

ORIGINAL INSTRUCTIONS

DV23CC
DV23
DV26CC
DV26
Vibratory Roller

OPERATOR'S MANUAL

Part number 51503798

6th edition English

June 2018

Replaces part number 48142065



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Electro-Magnetic Compatibility (EMC)

Interference may arise as a result of add-on equipment that 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:

- 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
- The add-on equipment must not interfere with the functioning of the on board electronics

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

Emission control system Warranty – USA only

Your warranty rights and obligations

California

The California Air Resources Board (CARB), the United States Environmental Protection Agency (EPA) and YANMAR Co., Ltd. hereafter referred to as Yanmar, are pleased to explain the emission control system warranty on your industrial compression-ignition engine. California-certified, new off-road compression-ignition engines must be designed, built and equipped to meet the State's stringent anti-smog standards. In the remaining forty nine (49) states, new non-road compression-ignition engines must be designed, built and equipped to meet the United States EPA emissions standards. Yanmar must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel injection system, the air induction system, the electronic control system, the Exhaust Gas Recirculation (EGR) system, and the Diesel Particulate Filter (DPF) system. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, Yanmar will repair your non-road compression-ignition engine at no charge to you including diagnosis, parts and labor.

Manufacturer's warranty period:

Off-road compression-ignition engines are warranted for the periods listed below. If any emission-related part on your engine is found to be defective during the applicable warranty period the part will be replaced by Yanmar.

If your engine is certified as	And its maximum power is	And its rated speed is	The its warranty period is
Variable speed or constant speed	kW < 19	Any speed	1,500 h or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years.
Constant speed	19 ≤ kW <37	3,000 RPM or higher	1,500 h or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years.
Constant speed	19 ≤ kW <37	Less than 3,000 RPM	3,000 h or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.
Variable speed	19 ≤ kW <37	Any speed	3,000 h or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.
Variable speed or constant speed	kW ≥ 37	Any speed	3,000 h or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.

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 of 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 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 steering wheel or other controls or accessories as handholds when you enter or exit the cab or operator's platform.

Working at heights

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

DANGER
Explosion hazard
Read the procedure in the Operator's Manual before jump start or service the machine to avoid injury. Failure to comply will result in death or serious injury.

Quantity: 1
47437573



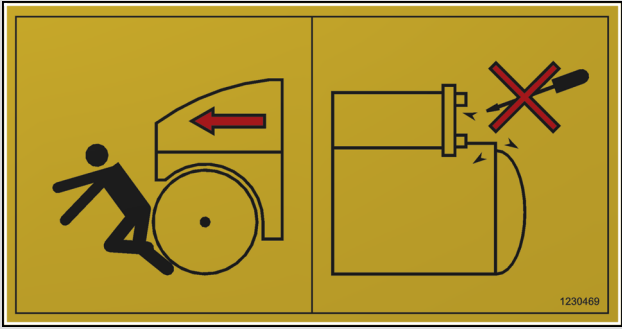
47437573 3

The icon shows a person attempting to jump-start a machine with a battery. Sparks are depicted emanating from the battery terminals, indicating a fire or explosion hazard. The entire icon is set against a yellow background within a square frame.

(1) Location:
On the front frame on the right-hand side under the battery.

WARNING
Run over hazard
Starting in gear could cause death. Start the engine from the operator seat only with the transmission control(s) in neutral. Failure to comply could result in death or serious injury.

Quantity: 1
47431348




47431348 4

The icon is divided into two panels. The left panel shows a person falling from the side of a machine, with a red arrow pointing to the rear wheel area. The right panel shows a hand using a screwdriver on a component, with a red 'X' over it, indicating that this action is prohibited. The entire icon is set against a yellow background within a square frame.

(2) Location:
On the side of the frame in the area of the starter.

WARNING
Welding hazard
Read Operator's Manual before welding on the machine. Disconnect the alternator before welding on the machine. Failure to comply could result in death or serious injury.

