

WX168
WX188
Wheeled Excavator

SERVICE MANUAL

Part number 48005370

English

April 2016

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SERVICE MANUAL

WX168

WX188

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INTRODUCTION

Foreword - Important notice regarding equipment servicing

All repair and maintenance work listed in this manual must be carried out only by qualified dealership personnel, strictly complying with the instructions given, and using, whenever possible, the special tools.

Anyone who performs repair and maintenance operations without complying with the procedures provided herein shall be responsible for any subsequent damages.

The manufacturer and all the organizations of its distribution chain, including - without limitation - national, regional, or local dealers, reject any responsibility for damages caused by parts and/or components not approved by the manufacturer, including those used for the servicing or repair of the product manufactured or marketed by the manufacturer. In any case, no warranty is given or attributed on the product manufactured or marketed by the manufacturer in case of damages caused by parts and/or components not approved by the manufacturer.

The manufacturer 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.

In case of questions, refer to your CASE CONSTRUCTION Sales and Service Networks.

Safety rules

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.

Personal safety

Carefully read this Manual before proceeding with maintenance, repairs, refuelling or other machine operations.

Repairs have to be carried out only by authorized and instructed staff; specific precautions have to be taken when grinding, welding or when using mallets or heavy hammers.

Not authorized persons are not allowed to repair or carry out maintenance on this machine. Do not carry out any work on the equipment without prior authorization.

Ask your employer about the safety instructions in force and safety equipment.

Nobody should be allowed in the cab during machine maintenance unless he is a qualified operator helping with the maintenance work.

If it is necessary to move the equipment to carry out repairs or maintenance, do not lift or lower the equipment from any other position than the operator's seat.

Never carry out any operation on the machine when the engine is running, except when specifically indicated.

Stop the engine and ensure that all pressure is relieved from hydraulic circuits before removing caps, covers, valves, etc.

All repair and maintenance operations should be carried out with the greatest care and attention.

Service stairs and platforms used in a workshop or in the field should be built in compliance with the safety rules in force.

Any functional disorders, especially those affecting the safety of the machine, should therefore be rectified immediately.

⚠ DANGER

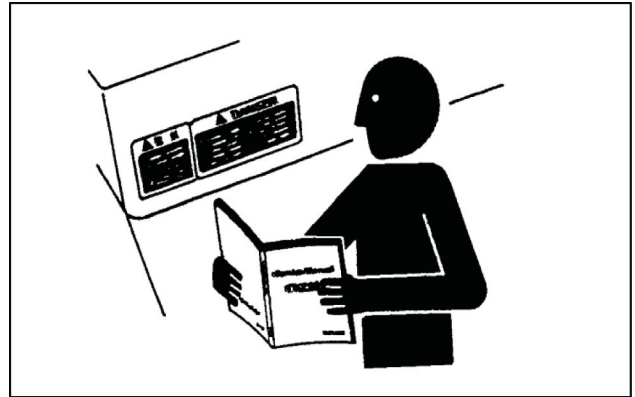
Unexpected movement!

Make sure parking brake is applied. Secure machine with wheel chocks.

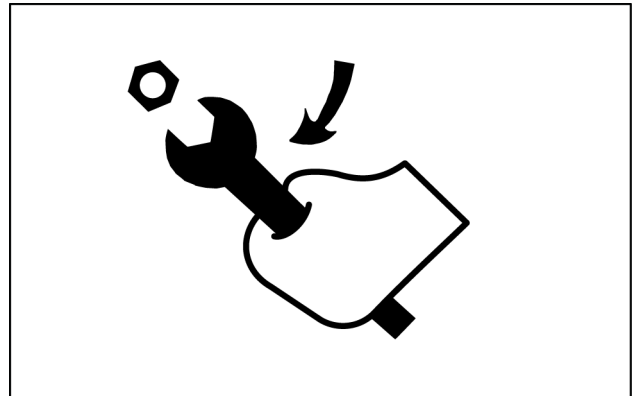
Failure to comply will result in death or serious injury.

D0013A

Before performing any work on the machine, attach a maintenance in progress tag. This tag can be applied on the left-hand control lever, safety lever or cab door.



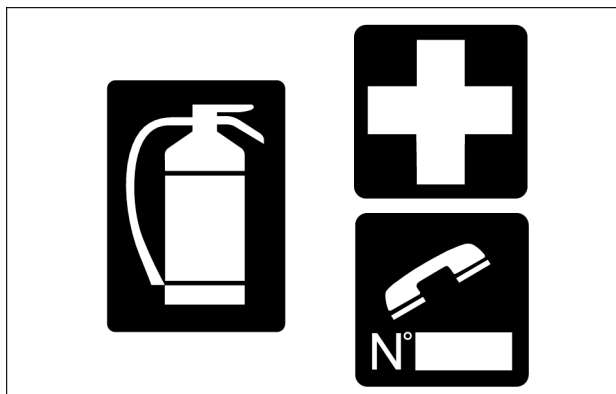
TULI12WEX2004AA 1



TULI12WEX2005AA 2

Emergency

Be prepared for emergencies. Always keep a fire extinguisher and first aid kit readily available. Ensure that the fire extinguisher is serviced in accordance with the manufacturer's instructions.



