to the machine frames and to the machine systems.*

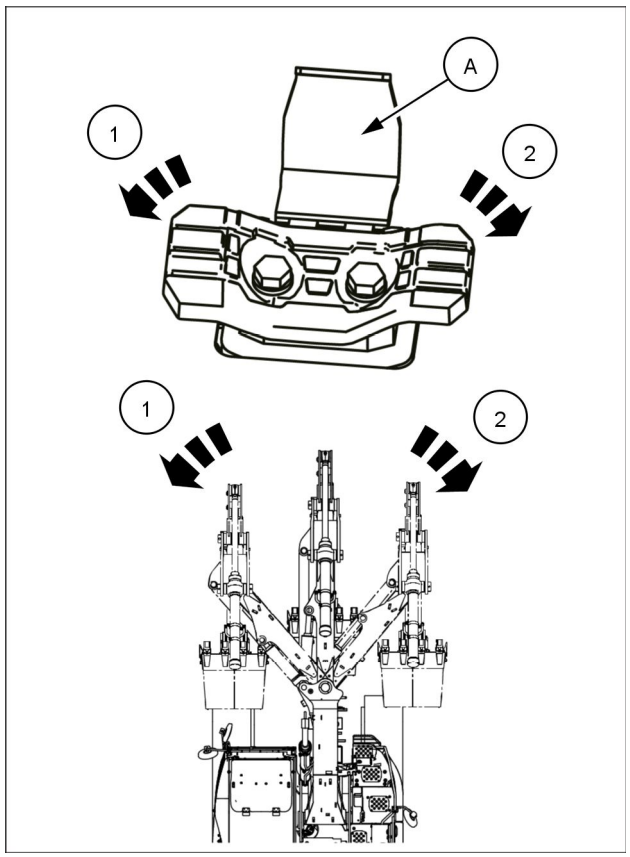
The offset between the boom and the arm is set by a positioning cylinder. The movement of the positioning cylinder is controlled by the positioning pedal.

To operate the positioning pedal, tilt the locking plate **(A)** in outward position.

1. The arm is offset leftward from the boom.
2. The arm is offset rightward from the boom.

NOTE: *The speed of movement of the positioner depends on the tilt angle of the pedal.*

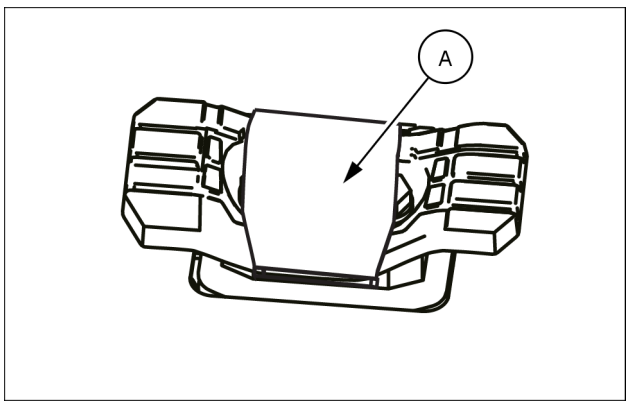
As the pedal is released, it returns automatically into the neutral position. The positioner stops moving and the offset between the boom and the arm is defined.



SMIL17CEX7669BA 6

NOTICE: *The positioning pedal shall always be locked when not in use. Unintended pedal operation can get the attachment hitting the cab causing serious damages to the machine and serious injuries to the operator.*

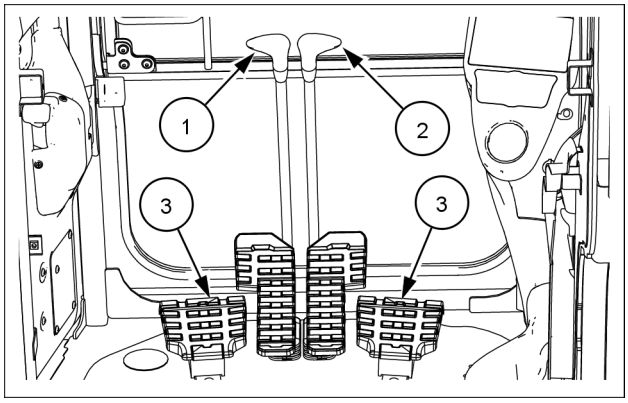
To lock the positioning pedal, fully lower the locking plate **(A)**.



SMIL17CEX7670AA 7

Travel controls

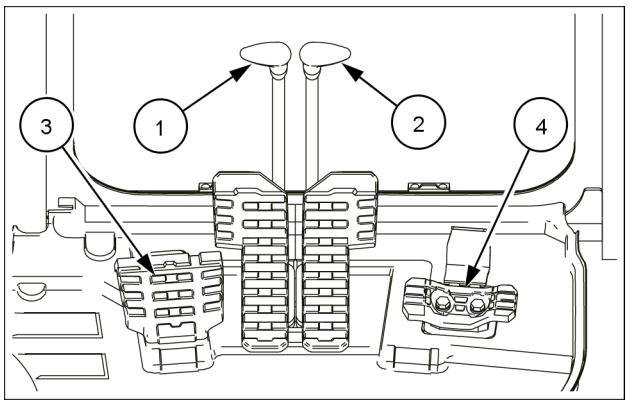
1. Left-hand travel control lever and pedal
2. Right-hand travel control lever and pedal
3. Footrest



SMIL17CEX5210AA 8

1. Left-hand travel control lever and pedal
2. Right-hand travel control lever and pedal
3. Footrest
4. Positioner pedal (Offset Boom version)

NOTICE: *The pedal* ***(4)*** *shall always be locked when not in use. Unintended pedal operation can get the attachment hitting the cab causing serious damages to the machine and serious injuries to the operator.*



SMIL17CEX7668AA 9

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

(N): neutral

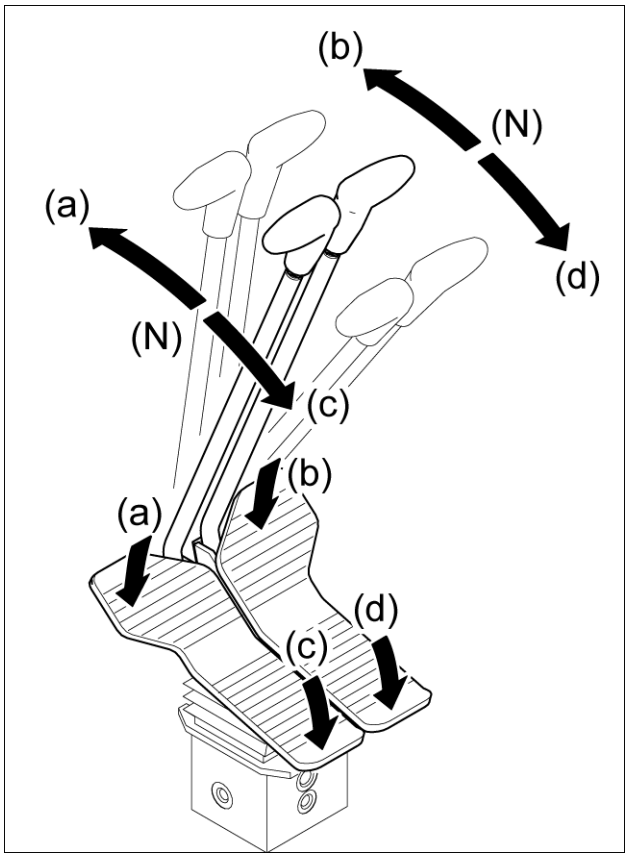
(a) + **(b)**: machine moves forward.

(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 10

Windshield

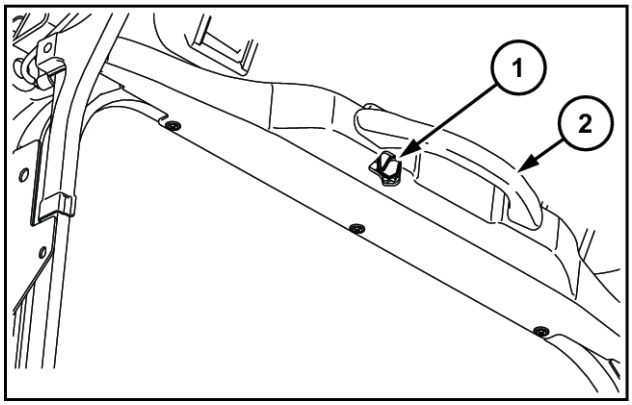
⚠ CAUTION

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

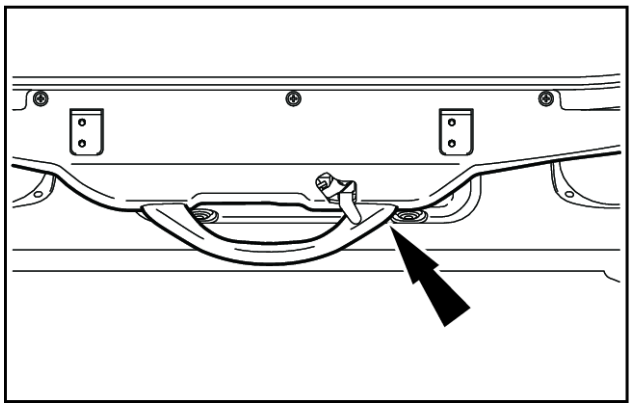
Opening

1. Use the lever **(1)** to release the windshield. Hold the lower and upper handles **(2)** and carefully raise the windshield.



SMIL13CEX2591AB 1

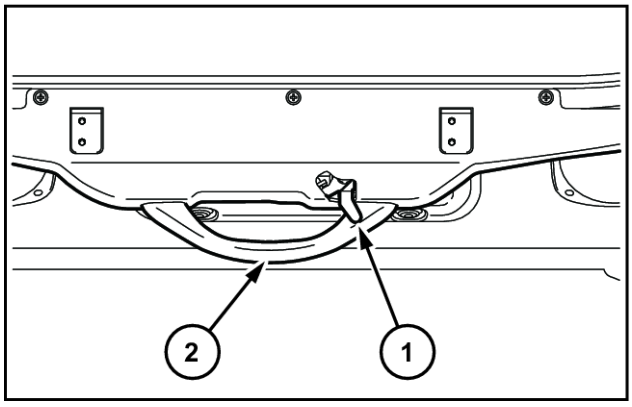
2. Pull the windshield to the rear until it engages perfectly behind the cab.



SMIL13CEX2592AB 2

Closing

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

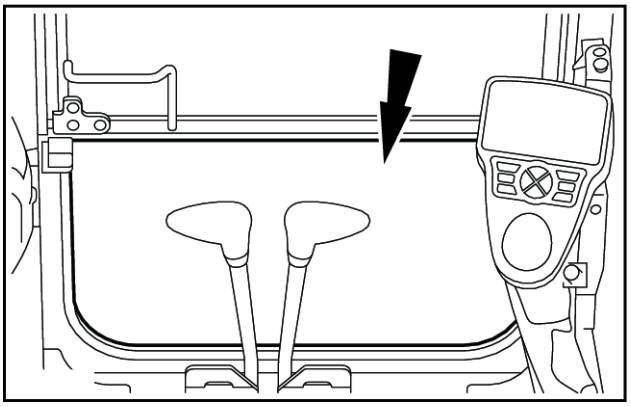


SMIL13CEX2593AB 3

Front lower window

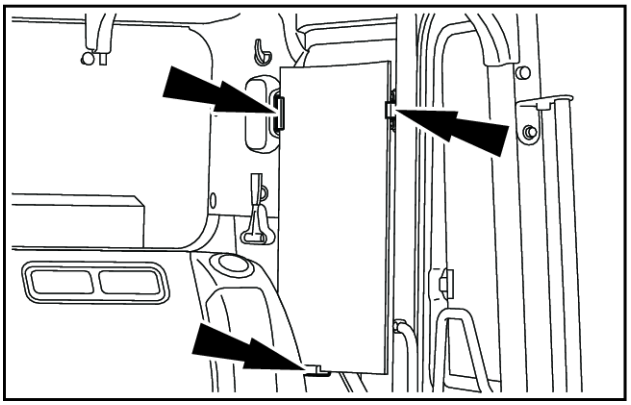
The front lower window may only be removed when the windshield is open.

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



SMIL13CEX2594AB 1

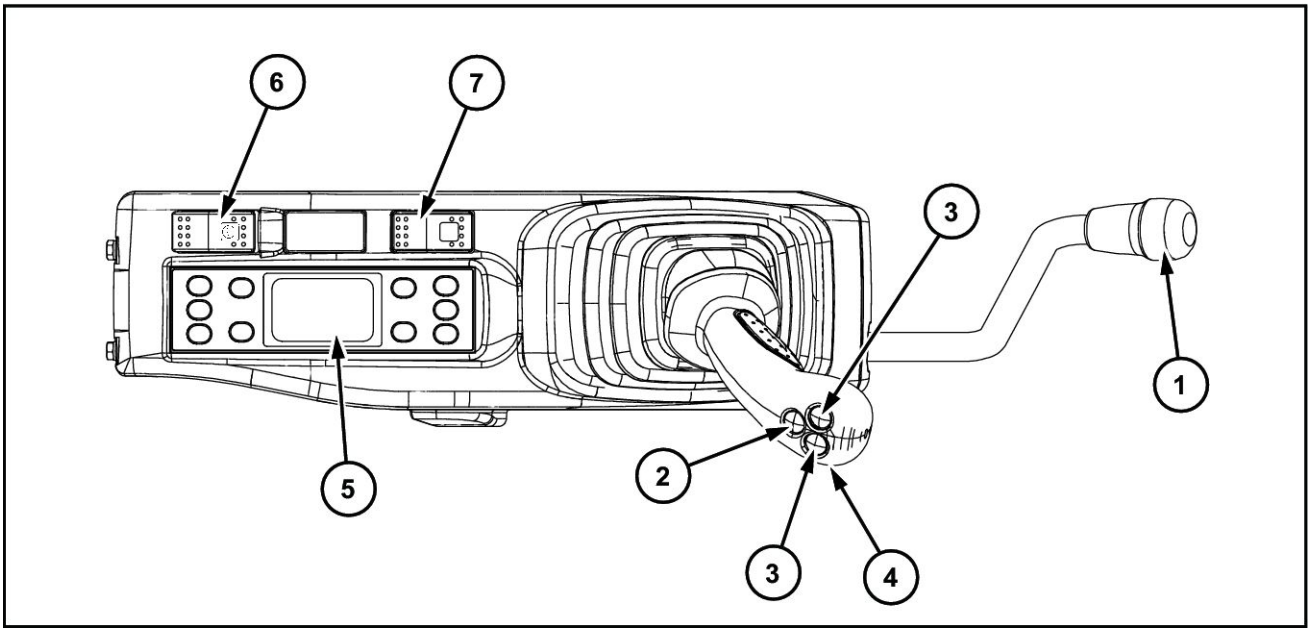
2. Place the window in the storage position provided to the left of the operator's seat and then engage it correctly.



SMIL13CEX2595AB 2

LEFT-HAND SIDE CONTROLS

Left-hand side controls



SMIL13CEX2619FB 1

1. Gate lock lever (Safety bar)
   The purpose of this safety bar is to prevent the operator leaving the operator's compartment without first operating the gate lock lever **(1)**.
2. Horn
   To sound the horn, press the end of the left-hand control lever.

   NOTICE: *always sound the horn before operating the machine.*
3. Not active
4. Car radio mute control (if equipped)
   Located below the control lever, this control is used to mute the sound without having to operate the car radio.
   Press and release the control to mute the sound.
   Press once again on the control and release, the sound is restored.

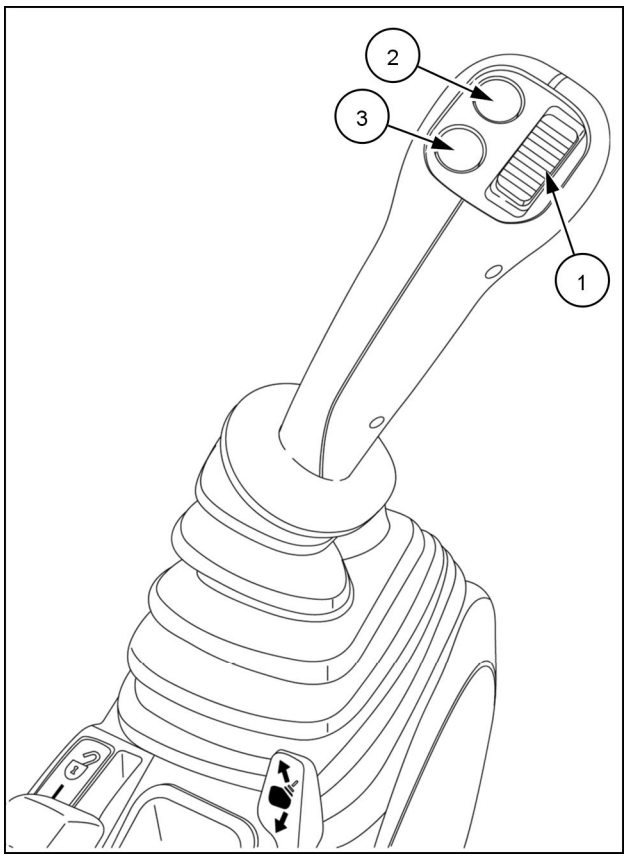
   NOTE: *with the engine stopped, if the sound is muted, it will still be active when the engine is restarted.*
5. Heating, ventilation or air conditioning control
6. Emergency shut down switch
   This control enables the engine to be shut down in emergency or when it is not possible to shut it down by means of the starter key.
   Press on the front of the control, the engine stops, the audible warning device sounds, and the message "Engine stop" is displayed.
   To start the engine again, press on the back of the control once more and then turn the starter key to start the engine.

   NOTICE: *this switch should only be used in case of an emergency.*
7. Quick coupler locking and unlocking control switch (optional).

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.

NOTE: *the auxiliary low-flow hydraulic circuit is not available on CX75C SR Offset Boom with blade.*



SMIL15CEXY839BA 2

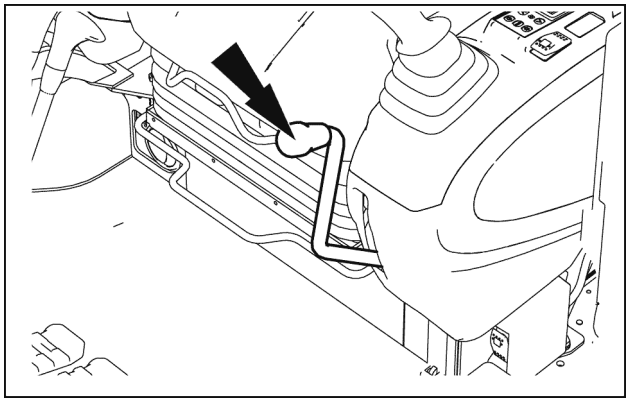
Gate lock lever

⚠ WARNING

Unexpected machine movement!
When the machine is not in operation, the gate lock lever must be in the LOCK position.
Failure to comply could result in death or serious injury.

W1487A

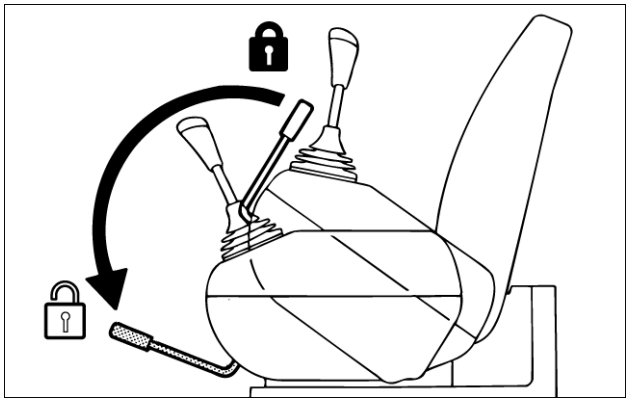
The gate lock lever allows to cancel the functioning of the control levers and pedals.



SMIL17CEX0199AA 1

The gate lock lever has two positions:

Unlock position: when the gate lock lever is in unlock position, the attachment, the travel functions and the swing functions can be operated.

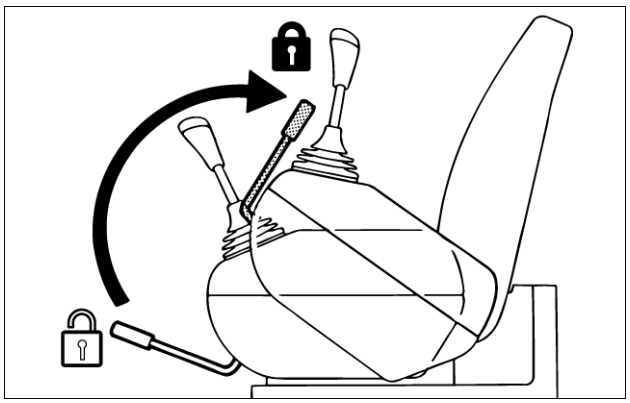


NH0003 2

Lock position: when the gate lock lever is in lock position, all the functions are disabled and the left hand console is fully raised. The operator can thus easily get off the cab.

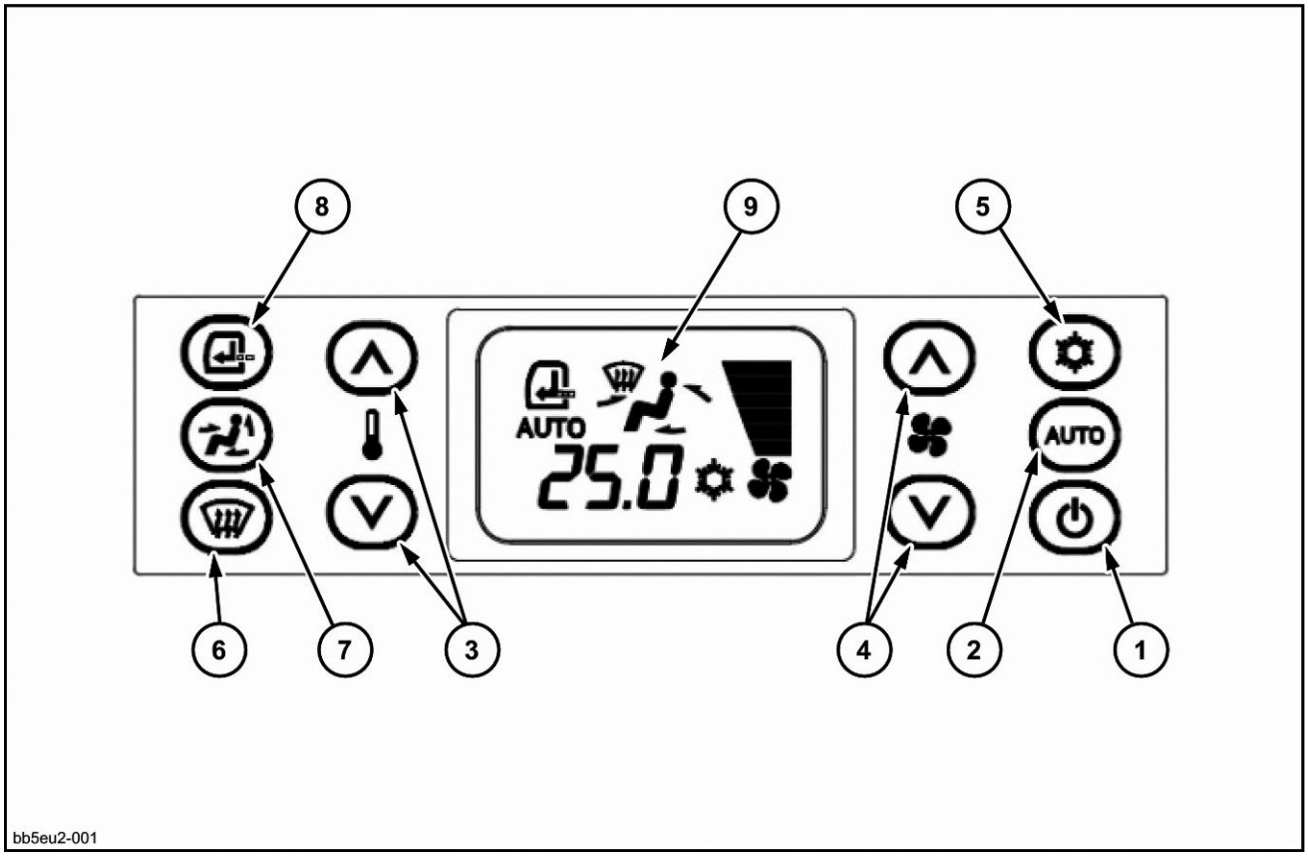
NOTE: *Set the gate lock lever to lock position when ending machine operation and leaving the machine.*

NOTE: *the engine must be started with the gate lock lever in lock position. If the gate lock lever is in unlock position, the engine does not start.*



NH0002 3

Heating, ventilation or air-conditioning control



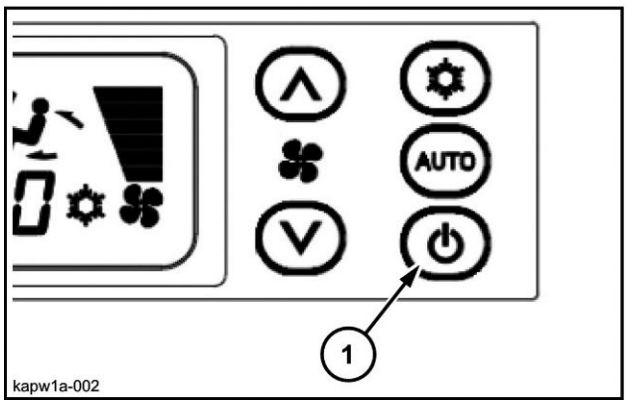
BB5EU2-001 1

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

On/Off

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

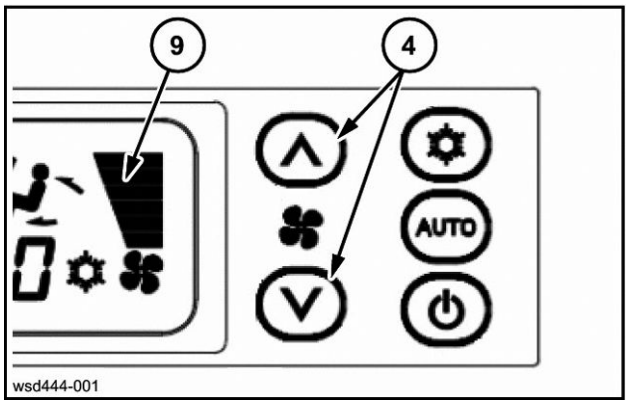
NOTICE: *When the system is turned On it will operate at the same setting as the one selected previously.*



KAPW1A-002 2

Ventilation

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

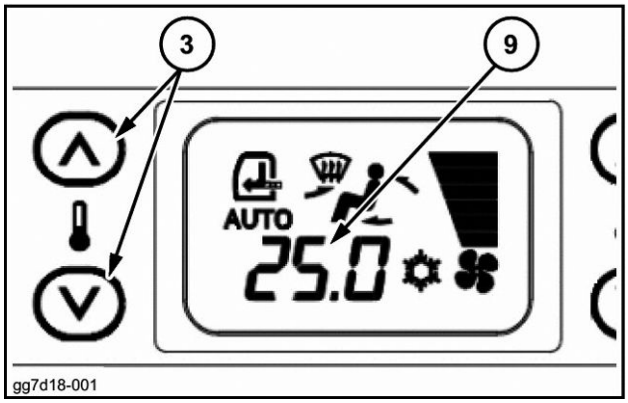


WSD444-001 3

Temperature

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

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



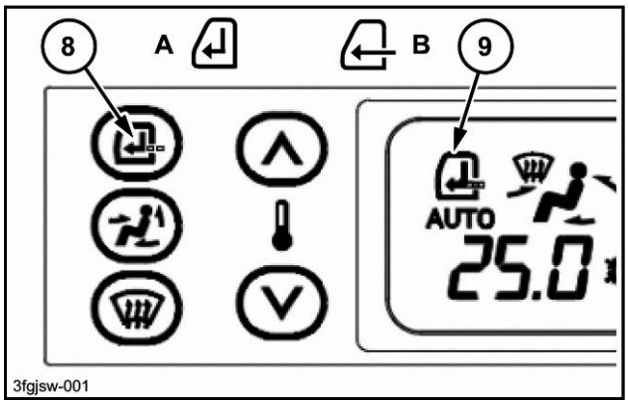
GG7D18-001 4

Air recycling

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

(A) Internal air circulated

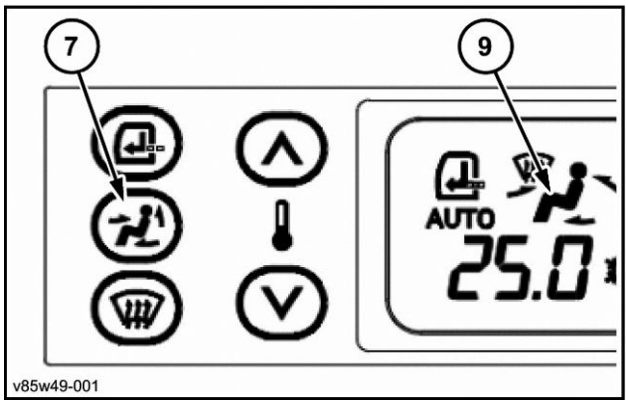
(B) External air enters



3FGJSW-001 5

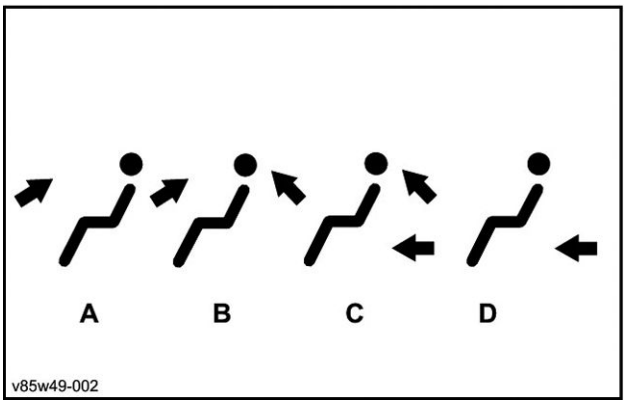
Air flow direction

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



V85W49-001 6

(A) Upper front distribution.
(B) Upper rear distribution.
(C) High force upper distribution and low force rear distribution.
(D) Lower rear distribution (feet) and windshield.

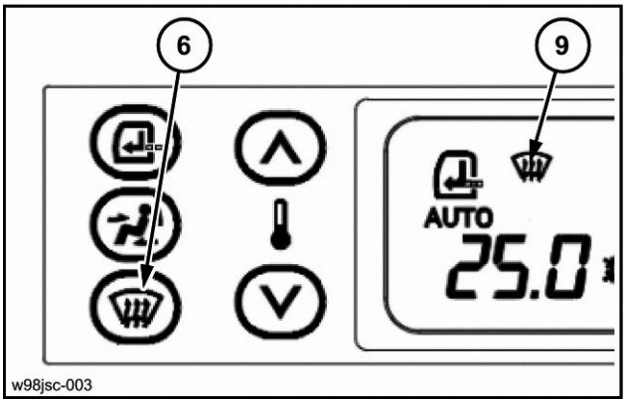


V85W49-002 7

Windshield defroster

This button **(6)** allows the windshield to be defrosted. Press the button to defrost the windshield. The display screen will show that the defroster is working **(9)**. To turn the defroster off, press the button again and the indication on the display screen will disappear.

NOTICE: *When this button is used, the control* ***(7)*** *is deactivated.*



W98JSC-003 8

Air conditioning

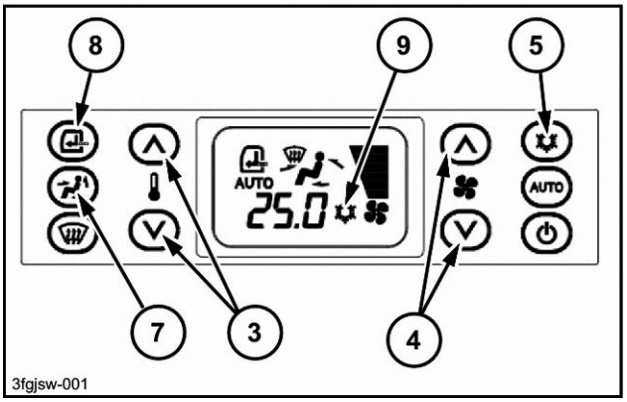
NOTE: *Operate the air conditioning system at least once a week, if only for a short time.*

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:

This button **(5)** is used to turn the air conditioning on and off. When the air conditioning is running, confirmation is given on the display screen **(9)**. Manual adjustments can be made using controls **(3)**, **(4)**, **(7)** and **(8)**.

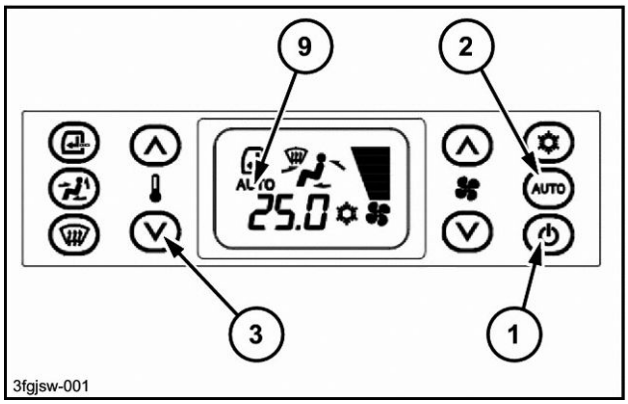


6CSC9W-001 9

Automatic:

This button **(2)** is used for automatic adjustment of the volume, the direction of flow and starting or stopping of the air conditioning. AUTO will appear on the display screen **(9)**. In automatic mode, the only possible manual adjustment is to the temperature **(3)**.

If a control other than the temperature control is operated, the automatic mode will be cancelled and AUTO will disappear from the display **(9)**. To stop the system, press buttons **(1)** or **(2)**.



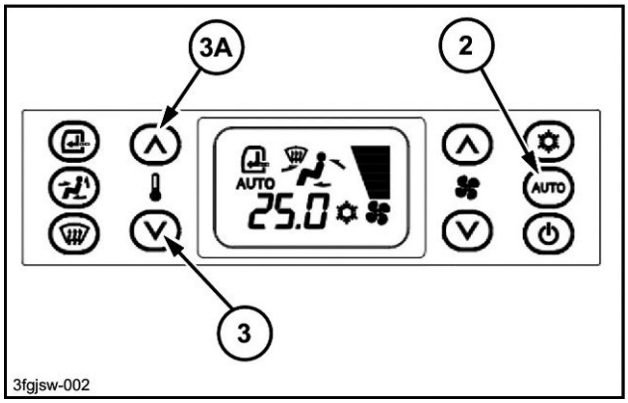
8TWEZ7-001 10

To obtain hot or cold air quickly:

Cold air: Quit the automatic mode by pressing button **(2)** then press button **(3)** down to the minimum temperature of **18 °C** (**64.4 °F**). Ventilation will be at maximum and cold air flow will come from the front.

Hot air: Quit the automatic mode by pressing button **(2)** then press button **(3A)** up to the maximum temperature of **32 °C** (**89.6 °F**). Ventilation will be at maximum and the flow of hot air will come from the rear at foot level.

NOTICE: *To ensure correct functioning and full effectiveness of the air conditioning system, it must be run at least once a week, even if only for a short time.*



8TWEZ7-002 11

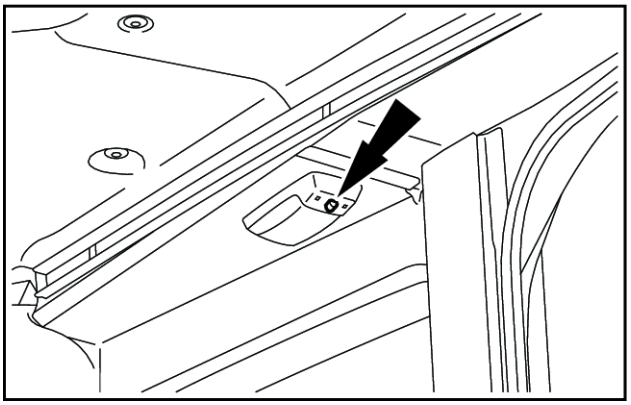
Cab internal lighting

The light is located on the left-hand cab upright and is controlled by a three position switch set in the lamp base.

Positions: “On” (continuous operation), “Off” (shut-down) and intermediate position goes off **30 s** after closing the door.

NOTICE: *make sure that the lights are switched off after use, otherwise the batteries may become discharged.*

NOTE: *to replace the bulb refer to page* ***6-75****.*



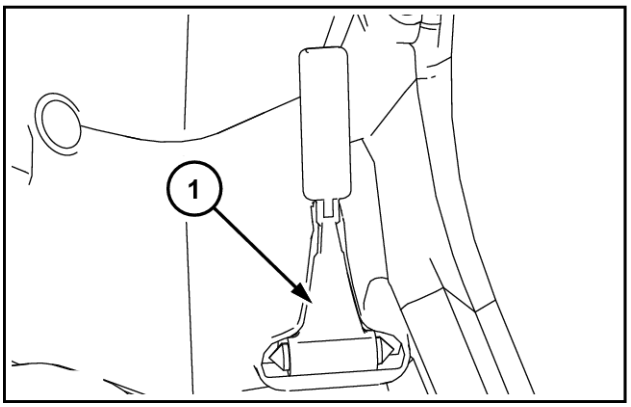
SMIL13CEX2620AB 1

Emergency exit hammer

Located on the left-hand cab, use the hammer **(1)** 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.*

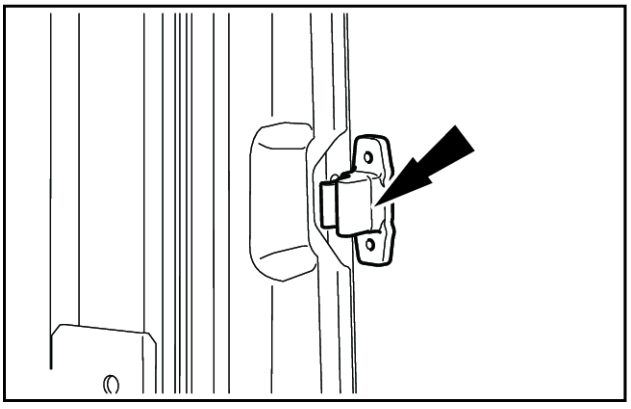
NOTICE: *Do not place anything in front of the window. Doing so may obstruct an emergency escape.*



SMIL13CEX2621AB 1

Sliding windows on door

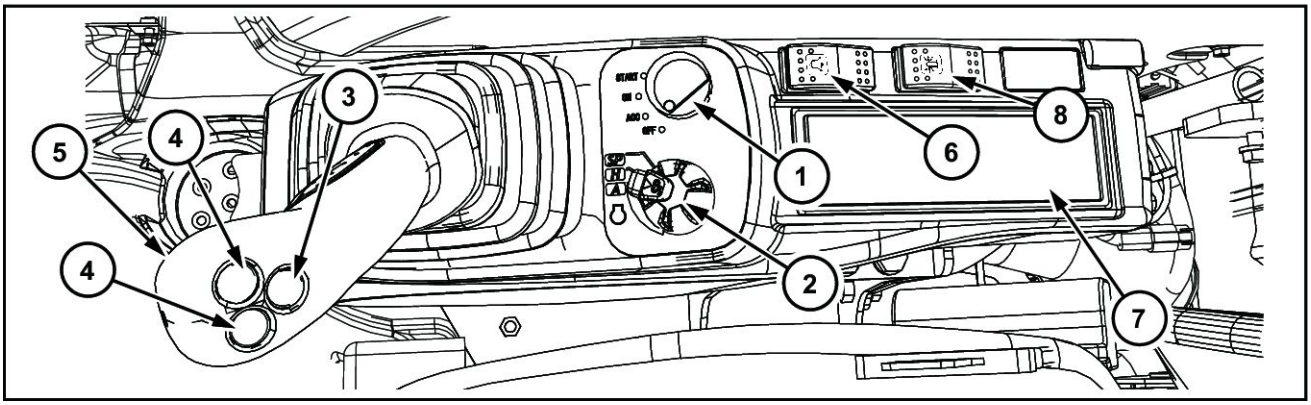
When the locks are released, the windows can be opened and closed to the left or right as required.



SMIL13CEX2623AB 1

RIGHT-HAND SIDE CONTROLS

Right-hand side controls



SMIL13CEX2624EB 1

1. Starter switch
   This switch has four positions, ON (contact), START (engine ignition), OFF (engine shut-down) and ACC (accessory current supply).

   NOTICE: *when the starter key is in ON (contact) position, if the anti-theft protection has been programmed, then it will be necessary to enter the code. The message "Password" will be displayed. Refer to page* ***4-1****.*

   NOTE: *this key is also used to lock the cab door, the engine hood, the front storage compartment, the side doors and the fuel tank cap.*

2. Engine throttle and working mode selector
   The engine throttle enables an increase or reduction of the engine speed. It is also related with the selection of the working mode:
   Mode A when the energy output has priority.
   Mode H for general duty works.
   Mode SP when the output has priority.
   A specific icon is displayed according to the selected mode (A, H or SP).

   NOTE: *to select the SP mode, operate the indexing pin while rotating the throttle to the right.*

   NOTE: *if there is no change in engine speed, press and release the engine automatic idle speed selector.*

3. Engine idle speed selector
   This control enables automatic engine idle without operating the throttle button. To select idle speed, press and release the control for the engine automatically to go into idle speed; the "Engine idling" icon will appear on the message screens. When the control is pressed and released once more the engine will revert to its original speed and the icon on the systems display panel will disappear.

4. Not active

5. Wiper switch
   When this switch is pressed, the wiper moves.

6. Overload indicator switch
   This control is to be used during load handling. Place the switch in the “On” position. If the load to be lifted exceeds the authorized limit, the audible alarm will sound. In the “Off” position the switch is non-operational.

   NOTICE: *before undertaking any load handling operations, place the switch in the “On” position.*

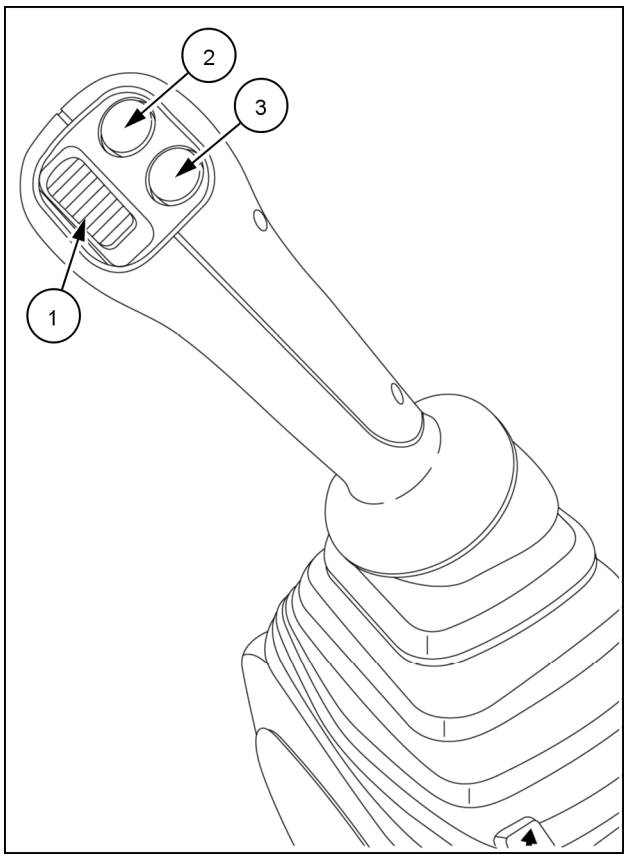
7. Cab radio compartment
   This pre equipped compartment is provided for installing a **12 V** car radio (optional). For details on the vehicle radio operation, read the operator’s manual that comes with the car radio.

8. Rotary light control
   This control is used to turn the rotary light on or off (not supplied). Press “On”, the rotary light and the indicator lamp on the switch come on. Press “Off”, to turn off the rotary light.

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.

NOTE: *The Single-acting auxiliary high-flow hydraulic circuit can be equipped with two alternative controls: the auxiliary pedal or the ON/OFF button on the right-hand control lever. Check which type of control is actually fitted on the machine before start operating the attachment.*



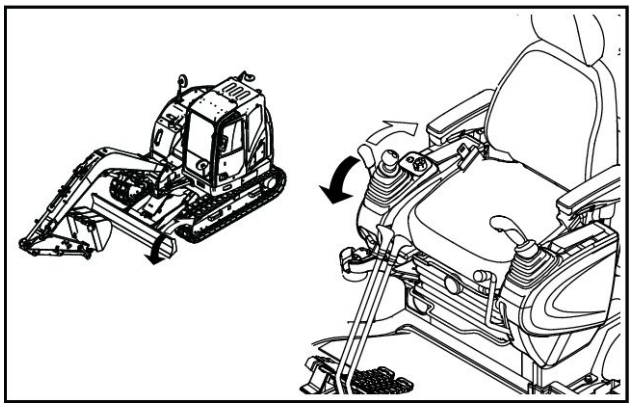
SMIL15CEXY838BA 2

Dozer blade control lever

⚠ 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



SMIL13CEX2945AB 1

The dozer blade control lever is located beside the right-hand console. Basic operation of dozer blade control lever:

- Pull the lever to raise the dozer blade.
- Push the lever to lower the dozer blade.

The operation of the dozer blade stops when the lever is released. The lever returns to the neutral position.

Use the blade only for light work such as dozing of soft soil or mud.

Do not forcibly push down or dig deeply with the blade.

When operating in an area with many rocks and stones, pay attention not to damage the blade.

During blade operations, avoid application of concentrated or lateral load to the blade. Severe damages may be caused to the blade structure.

When the blade is used as an outrigger during the operation, check that the ground has the sufficient strength, and be sure that the edge surface of the blade is contacting the ground uniformly. Severe damages may be caused to the blade structure if the machine is supported only at one side of the blade.

NOTICE: *Make sure to lower the blade to the ground before stopping machine operation.*

If the engine is stopped with the blade in raised position, it is still possible to lower the blade proceeding as follows:

1. Turn the starter key to ON position.
2. Set the gate lock lever in unlock position.
3. Push the blade control lever to lower the dozer blade.

Instrument cluster

(1) Ambient sensor.

NOTE: *Do not place any object on the ambient sensor: the climate control system may not correctly control the temperature inside the cab.*

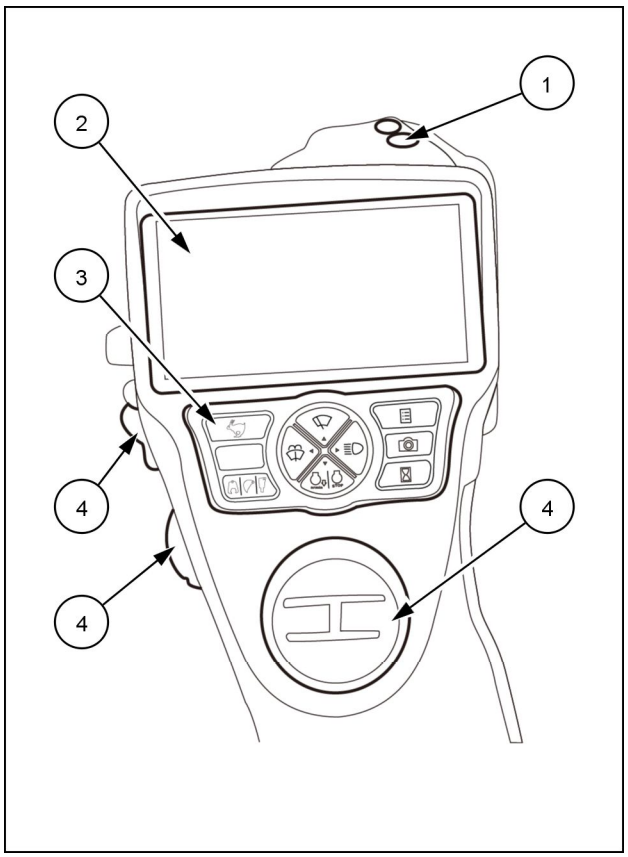
(2) Display.

(3) Control buttons.

(4) Air vents.

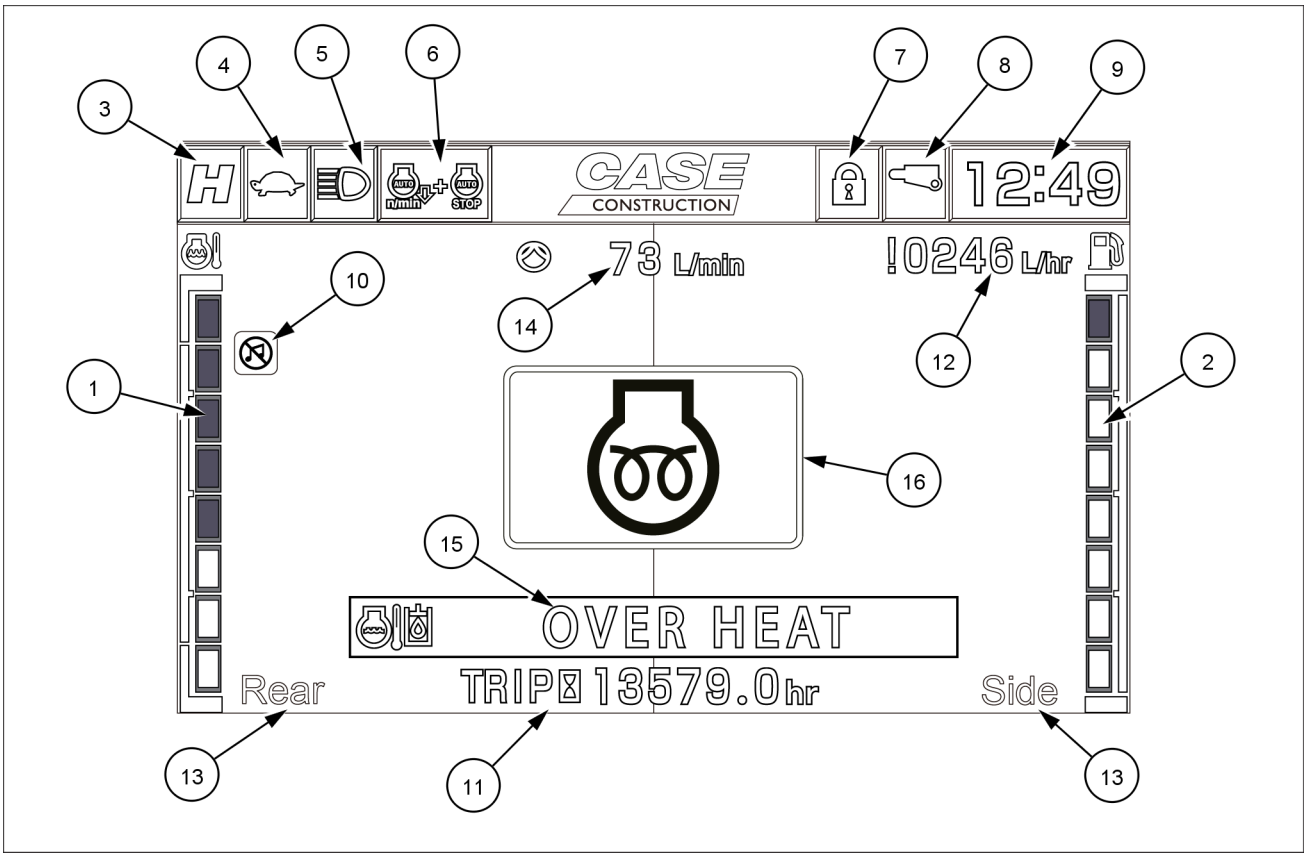
NOTE: *The air vents shall be manually set. Make sure to set the opening and the direction of the air vents in order to grant the desired condition into the cab environment.*

NOTICE: *If water gets inside the instrument cluster, it can be seriously damaged. Make sure to keep the instrument cluster protected from water and from any kind of fluid. Use only a soft, dry cloth to clean the instrument cluster.*



SMIL16CEX1653BA 1

Display



SMIL17CEX7951FA 2

1. Engine coolant temperature gauge
2. Fuel gauge
3. Work mode icon
4. Travel mode icon
5. Working lights icon
6. Engine auto idle icon and auto stop icon
7. Anti-theft icon
8. Attachment selection icon
9. Date and time
10. Radio mute icon
11. Hour meter and trip meter
12. Fuel consumption indicator/Diagnostic Trouble Code
13. Camera view indicator
14. Auxiliary hydraulic circuit flow
15. Messages
16. Large temporary icon

1. Engine coolant temperature gauge.
   Displays the temperature of the engine coolant. The lower zone indicates that the engine coolant temperature is low. When the temperature gauge display reaches the upper zone, an alarm sounds and the OVER HEAT message is displayed. Lower the engine speed. If the temperature does not go down, stop the engine, remove the starter key, and investigate the cause.
2. Fuel gauge.
   Displays the remaining amount of fuel by the number of lit segments. When all are lit, it indicates that the fuel tank is full. When only 1 is lit, an alarm sounds and the LOW FUEL message is displayed.

   NOTE: *It is not necessary to wait until the fuel tank is empty before filling with fuel. If the tank becomes empty, air bleeding of the fuel system is required.*
3. Work mode icon.

   The A work mode is selected.

   The H work mode is selected.

   The SP work mode is selected.
4. Travel mode icon.

   
   The slow speed travel mode is selected.

   
   The fast speed travel mode is selected.
5. Working lights icon.

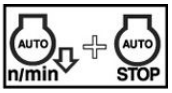
   
   The working lights are on.
6. Engine auto idle icon and auto stop icon.

   Engine auto idle is set.

   Engine auto stop is set.

   Auto idle and auto stop are both set.
7. Anti-theft icon.

   
   The anti-theft protection function is set up.
8. Attachment selection icon.

   
   Hydraulic breaker.

   
   Hydraulic crusher.
9. Date and time.
10. Radio mute icon.

    
    Radio is muted.
11. Hour meter and trip meter.
    The hour meter indicates the total engine operating hours in units of **0.1 h** (**6 min**). The trip meter allows to set a partial operating hour counter, which can be reset to **0 h** at any time. The hours are indicated in units of **0.1 h** (**6 min**).
12. Fuel consumption indicator/Diagnostic Trouble Code.
    The instantaneous fuel consumption in L/h is displayed.
    Diagnostic Trouble Codes come up if any malfunction is detected on the machine systems.

    NOTE: *the fuel consumption indicator can be disabled by a specific tab into the user information mode of the display. Refer to the dedicated instruction ahead in this Chapter.*
13. Camera view indicator.
    The view of the rear camera is shown on the left side of the display. The view of the right side camera is shown on the right side of the display.
14. Auxiliary hydraulic circuit flow.
    The rated flow of the auxiliary hydraulic circuit is fixed depending upon the type of circuit.
    1 pump breaker circuit: **73 L/min** (**19.3 US gpm**)
    2 pumps crusher circuit: **146 L/min** (**38.6 US gpm**)
15. Messages.
    The messages on the bottom of the display are intended to provide significant information related to the machine operation. A message combines an icon and a text. Some messages are accompanied by an alarm as they are displayed. A message can have a red, orange or green background depending upon the type of message, according to its level of urgency and importance.

    NOTICE: *If a message is displayed, perform action according to the message.*

NOTICE: *If the message is still displayed after action, consult your CASE CONSTRUCTION Dealer.*

NOTE: *The language of the displayed messages can be changed, consult your CASE CONSTRUCTION Dealer.*

- LOW OIL PRESSURE

Indicates that the engine oil level is low. An alarm sounds. Stop the engine and remove the starter key, and then inspect the oil level.

NOTE: *If the measures above are not performed immediately when this message is displayed, the engine stops automatically.*

- OVER HEAT

Indicates that the engine coolant temperature is high. An alarm sounds. Lower the engine speed. If the temperature does not go down, stop the engine and remove the starter key. Wait for the temperature of the cooling system to go down, and then inspect the coolant level inside the reservoir tank and radiator. Check the radiator and oil cooler.

- BOOST TEMP HIGH

Indicates that the temperature of the turbocharger air that is being supplied to the engine is abnormally high. An alarm sounds. The engine automatically enters idling mode as a preventative measure. Stop the machine, operate the engine at idling speed, and wait until the message disappears. If the turbocharger air temperature continues to rise, the engine stops automatically. Consult your CASE CONSTRUCTION Dealer.

- ALTERNATOR

Indicates that there is a problem in the alternator. An alarm sounds. Stop the engine and remove the starter key, and then inspect the alternator. Consult your CASE CONSTRUCTION Dealer.

- CHECK ENGINE

Indicates that there is a problem (short or disconnection) in the electrical system of the engine. An alarm sounds. Stop the engine and remove the starter key, and then inspect the electrical system. Consult your CASE CONSTRUCTION Dealer.

- ELEC. PROBLEM

Indicates that there is a problem in the electrical system. An alarm sounds. In this case, stop the engine and remove the starter key, and then investigate the cause or consult your CASE CONSTRUCTION Dealer.

- ENGINE STOP

Indicates that the engine has been stopped by the emergency stop switch. An alarm sounds. 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

Indicates that the engine has been stopped without cooling it down. Restart the engine, and keep it at a low idle for at least **5 min**.

- CHECK CAMERA

Indicates that the cameras or the camera wirings have a failure. Stop the engine, and contact your CASE CONSTRUCTION dealer immediately.

- OVER LOAD

Indicates that an overload condition is detected during the handling of an object. Place the load onto the ground and check the load conditions making reference to the chart located inside the cab.

- LOW COOLANT

Indicates that the level of the coolant in the engine cooling system is low. An alarm sounds. Stop the engine and remove the starter key. Wait for the temperature of the cooling system to go down, and then inspect the coolant level inside the reservoir tank and radiator.

- AIR FILTER

Indicates that the air cleaner element is clogged. Stop the engine, and clean or replace the air cleaner element.

- LOW FUEL

Indicates that the fuel level in the tank is low. Stop the engine, and add fuel to the fuel tank.

- FUEL FILTER

Indicates that the fuel pre-filter or the fuel main filter is clogged. Stop the engine, and replace the filter element. Start the engine, and if the message persists, contact the CASE CONSTRUCTION Dealer immediately.

- AUXILIARY SET-UP REQUIRED

Indicates that the operation with the hydraulic attachment is attempted without any set up of the auxiliary hydraulics. Check the type of attachment currently in use, and set the auxiliary hydraulic circuit to the pattern that properly matches this type of attachment.

- SERVICE DUE

Indicates that one or more periodical maintenance operations are due. Check the maintenance chart, and carry out the required maintenance operations.

- AUTO WARM UP

Indicates that the auto warm-up of the machine systems is in progress.

- IDLE SHUT DOWN

Indicates that the engine is going to stop automatically within **10 s**. If needed, set the gate lock lever in unlock position to restart normal operation.

16. Large temporary icon.

A large icon appears temporary in the middle of the display in order to indicate a specific operating condition

• Wiper speed

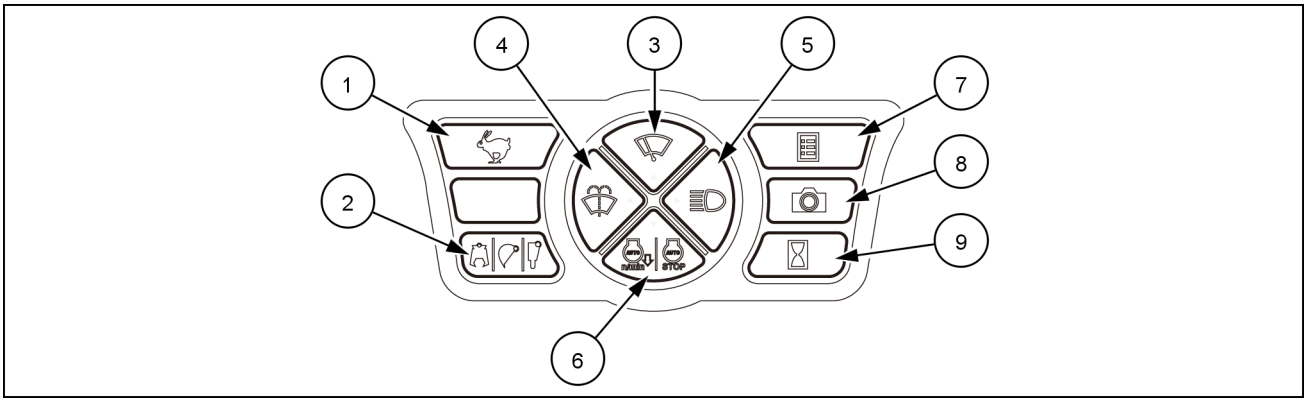
1st speed

2nd speed

Stop

• Engine preheating

Control buttons



SMIL16CEX1655EA 3

1. Travel mode select button
   The selection toggles between slow speed mode ("Turtle") and fast speed mode ("Rabbit") every time the travel mode selector switch is pressed.

   NOTICE: *perform all changes to the travel mode while the machine is stopped.*

Use the "Turtle" mode to travel on slope, off-road or soft ground.
Use the "Rabbit" mode to travel on a hard, flat, maintained road.

NOTE: *the slow speed mode is automatically selected when the engine is started.*

NOTE: *if the fast speed mode is selected on the machine, it automatically switches to slow speed mode when the load increases on uphill road, and automatically returns to fast speed mode as the load decreases.*

2. Attachment selection button
   When using a hydraulic attachment, press the button to set the auxiliary hydraulic circuit to the pattern that properly matches the type of attachment used.
   Set the breaker mode for using a single acting hydraulic attachment such as hydraulic breaker. The breaker icon appears on the display.
   Set the crusher mode for using a double acting hydraulic attachment such as hydraulic crusher. The crusher icon appears on the display.

   NOTICE: *before changing the setting of the auxiliary hydraulic circuit, stop operation and set the machine in parking position.*

3. Wiper button
   The button sets three operating conditions: "Off", "Intermittent" and "Continuous".
   When the button is pressed to operate the wiper intermittently, **(I)** is displayed on the monitor.
   When the button is pressed again to operate the wiper continuously, **(II)** is displayed on the monitor.
   When the button is pressed again to stop the wiper, "Off" is displayed on the monitor.

   NOTICE: *Do not operate the wiper when the front glass is dry. Doing so could damage the wiper.*

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

   NOTICE: *Do not operate the washer when the reservoir is empty. Doing so could damage the electric pump.*

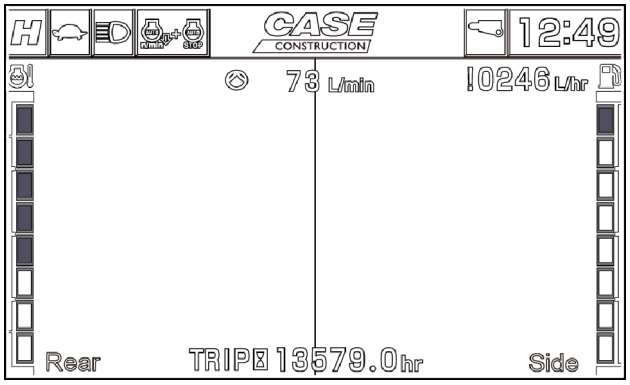
5. Working lights button
   Press the working lights button to turn on the working lights on the front of the machine.
   Press the button again to turn the working lights off.

6. Idle mode button
   Press the button to select the automatic control mode of engine idling or stopping.
   If auto idle mode is selected, the engine speed drops automatically to low idle if any lever or pedal is not operated for **5 s**. The auto idle icon appears on the display. To restore the engine speed, operate any control lever, or turn the engine speed throttle.
   If auto stop mode is selected, the message IDLE SHUT DOWN is displayed, an alarm sounds, and the engine stops automatically **10 s** thereafter if the engine speed is kept at **1200 RPM** or below and the gate lock lever is kept in lock position for **3 min**. The auto stop icon appears on the display
   If the sequence of auto idle and auto stop is selected, auto idle activates as described before, and if the gate lock lever is also set to the lock position, idle shutdown eventually activates after **3 min**. The combined icon appears on the display.

   NOTICE: *To protect the engine, let idle continue for at least **3 min**.*

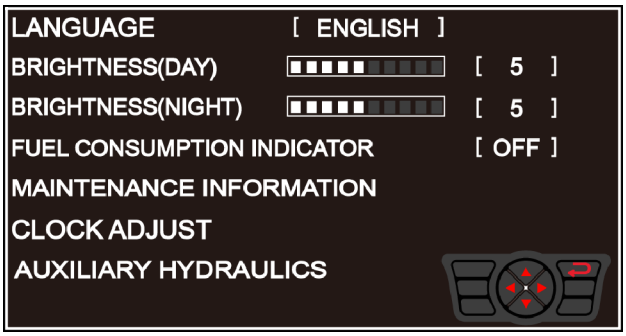
   NOTE: *to restart the engine that has stopped by auto stop, turn the starter key to OFF position and then start the engine.*

7. Display mode selector button
   Press the display mode selector button to select the set of information visualized on the display:
   The operating mode shows the images of the external cameras, along with the icons, warning and messages related to the functioning of the machine.



SMIL16CEX1657AA 4

The user information mode provides access to the configuration tabs for the set up of the main functionalities of the machine.

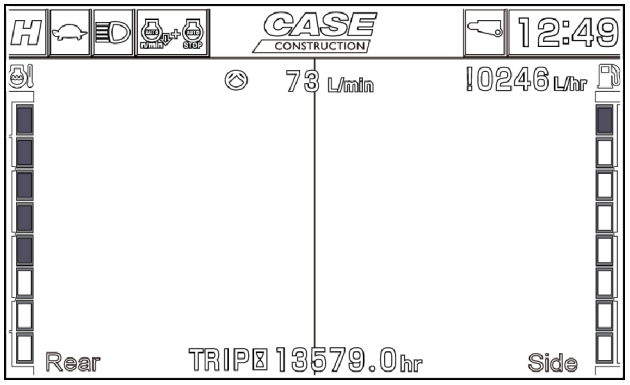


SMIL16CEX1658AA 5

The mode of the display toggles every time the selector button is pressed.

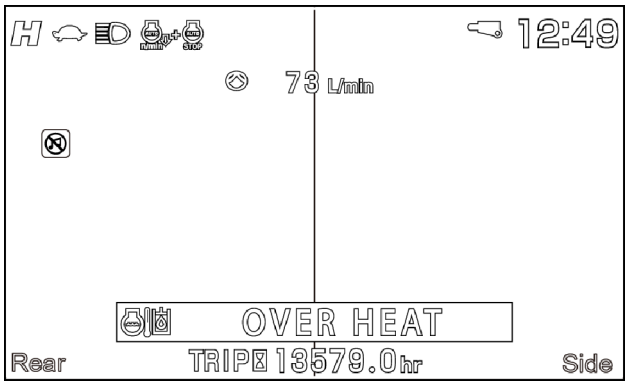
NOTICE: *During machine operation, make sure to select the operating mode of the display in order to ensure proper visibility around the machine.*

8. Camera view selector button
   Press the camera view selector button to select the operating mode of the display between the two following modes:
   MODE-1: Camera images + Machine information



SMIL16CEX1657AA 6

MODE-2: Camera images + icons



SMIL16CEX1656AA 7

The operating mode of the display toggles every time the selector button is pressed.

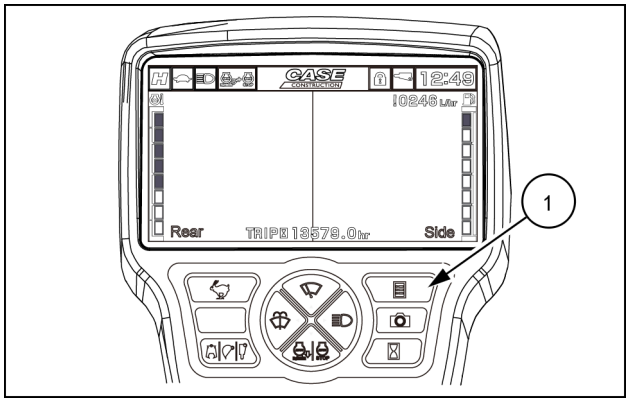
9. Hour meter/Trip meter button
   The information is shown on the bottom of the display. The hour meter indicates the total engine operating hours in units of **0.1 h** (**6 min**). The hour meter cannot be reset. The trip meter allows to set a partial operating hour counter, which can be reset to **0 h** at any time. The hours are indicated in units of **0.1 h** (**6 min**). To reset the trip meter press and hold the hour meter button while the trip meter is displayed. The displayed engine operating hours will be reset to **0 h**. The hour meter is displayed by default. To display the trip meter, press the hour meter button: the trip meter will be thus displayed for approximately **1 min**, after which the hour meter will be displayed again.

   NOTE: *the display disappears when the starter key is turned to OFF position. The hour meter can be anyway displayed for **20 s** by pressing the hour meter button.*

User information mode

Press the button **(1)** to access the user information mode of the display.

Press the button **(3)** as indicated into the next pictures in order to scroll down to the intended setting tab.



SMIL16CEX1664AA 8

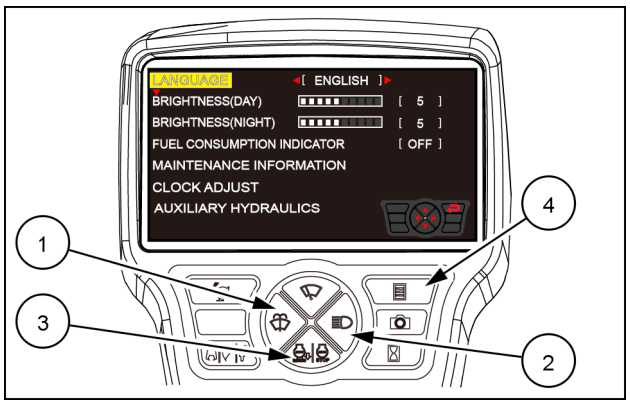
LANGUAGE setting

The first tab of the user information mode allows to set the language of the messages on the display.

Press the button **(1)** or **(2)** to select the desired language.

If other settings are needed, press the button **(3)** to scroll down to the next tab.

Otherwise, press the button **(4)** to confirm the selection and to reset the operating mode of the display.



SMIL16CEX1665AA 9

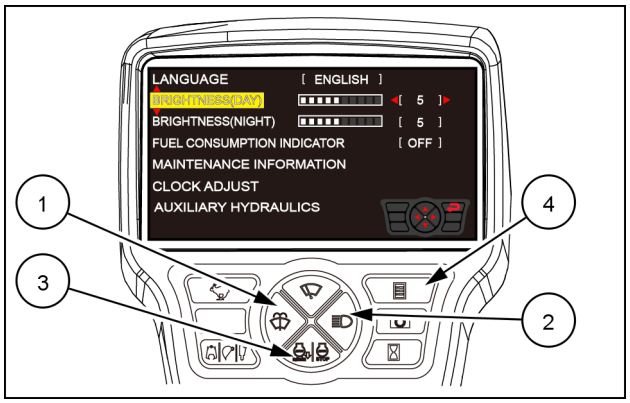
BRIGHTNESS (DAY) setting

The second tab of the user information mode allows to set the brightness of the display in daylight.

Press the button **(2)** to increase the brightness of the display, press the button **(1)** to decrease the brightness of the display.

If other settings are needed, press the button **(3)** to scroll down to the next tab.

Otherwise, press the button **(4)** to confirm the selection and to reset the operating mode of the display.



SMIL16CEX1666AA 10

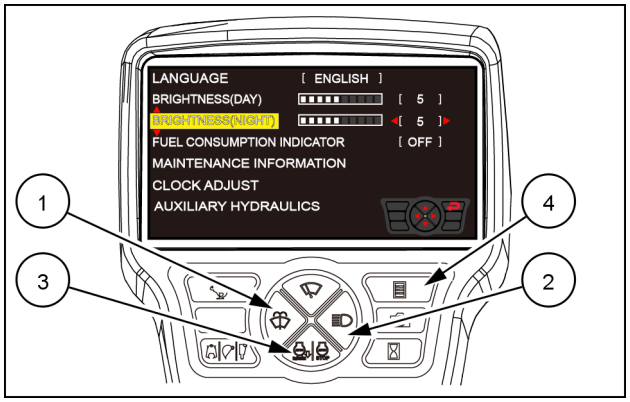
BRIGHTNESS (NIGHT) setting

The third tab of the user information mode allows to set the brightness of the display in low ambient lighting.

Press the button **(1)** or **(2)** to set the brightness of the display as described in the previous tab.

If other settings are needed, press the button **(3)** to scroll down to the next tab.

Otherwise, press the button **(4)** to confirm the selection and to reset the operating mode of the display.