Quantity: 1
47437574



47437574 5

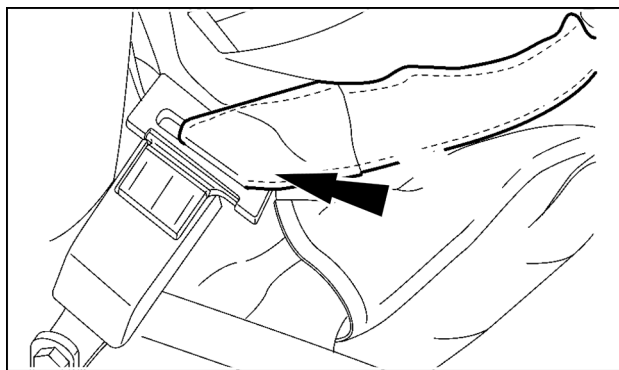
The icon shows a person welding a metal part. A red 'X' is placed over the welding area, indicating that welding is prohibited. The entire icon is set against a yellow background within a square frame.

(3) Location:
On the steering column

Retractable seat belt

1. Sit in the operator's seat.
2. Pull the left-hand belt strap from the retractor across your lap.
3. Insert the metal end of the retractable belt into the latch mechanism on the right-hand side.
4. To release, press the red button on the latch mechanism. The seat belt will automatically retract.

NOTE: A 3 in wide retractable seat belt is available as an option. Contact your dealer for details.



RAIL15COM0029AA 2

Deluxe seat (option)

- The operator's seat is equipped with two armrests.
- Move the armrests upward or downward.

Seat switch

⚠ WARNING

Run-over hazard!

Only operate the machine when sitting in the operator's seat. Do not try to bypass the operator presence safety system by placing heavy objects on the seat. Failure to comply could result in death or serious injury.

W0318A

Your machine is equipped with a seat switch (operator's presence system). The machine can only operate when the seat switch is in the closed position, i.e. the operator is on the operator's seat.

If you stand up, the seat switch will open. The machine will come to a standstill after **0.7 s**.

NOTE: The seat switch can also open when:

The operator leans out to the side and no longer has full weight on the seat.

The operator is too light. In this case, use the weight adjustment to adjust the seat.

NOTE: Always follow the stopping procedure described in this manual. Do not use the seat switch feature as a normal way to stop movement of the machine.

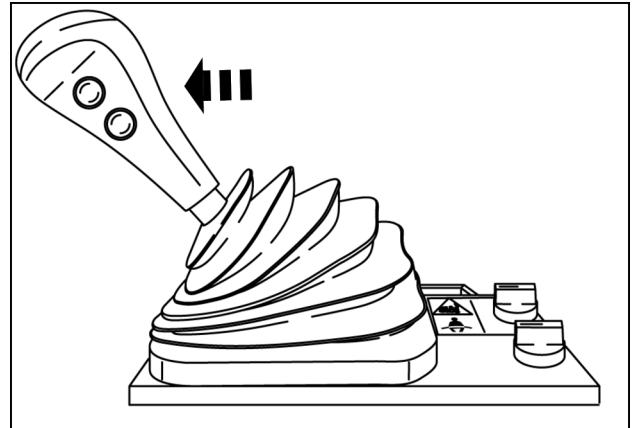
Right-hand side controls

Right-hand side controls

Travel control lever

To drive forward:

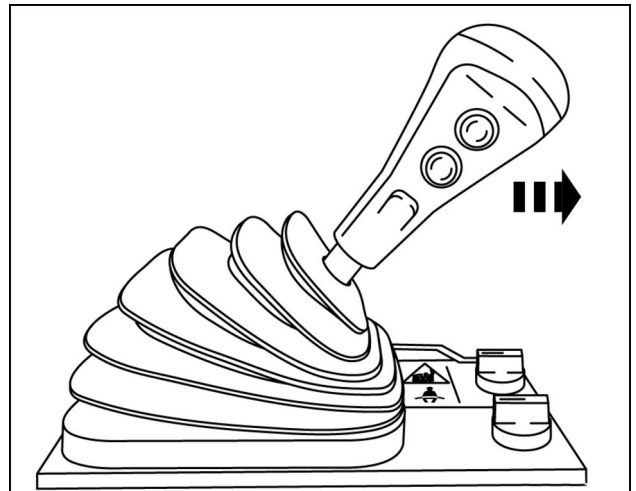
Slowly push the travel control lever forward to move the machine forward.