SMIL12WEX0174AA 3

Equipment

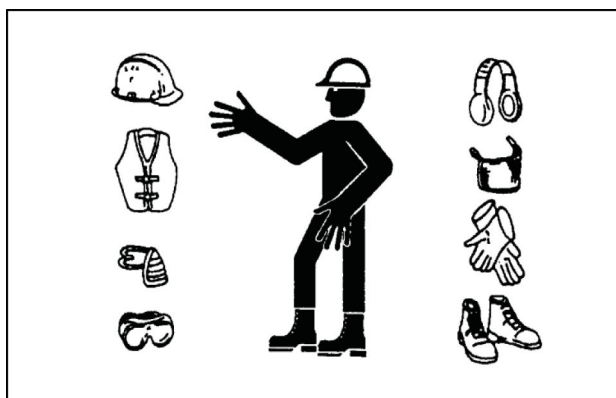
Wear close fitting clothing and safety equipment appropriate for the job:

- Safety helmet
- Safety shoes
- Heavy gloves
- Reflective clothing
- Wet weather clothing

If working conditions require, the following personal safety equipment should be on hand:

- Respirators (or dust proof masks)
- Ear plugs or acoustic ears protections
- Goggles with lateral shield or masks for eyes protection

Do not wear rings, wristwatches, jewels, unbuttoned or flapping clothing such as ties, torn clothes, scarves, open jackets or shirts with open zips which could get caught into moving parts.



TUL12WEX2008AA 4

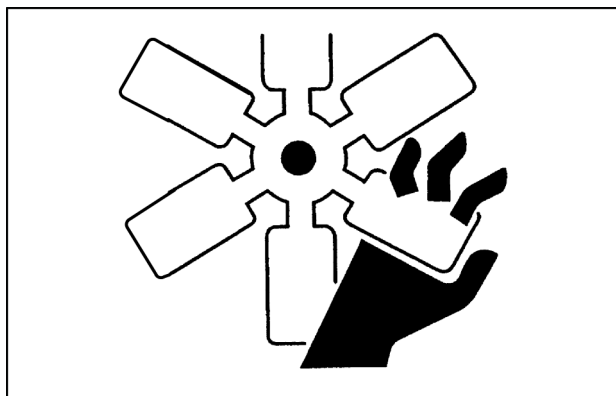
Engine - Radiator

Never leave the engine running in enclosed spaces without proper ventilation which is able to evacuate toxic exhaust gases- Keep the exhaust manifold and tube free from combustible materials.

Do not refuel with the engine running, especially if hot, as this increases fire hazard in case of fuel spillage.

Never attempt to check or adjust the belts when the engine is running.

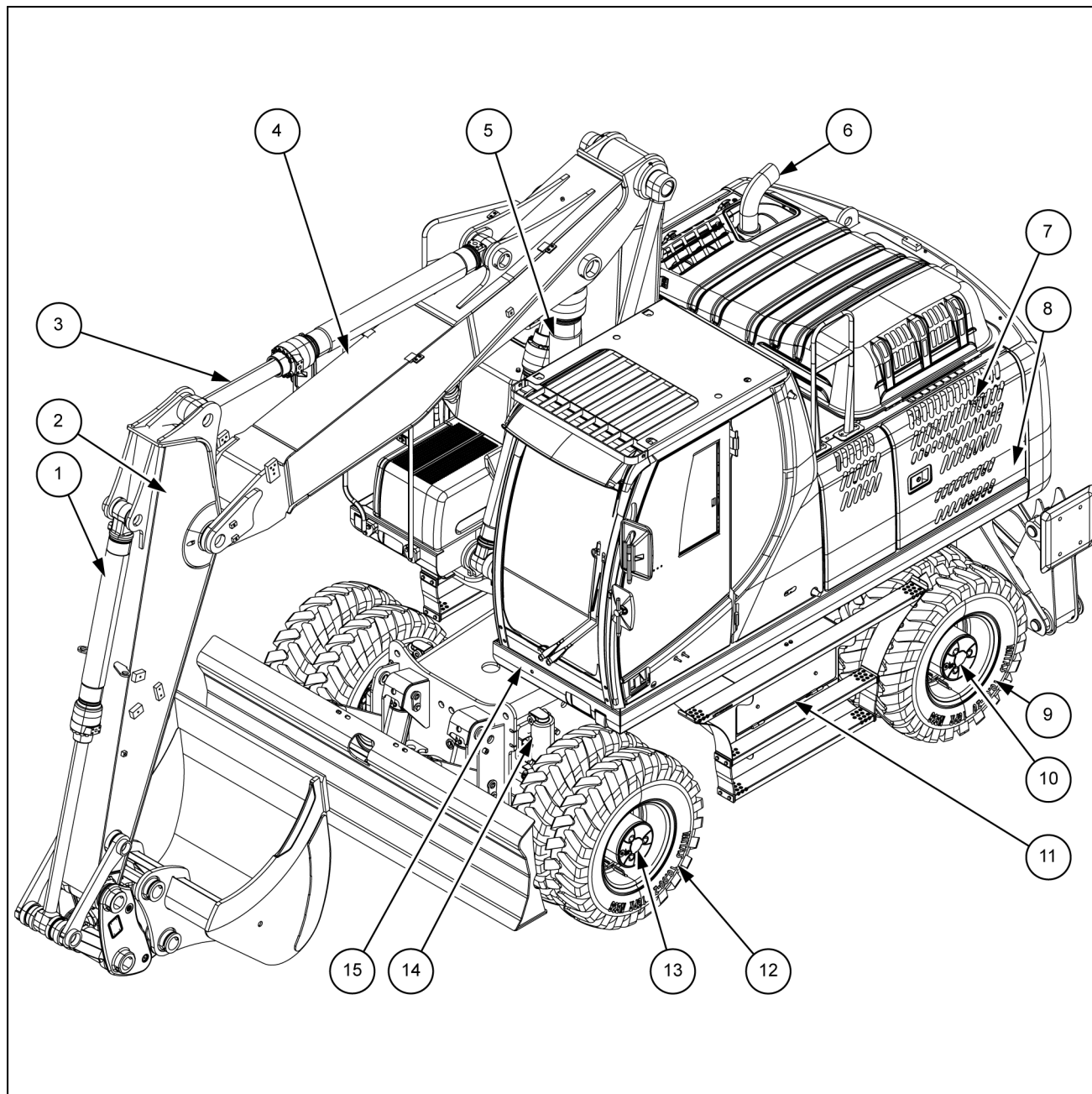
Never lubricate the machine with the engine running.