SMIL16CEX1662AA 11

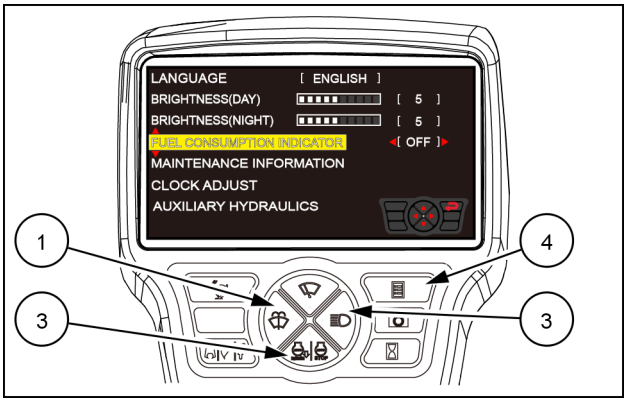
FUEL CONSUMPTION INDICATOR setting

The fourth tab of the user information mode allows to set the display of the fuel consumption indicator.

Press the button **(1)** or **(2)** to set the fuel consumption indicator ON or OFF.

If other settings are needed, press the button **(3)** to scroll down to the next tab.

Otherwise, press the button **(4)** to confirm the selection and to reset the operating mode of the display.



SMIL16CEX1660AA 12

MAINTENANCE INFORMATION setting

The fifth tab of the user information mode allows to set the time sheet of the main maintenance operations.

Press the button **(2)** to show the setting pages.

Press the button **(1)** or **(2)** to select the page that includes the intended maintenance operation.

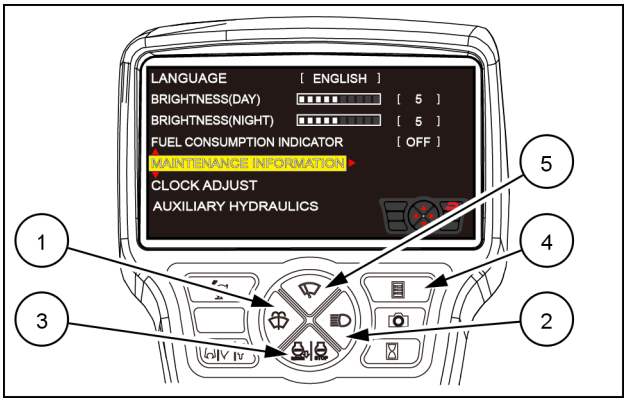
NOTE: *the main maintenance operations are included into the pages 1, 2, and 3.*

Press the button **(3)** or **(5)** to select the intended maintenance operation into the page. If service is due shortly, the remaining time is displayed in yellow. If the due timing for service has passed, the delay is displayed in red. As the intended maintenance operation has been performed, press and hold the button **(2)** to reset the remaining time to the next service. An alarm sounds to confirm the reset.

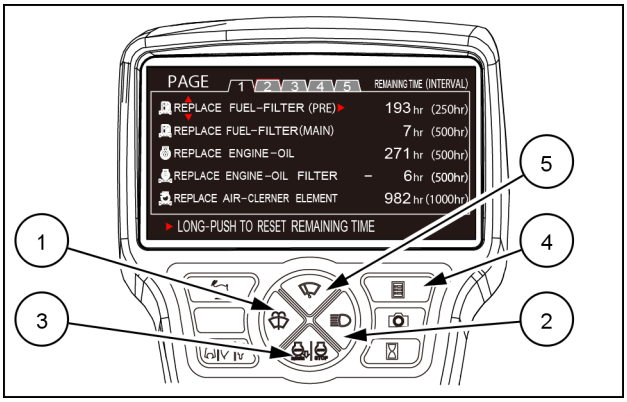
When the time sheets have been set, press the button **(4)** to return to the user information mode.

If other settings are needed, press the button **(3)** to scroll down to the next tab.

Otherwise, press the button **(4)** to reset the operating mode of the display.



SMIL16CEX1659AA 13

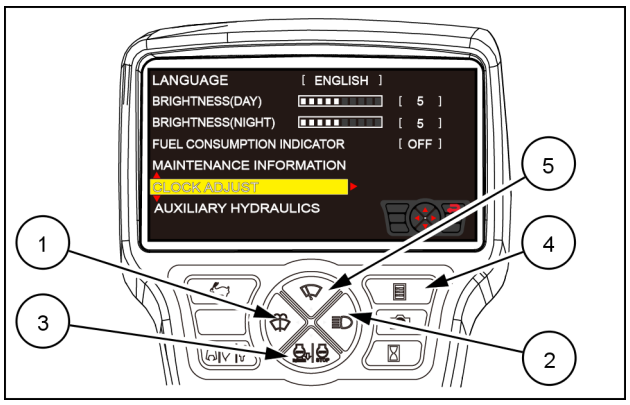


SMIL16CEX1661AA 14

CLOCK ADJUST setting

The sixth tab of the user information mode allows to set the clock on the display.

Press the button **(2)** to show the setting frame.



SMIL16CEX1663AA 15

Press the button **(1)** or **(2)** to select between hours or minutes.

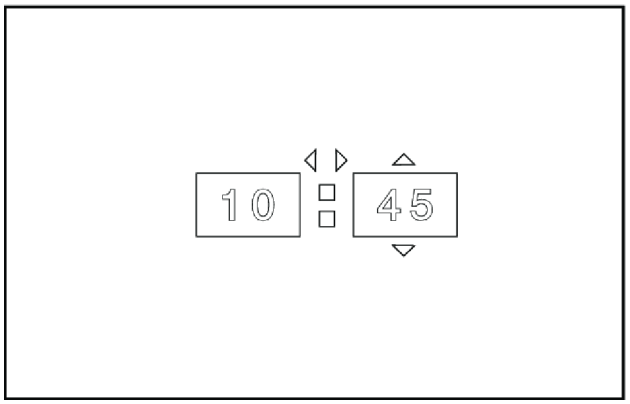
Press the button **(3)** or **(5)** to set the correct value of either hours or minutes.

When the clock has been set, press the button **(4)** to return to the user information mode.

If other settings are needed, press the button **(3)** to scroll down to the next tab.

Otherwise, press the button **(4)** to reset the operating mode of the display.

NOTE: *the tab named AUXILIARY HYDRAULICS is not active.*

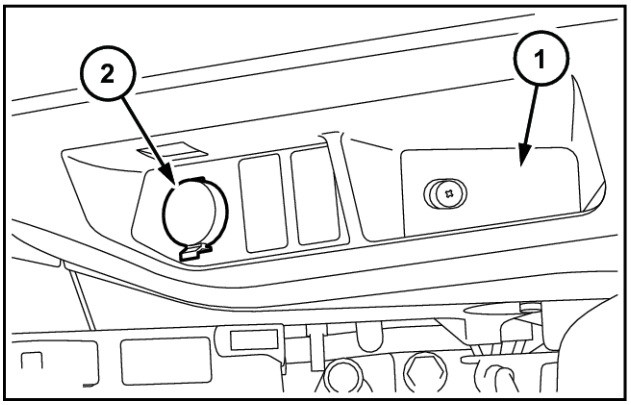


SMIL13CEX2618AB 16

Power sockets

1. Storage tray.
2. Auxiliary **12 V** socket. This socket is used to supply electric power to a **12 V** electric equipment.

NOTICE: *it is prohibited to connect anything other than a* ***12 V*** *device.*

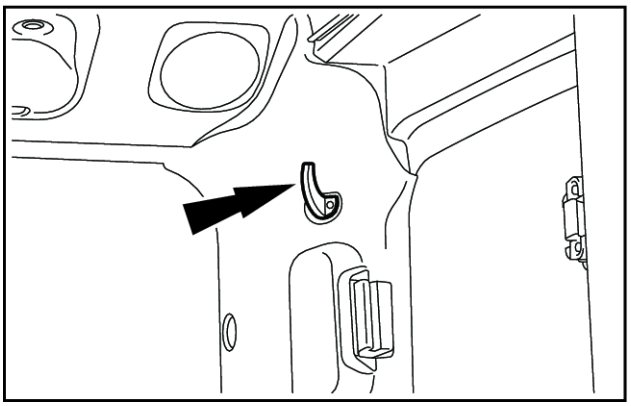


SMIL13CEX2879AB 1

Coat hanger hook

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

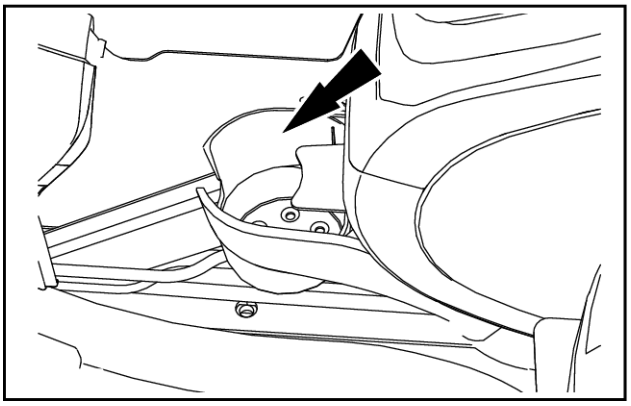
NOTICE: *Take care not to obscure the view with clothes that are too bulky.*



SMIL13CEX2626AB 1

Cup holder

Located on the front right-hand side of the operator's seat, the cap holder is designed to hold a beverage container.

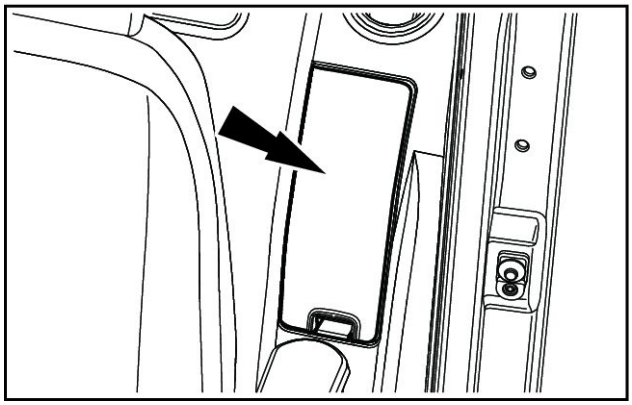


SMIL13CEX2627AB 1

REARWARD CONTROLS

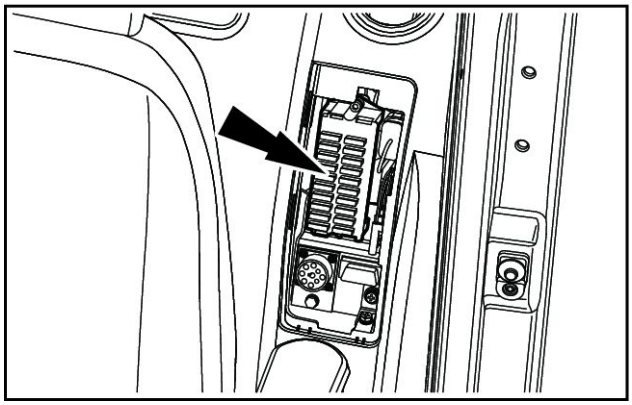
Fuse box

Located on the left-hand site, behind the operator's seat.



SMIL13CEX2628AB 1

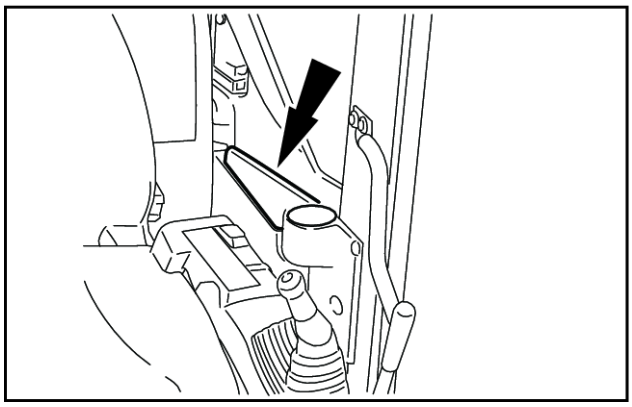
Remove the cover of the fuse box.



SMIL13CEX2629AB 2

Magazine rack

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

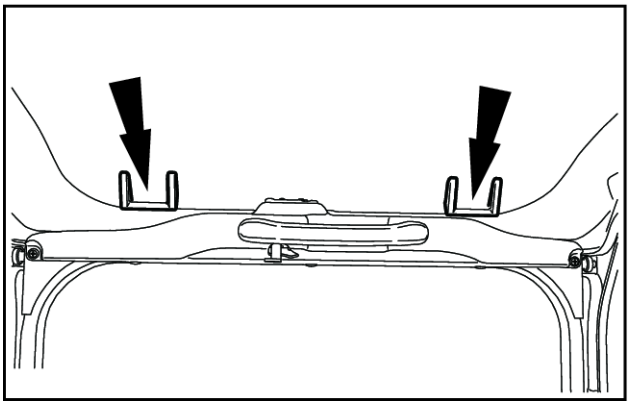


SMIL13CEX2630AB 1

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.

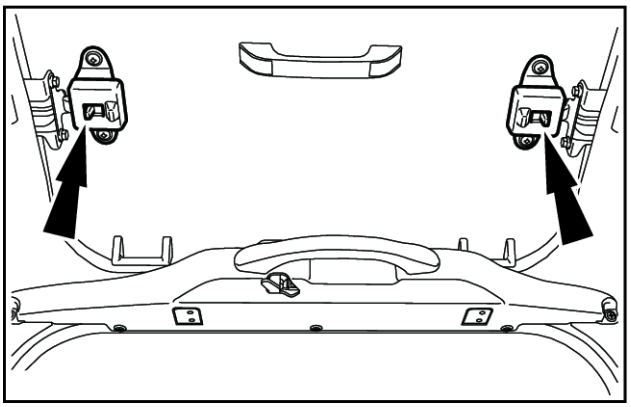


SMIL13CEX2631AB 1

Roof hatch

Open the roof curtain. 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.*



SMIL13CEX2632AB 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.

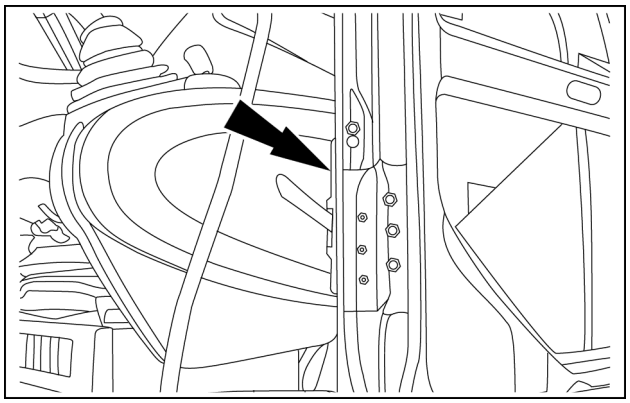
W0134A

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

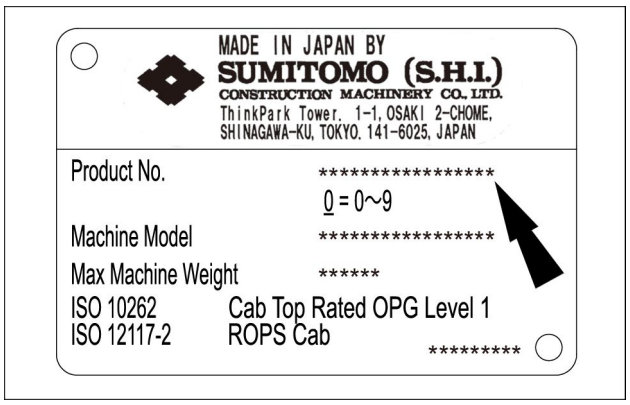
NOTICE: *If the cab's ROPS (guaranteed high-strength member) is damaged, replace the cab. When replacing the cab, check the parts list for the part number of the cab appropriate for the model. If the wrong cab is mounted, the cab could be damaged when the machine rolls over, which could result in the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



SMIL15CEX1339AA 1



SMIL17CEX5115AA 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.

NOTICE: *FOPS level 2 is standard for CX75C SR Offset Boom with blade.*

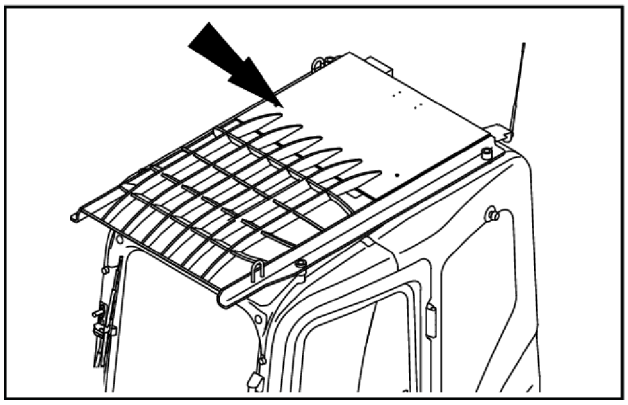
The protective structure, the fitting supports and fastening elements on the machine are an integral part of the structure.

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

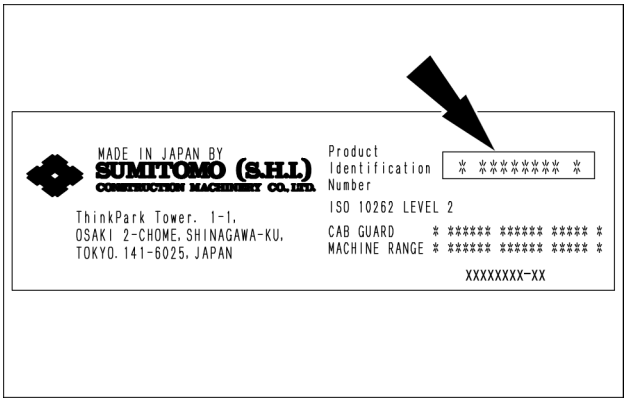
In any case, all damaged parts must be replaced with genuine spare parts, in order to return the machine to its original conditions.

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.

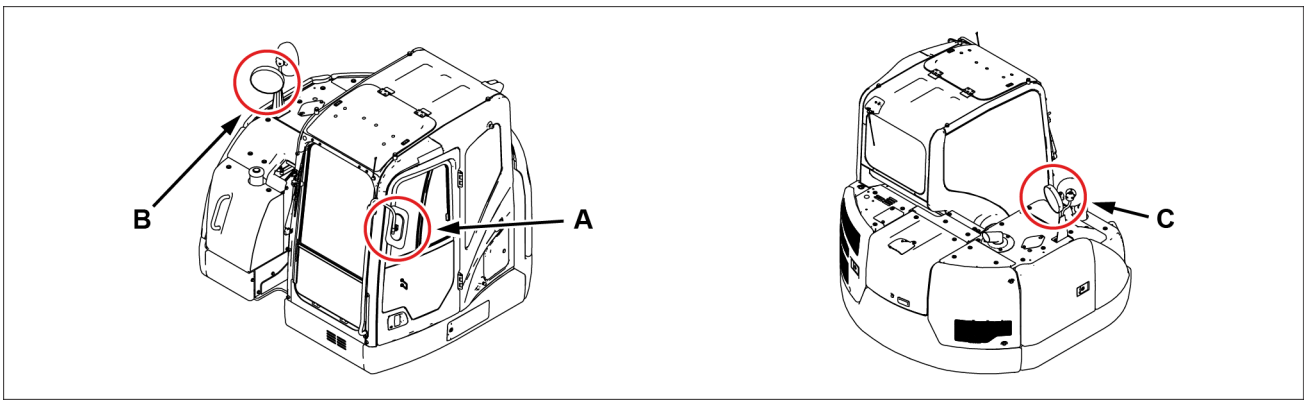


SMIL13CEX2661AB 3



SMIL17CEX5116AA 4

Mirrors



SMIL17CEX7955GA 1

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

Installation and positioning of the mirrors

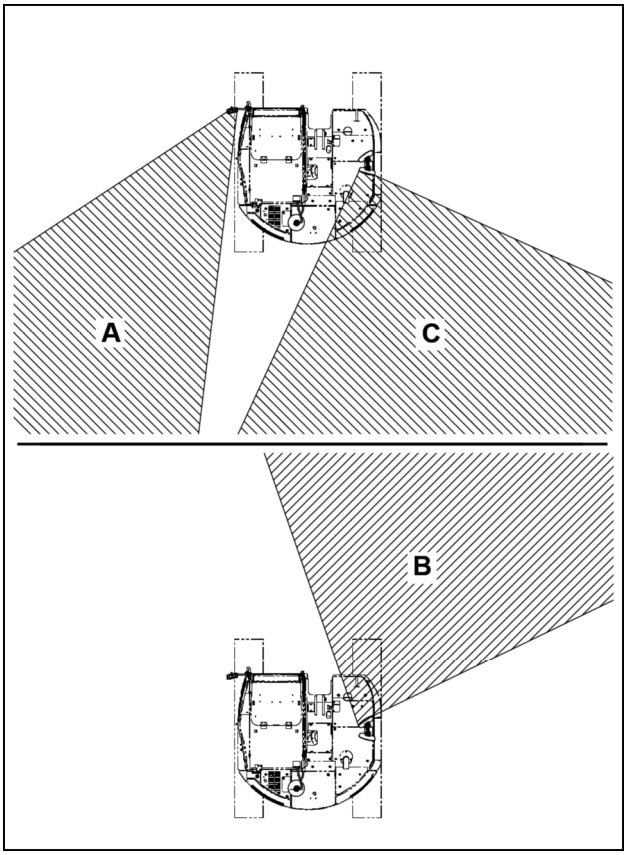
⚠ WARNING

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.



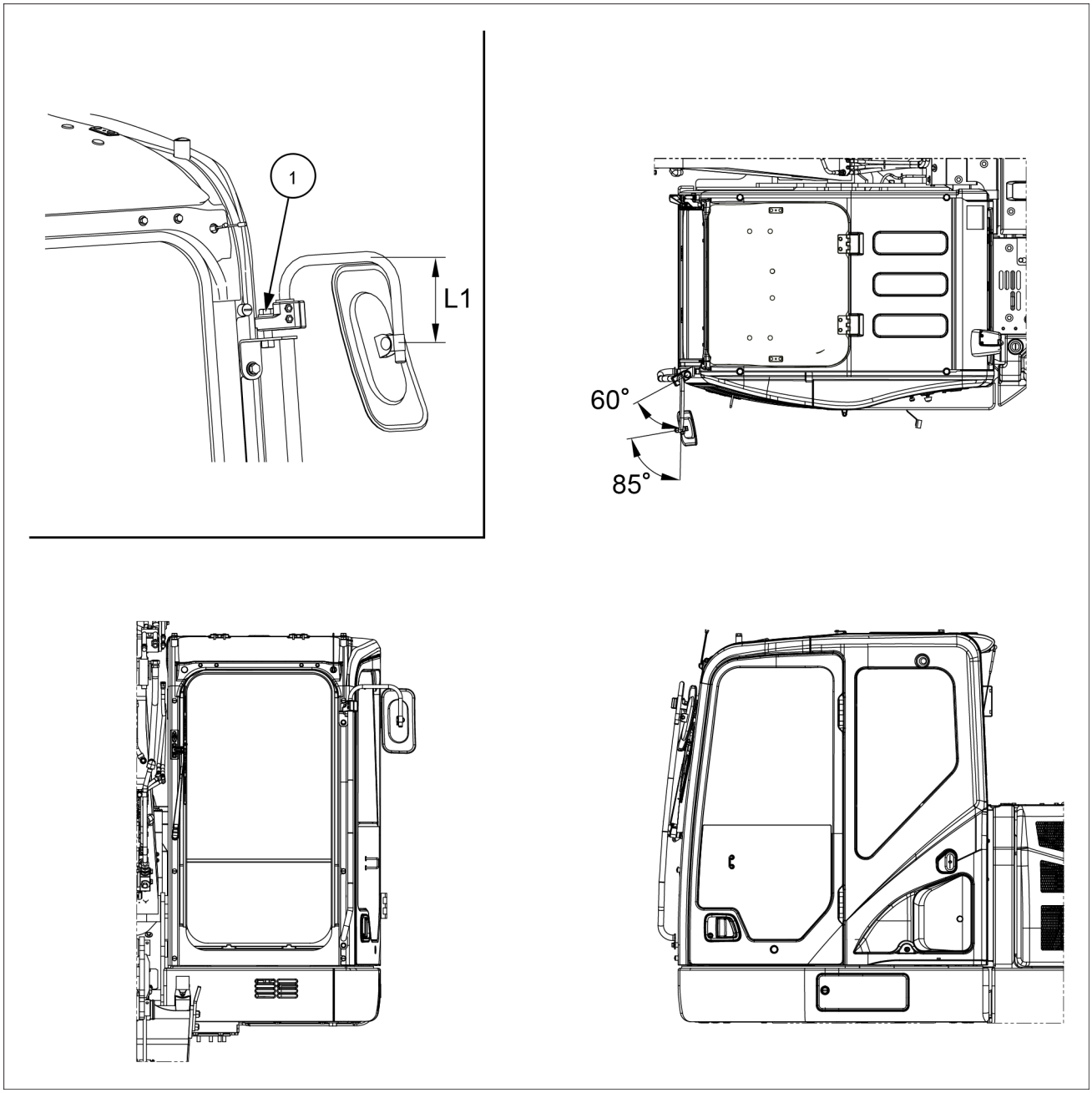
SMIL16CEX1646BA 2

Left mirror (A)

The mirror shall be installed as shown in the picture.

The dimension **(L1)** is **165 mm** (**6.5 in**).

The tightening torque of the bolt **(1)** is **71.6 – 91.2 N·m** (**52.8 – 67.3 lb ft**).

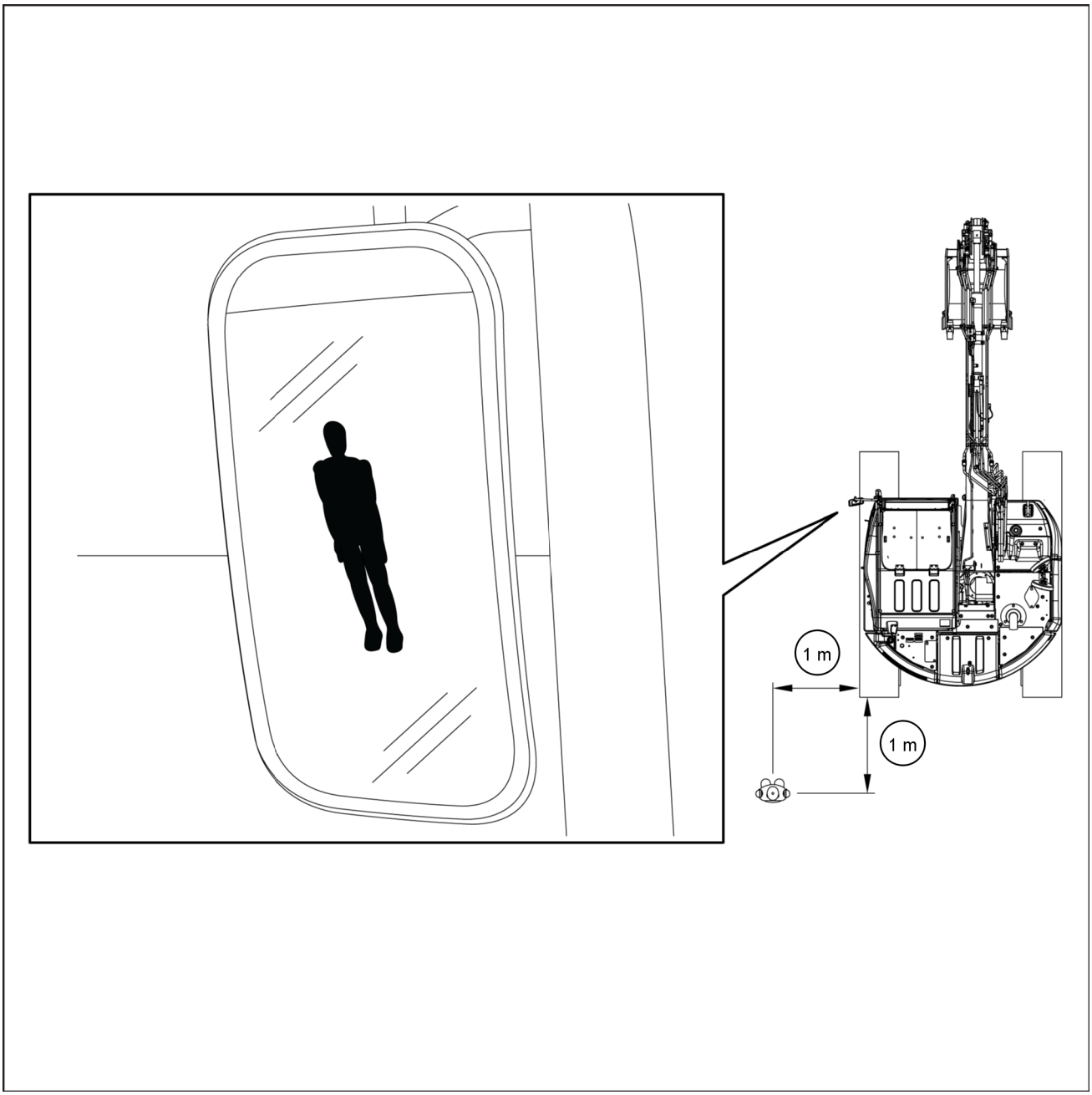


SMIL17CEX7956GA 3

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.



SMIL17CEX7952GA 4

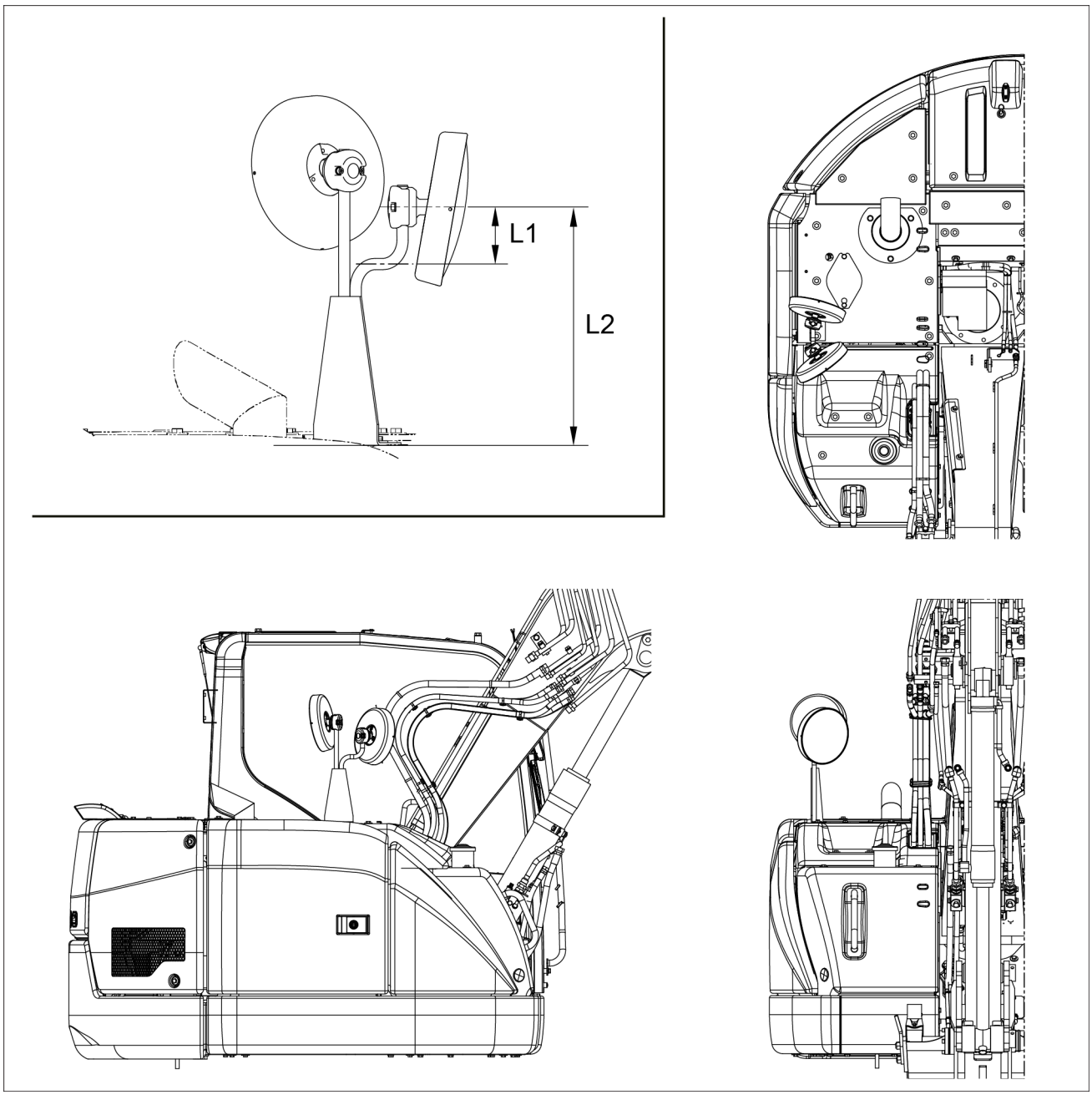
NOTICE: *After installing and positioning all the mirrors, the visibility around the machine shall be checked from the operator's seat. Set the seat into the desired position, and make sure to confirm all the reference views in the mirrors. If necessary, fine tune the positioning of the mirrors in order 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 **80.5 mm** (**3.2 in**).

The dimension **(L2)** is **385 mm** (**15.2 in**).

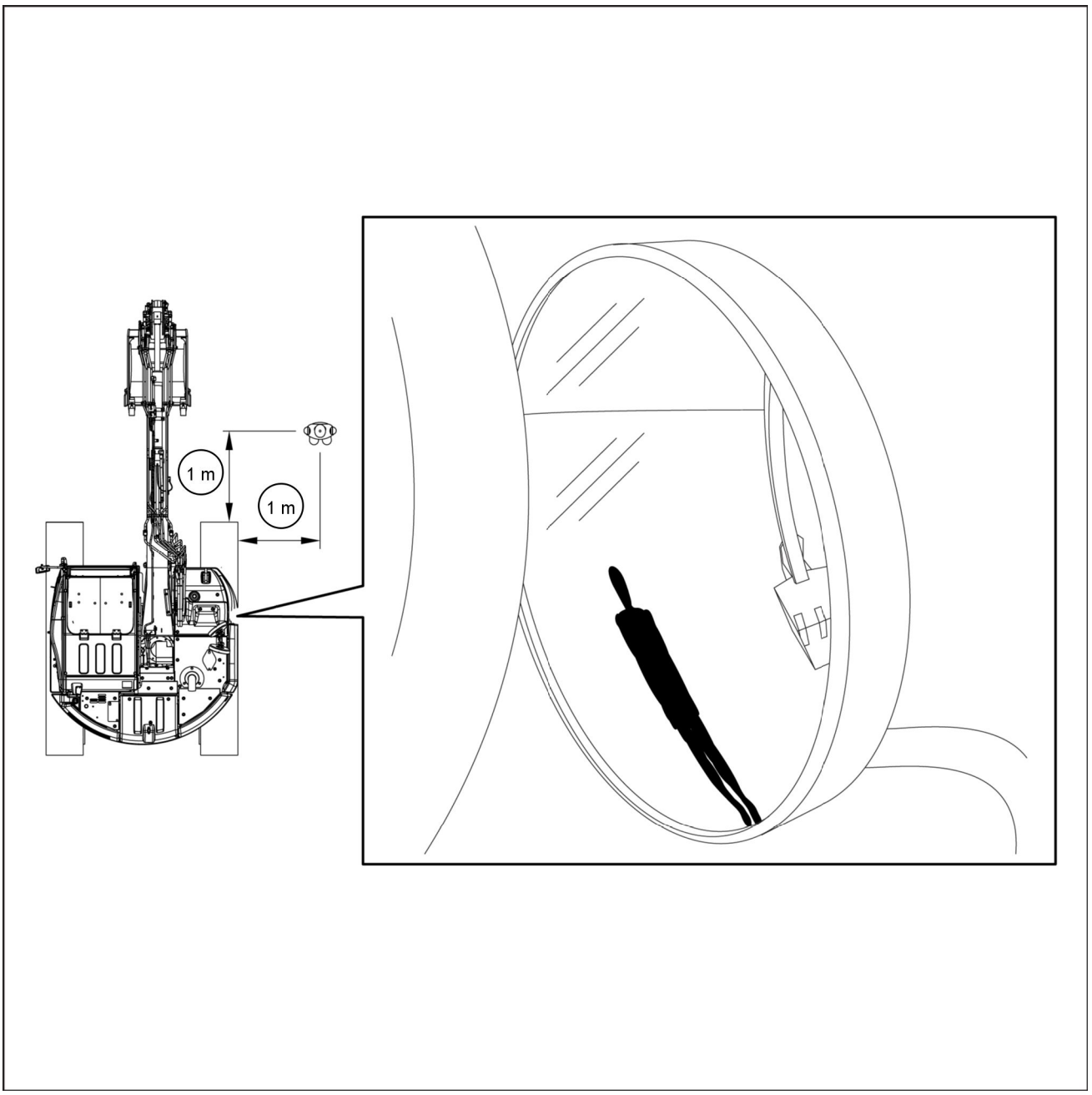


SMIL17CEX7957GA 5

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.



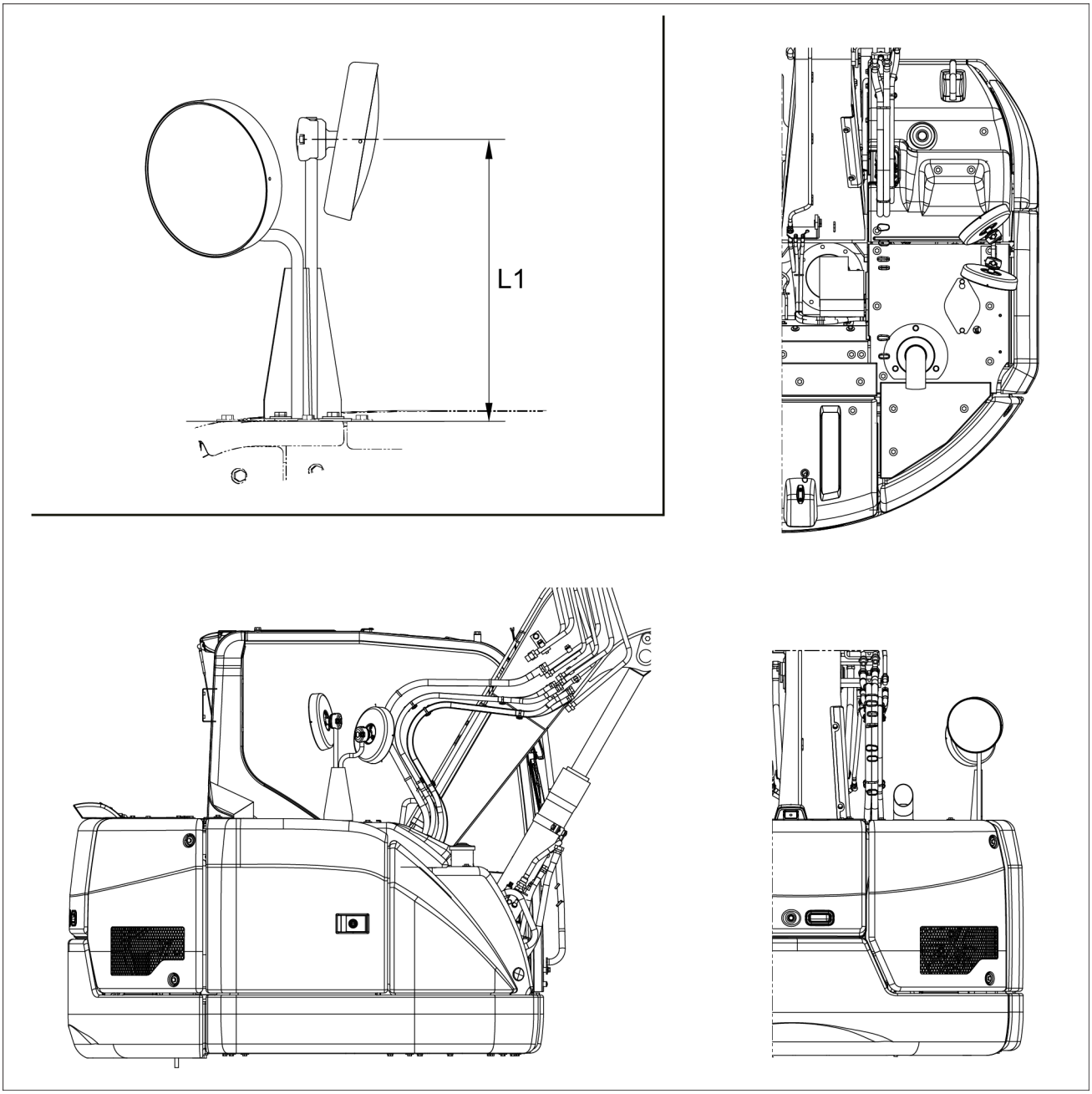
SMIL17CEX7953GA 6

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-center mirror (C)

The mirror shall be installed as shown in the picture.

The dimension **(L1)** is **461 mm** (**18.1 in**).

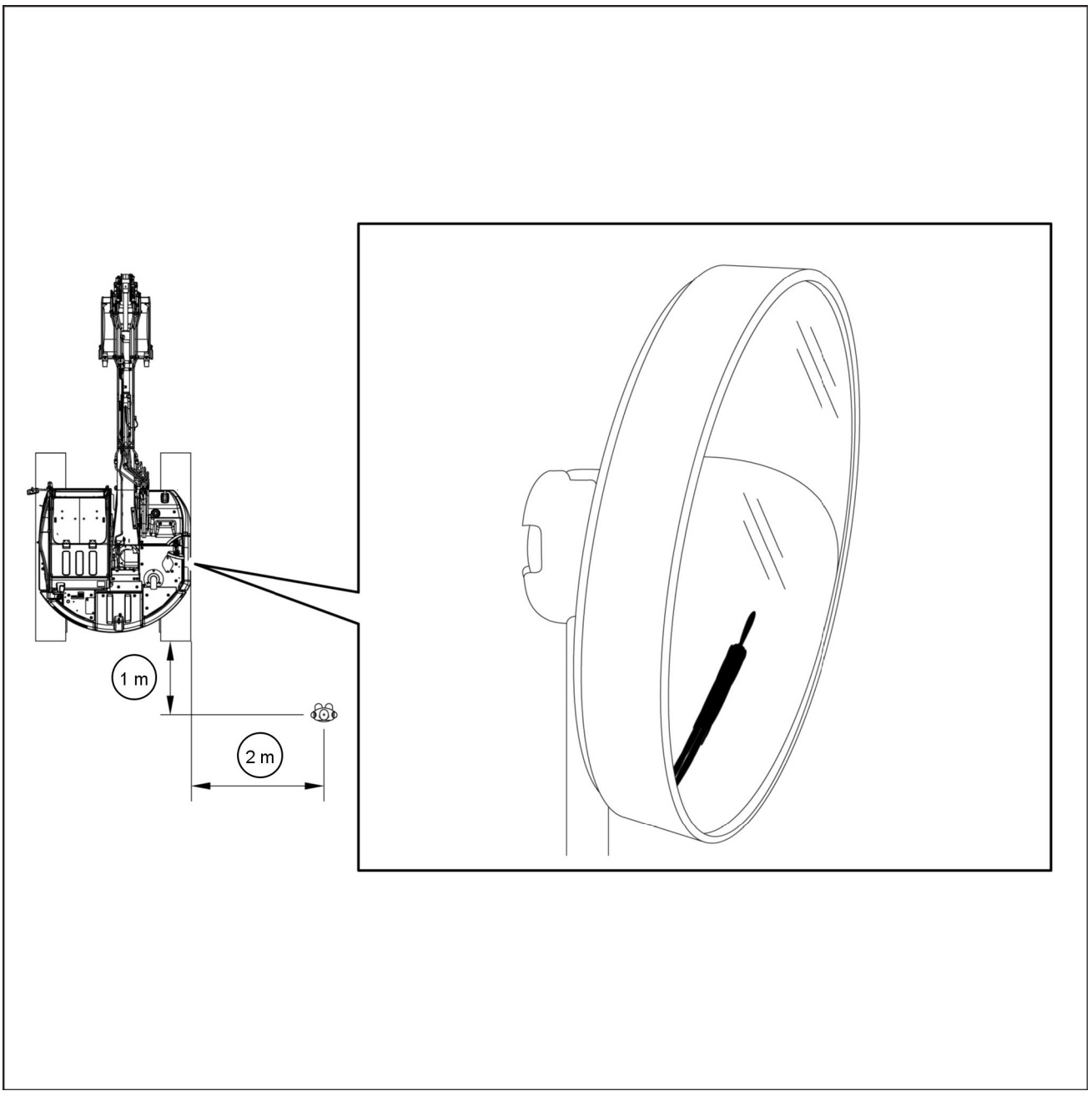


SMIL18CEX0271GA 7

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

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

The area around a reference body positioned **1 m** (**39.4 in**) back from the edge of the right track and **2 m** (**39.4 in**) rightward the machine shall be visible.



SMIL17CEX7954GA 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.*

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

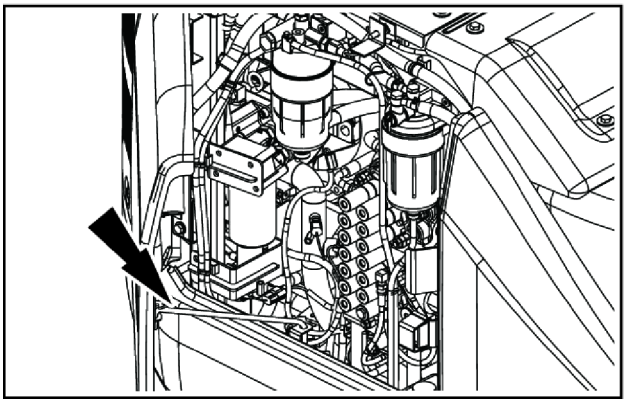
Open the side doors until they are fixed by the stays. Close the side doors unlocking the stays. Make sure to close the doors firmly. Use the starter key to lock the doors.

Right-hand door

The 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 control valve, the windshield washer reservoir, and the fuel tank filler pump (if equipped).

NOTE: *Never leave tools inside the compartment.*

NOTE: *An additional door on the rear right allows to access the hydraulic pump compartment. The rear right-hand door can be opened only using a tool: if any inspection or maintenance has to be done on the hydraulic pump, call the CASE CONSTRUCTION Dealer for being instructed about how to open the rear right-hand door.*

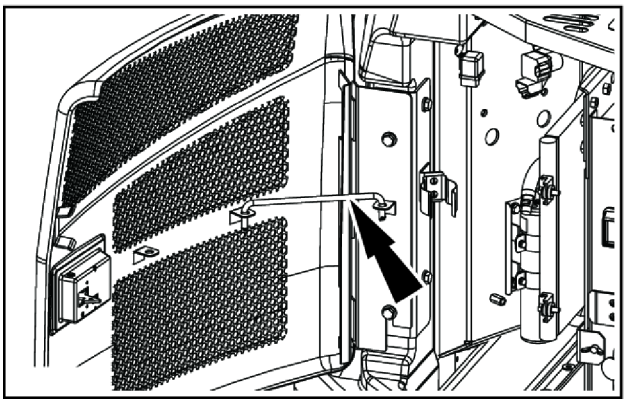


SMIL13CEX2645AB 1

Left-hand door

The left-hand door allows to access the compartment including the radiators, the battery, the battery disconnect switch, and the air conditioning dryer.

NOTE: *Never leave tools inside the compartment.*



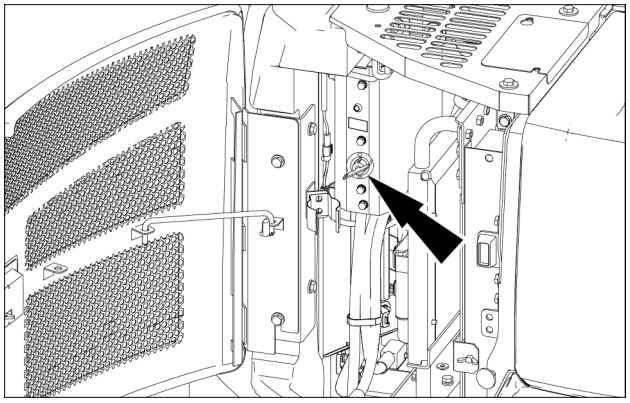
SMIL13CEX2646AB 2

Battery disconnect switch

The battery disconnect switch is located near the batteries. It can thus be reached by opening the 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 O (OFF) position, all electrical circuits are cut off and the stations stored on the radio presets and the time set for the clock will be cleared.*

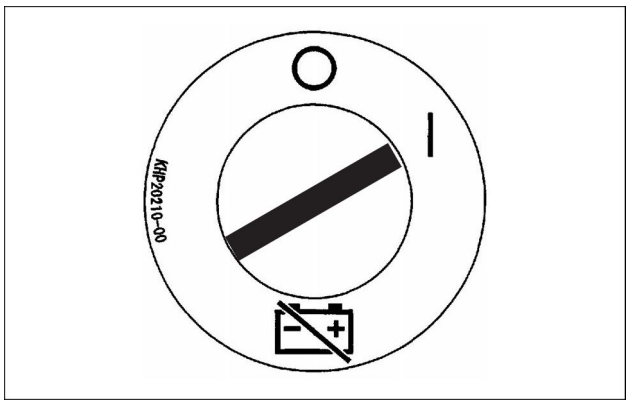


SMIL17CEX7679AA 3

The battery disconnect switch shall be in I (ON) position for normal operation.

The battery disconnect switch shall be turned to O (OFF) position only when taking the actions below for inspection, repair and welding:

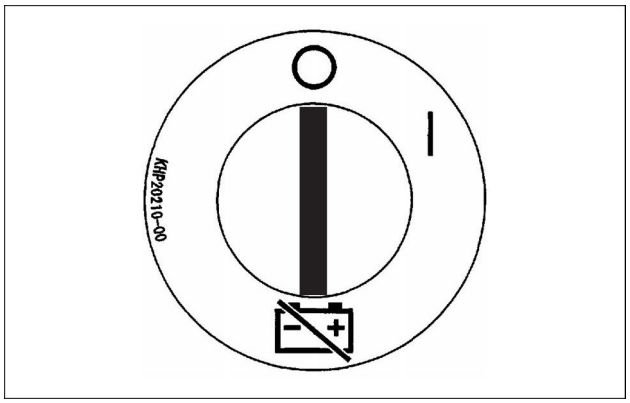
1. Batteries removal.
2. Electrical system connectors removal.
3. Service on the electrical system.
4. Long-term storage.



SMIL17CEX7690AA 4

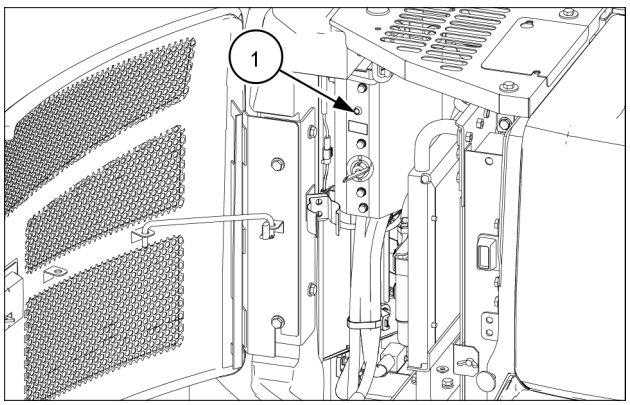
NOTICE: *Never turn the battery disconnect switch to O (OFF) position with the engine running. This could damage the electrical system.*

NOTICE: *Never turn the battery disconnect switch to O (OFF) position within **3 min** after the starter key is turned off. The machine control system and the engine control system will be damaged.*



SMIL17CEX7689AA 5

The LED indicator **(1)** above the battery disconnect switch is lit up in yellow as the main control systems are still operating after the engine stop. Never turn the battery disconnect switch to O (OFF) position when the LED indicator **(1)** is lit up in yellow.



SMIL17CEX7679AA 6

Engine hood

⚠ WARNING

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

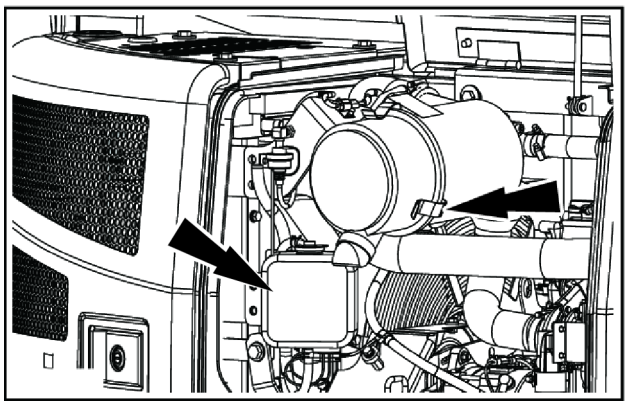
W1059A

⚠ 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

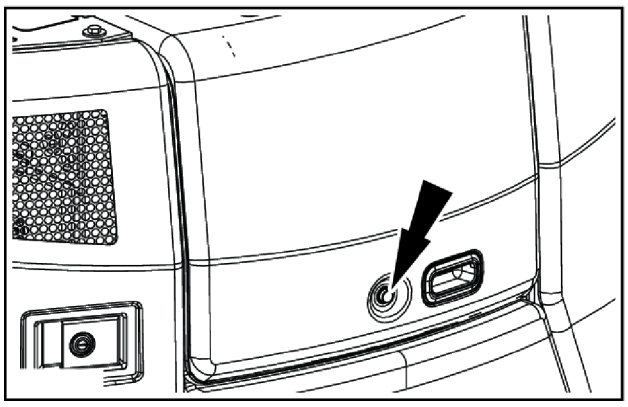
The hood allows to access the engine compartment including the reserve tank for engine coolant and the engine air cleaner.



SMIL13CEX2754AB 1

Opening

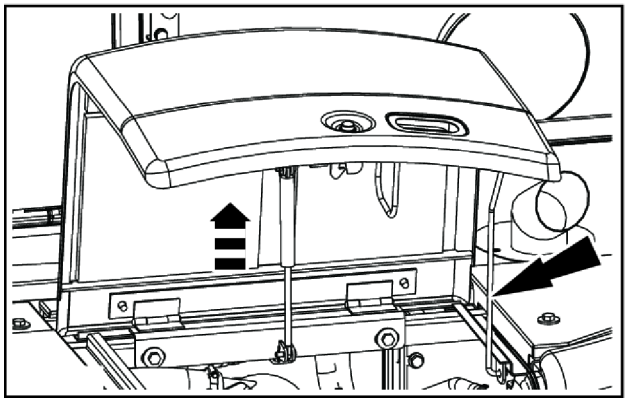
Unlock the pushrod of the engine hood with the starter key, and press the pushrod to open the hood.



SMIL13CEX2647AB 2

Slowly lift the hood until it is fixed in the open position with the stay.

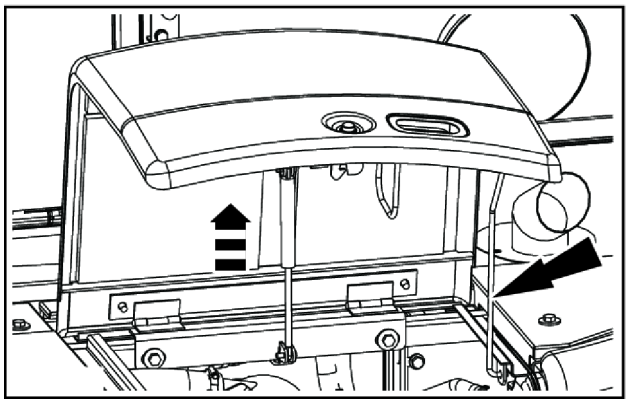
NOTE: *The engine hood is fitted with a gas strut, and the opening movement shall thus be followed through by hand in order not to damage the machine.*



SMIL13CEX2648AB 3

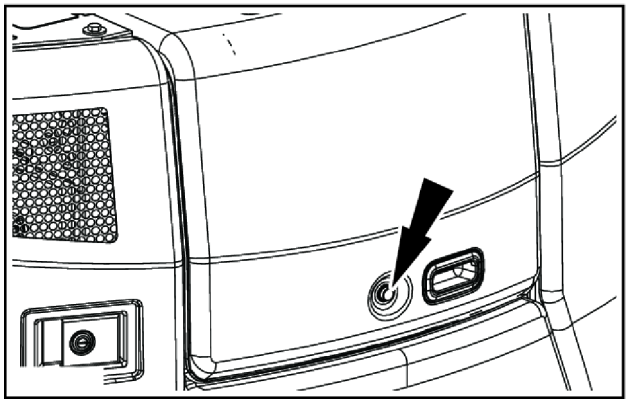
Closing

Raise a little the engine hood in order to unlock the stay. Handle the stay to lead it into the guide, and pull down the hood to close it.



SMIL13CEX2648AB 4

Lock the pushrod with the starter key.



SMIL13CEX2647AB 5

Lower panels

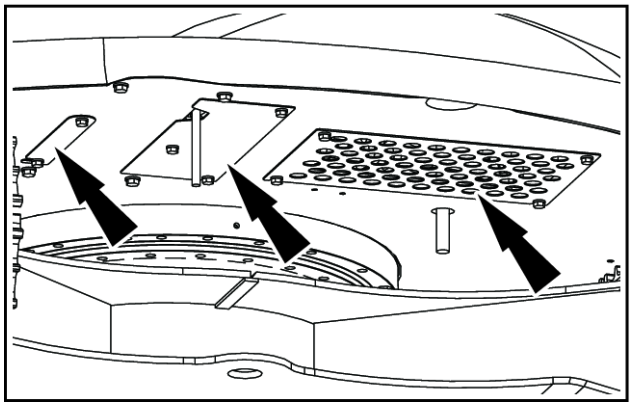
⚠ WARNING

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

W0910A

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

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



SMIL13CEX2649AB 1

Windshield washer reservoir

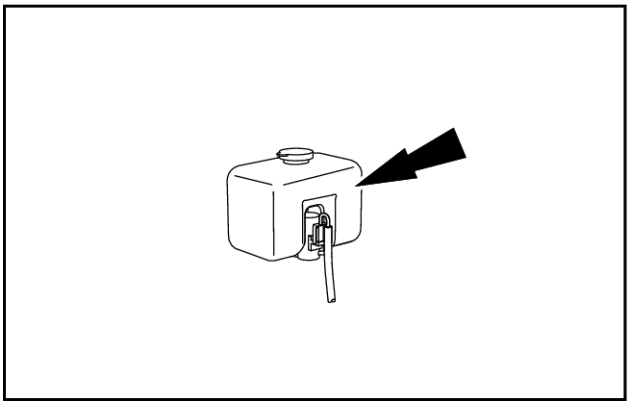
This reservoir, located in the right side compartment, is equipped with an electric pump which is operated from the control panel.

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

Remove the cap to add windshield washing fluid.

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

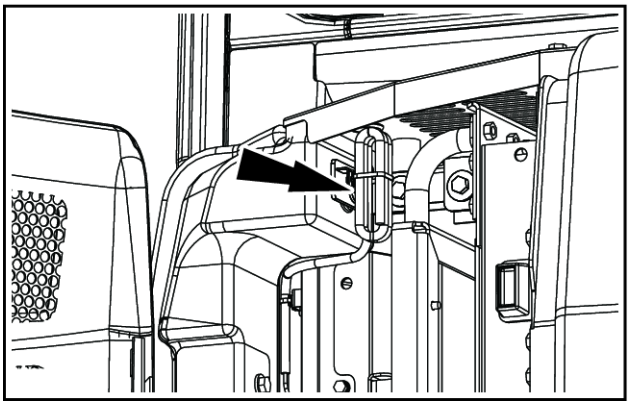
The reservoir can be lifted out of its support.



SMIL13CEX2650AB 1

Rotary light cable

This cable is located inside the left side door. This can be used for connecting a **24 V** rotating beacon (not supplied).



SMIL13CEX2651AB 1

Towing holes

⚠ WARNING

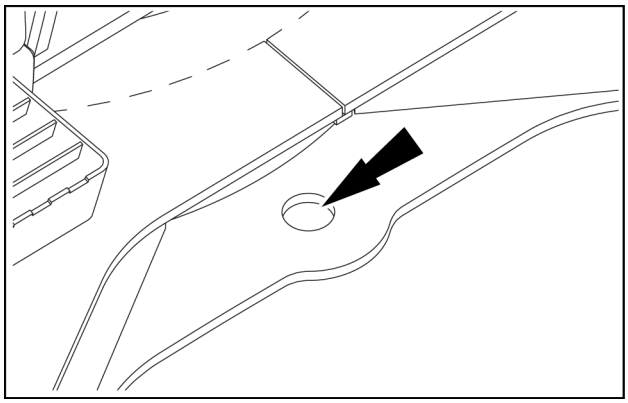
Misuse hazard!
Towing is a delicate maneuver that is always carried out at the risk of the user. The manufacturer's warranty does not apply to incidents or accidents that occur during towing. Where possible, carry out the repairs at the site.
Failure to comply could result in death or serious injury.

W0286A

Located at the front and rear of the undercarriage. These 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.*



SMIL14CEX2589AA 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

The fuel tank shall be filled only with Ultra-Low Sulphur Diesel fuel. Refer to Chapter 6 for the detailed specifications and prescriptions about the fuel to be used.

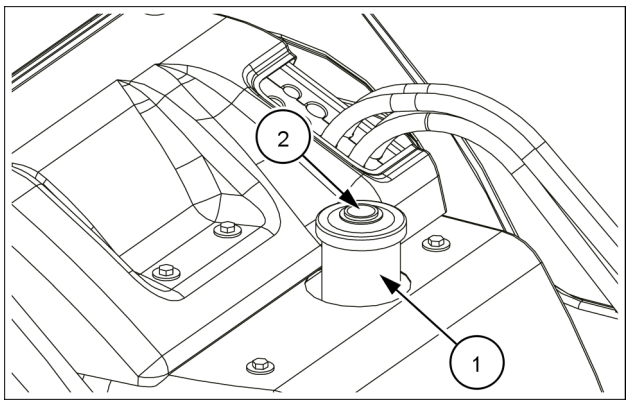
NOTICE: *Never put any moisture elimination product (water draining agent) in the fuel tank. Doing so may damage the fuel system, and thus the engine.*

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.*

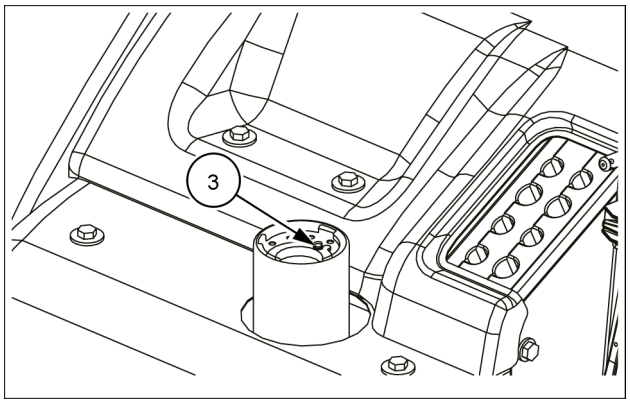
To refill the fuel tank proceed as follows:

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.



SMIL17CEX7691AA 1



SMIL17CEX7949AA 2

Fuel tank filler pump (if equipped)

⚠ WARNING

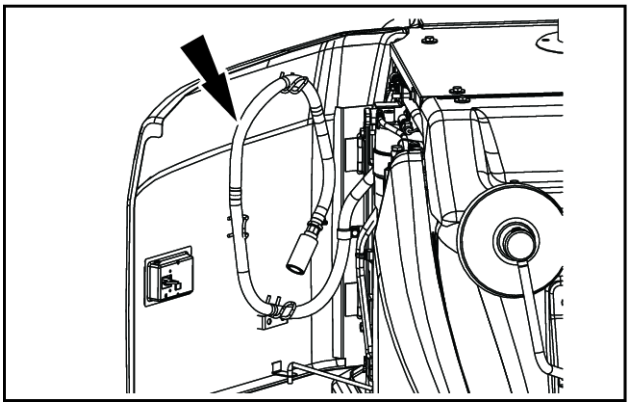
Fire hazard!
When handling diesel fuel, observe the following precautions:
1. Do not smoke.
2. Never fill the tank when the engine is running.
3. Wipe up spilled fuel immediately.
Failure to comply could result in death or serious injury.

W0099A

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

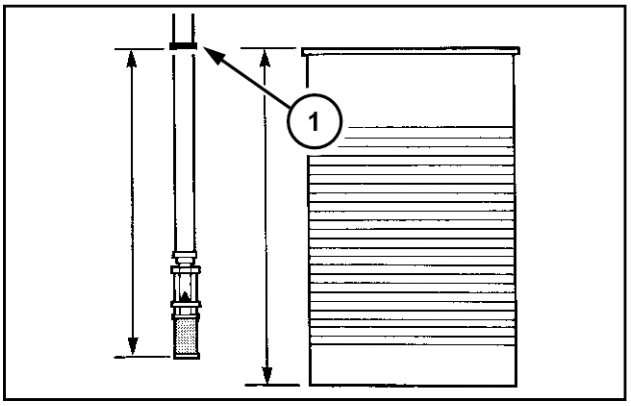
NOTICE: *the fuel tank filler pump is located inside of the right side door and is to be used for fuel only. Use suitable fuel.*

1. Park the machine on flat, horizontal ground, stop the engine and set the ignition key to the ON position (contact).
2. Take the inlet pipe out of the storage compartment.



SMIL13CEX2656AB 1

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



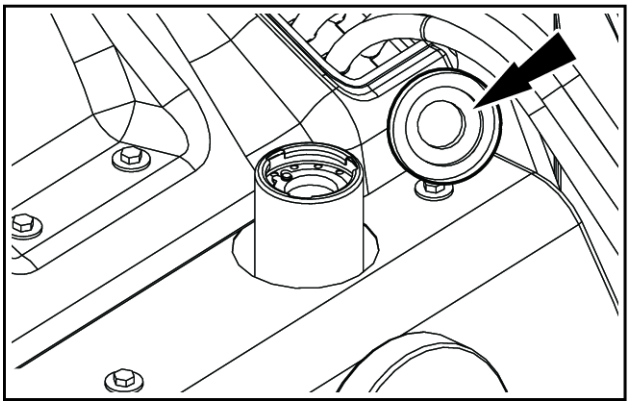
SMIL13CEX2657AB 2

5. Remove the fuel tank filler cap.

⚠ WARNING

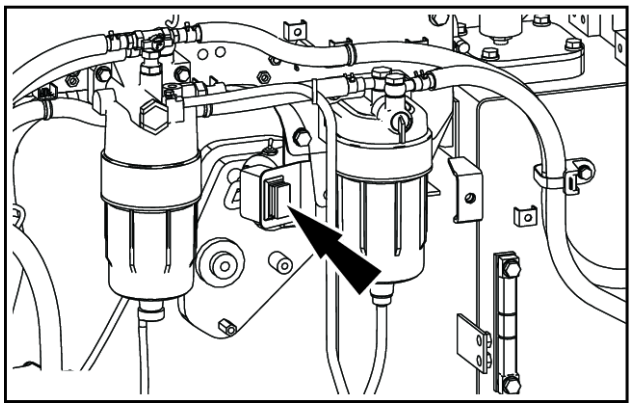
Burn hazard!
If the filler cap remains on during the refueling process, removing the cap after refueling could cause an accident. To reduce this risk, ALWAYS remove the fuel tank filler cap before refueling with the fuel tank filling pump.
Failure to comply could result in death or serious injury.

W0247A



SMIL13CEX2658AB 3

6. Select the filling method using the selector switch located to the right of the filling pump.
   “Auto” mode, the pump stops filling automatically and the audible alarm sounds when the fuel tank is full.
   “Manual” mode, monitor the filling by means of the reservoir gauge and stop when necessary.



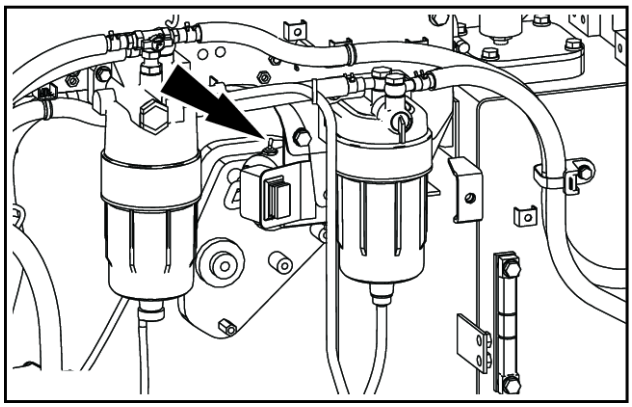
SMIL13CEX2659AB 4

7. Turn the switch located on the pump to the “On” position (start). Filling begins.

   NOTE: *It is possible to stop filling at any time for any reason (empty drum, for example) by turning the switch to the “Off” position.*

8. When the fuel tank is full, turn the switch and the selector switch to the “Off” position (stopped). In “Auto” mode, the audible alarm device will cease to function.

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



SMIL13CEX2660AB 5

10. Refit the fuel tank filler cap.

11. Place the ignition key in OFF position.

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

4 - OPERATING INSTRUCTIONS

STARTING THE UNIT

Anti-theft protection

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

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

The security function is set up.

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

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

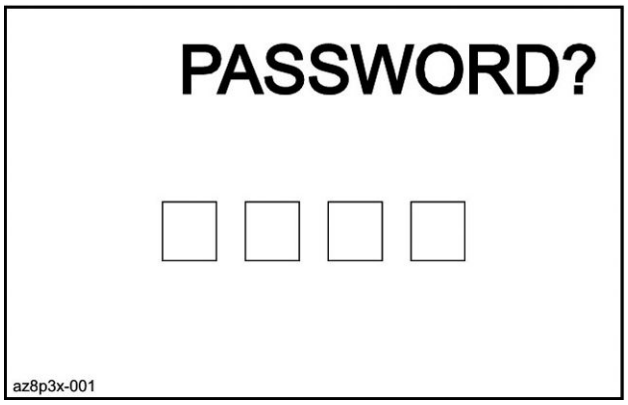
Activation of the security function

The activation of the security function has to be decided when shutting down the engine.

To activate the security function, turn the starter key to OFF position, then to ON position, finally to OFF position again after 2 sec. A warning alarm sounds, and the security function icon is displayed.

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

As the key is turned to ON position, the request for entering the password is displayed.



AZ8P3X-001 1

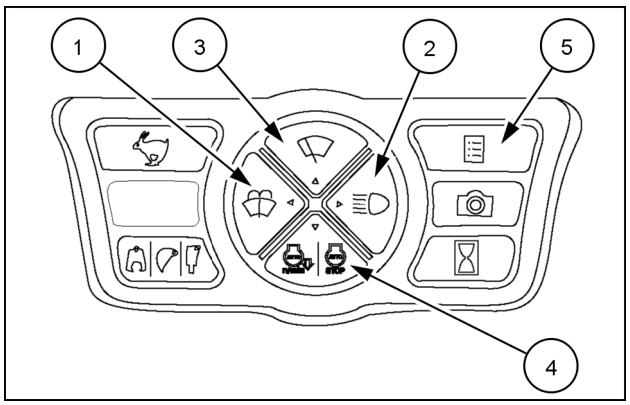
Enter the password according to the following instruction.
Move the cursor to the left with the front glass washer button **(1)**.
Move the cursor to the right with the working light button **(2)**.
Increase the value (0, 1, 2, 3...) with the front glass wiper button **(3)**.
Decrease the value (...3, 2, 1, 0) with the engine idling select button **(4)**.

Press the menu button (5) to confirm the password.

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

If the password is wrongly entered, the ERROR message is displayed: turn the starter key to OFF position, and repeat the procedure to enter the password. If the engine is started up without entering the password, the machine goes into an immobilized state:

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



SMIL16CEX1781AB 2

AZ8P3X-002 3

Starting the engine

⚠ WARNING

Avoid injury!
Before starting the engine, securely fasten the seat belt. The seat belt can help ensure your safety if it is properly used and maintained. Never wear a seat belt loosely or with slack in the belt system. Never wear the belt if it is twisted or pinched between the seat structures.
Failure to comply could result in death or serious injury.

W0142A

⚠ WARNING

Hazard to bystanders!
Make sure the area surrounding the machine is clear of all persons before starting the engine.
Failure to comply could result in death or serious injury.