RAIL15COM0087AA 1

To drive in reverse:

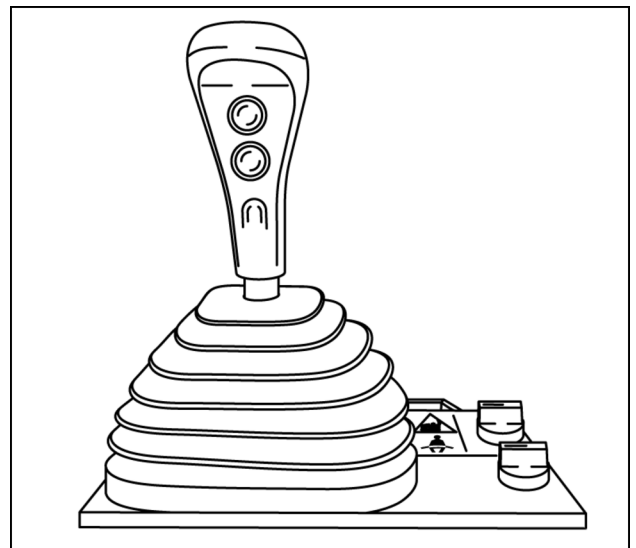
Slowly pull the travel control lever backward to move the machine in reverse.



RAIL15COM0089AA 2

To slow the machine down from forward or backward movement:

Slowly move the travel control lever into the NEUTRAL position. The machine will hydrostatically brake automatically.



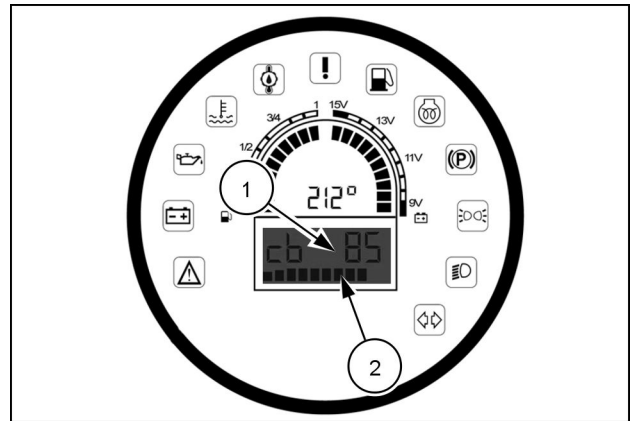
RAIL15COM0088AA 3

ACE force (option)

The ACE force option measure the current stiffness (1) at the front roller drum in kB (Millinewton meter (mN/m)). The display shows the value for stiffness as "cb". The display also expresses this value graphically in steps of 10 below the numerical value. This measurement starts and stops with the activation of vibration. The values are not saved or printed.

Possible displays

Display	Description
cb 1 ... cb120	Normal operation; the measured compaction value is displayed. Stiffness without a leading "0"; bar graph shows each step of 10 already started.
cb 000 ... cb 015	Calibration mode; status of the calibration procedure.
cb 888	Calibration mode; calibration error; check the cabling and the machine.
cb 999	Machine is bouncing; NOTICE: This condition destroys the ground and the roller drum. It is normal for the display to show "cb 999" briefly during operation, or when you switch vibration on or off. If "cb 999" remains on the display for an extended period of time, the vibration is too strong or the ground is already fully compacted.



RAIL15COM0101AA 4

Moving the unit

Machine travel

⚠ WARNING

Run-over hazard!

Only operate the machine when sitting in the operator's seat. Do not try to bypass the operator presence safety system by placing heavy objects on the seat. Failure to comply could result in death or serious injury.

W0318A

⚠ WARNING

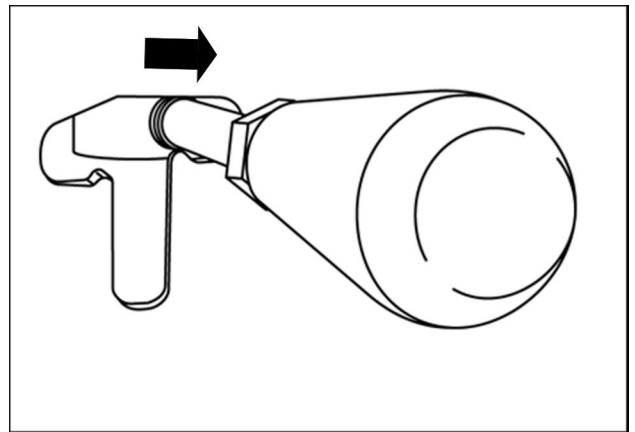
Hazard to bystanders!