TUL12WEX2009AA 5

Product overview

Triple Articulation Version



SMIL13WEX0034GB 1

- | | |
|------------------------|-----------------------------------|
| 1 Bucket cylinder | 9 Rear wheels |
| 2 Dipper | 10 Rear rigid axle |
| 3 Dipper cylinder | 11 Stair and storage box |
| 4 Second boom | 12 Front wheels |
| 5 Positioning cylinder | 13 Front steering axle |
| 6 Muffler | 14 Axle floating locking cylinder |
| 7 Radiators | 15 Upper structure |
| 8 Batteries | |



SERVICE MANUAL

Engine

WX168

WX188

Air cleaners and lines - Static description

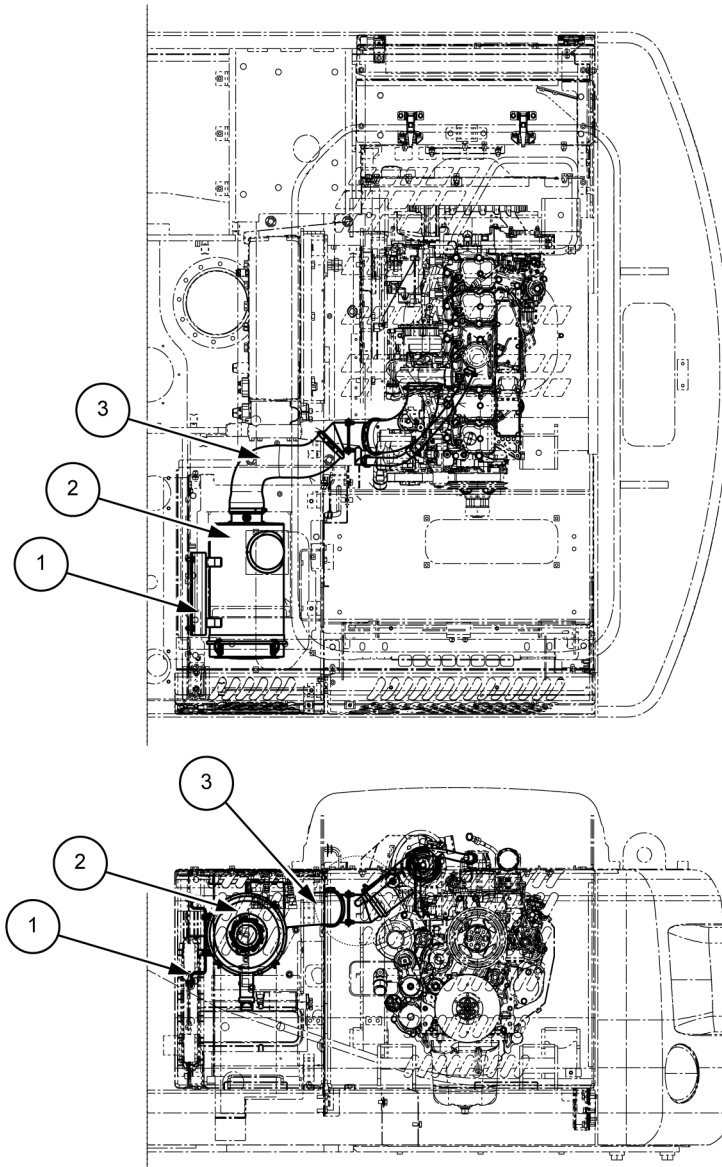
WX168

APAC --- MEA --- WE

The support **(1)** attaches the air cleaner **(2)** to the frame of the machine.

The air cleaner **(2)** filters the intake air of the engine.

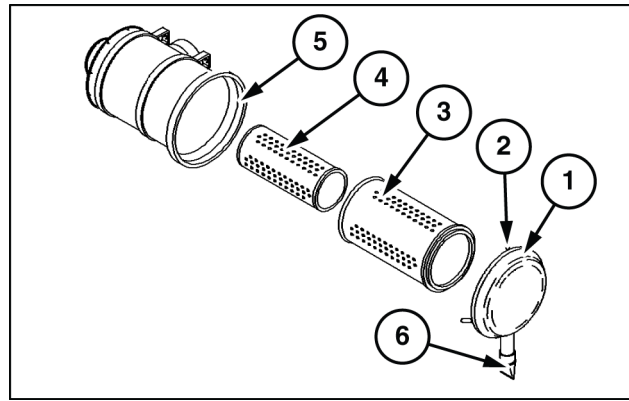
The filtered air flows into the hose **(3)**.



SMIL14WEX0226GB 1

The air cleaner consists of:

- a cover **(1)**;
- a locking clip **(2)**;
- two filter elements **(3)** and **(4)**;
- a case **(5)**;
- a dust charge valve **(6)**.