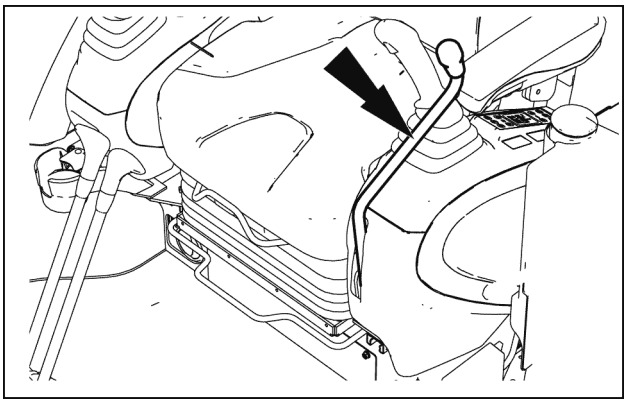
W0090A

⚠ WARNING

Toxic gas and asphyxiation hazard!
Diesel exhaust contains dangerous compounds. Never operate the engine in a closed building or area. Proper ventilation is required under all circumstances.
Failure to comply could result in death or serious injury.

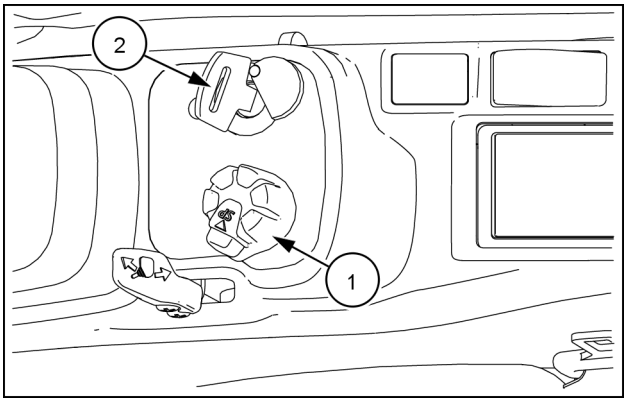
W1302A

1. Check that there is no abnormality in the machine.
2. Confirm that the engine hood and the side doors are closed and locked.
3. Confirm that the gate lock lever is in lock position.
4. Set each operation lever in neutral.
5. Securely fasten the seat belt.



SMIL17CEX0198AA 1

6. Confirm that the engine speed throttle **(1)** is in low idle position.
7. Turn the starter key **(2)** to ON position.



SMIL15CEXY892AB 2

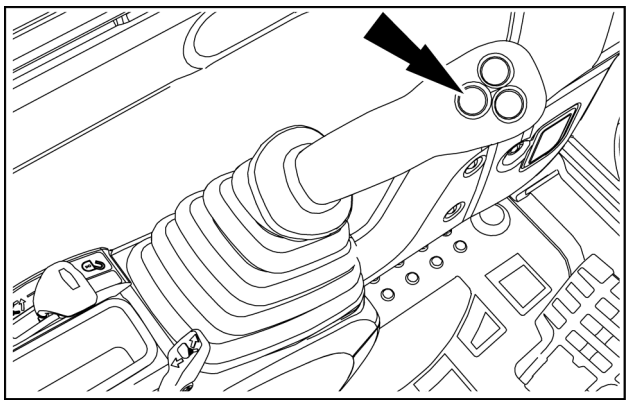
8. Unlock the display if the security function had been activated. When operating the machine in severe winter climates, the engine preheating icon is displayed as the engine is being preheated automatically.

   The engine is preheating.

   Wait for the auto preheat to complete and the icon to disappear.

9. Sound the horn with the button on the left control lever to warn that the machine is starting up.
10. Turn the starter key **(2)** to START position. The engine running takes approximately **1 s** to stabilize after it has been cranked up. Release the starter key as soon as the engine is running regularly.



SMIL14CEX2594AA 3

NOTICE: *The cranking up of the engine may be difficult in severe winter climate. If the engine does not start after* ***10 s*** *of operation of the starter motor, turn the key to OFF position and wait* ***2 min*** *before attempting a new cranking.*

NOTICE: *When the engine is started in severe winter climate, moisture vapor may be temporarily generated resulting in a whitened smoke.*

NOTICE: *Immediately after the engine is started, the engine sound is louder compared to the sound after the engine is warmed up, and also the color of the exhaust smoke becomes more whitened or more blackened than the smoke emitted during the normal operation. The engine sound and the color of the exhaust smoke get smoothed after the engine is warmed up.*

NOTICE: *Due to resonance, vibration might come up while the engine is running at low speed. Increasing slightly the engine speed reduces the vibration.*

Bringing the machine up to operating temperature

Before starting operation, the main systems of the machine shall be warmed up to their normal operating temperature.

NOTE: *The normal operating temperature for the hydraulic fluid is* ***50 – 80 °C*** *(****122 – 176 °F****) . This corresponds to four segments lit on the hydraulic temperature gauge.*

NOTE: *The normal operating temperature for the engine coolant is* ***75 – 90 °C*** *(****167 – 194 °F****). This corresponds to four segments lit on the coolant temperature gauge.*

A warm-up procedure shall thus be carried out in order to grant a proper and safe usage of the machine, and in order to grant the best machine performance and fuel efficiency.

NOTICE: *The warm-up of the machine is mandatory when operating in severe winter climates.*

NOTICE: *The warm-up of the machine prevents wear and severe damages to the engine, to the fuel system and to the hydraulic system.*

NOTICE: *The exhaust pipe becomes extremely hot while the engine is idling. Make sure that there is no flammable material such as plants, dried grass, paper waste, oil and old tires close to the exhaust pipe before starting warm-up procedure.*

NOTICE: *Never cover the grids of the radiators with flammable materials.*

Automatic machine warm up

Regardless of the ambient conditions, the machine control system allows to carry out an automatic warm-up procedure that brings the temperature of the main operating fluids to the proper level for machine operation.

Start the engine with the speed throttle in the low idle position and let the machine complete the automatic warm-up procedure. During the automatic warm-up, the engine speed and the engine load are automatically managed in order to match the warm-up cycle to the ambient conditions and to optimize the warm-up cycle in respect to the machine operating parameters.

NOTE: *the engine speed and the noise of the hydraulics are supposed to change during the warm-up cycle.*

NOTICE: *The automatic warm-up procedure is the recommended operating practice. However, the automatic warm-up procedure can be overridden either by changing the engine speed manually or by operating any operation lever.*

As the procedure starts up, the message AUTO WARM UP is displayed:

The automatic warm-up procedure takes about **5 – 10 min** depending on the ambient conditions.

After completion of the automatic warm-up procedure, the AUTO WARM UP message disappears, and the engine speed gets back to low idle.

Manual machine warm up

A manual machine warm-up can be carried out referring to the following procedure:

1. Set the engine speed throttle three steps over the low idle position.
2. Start the engine and let it run approximately for **5 – 10 min** with no load.
3. When the coolant temperature reaches the second segment on the coolant temperature gauge, set the engine speed throttle in intermediate position.
4. Push the gate lock lever forward (the safety bar is facing outward).
5. Move the bucket control slowly until the bucket is fully curled.
6. Operate the arm until the it is completely retracted, and hold the position for **30 s**.
7. Extend the arm completely, and hold the position for **30 s**.
8. Repeat the sequence of extending and retracting the arm until the temperature of the hydraulic fluid raises over the first two segments on the hydraulic temperature gauge, corresponding to **25 °C** (**77 °F**).

   NOTICE: *Never overload the hydraulic system until the temperature of the hydraulic fluid reaches **25 °C** (**77 °F**). If the hydraulic system is overloaded with the temperature of the hydraulic fluid below **25 °C** (**77 °F**) it will be severely damaged.*
9. Gently operate the controls for travel, front equipment and swing for 3 to 4 times to circulate warmed hydraulic fluid into the whole circuit.

Check the followings after reaching normal operating temperature of the fluids:

- Exhaust gas is normal.
- No unusual noise or vibration.
- No leak of oil, fuel or water.
- No unusual noise when activating the hydraulic equipment.
- Inspection of the horn, buzzer, working lights and instrument cluster.
- Proper display of the temperature gauges.
- Check the visibility from the rear view mirrors, the side view mirrors and the cameras before operation. Adjust and clean up dirt as necessary.
- Check each operation (travel, front equipment and swing).

If any of the following occurs during the warm-up procedure, stop the engine immediately.

- Engine speed increases or decreases rapidly.
- Engine sound and exhaust gas color are abnormal.
- Messages are displayed, and a warning alarm sounds.

Operating the machine in hot or cold weather

In cold weather

- Make sure to use fluids and lubricants which have specifications suitable for operation at low ambient temperatures.
- Check the batteries for full charge state.
- Fill up the fuel tank after completing the work, and then drain water before starting work on the next day in order to prevent dew condensation and invasion of water to the fuel system.
- Use fuel which is rated to the outside air temperature, or proper anti-freeze in order to prevent crystal generation at **-2 °C** (**28 °F**).

  NOTICE: *Before transporting the machine to a cold region, fill the tank with fuel that has a low freezing temperature.*

In hot weather

- Make sure to use fluids and lubricants which have specifications suitable for operation at high ambient temperatures.
- Keep the coolant at the correct level in the coolant reservoir and in the radiator.
- Use the correct solution of ethylene glycol and water in the cooling system.
- Test the radiator cap before hot weather starts. Replace the cap as required.
- Clean all dirt and debris from the radiator, cooler and engine area.
- Check the condition of the fan drive belt.

Operation under dusty and sandy conditions

- Frequently inspect the element of the air cleaner and clean or replace the element and the dust cup regardless of service due.
- Tightly close the breather cap of the hydraulic tank to prevent invasion of sand and dust to the hydraulic circuits.
- Make sure to thoroughly clean the grease fittings before greasing any lubrication point of each pin and bush.
- Make sure to clean the radiator fin and oil cooler fin and the radiator grid.

Operation on seashore

- Inspect tightness of the plugs/cocks/bolts in each point in order to prevent salt corrosion.
- Thoroughly wash the machine after the work, especially take good care of the electrical equipment and hydraulic cylinder to prevent corrosion.

Operation on highly humid land or soft land

- Keep the machine as dry as possible during operation and make sure to carry out regular lubrication. Moisture and mud water cause deterioration and corrosion of paints/wirings/metal components.

Operating the machine

⚠ WARNING

Misuse hazard!
Follow the operating instructions in this chapter. Any other practice that has not received the prior approval of the manufacturer is considered to be strictly forbidden.
Failure to comply could result in death or serious injury.

W0281A

⚠ WARNING

Hazard to bystanders!
Always know the location of all workers in your area. Warn them before you start working on the machine. Always keep all unauthorized bystanders clear of the area.
Failure to comply could result in death or serious injury.

W0176A

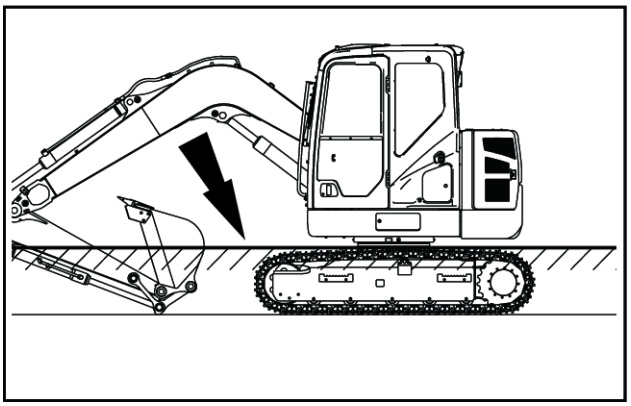
- Pay attention to work condition characteristics of ground and climate condition before operating the machine.
- Inspect every possible risk before operating the machine. Holes on working site, obstructions and hazardous materials such as debris are subject to cause serious accident.
- Pay attention to location of pipes and cables before commencing work. Electric cables, gas pipes, water pipes and underground installations may cause serious injury. If the work takes place adjacent to high voltage power lines make sure to check the following work range:
  Less than **57000 V**: **4 m** (**13.1 ft**)
  57000 V or more: **5 m** (**16.4 ft**)
- Sit on the operator's seat, adjust it so as to be able to easily reach the console, and then fasten the safety belt.
- Check that the cab door is tightly secured at position of open or close.
- Sound the horn.
- Start up the engine.
- Check all the indicator lamps and gauges are operating properly.
- Push the safety bar in outward position.

The following operation may cause damage to the machine:

- Do not use weight of the machine as an impact force for excavation.
- Do not use traveling force of the machine for excavation.
- Avoid abrupt change of swing direction when swinging the upper structure.
- Never hit or push objects with side of the bucket. Do not sweep ground with the bucket to level rubbles.
- Open and close the bucket for several times to loosen soil and mud when soil and mud are tightly packed in the bucket.
- After work, remove mud from the machine and clean it.

Operating the machine on soft ground or in water

- The machine could gradually sink when working on soft ground. Pay attention to undercarriage during work.
- Before operating the machine in water, check the water depth and the footing. Permissible water depth is up to the upper rollers.
- After operation underwater or on soft ground, apply grease to the attachment and the turntable bearings. Clean and inspect the undercarriage as well.
- In case of accidental sinking in water or soil up to the swing body, replacement of grease and service are required. Terminate operation, and contact the CASE CONSTRUCTION dealer.



SMIL13CEX2692AB 1

NOTICE: *Do not operate in a fast flowing stream.*

Operating the machine on sloping ground

⚠ WARNING

Driving hazard!
Hillside operations can be dangerous. Rain, snow, ice, loose gravel, or soft ground, etc. can change the ground conditions. You must make a judgment if it is safe to operate your machine on any hillside or ramp.
Failure to comply could result in death or serious injury.

W0144A

⚠ WARNING

Overturning hazard!
Before parking the machine, make sure the ground is stable. Plan the worksite so that the ground is flat, hard, and level.
Failure to comply could result in death or serious injury.

W0258A

The machine gradeability is **35°** (**70%**).

NOTICE: *Do not operate the engine when incline of the machine is **35°** or more. The engine or the hydraulic system may be damaged.*

During hillside operations, be extra careful.

- Maintain the maximum engine speed.
- Make sure that the low speed travel is selected.
- Always keep the travel reduction gears pointing down towards the bottom of the slope.
- Always travel in the same direction as the slope, to prevent the machine from turning over. Never decelerate when descending a slope.
- Raise the bucket about **40 cm** (**15.75 in**) away from ground when ascending a slope. Contact the bucket on ground to avoid slipping the machine when descending a slope.
- Avoid swinging to a direction of travel on a **15°** slope, or avoid swinging perpendicular to direction of travel on a **10°** slope.
- During digging operation, avoid swinging the upperstructure towards the bottom of the slope with the bucket full.

Digging and loading operations

Use the H work mode for general digging and truck loading operations.

Use the SP work mode for heavy digging operation.

Filling

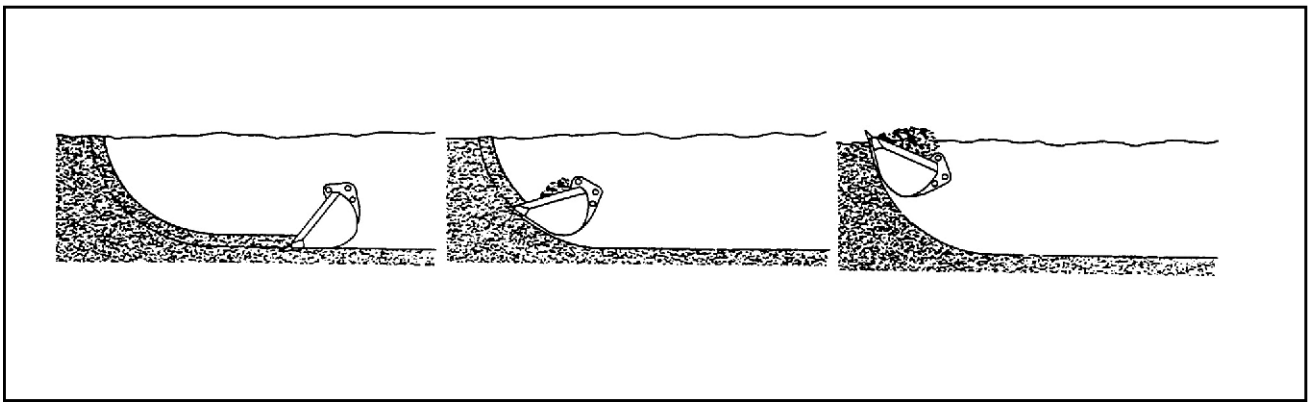
Fill the bucket by manoeuvring the arm.

Keep the bottom of the bucket parallel to the cut.

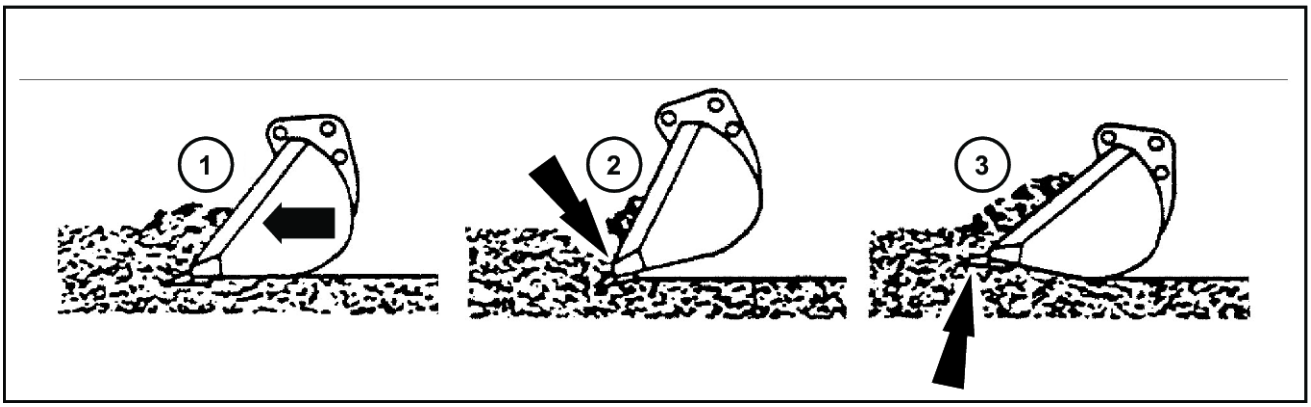
The bucket teeth and blade must cut the ground like the blade of a knife.

The depth of dig varies depending on the type of material.

Excavating method



SMIL13CEX2693EA 2



SMIL13CEX2694EB 3

1. Correct
2. Incorrect. The bucket will dig in and cause a stall.
3. Incorrect. The bucket is pushed upwards. This will also increase the cycle time.

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

⚠ CAUTION

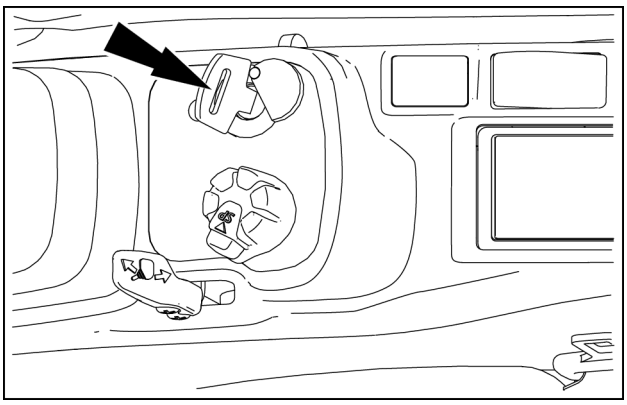
Crushing hazard!
Keep away from the space under the bucket or attachment when lowering the bucket or attachment. In cases where the machine fails and the engine stops, lower the attachment using the procedure described in this manual.
Failure to comply could result in minor or moderate injury.

C0169A

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

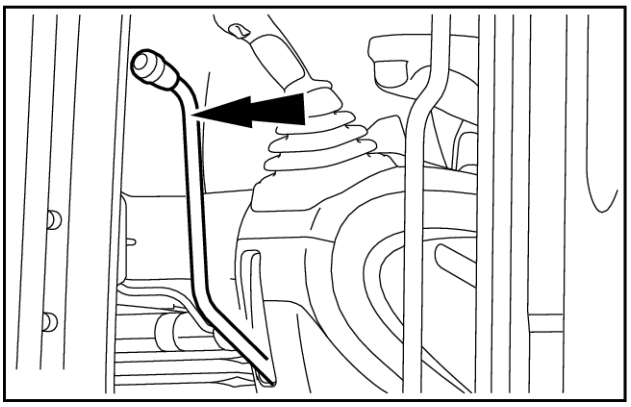
If the engine breaks down, use the following procedure to lower the attachment:

1. Turn the starter key to ON position.



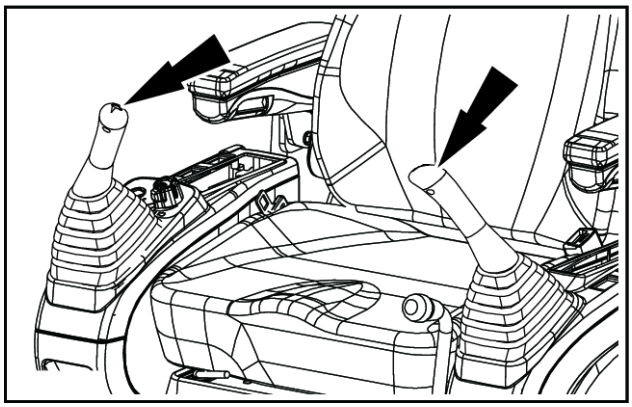
SMIL15CEXY892AB 1

2. Set the gate lock lever in unlock position.



SMIL13CEX2674AB 2

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



SMIL13CEX2708AB 3

Bucket replacement

⚠ CAUTION

Avoid injury!
Handle all parts carefully. Do not place your hands or fingers between parts. Use Personal Protective Equipment (PPE) as indicated in this manual, including protective goggles, gloves, and safety footwear.
Failure to comply could result in minor or moderate injury.

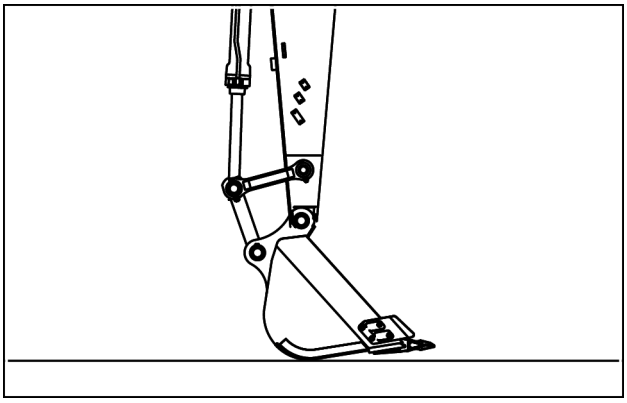
C0145A

To remove the bucket from the linkage proceed as follows:

1. Operate the arm and bucket controls so that the arm stands vertical and the bottom side of the bucket leans against a hard and level ground.

   NOTICE: *never push the bucket onto the ground. The bucket pins shall be unloaded in order to be properly extracted from the bushings.*

2. Place the gate lock lever in central position, stop the engine and remove the starter key.
3. Slide the O-ring seals onto the inner bosses of the bucket.
4. Unlock the bucket pins by removing either the retaining pins or the locking bolts. Check the locking tools for wear or damages. Make sure to properly store the locking tools in order not to damage them.
5. Place a punch on the flat edge of the pin **(1)**, and push it out using a hammer. Extract the pin **(2)** using the same procedure. Make sure to handle and store properly the bucket pins in order not to damage them.



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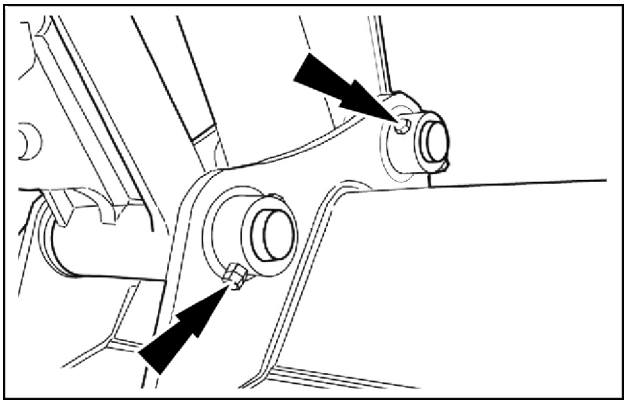
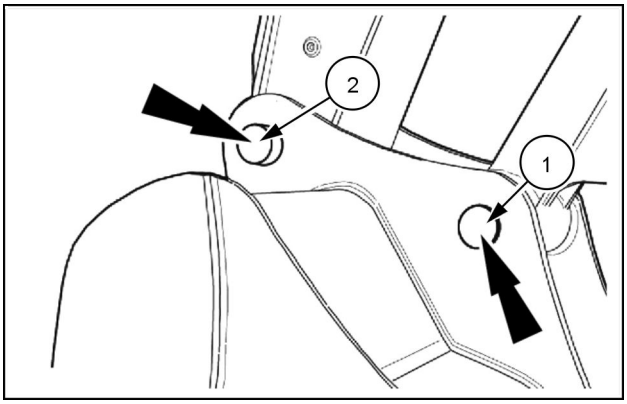


SMIL13CEX2827AB 2

6. Get onto the cab, start the engine and place the gate lock lever in forward position.
7. Gently retract the bucket cylinder in order to release the bucket connecting rod from the bucket hangers.
8. Gently operate the arm and boom controls in order to release the arm top from the bucket hangers. Check the O-ring seals and the mounting spacers for wear or damages. Make sure to properly store the O-ring seals and the mounting spacers in order not to damage them.

   NOTICE: *if the bucket linkage does not easily come out from the bucket hangers, lower the bucket to the ground, gently operate the bucket control to extend the bucket cylinder, or the boom control to push down the arm top, in order to let the mating surfaces to be unstucked.*



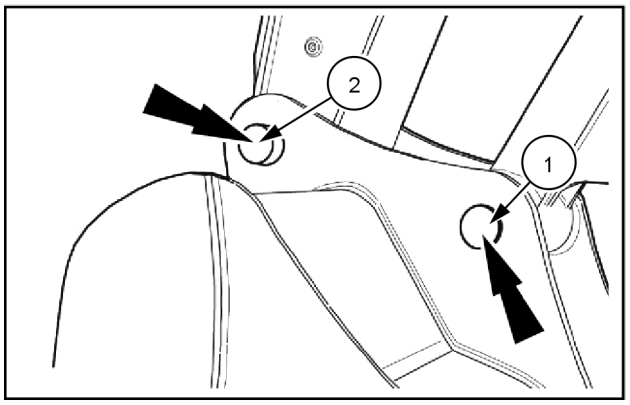
SMIL13CEX2828AB 3

To mount the bucket to the linkage proceed as follows:

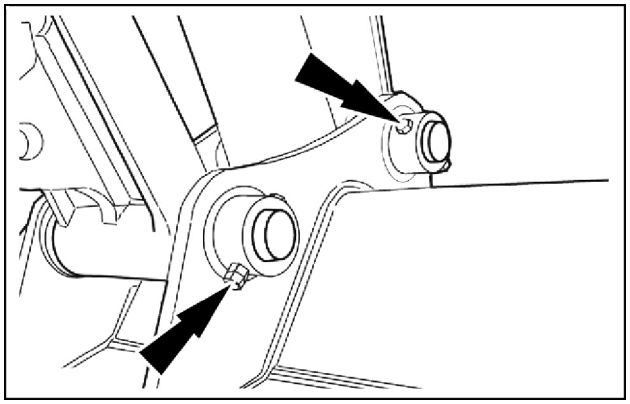
1. Make sure that the machine and the bucket stand both onto a hard and level ground. The bucket shall stand on its bottom side.
2. Prepare the O-ring seals onto the inner bosses of the bucket.
3. Position the machine close to the bucket, and gently operate the boom and arm controls in order to align the arm top between the respective bosses on the bucket.
4. Place the gate lock lever in central position, stop the engine and remove the starter key.
5. Position the mounting spacers if required. Place a punch on the flat edge of the pin **(2)**, and push it in using a hammer.

   NOTICE: *Make sure to insert the pin by its chamfered edge. Make sure to insert the pin from the bucket side opposite to the locking boss.*

6. Push the pin until the locking hole on the pin is aligned to the locking hole on the bucket boss. Install either the retaining pin or the locking bolt.
7. Get onto the cab, start the engine and place the gate lock lever in forward position.
8. Gently extend the bucket cylinder in order to align the bucket connecting rod between the respective bosses on the bucket.
9. Place the gate lock lever in central position, stop the engine and remove the starter key.
10. Insert the pin **(1)** and lock it as described for the pin **(2)**.
11. Slide down the O-ring seals. Grease the bucket pins.



SMIL13CEX2828AB 4



SMIL13CEX2827AB 5

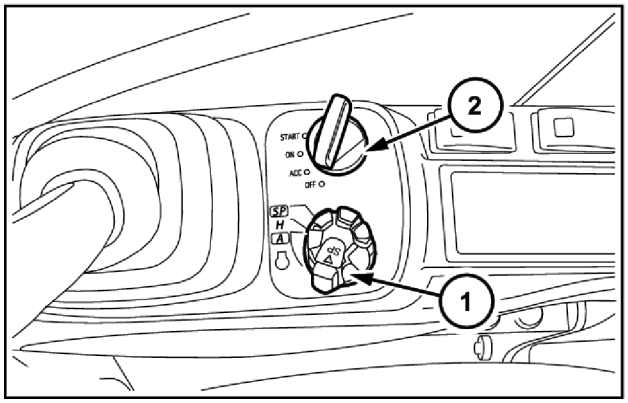
STOPPING THE UNIT

Stopping the engine

1. Lower the attachment and the dozer blade until they rest on the ground.
2. Turn the engine throttle **(1)** to low idle position and let the engine run for about **5 min**.

   NOTICE: *The engine shall be stopped only after it has cooled down. Failing to comply will cause severe damages to the engine as seizure.*

   NOTICE: *When the engine is stopped suddenly, the lubricated section on the turbocharger get dried from the high heat, leading to a turbocharger failure.*
3. Turn the starter key **(2)** to OFF position.

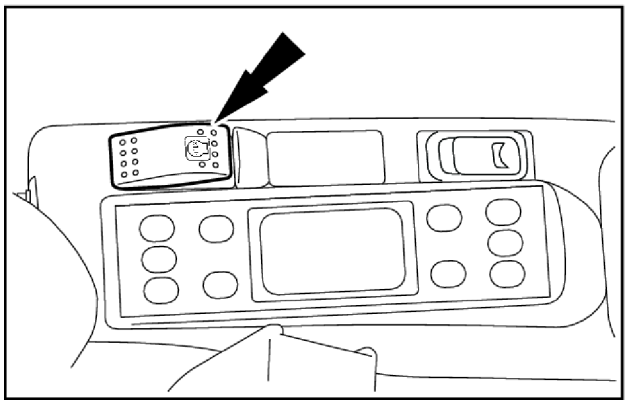


SMIL13CEX2675AB 1

Emergency stop switch

In the event of an emergency or if it is not possible to stop the engine using the starter key, press the emergency stop switch on the left-hand console.

NOTE: *This switch should only be used in case of an emergency. Do not use it on a day-to-day basis to stop the engine.*



SMIL13CEX2676AB 2

MOVING THE UNIT

Machine travel

⚠ WARNING

Controls can be reversed!
In the normal travel position, the operator's compartment is above the idler wheels and the travel reduction gears are to the rear of the upper structure. If the upper structure is turned 180 degrees in relation to the undercarriage, the controls are reversed.
Failure to comply could result in death or serious injury.

W0289A

⚠ WARNING

Hazard to bystanders!
Always sound the horn before starting the machine. Make sure the work area is clear of other persons, domestic animals, tools, etc. before you operate the machine. Never allow anyone in the work area during machine operation.
Failure to comply could result in death or serious injury.

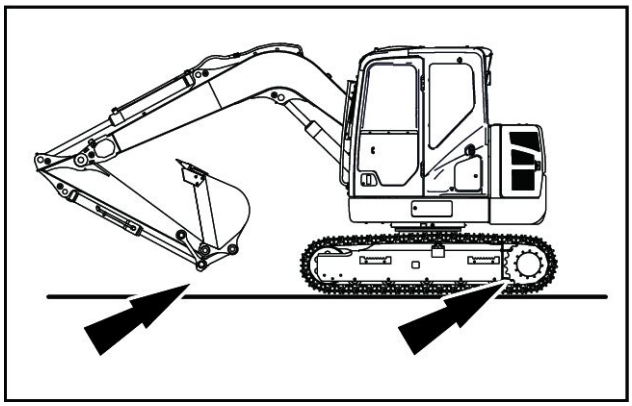
W0304A

NOTE: *before undertaking any travel, raise the attachment and the dozer blade (if equipped).*

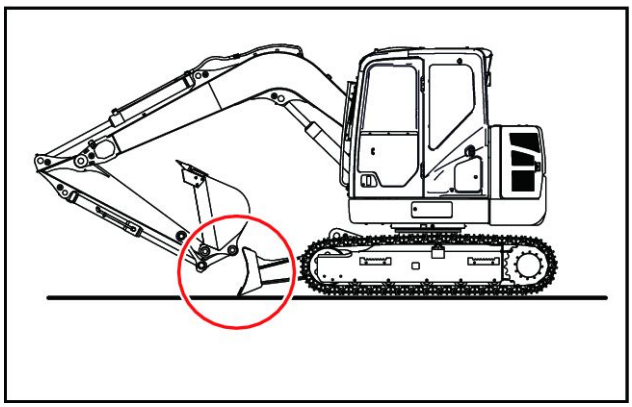
NOTE: *travel speed depends on the tilting angle of the travel control levers and pedals and the speed travel mode selected.*

NOTE: *the different travel configurations described hereafter are with the travel reduction gears to the rear of the upperstructure.*

NOTICE: *ensure the safety of the work range before operating a blade. Raise the blade before traveling with the machine. Lower the blade while the machine is stopped. Ensure the safety while operating the blade. Also, pay careful attention to the lever operation. Be careful of interference with the blade and bucket when folding the attachment before traveling or transport.*



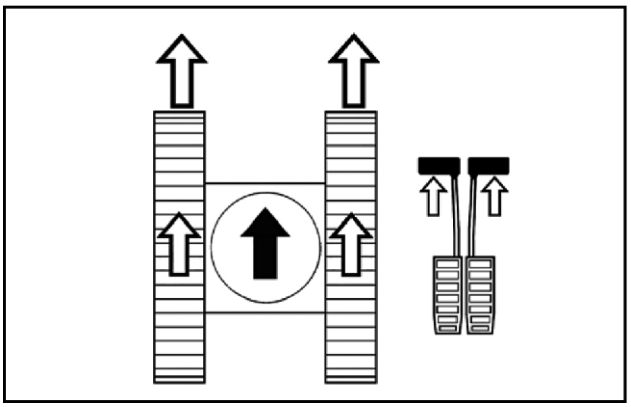
SMIL13CEX2677AB 1



SMIL13CEX2678AB 2

Straight line travel (forward travel)

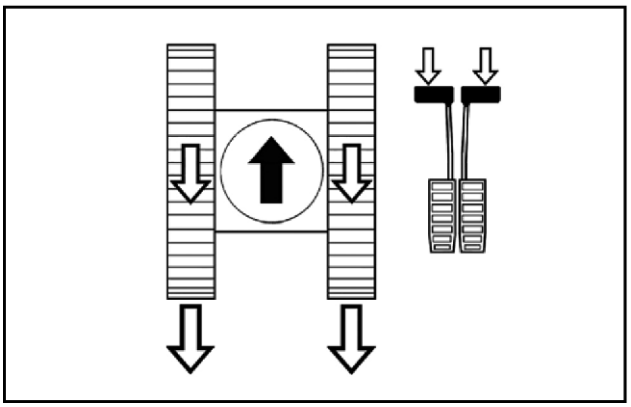
Press the two pedals (or push the two levers) forwards at the same time.



SMIL13CEX2679AB 3

Straight line travel (reverse travel)

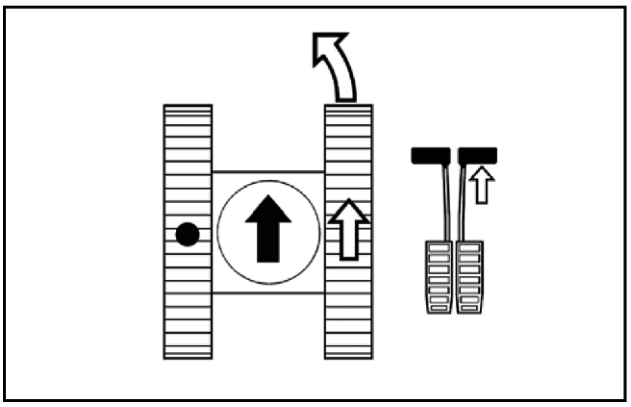
Press the two pedals (or push the two levers) rearwards at the same time.



SMIL13CEX2680AB 4

Turning to the left (forward travel)

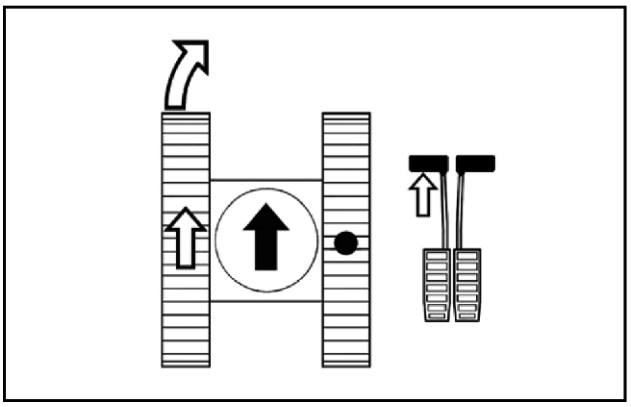
Simply press the right-hand pedal or the right-hand lever forwards.



SMIL13CEX2681AB 5

Turning to the right (forward travel)

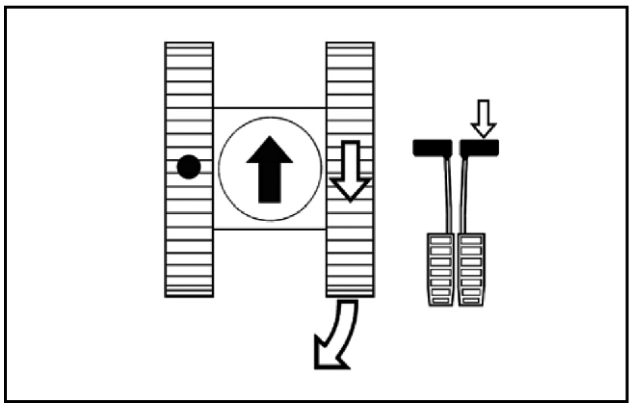
Simply press the left-hand pedal or the left-hand lever forwards.



SMIL13CEX2682AB 6

Turning to the left (reverse travel)

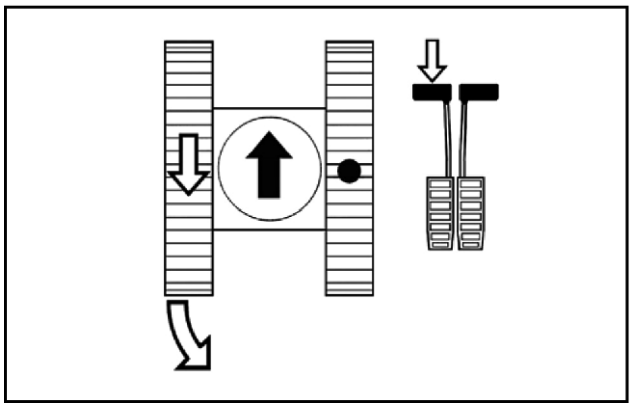
Simply press the right-hand pedal or the right-hand lever rearwards.



SMIL13CEX2683AB 7

Turning to the right (reverse travel)

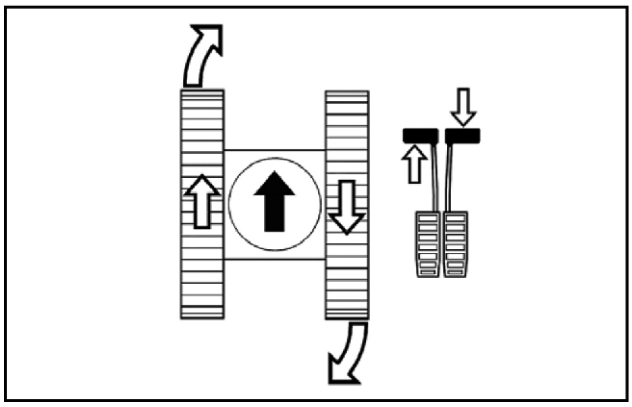
Simply press the left-hand pedal or the left-hand lever rearwards.



SMIL13CEX2684AB 8

Turning on the spot, to the right

Press the left-hand pedal or the left-hand lever forwards and at the same time press the right-hand pedal or the right-hand lever rearwards.

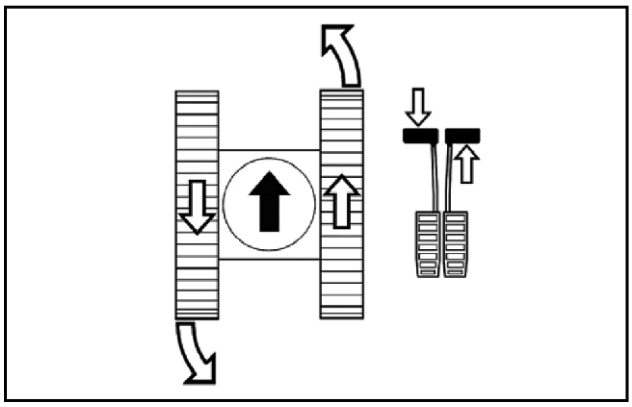


SMIL13CEX2685AB 9

Turning on the spot, to the left

Press the right-hand pedal or the right-hand lever forwards and at the same time press the left-hand pedal or the left-hand lever rearwards.

NOTE: *Turning on the spot cannot be done if high speed travel mode is selected.*



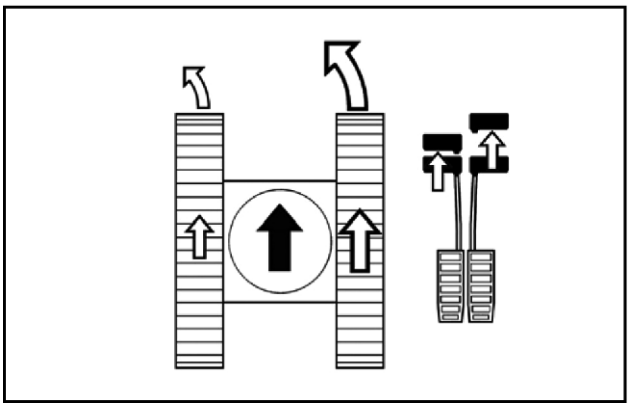
SMIL13CEX2686AB 10

Gradual turn on the move

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

Stopping travel

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



SMIL13CEX2687AB 11

PARKING THE UNIT

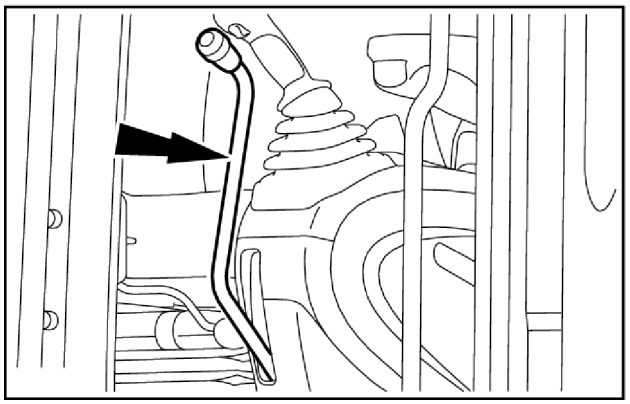
Parking the machine

⚠ 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.

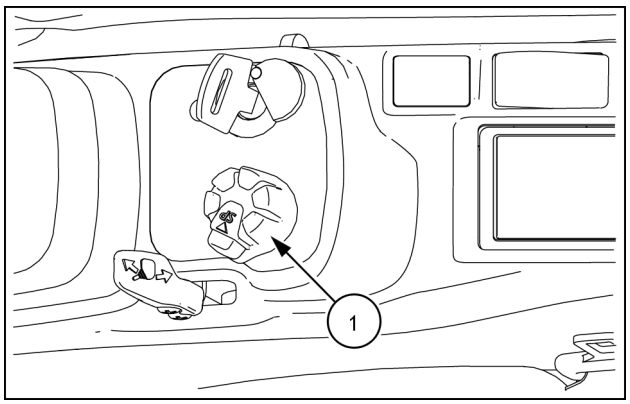
W0141A

1. Park the machine on a hard and level ground, and orient the upper structure frame parallel to the undercarriage.
2. Operate the boom, arm, and attachment controls so that the arm stands vertical and the attachment rests on the ground.
3. Lower the blade until it rests on the ground.
4. Set the gate lock lever to lock position.



SMIL13CEX2669AB 1

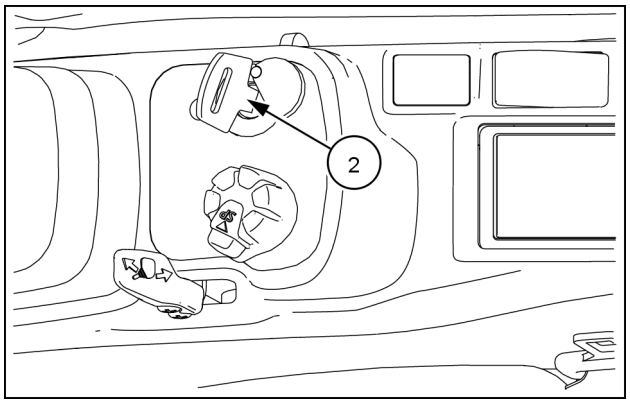
5. Turn the engine throttle **(1)** to low idle position, and let the engine run for about **5 min**.



SMIL15CEXY892AB 2

6. Turn the starter key **(2)** to OFF position.

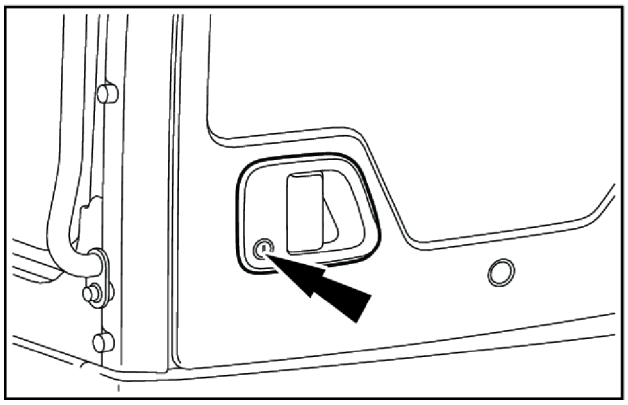
   NOTE: *If the security function is set up, the option for activating the security function is displayed.*



SMIL15CEXY892AB 3

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

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



SMIL13CEX2716AB 4

5 - TRANSPORT OPERATIONS

ROAD TRANSPORT

Loading the machine onto a transport trailer

⚠ 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

Transport hazard!
The machine can slip or fall from a ramp or trailer. Make sure the ramp and trailer are not slippery. Remove all oil, grease, ice, etc. Move the machine on or off the trailer with machine centered on the trailer or ramp.
Failure to comply could result in death or serious injury.

W0152A

Make sure to check the total weight, length, width and height of the machine to be transported. Refer to Chapter 8.

Make sure to use a trailer with a rated capacity and dimensions sufficient to transport the machine. If a rear loading type trailer is used for road transport, make sure that ramps are available to climb onto the trailer bed. Use ramps which have sufficient width, length, thickness and strength. The ramp slope should be **15°** or less.

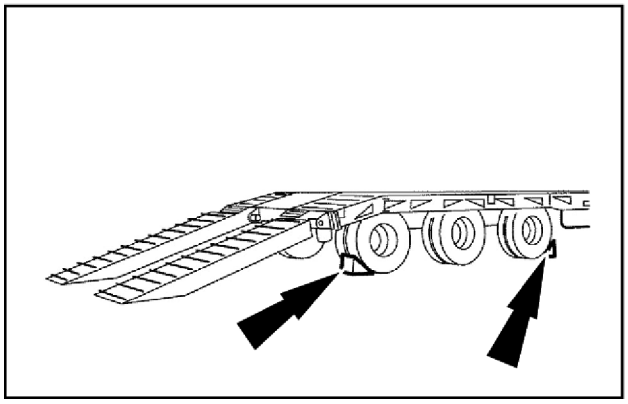
Investigate beforehand the conditions of the road to be traveled, weight and size limits, and special local traffic regulations. Obtain any permits required from proper government agencies for machine transportation.

Trailer setup

Position the trailer on firm and level ground.

Put blocks to the tires of the trailer to prevent trailer from moving.

If a rear loading type trailer is used for road transport, prepare the loading ramps. If the ramps are included in the trailer frame, lower them to the ground. If the ramps are external to the trailer, match them to the rear edge of the trailer avoiding any bump between trailer bed and external ramps.



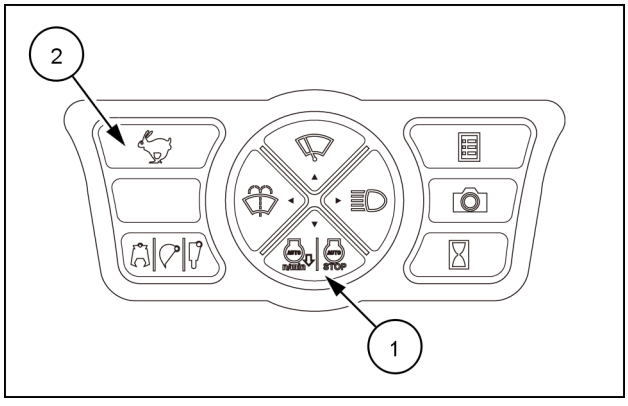
SMIL13CEX2717AB 1

Machine setup

Accurately clean the machine undercarriage and tracks to prevent mud or debris from skidding during transport.

Make sure to deactivate the auto idle function and the auto shut-down function. Press the idle mode button **(1)** until any idle icon on the display turns off.

Press the travel mode selector button **(2)** to select the low travel speed. The “Turtle” icon appears on the display.



SMIL16CEX1680AA 2

Loading the machine on a rear loading type trailer (with front equipment installed)

Select the H work mode.

Align the machine to the trailer, so as the travel motors face the trailer ramps.

NOTICE: *In this position, traveling and steering control become opposite to each other.*

NOTICE: *for loading of the BLADE version, align the machine to the trailer, so as the blade faces the trailer ramps. Make sure to fully raise the blade before getting onto the trailer ramps.*

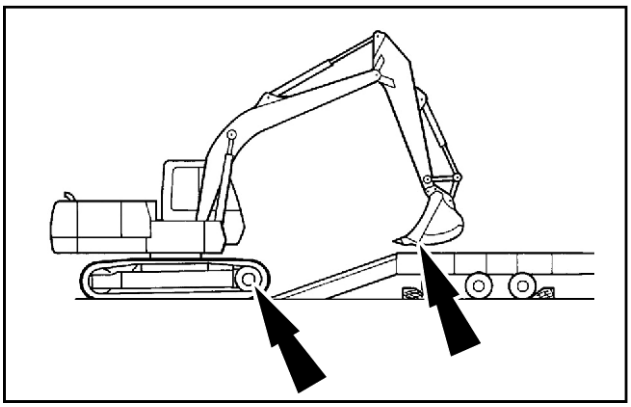
NOTICE: *for loading and unloading of the BLADE version, traveling and steering control are consistent with the machine traveling directions.*

Get close to the ramps and operate the arm and bucket controls so that the arm stands vertical and the bottom side of the bucket is about **20 cm** (**7.9 in**) above the trailer bed.

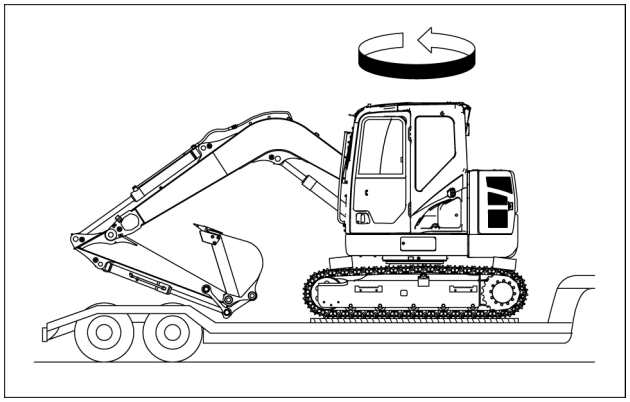
Slowly climb the trailer ramps keeping the bucket close to the trailer bed. Slowly travel on the trailer bed to reach the resting position, giving particular attention to the attachment so as not to touch the trailer bed.

NOTICE: *for parking of the BLADE version, lower the blade to the trailer bed.*

Slowly turn the upper structure **180°**.



SMIL13CEX2720AB 3



SMIL17CEX7688AA 4

Loading the machine on a rear loading type trailer (without front equipment installed)

⚠ WARNING

Tip-over hazard!
The counterweight MUST be removed before transporting the machine without an attachment. Consult you dealer.
Failure to comply could result in death or serious injury.

W0260A

⚠ WARNING

Pressurized system!
Before removing the attachment from the machine, make sure the air pressure and hydraulic oil pressure are at zero.
Failure to comply could result in death or serious injury.

W0284A

If the machine has to be transported without the complete front equipment (boom and arm), the counterweight shall be removed from the base machine. Loading the base machine on the trailer with the counterweight installed affects the stability of the base machine itself, and definitely compromises its climbing ability.

NOTICE: *the use of lifting systems is necessary for removal and installation of the machine front attachment and of the counterweight. Refer to your CASE CONSTRUCTION dealer for proper removal and installation procedure.*

Select the H work mode.

Align the machine to the trailer, so as the travel motors face the trailer ramps.

NOTICE: *In this position, traveling and steering control become opposite to each other.*

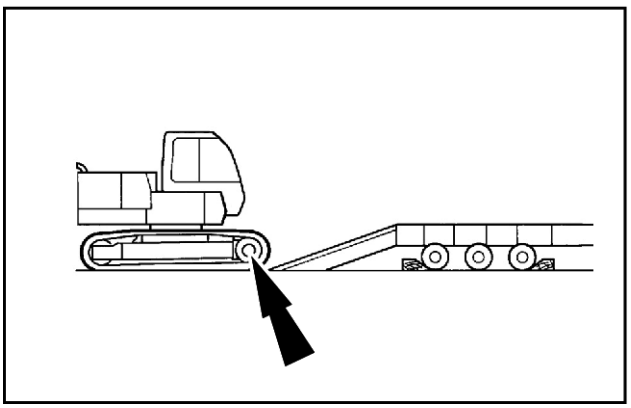
NOTICE: *for loading of the BLADE version, align the machine to the trailer, so as the blade faces the trailer ramps. Make sure to fully raise the blade before getting onto the trailer ramps.*

NOTICE: *for loading and unloading of the BLADE version, traveling and steering control are consistent with the machine traveling directions.*

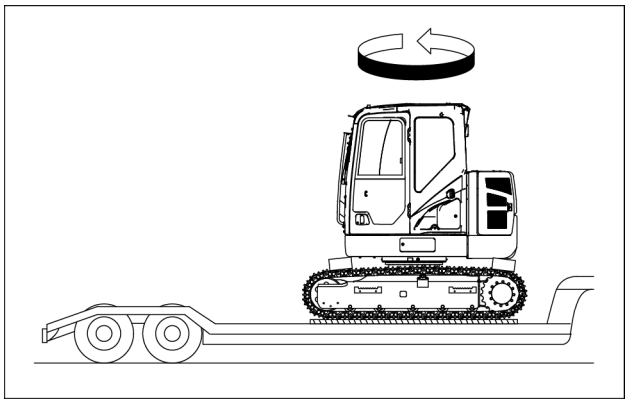
Slowly climb the trailer ramps. Slowly travel on the trailer bed to reach the resting position.

NOTICE: *for parking of the BLADE version, lower the blade to the trailer bed.*

Slowly turn the upper structure **180°**.



SMIL13CEX2721AB 5

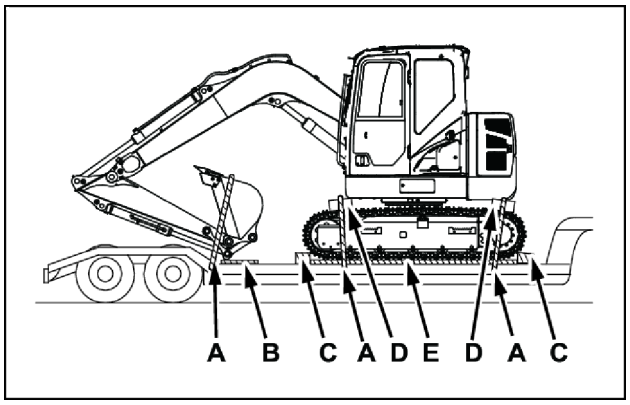


SMIL17CEX7692AA 6

Tie downs for shipping

CX75C SR

1. Set the machine in the position for transport: fully retract the arm and curl the bucket slowly.
2. Place the block **(B)** on the trailer floor and lower the boom slowly. Adjust the position of the block **(B)** so that the bucket linkage lays on the block **(B)**.
3. Check the overall height between the ground and the highest point of the machine and check the overall width of the machine. Make sure to be within the size limits defined before transport, in order to confirm documents and permissions already got to comply to the local traffic regulations.
4. Place the gate lock lever in lock position. Stop the engine and remove the starter key.
5. Get off the machine. Retract the radio antenna. Fold the rear view mirrors.
6. Lock the cab door and the side panels.
7. Check the condition of the tie-down points on the trailer.
8. Secure the machine onto the trailer using chocks **(C)**, chains, wire ropes **(A)** to prevent the machine from swaying (oscillation) during transport.
9. Carry out a final check of the tie-down condition.
10. If a rear loading type trailer is used for road transport, lift or remove the loading ramps.
11. Remove blocks from the tires of the trailer.

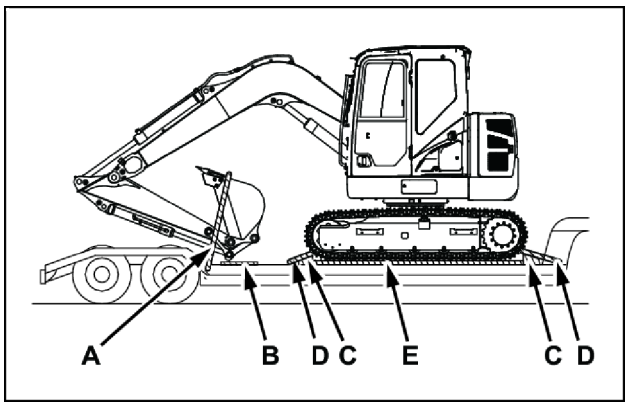


SMIL13CEX2727AB 1

(A) Wire rope
(B) Block
(C) Chock
(D) Padding
(E) Rubber mat

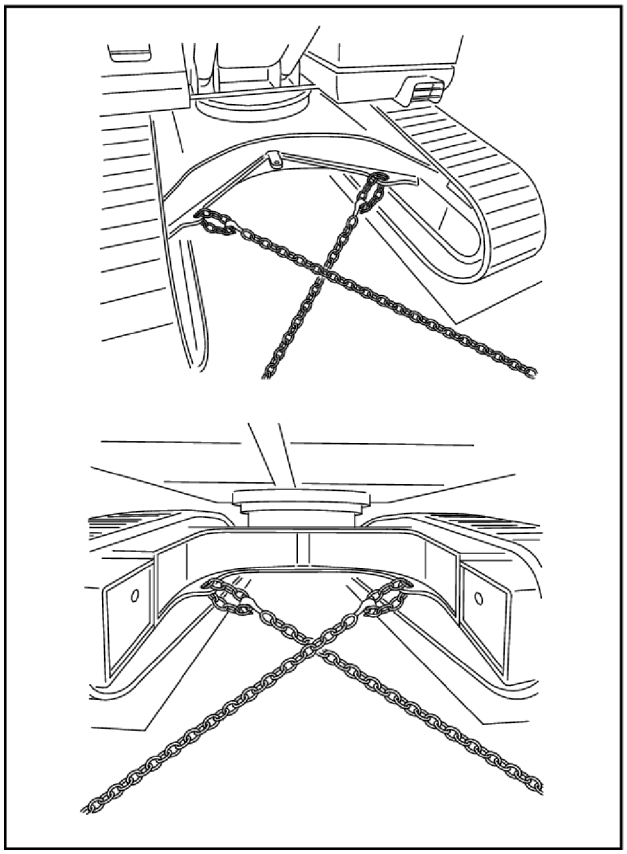
Alternatively, the machine may be secured onto the trailer bed with an X shape tie-down.

1. Set the machine in the position for transport: fully retract the arm and curl the bucket slowly.
2. Place the block **(B)** on the trailer floor and lower the boom slowly. Adjust the position of the block **(B)** so that the bucket linkage lays on the block **(B)**.
3. Check the overall height between the ground and the highest point of the machine and check the overall width of the machine. Make sure to be within the size limits defined before transport, in order to confirm documents and permissions already got to comply to the local traffic regulations.
4. Place the gate lock lever in lock position. Stop the engine and remove the starter key.
5. Get off the machine. Retract the radio antenna. Fold the rear view mirrors.
6. Lock the cab door and the side panels.
7. Check the condition of the tie-down points on the trailer.
8. Secure the machine onto the trailer using chocks **(C)**, chains **(D)**, wire ropes **(A)** to prevent the machine from swaying (oscillation) during transport. Secure the lower frame to the trailer by passing chains through the chain mounting holes (for transport) in the lower frame and tensioning the chains in an X shape. Secure both the front and rear of the lower frame in the same manner using chains.
9. Carry out a final check of the tie-down condition.
10. If a rear loading type trailer is used for road transport, lift or remove the loading ramps.
11. Remove blocks from the tires of the trailer.



SMIL13CEX2728AB 2

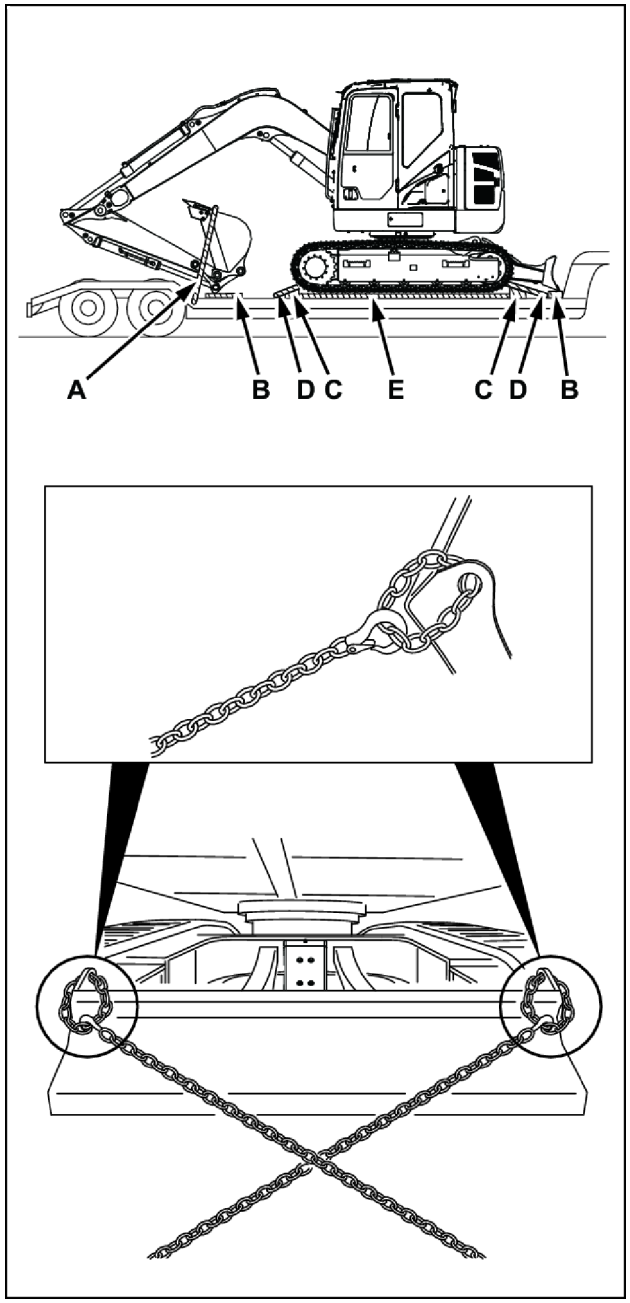
(A) Wire rope
(B) Block
(C) Chock
(D) Chain
(E) Rubber mat



SMIL13CEX2729BA 3

CX75C SR with blade

1. Set the machine in the position for transport: align the boom in straight position (Offset Boom version), fully retract the arm and curl the bucket slowly.
2. Place the block **(B)** on the trailer floor and lower the boom slowly. Adjust the position of the block **(B)** so that the bucket linkage lays on the block **(B)**.
3. Check the overall height between the ground and the highest point of the machine and check the overall width of the machine. Make sure to be within the size limits defined before transport, in order to confirm documents and permissions already got to comply to the local traffic regulations.
4. Place the gate lock lever in lock position. Stop the engine and remove the starter key.
5. Get off the machine. Retract the radio antenna. Fold the rear view mirrors.
6. Lock the cab door and the side panels.
7. Check the condition of the tie-down points on the trailer.
8. Secure the machine onto the trailer using chocks **(C)**, chains **(D)**, wire ropes **(A)** to prevent the machine from swaying (oscillation) during transport. Secure the blade to the trailer by passing chains through the chain mounting holes on the blade (for transport) and tensioning the chains in an X shape. Secure the rear of the lower frame in the same manner using chains.
9. Carry out a final check of the tie-down condition.
10. If a rear loading type trailer is used for road transport, lift or remove the loading ramps.
11. Remove blocks from the tires of the trailer.



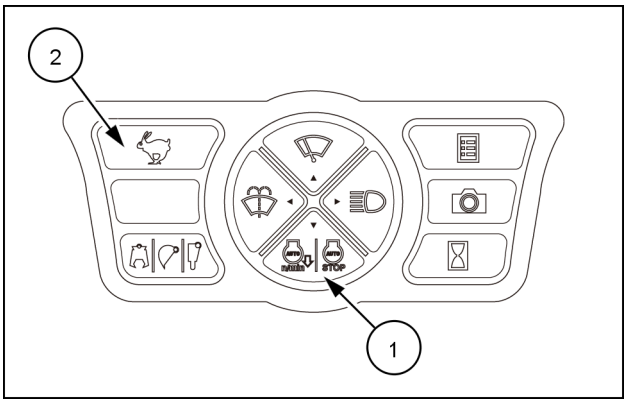
SMIL13CEX2730CB 4

(A) Wire rope
(B) Block
(C) Chock
(D) Chain
(E) Rubber mat

Unloading the machine from a transport trailer

Rear loading type transport trailer

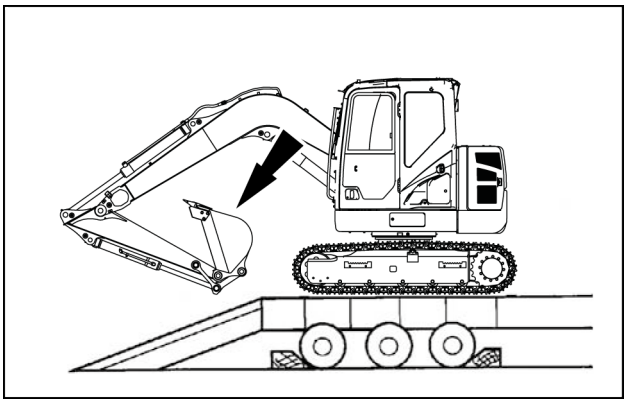
1. Position the trailer on firm and level ground. Put blocks to the tires of trailer to prevent trailer from moving.
2. Remove chains, wire ropes, chocks, blocks and other devices used to secure the machine during road transport.
3. Prepare the loading ramps. If the ramps are included in the trailer frame, lower them to the ground. If the ramps are external to the trailer, match them to the rear edge of the trailer avoiding any bump between trailer bed and external ramps.
4. Get on the machine and start the engine.
5. Make sure to deactivate the auto idle function and the auto shut-down function. Press the idle mode button **(1)** until any idle icon on the display turns off. Press the travel mode selector button **(2)** to select the low travel speed. The “Turtle” icon appears on the display.
6. Select the H work mode and set the gate lock lever in unlock position.



SMIL16CEX1680AA 1

7. If the front equipment is installed, operate the arm and bucket controls so that the arm stands vertical and the bottom of the bucket is about **20 cm** (**7.9 in**) above the trailer bed.

   NOTICE: *for unloading of the BLADE version, fully raise the blade before start moving on the trailer bed.*



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8. Travel slowly towards the back of the trailer and stop as reaching the ramps. If the front equipment is installed, operate boom and arm softly in order to get the bucket close to the ground ahead of the ramps. Avoid to fully extend the bucket cylinder to prevent damaging it due to accidental impacts with the ground.
9. Move down on ramps with extreme care while operating boom and arm softly in order to keep the bucket close to the ground and so to grant machine stability.
10. Pass through the ramps completely and stop the machine once it gets on the ground.

SHIPPING TRANSPORT

Lifting the machine with a crane

⚠ 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.

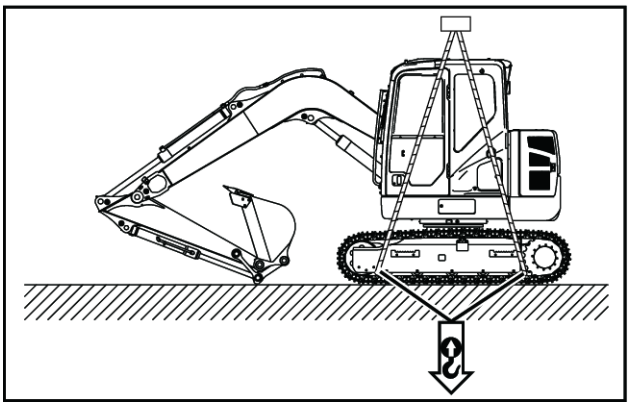
W0245A

Retract the attachment, bucket and dipper cylinders fully extended then place the attachment on the ground. Shut-down the engine and leave the operator's compartment.

NOTICE: *before handling the machine, make sure the slings are in perfect condition and that they are capable of supporting the weight of the machine. Refer to Chapter 8.*

NOTICE: *it is imperative to use the sling points indicated on the machine decals.*

NOTICE: *the machine must be handled very slowly and horizontally.*



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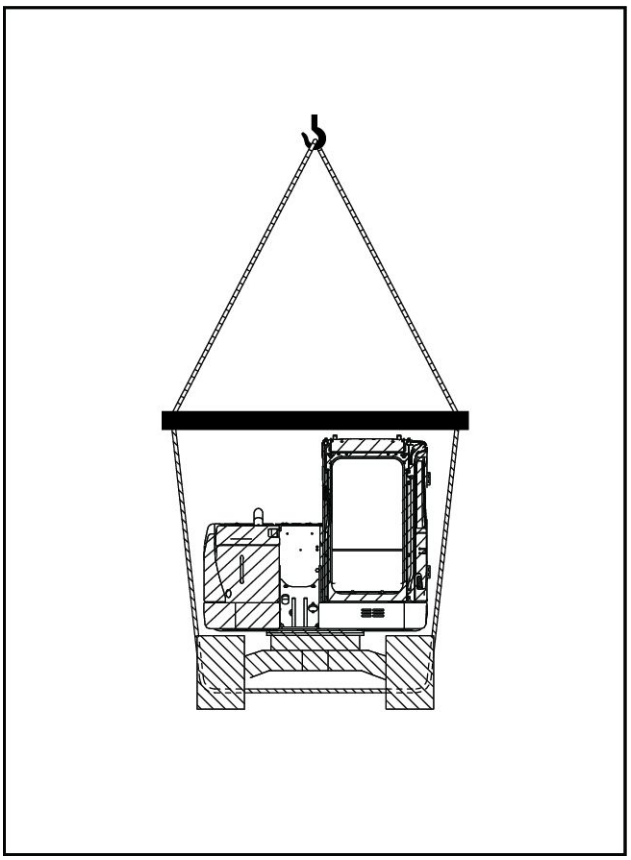

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RECOVERY TRANSPORT

Towing the machine

⚠ WARNING

Misuse hazard!
Towing is a delicate maneuver that is always carried out at the risk of the user. The manufacturer's warranty does not apply to incidents or accidents that occur during towing. Where possible, carry out the repairs at the site.
Failure to comply could result in death or serious injury.