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

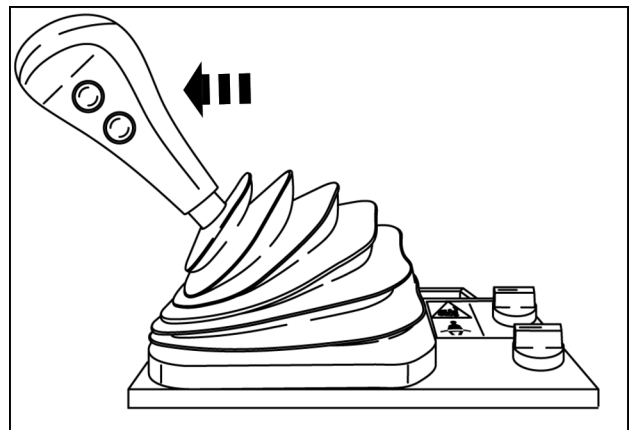
1. Start the unit.
2. Move the speed adjusting lever up and forward to the operating speed position.



RAIL15COM0103AA 1

To drive forward:

3. Slowly push the travel control lever forward to move the machine forward.



RAIL15COM0087AA 2

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6 - WORKING OPERATIONS

General information

Vibration operation

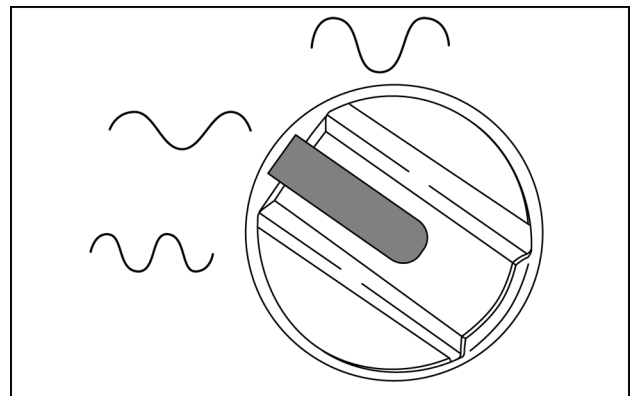
Single and double vibration

To avoid damage to material due to harsh vibration movement:

- Never use vibration while idling.
- Never use vibration while at a standstill.
- Only switch vibration on if the speed adjusting lever is set to an operating speed.

Preselecting the frequency

- Turn the vibration amplitude and frequency preselect switch to the left position for high frequency and low amplitude operations.
- Turn the vibration amplitude and frequency preselect switch to the center position for low frequency and low amplitude operations.
- Turn the vibration amplitude and frequency preselect switch to the right position for low frequency and high amplitude operations.

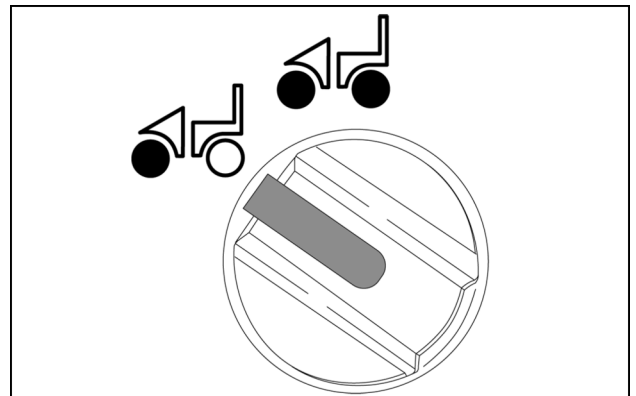


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Vibration ON/OFF

- Turn the switch to the left and only the front roller will vibrate.
- Turn the switch to the right and both the front and the rear roller will vibrate.

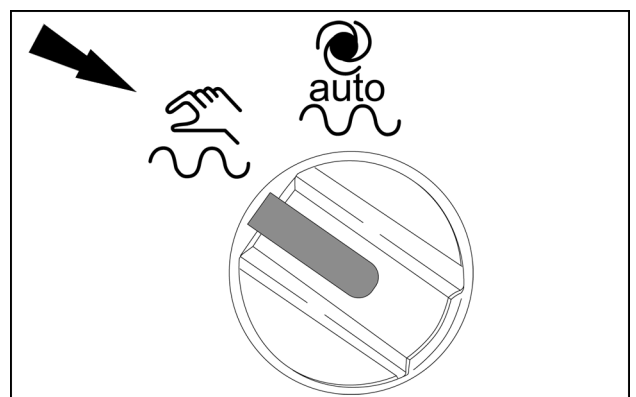
NOTE: When you switch from double vibration to single vibration, expect a brief interruption of the vibration.