TULI12WEX2146AB 2

Air cleaners and lines - Static description

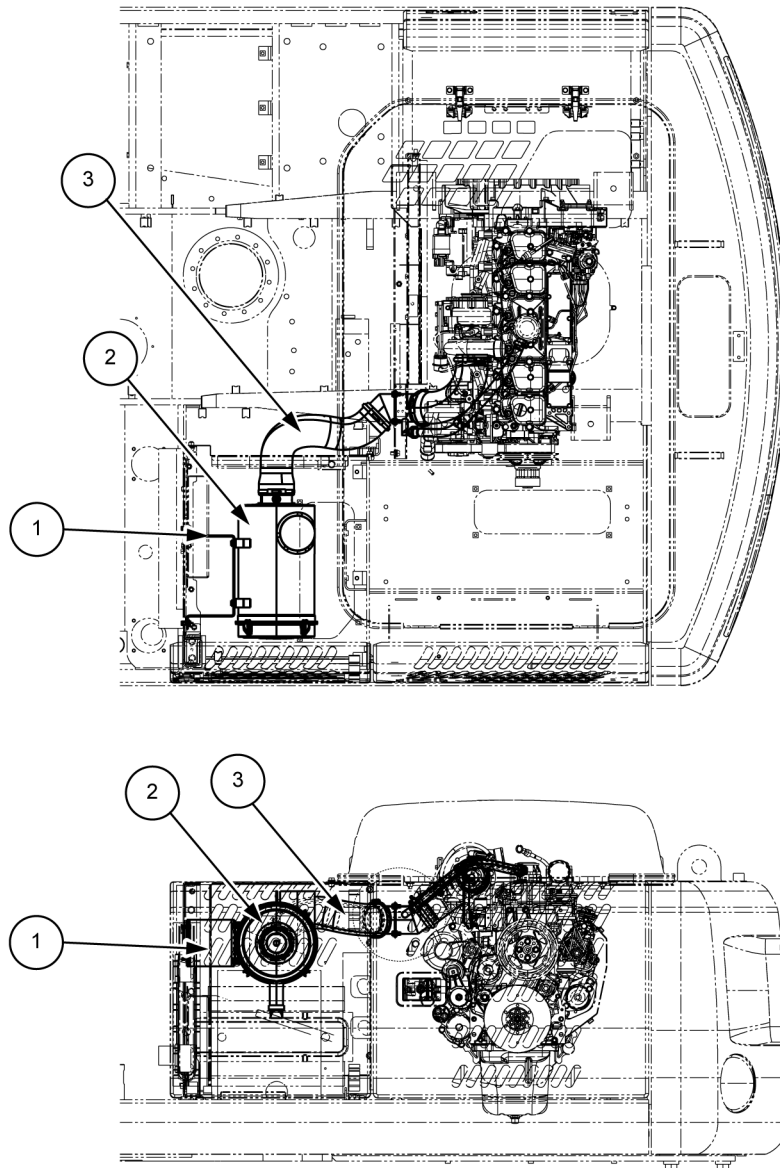
WX188

APAC --- MEA --- WE

The support **(1)** attaches the air cleaner **(2)** to the frame of the machine.

The air cleaner **(2)** filters the intake air of the engine.

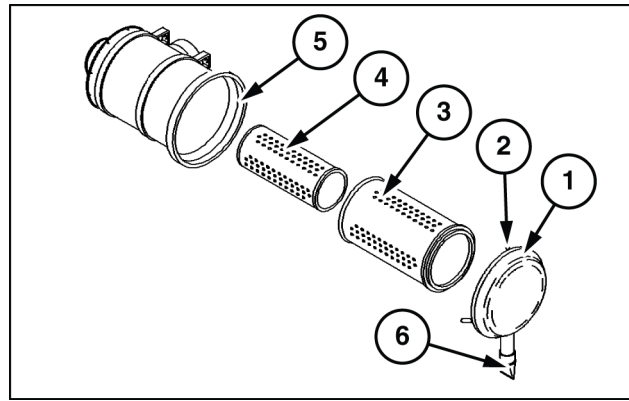
The filtered air flows into the hose **(3)**.



SMIL14WEX0227GB 1

The air cleaner consists of:

- a cover **(1)**;
- a locking clip **(2)**;
- two filter elements **(3)** and **(4)**;
- a case **(5)**;
- a dust charge valve **(6)**.

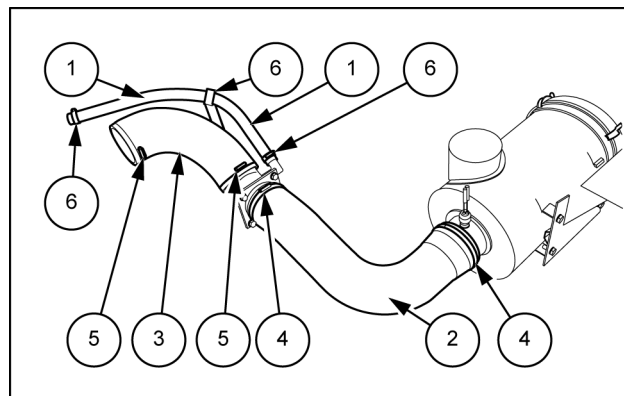


TULI12WEX2146AB 2

Air intake lines - Remove

Remove the hose (1).

1. Loosen the three clamps (6).
2. Disconnect the two ends of the hose and remove it.
Remove the hose (2).
3. Loosen the two clamps (4).
4. Disconnect the two ends of the hose and remove it.
Remove the hose (3).
5. Loosen the two clamps (5)
6. Disconnect the two ends of the hose and remove it.



SMIL13WEX0077AB 1

Air intake lines - Install

Install the hose (1).

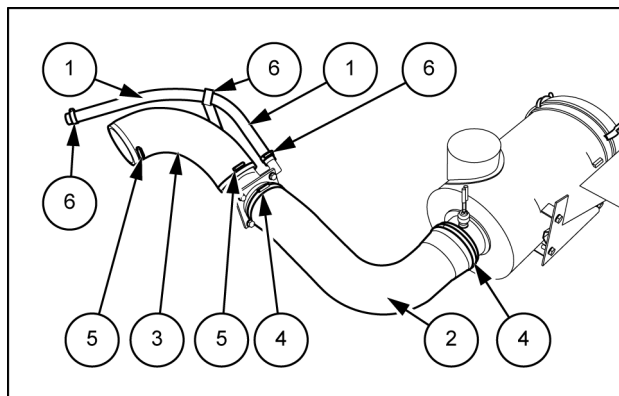
1. Connect the two ends of the hose.
2. Install the clamps (6) and tighten them to **5.9 N·m (4.4 lb ft)**.