W0286A

⚠ WARNING

Hazard to bystanders!
The operator must be the only person on the machine when towing. Make sure that nobody else is on the machine or within its working range.
Failure to comply could result in death or serious injury.

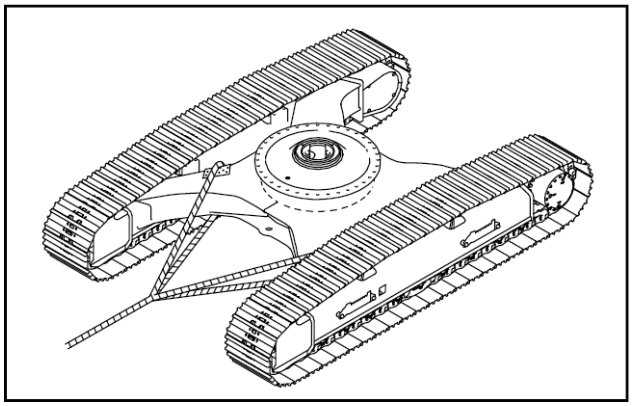
W0259A

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

NOTICE: *the machine must be towed very slowly, over a short distance and only if it is really unavoidable. Always tow the machine in alignment with the undercarriage.*

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

1. Make sure that it can be towed without risk of further damage.
2. Make sure that the shackles, chains and tackle are in perfect condition and strong enough to move the load.
3. Attach the shackles, chains and tackle to the under-carriage taking care to protect any salient angles.
4. Pull the machine without jerking, very slowly and in alignment with the undercarriage.



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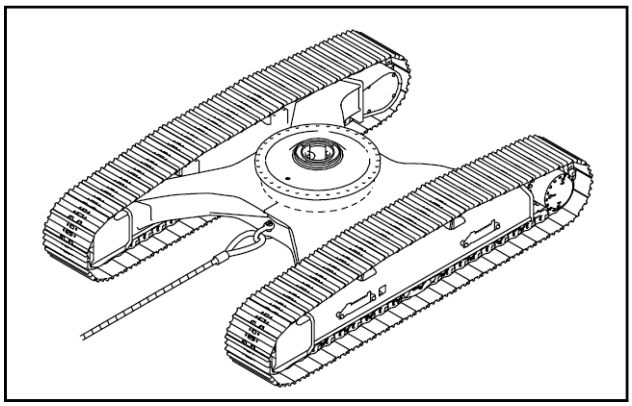
Towing a load

To tow a load of up to **10 t** (**22046 lb**) , use one of the towing holes provided for this purpose.



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6 - MAINTENANCE

GENERAL INFORMATION

Basic instructions

⚠ WARNING

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

W0157A

⚠ WARNING

Improper operation or service of this machine can result in an accident.
Raised equipment or machine movement without an operator can cause serious injury. Always do the following before performing any maintenance:
Park the machine on flat, level ground.
Lower the attachment to the ground.
Shut down the engine and remove the ignition key.
Lock the tracks.
Failure to comply could result in death or serious injury.

W0944D

⚠ 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

NOTICE: *be sure all the service operations in this section are carried out punctually at the intervals given, in order to ensure optimum performance levels and maximum safety when using the machine.*

- Before any maintenance operation, park the machine on a hard and level ground, away from obstacles, and lower the attachment and the dozer blade (if equipped) to the ground.
- Unless otherwise specified, all maintenance operations shall be carried out with the engine stopped and the key removed from the starter switch. Wait for all circuits to cool down before starting work.
- Clean the grease fittings before lubrication. Clean around plugs and filler holes before adding fluid. No dust or dirt must enter the components or the circuits. Wear suitable clothing and remember to use the necessary safety equipment.
- When carrying out service work on the machine, place the "Do not operate" tag on the instrument panel. Never climb down from the operator's compartment leaving the engine running.
- Remove the necessary lower panels during maintenance of certain machine components. Make sure the lower panels are properly closed before operating the machine.

Any modification to the machine without prior authorization could cause serious injury. Do not make any modifications without authorization. Consult your CASE CONSTRUCTION Dealer.

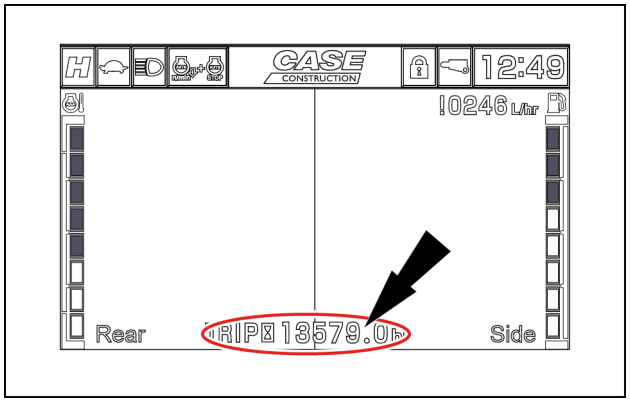
NOTICE: *if you use your machine in particularly harsh conditions (dusty or corrosive atmosphere, etc.), the servicing intervals should be reduced accordingly.*

NOTICE: *take particular care to replace all filters regularly. Clean filters mean longer engine running life.*

NOTE: *oil and fluid should not be thrown on the ground. They must be stored and removed by a company which is responsible for their recycling or their disposal.*

Hour meter

The machine control system is readily warning about the need of specific maintenance operations. However, some other maintenance operations have to be carried out on a regular basis without any specific warning. Make sure to get acquainted with the main time intervals indicated into this Chapter, and make sure to check the hourmeter at the beginning of every working day in order to anticipate the need for maintenance operations at a certain time interval.



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Daily inspections

Every day, before starting work, it is necessary to inspect the machine and service certain of its components.

General remarks

- Check signs of leaking oil or water.
- Check that all screws and nuts are correctly tightened.
- Wipe off any dust (engine, operator's compartment etc.).
- Check for any signs of damage.

Engine

- Check the oil level and change the oil if necessary.
- Check the coolant level.
- Check the radiator for signs of clogging or deterioration.
- Check the radiator fan belt tension.
- Check the air filter is clean and not restricted.
- Check the components for signs of leaking oil or water.
- Check the condition of all lines.

Undercarriage

- Check the pad hardware.
- Check the condition of the tracks.
- Check that the upper and lower track rollers and the idler wheels are not leaking oil.

Upperstructure

- Check the fuel tank level.
- Check the hydraulic tank level.
- Check that the hydraulic oil is clean.
- Check the components for signs of leaking oil or water.
- Check the condition of all lines.
- Make sure there are no electrical short circuits.
- Check the battery connections are properly tightened.
- Adjust the rear view mirrors.
- Check the cameras.

Attachment

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

After starting the engine

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

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

Biodiesel fuel

Biodiesel usage in CASE CONSTRUCTION products

Introduction to Fatty Acid Methyl Ester (FAME) biodiesel

FAME biodiesel, called biodiesel fuel in the following section, consists of a family of fuels derived from vegetable oils treated with methyl esters.

There are two main biodiesel fuel types: Rapeseed Methyl Ester (RME) and Soybean Methyl Ester (SME). RME is a blend of rapeseed and sunflower methyl ester, and is the preferred crop in Europe. SME is the preferred crop in the United States.

Biodiesel fuel is a renewable alternative fuel source. Its use and development is promoted worldwide, especially in Europe and in the United States.

NOTICE: *Your emissions control system is compatible with up to* ***7%*** *biodiesel fuel (B7). Be aware that the use of biodiesel fuel that does not comply with the standards mentioned in this section could lead to severe damage to the engine, fuel system or after treatment system of your machine. The use of non-approved fuels may void CASE CONSTRUCTION Warranty coverage.*

Biodiesel can be used to run Stage IV diesel engines only when blended with standard diesel fuel:

- B7: indicates the blend of **7%** biodiesel and **93%** diesel fuels.

NOTICE: *Never use biodiesel blends higher than B7.*

Biodiesel fuel has several positive features in comparison with diesel fuel:

- Biodiesel adds lubricity to the fuel, which is beneficial in many circumstances, particularly as sulfur and aromatics are removed from the fuel.
- Biodiesel has a greater cetane number and burns cleaner.
- Biodiesel produces less particulate matter and reduces smoke emissions.
- Biodiesel is fully biodegradable and non-toxic.

Diesel and biodiesel fuel specifications

Stage IV diesel fuel specifications are covered by the following:

- **EN 590** - Specification of Diesel fuel. (10 ppm sulfur maximum.)

Biodiesel blends are covered by:

- European Diesel Fuel Specification **EN 590** allows up to **7%** biodiesel since 2009. European fuel suppliers are allowed to use up to **7%** biodiesel fuel (B7) to supply the network.

Pure biodiesel blend stock (B100) specification is covered by the following requirements:

- Europe: **EN14214** - Automotive fuels. Fatty Acid Methyl Ester (FAME) for diesel engines. Requirements and test methods.
- **DIN V 51606** - German standard for biodiesel.

Before raw oil can be converted into usable biodiesel fuel, it must undergo transesterification to remove glycerides. During the transesterification process, the oil reacts with an alcohol to separate the glycerine from the fat or vegetable oil. This process leaves behind two products: methyl ester (the chemical name for biodiesel) and glycerine (a byproduct usually sold for use in soaps or other products).

NOTICE: *Biodiesel fuels approved for use in the CASE CONSTRUCTION equipment must be transesterified and comply with the European Standard* ***EN14214*** *or the German standard* ***DIN V 51606****.*

NOTICE: *Cold Pressed Biodiesel, Cold Pressed Oil, Straight Vegetable Oil (SVO), or more generally unrefined vegetable oils used as motor fuel, are fuels that are normally made from Rapeseed oil or similar high oil content crops. These kinds of fuel are not transesterified, so they do not fulfil the* ***EN14214*** *requirements. There is no recognized quality standard available for these types of fuel. Therefore the use of Cold Pressed Biodiesel, Cold Pressed Oil, Straight Vegetable Oil (SVO), or more generally unrefined vegetable oils used as motor fuel are NOT APPROVED at any blend in any CASE CONSTRUCTION product.*

NOTICE: *Any engine and fuel injection equipment fitted to a CASE CONSTRUCTION vehicle found to have run with any blend of NON-APPROVED fuel (fuel not fulfilling the specification described in the requirement* ***EN14214****) will no longer be covered for Warranty by CASE CONSTRUCTION.*

Biodiesel fuel usage conditions

You must stringently follow the biodiesel fuel usage conditions. Incorrect application of the biodiesel fuel usage conditions could lead to severe damage to the engine, fuel injection equipment and aftertreatment system.

The main concerns related to operation with biodiesel fuels are:

- Filters and injector blockage caused by poor fuel quality.
- Wear and corrosion of internal components due to water content, which affects lubricity.
- Deterioration of some rubber sealing compounds in the fuel system.
- Biodiesel oxidation, which can lead to the formation of deposits that can harm the fuel injection system.

NOTICE: *Any problem in the engine fuel injection equipment associated with non-compliance to the following conditions for biodiesel fuel handling and maintenance will not be covered for Warranty by CASE CONSTRUCTION.*

Purchase biodiesel fuel from a trusted supplier who understands the product and maintains acceptable fuel quality.

The use of biodiesel blends up to B7 will not void the CASE CONSTRUCTION warranty as long as the following conditions for biodiesel fuel handling and maintenance are stringently followed:

Biodiesel fuel must be pre-blended by the supplier. Mixing biodiesel fuels on-site can result in an incorrect mixture that could damage the engine and/or fuel system.

NOTICE: *CASE CONSTRUCTION may void your warranty if the problem is associated with poor fuel quality due to improper blending. It is the responsibility of the fuel supplier and/or yourself to ensure the right type of fuel and blend is delivered and used.*

Storage

The machine should not be stored for long periods without changing the diesel fuel in the fuel system.

NOTICE: *Biodiesel is highly hygroscopic and tends to collect water more than diesel fuel. This increases the risk of algae and bacteria growth which can cause severe damage to the fuel injection system. Keep the machine fuel tanks and on-site storage tanks as full as possible to limit the amount of air and water vapors inside the tank. Drain water from the tanks at least once a week.*

If the machine should be stored for long periods, make sure to replace the diesel fuel every three months at most.

Fluids and lubricants

By using appropriate fluids and lubricants the excavator can operate in ambient temperatures ranging from **-10 °C** (**14 °F**) to **40 °C** (**104 °F**). Refer to the list of fluids and lubricants contained in this manual.

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

	Quantity		CASE CONSTRUCTION specification	Reference specification
Fuel tank	**120 l** (**31.7 US gal**)	—	—	**EN 590**
Engine oil	**11.5 l** (**3.0 US gal**)	**CASE AKCELA UNITEK 10W-40**	**MAT3521**	**SAE 10W40** **ACEA E9** **API CJ-4**
Travel reduction unit	**1.1 l** (**0.3 US gal**)	**CASE AKCELA GEAR LUBE 135 H EP 80W-90**	MS 1316	**SAE 80W/90** **API GL-5**
Engine coolant	**12.2 l** (**3.2 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 (**)	**51 l** (**13.5 US gal**)	**CASE AKCELA HYDRAULIC LL 46**	—	**ISO 11158** L-HV46
Grease	—	**CASE AKCELA 251H EP MULTI-PURPOSE GREASE**	IH B-27 251H EP	**NLGI 2**

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

(**) The total capacity of the hydraulic system is **96.3 l** (**25.4 US gal**).

Engine coolant

CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT is the reference genuine product for machine service.

NOTICE: *Never add Supplemental Coolant Additives (SCA) when using* ***CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT****.*

CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT has to be used if refilling of the cooling system is needed. Refer to the dedicated procedure and recommendations described in Chapter 6.

CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT shall be used for the replacement of engine coolant according to the maintenance program of the machine. The replacement shall also be tackled in case of repair or replacement of components of the cooling system. Refer to the dedicated procedure described in Chapter 6.

The engine cooling system shall always be refilled with coolant solution made by mixture of antifreeze and distilled (deionized) water.

NOTICE: *Never refill the cooling system with only antifreeze. Never refill the cooling system with only water.*

Using **CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT**, a 50/50 mixture of antifreeze and distilled (deionized) water grants proper performance of the engine cooling system in the above mentioned operating temperature range of the machine.

CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT is available as:

- 50/50 PREMIXED coolant solution ready for usage.
- CONCENTRATE antifreeze to be mixed 50/50 with distilled (deionized) water.

NOTICE: *If operating in extreme winter climate, a coolant solution made by 60/40 antifreeze/distilled (deionized) water mixture shall be used in order to grant proper performance of the engine cooling system.*

NOTICE: *Never use coolant solution with more than* ***60%*** *of antifreeze. This affects the cooling capacity of the mixture.*

When the coolant solution is prepared starting from the CONCENTRATE product, the antifreeze concentration in the mixture of antifreeze and distilled (deionized) water can be determined with a refractometer designed to measure ethylene glycol content.

If distilled (deionized) water is not available, use water for dilution with the following properties:

Property	Maximum limit
Total Solids	**340 ppm**
Total Hardness	**170 ppm**
Chloride (Cl)	**40 ppm**
Sulfate (SO4)	**100 ppm**
Acidity pH	5.5 to 9.0

NOTICE: *Never use hard water, sea water and softened sea water that has been conditioned with salt. The minerals and salts present in potable water can cause corrosion and deposits resulting in shortened engine life.*

Fuel

Use only Ultra-Low Sulphur Diesel (S10) that meets **EN 590** specifications.

Using other types of fuel may lead to stalled engine output or deterioration in fuel economy.

NOTICE: *The warranty shall be invalid if any serious defect is caused by usage of any other fuel. Using any fuel other than the prescribed type will cause damages to the fuel supply system, to the fuel injection system, to the engine block, and to the exhaust after treatment system. CASE CONSTRUCTION will not be responsible to any of such damages.*

If the temperature drops below the fuel cloud point, output deficiency or engine start problems may occur due to wax crystals.

NOTICE: *If operating in severe winter climate, consult the fuel supplier or the CASE CONSTRUCTION dealer for specific diesel fuel according to the* ***EN 590*** *to be used.*

The diesel fuel to be used on the machine shall:

- be free from dust particles, even minute ones.
- have the proper viscosity.
- have a high cetane number.
- present great fluidity at low temperatures.
- have low sulphur content.
- have very little residual carbon.

NOTICE: *Never use a mix of diesel fuel and old engine oil. The fuel injection system and the exhaust after treatment system will be severely damaged.*

NOTICE: *consult the fuel supplier or the CASE CONSTRUCTION Dealer regarding appropriate use of fuel additives.*

NOTICE: *in order to prevent condensation during cold weather, fill the fuel tank to full after completing the day's work.*

Fuel storage:

Long storage can lead to the accumulation of impurities and condensation in the fuel. Engine trouble can often be traced to the presence of water in the fuel. The storage tank must be placed outside and the temperature of the fuel should be kept as low as possible. Drain off water and impurities regularly.

Disposal of fluids, lubricants, and spare parts

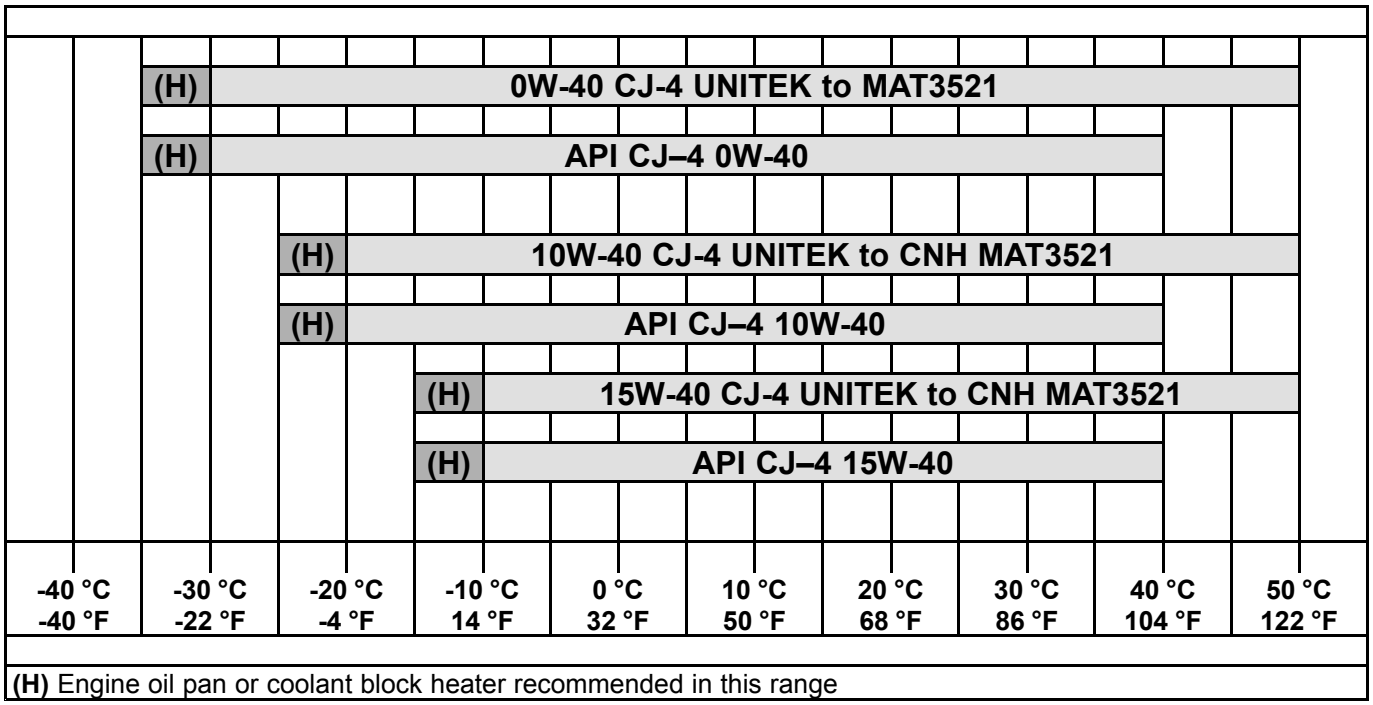
Fluids, lubricants and spare parts used on the machine are not fully compatible with the environment. Make sure to carry out all maintenance operations using appropriate tools, in order to avoid any risk of damaging the environment.

NOTE: *for example, make sure that the receptacle for collecting oil to be replaced is not leaking.*

Never spread fluids or lubricants on the ground or into water. Consult the CASE CONSTRUCTION Dealer or the Local Environmental Agency in order to obtain information on the correct method of disposing fluids and lubricants used on the machine.

Never throw away spare parts as filters or batteries. Consult the CASE CONSTRUCTION Dealer or the Local Environmental Agency in order to obtain information on the correct method of disposing filters, batteries or other spare parts used on the machine.

Engine oil recommended operating temperature range

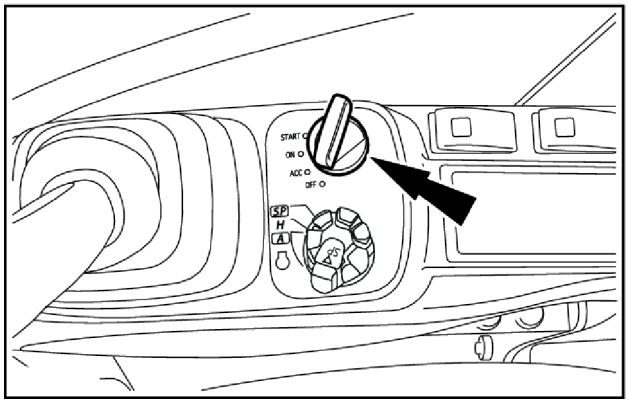


(H) Engine oil pan or coolant block heater recommended in this range

Releasing pressure in the hydraulic system

NOTICE: *before carrying out any work on the hydraulic system, there should be no pressure in any of the circuits.*

1. Place the machine on flat, level ground, lower the attachment to the ground and stop the engine.
2. Turn the starter key to the ON position.



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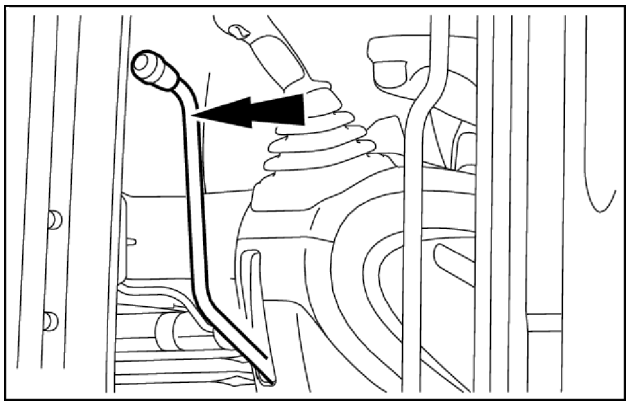
3. Push the gate lock lever (safety bar) forward.



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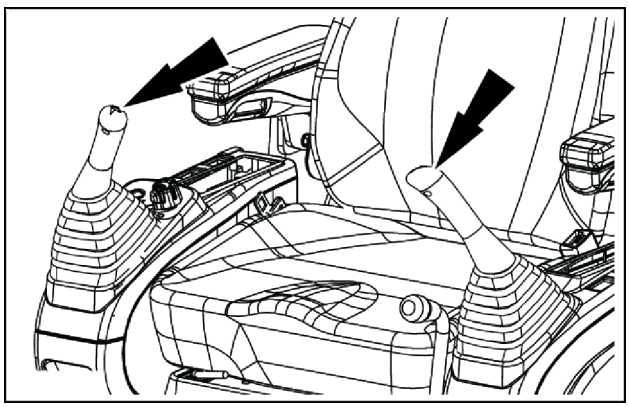
4. Operate the control levers from right to left and front to rear a dozen times approximately.
5. Turn the starter key to the OFF position.



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Fuel system bleeding

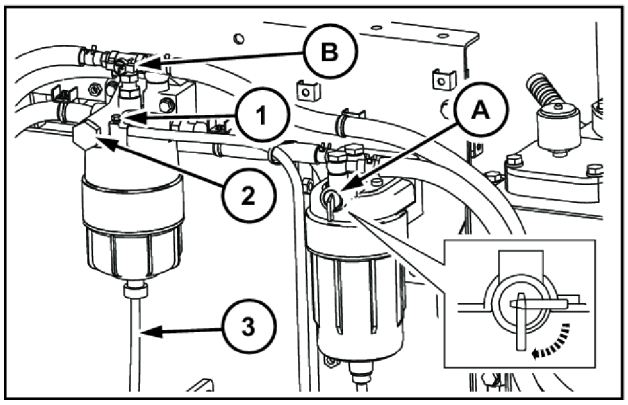
In the following cases, drainage from the fuel system is required:

- The tank has become empty completely.
- The fuel pre-filter is replaced.
- The fuel filter is replaced.
- The components of the fuel system are removed for service or repair.
- The machine has been stored for quite a long time.

To bleed the air from the fuel line, proceed as follows:

1. Open the fuel pre-filter valve **(A)**.
2. Switch the fuel main filter valve **(B)** to the tank side.
3. Loosen the air bleed screw **(1)** of the fuel main filter.

   NOTE: *do not loosen the air bleed screw of the fuel prefilter.*



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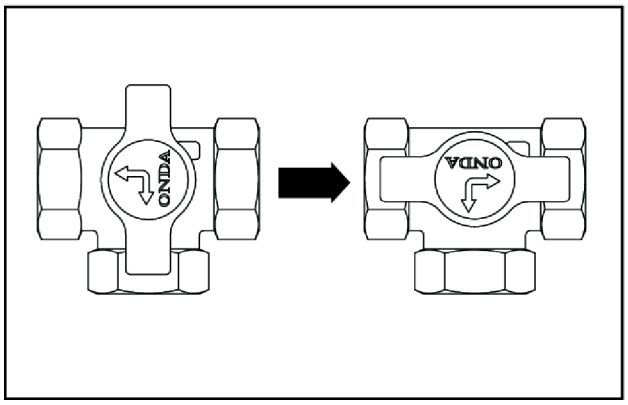

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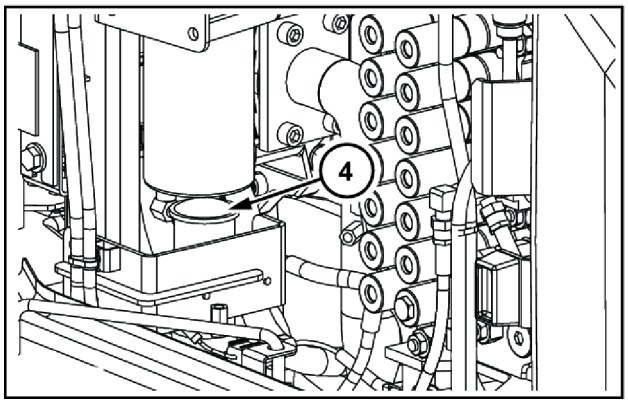
4. Insert the key into the starter switch and turn to the ON position. This makes the electromagnetic feed pump **(4)** operate.

   NOTICE: *if the air bleeding is not complete, do not leave the starter switch ON for longer than* ***5 min****. This could cause damage to the electromagnetic feed pump.*



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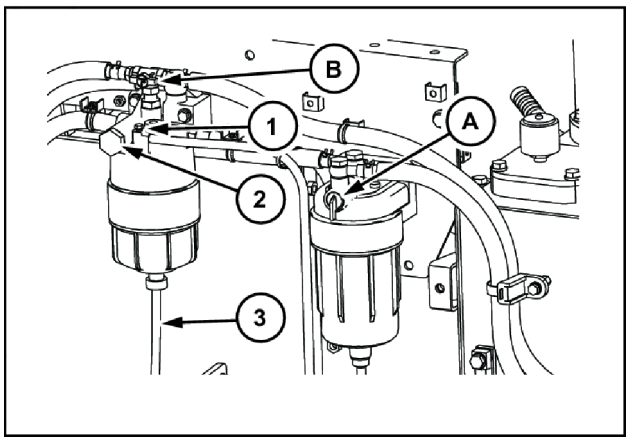
5. Turn the priming pump handle **(2)** counterclockwise. The handle **(2)** springs up due to the force of the spring inside the handle.
6. Push the handle **(2)** to drain the fuel with air bubbles mixed in from the drain hose **(3)**. This operation also assists the electromagnetic feed pump **(4)**. Continue pushing the handle **(2)** until there are no more air bubbles in the fuel.
7. When the air bleeding is complete, turn the starter switch to OFF position.



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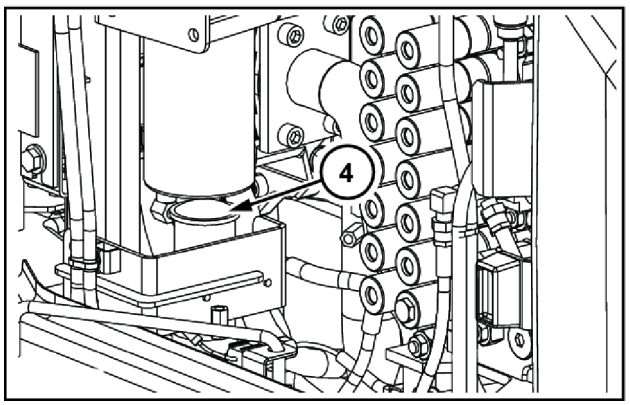

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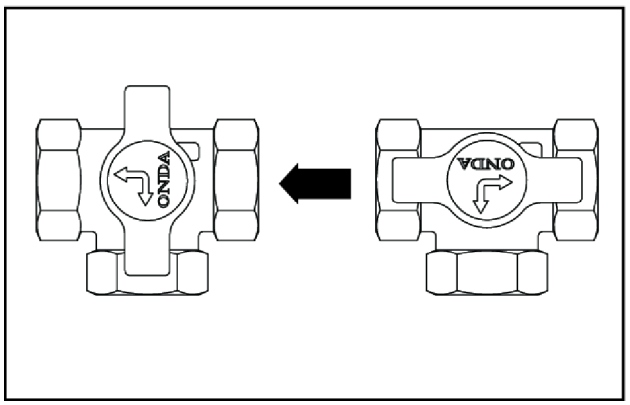
8. Tighten the air bleed screw **(1)**. When the handle becomes difficult to turn, air bleeding is complete.
   Air bleed screw tightening torque:
   8.0 – 12.0 N·m (**5.9 – 8.9 lb ft**)
9. Return the priming pump handle **(2)** back to its original position.
10. Turn the starter switch ON to operate the electromagnetic feed pump **(4)** for at least **30 s** to drain the contaminant (impurities) inside fuel lines.
11. Turn the starter switch OFF.
12. Return the fuel main filter valve **(B)** to its original position.
13. Wipe off any spilled fuel, start the engine, and check for any fuel leaks.



SMIL13CEX2769AB 6

Protecting the electronic and electrical systems during battery charging or welding

⚠ DANGER

Improper operation or service of this machine can result in an accident.
Any unauthorized modifications made to this machine can have serious consequences. Consult an authorized dealer on changes, additions, or modifications that may be required for this machine. Do not make any unauthorized modifications.
Failure to comply will result in death or serious injury.

D0030A

⚠ DANGER

Battery acid causes burns. Batteries contain sulfuric acid.
Avoid contact with skin, eyes or clothing. Antidote (external): Flush with water. Antidote (eyes): flush with water for 15 minutes and seek medical attention immediately. Antidote (internal): Drink large quantities of water or milk. Do not induce vomiting. Seek medical attention immediately.
Failure to comply will result in death or serious injury.

D0117A

Whenever carrying out a welding operation on the undercarriage or upperstructure carriage as authorized by the manufacturer and in accordance with his instructions, disconnect the batteries, disconnect the alternator B+ and D+ terminal wires and connect the welding apparatus earth cable to the component on which the welding operation is to be performed. Never connect the welding apparatus to the undercarriage when welding on the upperstructure (or vice-versa). Never connect the welding apparatus earth to a component of the hydraulic system.

To avoid damage to the electronic/electrical systems, always observe the following:

- Never make or break any of the charging circuit connections, including the battery connections, when the engine is running.
- Never short any of the charging components to ground.
- Make sure to set the battery disconnect switch to OFF position in advance or cut-off the connection of the ground cable when executing arc welding to the machine.
- Always disconnect the negative cable from the battery when charging the battery in the machine with a battery charger.

NOTICE: *position the welder ground clamp as close to the welding area as possible. If welding in close proximity to a computer module, then the module should be removed from the machine. Never allow welding cables to lay on, near or across any electrical wiring or electronic component while welding is in progress.*

NOTICE: *if welding must be performed on the unit, either the machine, the battery ground cable must be disconnected from the machine battery. The electronic monitoring system and charging system will be damaged if this is not done.*

MAINTENANCE CHART

Maintenance chart

Maintenance action	Check	Replace	Change fluid	Cleaning	Grease	Drain fluid	Page no.
Break-in period							
Cab protection (ROPS and FOPS)	x						**6-16**
Tightening torques	x						**6-16**
Track shoe bolt torque	x						**6-16**
Hydraulic oil return filter		x					**6-16**
Pilot line filter		x					**6-16**
Travel reduction units oil			x				**6-16**
Every 10 hours							
Engine oil level	x						**6-17**
Engine coolant level	x						**6-18**
Hydraulic oil level	x						**6-19**
Fuel tank drain					x		**6-20**
Fan and alternator drive belt	x						**6-20**
Every 50 hours							
Grease points (Arm and backhoe bucket)					x		**6-21**
Grease points (Boom)					x		**6-23**
Grease points (Offset boom)					x		**6-25**
Grease points (Dozer blade)					x		**6-27**
Tracks	x						**6-28**
Air conditioner filters						x	**6-31**
Every 250 hours							
Travel reduction units oil	x						**6-32**
Engine primary air filter						x	**6-33**
Fuel pre-filter		x					**6-35**
Battery electrolyte level	x						**6-37**
Fan and alternator drive belt	x						**6-41**
Hydraulic oil tank					x		**6-43**
Tightening torques	x						**6-44**
Track shoe bolt torque	x						**6-45**
Track rollers and idler wheels	x						**6-46**
Cab protection (ROPS and FOPS)	x						**6-46**
Every 500 hours							
Swing bearing					x		**6-47**
Engine oil and filter			x				**6-49**
Fuel filter		x					**6-51**
Radiator and coolers						x	**6-53**
Every 1000 hours							
Grease points (Boom and Arm)					x		**6-54**
Hydraulic reservoir breather		x					**6-56**
Engine air filters		x					**6-57**
Hydraulic fluid analysis	x						**6-59**
Engine valve rocker clearance adjustment	x						**6-59**
Travel reduction units oil			x				**6-60**
Alternator	x						**6-61**
Starter motor	x						**6-61**
Every 2000 hours							
Hydraulic oil suction filter						x	**6-62**
Hydraulic oil return filter		x					**6-63**

Maintenance action	Check	Replace	Change fluid	Cleaning	Grease	Drain fluid	Page no.
Pilot line filter		x					**6-64**
Every 4000 hours							
Engine coolant			x				**6-65**
Pump outlet hoses	x						**6-68**
Hydraulic hoses	x						**6-68**
Every 5000 hours							
Hydraulic oil and filters			x				**6-69**
When necessary							
Fuel feed pump				x			**6-72**
Gas spring inspection	x						**6-74**
Fuel tank strainer				x			**6-74**
Bulb replacement		x					**6-75**
Bucket teeth		x					**6-77**
Cylinders	x						**6-79**
Plastic and resin parts				x			**6-79**
Air conditioning system	x						**6-80**
Fuel pre-filter			x				**6-81**
Fuses and relays location							
Fuses		x					**6-82**

Break-in period

Cab protection (ROPS and FOPS)

Check the cab protections after **50 h**: To check the cab protections refer to page **6-46**.

Tightening torques

Check the tightening torques after **50 h**: To check the tightening torques refer to table on page **6-44**.

Track shoe bolt torque

Check the tracks shoes bolts torque after **50 h**: To check the tightening torques refer to table on page **6-45**.

Hydraulic oil return filter

Replace the hydraulic return filter after **250 h**: To replace the hydraulic return filter perform the operations described on page **6-63**.

Pilot line filter

Replace the pilot filter after **250 h**: To replace the pilot filter perform the operations described on page **6-64**.

Travel reduction units oil

Replace the travel reduction gear oil after **250 h**: To replace the travel reduction gear oil perform the operations described on page **6-60**.

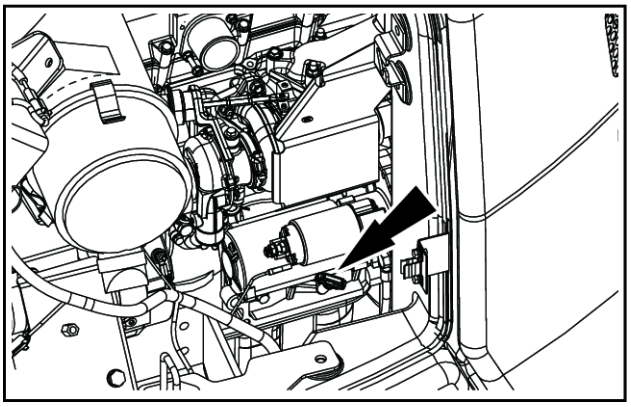
Every 10 hours

Engine oil level

Check the engine oil level every **10 h** or every day
Lubricant: **CASE AKCELA UNITEK 10W-40**

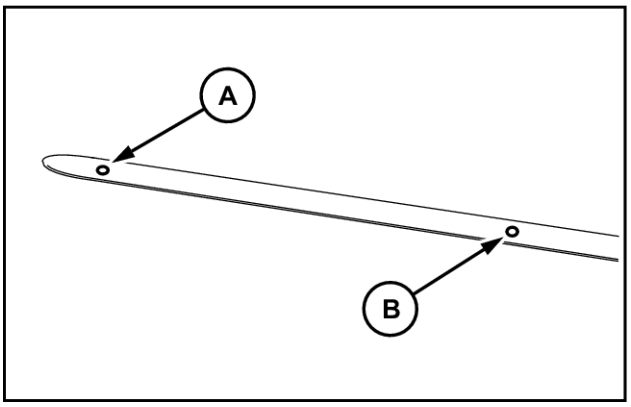
To check the engine oil level proceed as follows:

1. Take the oil gauge out of the guide tube and wipe any oil off with a clean cloth.
2. Insert the gauge all the way into the guide tube, then gently take it out.



SMIL13CEX2780AB 1

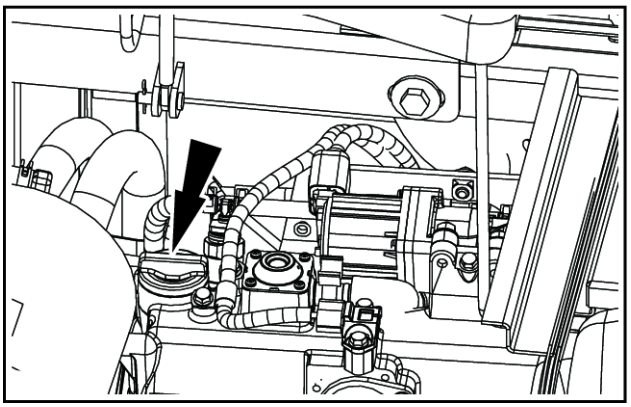
3. If the oil level is between the **(A)** (minimum) and **(B)** (maximum), then the level is appropriate. Also inspect the degree of soiling and viscosity of the oil.



SMIL13CEX2781AB 2

4. If the oil level is at or below the mark **(A)** (minimum) on the oil gauge, remove the fill plug, pour in oil until the level reaches the mark **(B)** (maximum), then install the fill plug.
5. After the inspection, insert the oil level gauge correctly back into place.

NOTICE: *do not raise the oil level above the mark* ***(B)*** *(maximum) on the oil gauge.* ***10 – 20 min*** *after refilling, check the oil level again.*



SMIL13CEX2782AB 3

Engine coolant level

⚠ WARNING

Hazardous chemicals!
Coolant can be toxic. Avoid contact with skin, eyes, and clothing. Antidotes:
EXTERNAL - Rinse thoroughly with water. Remove soiled clothing.
INTERNAL - Rinse the mouth with water. DO NOT induce vomiting. Seek immediate medical attention.
EYES - Flush with water. Seek immediate medical attention.
Failure to comply could result in death or serious injury.

W0282A

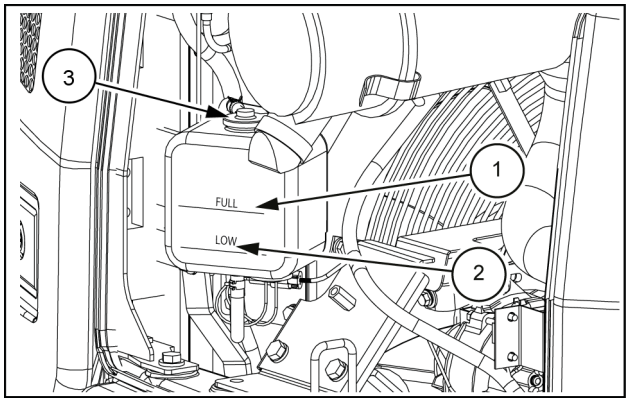
Check the coolant level in the reserve tank every **10 h** or every day
Fluid: **CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT**

NOTICE: *make sure that the level of the engine coolant is checked after the engine has cooled down.*

NOTICE: *the refilling of the engine coolant shall be done only if the level of coolant in the reserve tank is at the LOW mark.*

NOTICE: *If the refilling frequency is higher than **250 h**, CASE CONSTRUCTION recommends not to further refill the system: carefully inspect the cooling circuit for damages, replace any damaged part, and then replace the whole fluid into the cooling system. Refer to the dedicated procedure described ahead in this Chapter.*

1. Park the machine on a flat and level place. Stop the engine, and remove the starter key.
2. Open the engine hood.
3. Check that the level of the reserve tank is between the FULL **(1)** mark and the LOW **(2)** mark.
4. If the coolant level is at the LOW mark, remove the plug **(3)** and add coolant until the level is right below the FULL mark.
5. Install the plug **(3)**.



SMIL14CEX4574AB 1

Hydraulic oil level

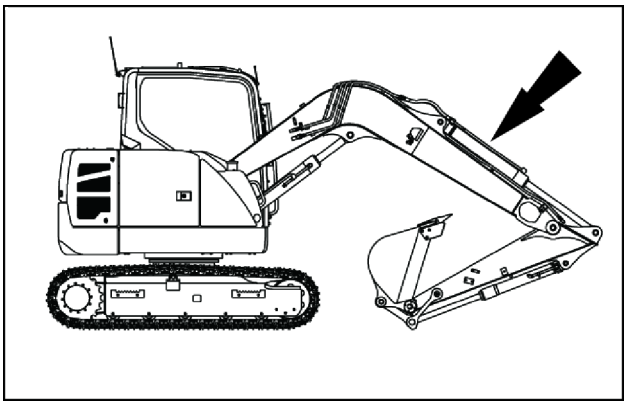
⚠ WARNING

Burn hazard!
Before performing any service on the hydraulic system, you must allow it to cool. Hydraulic fluid temperature should not exceed 40 °C (104 °F).
Failure to comply could result in death or serious injury.

W0241A

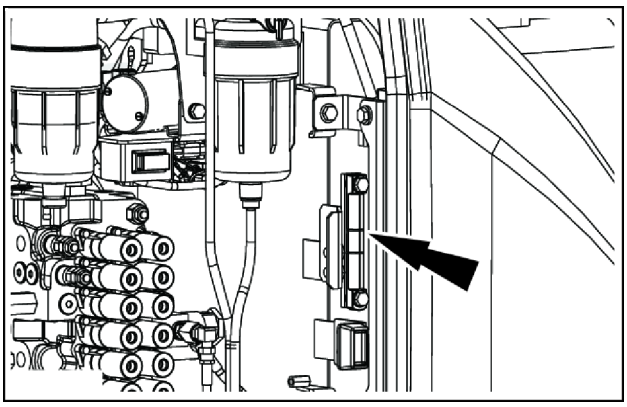
Check the hydraulic oil level every **10 h** or every day
Fluid: **CASE AKCELA HYDRAULIC LL 46**

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



SMIL13CEX2784AB 1

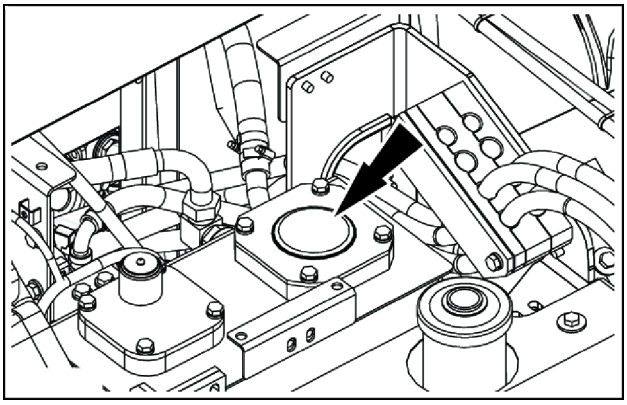
2. The oil should be in the middle of the indicator.



SMIL13CEX2785AB 2

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

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



SMIL13CEX2786AB 3

Fuel tank drain

⚠ WARNING

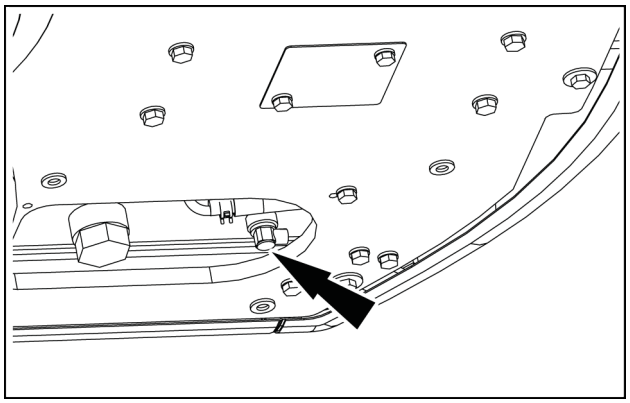
Fire hazard!
When handling diesel fuel, observe the following precautions:
1. Do not smoke.
2. Never fill the tank when the engine is running.
3. Wipe up spilled fuel immediately.
Failure to comply could result in death or serious injury.

W0099A

Drain water and sediment from the fuel tank every **10 h** or every day

NOTE: *Take all necessary precautions during the following operations; no foreign matter must enter the fuel system.*

1. Place a receptacle of a suitable capacity under the drain plug.
2. Open the drain valve located at the bottom of the tank and drain the accumulated sediment and water.
3. After draining, close the drain valve.



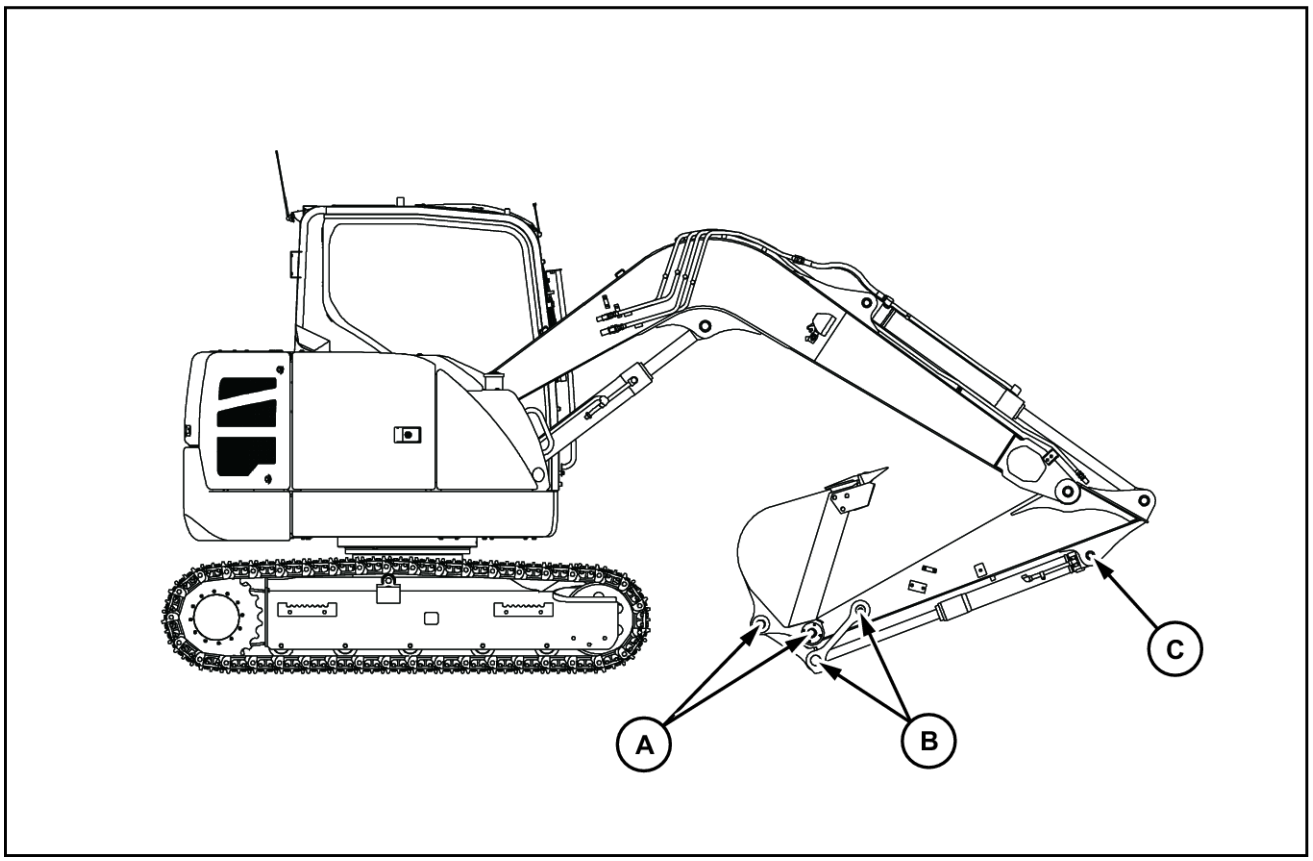
SMIL14CEX4577AA 1

Fan and alternator drive belt

Visual check: Every **10 h** or every day

Every 50 hours

Grease points (Arm and backhoe bucket)

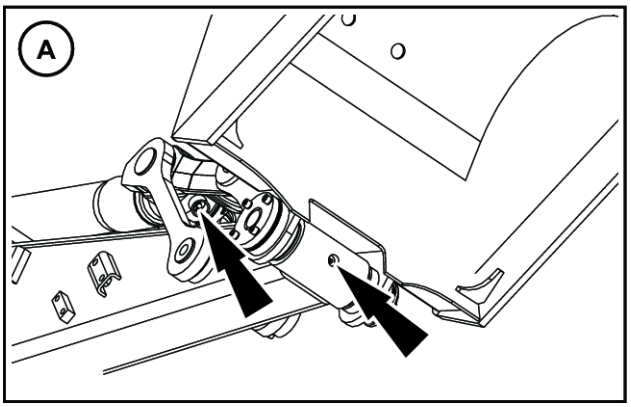


SMIL13CEX2733FB 1

Using a grease gun, inject grease of the specified type in the grease points shown in figures:

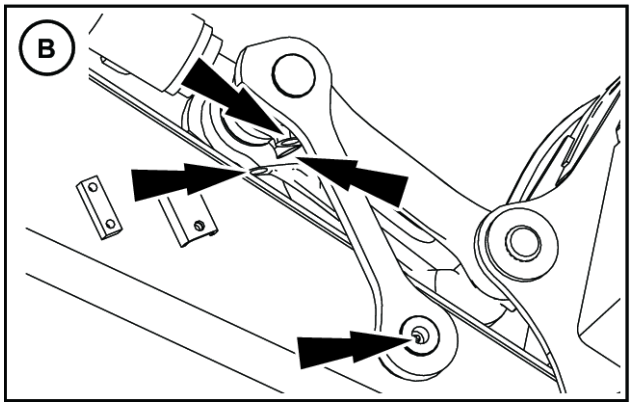
- Bucket linkages

NOTE: *if a tool other than the bucket (for example, the hydraulic hammer) is installed, these points must be lubricated every* ***10 h****.*



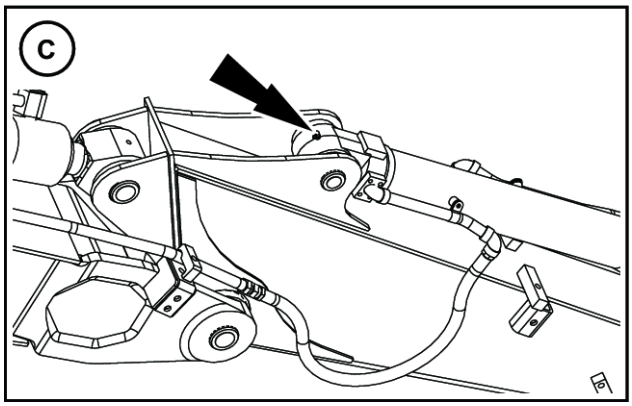
SMIL13CEX2876AB 2

- Arm link/connecting rod



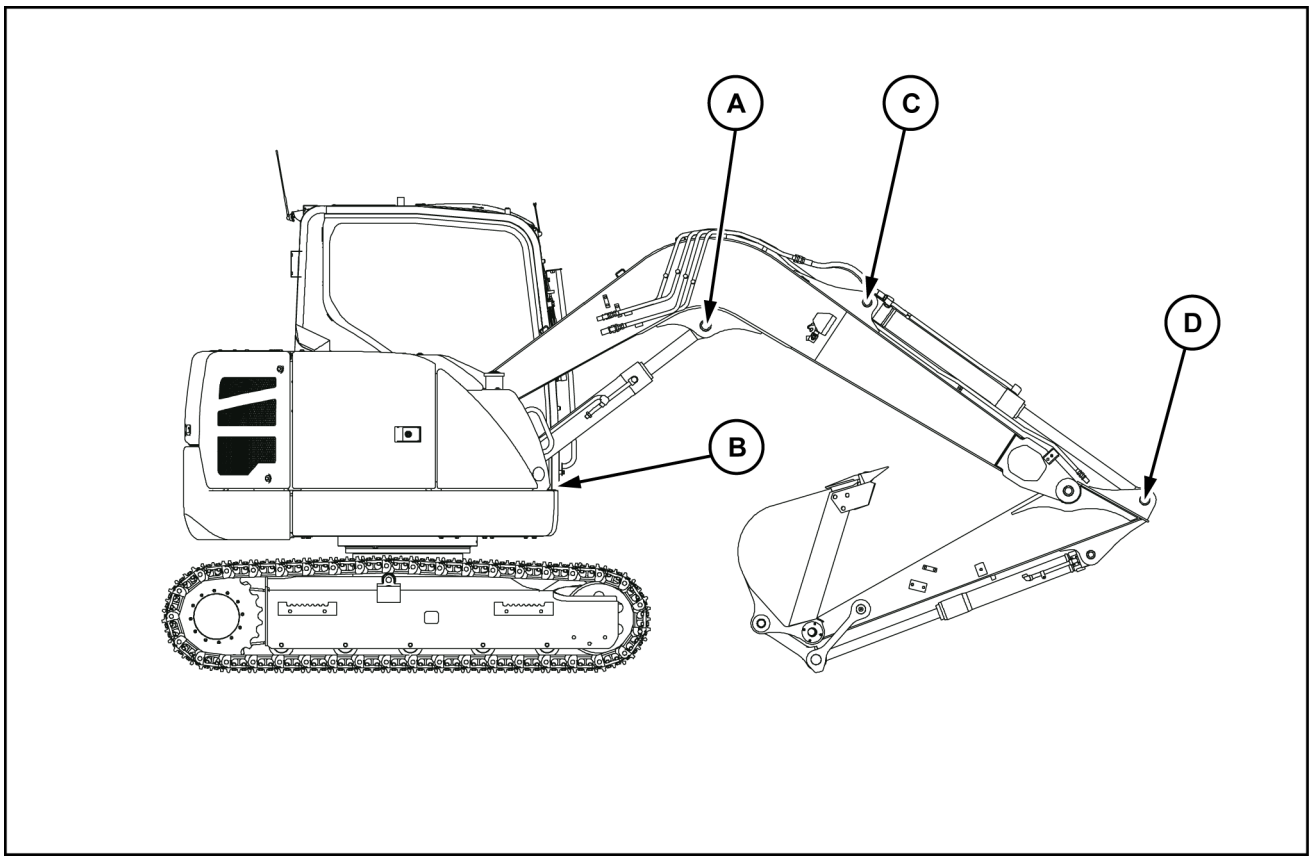
SMIL13CEX2877AB 3

- Bucket cylinder bottom pin



SMIL13CEX2878AB 4

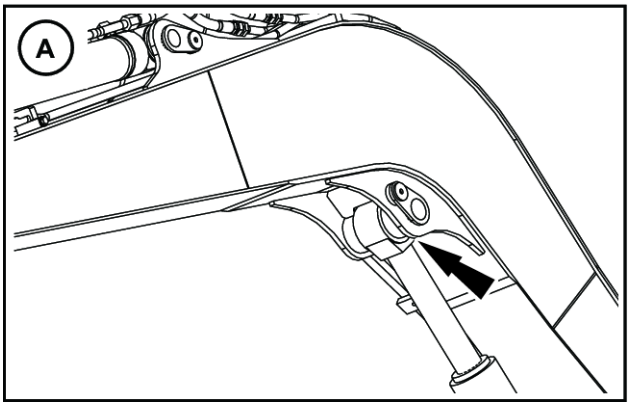
Grease points (Boom)



SMIL13CEX2840FB 1

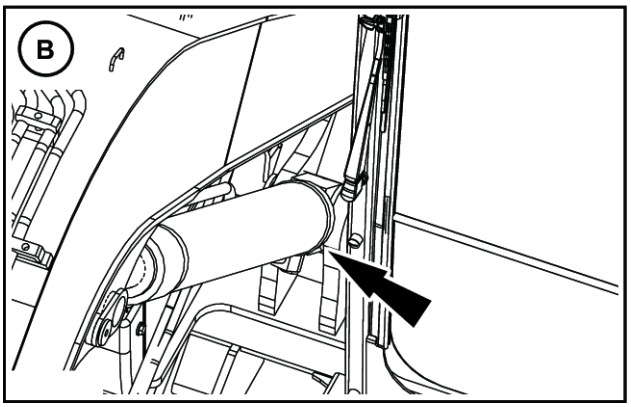
Using a grease gun, inject grease of the specified type in the grease point shown in figure.

- Boom cylinder top pin



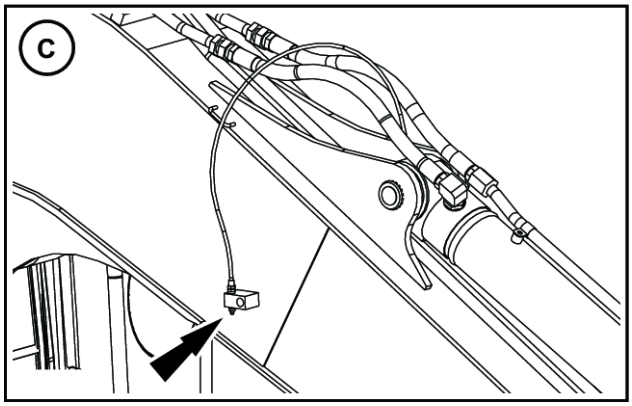
SMIL13CEX2737AB 2

- Boom cylinder bottom pin



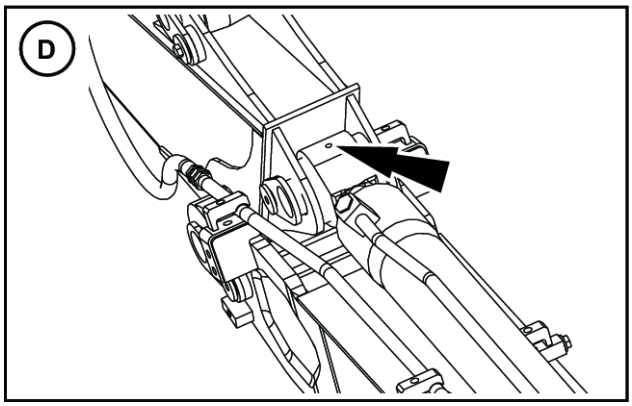
SMIL13CEX2738AB 3

- Arm cylinder bottom pin



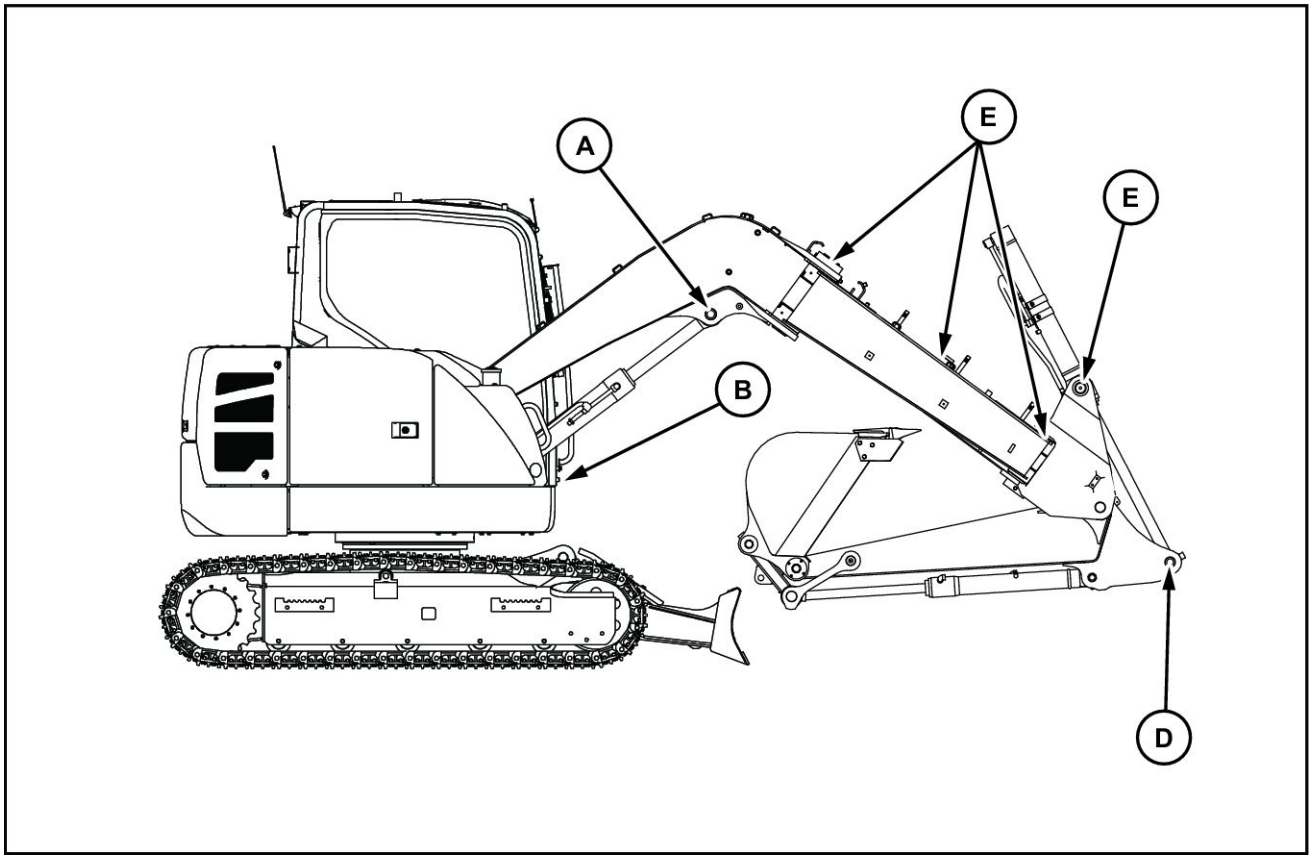
SMIL13CEX2739AB 4

- Arm cylinder top pin



SMIL13CEX2740AB 5

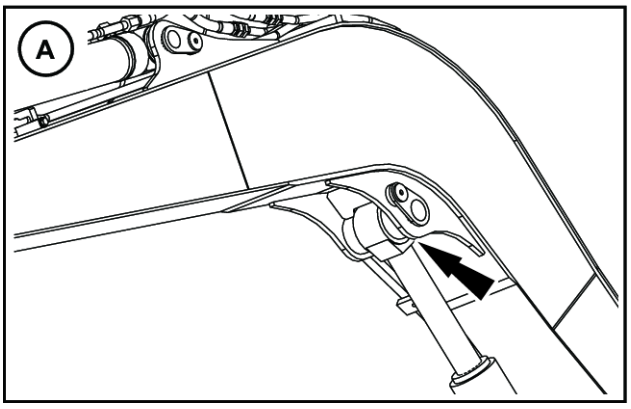
Grease points (Offset boom)



SMIL13CEX2912FB 1

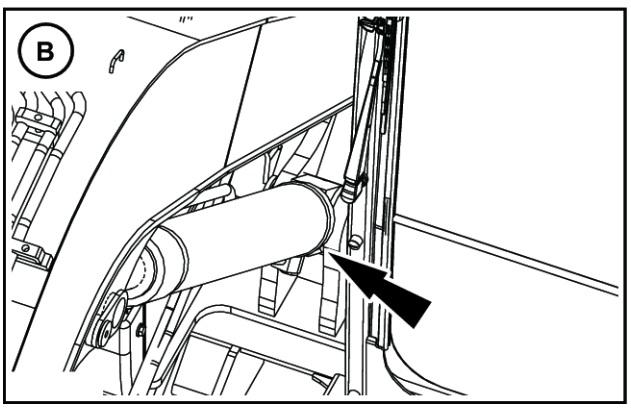
Using a grease gun, inject grease of the specified type in the grease point shown in figure.

- Boom cylinder top pin



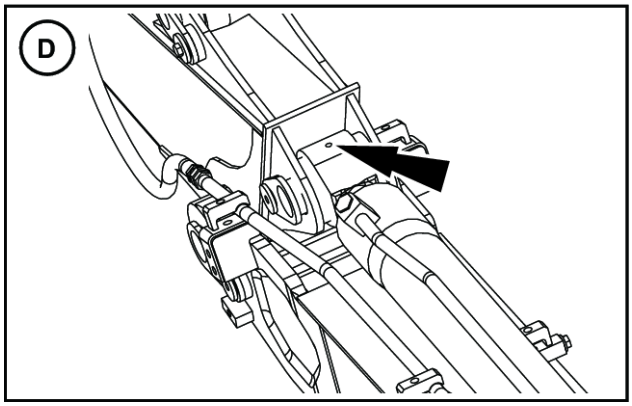
SMIL13CEX2737AB 2

- Boom cylinder bottom pin



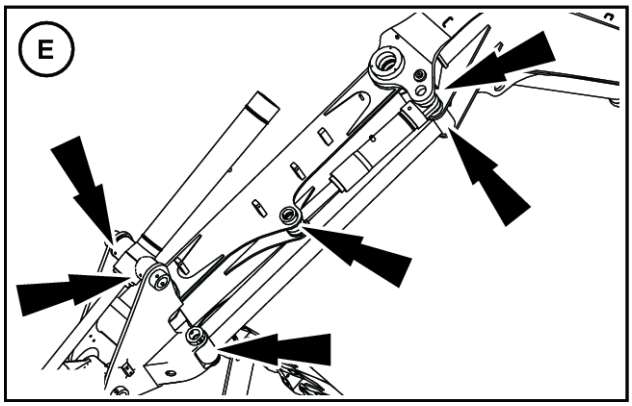
SMIL13CEX2738AB 3

- Arm cylinder top pin

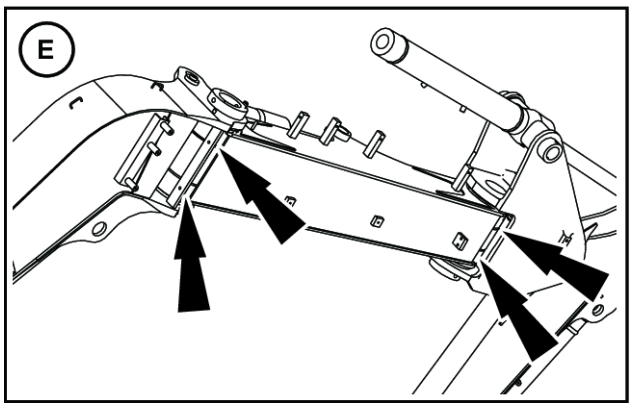


SMIL13CEX2740AB 4

- Offset boom pins

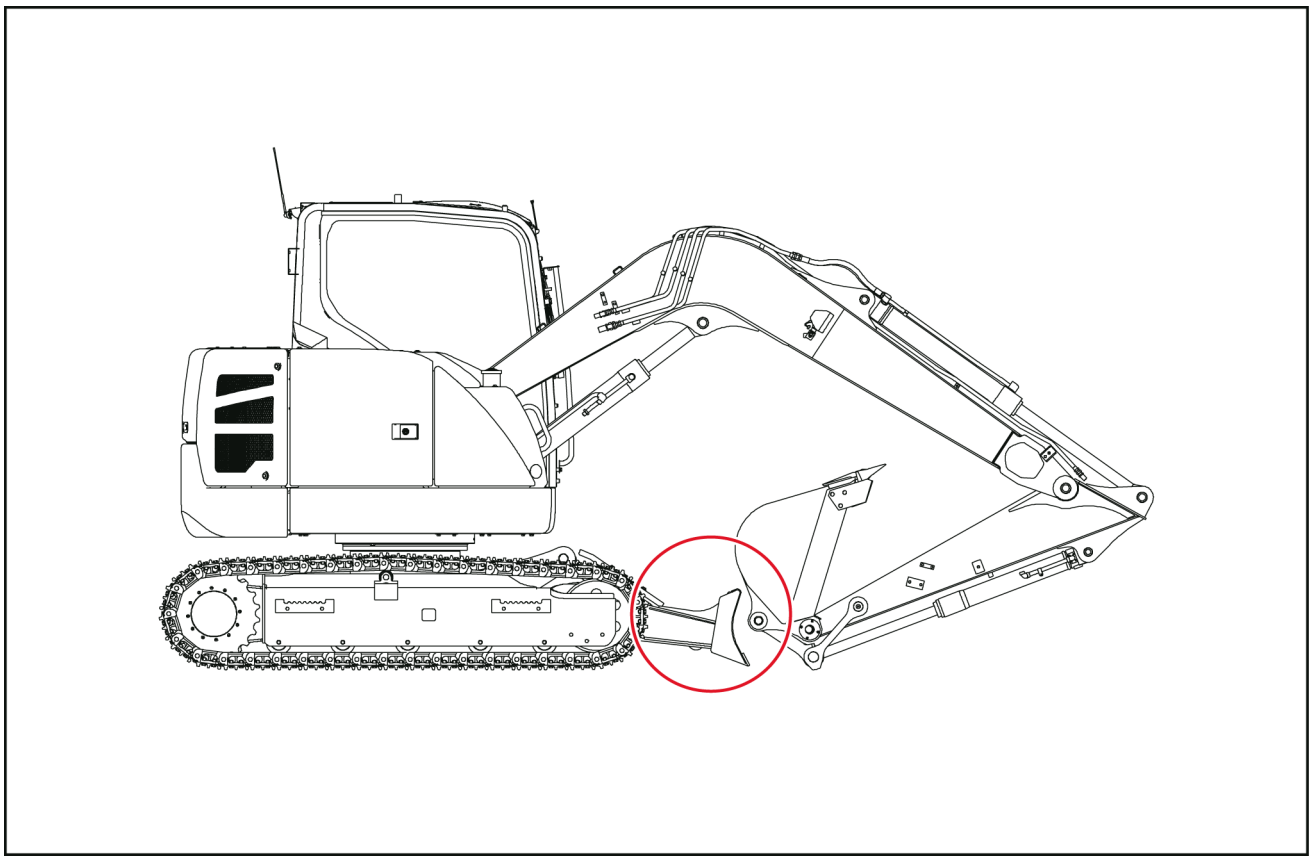


SMIL13CEX2913AB 5



SMIL13CEX2914AB 6

Grease points (Dozer blade)

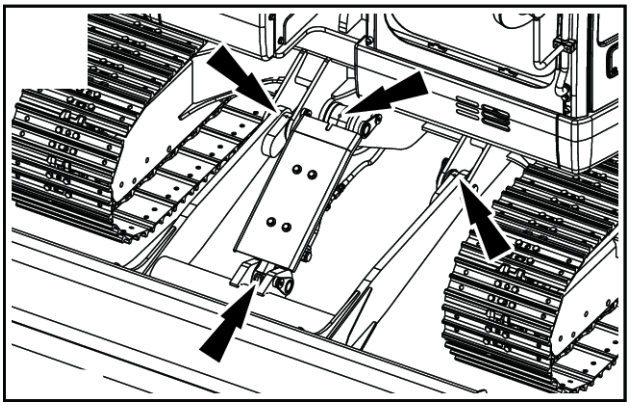


SMIL13CEX2839FB 1

Using a grease gun, inject grease of the specified type in the grease points shown in figure.