RAIL15COM0129AA 2

Manual vibration

1. Set the vibration preselect switch to the "Manual" position.



RAIL15COM0130AA 3

Screw plugs

Hex	Allen	Screw diameter	Tightening torque
—	5	1/8" thread	13 N·m (9.59 lb ft)
—	10	1/2" thread	80 N·m (59.00 lb ft)
27	—	M22 x 1.5	90 N·m (66.38 lb ft)

Drain valve tightening

Drain valve	Tightening torque
Diesel fuel tank	Secure the screw connections with universal pipe sealant and tighten by hand, not with torque.
Hydraulic tank	Secure the screw connections with universal pipe sealant and tighten by hand, not with torque.

Hydraulic hose and neck tightening

Connection	Tightening torque
Cap nut	Tighten the cap nut manually until the stop. Tighten the cap nut a 1/4 turn, 90° , more with the wrench to secure.

Threaded bolt of the ROPS joint

Screw diameter	Bolt class	Tightening torque
M18	S355	147.0 N·m (108.4 lb ft) Lubricate the bolt with LOCTITE® ANTI-SEIZE or equivalent

Every 10 hours of operation or daily

Fuel level - Check

⚠ WARNING

Fuel vapors are explosive and flammable.
 Do not smoke while handling fuel. Keep fuel away from flames or sparks. Shut off engine and remove key before servicing. Always work in a well-ventilated area. Clean up spilled fuel immediately.
 Failure to comply could result in death or serious injury.

W0904A

⚠ WARNING

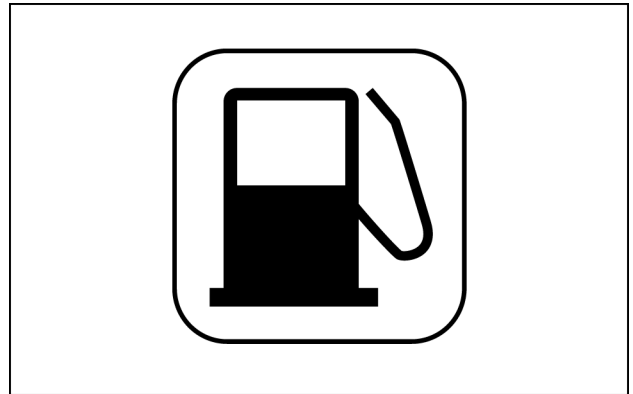
Fire hazard!
 Do not add gasoline, alcohol, or blended fuels to diesel fuel, except as recommended in this manual.
 Fuel combinations may increase fire and explosion hazards.
 Failure to comply could result in death or serious injury.

W0401A

Check the fuel level every 10 hours or daily.

Service specifications	
Type of fuel	Use fuel that complies with the American Society for Testing and Materials (ASTM) D975 standard. Grade number 2 diesel fuel
Capacity	40 L (15.59 US gal)

When the control lamp for the diesel fuel tank illuminates for the first time, you have at least **30 min** of remaining fuel.

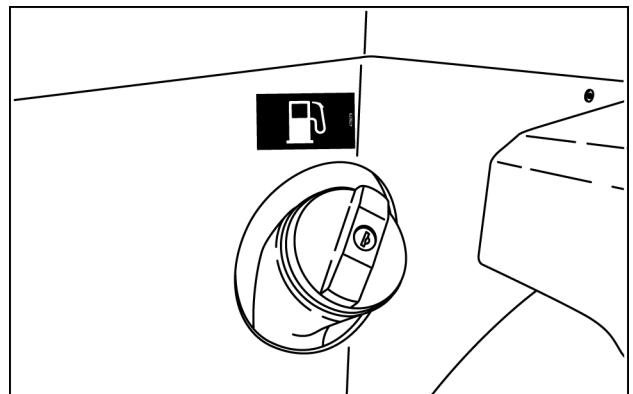


RAIL15COM0133AA 1

Fueling

Fill the tank with diesel fuel up to the lower edge of the filler neck

- Every day before you begin work operations, or
- As soon as the control lamp for the diesel fuel illuminates.