Install the hose (2).

1. Connect the two ends of the hose.
2. Install the clamps (4) and tighten them to **5.9 N·m (4.4 lb ft)**.

Install the hose (3).

1. Connect the two ends of the hose.
2. Install the clamps (5) and tighten them to **5.9 N·m (4.4 lb ft)**.



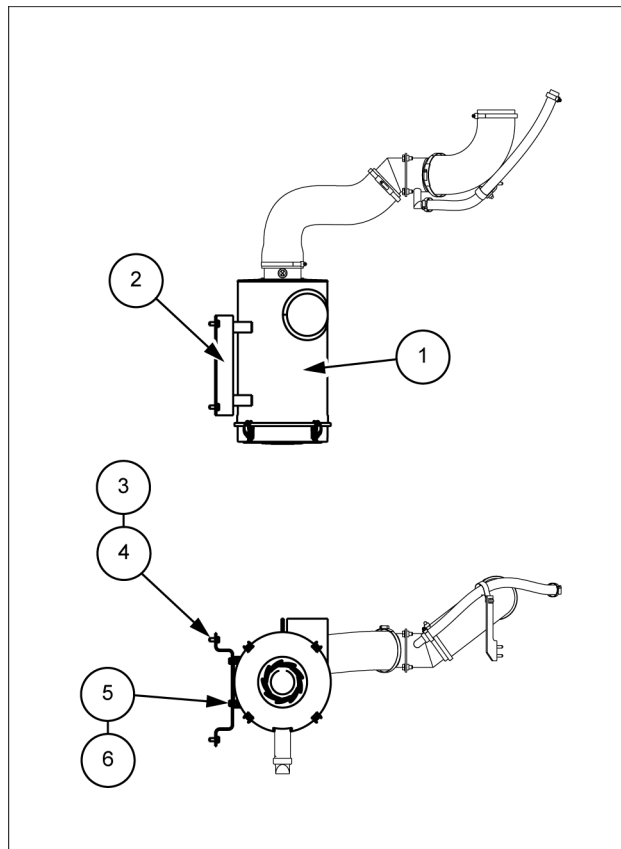
SMIL13WEX0077AB 1

Air cleaner support - Remove

WX168

APAC --- MEA --- WE

1. Remove three screws **(3)** and relevant washers **(4)**.
2. Remove four screws **(5)** and relevant washers **(6)**.
3. Separate the air cleaner support **(2)** from the air cleaner **(1)**.



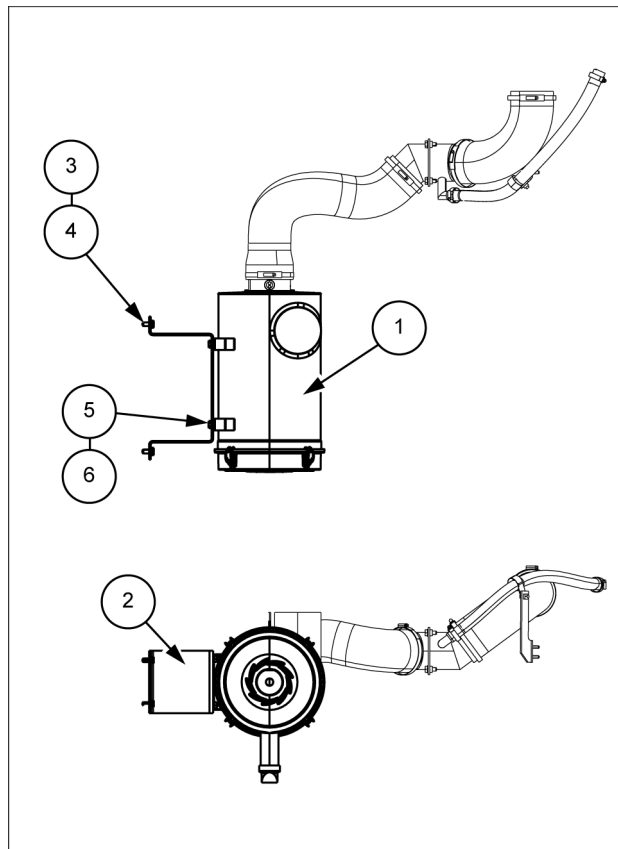
SMIL14WEX0230BB 1

Air cleaner support - Remove

WX188

APAC --- MEA --- WE

1. Remove three screws **(3)** and relevant washers **(4)**.
2. Remove four screws **(5)** and relevant washers **(6)**.
3. Separate the air cleaner support **(2)** from the air cleaner **(1)**.