- Blade, blade cylinder foot pin and blade cylinder top pin.

NOTE: *after lubrication, refit the protective plastic caps to the grease fittings.*



SMIL13CEX2742AB 2

Tracks

NOTICE: *if the tracks are too tight, they wear quickly. If tracks are not tight enough, they wear quickly and the links can catch on the sprocket wheel or slide off the idler wheel or the sprocket wheel. Clean the tracks after work.*

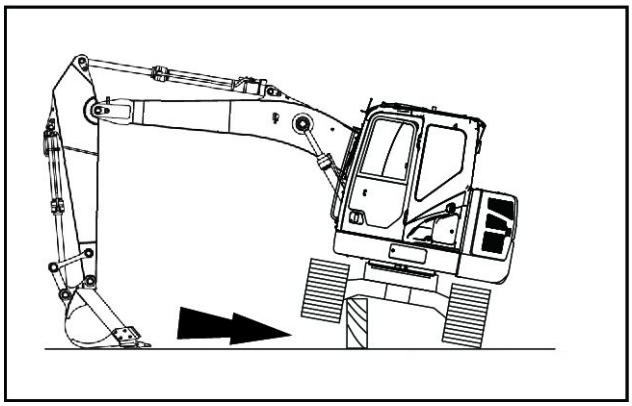
⚠ WARNING

Tip-over hazard!
Only raise the track as little as necessary.
Failure to comply could result in death or serious injury.

W0276A

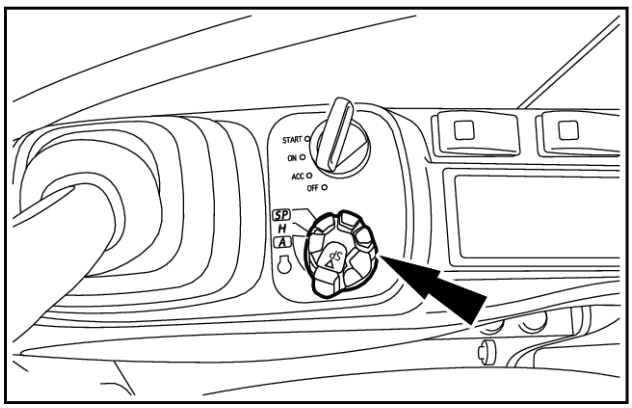
To check the tracks tension, proceed as follows:

1. Swing the upper structure to a straight angle relative to the undercarriage. Lower the attachment to the ground, then lower the boom until the track is raised off the ground. Place a block under the undercarriage and raise the attachment off the ground.



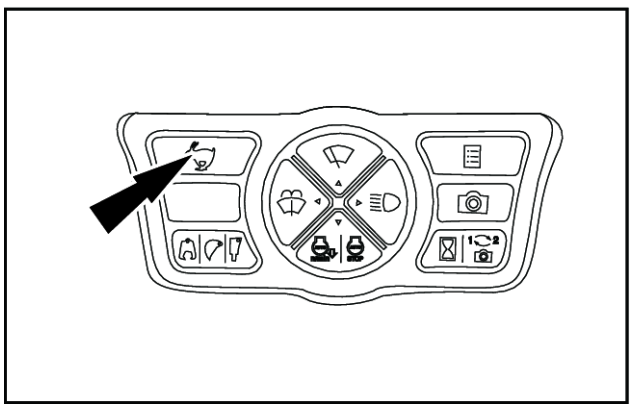
SMIL13CEX2746AB 1

2. Turn the engine speed throttle to the maximum speed position.



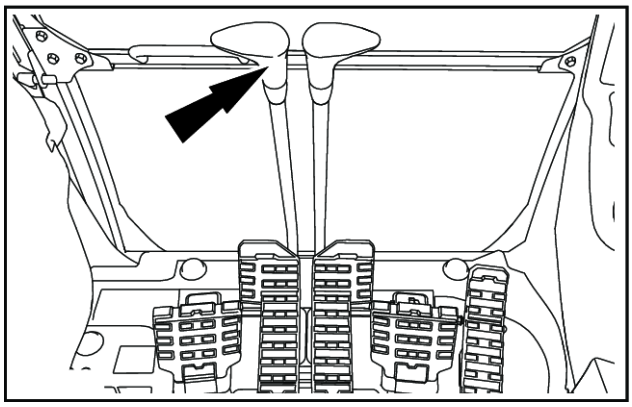
SMIL13CEX2715AB 2

3. Set the travel speed selector to high speed.



SMIL13CEX2719AB 3

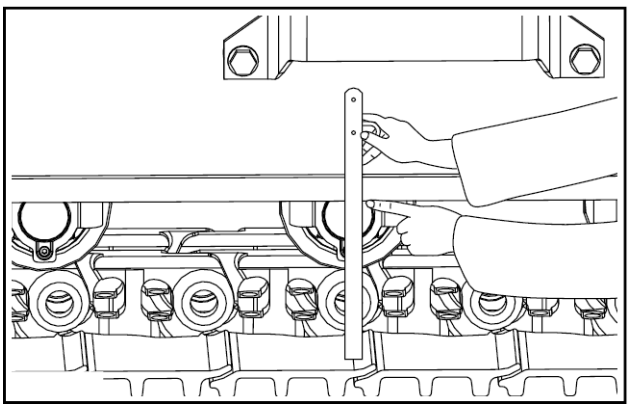
4. Operate the travel control lever to move the raised track forward and backward and shake off the mud.
5. Repeat the same operations for the other track.



SMIL13CEX2747AB 4

Checking the tension

1. If the track is not yet raised, perform the same procedure as for cleaning to put the machine into the required position.
2. Operate the travel control lever to move the raised track rearward for a while.
3. Stop the engine, then remove the key from the starter switch.
4. At the center of the track, measure the slack between the base of the undercarriage and the pad. The value must be within the following range:
   450 mm (**17.717 in**) steel track: **160 – 180 mm** (**6.3 – 7.1 in**)
   450 mm (**17.717 in**) rubber pads: **140 – 160 mm** (**5.5 – 6.3 in**)
   450 mm (**17.717 in**) rubber track: **125 – 135 mm** (**4.9 – 5.3 in**)
   600 mm (**23.622 in**) steel track: **160 – 180 mm** (**6.3 – 7.1 in**)
5. Adjust the tension as necessary, then lower the track to the ground.
6. Repeat the same operations for the other track.

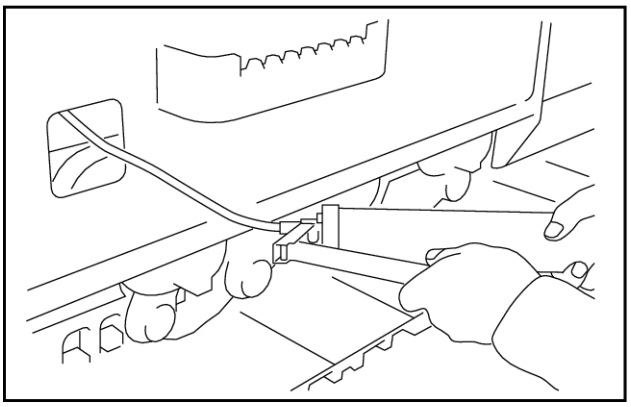


SMIL13CEX2748AA 5

Adjusting the tension

To increase the tension:

1. Clean the grease fitting adapter and the grease fitting.
2. Connect the grease pump. Inject the grease to obtain the right amount of track tension.
3. Remove the grease pump and clean the grease fitting.
4. Repeat the same operations for the other track.



SMIL13CEX2749AA 6

⚠ WARNING

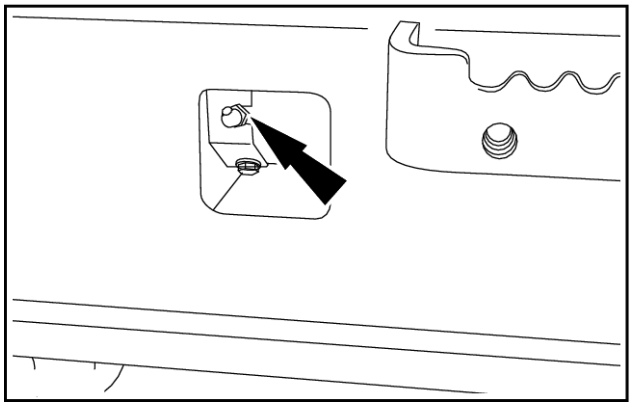
Pressurized fluid can penetrate the skin and cause severe injuries.
The grease in the cylinder is under high pressure. Never loosen the grease fitting adaptor completely in order to speed up the flow of grease.
Failure to comply could result in death or serious injury.

W0261A

To reduce the tension:

1. Turn the grease fitting adapter about 3 times to loosen it and drain grease from the cylinder.
2. When the track tension is correct, tighten the adapter.
3. Clean the grease adapter and fitting, then lower the track to the ground.
4. Repeat the same operations for the other track.

NOTICE: *if the grease fitting adaptor is damaged, grease may leak out. Check the condition of the grease fitting adaptor regularly and replace it if necessary.*



SMIL13CEX2750AB 7

Air conditioner filters

⚠ CAUTION

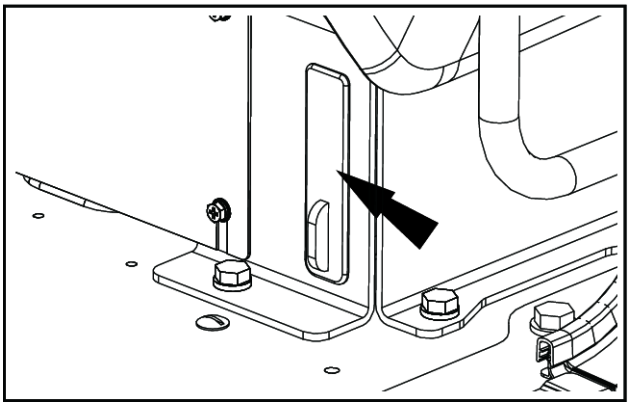
Flying debris!
Compressed air can propel dirt, rust, etc. into the air. Wear eye and face protection when using compressed air.
Failure to comply could result in minor or moderate injury.

C0049A

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

To clean the circulation filter, proceed as follows:

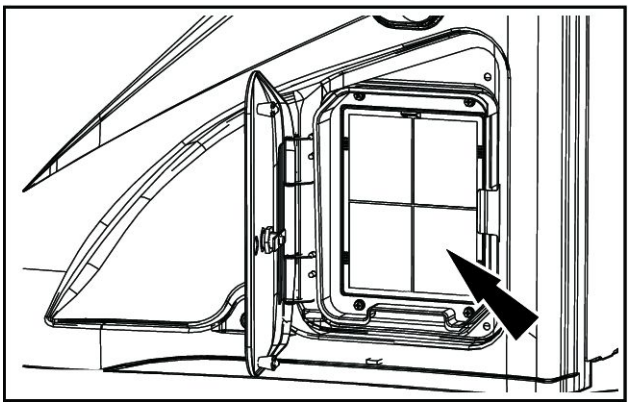
1. Remove the filter and clean it with compressed air. If the filter is damaged, replace it.
2. Install the filter.



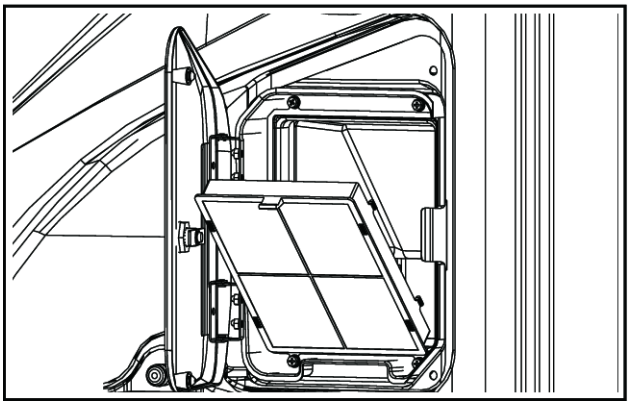
SMIL13CEX2751AB 1

To clean the suction filter, proceed as follows:

1. Remove the air cleaner and clean it with compressed air. Replace the filter if it is damaged.
2. Place the filter in the housing according to the installation procedure.



SMIL13CEX2752AB 2



SMIL13CEX2753AB 3

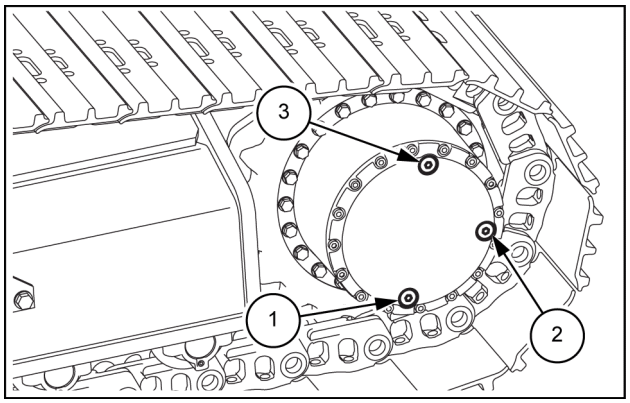
Every 250 hours

Travel reduction units oil

Check the travel reduction gears oil level every **250 h**.
Lubricant: **CASE AKCELA GEAR LUBE 135 H EP 80W-90**

1. Park the machine on flat, horizontal ground.
2. Move the machine so that the drain plug **(1)** comes down to the lowest position.
3. Stop the engine and remove the starter key.
4. Slowly loosen the air bleed plug **(3)** to release the internal pressure of the case.
5. Remove the level plug **(2)**, and check the oil level. If the level comes up to the bottom edge of the port **(2)**, it is sufficient.

   If necessary, add oil through the port **(3)** until the oil comes up to the bottom edge of the port **(2)**.
6. Check the O-ring seal of the level plug **(2)** for damages, and replace it if necessary. Insert the level plug **(2)** with seal tape wrapped around it.
7. Check the O-ring seal of the air bleed plug **(3)** for damages, and replace it if necessary. Insert the air bleed plug **(3)** with seal tape wrapped around it.
8. Repeat Steps **2** to **7** for the other travel reduction gear.
9. Run the machine slowly to check that there are no leaks.



SMIL14CEX2849AB 1

Engine primary air filter

⚠ CAUTION

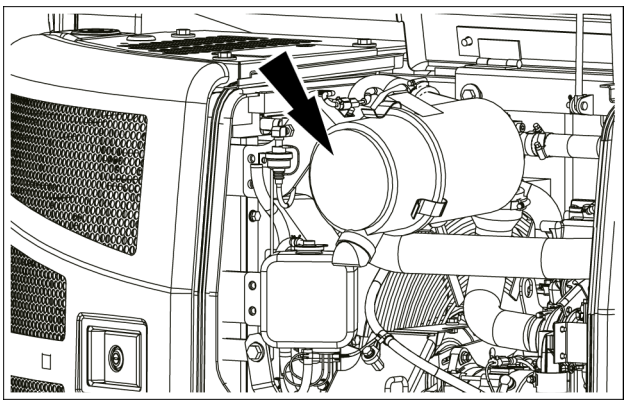
Flying debris!
Compressed air can propel dirt, rust, etc. into the air. Wear eye and face protection when using compressed air.
Failure to comply could result in minor or moderate injury.

C0049A

Clean the engine primary air filter every **250 h** or when the AIR FILTER message is displayed.

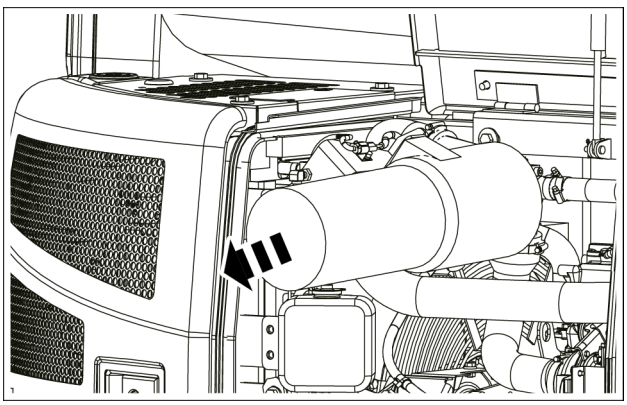
NOTE: *The primary element can be cleaned. The secondary element cannot be cleaned and must be changed.*

1. Release the fasteners, and remove the cover.



SMIL17CEX7693A 1

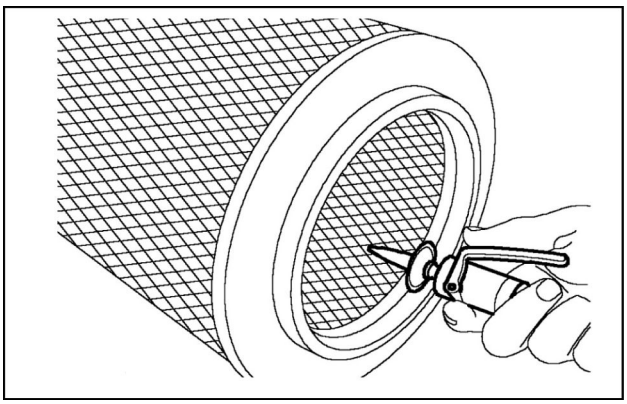
2. Remove the primary element.



SMIL17CEX7948AA 2

When the primary element is dry:
Blow compressed air at very low pressure from the inside to the outside.
Hold the compressed air nozzle at a position at least **3 cm** (**1.181 in**) away from the inside wall of the element. When no more dust comes out of the primary element, cleaning is complete.

NOTE: *Be sure to keep the compressed air pressure below **7 bar**.*



SMIL14CEX2795AA 3

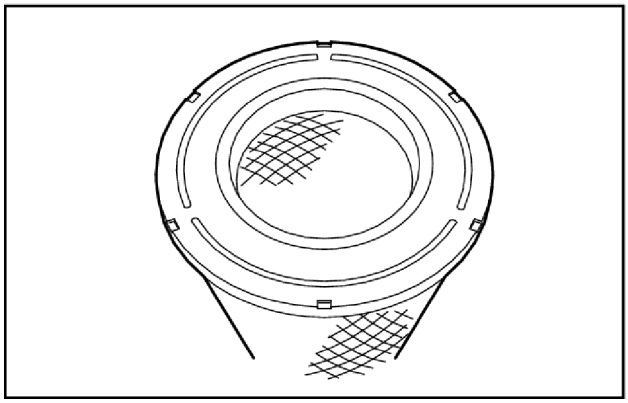
NOTE: *Do not use compressed air if there is oil or soot in the element.*

If the cartridge is greasy:

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

Instructions for using the detergent are printed on the package.

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

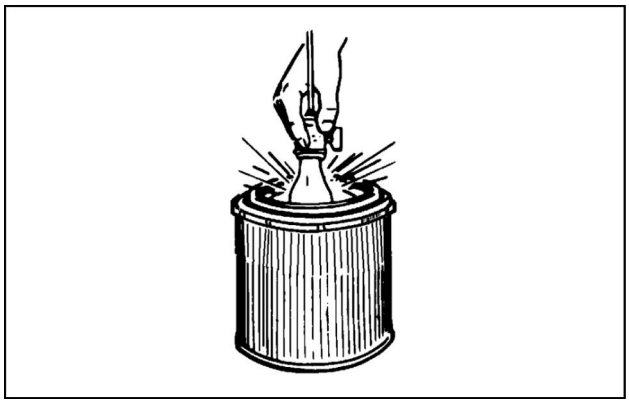


SMIL13CEX2757AA 4

Inspecting the element

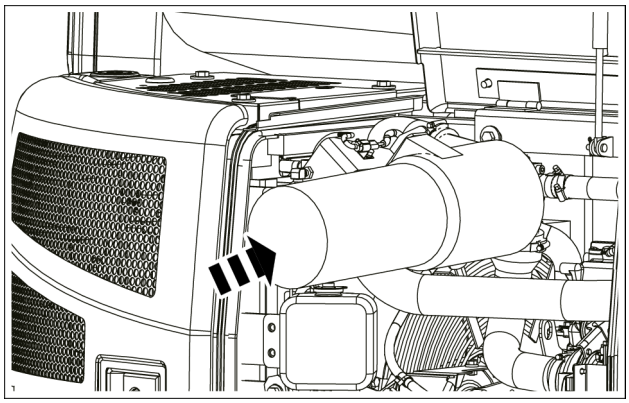
Check the element for damage by placing an inspection lamp inside the element.

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



SMIL14CEX2797AA 5

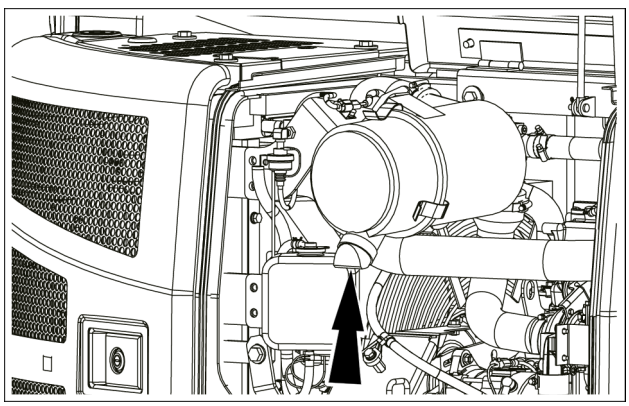
3. Clean the inside of the air cleaner case, and attach the primary element.
4. Attach the cover (with the "TOP" display facing up), and lock the fasteners.



SMIL17CEX7948AA 6

5. Check that the dust ejector under the filter is operating correctly.

NOTE: *If, after cleaning, smoke exhaust is abnormal, be sure to replace the primary element of the air cleaner.*



SMIL17CEX7693A 7

Fuel pre-filter

⚠ 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

Replace the fuel pre-filter element every **250 h**

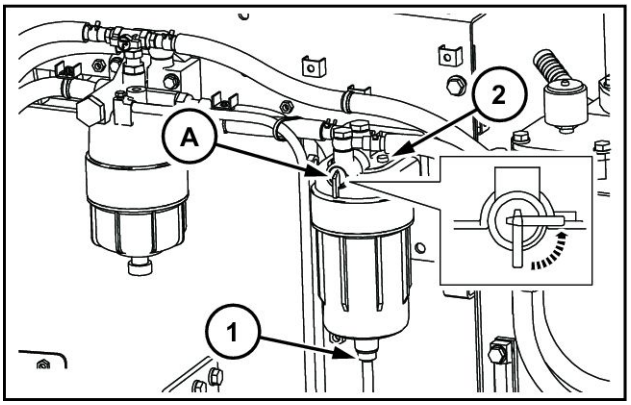
NOTICE: *Replace fuel pre-filter when the text message FUEL FILTER is displayed on the monitor. The filter could be clogged earlier than **250 h** depending on the fuel quality and other conditions.*

NOTICE: *Do not work in any environment in which anything other than fuel will get into fuel lines. (Sites with strong wind, blowing dust, etc.). Wash hands before operations. Do not use gloves. Do not open the packaging for the filter kit until you start the installation work. Do not reuse any fuel remaining within the cover. For persistent dirt within the cover, wipe it off with a clean rag, then clean with clean diesel fuel. Do not use parts cleaner because it could affect the case cover. Do not touch the inside of the element. Completely wipe off any spilled fuel after changing the filter element.*

NOTICE: *Use of fuel filters other than CASE CONSTRUCTION genuine components, is prohibited.*

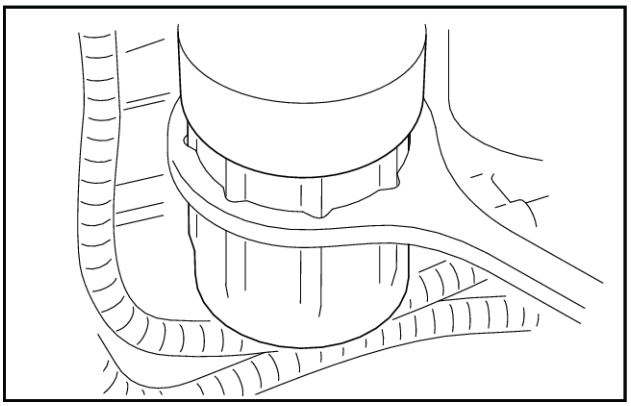
To replace the fuel pre-filter proceed as follows:

1. Place a receptacle of a suitable capacity under the fuel pre-filter.
2. Close the fuel pre-filter valve **(A)**.
3. Loosen the drain plug **(1)** and the bleed screw **(2)** then drain the fuel and sediments from the pre-filter.



SMIL13CEX2762AB 1

4. Clean around the fuel pre-filter case.
5. Remove the fuel pre-filter case using the wrench provided with the machine.



SMIL13CEX2763AA 2

6. Install the new filter element. Replace the filter case seal, then install the case turning it until it is in contact with the pre-filter head.

NOTICE: *do not fill the filter body with fuel before installing.*

7. Tighten the case using the wrench.
   Filter case tightening torque:
   28 – 32 N·m (**20.7 – 23.6 lb ft**).

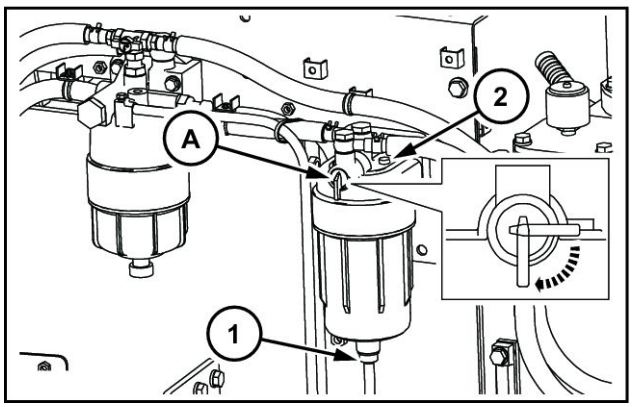
8. Replace the drain plug **(1)** seal, then tighten the drain plug **(1)** and the air bleed screw **(2)**.
   Drain plug tightening torque:
   1.5 – 2.5 N·m (**1.1 – 1.8 lb ft**)
   Air bleed screw tightening torque:
   8.0 – 12.0 N·m (**5.9 – 8.9 lb ft**)

NOTICE: *overtightening can damage the seal.*

NOTICE: *never reuse the seal of the filter case or the drain plug **(1)**, they must always be replaced with new seals.*

NOTICE: *tighten no more than the specified torque.*

9. Open the fuel pre-filter valve **(A)**.
10. Bleed the fuel system. Refer to page **6-11**.



SMIL13CEX2764AB 3

Battery electrolyte level

⚠ WARNING

Improper operation or service of this machine can result in an accident.
Before working on any component(s) of the electrical circuit, put the ignition key in the off (shut down) position. When disconnecting batteries, always disconnect the negative (-) cable first. When reconnecting batteries, always connect the negative (-) cable last.
Failure to comply could result in death or serious injury.

W0943A

⚠ WARNING

Battery acid causes burns. Batteries contain sulfuric acid.
Avoid contact with skin, eyes or clothing. Antidote (external): Flush with water. Antidote (eyes): flush with water for 15 minutes and seek medical attention immediately. Antidote (internal): Drink large quantities of water or milk. Do not induce vomiting. Seek medical attention immediately.
Failure to comply could result in death or serious injury.

W0111A

⚠ WARNING

Battery gas can explode!
To prevent an explosion: 1. Always disconnect the negative (-) battery cable first. 2. Always connect the negative (-) battery cable last. 3. Do not short circuit the battery posts with metal objects. 4. Do not weld, grind, or smoke near a battery.
Failure to comply could result in death or serious injury.

W0011A

⚠ WARNING

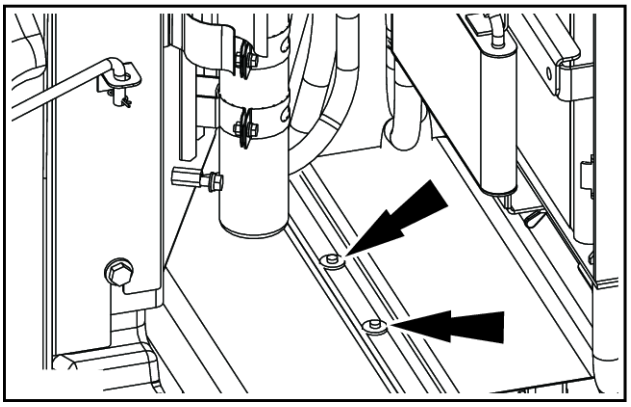
Explosive gas!
Batteries emit explosive hydrogen gas and other fumes while charging. Ventilate the charging area. Keep the battery away from sparks, open flames, and other ignition sources. Never charge a frozen battery.
Failure to comply could result in death or serious injury.

W0005A

Check the electric charge of the battery every **250 h**.
Check of electrolyte level of the battery every **250 h**.

To check the charge state of the batteries, proceed as follows:

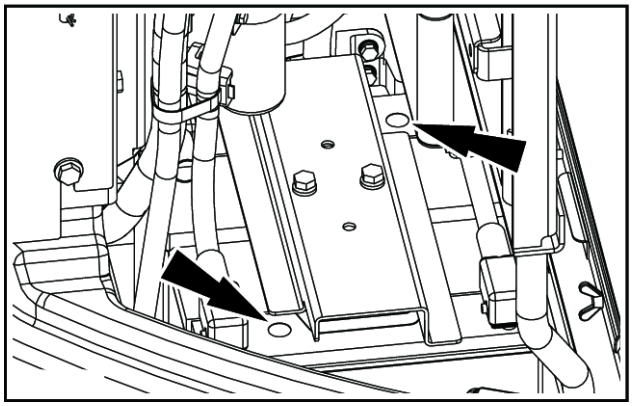
- Reach the battery by opening the door on the left rear and removing the skid plate there.



SMIL13CEX2770AB 1

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

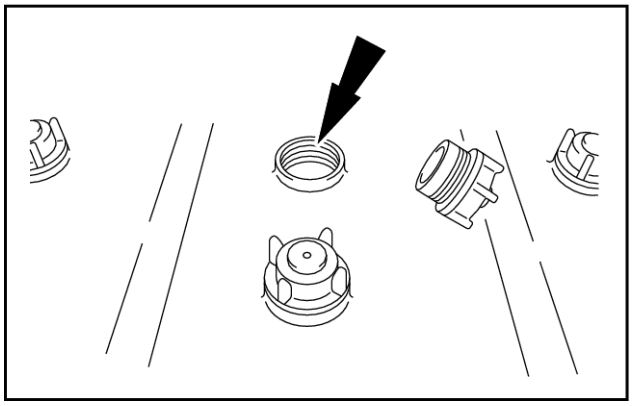
- Green: the charge is correct.
- Black: insufficient charge: recharge the battery until the indicator turns green.
- Transparent (colourless): replace the battery as soon as possible.



SMIL13CEX2771AB 2

To check the electrolytic solution level of a maintenance type battery, proceed as follows:

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



SMIL13CEX2772AB 3

NOTICE: *when adding distilled water at temperatures below* ***0 °C*** *(****32.0 °F****), the batteries must be charged or the engine run for two hours approximately in order to ensure that the distilled water and the electrolyte are properly mixed.*

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

Changing a battery

⚠ WARNING

Electrical shock hazard!
Do not reverse battery terminals. Connect positive cable ends to positive terminals (+) and negative cable ends to negative terminals (-).
Failure to comply could result in death or serious injury.

W0262A

⚠ WARNING

Hazard to bystanders!
Always store batteries in a safe location. Keep out of reach of children and other unauthorized persons.
Failure to comply could result in death or serious injury.

W0224A

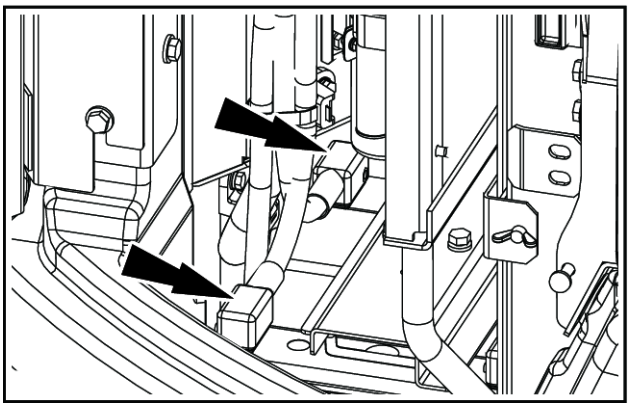
⚠ WARNING

Battery acid causes burns. Batteries contain sulfuric acid.
Battery electrolyte contains sulfuric acid. Contact with skin and eyes could result in severe irritation and burns. Always wear splash-proof goggles and protective clothing (gloves and aprons). Wash hands after handling.
Failure to comply could result in death or serious injury.

W0120A

To replace the battery, proceed as follows:

1. Place the key of the battery master switch in O (off) position.
2. Remove the terminal protection caps, disconnect cables (negative terminals) and then cables (positive terminals). Remove the anti-sulphate pellets and the battery clips.
3. Install a new battery, put back its clips.
4. Clean the cables and battery terminals and coat them with grease.
5. Install new anti-sulphate pellets, reconnect positive cable ends to positive terminals and then negative cable ends to negative terminals. Install the terminal protection caps.
6. Place the key of the battery master switch in “I” (on) position.
7. Install the skid plate.



SMIL13CEX2773AB 4

Connecting booster batteries

Make sure that the booster battery voltage corresponds to the voltage system of the machine (**24 V**).

1. Place the key of the battery master switch in “O” (off) position.
2. Remove the terminal sleeves.
3. Connect the positive (+) cable to the positive (+) terminal on the first machine battery.
4. Connect the negative (-) cable to the negative (-) terminal on the second machine battery.
5. Start the engine.
6. Place the key of the battery master switch in “I” (on) position.
7. Remove the booster battery negative (-) cable and then the positive (+) cable.
8. Install the terminal sleeves.

Fan and alternator drive belt

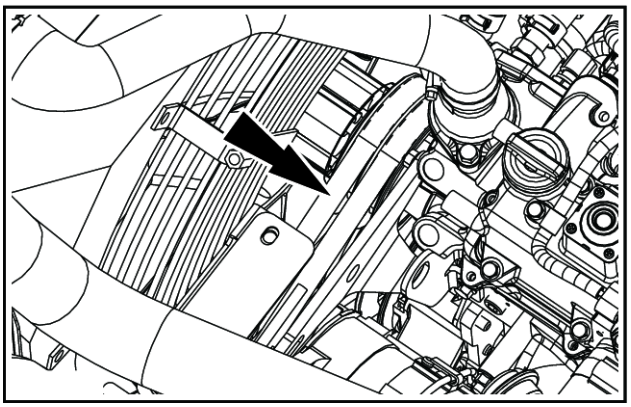
Check the belt tension every **250 h**.

To check the belt tension proceed as follows:

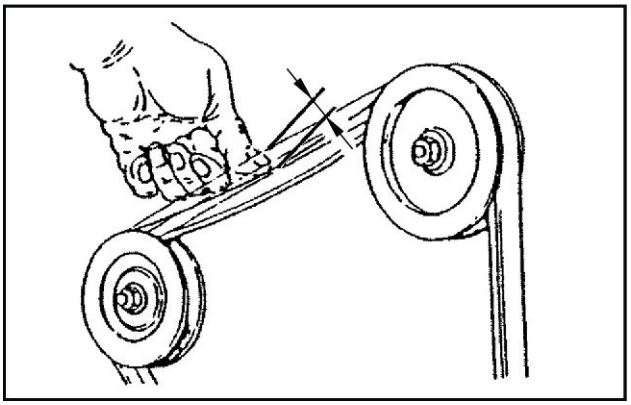
1. Stop the engine.
2. Remove the key from the starter switch.
3. Press the center of the belt with a finger with a pressure of about **10 kg** (**22.0 lb**).
   Deflection range (new part)
   7.7 – 8.7 mm (**0.303 – 0.343 in**)
   Deflection range (reused part)
   8.3 – 9.3 mm (**0.327 – 0.366 in**)

NOTICE: *if the engine runs with the belt slack, the belt can slip in its housing and cause the engine to overheat or the battery to receive insufficient charge.*

NOTE: *check that there is no damage due to wear on the pulley or the belt. Check that the belt is positioned correctly in the pulley groove. Replace the belt if it is stretched, cracked, or frayed.*



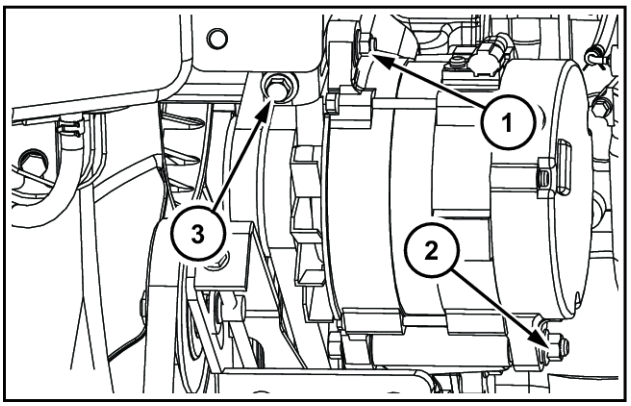
SMIL13CEX2774AB 1



SMIL13CEX2775AB 2

To adjust the belt tension proceed as follows:

1. Remove the locking screw **(1)**.
2. Remove the locking screw **(2)**.
3. Use the adjusting screw **(3)** to move the alternator outwards until the belt tension is correct.
4. Tighten the alternator mounting bolts **(1)** and **(2)**.

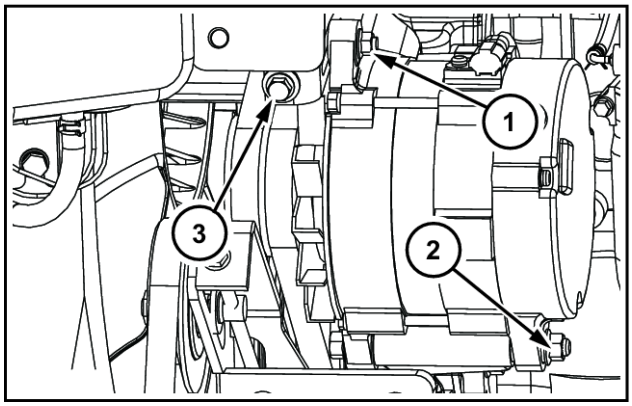


SMIL13CEX2776AB 3

NOTE: *If the belt is damaged, "ALTERNATOR" is displayed on the message screen.*

To replace the belt proceed as follows:

1. Stop the engine.
2. Remove the key from the starter switch.
3. Remove the locking screws **(1)**.
4. Remove the locking screws **(2)**.
5. Use the adjusting screw **(3)** to push the alternator inwards.
6. Remove the worn belt.
7. Install a new belt.
8. Use the adjusting screw **(3)** to adjust the belt.
9. Tighten the locking screws **(1)** and **(2)** again.
10. Run the engine for about **1 h**, then check the belt tension again.
11. Set the deflection to be in the range **7.7 – 8.7 mm** (**0.303 – 0.343 in**).



SMIL13CEX2776AB 4

Hydraulic oil tank

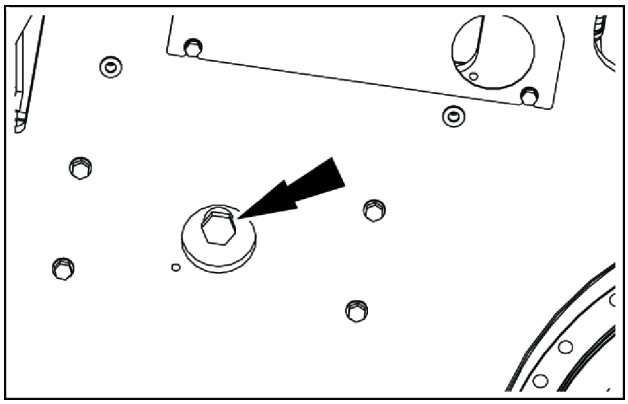
⚠ WARNING

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

Drain water and sediment from the hydraulic oil tank every **250 h**

1. Release all the pressure in the hydraulic tank. Refer to page **6-10**.
2. Place a receptacle of a suitable capacity under the drain plug.
3. Open the drain plug on the bottom of the tank and drain the sediment and water accumulated at the bottom of the tank.
4. After draining, close the drain plug.
5. Add hydraulic oil if necessary.



SMIL13CEX2761AB 1

Tightening torques

Check the tightening torques every **250 h** (after the first **50 h** during the run-in period).

NOTICE: *At the end of each working day, check all mounting nuts and screws for tightness and tighten if necessary. Make sure no hardware items are missing. Replace them, if necessary.*

Component		Screw	Wrench	Torque setting
Traction motor **(*)**		**M16**	**24 mm** (**0.9 in**)	**267 – 312 N·m** (**197 – 230 lb ft**)
Drive sprocket **(*)**		**M14**	**22 mm** (**0.8 in**)	**173 – 202 N·m** (**128 – 149 lb ft**)
Take-up roller **(*)**		**M10**	**17 mm** (**0.6 in**)	**63 – 73 N·m** (**47 – 54 lb ft**)
Upper roller **(*)**		**M16**	**24 mm** (**0.9 in**)	**267 – 312 N·m** (**197 – 230 lb ft**)
Lower roller **(*)**		**M20**	**30 mm** (**1.2 in**)	**521 – 608 N·m** (**384 – 448 lb ft**)
Front guard **(*)**		**M16**	**24 mm** (**0.9 in**)	**267 – 312 N·m** (**197 – 230 lb ft**)
Shoe		**M14**	**22 mm** (**0.8 in**)	**220 – 270 N·m** (**162 – 199 lb ft**)
Counterweight		**M24**	**36 mm** (**1.4 in**)	**850 – 992 N·m** (**627 – 731 lb ft**)
Turntable bearing		**M16**	**24 mm** (**0.9 in**)	**252 – 283 N·m** (**186 – 209 lb ft**)
Revolving equipment **(*)**		**M16**	**24 mm** (**0.9 in**)	**273 – 318 N·m** (**201 – 234 lb ft**)
Engine mount **(*)**		**M16**	**24 mm** (**0.9 in**)	**265 – 314 N·m** (**195 – 232 lb ft**)
Engine rear bracket **(*)**		**M10**	**17 mm** (**0.6 in**)	**64 – 74 N·m** (**47 – 54 lb ft**)
Radiator		**M12**	**19 mm** (**0.7 in**)	**64 – 74 N·m** (**47 – 54 lb ft**)
Hydraulic pump **(*)**		**M18**	**14 mm** (**0.6 in**) (Hexagon wrench)	**335 N·m** (**247 lb ft**)
Hydraulic reservoir **(*)**		**M12**	**19 mm** (**0.7 in**)	**98 – 108 N·m** (**72 – 80 lb ft**)
Fuel reservoir **(*)**		**M12**	**19 mm** (**0.7 in**)	**98 – 108 N·m** (**72 – 80 lb ft**)
Control valve **(*)**		**M12**	**19 mm** (**0.7 in**)	**64 – 74 N·m** (**47 – 54 lb ft**)
Center joint **(*)**	Locking bar	**M12**	**19 mm** (**0.7 in**)	**88 – 107 N·m** (**65 – 79 lb ft**)
	Joint	**M12**	**19 mm** (**0.7 in**)	**109 – 127 N·m** (**80 – 94 lb ft**)
Cab		**M16**	**24 mm** (**0.9 in**)	**149 – 173 N·m** (**110 – 128 lb ft**)
Battery		**M10**	**17 mm** (**0.7 in**)	**20 – 29 N·m** (**15 – 22 lb ft**)

NOTE: *On the screws with mark (*), use* ***LOCTITE® 262™*** *or its equivalent.*

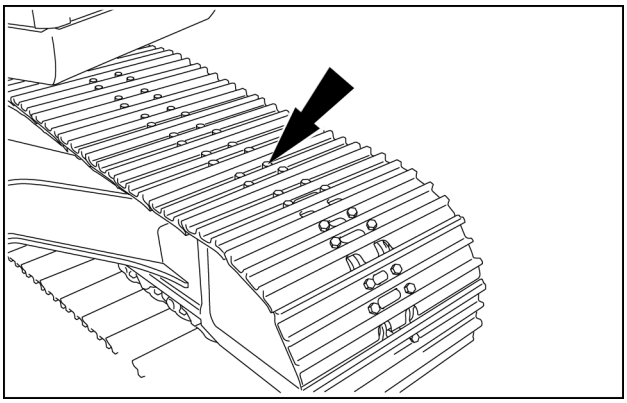
Track shoe bolt torque

Check the torque of the track shoe every **250 h** (after the first **50 h** during the run-in period)

NOTE: *If the tracks are too tight, they wear quickly. If tracks are not tight enough, they wear quickly and the links can catch on the sprocket wheel or slide off the idler wheel or the sprocket wheel. Clean the tracks after work.*

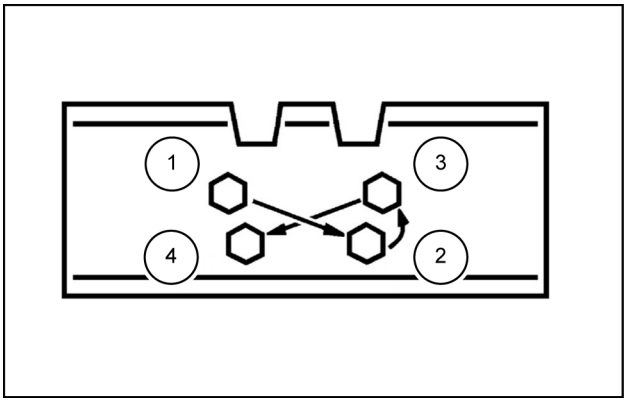
NOTE: *Check the screws for tightness periodically. Do not use the machine with track pad screws loose. Otherwise, the screws may come out to cause damage to tracks.*

The screw tightening torque must be **220 – 270 N·m** (**162 – 199 lb ft**).



SMIL17CEX3811AA 1

NOTE: *Follow the specified order when tightening the screws.*

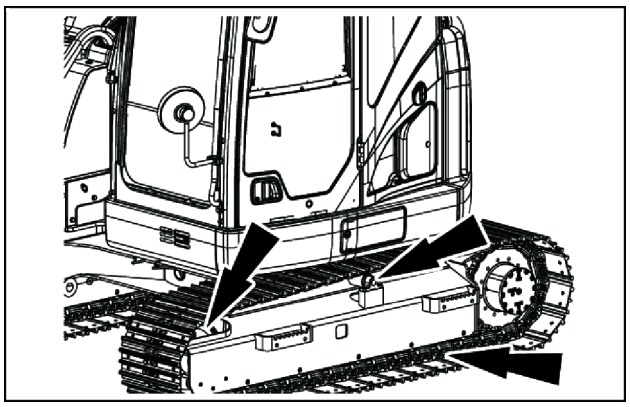


SMIL14CEX2859AA 2

Track rollers and idler wheels

Visually check the track rollers and the idler wheels every **250 h**

Floating seals are used on the upper/lower roller and the idler wheel. Although they endure enough until the average overhaul timing, visually check for oil leaks before work. If there is any oil leak, the components need to be replaced. Consult the CASE CONSTRUCTION dealer.



SMIL13CEX2779AB 1

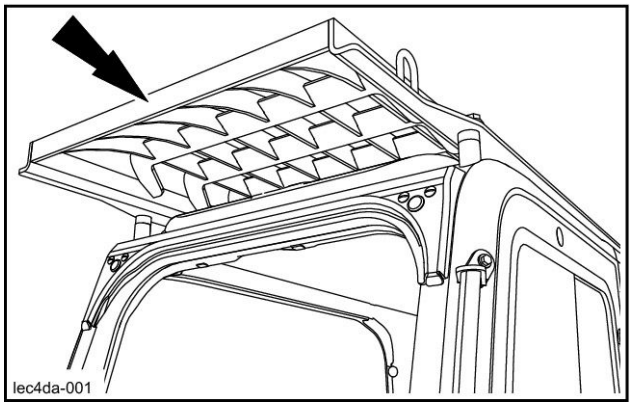
Cab protection (ROPS and FOPS)

Check the cab protection every **250 h** (after the first **50 h** during the run-in period)

Check the retaining hardware, if necessary retighten the screws.

Check the absence of cracks, rust or holes in the protective structure and the components that constitute it. Ageing, bad weather and accidents can cause damage. If you have even the slightest doubt regarding the condition of the structure, consult your CASE CONSTRUCTION Dealer.

If the protective structure has suffered any accident, it is necessary to replace the damaged components of the structure in order to restore the initial protection, consult your CASE CONSTRUCTION Dealer.



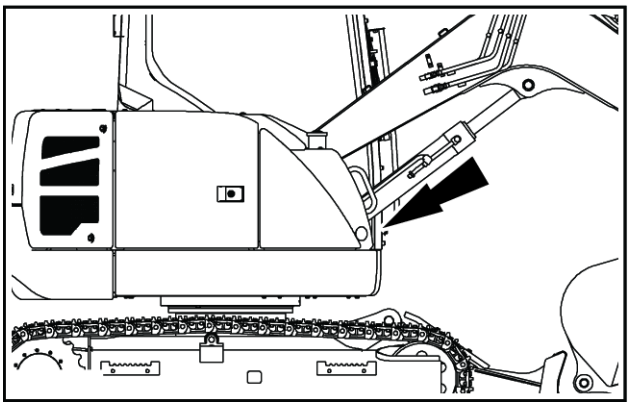
LEC4DA-001A 1

Every 500 hours

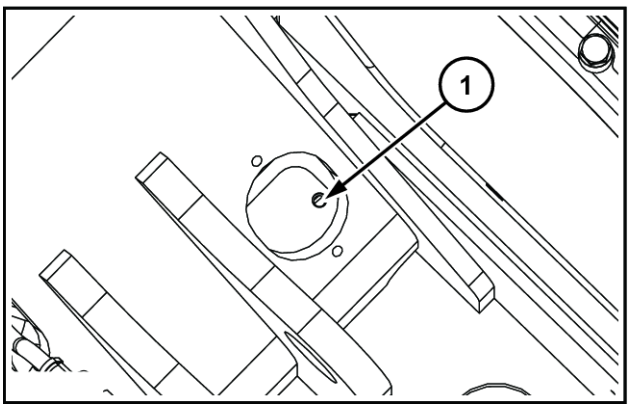
Swing bearing

To grease the swing bearing proceed as follows:

1. Remove the inspection cover **(1)** and visually check the condition of the gear surface and for any damage.
2. If the gear surface is not well greased, add grease.



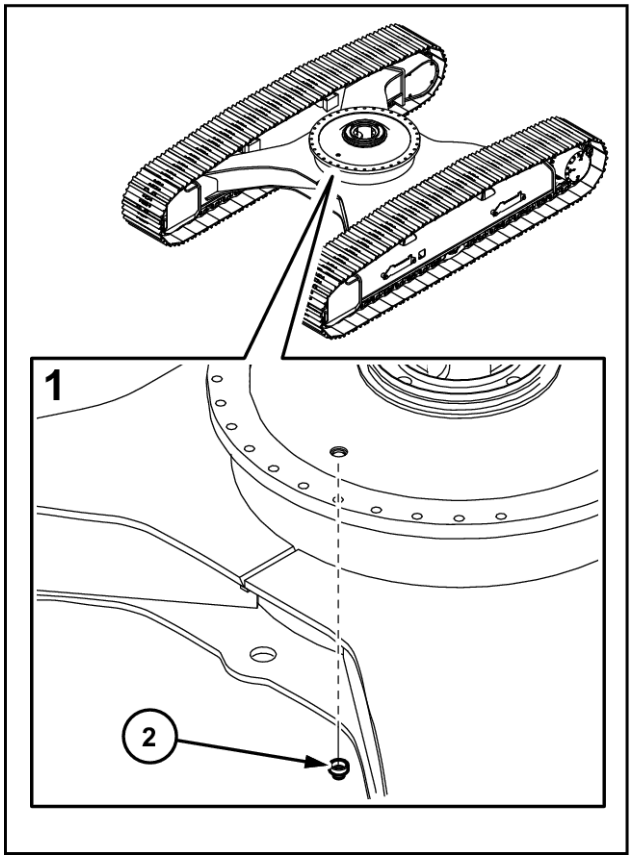
SMIL13CEX2806AB 1



SMIL13CEX2807AB 2

If the presence of water is detected, remove the plug **(2)** and drain off the water:

1. Remove the protective panel from the lower central area.
2. Remove plug **(2)**.
3. Discharge the water or contaminated grease.
4. Install plug **(2)**.
5. Inject new grease through the port and install the inspection cover **(1)**.



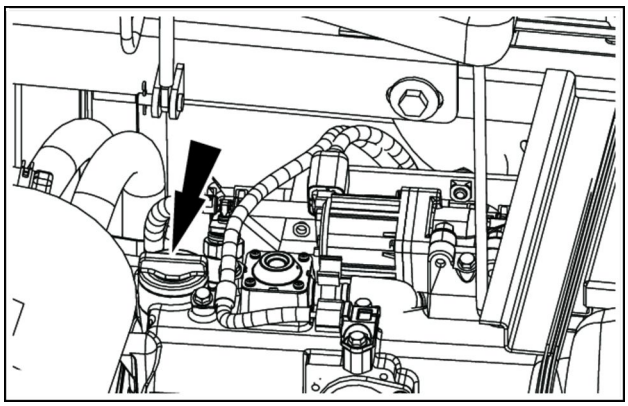
SMIL13CEX2808BB 3

Engine oil and filter

Replace the engine oil every **500 h**
Replace the engine oil filter every **500 h**
Lubricant: **CASE AKCELA UNITEK 10W-40**
Quantity: **11.5 L** (**3.0 US gal**)

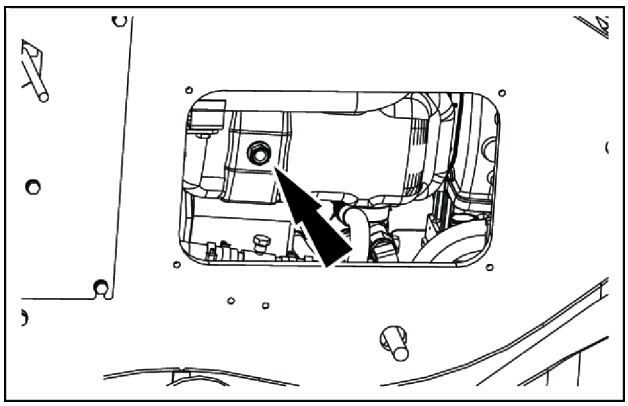
NOTE: *Replace the oil while the engine is warm. Doing so helps the oil in flowing.*

1. Park the machine on a flat and level place. Stop the engine and remove the starter key.
2. Raise and lock the engine hood, and remove the filling plug.



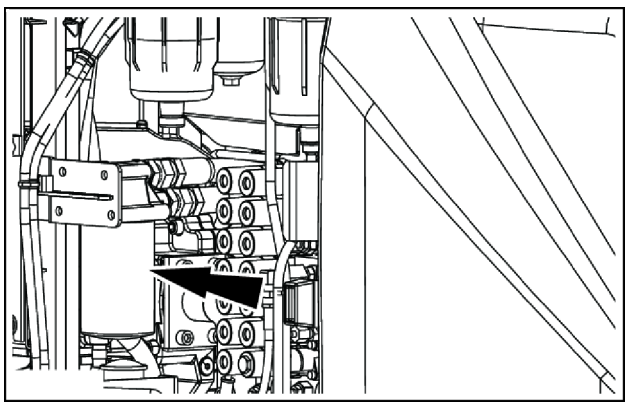
SMIL13CEX2782AB 1

3. Remove the lower panel under the engine oil pan.
4. Remove the protection cap from the drain valve on the engine oil pan.
5. Take out the extension drain hose provided with the machine from the front storage box. Screw one end of the extension drain hose onto the drain valve on the engine, and put the other end into a container with an appropriate capacity to drain the oil.
6. Remove the extension drain hose, and attach the protection cap to the drain valve on the engine housing. Stow the extension drain hose in the front storage box.



SMIL13CEX2801AB 2

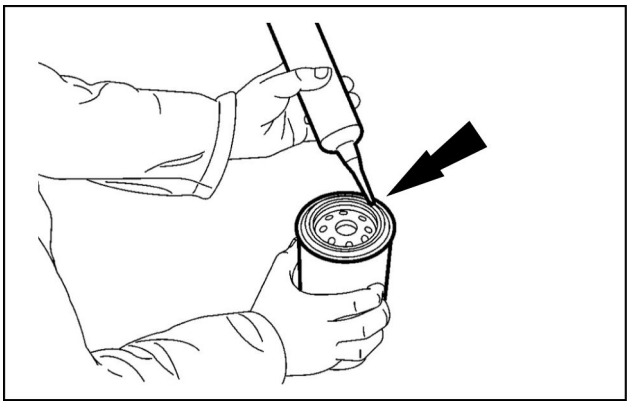
7. Open the rear right-hand door. Clean the area around the engine oil filter and remove it with the specific tool provided with the machine.



SMIL13CEX2802AB 3

8. Apply an oil film finely to the seal of a new filter.
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.*

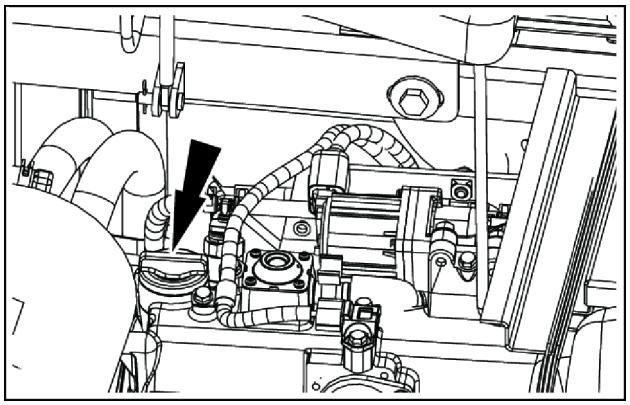


SMIL14CEX2751AA 4

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

    Recheck the level, and add oil if necessary.

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



SMIL13CEX2782AB 5

Fuel filter

⚠ WARNING

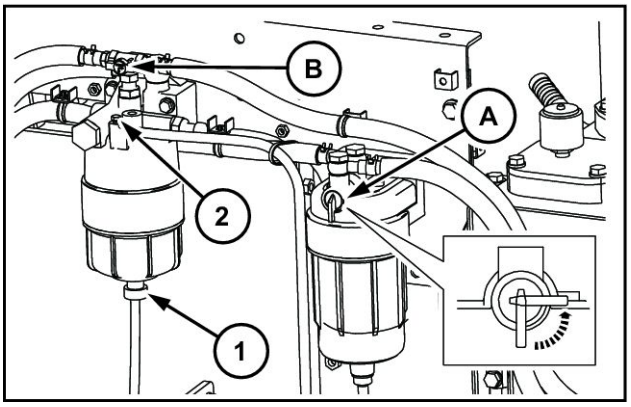
Fire hazard!
When handling diesel fuel, observe the following precautions:
1. Do not smoke.
2. Never fill the tank when the engine is running.
3. Wipe up spilled fuel immediately.
Failure to comply could result in death or serious injury.

W0099A

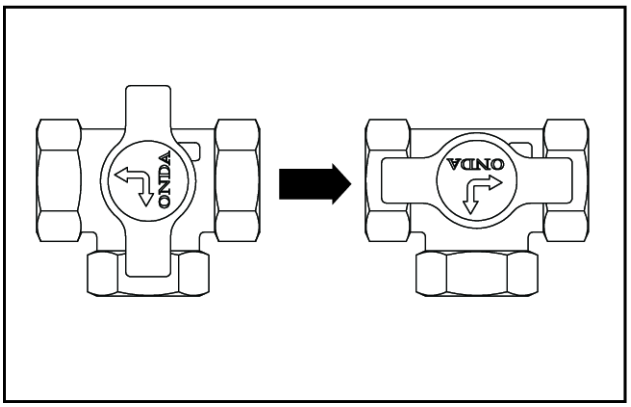
Replace the fuel filter element every **500 h**

To replace the fuel filter proceed as follows:

1. Place a receptacle of a suitable capacity under the fuel main filter.
2. Close the fuel pre-filter valve **(A)**.
3. Switch the fuel main filter valve **(B)** to the tank side.
4. Loosen the drain plug **(1)** and the bleed screw **(2)** then drain the fuel and sediments from the fuel main filter.

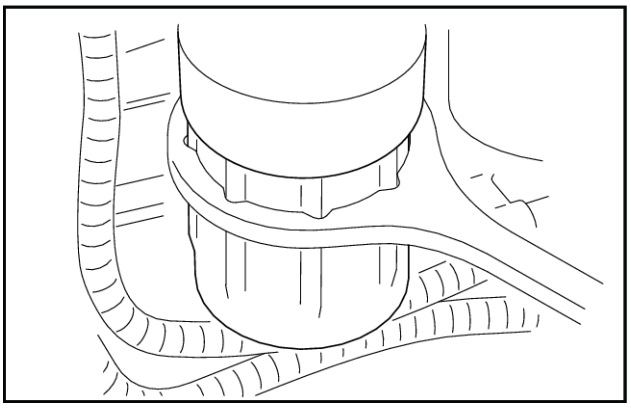


SMIL13CEX2804AB 1



SMIL13CEX2766AB 2

5. Clean around the fuel main filter case. Do not use cleaning spray. It could damage the case.
6. Use the filter wrench that came with the machine to remove the fuel main filter case, then clean inside the case with diesel fuel. Replace the used filter element with a new filter element being careful to not let any dirt or dust get on the new element.



SMIL13CEX2763AA 3

7. Replace the filter case seal, install the case, then turn it until it contacts the main filter head.

NOTICE: *do not fill the filter case with fuel before installing.*

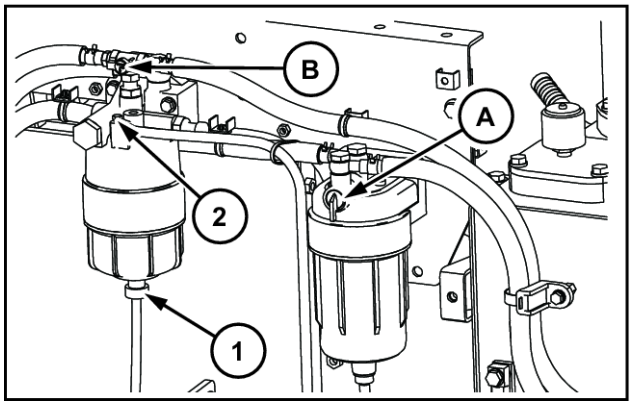
8. Use the filter wrench that came with the machine to tighten the case.
   Filter case tightening torque:
   28 – 32 N·m (**20.7 – 23.6 lb ft**).

9. Replace the drain plug **(1)** seal then tighten the drain plug **(1)**.
   Drain plug tightening torque:
   1.5 – 2.5 N·m (**1.1 – 1.8 lb ft**)

NOTICE: *overtightening can damage the seal.*

NOTICE: *never reuse the seal of the filter case or the drain plug **(1)**, they must always be replaced with new seals.*

NOTICE: *tighten no more than the specified torque.*



SMIL13CEX2805AB 4

10. Bleed the fuel system. Refer to page **6-11**.

Radiator and coolers

⚠ WARNING

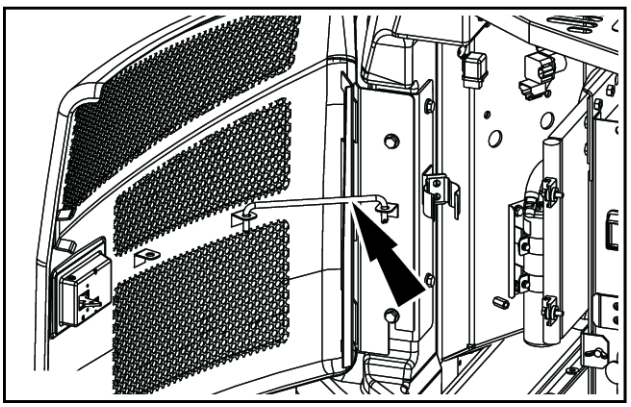
Flying debris!
Compressed air can propel dirt, rust, etc. into the air. Wear eye and face protection when using compressed air.
Failure to comply could result in death or serious injury.

W0307A

Clean the radiator every **500 h**

To clean the radiators and oil coolers proceed as follows:

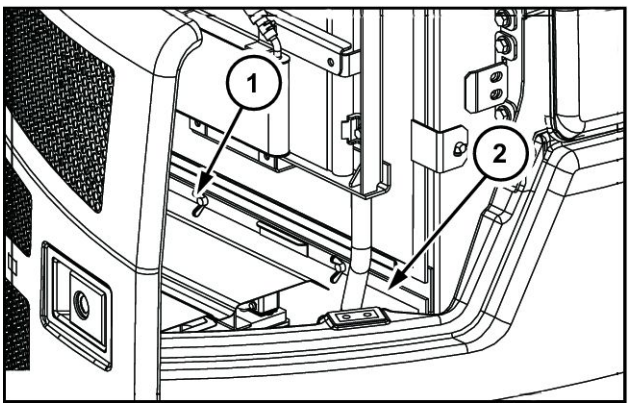
1. Stop the engine and remove the ignition key.
2. Open the rear left-hand door and block it with the brace. Then, open the engine hood.



SMIL13CEX2788AB 1

3. Remove the one touch clip **(1)** and remove the protection grill **(2)**.
4. Clean the radiator and oil coolers. Use compressed air on dry dirt. Clean off mud with a water jet. For greasy dirt, use tetrachloroethylene.
5. Install the protective grill **(2)** and install the one touch clips **(1)** .

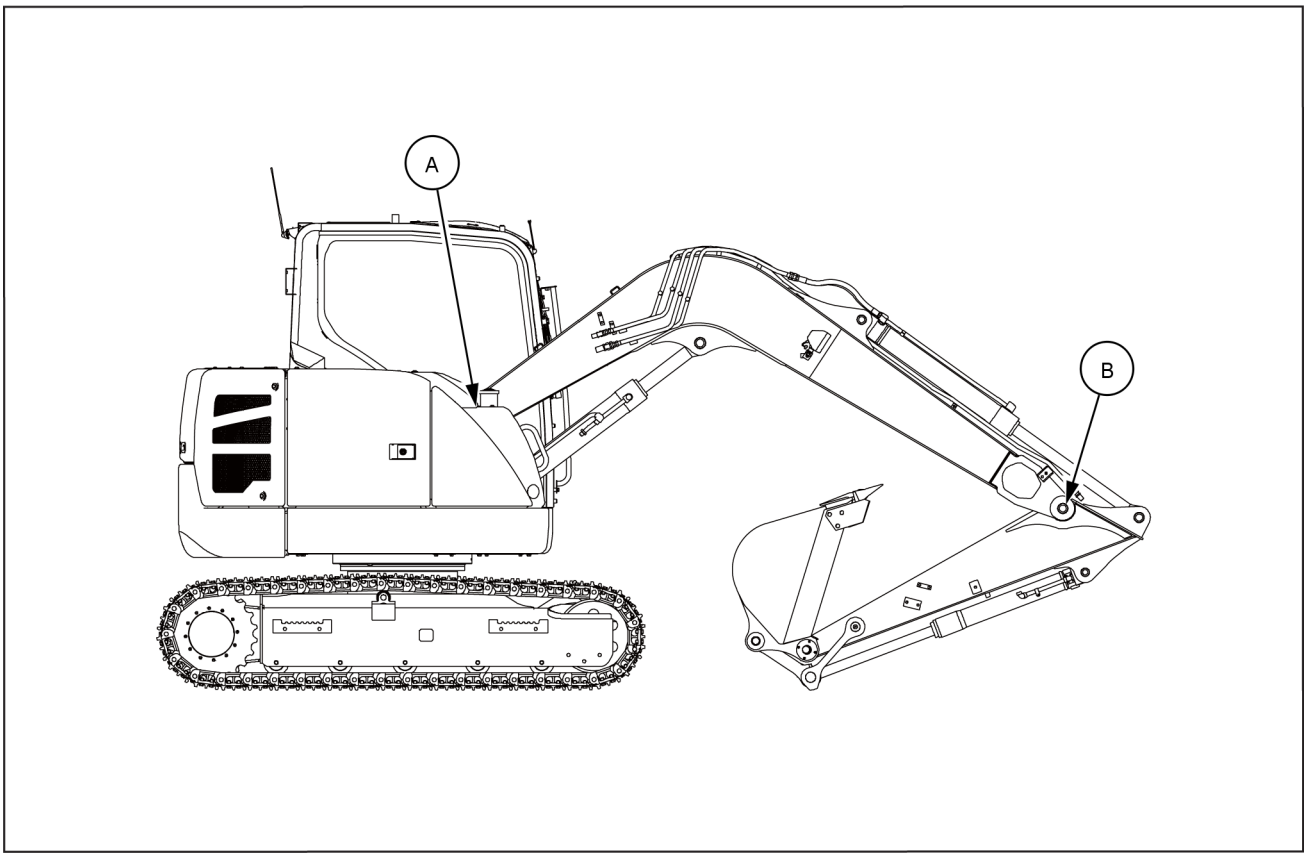
NOTE: *the use of trichloroethylene is strictly forbidden.*



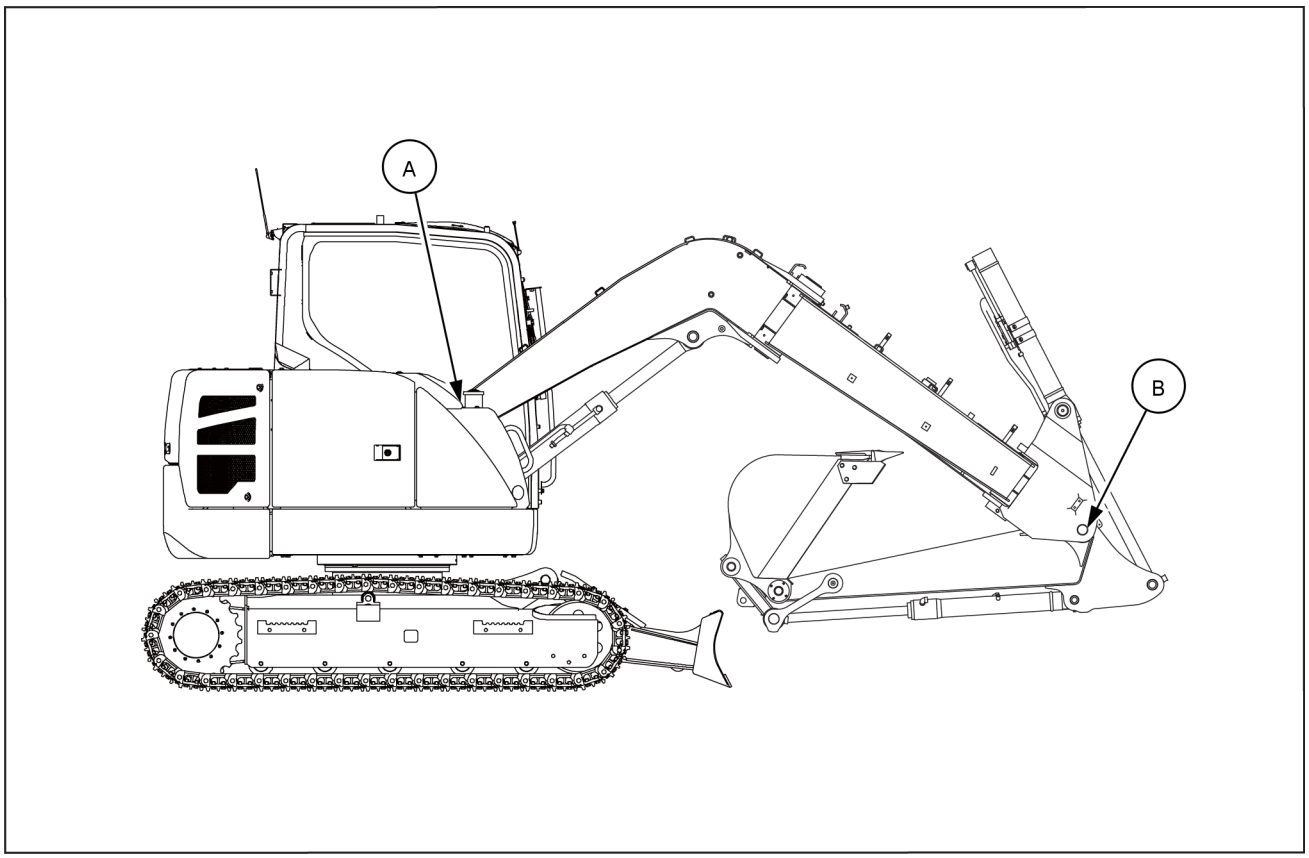
SMIL13CEX2789AB 2

Every 1000 hours

Grease points (Boom and Arm)



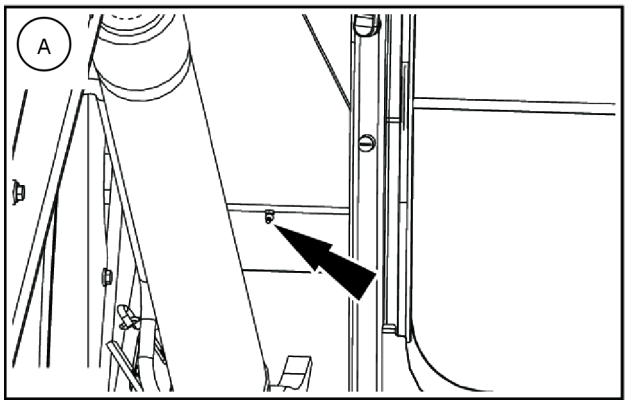
SMIL18CEX0283FA 1



SMIL18CEX0284FA 2

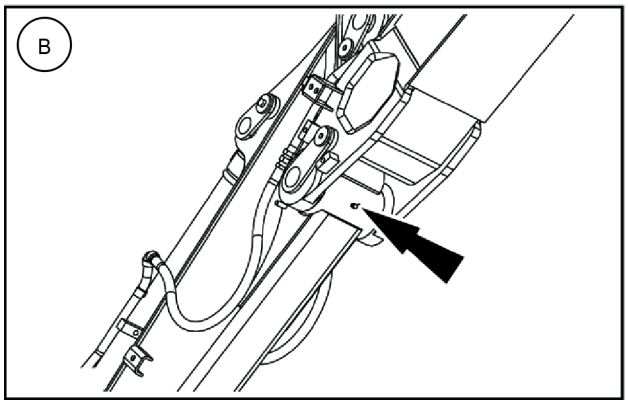
Using a grease gun, inject grease of the specified type in the grease points shown in figures:

- Boom bottom pin



SMIL13CEX2824AB 3

- Boom/arm linkage



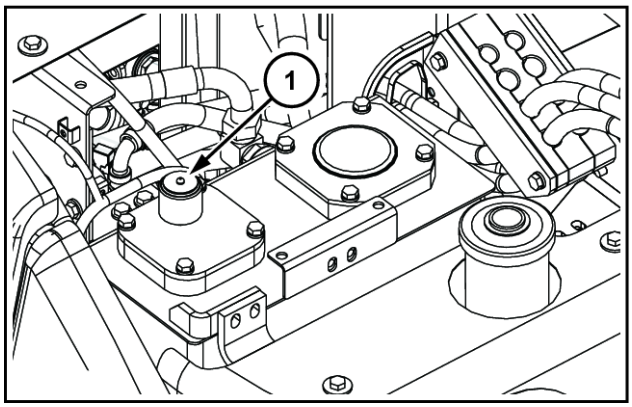
SMIL13CEX2825AB 4

Hydraulic reservoir breather

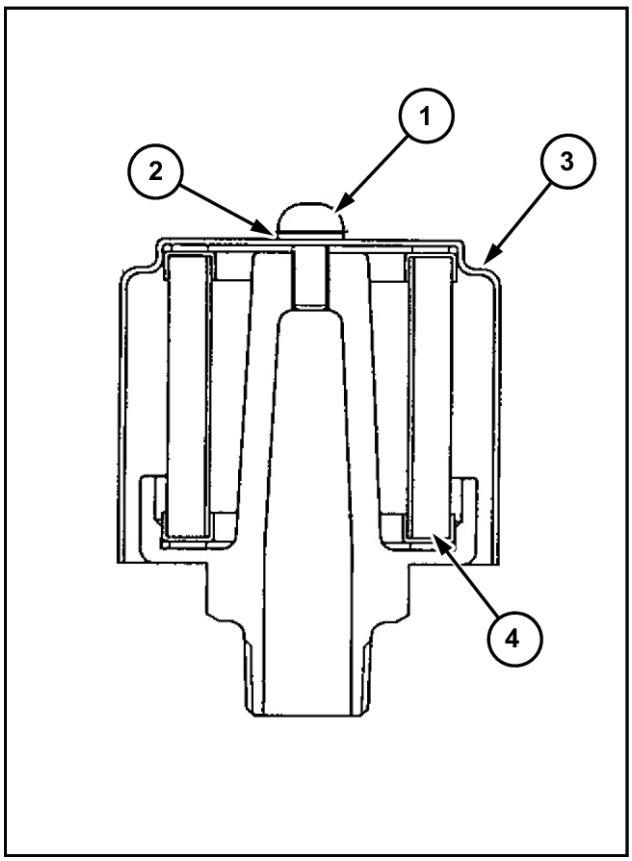
Replace the reservoir breather every **1000 h**

To replace the reservoir breather filter proceed as follows:

1. Release all pressure in the hydraulic reservoir. Refer to page **6-10**.
2. Remove the bolt **(1)**, the washer **(2)**, and the cover **(3)** from the breather.
3. Remove and discard the used filter element **(4)**.
4. Install a new element **(4)** and put the sponge packing on the top of the element **(4)**.
5. Install the cover **(3)**, the washer **(2)**, and the bolt **(1)**.