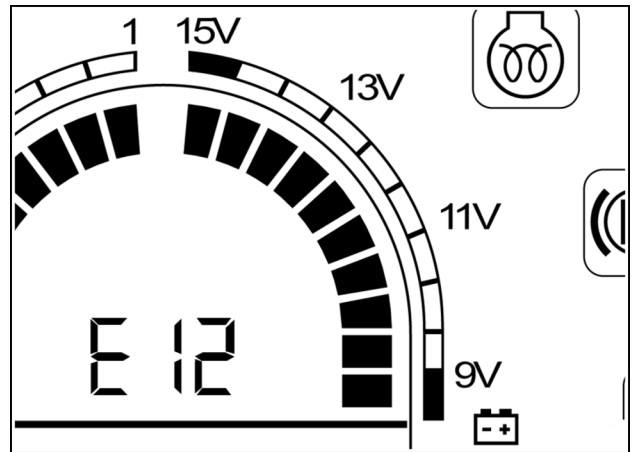


RAIL15COM0134AA 2

Battery charge - Check

Read the battery charge level on the display screen.

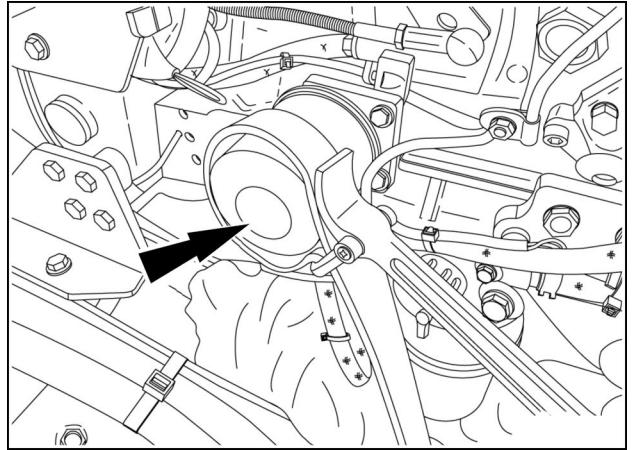
- When you turn the ignition ON the battery voltage displays. During start-up of the machine, the battery voltage should not drop below **10 V**. If the voltage drops below **10 V**, charge the battery.
- After start-up, the alternator charging voltage displays. The voltage should display between **13 – 14.5 V**



RAIL15COM0148AA 1

Replace the engine oil filter

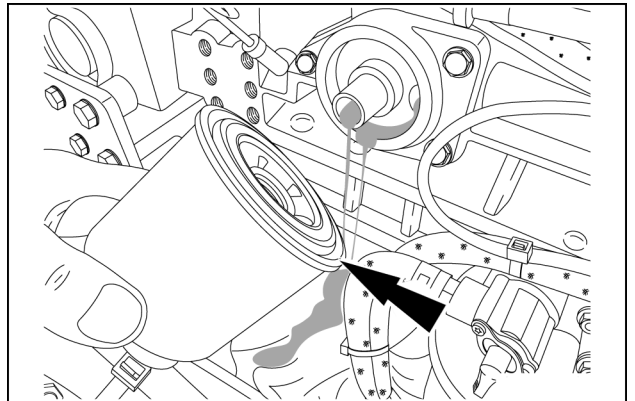
6. Open the engine hood.
7. Place a rag under the engine oil filter to collect oil once you remove the filter.
8. Remove the engine oil filter with a filter wrench or by hand.



RAIL15COM0167AA 3

9. Dispose of the filter and collected oil in accordance with local, regional, and federal regulations.
10. Use a clean cloth and wipe the sealing surface of the oil filter base to remove all dirt.
11. Apply a thin layer of engine oil to the gasket of the new oil filter.
12. Turn the new oil filter onto the base until the gasket makes contact with the base.
13. Torque the engine oil filter to: **19.0 – 23.0 N·m (14.0 – 17.0 lb ft)** or use the filter wrench to turn the engine oil filter one additional turn.

NOTICE: Only use genuine, specified filters.