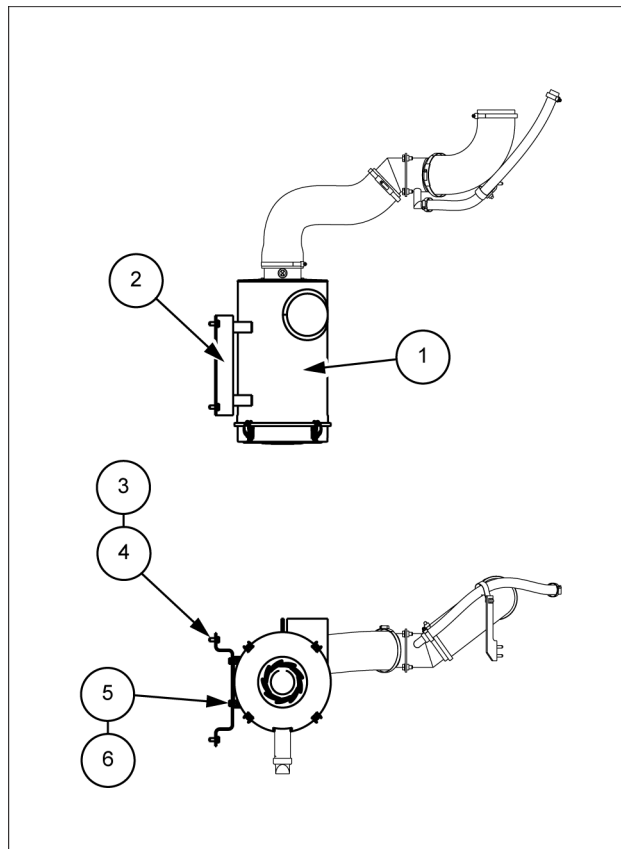
SMIL14WEX0231BB 1

Air cleaner support - Install

WX168

APAC --- MEA --- WE

1. Install the air cleaner support **(2)** by means of three screws **(3)** and relevant washers **(4)**.
Apply loctite to the screws **(3)**.
Tighten to **39.2 N·m (28.9 lb ft)**.
2. Install the air cleaner **(1)** to the support **(2)** by means of four screws **(5)** and relevant washers **(6)**.
Apply loctite to the screws **(5)**.
Tighten to **39.2 N·m (28.9 lb ft)**.



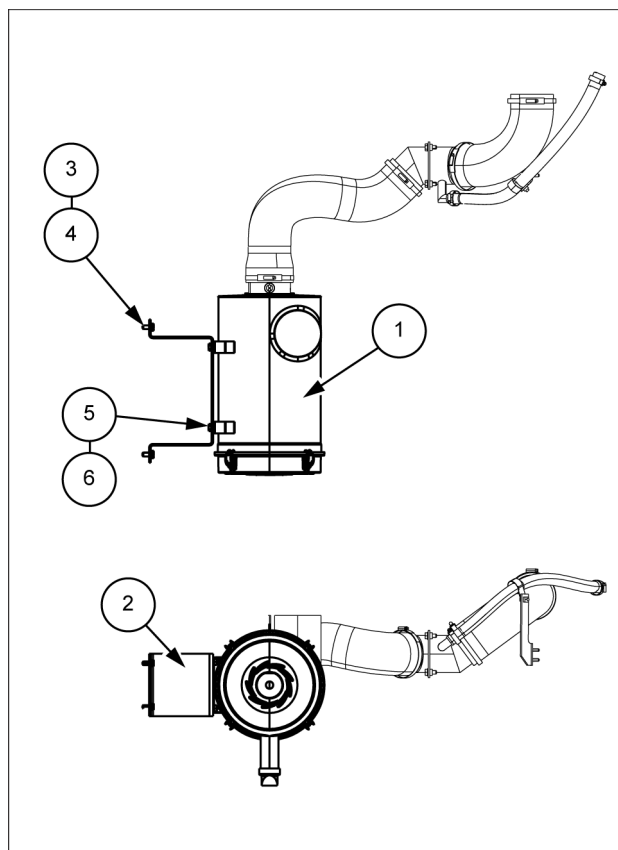
SMIL14WEX0230BB 1

Air cleaner support - Install

WX188

APAC --- MEA --- WE

1. Install the air cleaner support **(2)** by means of three screws **(3)** and relevant washers **(4)**.
Apply loctite to the screws **(3)**.
Tighten to **39.2 N·m (28.9 lb ft)**.
2. Install the air cleaner **(1)** to the support **(2)** by means of four screws **(5)** and relevant washers **(6)**.
Apply loctite to the screws **(5)**.
Tighten to **39.2 N·m (28.9 lb ft)**.

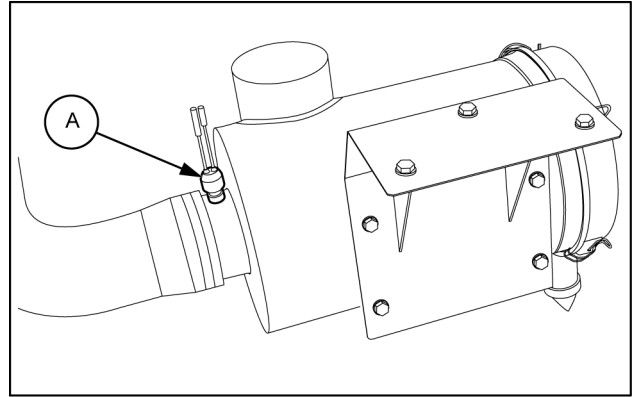


SMIL14WEX0231BB 1

Air cleaner - Replace

Open the cover on the left side of the machine.

Remove the air cleaner sensor (A).



SMIL13WEX0078AB 1

Push the clip (2) forward, turn the filter cover (1) to the left and remove it.

The dust discharge valve (6) is included into the filter cover (1).

Remove the main filter element (3) carefully from the case (5).

Remove from the case (5) also the filter element (4).

NOTE: Beyond respecting the maintenance interval of the safety element (4), this has to be replaced after the main element (3) has been cleaned three times.

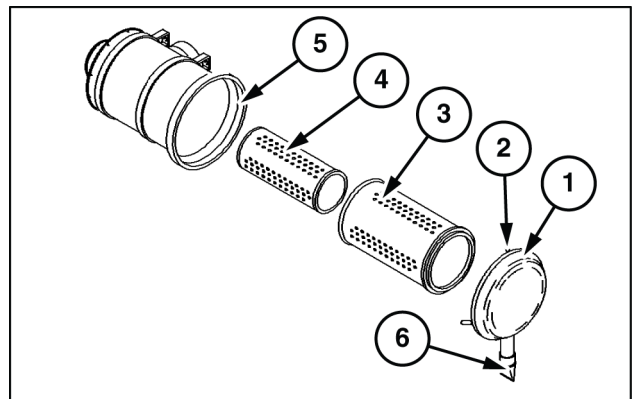
Clean the inside of the filter case (5) and the cover (1) accurately, by means of a vacuum cleaner.