SMIL13CEX2792AB 1



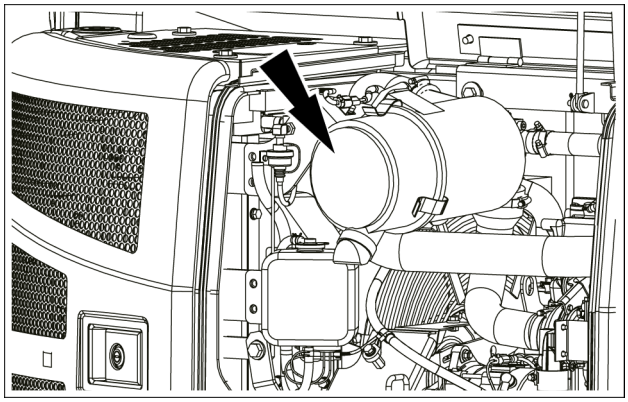
SMIL13CEX2793BB 2

Engine air filters

Change the primary element: every **1000 h** or after cleaning 6 times
Change the secondary element every **1000 h**

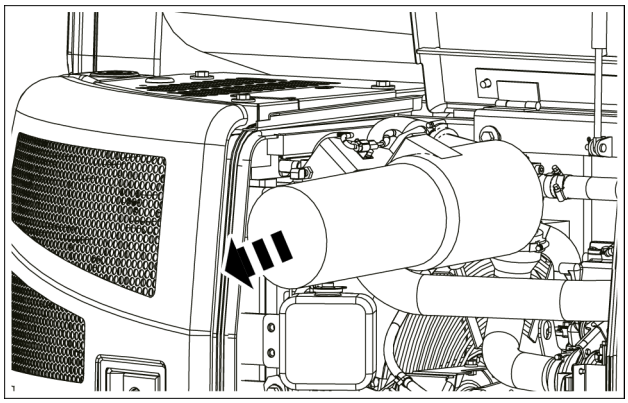
NOTICE: *Be sure to carry out regular checks on the air filter, intake manifold, seals and hoses. At the same time, check the intake manifold screws and hose clamps for tightness. The hoses should be changed before they are worn.*

1. Release the fasteners, and remove the cover.



SMIL17CEX7693A 1

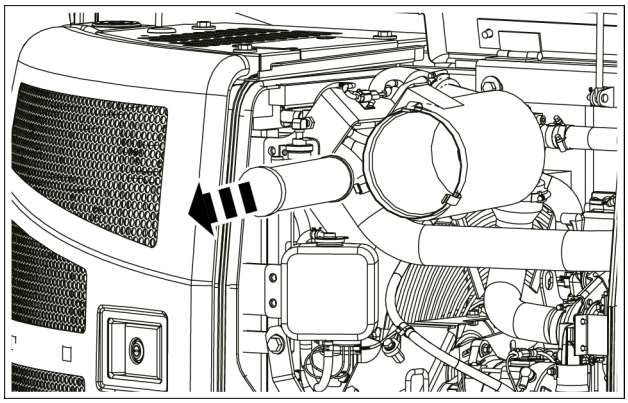
2. Remove the primary element.



SMIL17CEX7948AA 2

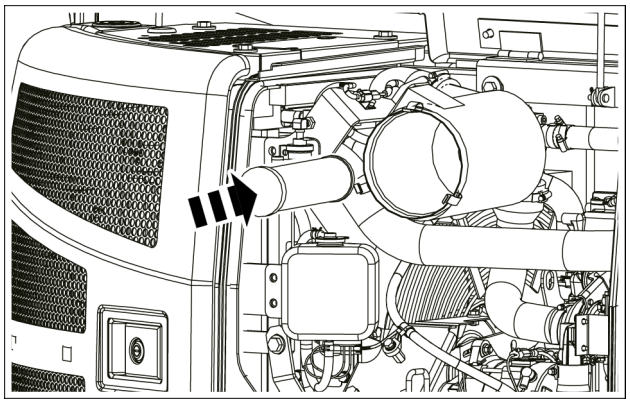
3. Remove the secondary element.

NOTICE: *Make sure that the secondary element is replaced. Do not clean it.*



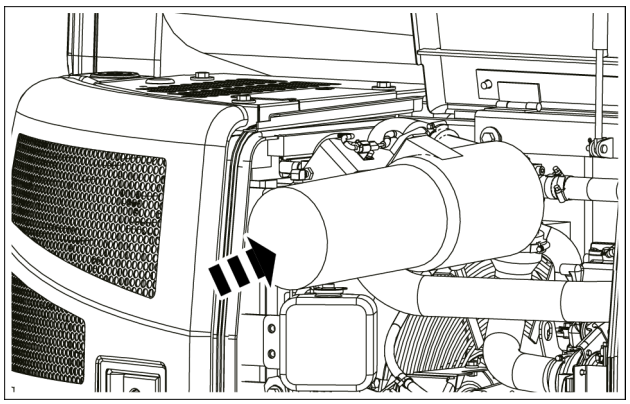
SMIL17CEX7950A 3

4. Clean the inside of the air cleaner case, and attach the new secondary element.



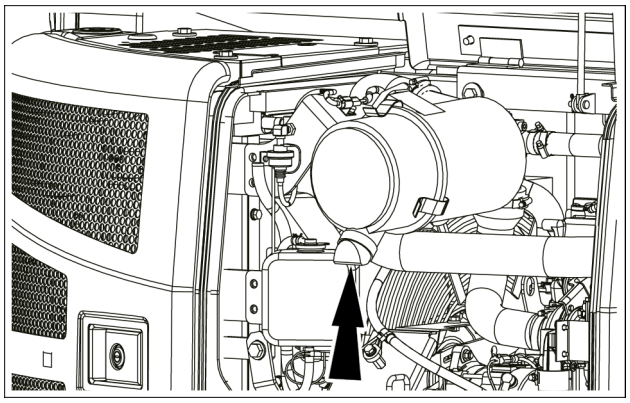
SMIL17CEX7950A 4

5. Attach the new primary element.



SMIL17CEX7948AA 5

6. Attach the cover (with the "TOP" display facing up), and lock the fasteners.
7. Check that the dust ejector under the filter is operating correctly.



SMIL17CEX7693A 6

Hydraulic fluid analysis

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

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

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

Engine valve rocker clearance adjustment

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

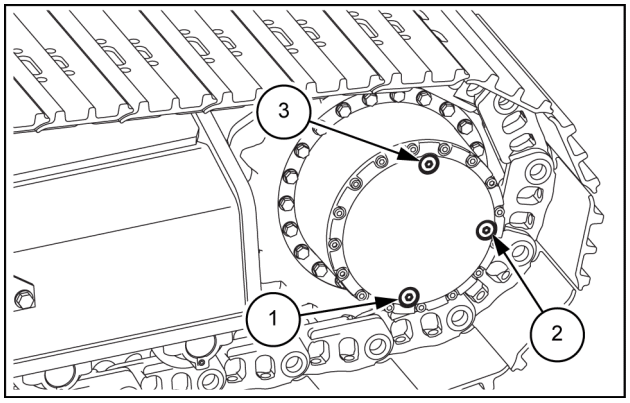
Travel reduction units oil

Replace the travel reduction units oil every **1000 h** (After **250 h** of operation in run-in period)
Lubricant: **CASE AKCELA GEAR LUBE 135 H EP 80W-90**
Quantity: **1.1 L** (**0.3 US gal**) (per travel reduction gear)

1. Park the machine on flat, horizontal ground.
2. Move the machine so that the drain plug **(1)** comes down to the lowest position.
3. Stop the engine, and remove the starter key.
4. Slowly loosen the air bleed plug **(3)** to release the internal pressure of the case.
5. Place a container with an appropriate capacity under the travel reduction gear.
6. Remove the level plug **(2)**.
7. Remove the drain plug **(1)**.

NOTE: *Check the condition of the drained oil. If there are pieces of metal or foreign objects in the oil, consult the CASE CONSTRUCTION dealer.*

8. Replace the O-ring seal of the drain plug **(1)**. Insert the drain plug **(1)** with seal tape wrapped around it. Add oil through port **(3)** until the oil comes up to the bottom edge of the port **(2)**.
9. Replace the O-ring seal of the level plug **(2)**. Insert the level plug **(2)** with seal tape wrapped around it.
10. Replace the O-ring seal of the air bleed plug **(3)**. Insert the air bleed plug **(3)** with seal tape wrapped around it.
11. Repeat steps **2** to **10** for the other travel reduction gear.
12. Run the machine slowly to check that there are no leaks.



SMIL14CEX2850AB 1

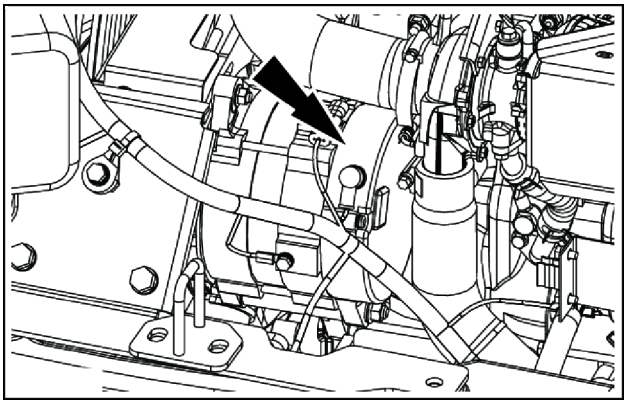
Alternator

Check the alternator every **1000 h**

⚠ WARNING

Improper operation or service of this machine can result in an accident.
Welding sparks can cause battery gases to explode. When welding on the machine, always disconnect the B+ and D+ wires from the alternator. Check the wire markings before reconnecting to ensure a correct connection.
Failure to comply could result in death or serious injury.

W0253A



SMIL13CEX2790AB 1

Ask your CASE CONSTRUCTION Dealer to check the alternator.

NOTICE: *check that the terminal protectors are correctly installed.*

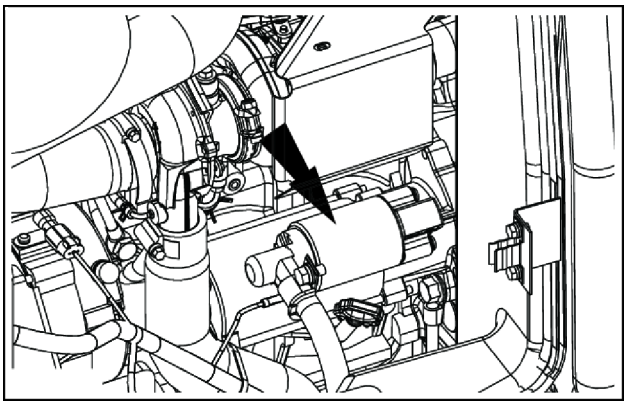
NOTICE: *do not use a steam cleaning machine or solvent to clean the alternator.*

Starter motor

Check the starter motor every **1000 h**

Ask your CASE CONSTRUCTION Dealer to check the starter motor.

NOTICE: *check that the terminal protectors are correctly installed.*



SMIL13CEX2791AB 1

Every 2000 hours

Hydraulic oil suction filter

⚠ WARNING

Burn hazard!
Before performing any service on the hydraulic system, you must allow it to cool. Hydraulic fluid temperature should not exceed 40 °C (104 °F).
Failure to comply could result in death or serious injury.

W0241A

⚠ WARNING

Pressurized system!
Never attempt to drain fluids or remove filters when the engine is running. Turn off the engine and relieve all pressure from pressurized systems before servicing the machine.
Failure to comply could result in death or serious injury.

W0905A

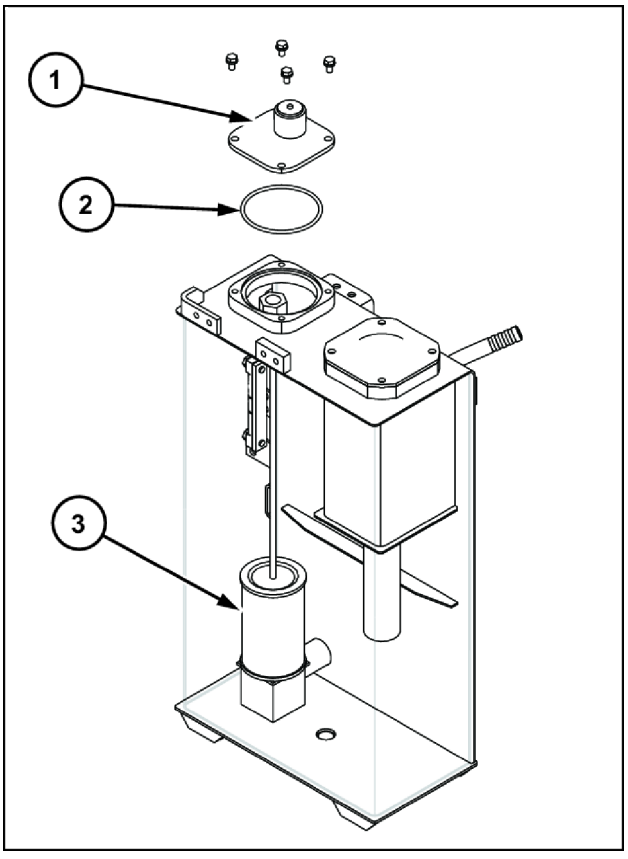
Clean the hydraulic oil suction filter every **2000 h**

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

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

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

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



SMIL13CEX2796BB 1

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

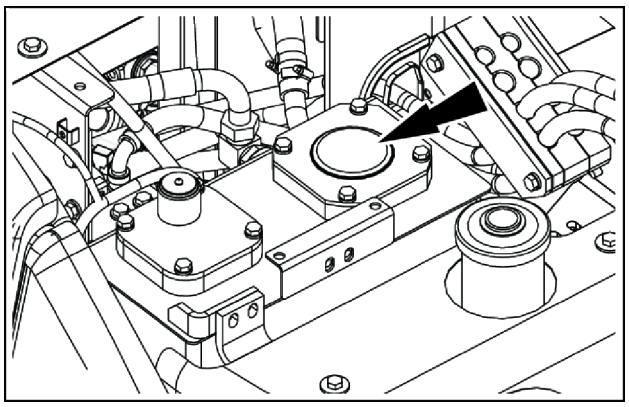
Replace the hydraulic oil return filter every **2000 h** (After **250 h** of operation in run-in period).

NOTICE: *When the machine is a new vehicle, or when the main components of the hydraulic system are already overhauled or replaced, replace the oil return filter after **250 h** of operation. After that, replace the filter at specified intervals.*

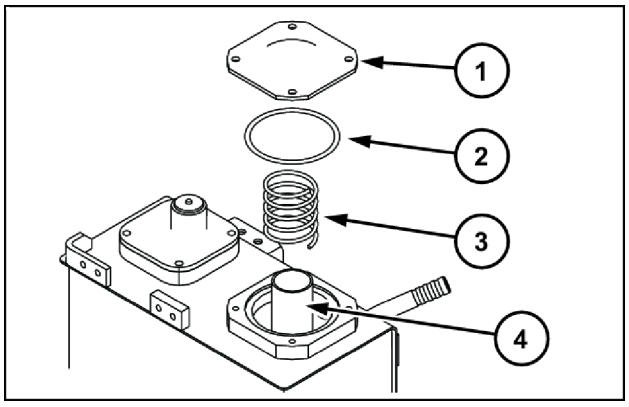
NOTICE: *If any attachment other than a bucket is used, reduce the interval of the hydraulic oil return filter replacement. Refer to Chapter 9.*

1. Release all the pressure in the hydraulic tank. Refer to page **6-10**.
2. Clean the top of the hydraulic tank, and clean the cover of the return filter.
3. Remove the cover **(1)** and the O-ring **(2)**.
4. Take out the spring **(3)**, the valve **(4)**, and the filter **(5)**.
5. Attach a new filter **(5)**.

   Clean and attach the spring **(3)** and the valve **(4)**.
6. Check the O-ring **(2)**, and replace it if any wear or damage is found.
7. Attach the cover **(1)**.
8. Attach the top plate to the hydraulic tank.
9. Check the hydraulic fluid level, and supply it if necessary.



SMIL13CEX2797AB 1



SMIL13CEX2798AB 2

Pilot line 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 pilot line filter every **2000 h** (After **250 h** of operation in run-in period).

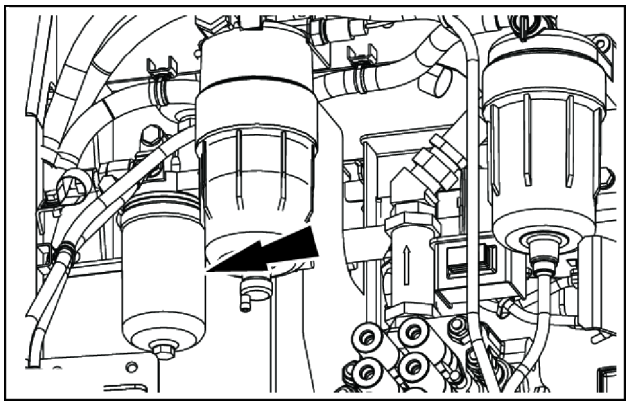
NOTICE: *The accumulator of the pilot circuit contains high pressure gas. Do not perform welding and avoid any operation generating sparks and high temperature close to the accumulator.*

NOTICE: *When the machine is a new vehicle, or when the main components of the hydraulic system are already overhauled or replaced, replace the pilot filter after **250 h** of operation. After that, replace the filter at specified intervals.*

NOTICE: *If any attachment other than a bucket is used, reduce the interval of the pilot line filter replacement. Refer to Chapter 9.*

1. Release all the pressure in the hydraulic tank. Refer to page **6-10**.
2. Unscrew and remove the filter using a wrench.
3. Coat the seal of the new filter with a fine film of clean oil.
4. Install the new filter.

   Turn the filter until the seal comes into contact with the filter head then tighten by an extra third of a turn by hand.



SMIL13CEX2800AB 1

Every 4000 hours

Engine coolant

⚠ WARNING

Hazardous chemicals!
Coolant can be toxic. Avoid contact with skin, eyes, and clothing. Antidotes:
EXTERNAL - Rinse thoroughly with water. Remove soiled clothing.
INTERNAL - Rinse the mouth with water. DO NOT induce vomiting. Seek immediate medical attention.
EYES - Flush with water. Seek immediate medical attention.
Failure to comply could result in death or serious injury.

W0282A

⚠ WARNING

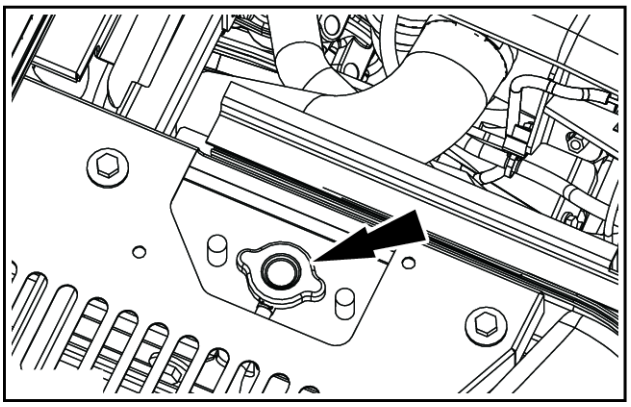
Burn hazard!
Hot coolant can spray and scald if you remove the radiator or deaeration tank cap while the system is hot. To remove the cap: allow the system to cool, turn the cap to the first notch, and wait for all pressure to release. Remove the cap only after all pressure has released.
Failure to comply could result in death or serious injury.

W0367A

Replace the engine coolant every **4000 h** or every 2 years
Fluid: **CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT**
Quantity (50/50 antifreeze/deionized water mixture): **12.2 L** (**3.2 US gal**)

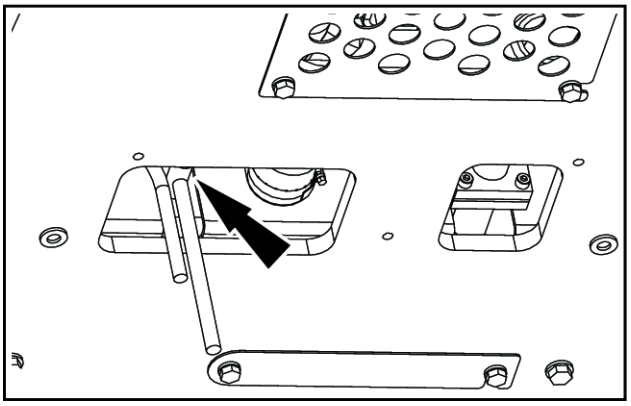
To replace the engine coolant proceed as follows:

1. Remove the radiator plug.



SMIL13CEX2809AB 1

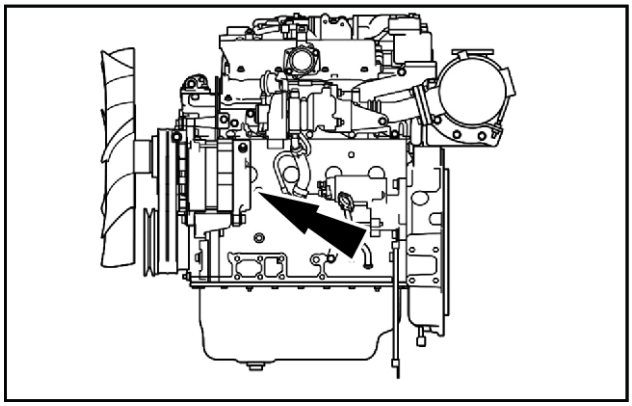
2. Open the radiator drain valve on the engine side of the radiator.



SMIL13CEX2810AB 2

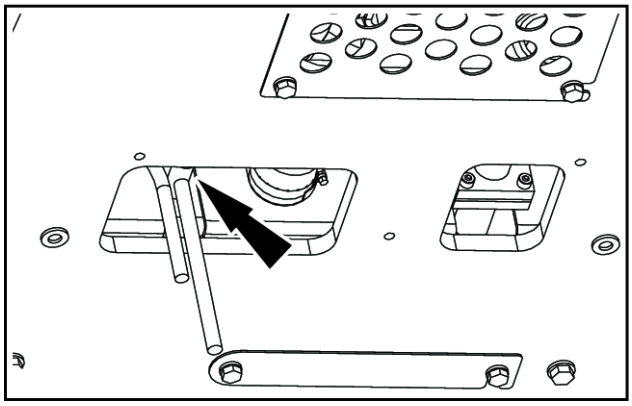
3. Open the drain plug on the engine block.

NOTE: *prepare a container with the necessary capacity beforehand.*

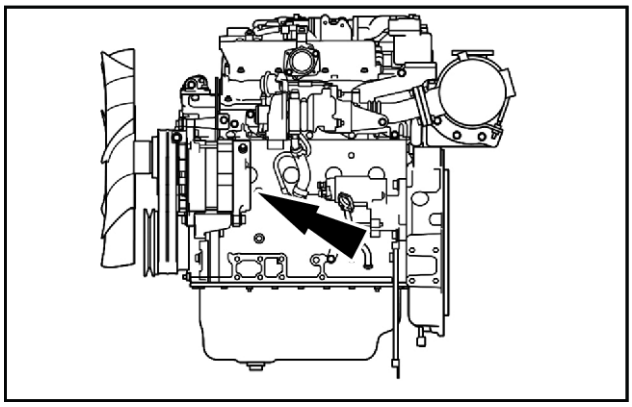


SMIL13CEX2811AB 3

4. When the radiator is completely empty, close the drain valve. Close the drain plug on the engine block.
5. Fill the system with clean water. Install the radiator cap.
6. Start the engine. Run the engine for **10 min** just slightly higher than idling to raise the engine temperature to **80 °C** (**176.0 °F**).
7. Stop the engine, then remove the key from the starter switch.
8. Wait for the engine to sufficiently cool before draining the coolant.
9. Repeat steps 4 to 8 until the water drained is clear.
10. Close the drain valve on the radiator and the drain plug on the engine block.

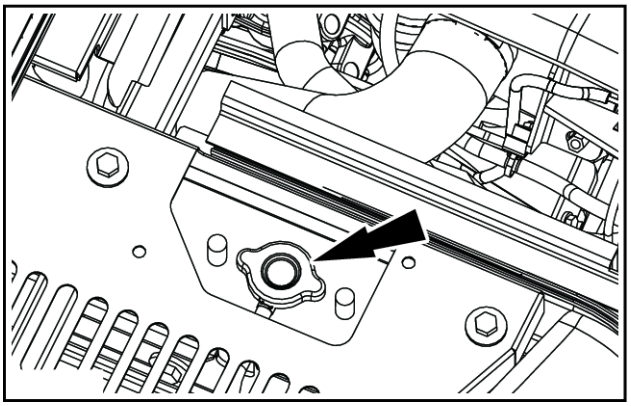


SMIL13CEX2810AB 4



SMIL13CEX2811AB 5

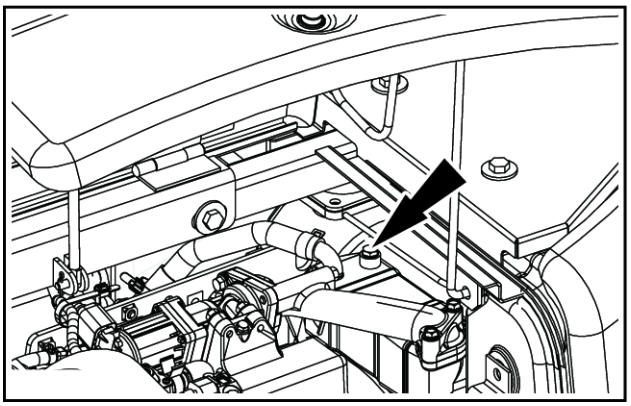
11. From the fill port, slowly fill the radiator with coolant up to the fill port. Fill slowly to avoid mixing any air in.



SMIL13CEX2809AB 6

12. Loosen the air bleed plug of the EGR cooler to remove the air in the coolant.

NOTICE: *when loosening the air bleed plug, always replace its gasket with a new one.*



SMIL13CEX2812AB 7

13. When coolant flows out from the air bleed plug, tighten the air bleed plug.
    Air bleed plug tightening torque:
    27.5 N·m (**20.3 lb ft**)
14. Securely install the radiator plug.
15. Fill with coolant to the specified amount for the expansion reservoir, then close the expansion reservoir cap.

Pump outlet hoses

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

Checking the hydraulic system piping

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

Hydraulic hoses

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

Checking the hydraulic system piping

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

Every 5000 hours

Hydraulic oil and filters

⚠ 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

⚠ CAUTION

Escaping fluid!
Hydraulic fluid or diesel fuel leaking under pressure can penetrate the skin and cause infection or other injury. To prevent personal injury: Relieve all pressure before disconnecting fluid lines or performing work on the hydraulic system. Before applying pressure, make sure all connections are tight and all components are in good condition. Never use your hand to check for suspected leaks under pressure. Use a piece of cardboard or wood for this purpose. If injured by leaking fluid, see your doctor immediately.
Failure to comply could result in minor or moderate injury.

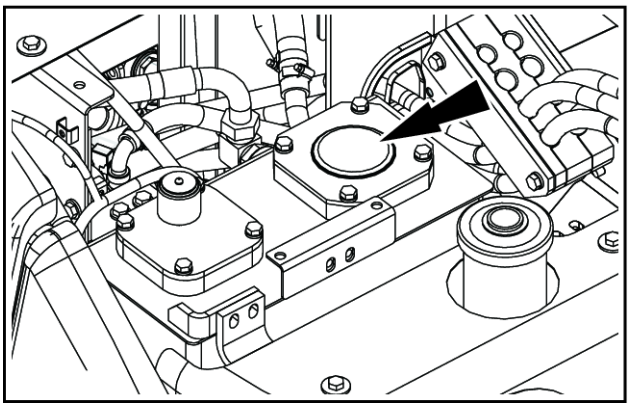
C0104A

Replace the hydraulic oil every **5000 h**
Fluid: **CASE AKCELA HYDRAULIC LL 46**
Quantity: **51 L** (**13.5 US gal**)

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

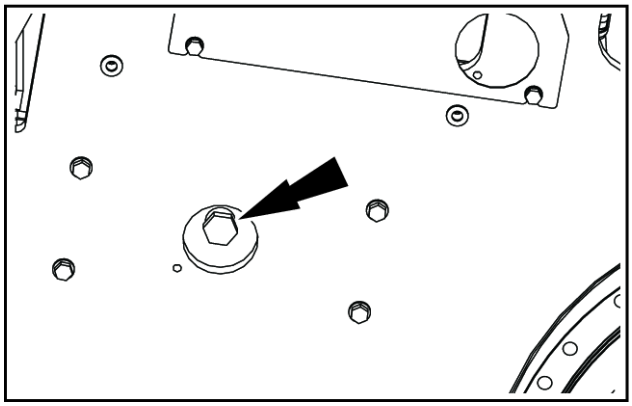
To replace the hydraulic oil proceed as follows:

1. Release all pressure in the hydraulic reservoir. Refer to page **6-10**
2. Remove the reservoir cover plate.



SMIL13CEX2797AB 1

3. Prepare a container of the necessary capacity and use a pump to drain the hydraulic fluid from the hydraulic tank.
4. Place a container with suitable capacity underneath the tank drain plug, then remove the tank drain plug to drain the remaining hydraulic fluid.



SMIL13CEX2761AB 2

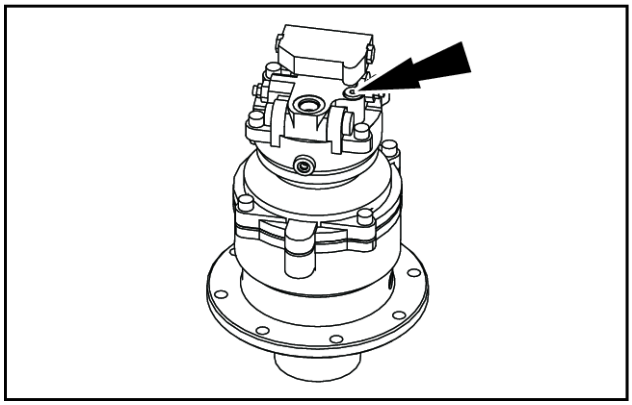
5. Replace the suction filter as described on page **6-62**.
6. Replace the return filter as described on page **6-63**.
7. Install the reservoir drain plug.
8. Pour new hydraulic fluid into the reservoir.
9. Replace the cover plate seal if necessary and install the cover plate on the tank.

NOTICE: *before starting the engine, it is extremely important to bleed air from all the hydraulic components.*

Bleeding air from the hydraulic components

Swing reduction gear

- Start the engine and run it at low idle speed. Loosen the air bleed plug and check that fluid flows out. If necessary, stop the engine and add oil from the orifice. Install the plug but leave it untightened and start the engine. Run the engine at low idle until the oil starts flowing out of the orifice. Completely tighten the air bleed plug. Swing the upper structure all the way to the right and all the way to the left at least two times. After bleeding is complete, stop the engine for about **5 min**, then check that there are no air bubbles in the hydraulic reservoir.



SMIL13CEX2823AB 3

Attachment cylinders

- Start the engine and run it at low idle speed. Extend and retract the attachment cylinder rods four or five times without bringing them to end of stroke. Then repeat the operation three or four times, this time bringing the cylinder rods to end of stroke.

NOTICE: *after bleeding air from the components, stop the engine for about **5 min** and check there are no bubbles at the surface of the hydraulic fluid in the reservoir.*

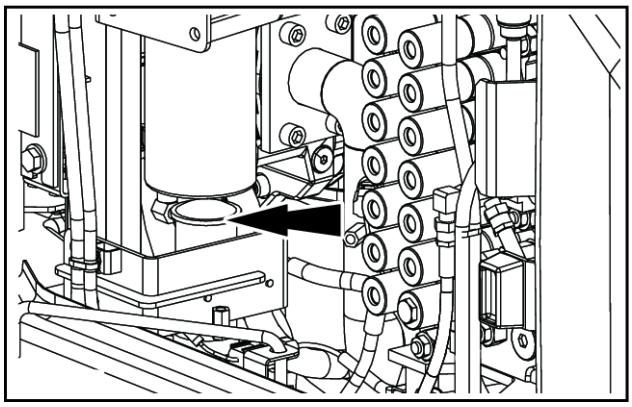
10. Start and run the engine with no load for about **5 min**.
11. Move each control several times to bleed any air in the system.
12. Swing the upper structure evenly and completely from left to right at least two rotations.
13. Put the machine at the specified position and stop the engine.
14. Check the hydraulic tank fluid level and refill if necessary. Check that there are no air bubbles in the hydraulic tank.

When necessary

Fuel feed pump

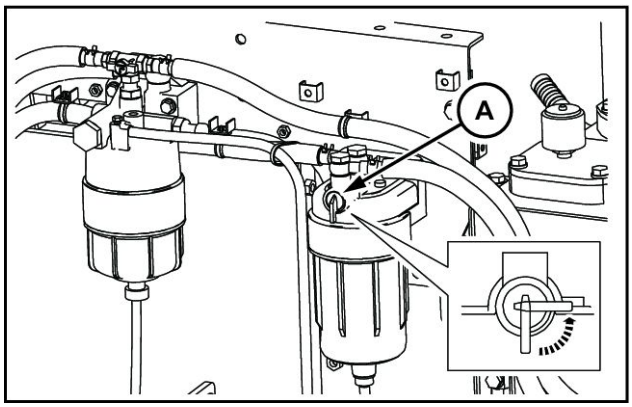
To clean the filter of the fuel supply pump proceed as follows:

1. Place a container with suitable capacity underneath the fuel supply pump (located to the left and below the fuel main filter).



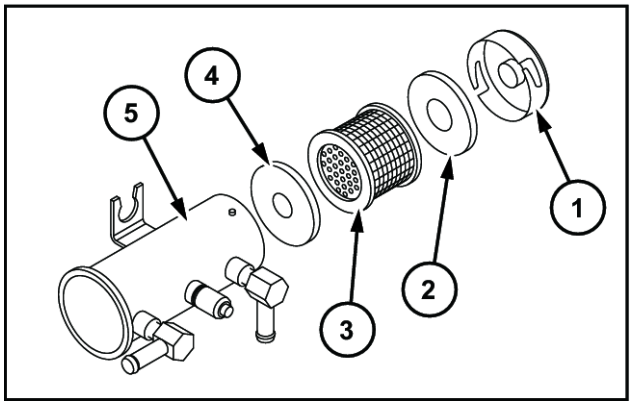
SMIL13CEX2890AB 1

2. Close the fuel pre-filter valve **(A)**, then remove the fuel supply pump.



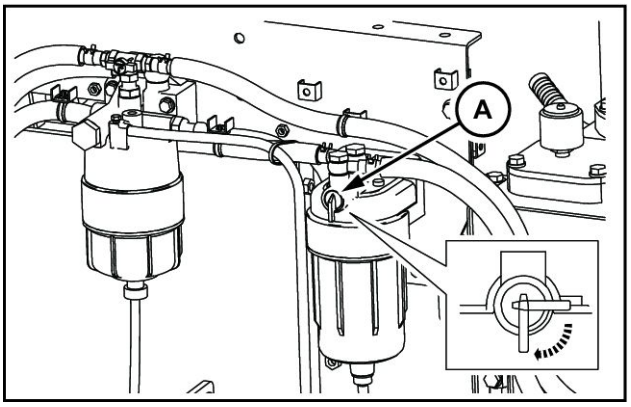
SMIL13CEX2891AB 2

3. Open the pump cover, then pull out the filter **(3)** and the seals **(2)** and **(4)**.
4. Clean the filter **(3)** with compressed air. Check the filter **(3)** and replace it if necessary. Replace the seals **(2)** and **(4)** with new seals.
5. Carefully clean the body **(5)** and the cover **(1)**. Never leave any dirt in the fuel supply pump.
6. Install the seals carefully in the correct order as you re-assemble and install the pump.



SMIL13CEX2892AB 3

7. Open the fuel pre-filter valve **(A)**.
8. Bleed the air from the fuel line.



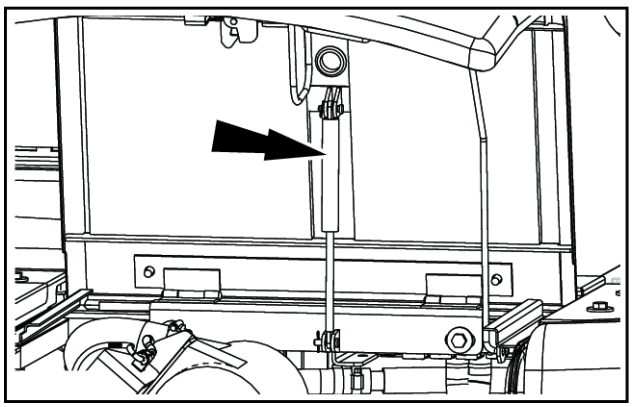
SMIL13CEX2893AB 4

Gas spring inspection

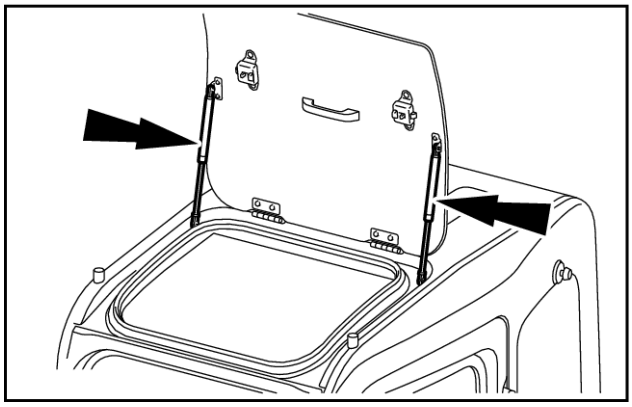
⚠ WARNING

Explosive gas!
Gas struts contain high-pressure nitrogen gas.
If handled improperly, they could explode.
- Do not disassemble.
- Do not expose to flame or fire.
- Do not puncture, weld, or melt.
- Do not expose to shock by striking or turning.
- The fill gas must be removed before disposal. Consult your dealer.
Failure to comply could result in death or serious injury.

W0914A



SMIL13CEX2816AB 1



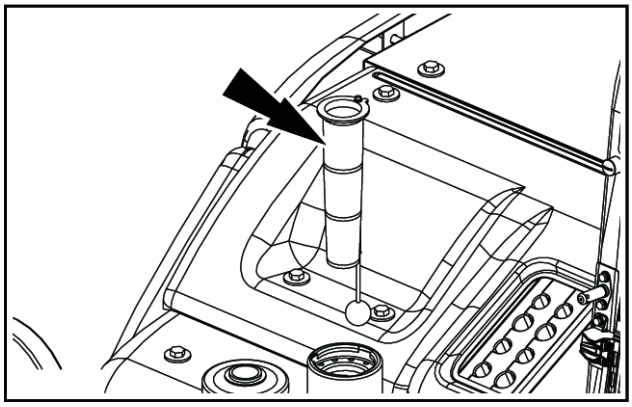
SMIL13CEX2817AB 2

Gas springs are installed on the cab sunroof (2, left and right) and the engine hood (1). In the following cases, ask the CASE CONSTRUCTION dealer to service, or replace.

- The cab sunroof does not open easily.
- The cab sunroof does not stay open.
- There is an oil leak or gas leak from a gas spring.

Fuel tank strainer

Remove the filter and clean it with diesel oil.

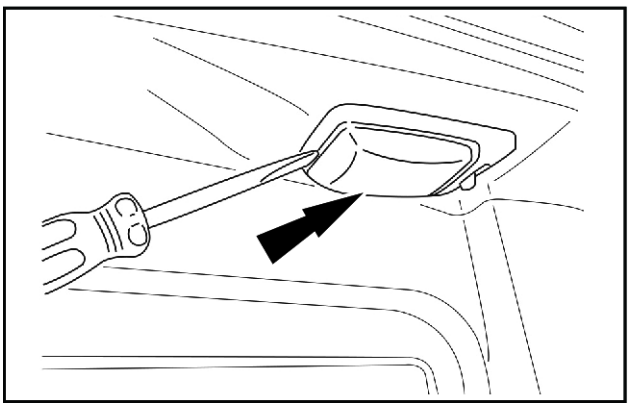


SMIL13CEX2826AB 1

Bulb replacement

Lighting in the operator compartment

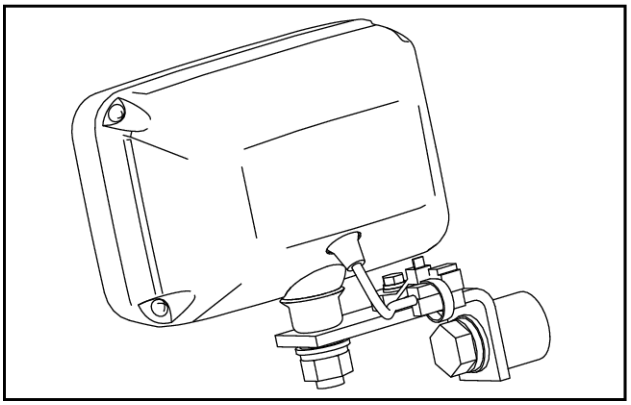
1. Remove the cover.
2. Remove the light bulb, then install a new light bulb of the same wattage (**5 W**).
3. Install the cover.



SMIL13CEX2829AB 1

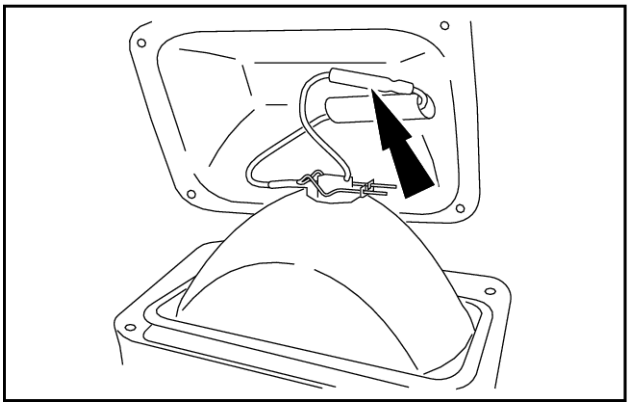
Attachment working lights

1. Remove the 4 retaining screws.



SMIL13CEX2830AB 2

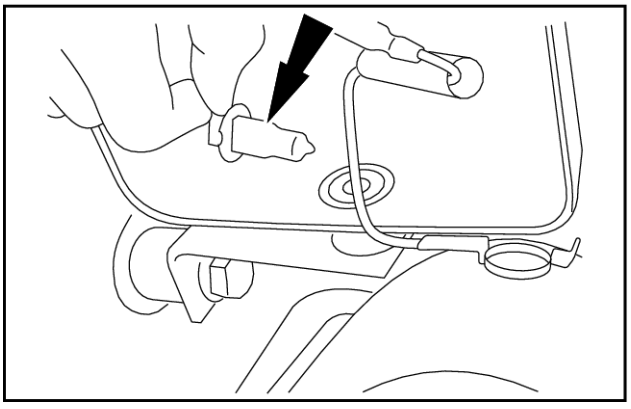
2. Tilt the working light and disconnect the plug.



SMIL13CEX2831AB 3

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

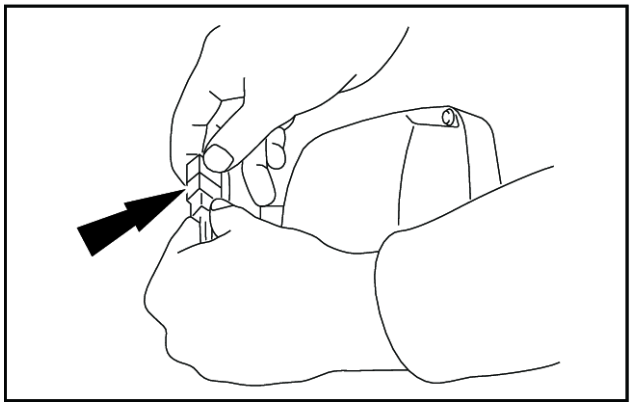
NOTICE: *never put your fingers on a tungsten iodide bulb.*



SMIL13CEX2832AB 4

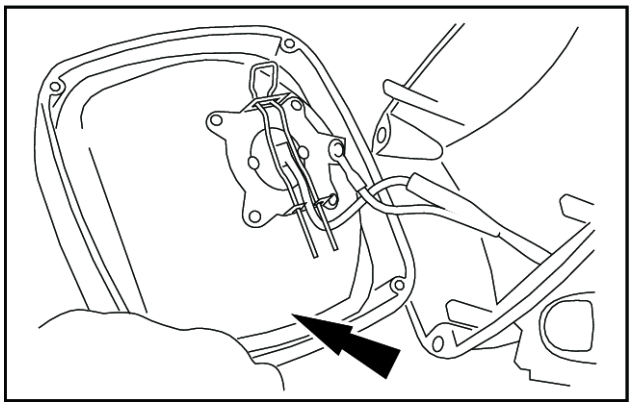
Cab headlight

1. Disconnect the plug.



SMIL13CEX2833AB 5

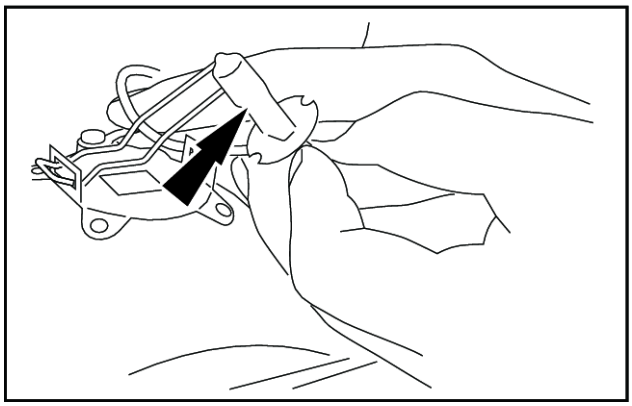
2. Remove the 4 screws and tilt the headlight.



SMIL13CEX2834AB 6

3. Pull the clip to the outside and remove the light bulb. Install a new light bulb of the same wattage (**70 W**).
4. Install the clip, put the headlight back in position and install the screws and the plug.
5. Install the switch bracket.

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



SMIL13CEX2835AB 7

Bucket teeth

The bucket teeth might be replaced because of either wearing or different operating needs.

NOTE: *The wear of the bucket teeth depends upon several application factors. Examples of these factors are the materials mainly handled on the jobsite and the operator's digging style.*

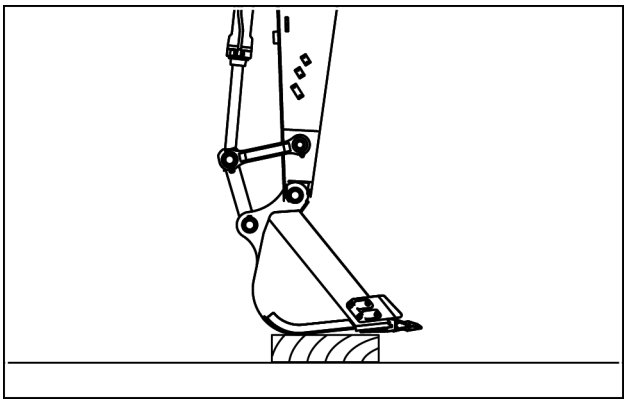
NOTICE: *some types of teeth have a symmetrical design that allows to flip them in case of uneven wear. Consult the CASE CONSTRUCTION DEALER or the bucket supplier and make sure to understand the proper practices to increase the service life of the teeth, as for example flipping and swapping.*

NOTICE: *Never work with a tooth that is completely worn: the adapter on the bucket will be seriously damaged.*

The CASE CONSTRUCTION buckets are equipped with the SMARTFIT teeth system that allows either to easily replace a worn tooth, or to easily switch between several types of teeth.

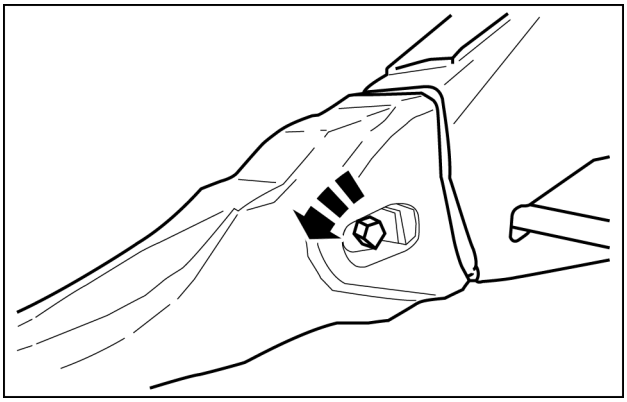
To replace a SMARTFIT bucket tooth proceed as follows:

1. Position the machine on a hard and level ground. Place the bottom side of the bucket on a block so that the bucket teeth are ahead of the block.



SMIL16CEX0479AA 1

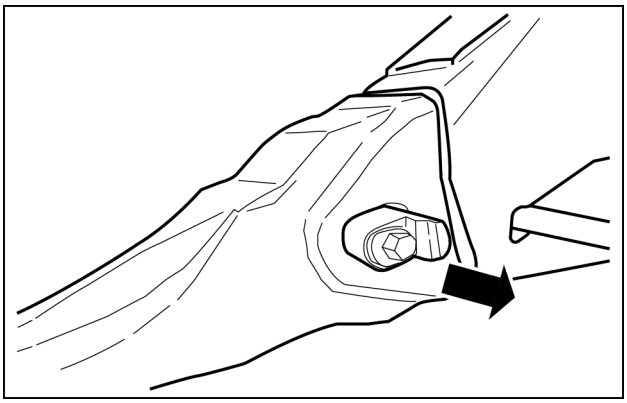
2. Place the gate lock lever in central position, stop the engine and remove the starter key.
3. Turn the locking stud of the mounting pin **90°** counterclockwise using an hexagonal wrench.



SMIL16CEX0461AA 2

4. Extract the mounting pin.
5. Check the mounting pin for wear or damages.
6. Extract the tooth from the adapter on the bucket.

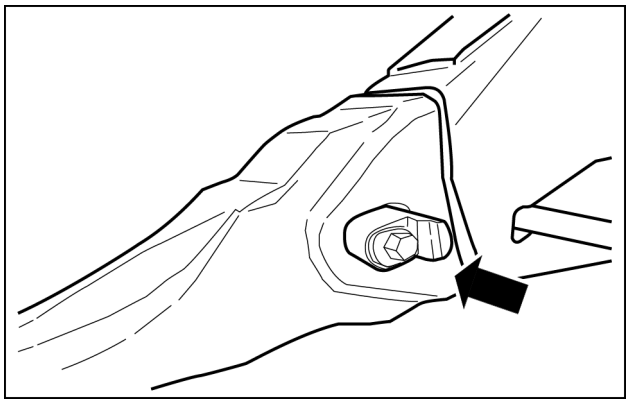
NOTICE: *If the tooth does not easily come out from the adapter, hit on its sides with a hammer as the mating surfaces come unstuck.*



SMIL16CEX0462AA 3

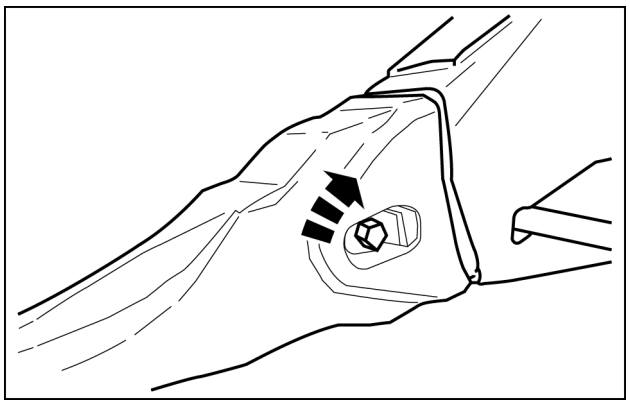
7. Clean the mating surfaces on the adapter. Check the adapter for wear and damages.
8. Insert a new tooth as it completely mate the adapter.

9. Insert the mounting pin. Push until the locking stud touches the aligning surface on the adapter.



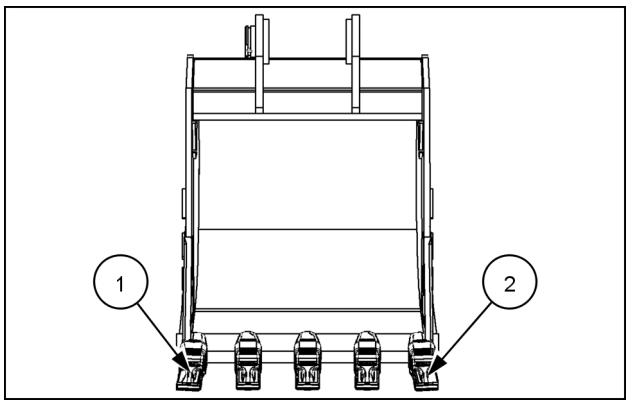
SMIL16CEX0462AA 4

10. Turn the locking stud **90°** clockwise using an hexagonal wrench in order to lock the mounting pin in position.
11. Make sure that the tooth is aligned with the adapter, and that it has no backlash.



SMIL16CEX0461AA 5

NOTE: *if all teeth have to be replaced, it is recommended to remove them starting from tooth* ***(1)*** *up to tooth* ***(2)****. It is also recommended to follow the same order from* ***(1)*** *to* ***(2)*** *to install the new teeth.*



SMIL16CEX0477AA 6

Cylinders

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

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

ROD APPEARANCE	TEST	CONCLUSION
Dry	Slight traces of oil when a piece of paper is wiped over **20 cm** (**7.9 in**) of the rod.	Normal
Slightly greasy	Paper remains stuck to rod when run over rod.	Normal
Oily	Paper remains stuck when placed on rod.	Normal
Very oily or weeping	Each time the cylinder rod is extended, a ring of oil can be seen on the rod.	Consult your CASE CONSTRUCTION Dealer
Leakage	Each time the rod retracts, the excess oil drips from the gland.	

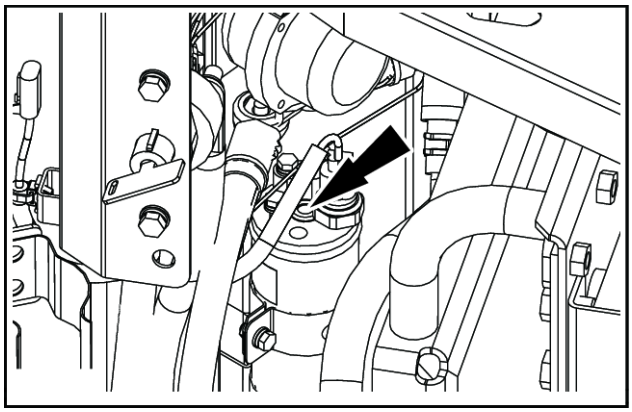
Plastic and resin parts

When cleaning the plastic windows, the console, the instrument panel, the indicators, etc. do not use gasoline, kerosene, paint solvents, etc. Only use water, soap and a soft cloth. The use of gasoline, kerosene, paint solvents, etc. will cause discoloration, cracks or deformation of these parts.

Air conditioning system

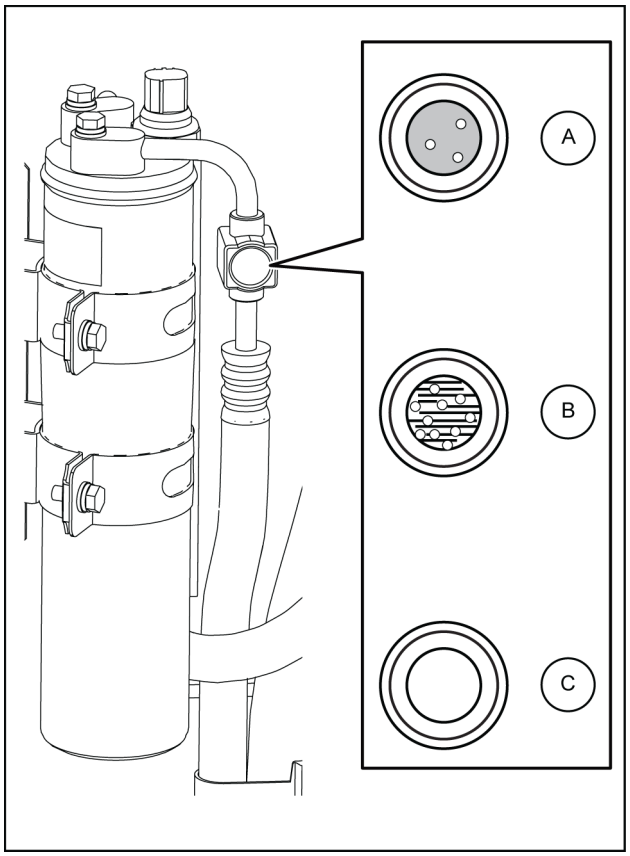
To check the charge of the air conditioning system, proceed as follows:

1. Turn on the system and set the engine speed to **1400 – 1600 RPM**. Check for air bubbles from the sight glass.



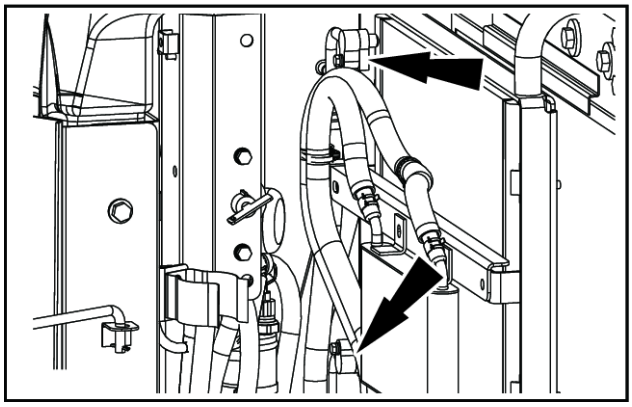
SMIL13CEX2894AB 1

2. Check for air bubbles about **5 min** after turning on the air conditioner:
   (A) The are almost no air bubbles. At first it is transparent then it turns whitish. Normal.
   (B) There are many air bubbles. Check the union and consult with your CASE CONSTRUCTION dealer.
   (C) There are no air bubbles. Check the union and consult with your CASE CONSTRUCTION dealer.



SMIL14CEX4926BB 2

3. Check whether air conditioner lines or hose connectors are dirty or dusty and clean them as necessary.



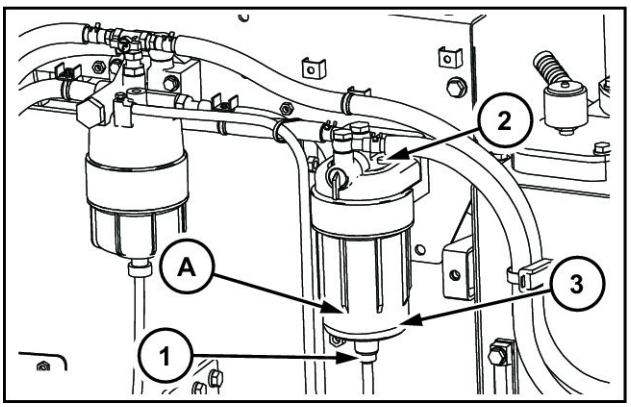
SMIL13CEX2896AB 3

Fuel pre-filter

When the float reaches the level line (A), drain water from the fuel pre-filter. Proceed as follows:

1. Place a receptacle of a suitable capacity under the fuel pre-filter.
2. Loosen the drain plug **(1)** and the bleed screw **(2)** then drain the water and sediment.
3. When the float **(3)** settles on the bottom, tighten the drain plug **(1)** and the bleed screw **(2)**.
   Drain plug tightening torque:
   1.5 – 2.5 N·m (**1.1 – 1.8 lb ft**)
   Air bleed screw tightening torque:
   8.0 – 12.0 N·m (**5.9 – 8.9 lb ft**)
4. Check for any signs of leaks.

NOTICE: *in cold weather, the water can freeze on the top part of the bowl. Bleed after the ice has melted.*



SMIL13CEX2889AB 1

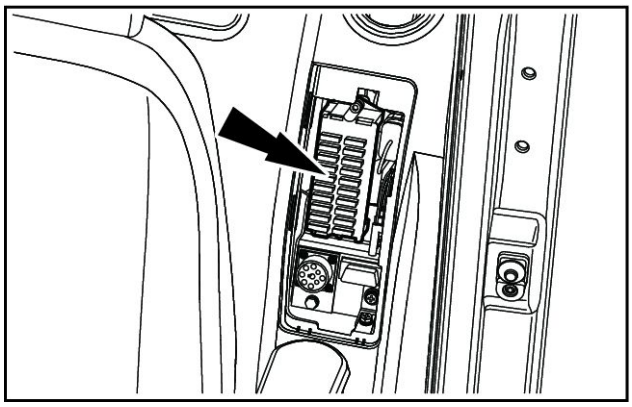
Fuses and relays location

Fuses

- To access the fuse box, open the cover located behind the operator's seat.

NOTICE: *before changing a fuse, turn the starter key to OFF position.*

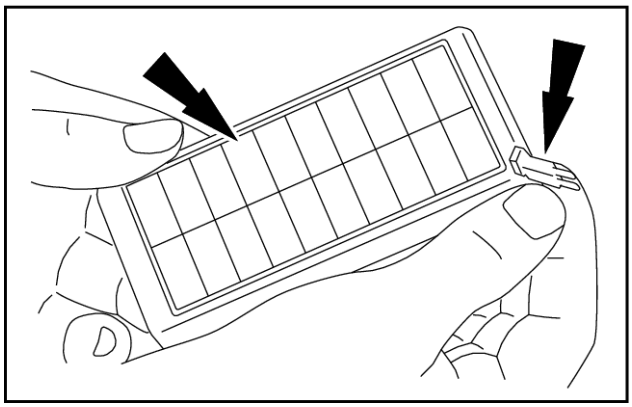
NOTICE: *never replace a fuse with a fuse of a different amperage.*



SMIL13CEX2813AB 1

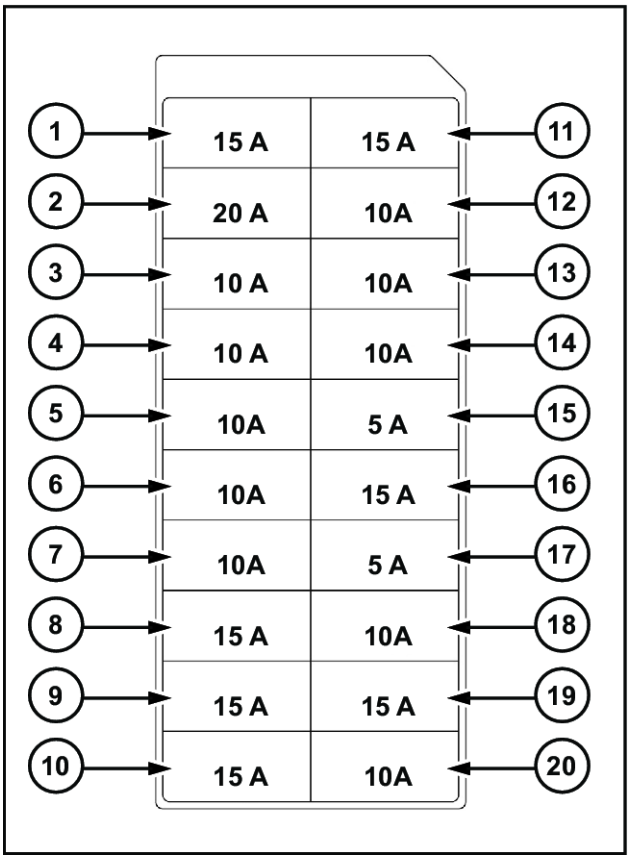
- To access the fuses, remove the cover on the box. A notice on the cover gives the function and amperage of each fuse.

NOTE: *to remove or install a fuse, use the notch in the upper right-hand corner of the cover.*



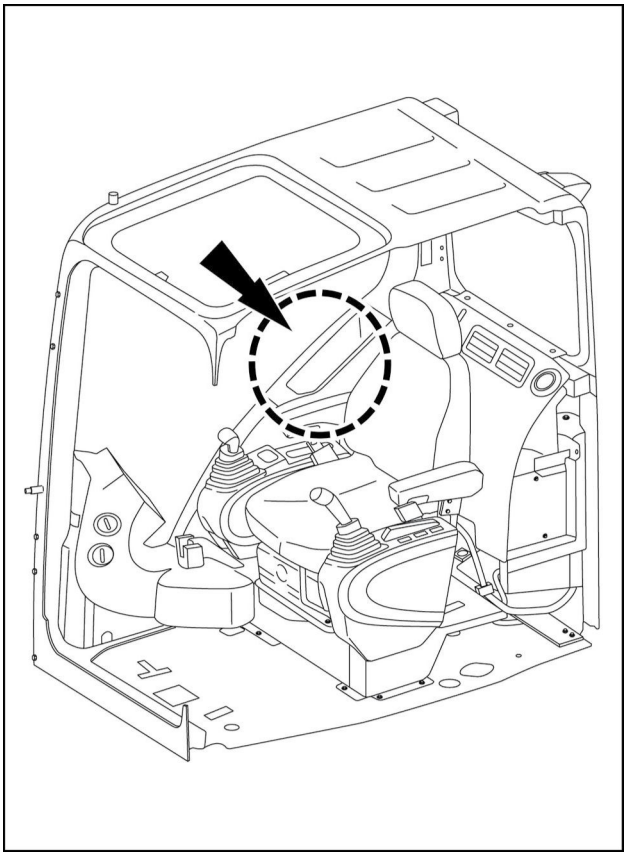
SMIL13CEX2814AB 2

1 Key switch **15 A**
2 Engine computer **20 A**
3 GPS controller **10 A**
4 Back up (radio, room lamp) **10 A**
5 Gate lock lever **10 A**
6 Solenoid **10 A**
7 Horn **10 A**
8 Cab top light **15 A**
9 Boom, house light **15 A**
10 Option power supply **15 A**
11 Wiper, washer **15 A**
12 Travel alarm, signal lamp **10 A**
13 Cigar lighter, seat suspension **10 A**
14 DC converter **10 A**
15 Air conditioner unit **5 A**
16 Air conditioner blower motor **15 A**
17 Air conditioner compressor **5 A**
18 Option power supply **10 A**
19 Feed pump **15 A**
20 Option line solenoid **10 A**



SMIL13CEX2815BB 3

NOTE: *if CASE CONSTRUCTION* ***SiteWatch™*** *system is equipped, a dedicated* ***5 A*** *fuse is added outside of the main fuse box. The fuse connector is located underneath the panels behind the operator's seat.*



SMIL13CEX2904BB 4

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:

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 for as possible and lower the boom until the attachment is resting on the ground. Lower the dozer blade (if equipped) 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 hours of the next scheduled coolant change, change the coolant now.
8. Remove the batteries, clean the battery housings and make sure not to leave any traces of acid. Store the batteries safely in a cool and dry location, where the temperature is higher than **0 °C** (**32.0 °F**) or disconnect the cable from the negative (-) terminal.
9. Paint any areas where the paintwork is not good.
10. Plug the air filter inlet and the exhaust pipe.
11. Remove the ignition key and place a "Do not operate" label on the right-hand control arm and then place the function cancellation lever in the central position (safety bar in inward position).
12. Lock the hoods, side doors and the cab door.

Periodic checks

⚠ WARNING

Inhalation hazard! Risk to operators and bystanders.
Avoid running the engine in confined areas. Make sure there is adequate ventilation at all times.
Failure to comply could result in death or serious injury.