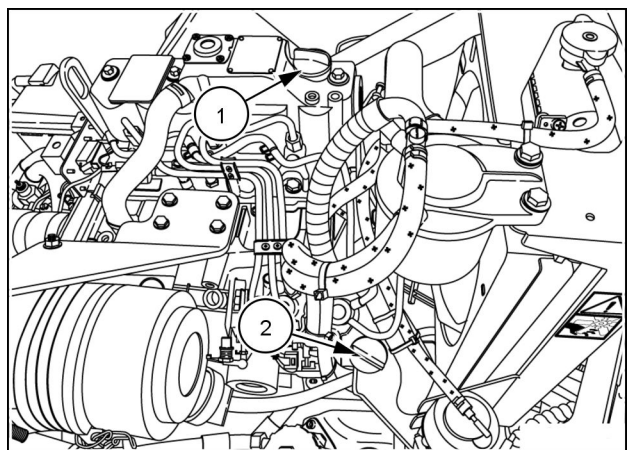
RAIL15COM0189AA 4

Fill the engine oil tank

14. Fill at either the filler neck **(2)** on the left-hand side of the engine or at the filler neck **(1)** on the engine.

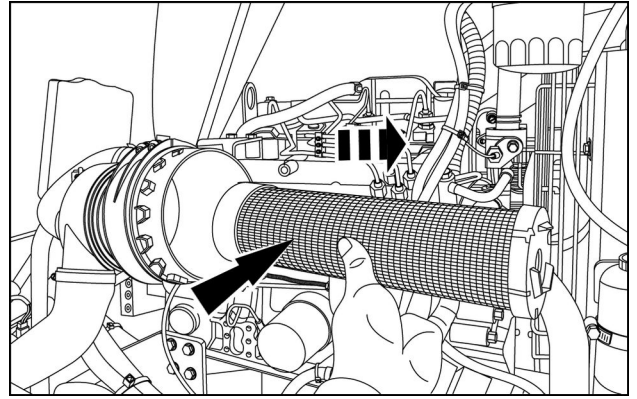
NOTE: After you refill the engine oil, wait **5 min** to allow the oil to drain to the sump before you check the oil level.

15. Close the engine hood.



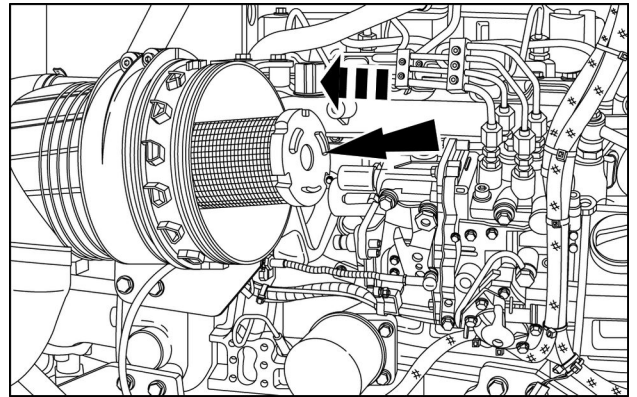
RAIL15COM0156AA 5

5. Remove the inner air filter element.
6. Clean the inside of the air filter housing with a lint-free cloth.



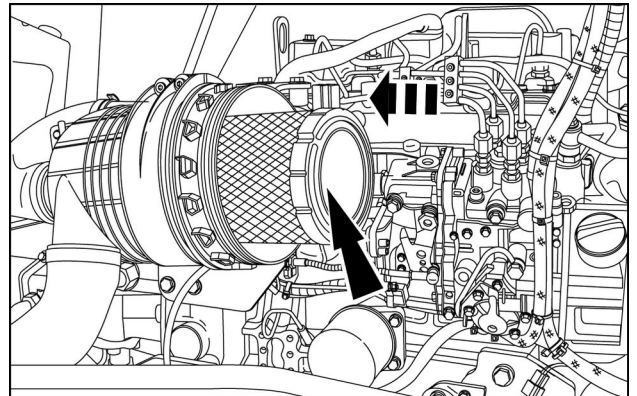
RAIL15COM0226AA 4

7. Install the new inner air filter element. Do not clean.



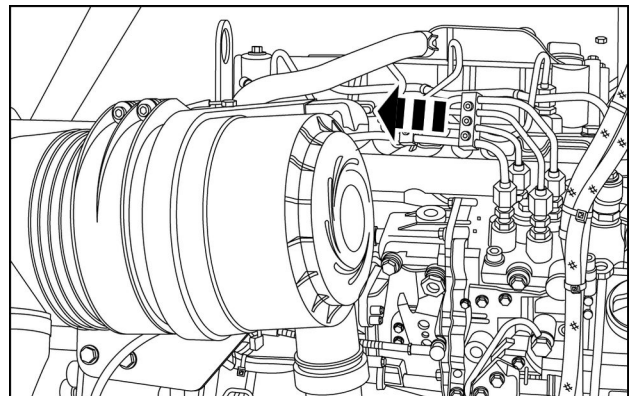
RAIL15COM0227AA 5

8. Install the outer air filter element.



RAIL15COM0224AA 6

9. Install the cover of the air filter housing.
10. Turn the cover of the air filter housing clockwise.
11. Push the yellow tab to lock the cover of the air filter housing.