Install the new safety element (4) and then the main new element (3).

Reassemble the cover (1) and lock it with the fastener (2).

Re-install the sensor (A) on the air cleaner.

Tighten the sensor (A) to **3.9 N·m (2.9 lb ft)**.



TULI12WEX2146AB 2

Fuel filters - Replace

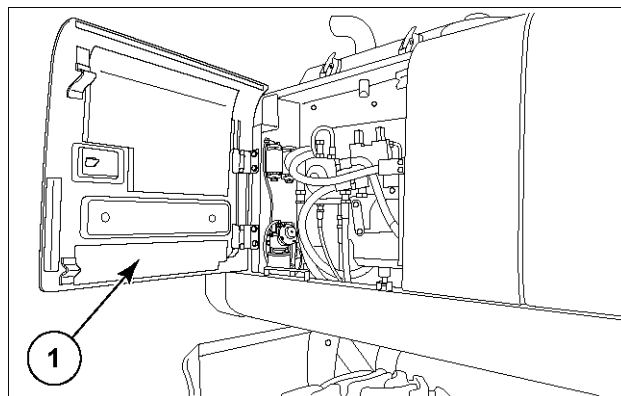
NOTICE: To work in safety, switch off and let the cooling of engine before work.

NOTICE: Dispose worn out filters respecting the current environmental legislation.

Open the right door (1) to access to the fuel filters.

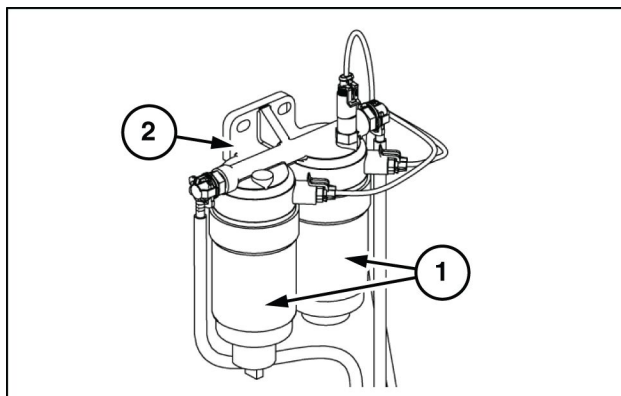
Replace fuel filters according to maintenance plan or in case of damage.

To replace, operate as follow.



F00384N1 1

1. Remove the filter elements (1) from support (2). Take care to collect the fuel that comes out.
2. Clean the support surface.
3. Fill of fuel the new filter elements.
4. Lubricate the seal of the new filter elements.
5. Tighten the filter elements on support.



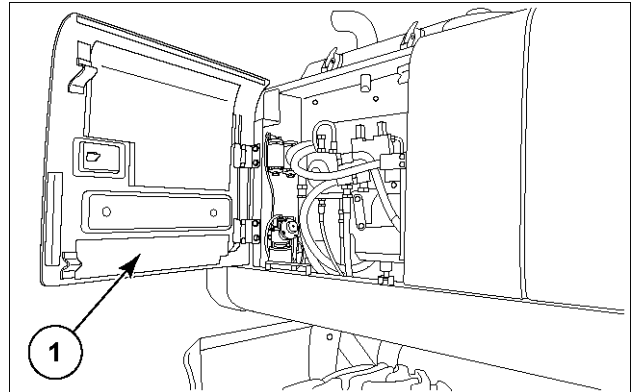
TULI12WEX2167AB 2

Fuel-water separator filter - Drain fluid

NOTICE: To work in safety, switch off and let the cooling of engine before work.

NOTE: Water in fuel can cause corrosion and engine damage.

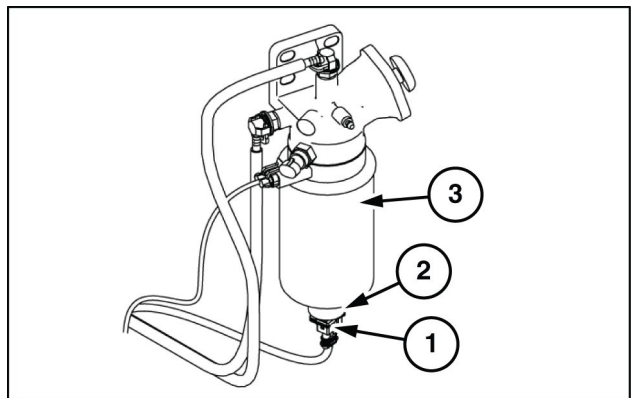
Open the right door (1) to access to the fuel-water separator filter.



F00384N1 1

Fuel-water separator filters impurity and separates the water present in fuel.

A sensor (1) is located on draining valve (2) of water separator (3).



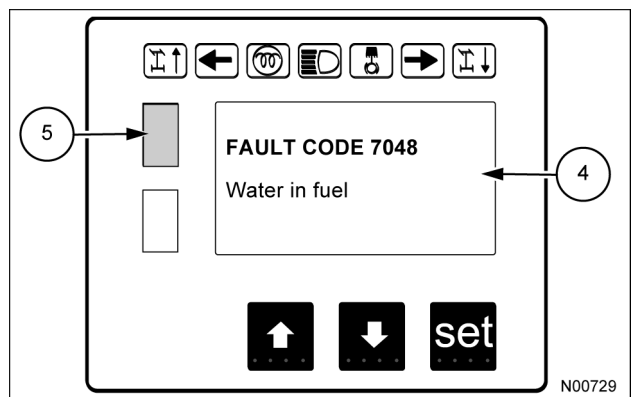
TULI12WEX2164AB 2

It causes the lighting of red light (5) on multifunction display (4) (with displaying of fault code 7048 "water in fuel"), each time water is detected into the water separator.