W0156A

Every month, check:

1. The battery charge and recharge the batteries if required.
2. The levels and top up if necessary.
3. The condition of all lines, connectors and clamps (rust). Grease if necessary.
4. The condition of the paintwork. Apply a coat of anti-rust treatment where necessary.
5. Unplug the air filter inlet and the exhaust pipe.
6. Run the engine at low speed following the starting up procedure and operate the attachment, swing and travel controls.
7. The grease on the cylinder rods.
8. Plug the air filter inlet and the exhaust pipe.

Starting up the machine

⚠ WARNING

Unexpected machine movement!
Before starting the engine, make sure all controls are in the neutral position.
Failure to comply could result in death or serious injury.

W0311A

⚠ WARNING

Inhalation hazard! Risk to operators and bystanders.
Avoid running the engine in confined areas. Make sure there is adequate ventilation at all times.
Failure to comply could result in death or serious injury.

W0156A

1. Drain the fuel tank, the pre-filter and the fuel filter, replace the filter elements if necessary.
2. Fill the fuel tank with suitable fuel.
3. Install the batteries or reconnect the cable to the negative (-) terminal.
4. Grease the machine thoroughly.
5. Check the condition of the fan drive belt and replace it if necessary.
6. Check the condition of the air conditioning drive belt and replace it if necessary.
7. Check the cooling system level and add more coolant if necessary.
8. Check the engine oil level and add more oil if necessary.
9. Check the hydraulic fluid level and add more fluid if necessary.
10. Check the travel reduction gears and swing reduction gear oil level and add more oil if necessary.
11. Clean the cylinder rods.
12. Unplug the air filter inlet and the exhaust pipe.
13. Remove the "Do not operate" tag and start the engine, following the starting up procedure.
14. Check all the indicators and lamps carefully.

NOTICE: *check the machine and the engine for leaks or for any parts that are broken, defective or missing.*

7 - TROUBLESHOOTING

FAULT CODE RESOLUTION

Engine troubleshooting

NOTE: *this chapter shows how to easily diagnose problems relating to the engine and describes the solutions to be adopted. If you are unable to determine the cause of the failure, or if the latter is difficult to rectify, consult your CASE CONSTRUCTION Dealer.*

PROBLEM	POSSIBLE CAUSE	SOLUTION
Engine does not start. Starter does not rotate or rotation is weak	Battery is running out	Charge or replace
	Disconnection, looseness, or corrosion of the battery terminals	Repair the corroded area, and then tighten securely
	Starter ground wire terminal detached, loose, or corroded	Repair the corroded area, and then tighten securely
	Engine oil viscosity is too high	Replace it with oil with appropriate viscosity
	Starter or electrical system faulty	Consult your CASE CONSTRUCTION Dealer
Engine does not start. Starter turns over	No fuel in fuel tank	Check that there is no fuel leakage and refuel
	Air intrusion in the fuel system	Remove the air
	Clogging of the fuel filter	Remove moisture and replace the element
	Fuel is frozen	Warm up the fuel pipe with hot water, or wait until the air temperature rises
	Failure of the supply pump	Consult your CASE CONSTRUCTION Dealer
	Clogging of the supply pump strainer	Clean the strainer
	Failure of the engine control system	Consult your CASE CONSTRUCTION Dealer
	Preheating system faulty	
	Overflow valve remains open	Clean or replace the supply pump, fuel filter or fuel port overflow valve
The engine starts, but stops immediately	Clogging of the fuel filter	Remove moisture and replace the element
	Clogging of the pre-fuel filter	Clean or replace the element
	Failure of the engine control system	Consult your CASE CONSTRUCTION Dealer
	Clogging of the air cleaner	Clean or replace the element
	Failure of the supply pump	Consult your CASE CONSTRUCTION Dealer
	Clogging of the supply pump strainer	Clean the strainer
Engine revolution is unstable	Failure of the fuel system	Consult your CASE CONSTRUCTION Dealer
	Water or air intrusion in the fuel system	Remove the air
	Failure of the engine control system	Consult your CASE CONSTRUCTION Dealer
Engine rotation does not increase	Clogging of the fuel filter	Remove moisture and replace the element
The exhaust smoke is white	Insufficient warming-up	Perform warming-up
	Too much engine oil	Adjust to the appropriate oil amount
	Failure of the engine control system	Consult your CASE CONSTRUCTION Dealer
	Failure of the supply pump	
	Failure of the fuel system	
	Continuous idling for a long period (more than two hours)	Raise the engine speed and confirm that white smoke is not emitted

PROBLEM	POSSIBLE CAUSE	SOLUTION
The exhaust smoke is black	Failure of the engine control system	Consult your CASE CONSTRUCTION Dealer
	Failure of the supply pump	
	Clogging of the air cleaner	Clean or replace the element
	Failure of the fuel system	Consult your CASE CONSTRUCTION Dealer
	Clogging of the exhaust system	
	Diesel Particulate Diffuser is faulty	
Overheat occurs	No coolant	Refill
	Front of the radiator is clogged with filth	Perform cleaning
	Reserve tank cap not fully tightened	Tighten it securely or replace the cap with a new one
	Coolant is dirty	Clean inside the radiator and replace the coolant
	Failure of the fan clutch	Consult your CASE CONSTRUCTION Dealer
	Reserve tank cap dirty or faulty	Clean or replace the reserve tank cap
	Excessive engine oil	Keep the oil at appropriate level
Oil pressure does not increase	Inappropriate engine oil viscosity	Replace it with oil with appropriate viscosity
	Amount of engine oil is insufficient	Refill
	Failure inside the engine	Consult your CASE CONSTRUCTION Dealer
	Failure of meters, lights or switches	
	Oil leakage from the oil filter hose	
Engine does not have enough power	Clogging of the air cleaner	Clean the element
	Clogging of the fuel filter	Remove moisture and replace the element
	Clogging of the pre-fuel filter	Clean the element
	Failure of the engine control system	Consult your CASE CONSTRUCTION Dealer
	Clogging of the supply pump strainer	Clean the strainer
	Failure of the engine	Consult your CASE CONSTRUCTION Dealer

8 - SPECIFICATIONS

Machine specifications

Engine

Manufacturer and model	Isuzu AP-4LE2X
Injection	Electronic-controlled High-pressure common rail
Number of cylinders	4
Bore x stroke	**85 mm** (**3.3 in**) x **96 mm** (**3.8 in**)
Displacement	**2179 cm³/rev** (**133 in³/rev**)
Rated speed	**2000 RPM**
Rated power (**ISO 9249**)	**40 kW** (**54.4 Hp**)
Cooling	Water-cooled
Battery start	2 x **12 V 64 A·h**
Voltage	**24 V**
Alternator	**50 A**
Starter	**24 V**, **3.2 kW**

Hydraulic system

Maximum flow of the main pump (at **2000 RPM**)	2 x **74 L/min** (**19.5 US gpm**)
Rated working pressure	**29.4 MPa** (**4264.5 psi**)
Maximum flow of the pilot pump (at **2000 RPM**)	**18 L/min** (**4.8 US gpm**)
Rated pilot pressure	**3.9 MPa** (**565.7 psi**)

Swing performance

Swing speed	**10.4 RPM**
Swing torque	**17000 N·m** (**12539 lb ft**)

Travel performance

Low speed	**0 – 3.2 km/h** (**0 – 2.0 mph**)
High speed	**0 – 5.1 km/h** (**0 – 3.2 mph**)
Drawbar pull	**59500 N** (**13376 lb**)
Grade ability	**70%** (**35°**)

Digging performance

CX75C SR (with blade)

Bucket digging force	**5690 daN** (**12792 lbf**)
Arm digging force **1.69 m** (**66.54 in**)	**3950 daN** (**8880 lbf**)
Arm digging force **2.19 m** (**86.22 in**)	**3380 daN** (**7599 lbf**)

CX75C SR Offset Boom with blade

Bucket digging force	**5690 daN** (**12792 lbf**)
Arm digging force **1.75 m** (**68.90 in**)	**3940 daN** (**8857 lbf**)
Arm digging force **2.10 m** (**82.68 in**)	**3470 daN** (**7801 lbf**)

Tracks

Steel track	**450 mm** (**17.7 in**)
	600 mm (**23.6 in**)
Rubber pads (*)	**450 mm** (**17.7 in**)
Rubber track (*)	**450 mm** (**17.7 in**)

NOTICE: *(*) for operation on concrete surfaces or paved roads.*

Working lights

One on attachment	**24 V**, **70 W**
One on cab	**24 V**, **70 W**

Fluids and lubricants

By using appropriate fluids and lubricants the excavator can operate in ambient temperatures ranging from **-10 °C** (**14 °F**) to **40 °C** (**104 °F**). Refer to the list of fluids and lubricants contained in this manual.

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

	Quantity		CASE CONSTRUCTION specification	Reference specification
Fuel tank	**120 l** (**31.7 US gal**)	—	—	**EN 590**
Engine oil	**11.5 l** (**3.0 US gal**)	**CASE AKCELA UNITEK 10W-40**	**MAT3521**	**SAE 10W40** **ACEA E9** **API CJ-4**
Travel reduction unit	**1.1 l** (**0.3 US gal**)	**CASE AKCELA GEAR LUBE 135 H EP 80W-90**	MS 1316	**SAE 80W/90** **API GL-5**
Engine coolant	**12.2 l** (**3.2 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 (**)	**51 l** (**13.5 US gal**)	**CASE AKCELA HYDRAULIC LL 46**	—	**ISO 11158** L-HV46
Grease	—	**CASE AKCELA 251H EP MULTI-PURPOSE GREASE**	IH B-27 251H EP	**NLGI 2**

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

(**) The total capacity of the hydraulic system is **96.3 l** (**25.4 US gal**).

Engine coolant

CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT is the reference genuine product for machine service.

NOTICE: *Never add Supplemental Coolant Additives (SCA) when using* ***CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT****.*

CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT has to be used if refilling of the cooling system is needed. Refer to the dedicated procedure and recommendations described in Chapter 6.

CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT shall be used for the replacement of engine coolant according to the maintenance program of the machine. The replacement shall also be tackled in case of repair or replacement of components of the cooling system. Refer to the dedicated procedure described in Chapter 6.

The engine cooling system shall always be refilled with coolant solution made by mixture of antifreeze and distilled (deionized) water.

NOTICE: *Never refill the cooling system with only antifreeze. Never refill the cooling system with only water.*

Using **CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT**, a 50/50 mixture of antifreeze and distilled (deionized) water grants proper performance of the engine cooling system in the above mentioned operating temperature range of the machine.

CASE AKCELA ACTIFULL™ OT EXTENDED LIFE COOLANT is available as:

- 50/50 PREMIXED coolant solution ready for usage.
- CONCENTRATE antifreeze to be mixed 50/50 with distilled (deionized) water.

NOTICE: *If operating in extreme winter climate, a coolant solution made by 60/40 antifreeze/distilled (deionized) water mixture shall be used in order to grant proper performance of the engine cooling system.*

NOTICE: *Never use coolant solution with more than* ***60%*** *of antifreeze. This affects the cooling capacity of the mixture.*

When the coolant solution is prepared starting from the CONCENTRATE product, the antifreeze concentration in the mixture of antifreeze and distilled (deionized) water can be determined with a refractometer designed to measure ethylene glycol content.

If distilled (deionized) water is not available, use water for dilution with the following properties:

Property	Maximum limit
Total Solids	**340 ppm**
Total Hardness	**170 ppm**
Chloride (Cl)	**40 ppm**
Sulfate (SO4)	**100 ppm**
Acidity pH	5.5 to 9.0

NOTICE: *Never use hard water, sea water and softened sea water that has been conditioned with salt. The minerals and salts present in potable water can cause corrosion and deposits resulting in shortened engine life.*

Fuel

Use only Ultra-Low Sulphur Diesel (S10) that meets **EN 590** specifications.

Using other types of fuel may lead to stalled engine output or deterioration in fuel economy.

NOTICE: *The warranty shall be invalid if any serious defect is caused by usage of any other fuel. Using any fuel other than the prescribed type will cause damages to the fuel supply system, to the fuel injection system, to the engine block, and to the exhaust after treatment system. CASE CONSTRUCTION will not be responsible to any of such damages.*

If the temperature drops below the fuel cloud point, output deficiency or engine start problems may occur due to wax crystals.

NOTICE: *If operating in severe winter climate, consult the fuel supplier or the CASE CONSTRUCTION dealer for specific diesel fuel according to the* ***EN 590*** *to be used.*

The diesel fuel to be used on the machine shall:

- be free from dust particles, even minute ones.
- have the proper viscosity.
- have a high cetane number.
- present great fluidity at low temperatures.
- have low sulphur content.
- have very little residual carbon.

NOTICE: *Never use a mix of diesel fuel and old engine oil. The fuel injection system and the exhaust after treatment system will be severely damaged.*

NOTICE: *consult the fuel supplier or the CASE CONSTRUCTION Dealer regarding appropriate use of fuel additives.*

NOTICE: *in order to prevent condensation during cold weather, fill the fuel tank to full after completing the day's work.*

Fuel storage:

Long storage can lead to the accumulation of impurities and condensation in the fuel. Engine trouble can often be traced to the presence of water in the fuel. The storage tank must be placed outside and the temperature of the fuel should be kept as low as possible. Drain off water and impurities regularly.

Disposal of fluids, lubricants, and spare parts

Fluids, lubricants and spare parts used on the machine are not fully compatible with the environment. Make sure to carry out all maintenance operations using appropriate tools, in order to avoid any risk of damaging the environment.

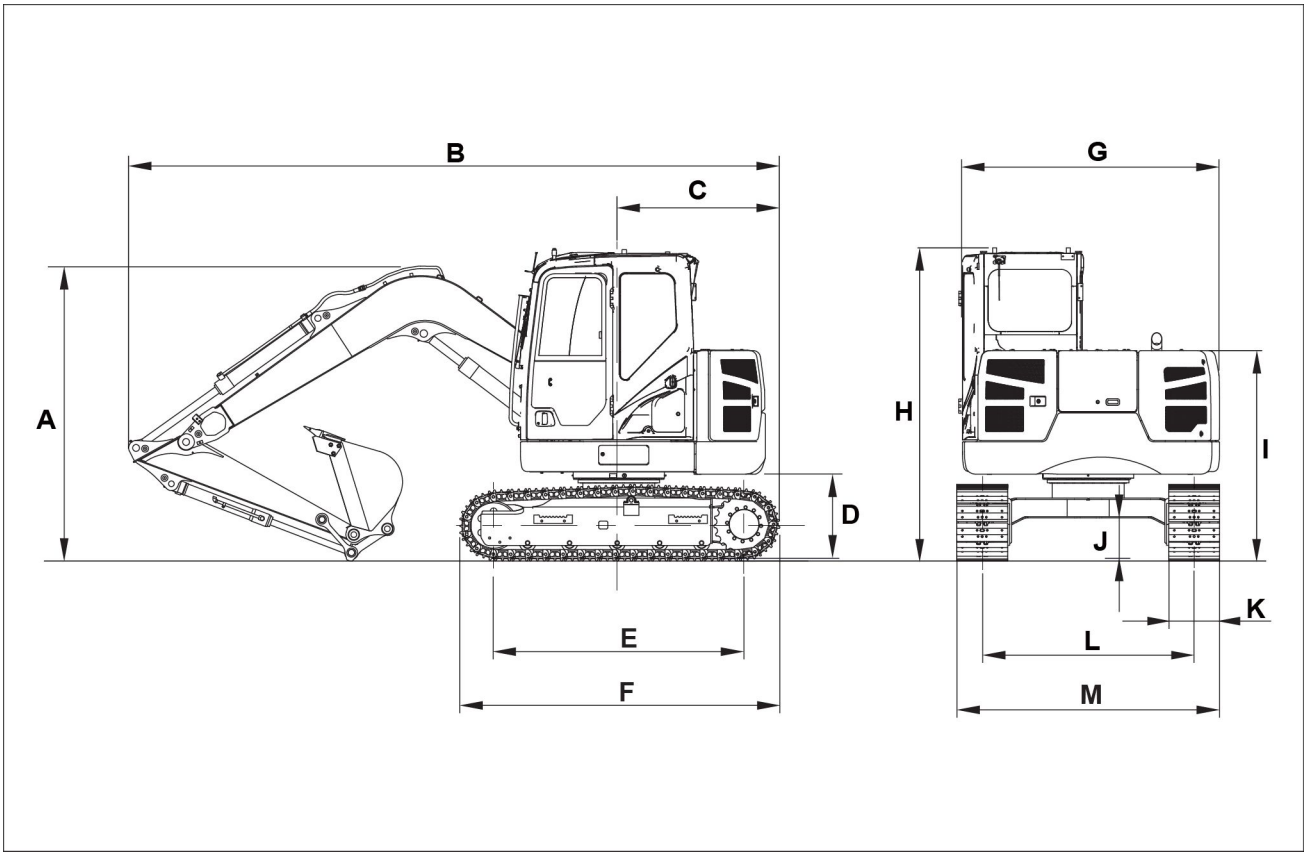
NOTE: *for example, make sure that the receptacle for collecting oil to be replaced is not leaking.*

Never spread fluids or lubricants on the ground or into water. Consult the CASE CONSTRUCTION Dealer or the Local Environmental Agency in order to obtain information on the correct method of disposing fluids and lubricants used on the machine.

Never throw away spare parts as filters or batteries. Consult the CASE CONSTRUCTION Dealer or the Local Environmental Agency in order to obtain information on the correct method of disposing filters, batteries or other spare parts used on the machine.

Dimensions

CX75C SR



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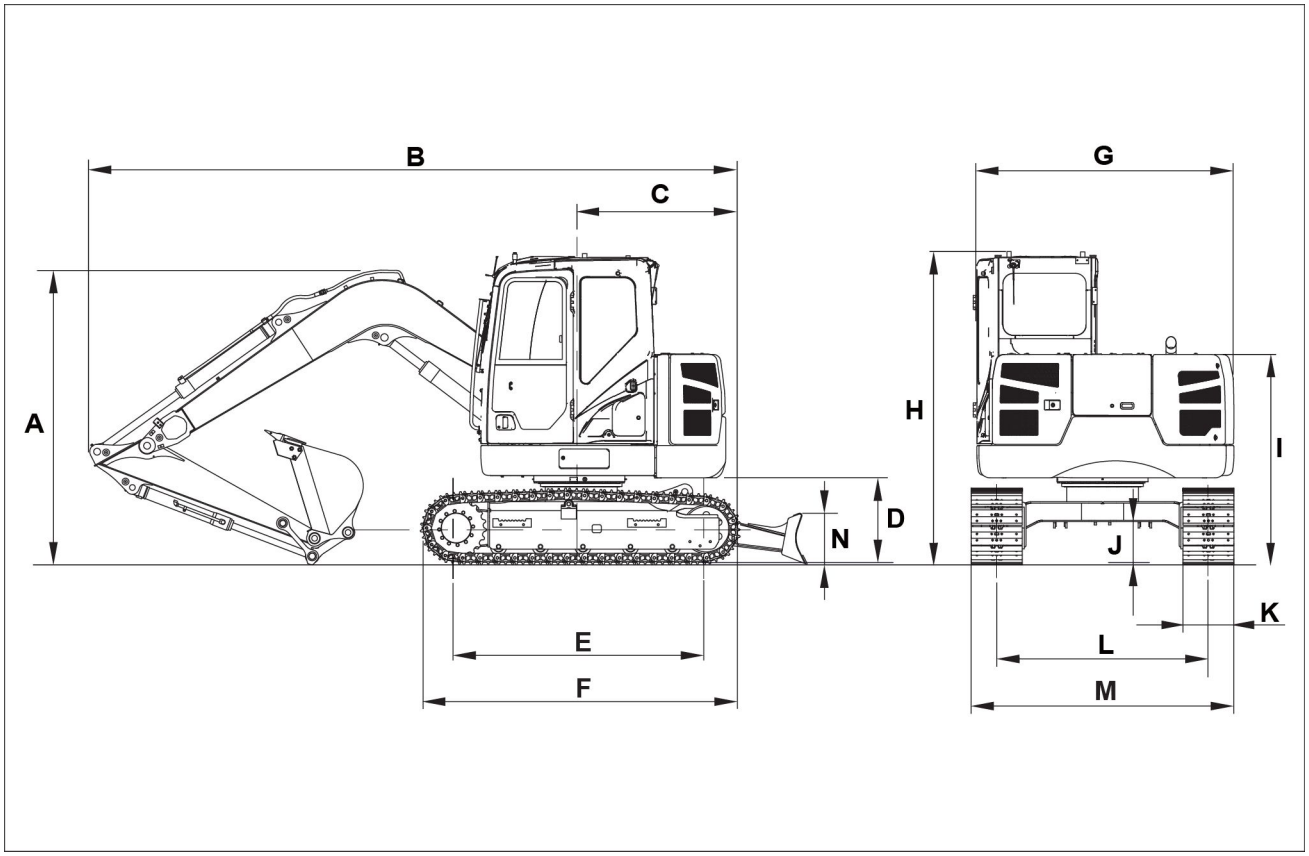
Arm	**1.69 m** (**66.54 in**)	**2.19 m** (**86.22 in**)
(A)	**2600 mm** (**102.36 in**)	**2860 mm** (**112.60 in**)
(B)	**5755 mm** (**226.57 in**)	**6340 mm** (**249.61 in**)
(C)	**1425 mm** (**56.10 in**)	
(D) (without grousers)	**750 mm** (**29.53 in**)	
(E)	**2210 mm** (**87.01 in**)	
(F)	**2845 mm** (**112.01 in**)	
(G)	**2270 mm** (**89.37 in**)	
(H) (*)	**2760 mm** (**108.66 in**)	
(I)	**1855 mm** (**73.03 in**)	
(J) (without grousers)	**360 mm** (**14.17 in**)	
(K) (standard track)	**450 mm** (**17.72 in**)	
(L)	**1870 mm** (**73.62 in**)	
(M) 450 mm (**17.7 in**) track or pad	**2320 mm** (**91.34 in**)	
(M) 600 mm (**23.6 in**) track	**2470 mm** (**97.24 in**)	

Boom length: **3.75 m** (**147.64 in**)

***NOTE: (*) 2860 mm** (**112.6 in**) if FOPS level 2 is installed.*

CX75C SR with blade



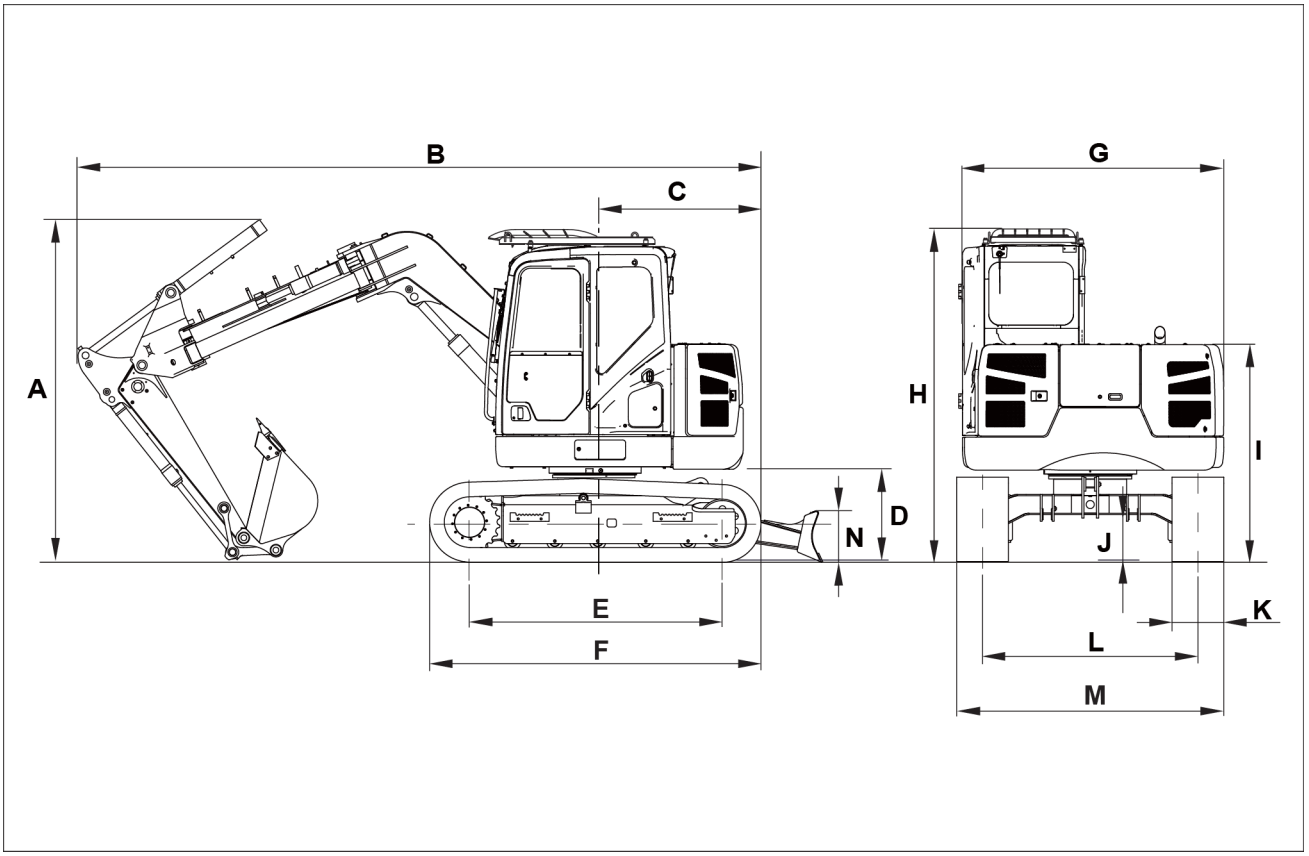
SMIL18CEX0275FA 2

Arm	**1.69 m** (**66.54 in**)	**2.19 m** (**86.22 in**)
(A)	**2600 mm** (**102.36 in**)	**2860 mm** (**112.60 in**)
(B)	**5755 mm** (**226.57 in**)	**6340 mm** (**249.61 in**)
(C)	**1425 mm** (**56.10 in**)	
(D) (without grousers)	**750 mm** (**29.53 in**)	
(E)	**2210 mm** (**87.01 in**)	
(F)	**2845 mm** (**112.01 in**)	
(G)	**2270 mm** (**89.37 in**)	
(H) (*)	**2760 mm** (**108.66 in**)	
(I)	**1855 mm** (**73.03 in**)	
(J) (without grousers)	**360 mm** (**14.17 in**)	
(K) (standard track)	**450 mm** (**17.72 in**)	
(L)	**1870 mm** (**73.62 in**)	
(M) 450 mm (**17.7 in**) track or pad	**2320 mm** (**91.34 in**)	
(M) 600 mm (**23.6 in**) track	**2470 mm** (**97.24 in**)	
(N)	**450 mm** (**17.72 in**)	

Boom length: **3.75 m** (**147.64 in**)

***NOTE: (*) 2860 mm** (**112.6 in**) if FOPS level 2 is installed.*

CX75C SR Offset Boom with blade

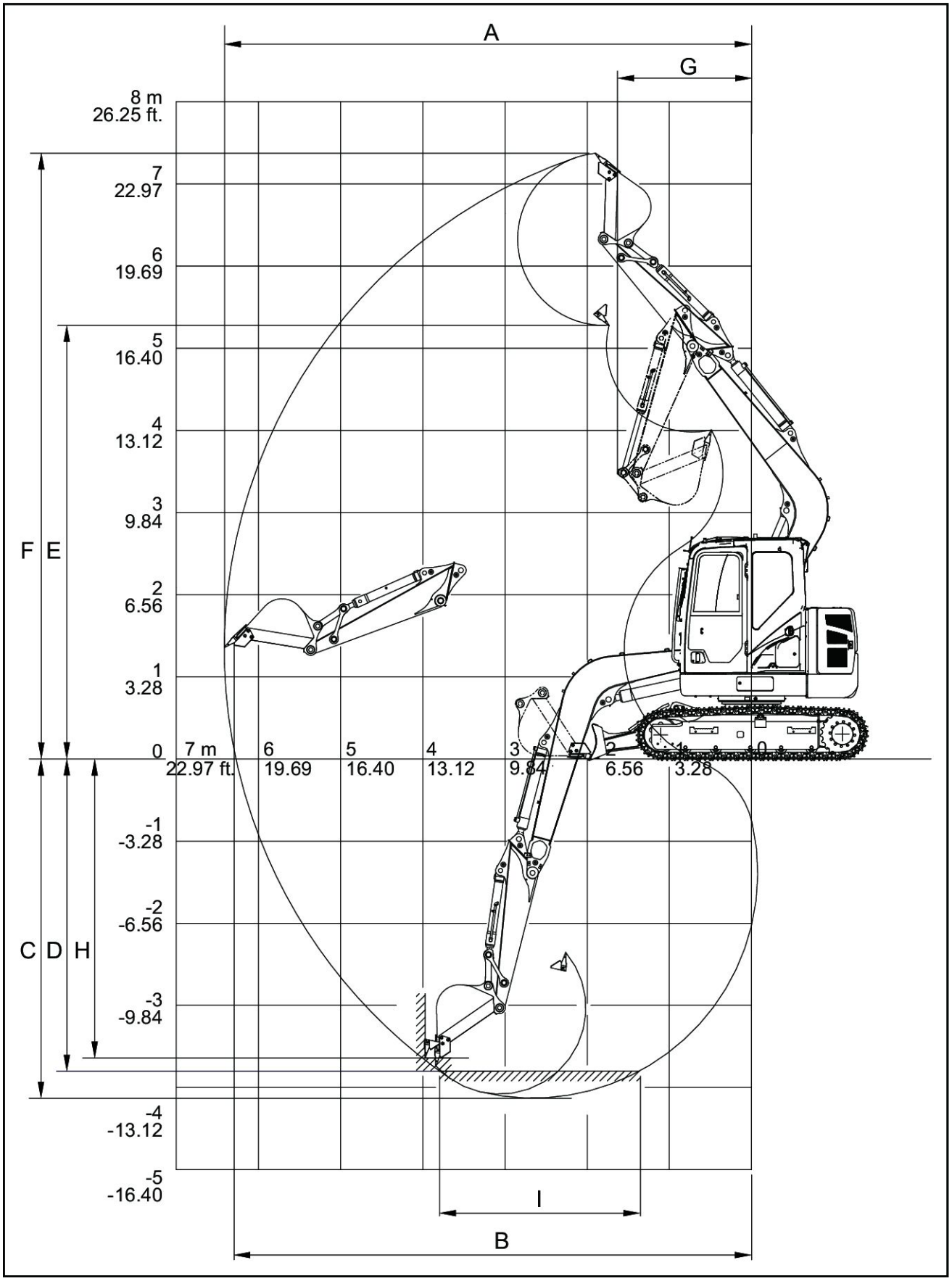


SMIL18CEX0276FA 3

Arm	**1.75 m** (**68.90 in**)	**2.10 m** (**82.68 in**)
(A)	**2970 mm** (**116.93 in**)	**3160 mm** (**124.41 in**)
(B)	**5945 mm** (**234.06 in**)	**5875 mm** (**231.30 in**)
(C)	**1425 mm** (**56.10 in**)	
(D) (without grousers)	**750 mm** (**29.53 in**)	
(E)	**2210 mm** (**87.01 in**)	
(F)	**2845 mm** (**112.01 in**)	
(G)	**2270 mm** (**89.37 in**)	
(H) (*)	**2860 mm** (**112.60 in**)	
(I)	**1855 mm** (**73.03 in**)	
(J) (without grousers)	**360 mm** (**14.17 in**)	
(K) (standard track)	**450 mm** (**17.72 in**)	
(L)	**1870 mm** (**73.62 in**)	
(M) 450 mm (**17.7 in**) track or pad	**2320 mm** (**91.34 in**)	
(M) 600 mm (**23.6 in**) track	**2470 mm** (**97.24 in**)	
(N)	**450 mm** (**17.72 in**)	

Boom length: **3.89 m** (**153.15 in**)

Working ranges (CX75C SR with blade)



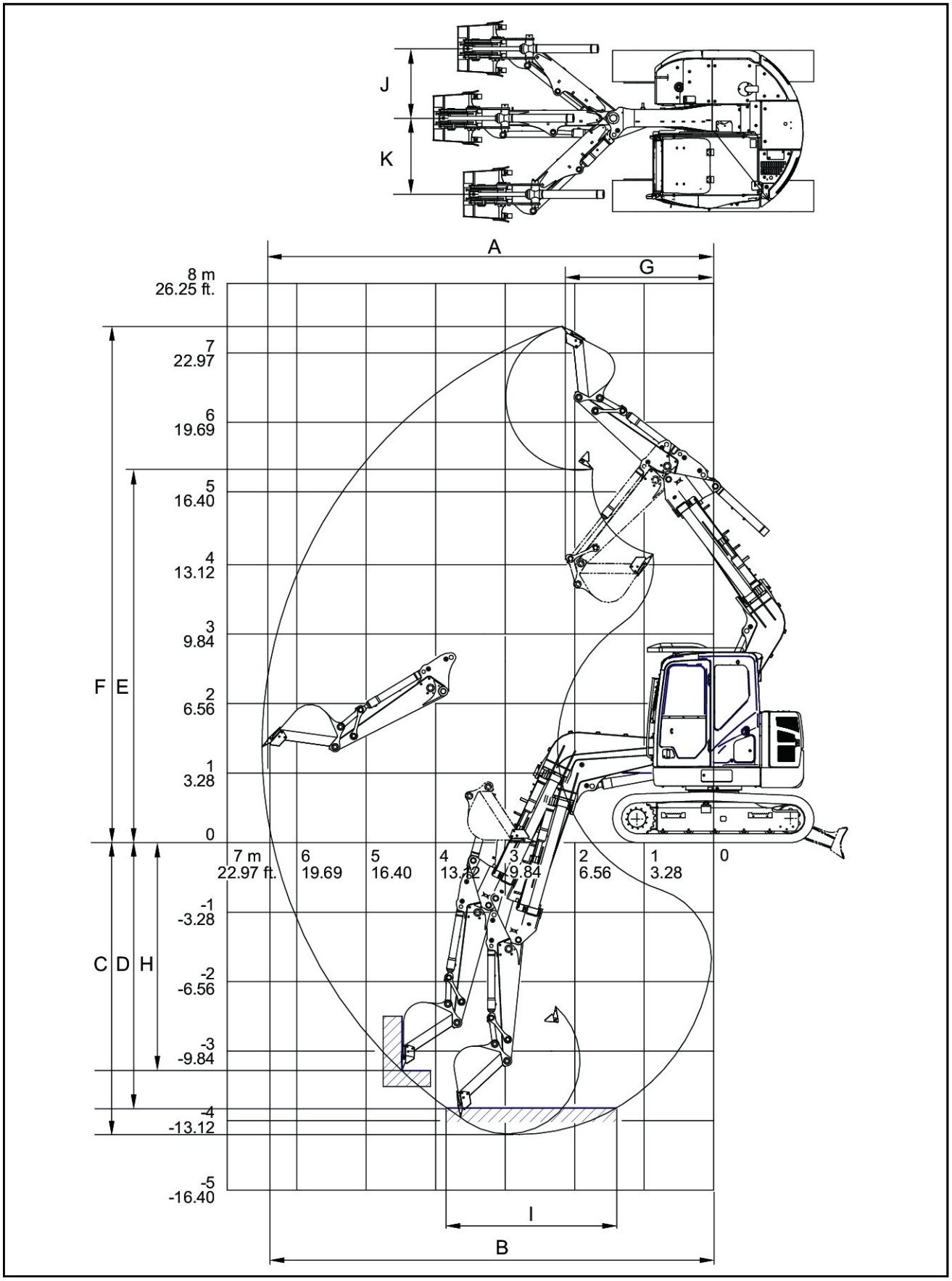
SMIL13CEX2900HB 4

Arm	**1.69 m** (**66.54 in**)	**2.19 m** (**86.22 in**)
(A) Maximum reach	**6410 mm** (**252.36 in**)	**6890 mm** (**271.26 in**)
(B) Maximum reach on surface	**6270 mm** (**246.85 in**)	**6760 mm** (**266.14 in**)
(C) Maximum digging depth	**4130 mm** (**162.60 in**)	**4630 mm** (**182.28 in**)
(D) 2.44 m (**96.06 in**) level digging depth	**3800 mm** (**149.61 in**)	**4360 mm** (**171.65 in**)
(E) Maximum dumping height	**5280 mm** (**207.87 in**)	**5670 mm** (**223.23 in**)
(F) Maximum digging height	**7370 mm** (**290.16 in**)	**7770 mm** (**305.91 in**)
(G) Minimum swing radius for attachments	**1630 mm** (**64.17 in**)	**1970 mm** (**77.56 in**)
(H) Maximum digging depth for vertical surface	**3640 mm** (**143.31 in**)	**4200 mm** (**165.35 in**)
(I) Maximum digging length for flat-bottom ditch	**2440 mm** (**96.06 in**)	**2440 mm** (**96.06 in**)

Additional working ranges

Maximum blade lift	**440 mm** (**17.32 in**)
Maximum blade depth	**280 mm** (**11.02 in**)

Working ranges (CX75C SR Offset Boom with blade)



SMIL13CEX2917HB 5

Offset 0 and Offset maximum (left)

Arm	**1.75 m** (**68.90 in**)	
	Offset 0	Maximum offset (left)
(A) Maximum reach	**6500 mm** (**255.91 in**)	**6080 mm** (**239.37 in**)
(B) Maximum reach on surface	**6360 mm** (**250.39 in**)	**5930 mm** (**233.46 in**)
(C) Maximum digging depth	**4250 mm** (**167.32 in**)	**3830 mm** (**150.79 in**)
(D) 2.44 m (**96.06 in**) level digging depth	**3870 mm** (**152.36 in**)	**3440 mm** (**135.43 in**)
(E) Maximum dumping height	**5310 mm** (**209.06 in**)	**4970 mm** (**195.67 in**)
(F) Maximum digging height	**7380 mm** (**290.55 in**)	**7040 mm** (**277.17 in**)
(G) Minimum swing radius for attachments	**2130 mm** (**83.86 in**)	**1870 mm** (**73.62 in**)
(H) Maximum digging depth for vertical surface	**3330 mm** (**131.10 in**)	**2940 mm** (**115.75 in**)
(I) Maximum digging length for flat-bottom ditch	**2440 mm** (**96.06 in**)	**2440 mm** (**96.06 in**)
(J) Offset right		**1000 mm** (**39.37 in**)
(K) Offset left		**1100 mm** (**43.31 in**)

Arm	**2.10 m** (**82.68 in**)	
	Offset 0	Maximum offset (left)
(A) Maximum reach	**6790 mm** (**267.32 in**)	**6370 mm** (**250.79 in**)
(B) Maximum reach on surface	**6660 mm** (**262.20 in**)	**6230 mm** (**245.28 in**)
(C) Maximum digging depth	**4600 mm** (**181.10 in**)	**4180 mm** (**164.57 in**)
(D) 2.44 m (**96.06 in**) level digging depth	**4250 mm** (**167.32 in**)	**3820 mm** (**150.39 in**)
(E) Maximum dumping height	**5520 mm** (**217.3 in**)	**5170 mm** (**203.5 in**)
(F) Maximum digging height	**7590 mm** (**298.82 in**)	**7240 mm** (**285.04 in**)
(G) Minimum swing radius for attachments	**2360 mm** (**92.91 in**)	**2090 mm** (**82.28 in**)
(H) Maximum digging depth for vertical surface	**3680 mm** (**144.88 in**)	**3280 mm** (**129.13 in**)
(I) Maximum digging length for flat-bottom ditch	**2440 mm** (**96.06 in**)	**2440 mm** (**96.06 in**)
(J) Offset right		**1000 mm** (**39.37 in**)
(K) Offset left		**1100 mm** (**43.31 in**)

Additional working ranges

Maximum blade lift	**440 mm** (**17.32 in**)
Maximum blade depth	**280 mm** (**11.02 in**)

Operating weights

CX75C SR

With mono-block boom, **1.69 m** (**66.54 in**) arm, **0.24 m³** (**0.31 yd³**) General Purpose bucket, **450 mm** (**18 in**) track, operator, fluids, and full fuel tank.	**7450 kg** (**16424 lb**)
Average ground contact pressure	**34 kPa** (**4.9 psi**)

CX75C SR with blade

With mono-block boom, **1.69 m** (**66.54 in**) arm, **0.24 m³** (**0.31 yd³**) General Purpose bucket, **450 mm** (**18 in**) track, operator, fluids, and full fuel tank.	**7900 kg** (**17417 lb**)
Average ground contact pressure	**36 kPa** (**5.2 psi**)

CX75C SR Offset Boom with blade

With Offset Boom, **1.75 m** (**68.90 in**) arm, **0.24 m³** (**0.31 yd³**) General Purpose bucket, **450 mm** (**18 in**) track, operator, fluids, full fuel tank, and FOPS level 2 guard.	**8400 kg** (**18519 lb**)
Average ground contact pressure	**38 kPa** (**5.5 psi**)

9 - ACCESSORIES

Direct fit buckets

Direct fit buckets application as function of the arm (CX75C SR)

General Purpose buckets			Arm	
Capacity **ISO 7451** (Heaped)	Width	Mass	**1.69 m** (**66.54 in**)	**2.19 m** (**86.22 in**)
0.10 m³ (**0.13 yd³**)	**300 mm** (**12 in**)	**125 kg** (**276 lb**)	○	○
0.12 m³ (**0.16 yd³**)	**350 mm** (**14 in**)	**130 kg** (**287 lb**)	○	○
0.15 m³ (**0.20 yd³**)	**400 mm** (**16 in**)	**140 kg** (**309 lb**)	○	○
0.17 m³ (**0.22 yd³**)	**450 mm** (**18 in**)	**145 kg** (**320 lb**)	○	○
0.19 m³ (**0.25 yd³**)	**500 mm** (**20 in**)	**150 kg** (**331 lb**)	○	○
0.24 m³ (**0.31 yd³**)	**600 mm** (**24 in**)	**170 kg** (**375 lb**)	○	○
0.32 m³ (**0.42 yd³**)	**750 mm** (**30 in**)	**200 kg** (**441 lb**)	○	○
0.37 m³ (**0.48 yd³**)	**850 mm** (**33 in**)	**220 kg** (**485 lb**)	●	●
0.44 m³ (**0.58 yd³**) (*)	**1000 mm** (**39 in**)	**260 kg** (**573 lb**)	■	■

Ditch cleaning buckets			Arm	
Capacity **ISO 7451** (Heaped)	Width	Mass	**1.69 m** (**66.54 in**)	**2.19 m** (**86.22 in**)
0.27 m³ (**0.35 yd³**)	**1200 mm** (**47 in**)	**170 kg** (**375 lb**)	○	○
0.35 m³ (**0.46 yd³**)	**1500 mm** (**59 in**)	**200 kg** (**441 lb**)	○	●

(*) Not suitable for digging application

○ Density of material up to 2 t/m^3
● Density of material up to 1.6 t/m^3
■ Density of material up to 1.2 t/m^3

Direct fit buckets application as function of the arm (CX75C SR Offset Boom with blade)

General Purpose buckets			Arm	
Capacity **ISO 7451** (Heaped)	Width	Mass	**1.75 m** (**68.90 in**)	**2.10 m** (**82.68 in**)
0.10 m³ (**0.13 yd³**)	**300 mm** (**12 in**)	**125 kg** (**276 lb**)	○	○
0.12 m³ (**0.16 yd³**)	**350 mm** (**14 in**)	**130 kg** (**287 lb**)	○	○
0.15 m³ (**0.20 yd³**)	**400 mm** (**16 in**)	**140 kg** (**309 lb**)	○	○
0.17 m³ (**0.22 yd³**)	**450 mm** (**18 in**)	**145 kg** (**320 lb**)	○	○
0.19 m³ (**0.25 yd³**)	**500 mm** (**20 in**)	**150 kg** (**331 lb**)	○	○
0.24 m³ (**0.31 yd³**)	**600 mm** (**24 in**)	**170 kg** (**375 lb**)	○	○
0.32 m³ (**0.42 yd³**)	**750 mm** (**30 in**)	**200 kg** (**441 lb**)	●	●
0.37 m³ (**0.48 yd³**)	**850 mm** (**33 in**)	**220 kg** (**485 lb**)	●	■
0.44 m³ (**0.58 yd³**) (*)	**1000 mm** (**39 in**)	**260 kg** (**573 lb**)	■	x

Ditch cleaning buckets			Arm	
Capacity **ISO 7451** (Heaped)	Width	Mass	**1.75 m** (**68.90 in**)	**2.10 m** (**82.68 in**)
0.27 m³ (**0.35 yd³**)	**1200 mm** (**47 in**)	**170 kg** (**375 lb**)	○	○
0.35 m³ (**0.46 yd³**)	**1500 mm** (**59 in**)	**200 kg** (**441 lb**)	●	●

(*) Not suitable for digging application

○ Density of material up to 2 t/m^3
● Density of material up to 1.6 t/m^3
■ Density of material up to 1.2 t/m^3
x Not applicable

Auxiliary hydraulic circuits

Auxiliary high-flow hydraulic circuit

CX75C SR can be equipped with one of the following auxiliary high-flow hydraulic circuits:

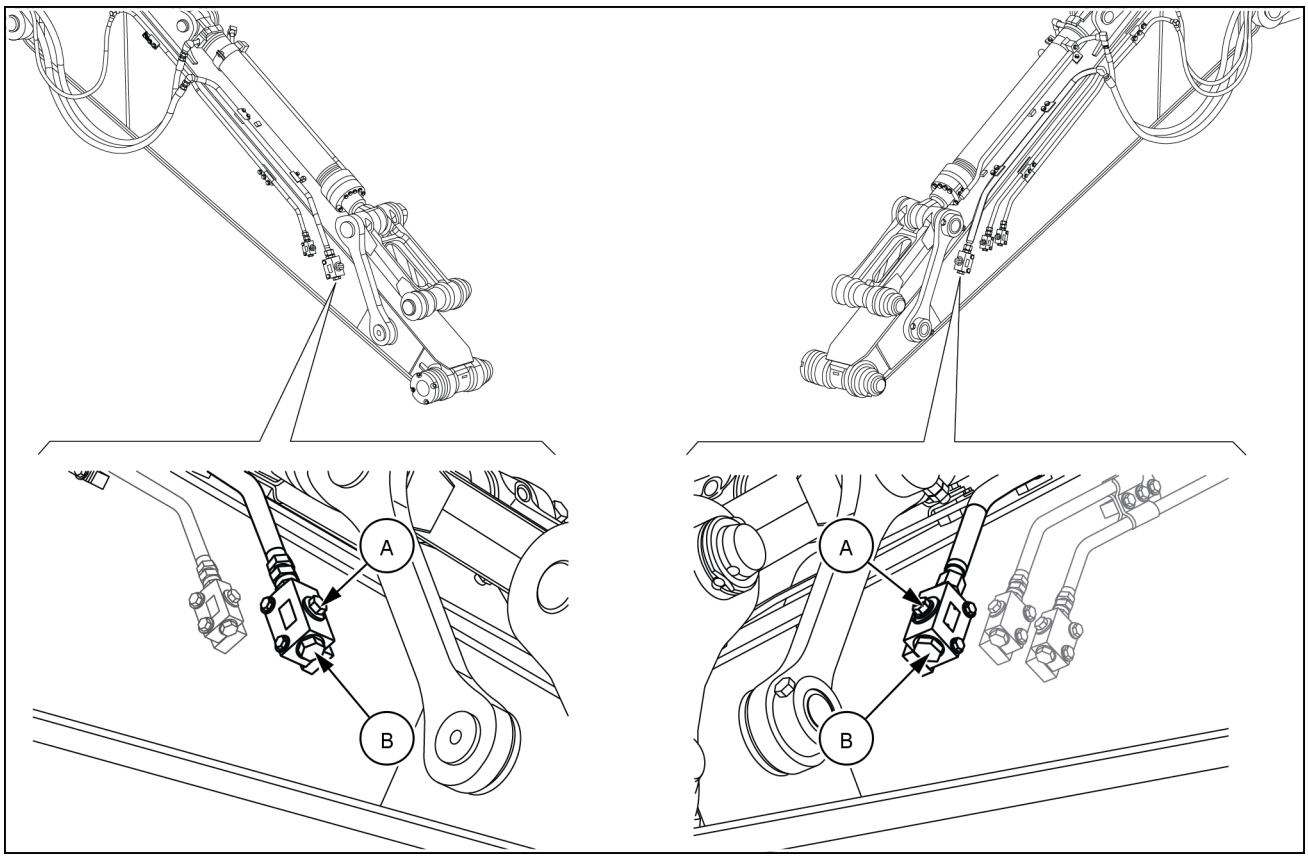
- Single-acting auxiliary high-flow hydraulic circuit intended for usage of attachments such as a hydraulic breaker.
- Multi-function auxiliary high-flow hydraulic circuit. This type of circuit can be alternatively set as a single-acting circuit to operate attachments such as a hydraulic breaker, or as a double-acting circuit to operate attachments such as a hydraulic sorting grab or a hydraulic demolition crusher.

CX75C SR Offset Boom with blade can be equipped with one of the following auxiliary high-flow hydraulic circuits:

- Single-acting auxiliary high-flow hydraulic circuit intended for usage of attachments such as a hydraulic breaker.
- Double-acting auxiliary high-flow hydraulic circuit intended for usage of attachments such as a hydraulic sorting grab.

Hydraulic connections

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



SMIL15CEXY959FB 1

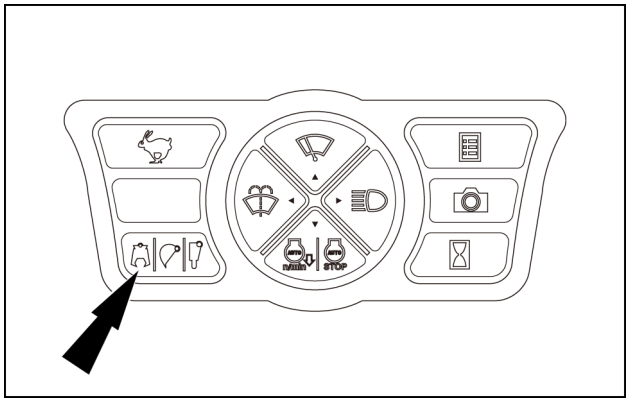
Open/Close tool **(A)**	**24 mm** wrench
Hydraulic connection **(B)**	G 3/4” female port with O-Ring seat

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

Operational settings

Before operating any hydraulic attachment, press the attachment selector button in order to set the auxiliary high-flow hydraulic circuit to the proper mode.

NOTICE: *If the attachment mode is not properly set, malfunction or failure may occur to the machine or damage may occur to the hydraulic attachment.*

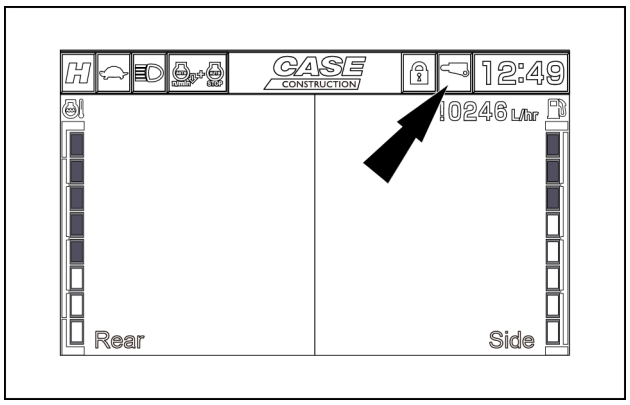


SMIL16CEX1680AA 2

Before operating a hydraulic breaker or any other single-acting hydraulic attachment, make sure that the breaker icon is shown on the top of the display.

NOTE: *The rated flow of the auxiliary hydraulic circuit in breaker mode (* ***73 L/min*** *(****19.3 US gpm****)) is shown on the top center of the display.*

NOTE: *If CX75C SR Offset Boom with blade is equipped with the Double-acting auxiliary high-flow hydraulic circuit, the breaker icon does not appear.*



SMIL16CEX1682AA 3

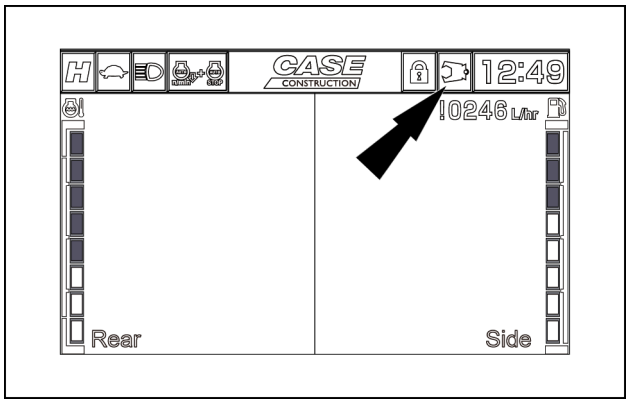
Before operating a hydraulic crusher or any other double-acting hydraulic attachment, make sure that the crusher icon is shown on the top of the display.

NOTE: *The rated flow of the auxiliary hydraulic circuit in crusher mode (* ***146 L/min*** *(****38.6 US gpm****)) is shown on the top center of the display.*

NOTE: *On CX75C SR Offset Boom with blade, the rated flow of the Double-acting auxiliary high-flow hydraulic circuit is* ***73 L/min*** *(****19.3 US gpm****).*

NOTE: *If the machine is equipped with the Single-acting auxiliary high-flow hydraulic circuit, the crusher icon does not appear.*

NOTICE: *if operation with the hydraulic attachment is attempted without going throughout the set up process and without confirming any selection, a warning buzzer sounds and the warning message AUXILIARY SETUP REQUIRED is displayed.*

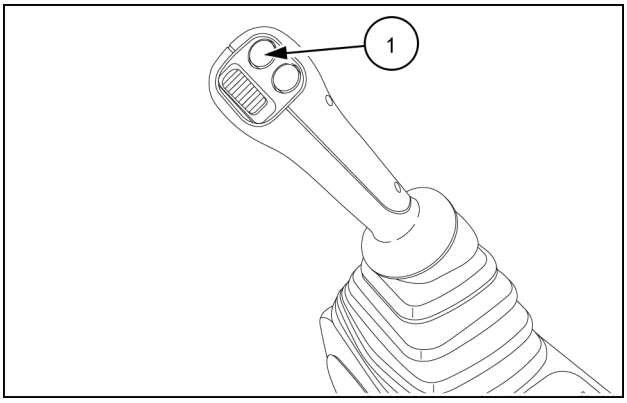


SMIL16CEX1681AA 4

Operating Controls

Use the ON/OFF button **(1)** located on the right-hand control lever to operate a single-acting hydraulic attachment with a continuous flow.

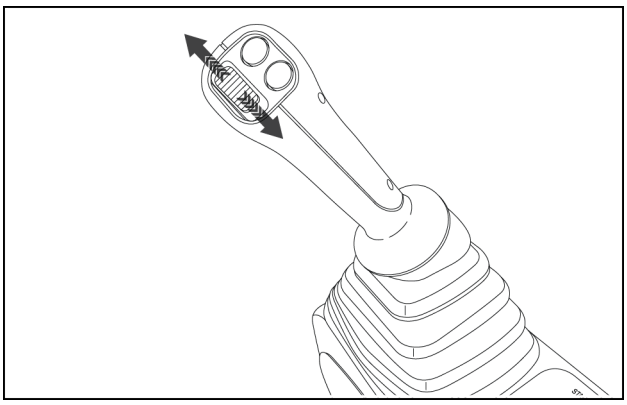
NOTICE: *If not using any hydraulic attachment, do not operate controls for auxiliary hydraulic circuits.*



SMIL15CEXZ396AB 5

Use the proportional switch located on the right-hand control lever to operate a double-acting hydraulic attachment with a variable power.

NOTICE: *If not using any hydraulic attachment, do not operate controls for auxiliary hydraulic circuits.*



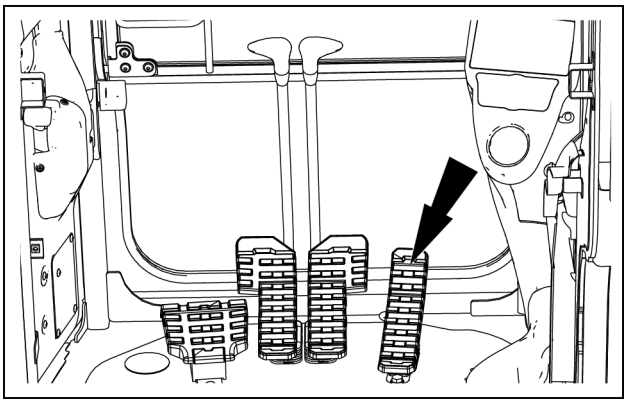
SMIL15CEXY965AB 6

The Single-acting auxiliary high-flow hydraulic circuit may be optionally equipped with a pedal type control.

NOTICE: *if the auxiliary pedal is equipped, the proportional controls on the right-hand control lever are not equipped.*

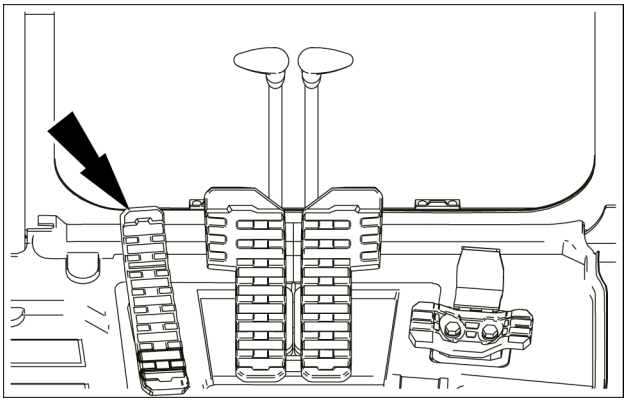
If the auxiliary pedal is equipped, press the front side of the pedal to full stroke to operate a single-acting hydraulic attachment with a continuous flow.

NOTICE: *If not using any hydraulic attachment, do not operate controls for auxiliary hydraulic circuits.*



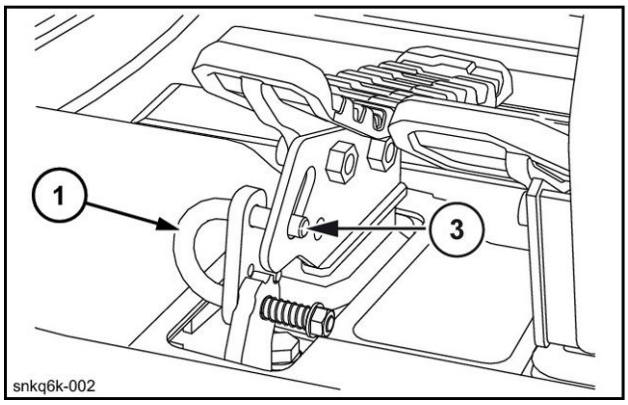
SMIL17CEX1756AA 7

NOTE: *On CX75C SR Offset Boom with blade, the auxiliary pedal is located on the left side.*



SMIL18CEX0300AA 8

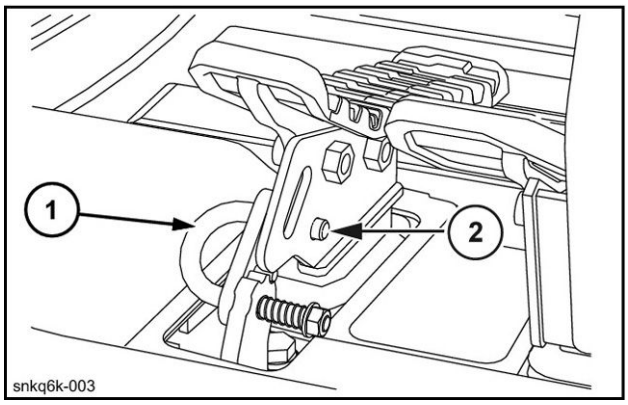
To operate the auxiliary pedal, engage the locking pin **(1)** in the guiding hole **(3)**.



SNKQ6K-002A 9

NOTICE: *the auxiliary pedal shall always be locked when not in use.*

To lock the auxiliary pedal, engage the locking pin **(1)** in the locking hole **(2)**.



SNKQ6K-003A 10

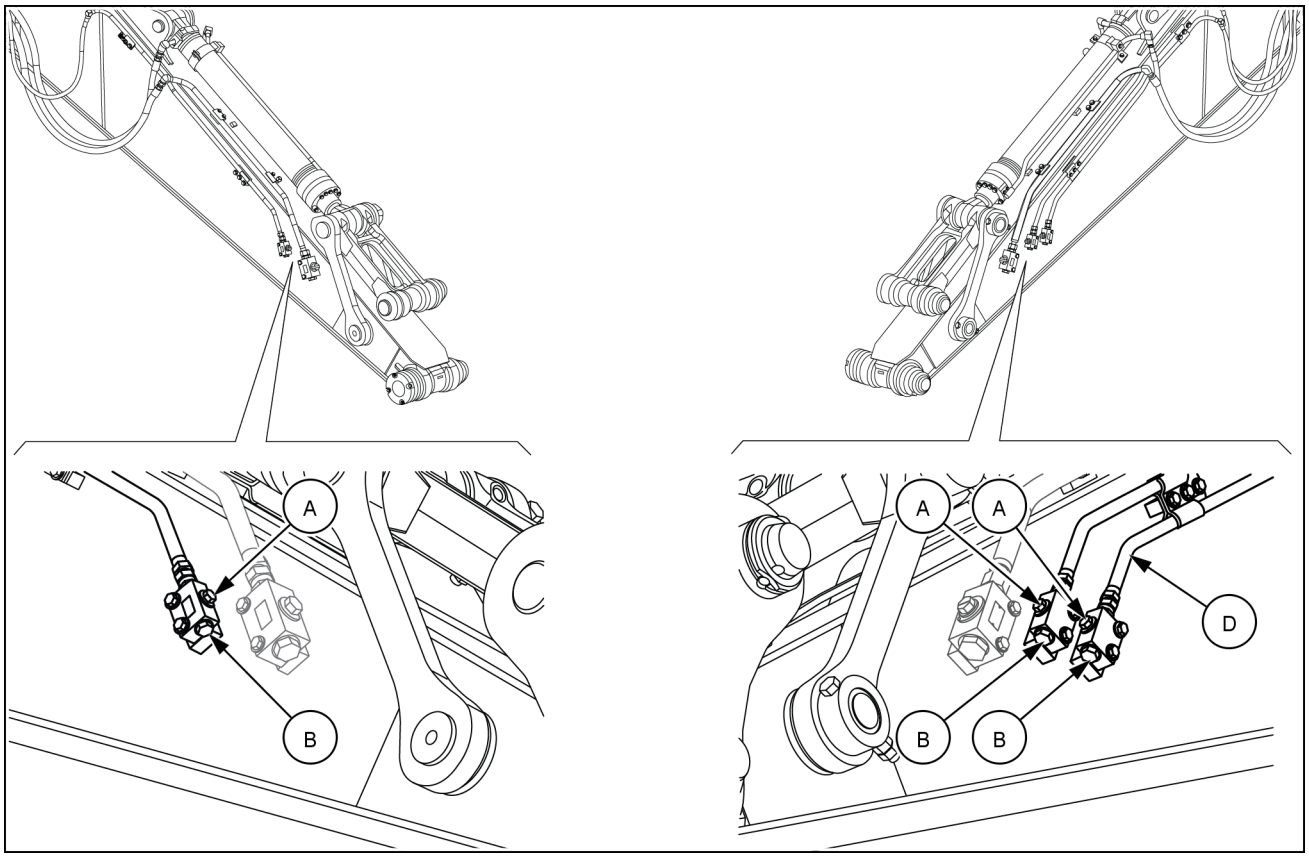
Auxiliary low-flow hydraulic circuit

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

NOTICE: *The CX75C SR Offset Boom with blade cannot be equipped with the auxiliary low-flow hydraulic circuit.*

Hydraulic connections

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



SMIL15CEXY958FB 11

Open/Close tool **(A)**	**19 mm** wrench
Hydraulic connection **(B)**	G 1/2” female port with O-Ring seat

NOTE: *the maximum flow rate of the auxiliary low-flow hydraulic circuit using the SP work mode is* ***35 L/min*** *(****9.2 US gpm****). The maximum working pressure of the auxiliary low-flow hydraulic circuit is* ***23.5 MPa*** *(****3409 psi****).*

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

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

Operating controls

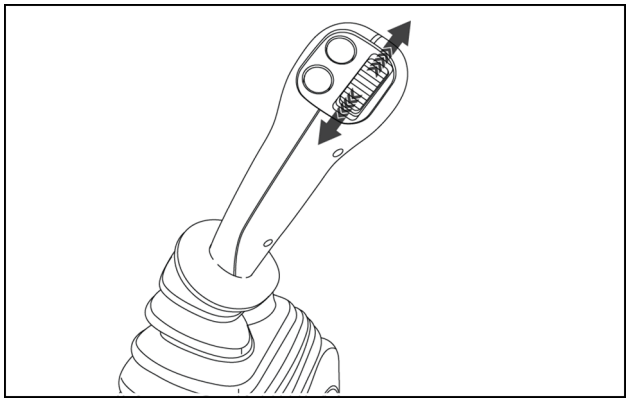
Use the proportional switch located on the left-hand control lever to operate the grab rotation or the bucket tilt with a variable power.

Make sure that the control pattern of the positioning actuation is as intended. Slide up and down the proportional switch and confirm the control directions (e.g. left/right).

NOTICE: *If control directions for the positioning actuation are not as intended, check for an alternative set up of the hydraulic connections between the attachment and the machine.*

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

NOTICE: *If not using any hydraulic attachment, do not operate controls for auxiliary hydraulic circuits.*



SMIL15CEXY964AB 12

Operating guidelines for usage of hydraulic attachments

When using the CX75C SR Offset Boom with a hydraulic attachment, the front equipment shall be set in straight position. The arm shall never be offset neither rightward nor leftward from the boom. Failing to comply will cause severe damages to the machine frames and to the machine systems.

Always select an hydraulic attachment which is suitable for installation on the machine, in order to avoid severe damages to the machine frames and to the machine systems. Make sure to select an hydraulic attachment which does not compromise the overall machine stability. Make sure to select an hydraulic attachment which properly matches the capacity of the auxiliary hydraulic circuit of the machine.

NOTICE: *make sure to know the maximum working pressure allowed by the attachment. Look for "Relief pressure range" or "Maximum pressure range" information into the specification sheet of the attachment. Set the maximum working pressure of the auxiliary hydraulic circuit according to this specification. The attachment will operate properly and effectively, and serious damages will be avoided to the attachment and to the machine.*

Contact your CASE CONSTRUCTION dealer for selection and provision of the mounting bracket for the attachment, and for selection and provision of the connecting hoses between the auxiliary hydraulic circuits and the attachment.

Make sure to read and understand the Operator's Manual of the hydraulic attachment.

Always refer to the Operator's Manual of the hydraulic attachment for proper and safe installation of the attachment to the machine.

Always refer to the Operator's Manual of the hydraulic attachment and to the following instructions in this manual for proper and safe usage of the attachment.

Always refer to the Operator's Manual of the hydraulic attachment for proper maintenance of the attachment. Always refer to the Operator's Manual of the machine for specific maintenance schedule related to the usage of any attachment other than a bucket (refer to the next page).

If not using any hydraulic attachment, make sure to apply the blanking plugs on the feed valves and on the connecting hoses to the attachment in order to avoid the penetration of foreign bodies.

Maintenance

A specific maintenance schedule shall be adopted for the machine if any hydraulic attachment is used over a significant period of time. In particular, the maintenance of the hydraulic system shall be more frequent because the usage of hydraulic attachments severely affects the properties of the hydraulic fluid.

The following table prescribes the required intervals for the maintenance operations to be performed on the hydraulic system of the machine depending upon the percentage of the usage of the attachment.

<table>
<tr><th></th><th>10%</th><th>20%</th><th>40%</th><th>100%</th></tr>
<tr><td>Hydraulic oil level check</td><td>10 h</td><td>10 h</td><td>10 h</td><td>10 h</td></tr>
<tr><td>Hydraulic oil suction filter cleaning</td><td rowspan="4">800 h</td><td rowspan="4">600 h</td><td rowspan="4">300 h</td><td rowspan="4">100 h</td></tr>
<tr><td>Hydraulic oil return filter replacement</td></tr>
<tr><td>Pilot filter replacement</td></tr>
<tr><td>Hydraulic oil analysis</td></tr>
<tr><td>Hydraulic oil and filters replacement</td><td>4000 h</td><td>3000 h</td><td>1500 h</td><td>600 h</td></tr>
</table>

Moreover, the following operations shall be performed every **10 h** if any attachment other than a bucket is used:

- lubricate the bucket pins and the whole bucket linkage.
- check the tightening torques, in particular if the machine is used in demolition applications.
- check the frames and the structures for damages or cracks, in particular if the machine is used in demolition applications.
- if an hydraulic attachment is used, check the hydraulic lines and connections towards the attachment.

Auxiliary hydraulic circuits pressure release

⚠ WARNING

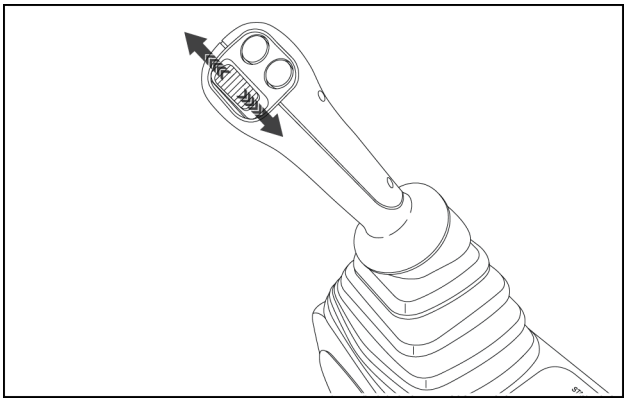
Escaping fluid!
Hydraulic fluid or diesel fuel leaking under pressure can penetrate the skin and cause infection or other injury. To prevent personal injury: Relieve all pressure before disconnecting fluid lines or performing work on the hydraulic system. Before applying pressure, make sure all connections are tight and all components are in good condition. Never use your hand to check for suspected leaks under pressure. Use a piece of cardboard or wood for this purpose. If injured by leaking fluid, see your doctor immediately.
Failure to comply could result in death or serious injury.

W0178A

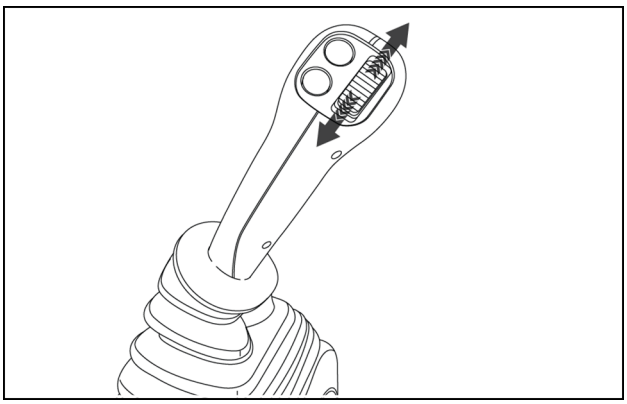
Auxiliary hydraulic circuits are high pressure hydraulic systems. Always release the pressure before connecting or disconnecting the hydraulic hoses between the machine and the attachment.

If the proportional switches are equipped, proceed as follows:

1. Place the machine on flat and level ground.
2. Lower the attachment to the ground and stop the engine.
3. Turn the starter key to ON position.
4. Set the gate lock lever in unlock position.
5. Slide the right proportional switch and the left proportional switch up and down three times approximately to release the pressure.
6. Turn the starter key to OFF position.



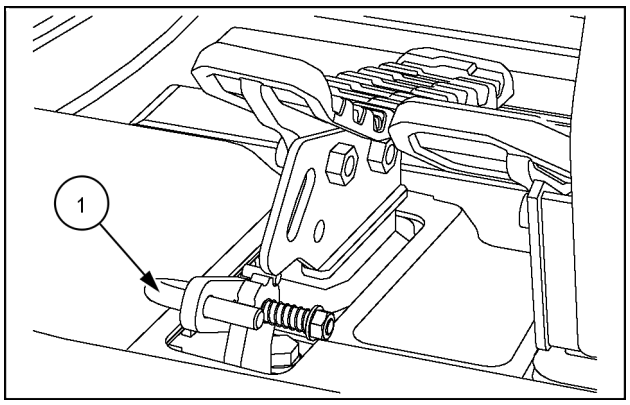
SMIL15CEXY965AB 13



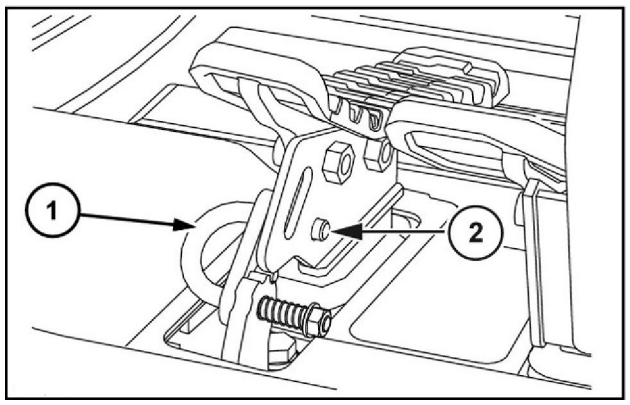
SMIL15CEXY964AB 14

If the auxiliary pedal is equipped, proceed as follows:

1. Place the machine on flat and level ground.
2. Lower the attachment to the ground and stop the engine.
3. Turn the starter key to ON position.
4. Set the gate lock lever in unlock position.
5. Place the locking pin **(1)** in outward position.
6. Operate the pedal backward and forward three times approximately to release the pressure.
7. Lock the auxiliary pedal by engaging the locking pin **(1)** in the locking hole **(2)**.
8. Turn the starter key to OFF position.



SMIL15CEX5130AA 15



SNKQ6K-003A 16

Operation with the hydraulic breaker

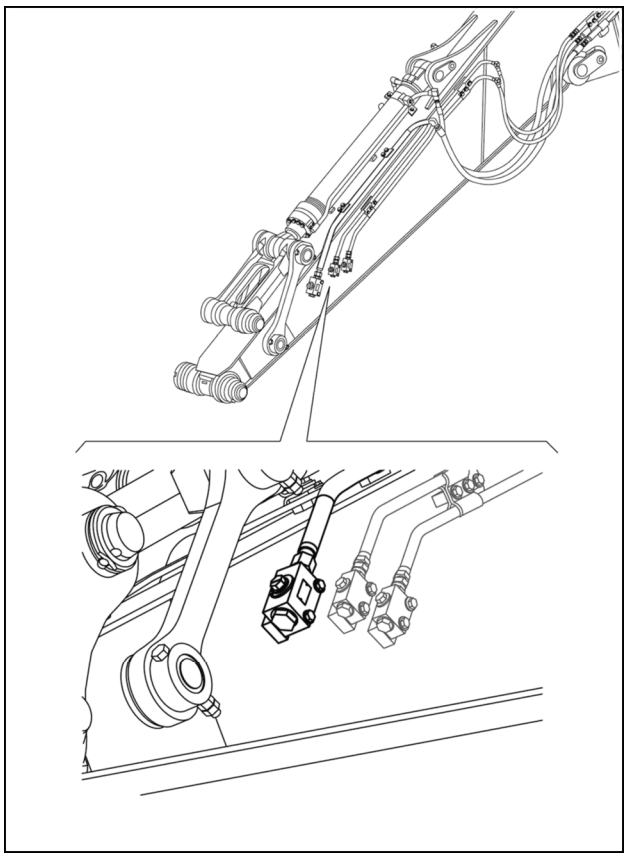
The hydraulic breaker is a single-acting hydraulic attachment, and shall be connected to a high-flow hydraulic circuit.

Therefore, to operate with a hydraulic breaker the machine shall be equipped with the Single-acting auxiliary high-flow hydraulic circuit or with the Multi-function auxiliary high-flow hydraulic circuit.

1. Make sure that the machine and the attachment to be installed are on flat and level ground.
2. Make sure to read and understand the installation procedure described in the Operator's Manual of the attachment.
3. Operate the controls of boom, arm and bucket in order to install the hydraulic breaker to the linkage at the top of the arm.
4. Stop the engine. Release pressure inside the auxiliary high-flow hydraulic circuit.
5. Close the feed valves at the top of the arm. Install the connecting hoses between the attachment and the feed valves.

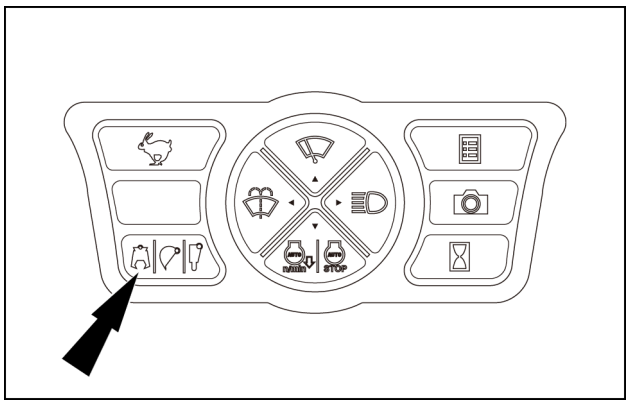
   NOTICE: *make sure to identify on the breaker the supply port (IN or P) and the return port to tank (OUT or T). The hose for breaker supply shall always be connected to the feed valve on the left side of the arm. If the supply port on the breaker is not aligned to the feed valve on the left side of the arm, check for an alternative set up of the hydraulic ports on the attachment.*

   NOTICE: *Always keep each connecting hose on the same side of the arm. Never cross-over the connecting hoses between the two sides of the arm.*
6. Open the feed valves and check the fixing clamps for looseness, and the tubes and hoses fittings for leakages.



SMIL15CEXZ386BB 17

7. Start the engine. Press the attachment selector button in order to select the breaker mode of the auxiliary high-flow hydraulic circuit.



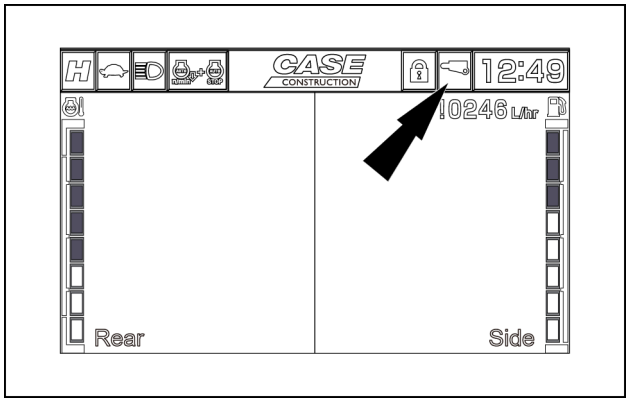
SMIL16CEX1680AA 18

8. Make sure that the breaker icon is displayed.

   NOTICE: *the maximum working pressure of the auxiliary high-flow hydraulic circuit shall be set according to the specification of the breaker.*

   NOTICE: *the working pressure of the Single-acting auxiliary high-flow hydraulic circuit shall be set manually by the port relief valve on the relevant section of the control valve.*

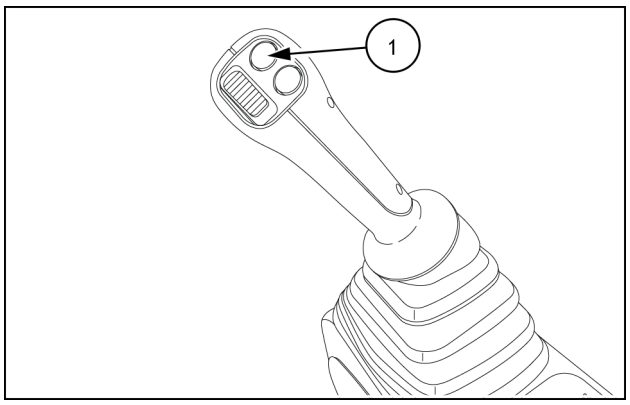
   NOTICE: *the working pressure of the Multi-function auxiliary high-flow hydraulic circuit shall be set manually by the relief valve located above the main control valve.*



SMIL16CEX1682AA 19

9. Select the SP work mode.
10. Set the gate lock lever in unlock position.
11. Operate the controls of boom, arm and bucket in order to position the breaker right to the structure or to the object to be crushed.
12. If the proportional controls on the right-hand lever are equipped, press and hold the ON/OFF button **(1)** to operate the hydraulic breaker with the continuous selected flow providing a constant blowing frequency. Release the button to stop breaker operation.

    NOTE: *To change the blowing frequency, a different work mode may be selected changing the position of the engine throttle (e.g. H work mode).*

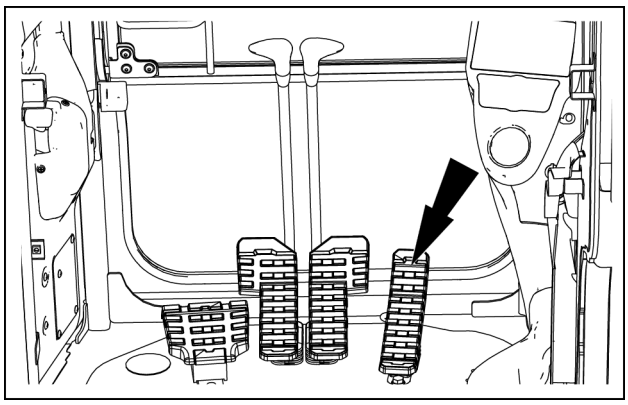


SMIL15CEXZ396AB 20

If the auxiliary pedal is equipped, press and hold the front side of the pedal to full stroke in order to operate the hydraulic breaker with the continuous selected flow providing a constant blowing frequency. Release the pedal to stop breaker operation.

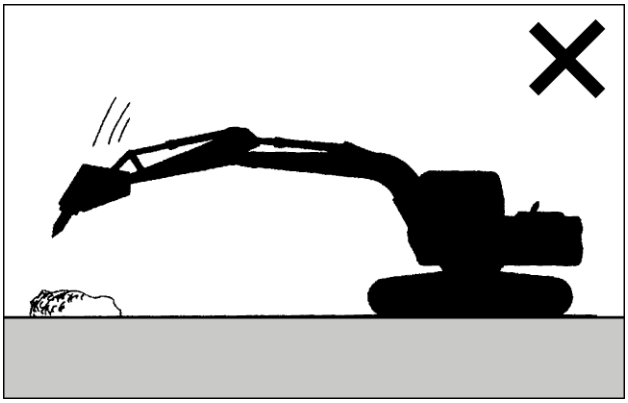
NOTE: *On CX75C SR Offset Boom with blade, the auxiliary pedal is located on the left side.*

NOTE: *To change the blowing frequency, a different work mode may be selected changing the position of the engine throttle (e.g. H work mode).*



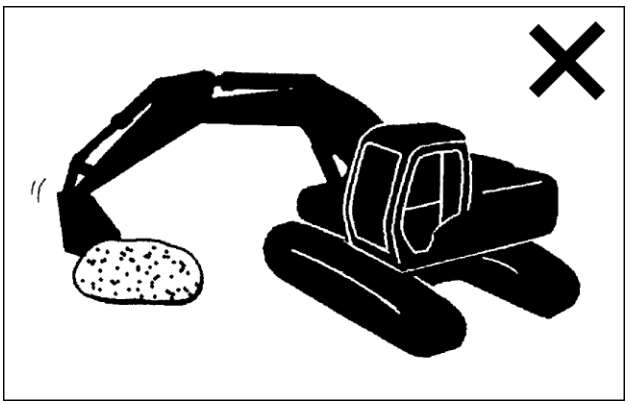
SMIL17CEX1756AA 21

Avoid hitting objects with breaker. The breaker is heavier than the bucket and lowers faster. This may cause damages to the breaker, attachment, and upperstructure. Always lower the breaker slowly until the chisel point touches the object to be broken before starting breaker operation.



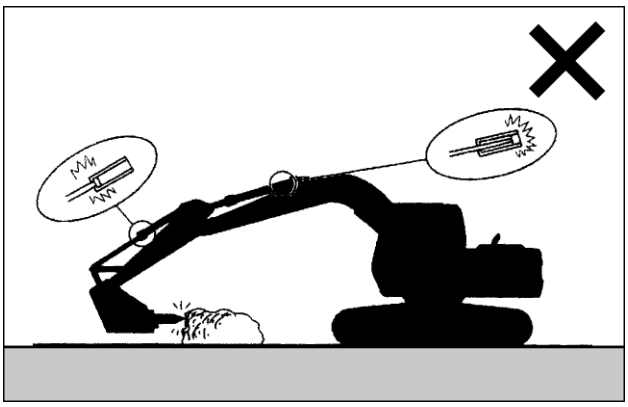
NH0195 22

Do not use the hydraulic breaker and/or swing function to push objects as damages to the attachment may result.



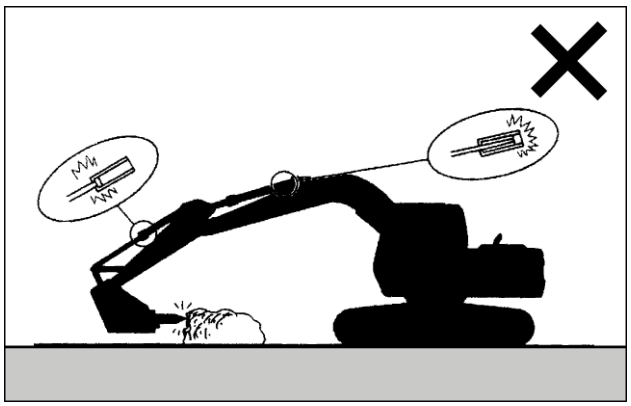
NH0196 23

Do not operate the breaker with the excavator cylinders fully extended or retracted to avoid attachment and/or cylinder damage.



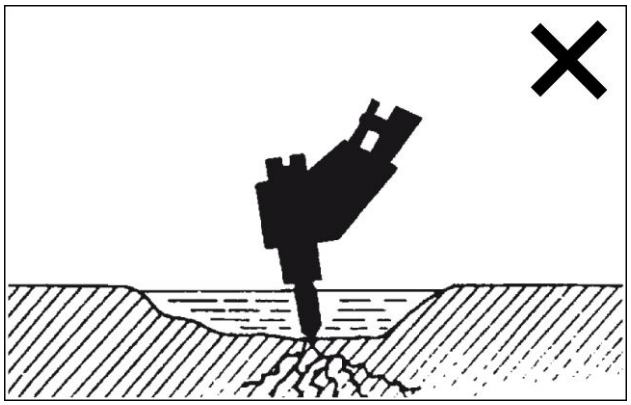
NH0197 24

Stop working if hydraulic hoses look abnormally bent. Contact your authorized Dealer.



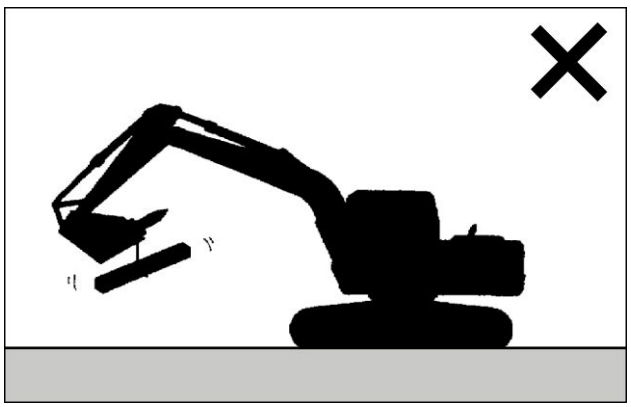
NH0197 25

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



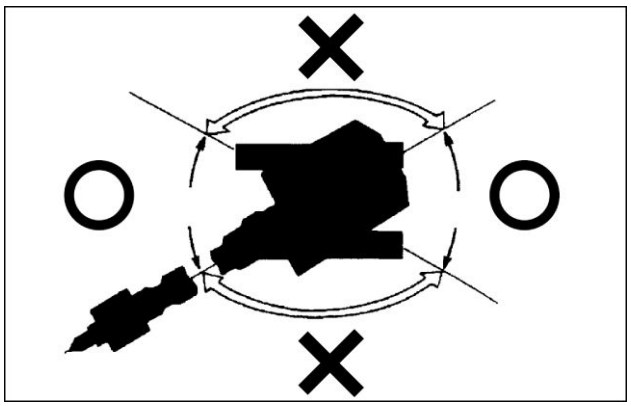
NH0199 26

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



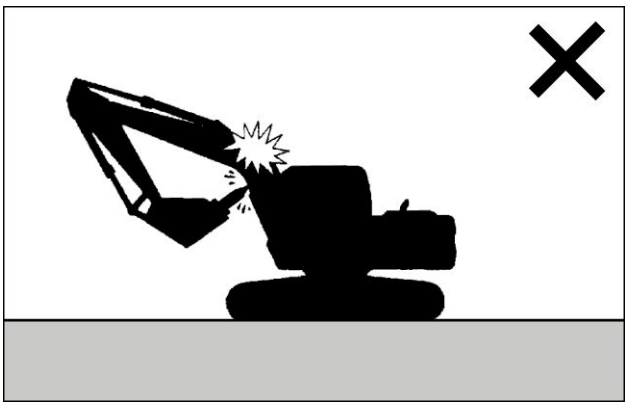
NH0200 27

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



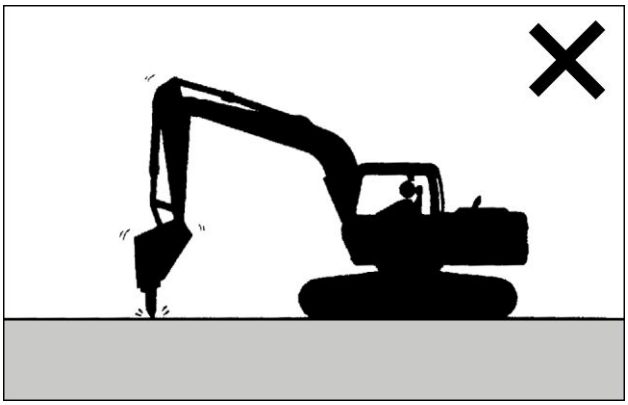
NH0201 28

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



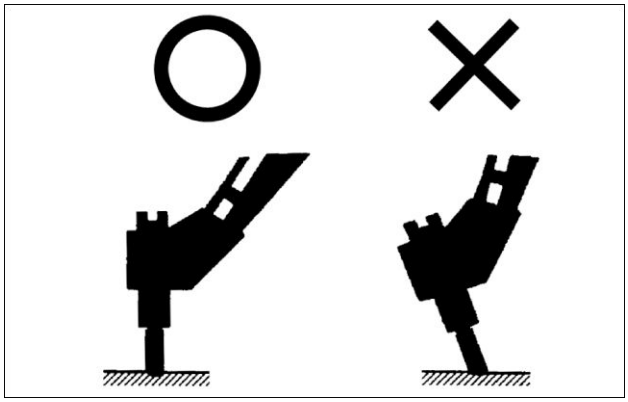
NH0202 29

Do not operate the breaker with the arm positioned vertically. Excessive vibration to the arm cylinder may cause oil leakage.



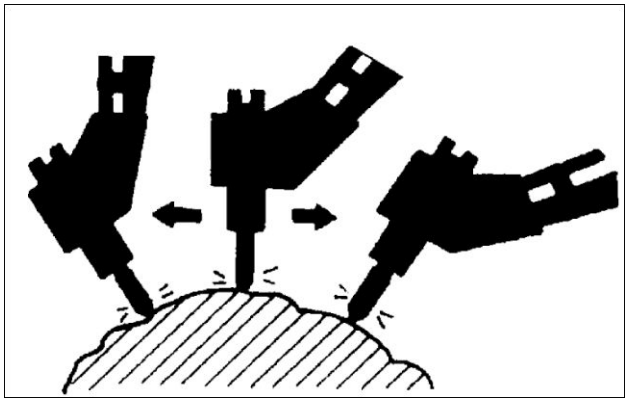
NH0203 30

Press the breaker so that the chisel point thrust is square (perpendicular) to the object to be broken.



NH0204 31

Do not operate the hydraulic breaker continuously longer than **15 s**. Excessive chisel wear will result. If an object could not be broken within **15 s**, apply chisel to other locations, less than **15 s** for each location.



NH0205 32

CASE CONSTRUCTION hydraulic breakers

CASE CONSTRUCTION CB hydraulic breakers are designed to optimize the operating performance of the CASE CONSTRUCTION excavators in general construction works, as for example residential construction or utilities maintenance.

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

Direct fit application as function of the arm

CX75C SR

CB BREAKER					
Model	Install Weight	Reference machine settings		Arm	
		Throttle	Relief Pressure	**1.69 m** (**66.54 in**)	**2.19 m** (**86.22 in**)
CB90S	**400 kg**	SP mode	**19 MPa**- **21 MPa**	○	○

CX75C SR Offset Boom with blade

CB BREAKER					
Model	Install Weight	Reference machine settings		Arm	
		Throttle	Relief Pressure	**1.75 m** (**68.90 in**)	**2.10 m** (**82.68 in**)
CB90S	**400 kg**	SP mode	**19 MPa**- **21 MPa**	●	x

○ Suitable application
● Conditional application (the boom shall be set in straight position)
x Not applicable

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

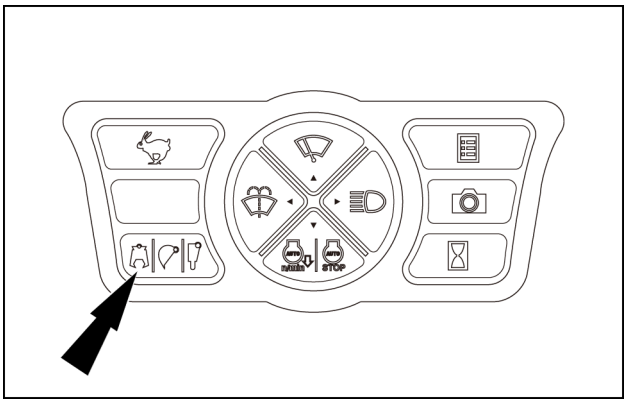
Operation with the hydraulic crusher (hydraulic sorting grab)

The hydraulic demolition crusher is a double-acting hydraulic attachment, and shall be connected to a high-flow hydraulic circuit.

Therefore, to operate with a hydraulic crusher the machine shall be equipped with the Multi-function auxiliary high-flow hydraulic circuit.

NOTICE: *The CX75C SR Offset Boom with blade is intended only for light duty applications. Therefore, for this version of the machine, CASE CONSTRUCTION tackles the usage only of hydraulic sorting grabs. For CX75C SR Offset Boom with blade, the following instruction has to be referred to the operation of a hydraulic sorting grab.*

1. Make sure that the machine and the attachment to be installed are on flat and level ground.
2. Make sure to read and understand the installation procedure described in the Operator's Manual of the attachment.
3. Operate the controls of boom, arm and bucket in order to install the hydraulic crusher to the linkage at the top of the arm.
4. Stop the engine. Release pressure inside the auxiliary high-flow hydraulic circuit.
5. Close the feed valves at the top of the arm. Install the connecting hoses between the attachment and the feed valves.
6. Open the feed valves and check the fixing clamps for looseness, and the tubes and hoses fittings for leakages.
7. Start the engine. Press the attachment selector button in order to select the crusher mode of the auxiliary high-flow hydraulic circuit.

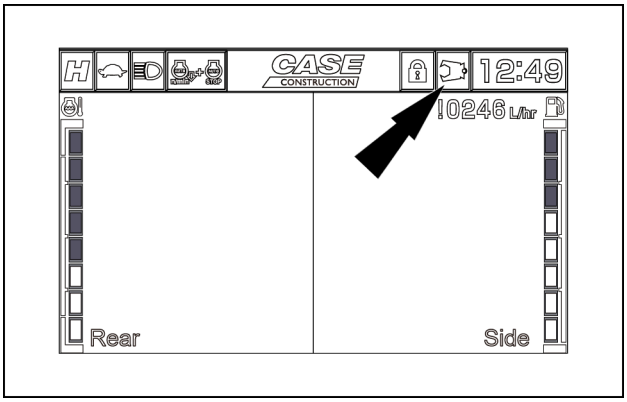


SMIL16CEX1680AA 33

8. Make sure that the crusher icon is displayed.

NOTICE: *the maximum working pressure of the auxiliary high-flow hydraulic circuit shall be set according to the specification of the crusher.*

NOTICE: *the working pressure of the Multi-function auxiliary high-flow hydraulic circuit shall be set manually by the relief valve located above the main control valve.*

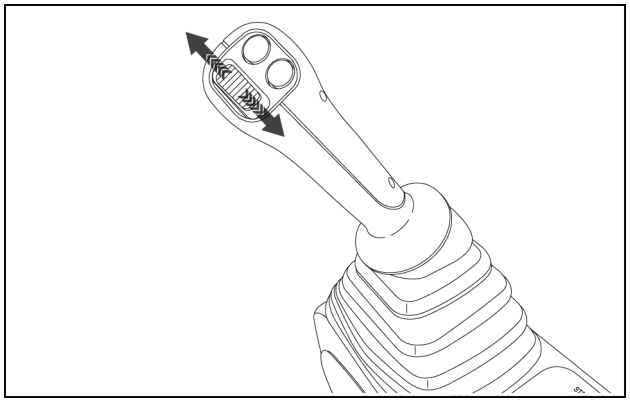


SMIL16CEX1681AA 34

9. Select the SP work mode.
10. Set the gate lock lever in unlock position.
11. Make sure that the control pattern of the hydraulic crusher is as intended. Slide up and down the proportional switch located on the right-hand control lever, and confirm the control direction to open the crusher and the control direction to close the crusher.

    NOTICE: *if control directions for opening and closing are not as intended, check for an alternative set up of the connecting ports on the attachment.*

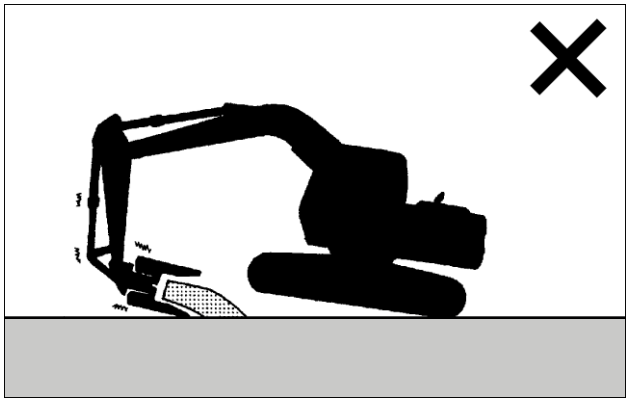
    NOTICE: *Always keep each connecting hose on the same side of the arm. Never cross-over the connecting hoses between the two sides of the arm.*
12. Operate the controls of boom, arm and bucket in order to position the crusher right to the structure or to the object to be crushed.
13. Operate the hydraulic crusher according to the control pattern defined at the step 11. The crushing force increases with the sliding of the proportional switch in the closing direction. Release the switch to hold the crusher jaws in position.



SMIL15CEXY965AB 35

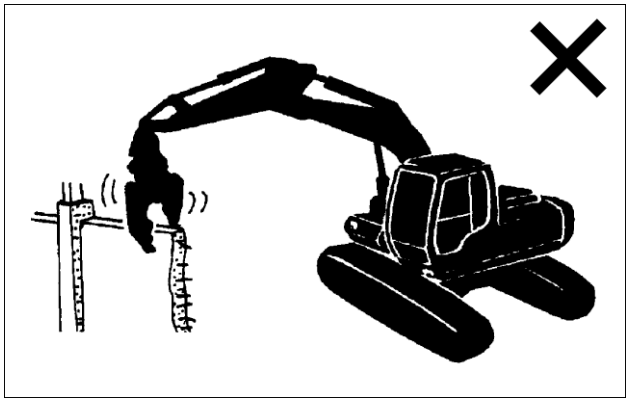
Do not allow the machine weight to be supported by prying with the crusher and cylinders fully extended or retracted. Doing so may damage the front attachment. In particular, avoid doing so with the crusher cylinder fully extended as the front attachment will be more easily damaged.

Do not use the crusher to haul or move crushed scraps.



NH0212A 36

Do not perform crushing on either side of the machine, always do so at front or rear, parallel with tracks. Otherwise, the machine may overturn.



NH0213A 37

When operating the crusher up high with the boom fully raised, be careful of falling objects.

NH0214 38

Operation with the tiltable ditch cleaning bucket

The tiltable ditch cleaning bucket is a double-acting hydraulic attachment, and shall be connected to a low-flow hydraulic circuit.

Therefore, to operate with a tiltable ditch cleaning bucket the machine shall be equipped with the auxiliary low-flow hydraulic circuit.

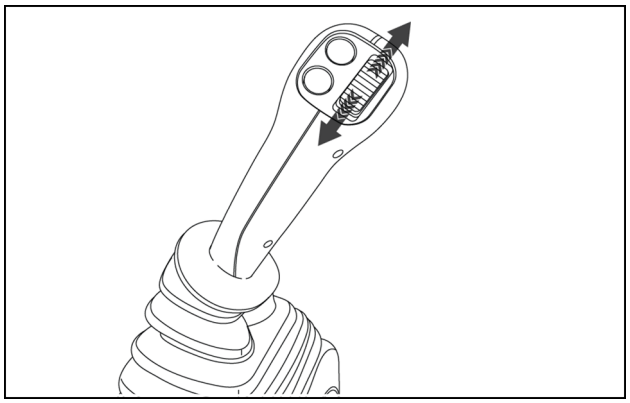
NOTICE: *The CX75C SR Offset Boom with blade cannot be equipped with the auxiliary low-flow hydraulic circuit. CASE CONSTRUCTION does not tackle the application of tiltable ditch cleaning buckets with this version of the machine.*

1. Make sure that the machine and the attachment to be installed are on flat and level ground.
2. Make sure to read and understand the installation procedure described in the Operator's Manual of the attachment.
3. Operate the controls of boom, arm and bucket in order to install the tiltable bucket to the linkage at the top of the arm.
4. Stop the engine. Release pressure inside the auxiliary low-flow hydraulic circuit.
5. Close the feed valves at the top of the arm. Install the connecting hoses between the attachment and the feed valves.
6. Open the feed valves and check the fixing clamps for looseness, and the tubes and hoses fittings for leakages.
7. Start the engine and select the SP work mode.
8. Set the gate lock lever in unlock position.
9. Make sure that the control pattern of the tiltable bucket is as intended. Slide up and down the proportional switch located on the left-hand control lever, and confirm the control direction to tilt the bucket leftward and the control direction to tilt the bucket rightward.

   NOTICE: *if control directions for tilting are not as intended, check for an alternative set up of the connecting ports on the attachment.*

   NOTICE: *Always keep each connecting hose on the same side of the arm. Never cross-over the connecting hoses between the two sides of the arm.*
10. Set the tilt angle that is suitable for the intended application, as for example leveling, grading, or finishing. If a different tilt angle is needed, make sure to stop the machine operation, unload the bucket, and set the required angle. Then start operation again.

    NOTICE: *Never change the tilt angle under pressure, neither do any operation that requires a power tilting. Failing to comply will cause severe damages to the frames of the bucket, to the frames of the machine, and to the machine systems.*



SMIL15CEXY964AB 39

Direct fit application as function of the arm

CX75C SR

Tiltable ditch cleaning buckets			Arm	
Capacity **ISO 7451** (Heaped)	Width	Mass	**1.69 m** (**66.54 in**)	**2.19 m** (**86.22 in**)
0.26 m³ (**0.34 yd³**)	**1200 mm** (**47 in**)	**490 kg** (**1080 lb**)	■	■
0.31 m³ (**0.41 yd³**)	**1400 mm** (**55 in**)	**520 kg** (**1146 lb**)	■	x

■ Density of material up to 1.2 t/m^3
x Not applicable

Hydraulic quick coupling system

⚠ WARNING

Crushing hazard!
Never put your hands inside the quick coupler when the engine is running. Turn off the engine and wait for all movement to stop.
Failure to comply could result in death or serious injury.

W0252A

⚠ 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

NOTICE: *The quick coupler extends the length of the arm. Make sure to check the operating range of the coupled attachment in order to avoid risk of hitting the cab or the machine frame.*

NOTICE: *Never operate with a quick coupled hydraulic breaker over a long period of time, in order to reduce the risk of premature wear, failures or breakage of the quick coupler. Never use the breaker as a lever, as the stress would be borne by the quick coupler cylinder.*

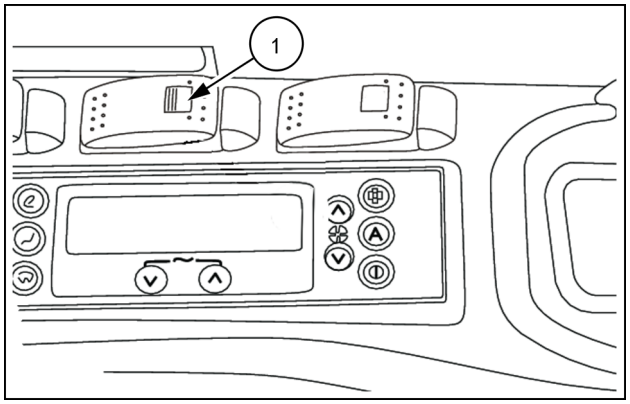
NOTICE: *Make sure to read and understand the Operator's Manual of the hydraulic quick coupler for proper installation, usage and maintenance.*

NOTICE: *The CASE CONSTRUCTION quick coupling system is supplied by the high pressure hydraulic system of the machine. Refer to Chapter 8 for the maximum working pressure of the hydraulic system. Make sure to use a quick coupler that is suitable for proper and safe operation with high pressure hydraulics. For information consult the CASE CONSTRUCTION dealer.*

Attachment engagement

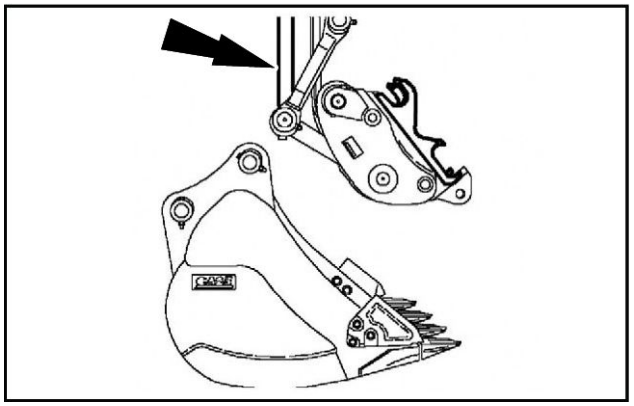
To engage the attachment using CASE CONSTRUCTION quick coupling system proceed as follows:

1. Make sure the attachment to be installed is laying safely on flat and level ground.
2. Select the H work mode.
3. Slide the lock device and press the front side of the quick coupler switch **(1)** to set the unlocking status of the quick coupling system. The audible alarm device starts sounding.



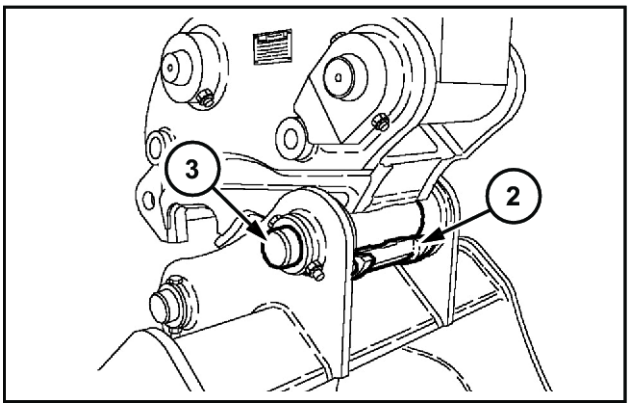
SMIL16CEX1103AA 1

4. Operate the arm and bucket controls so that the arm is practically vertical, sloping slightly towards the cab to release the safety device. Extend the bucket cylinder rod completely and maintain the hydraulic pressure for approximately **5 – 10 s** so that the latching hook retracts.



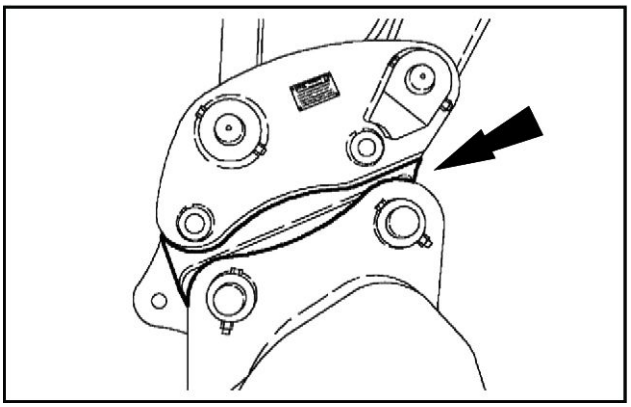
SMIL13CEX2697AB 2

5. Operate the arm and bucket controls so as to bring the quick coupler hook **(2)** around the attachment pin **(3)**.



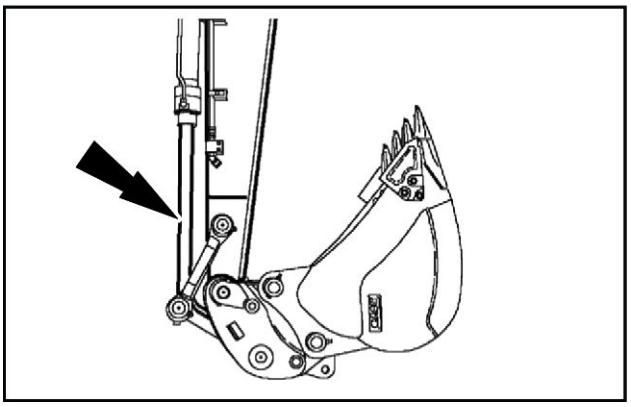
SMIL13CEX2698AB 3

6. Operate the bucket control lever so that the pin is completely engaged in the quick coupler hook.



SMIL13CEX2699AB 4

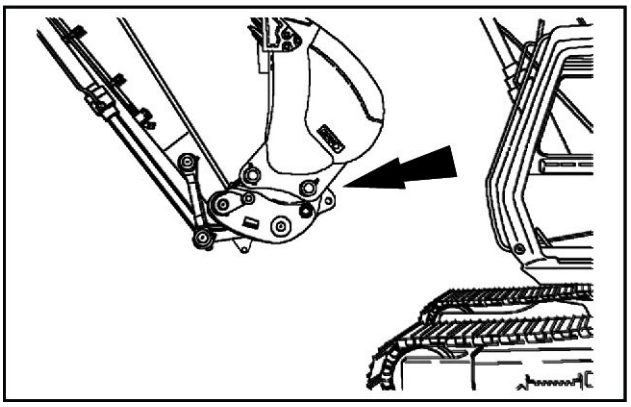
7. Operate the arm control to raise the arm and operate the bucket control to extend the bucket cylinder rod completely.



SMIL13CEX2700AB 5

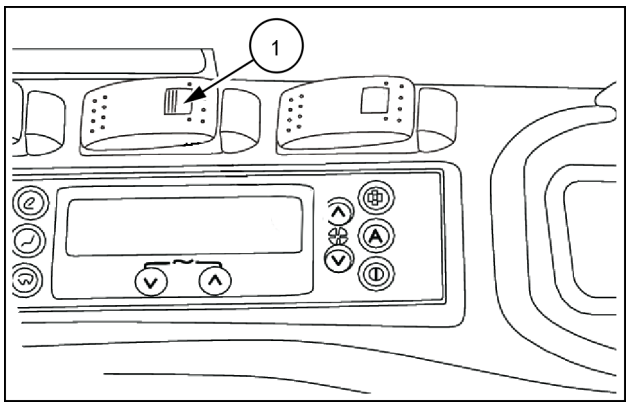
8. Raise the arm until the attachment pin is visible from the operator's seat.

NOTICE: *The quick coupler extends the length of the arm and with certain attachments there is the risk to hit the cab in some operating positions. With this kind of attachments, it may not be possible to raise the arm until the attachment pin is visible from the operator's seat.*



SMIL13CEX2701AB 6

9. Press the rear side of the quick coupler switch **(1)** to set the locking status of the quick coupling system. The audible alarm device stops sounding.

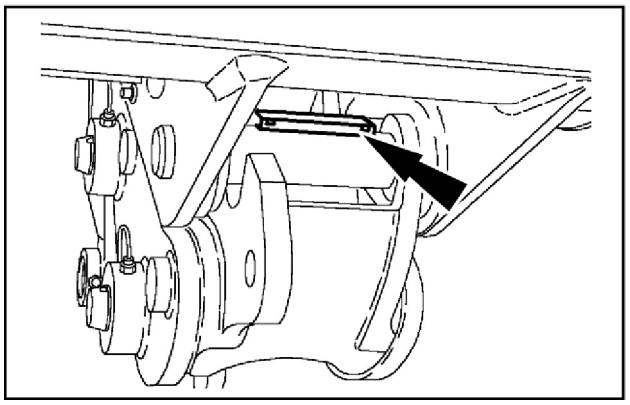


SMIL16CEX1103AA 7

10. Maintain the hydraulic pressure in the bucket cylinder for approximately **5 – 10 s** to allow the latching hook to close.
11. Confirm that the attachment pin is correctly engaged in the latching hook.

NOTE: *the latching hook has a different color to ease the visual confirmation of the engagement of the pin.*

NOTICE: *If visual confirmation is not possible from the operator's seat, get down from the machine and make sure that the attachment pin is correctly engaged in the latching hook.*

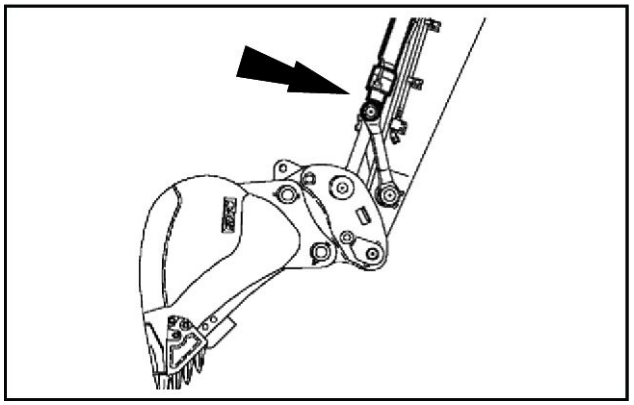


SMIL13CEX2702AB 8

12. Operate the bucket control to retract the cylinder rod and allow the safety device to engage.
13. To ensure that the bucket/attachment pins are securely held by the quick coupler, apply force to the bucket/attachment by pressing it against the ground.

    NOTE: *This operation is commonly known as “Bump Test” or “Ground test”.*

    NOTICE: *If the quick coupler is used in conjunction with an hydraulic breaker, do not apply force with the chisel.*

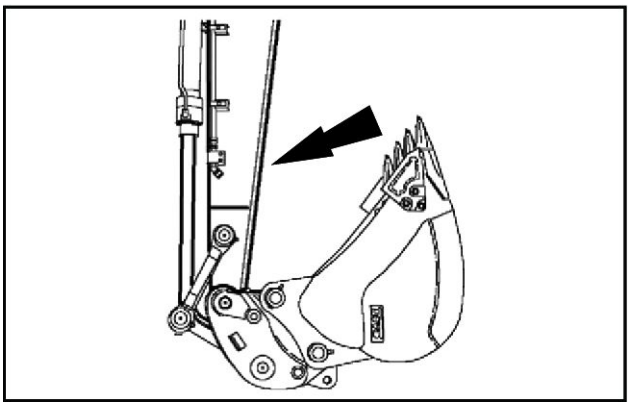


SMIL13CEX2703AB 9

Attachment disengagement

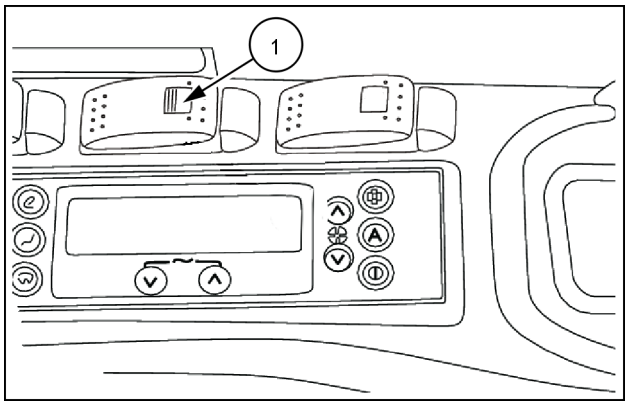
To disengage the attachment using CASE CONSTRUCTION quick coupling system proceed as follows:

1. Operate the arm and bucket controls so that the arm is practically vertical, sloping slightly towards the cab, to release the safety device.



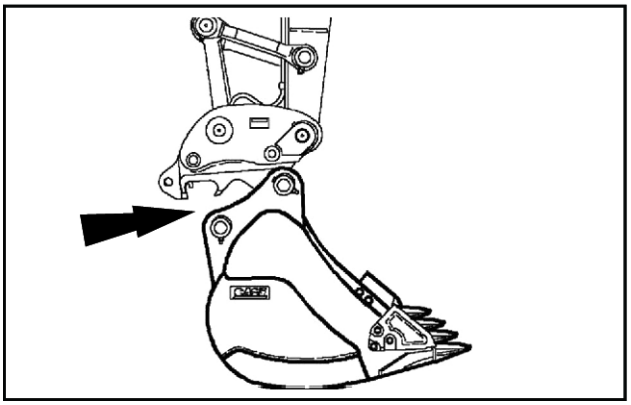
SMIL13CEX2704AB 10

2. Slide the lock device and press the front side of the quick coupler switch **(1)** to set the unlocking status of the quick coupling system. The audible alarm device starts sounding.
3. Extend the bucket cylinder rod completely and maintain the hydraulic pressure for approximately **5 – 10 s** so that the latching hook retracts.



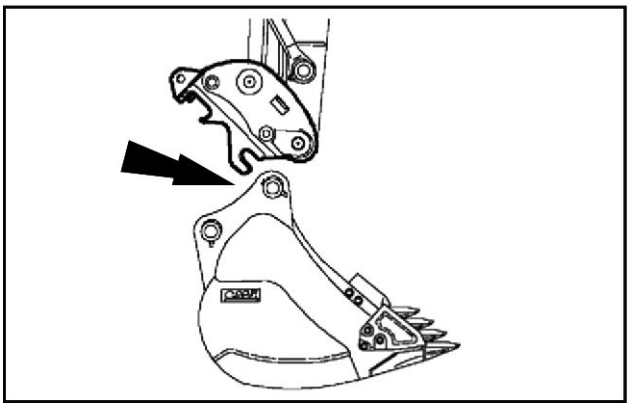
SMIL16CEX1103AA 11

4. Operate the bucket and arm controls to lay the attachment safely on flat, level ground.



SMIL13CEX2705AB 12

5. Operate the arm control to unhook the attachment.
6. Press the rear side of the quick coupler switch **(1)** to set the locking status of the quick coupling system. The audible alarm device stops sounding.



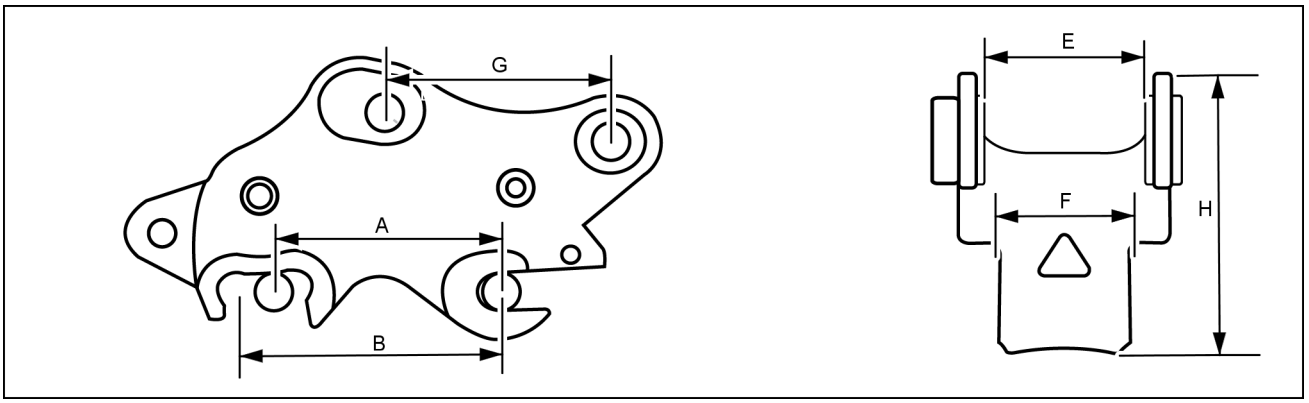
SMIL13CEX2706AB 13

Quick coupler buckets

CASE CONSTRUCTION quick coupler

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

The CASE CONSTRUCTION Coupler buckets are designed to optimize the fitting to the CASE CONSTRUCTION quick coupler, and thus to optimize the operating performance of the machine.



SMIL15CEX3064EA 1

Main dimensions

(E)	**192 mm** (**7.6 in**)
(G)	**322 mm** (**12.7 in**)
(H)	**410.5 mm** (**16.2 in**)
Weight	**93 kg** (**205.0 lb**)

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

Bucket fitting dimensions

Bucket pin diameter	**50 mm** (**2.0 in**)	**60 mm** (**2.4 in**)
Minimum pin spread **(A)**	**280 mm** (**11.0 in**)	**290 mm** (**11.4 in**)
Maximum pin spread **(B)**	**317 mm** (**12.5 in**)	**320 mm** (**12.6 in**)
Seating width **(F)**	**170 mm** (**6.7 in**)	

Quick coupler identification plate

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

Serial number:

Weight:

Working pressure:

Type/Model:

Part number:

Year of manufacture:

SWL (Safe Working Load):

Quick coupler buckets application as function of the arm (CX75C SR)

SCOOP General Purpose buckets			Arm	
Capacity **ISO 7451** (Heaped)	Width	Mass	**1.69 m** (**66.54 in**)	**2.19 m** (**86.22 in**)
0.10 m³ (**0.13 yd³**)	**300 mm** (**12 in**)	**125 kg** (**276 lb**)	○	○
0.12 m³ (**0.16 yd³**)	**350 mm** (**14 in**)	**130 kg** (**287 lb**)	○	○
0.15 m³ (**0.20 yd³**)	**400 mm** (**16 in**)	**140 kg** (**309 lb**)	○	○
0.17 m³ (**0.22 yd³**)	**450 mm** (**18 in**)	**145 kg** (**320 lb**)	○	○
0.19 m³ (**0.25 yd³**)	**500 mm** (**20 in**)	**150 kg** (**331 lb**)	○	○
0.24 m³ (**0.31 yd³**)	**600 mm** (**24 in**)	**170 kg** (**375 lb**)	○	○
0.32 m³ (**0.42 yd³**)	**750 mm** (**30 in**)	**200 kg** (**441 lb**)	○	●
0.37 m³ (**0.48 yd³**)	**850 mm** (**33 in**)	**220 kg** (**485 lb**)	●	■
0.44 m³ (**0.58 yd³**) (*)	**1000 mm** (**39 in**)	**260 kg** (**573 lb**)	■	x

FP Ditch cleaning buckets			Arm	
Capacity **ISO 7451** (Heaped)	Width	Mass	**1.69 m** (**66.54 in**)	**2.19 m** (**86.22 in**)
0.27 m³ (**0.35 yd³**)	**1200 mm** (**47 in**)	**180 kg** (**397 lb**)	○	○
0.35 m³ (**0.46 yd³**)	**1500 mm** (**59 in**)	**210 kg** (**463 lb**)	●	■

(*) Not suitable for digging application

○ Density of material up to 2 t/m^3
● Density of material up to 1.6 t/m^3
■ Density of material up to 1.2 t/m^3
x Not applicable

NOTICE: *A bucket mounted on the quick coupler has a longer overall teeth radius. Therefore, the bucket cannot be fully curled after the arm has been fully retracted, and the overall height of the machine in the transport position is increased. The recommended operating practice is to remove the bucket from the coupler before any transport operation in order not to increase the overall height of the machine.*

Quick coupler buckets application as function of the arm (CX75C SR Offset Boom with blade)

SCOOP General Purpose buckets			Arm	
Capacity **ISO 7451** (Heaped)	Width	Mass	**1.75 m** (**68.90 in**)	**2.10 m** (**82.68 in**)
0.10 m³ (**0.13 yd³**)	**300 mm** (**12 in**)	**125 kg** (**276 lb**)	○	○
0.12 m³ (**0.16 yd³**)	**350 mm** (**14 in**)	**130 kg** (**287 lb**)	○	○
0.15 m³ (**0.20 yd³**)	**400 mm** (**16 in**)	**140 kg** (**309 lb**)	○	○
0.17 m³ (**0.22 yd³**)	**450 mm** (**18 in**)	**145 kg** (**320 lb**)	○	○
0.19 m³ (**0.25 yd³**)	**500 mm** (**20 in**)	**150 kg** (**331 lb**)	○	○
0.24 m³ (**0.31 yd³**)	**600 mm** (**24 in**)	**170 kg** (**375 lb**)	○	○
0.32 m³ (**0.42 yd³**)	**750 mm** (**30 in**)	**200 kg** (**441 lb**)	●	■
0.37 m³ (**0.48 yd³**)	**850 mm** (**33 in**)	**220 kg** (**485 lb**)	■	■

FP Ditch cleaning buckets			Arm	
Capacity **ISO 7451** (Heaped)	Width	Mass	**1.75 m** (**68.90 in**)	**2.10 m** (**82.68 in**)
0.27 m³ (**0.35 yd³**)	**1200 mm** (**47 in**)	**180 kg** (**397 lb**)	○	●
0.35 m³ (**0.46 yd³**)	**1500 mm** (**59 in**)	**210 kg** (**463 lb**)	■	■

○ Density of material up to 2 t/m^3
● Density of material up to 1.6 t/m^3
■ Density of material up to 1.2 t/m^3

NOTICE: *A bucket mounted on the quick coupler has a longer overall teeth radius. Therefore, the bucket cannot be fully curled after the arm has been fully retracted, and the overall height of the machine in the transport position is increased. The recommended operating practice is to remove the bucket from the coupler before any transport operation in order not to increase the overall height of the machine.*

Servicing instructions

⚠ WARNING

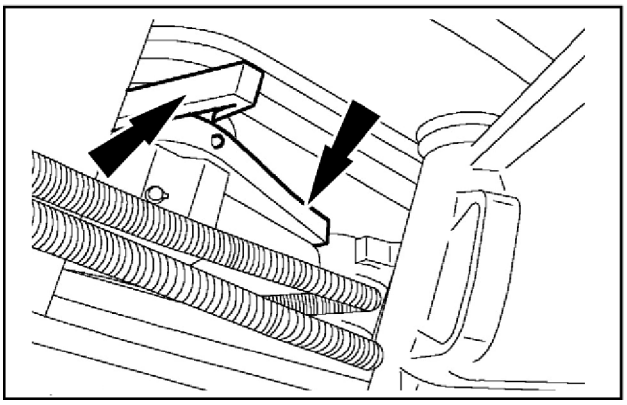
Improper operation or service of this machine can result in an accident.
If you do not understand a maintenance procedure, or doubt your ability to perform a maintenance procedure correctly, see your authorized dealer.
Failure to comply could result in death or serious injury.

W0157A

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

Daily checks:

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



SMIL13CEX2822AB 2

Incorrect functioning

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

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

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

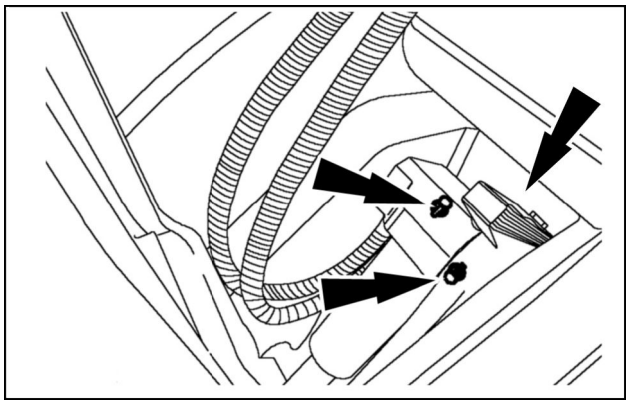
If the problem persists after all these checks, consult your CASE CONSTRUCTION Dealer.

Maintenance

Grease the quick coupler linkage every **50 h**.
Lubricant: **CASE AKCELA 251H EP MULTI-PURPOSE GREASE**.

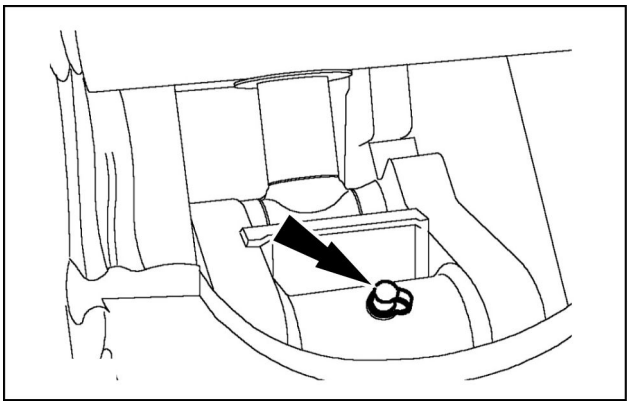
Set the quick coupler cylinder in retracted position. Put grease into the grease points shown in figure.

- Cylinder bottom pin: one lubrication point.
  Locking bar pivot: one lubrication point.
  Latching system pivot: one lubrication point.



SMIL14CEX2734AA 3

- Hook pivot: one lubrication point.



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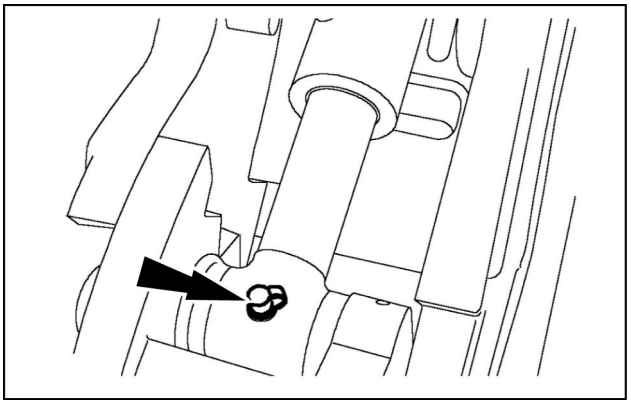
- Cylinder top pin: one lubrication point.



SMIL14CEX2735AA 5

NOTICE: *the coupler linkage shall be lubricated every* ***10 h*** *if the machine is operated in water or mud.*

Loads handling

⚠ WARNING

Crushing hazard!
During load handling operations, it is very important to adhere strictly to the instructions given in this manual and local legislation.
Failure to comply could result in death or serious injury.

W0257A

⚠ WARNING

Improper operation or service of this machine can result in an accident.
When lifting a load the machine must be equipped with:
- safety valves,
- an overload indicator,
- a load fixing point,
- a load handling chart corresponding to the type of machine and to its attachment.
Failure to comply could result in death or serious injury.

W1168A

NOTICE: *The machine has been specifically designed to perform digging/loading works. To handle suspended loads the machine shall be equipped with the appropriate optional provision including safety valves, load handling eye, load lifting table and overload warning alarm. Make sure to handle suspended loads following strictly all current Regulations regarding this application, as well as the rules described in the SAFETY INFORMATION chapter.*

NOTICE: *Make provision for lifting devices that comply with current Regulations for lifting applications. Make sure that the lifting devices (hooks, chains etc.) are in perfect conditions without any sign of excessive wear. Make sure to use selflocking hooks in order to avoid unintended opening during lift operation. The lifting devices can be used exclusively for the lifting of parts not anchored to the ground. Never use them for towing operations, uprooting or tearing apart.*

NOTICE: *A suspended load can swing freely, and it can thus hit persons or the cab of the machine. Make sure that all bystanders are moved away from the field of action of the machine, and make sure to handle the load slowly. If the load starts to swing during the handling, lower it slowly to the ground and sling it in a way that avoid unintended swinging as much as possible.*

To handle suspended loads proceed as described below:

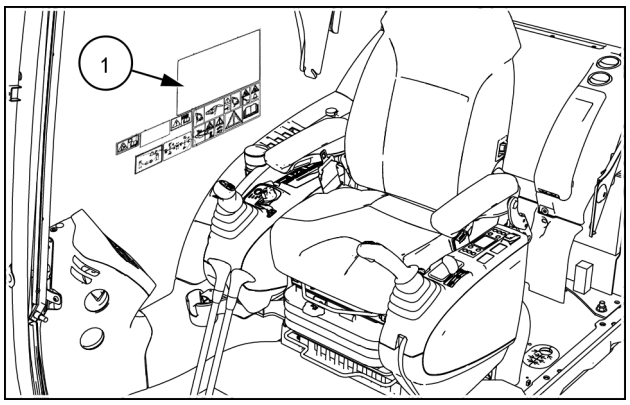
- Evaluate (if not known) the mass of the object to be handled and compare it with the data listed in the liftable loads chart **(1)** located in the cab. Do not lift loads exceeding the maximum values prescribed by the table.

  NOTICE: *The weight of all lifting accessories and the weight of all other working attachment such as buckets and couplers must be deducted from the maximum lifting values prescribed by the table.*

- Press the ON side of the overload warning switch **(2)** to activate the overload warning alarm. The overload warning alarm is intended to avoid lifting of excessive loads.

  NOTICE: *if an overload condition is detected during the handling of the load, the message OVER LOAD appears on the bottom of the display* OVER LOAD *and the overload warning alarm sounds. Place the load onto the ground and check the load conditions making reference to the chart located inside the cab.*

- Secure the load with the load handling eye **(3)** located on the bucket linkage rod, using slinging devices and chains adequate for the load to be lifted. In order to limit the swinging of the load, avoid slinging it with cables and/or chains too long.
- Select the A work mode.
- Extend the bucket cylinder to end stroke.
- Check the surrounding working area and make sure that the path to be travelled with the load is free from obstacles.
- Lift slowly the load, avoiding sharp movements which could cause swinging of the load. Keep the load near the machine, to improve the stability and operate, preferably, along its longitudinal axis, rather than crossways. Lift the load from the ground the minimum height required.
- Position and place the load where desired, making sure that it is resting on a solid base appropriate for its mass.
- Remove the chains.



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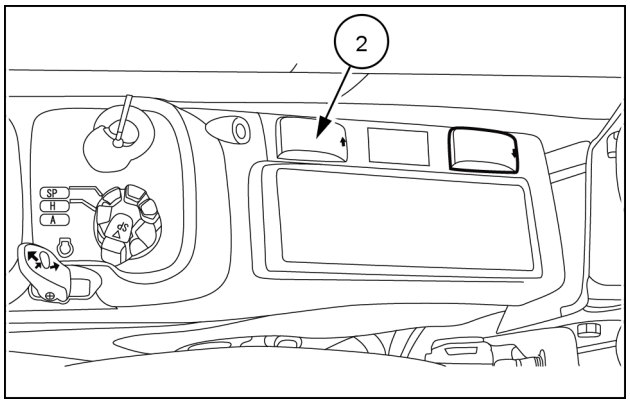

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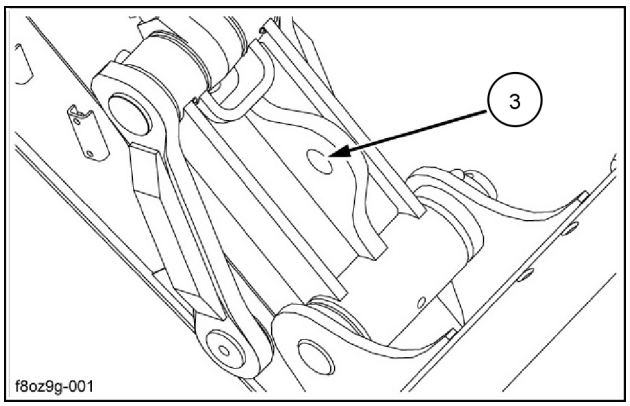

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Loads handling chart

The loads handling chart indicates the rated lift capacities that shall be considered at different distances from the swing axis.

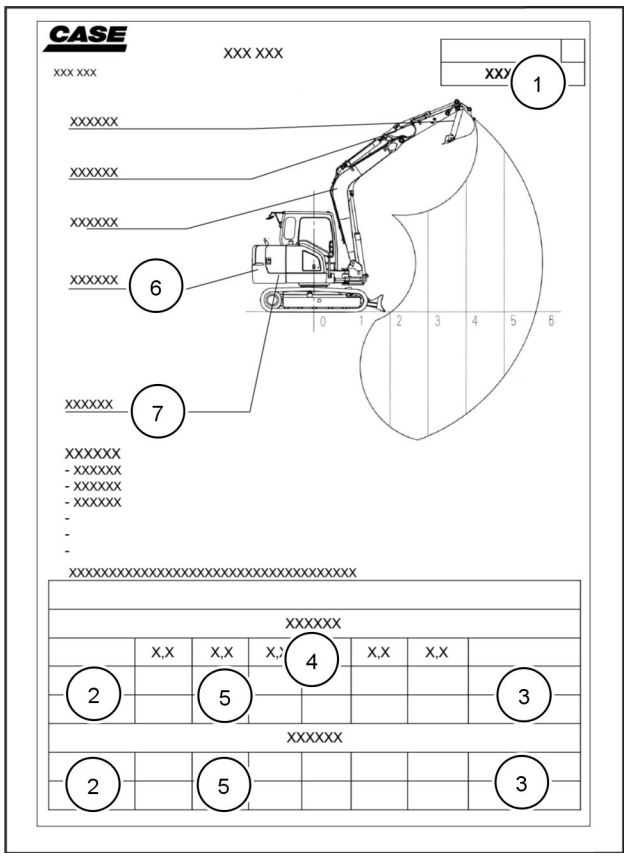
The rated lift capacity is defined according to **ISO 10567** as the smaller value of either the rated tipping load (**75%** of the tipping load) or the rated hydraulic lift capacity (**87%** of the hydraulic lift capacity).

The values are defined under the following working conditions:

- With reference bucket equipped.
- With extended bucket cylinder.
- Load fixed to a point on the back of the bucket.
- Machine on a compact, flat and level ground.
- In a complete swing of the upper structure.

Reference information

1. Model and undercarriage type.
2. Arm length (m).
3. Bucket mass (kg).
4. Distance of the load from the swing axis (m).
5. Rated lift capacity (kg).
6. Counterweight mass (kg).
7. Working pressure of the hydraulic system (MPa).



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Safety valves

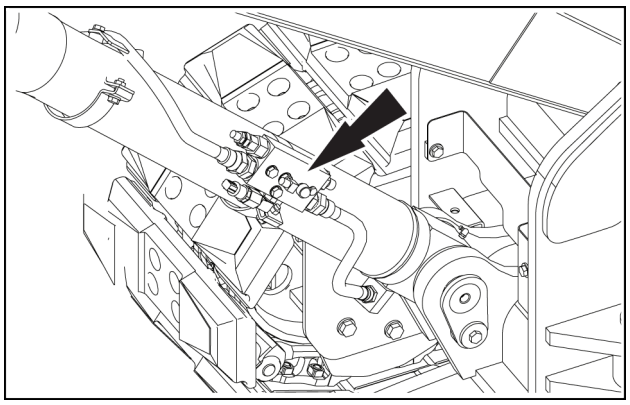
The safety valves are intended to prevent the front equipment from dropping down in the event of a breakage or burst of a hose in the hydraulic lines of boom and arm. The safety valves keep the front equipment in the position at the time of breakage, and thus allow the operator to slowly lower the attachment to the ground using the left and right control levers.

Moreover, the safety valves allow to keep the front equipment in the selected operating position reducing the leakages that occur in the neutral position of the boom spool and the arm spool in the main control valve.

NOTICE: *prior to starting any handling of suspended loads check that the valves do not show clear evidence of damages or abnormal noises. In the event abnormal conditions are found, contact the CASE CONSTRUCTION. dealer.*

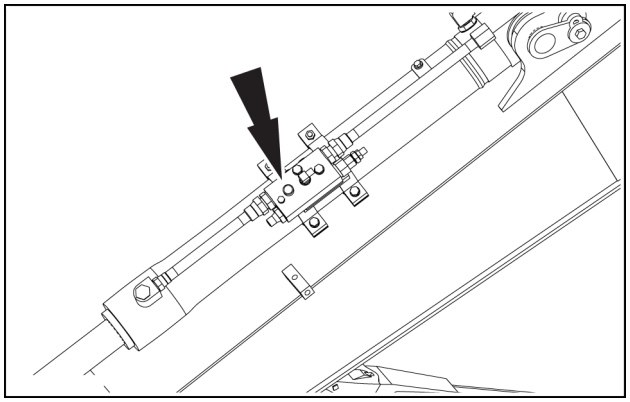
NOTICE: *the pressure setting of the safety valves must be checked every 6 months. Consult the CASE CONSTRUCTION dealer.*

On boom cylinder



SMIL13CEX2902AB 5

On arm cylinder



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Front Guard Protective System

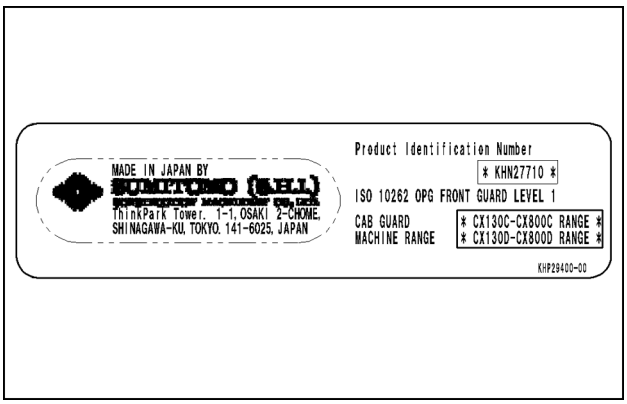
Working in areas where there is the danger of rocks or debris projection, the use of the Front Guard Protective System (FGPS) to be installed on the front side of the cab is unavoidable.

Two types of FGPS are available: a FGPS compliant with Level 1 as defined by ISO 10262, or a FGPS compliant with Level 2 as defined by ISO 10262.

Level 1 FGPS 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.

Level 2 FGPS is intended for protection from large objects, e.g. large rocks, large debris and other large objects encountered in applications such as construction, mining and demolition.

NOTICE: *FGPS is an operator protective structure, and it is a special safety component of your machine.*
DO NOT attach any device to the protective structure for pulling purposes. DO NOT drill holes to the protective structure.
The protective structure and interconnecting components are a certified system. Any damage, fire, corrosion, or modification will weaken the structure and reduce your protection. If this occurs, THE PROTECTIVE STRUCTURE MUST BE REPLACED so that it will provide the same protection as a new protective structure. Contact your dealer for protective structure inspection and replacement. After an accident, fire, tip over, or roll over, the following MUST be performed by a qualified technician before returning the machine to field or job-site operations:
• The protective structure MUST BE REPLACED.
• The mounting or suspension for the protective structure, and mounting components MUST be carefully inspected for damage.
• All damaged parts MUST BE REPLACED. DO NOT WELD, DRILL HOLES, ATTEMPT TO STRAIGHTEN, OR REPAIR THE PROTECTIVE STRUCTURE. MODIFICATION IN ANY WAY CAN REDUCE THE STRUCTURAL INTEGRITY OF THE STRUCTURE, WHICH COULD CAUSE DEATH OR SERIOUS INJURY IN THE EVENT OF FIRE, TIP OVER, ROLL OVER, COLLISION, OR ACCIDENT.



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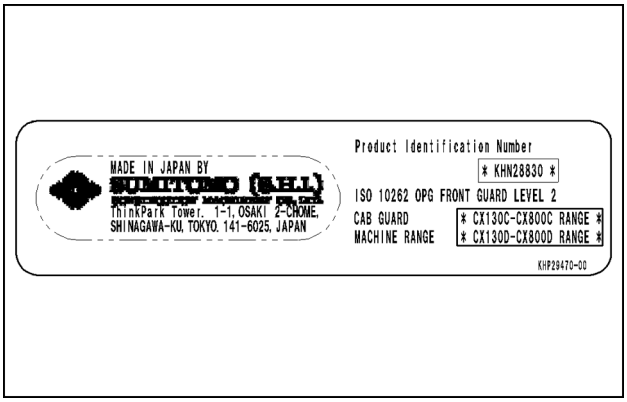

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Dealer's stamp

CNH Industrial Italia S.p.A. reserves the right to make improvements in design and changes in specifications at any time without notice and without incurring any obligation to install them on units previously sold. Specifications, descriptions, and illustrative material herein are as accurate as known at time of publication, but are subject to change without notice.

Availability of some models and equipment builds varies according to the country in which the equipment is being used. For exact information about any particular product, please consult your Case dealer.

CASE CONSTRUCTION