At the same time an acoustic signal is activated.

NOTICE: Immediately drain water from water separator when fault code 7048 (4) and red light (5) appear on display. If within **30 min** the fault code appears again, drain water from tank.

1. Gain access to the water separator filter (3) opening the right door of upper structure.
2. Place a container under the water separator to collect the water.
3. Disconnect the connector (1).
4. Open the drain valve (2), (located in the bottom part of water separator) and let water draining.
5. When fuel comes out, close the drain valve (2).
6. Connect the connector (1).
7. Check the sealing of water separator filter.



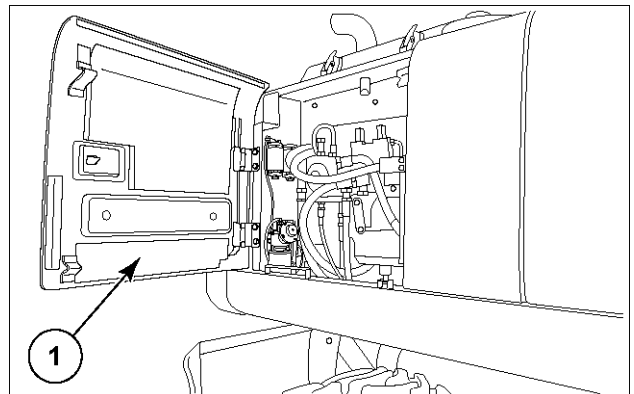
N00729

SMIL12WEX0319AB 3

Fuel-water separator filter - Bleed

NOTICE: To work in safety, switch off and let the cooling of engine before work.

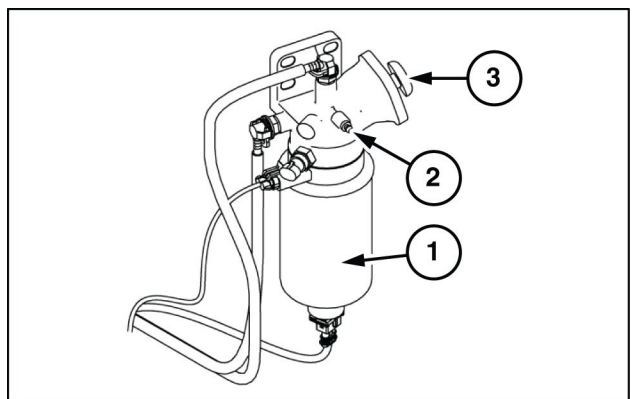
Gain access to the water separator filter **(1)** opening the right door of upper structure.



F00384N1 1

Air accumulation is possible into the filter **(1)**.
To bleed air operate as follow.

1. Loosen the bleeding screw **(2)**.
2. Connect a rubber hose to the bleeding screw **(2)** to direct the fuel into a fuel collecting container.
3. Manually operate on pump **(3)** until fuel comes out without air bubbles from rubber hose.
4. Disconnect the rubber hose.
5. Tighten the bleeding screw **(2)**.



TULI12WEX2166AB 2



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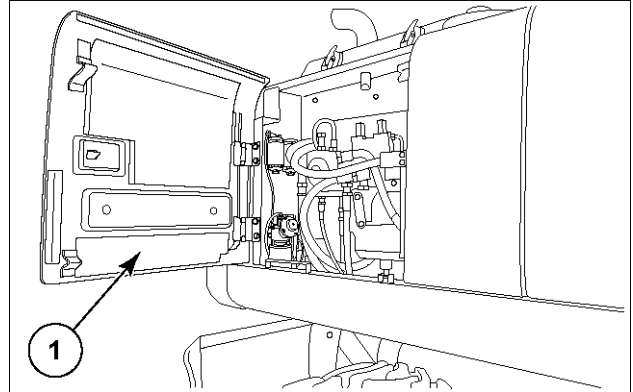
Thank you so much for reading

Fuel-water separator filter - Replace

NOTICE: To work in safety, switch off and let the cooling of engine before work.

NOTICE: Dispose worn out filters respecting the current environmental legislation.

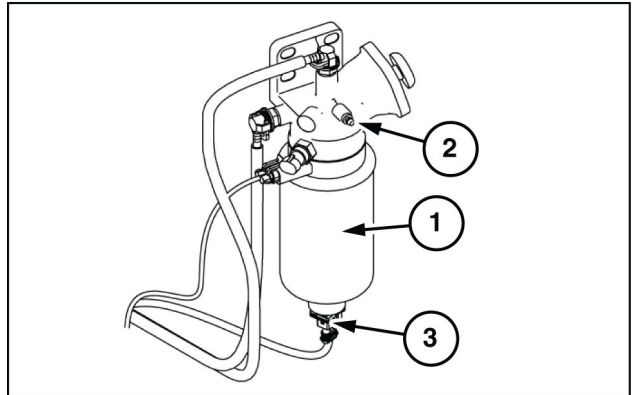
Open the right door (1) to access to the water separator filter.



F00384N1 1

Do not clean the water separator, but replace it according to the maintenance plan.

1. Disconnect the connector of the sensor (3).
2. Remove the filter element (1) from water separator (2). Pay attention to not pour fuel.
3. Clean the support surface.
4. Fill the new filter element with fuel.
5. Lubricate the seal of the new filter element.
6. Tighten the filter element on water separator.
7. Connect the connector of the sensor (3).
8. If engine does not start, bleed air from fuel hoses.
9. After few minutes, check sealing between filter element and water separator.



TUL12WEX2681AB 2

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