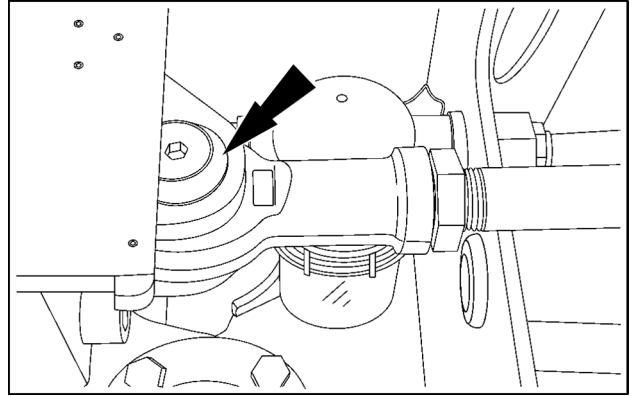
RAIL15COM0228AA 7

12. Close the engine hood.

Pendulum joint

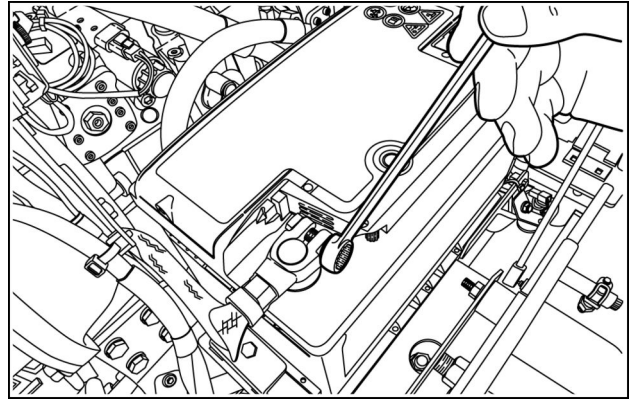
Maintain the pendulum joint every 1000 hours or every year, or as required.

If the pendulum joint makes a grinding noise as you operate the machine, contact your authorized dealer.



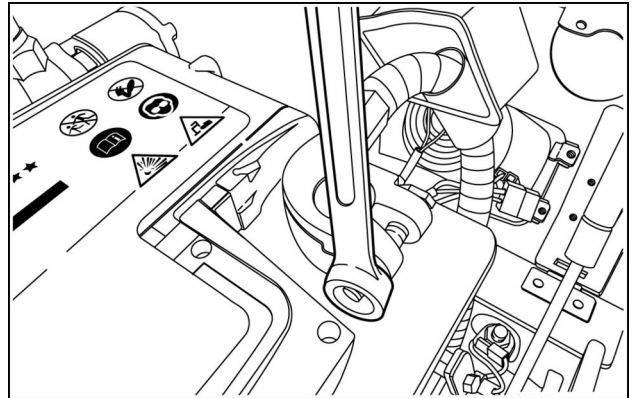
SVIL13COM0193AB 1

2. Disconnect the negative (-) terminal.



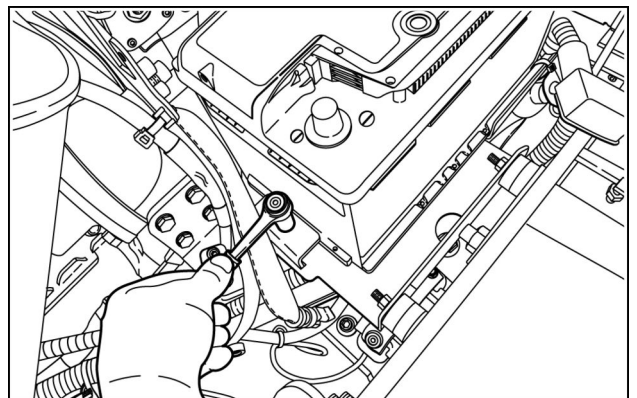
RAIL15COM0200AA 2

3. Disconnect the positive (+) terminal.



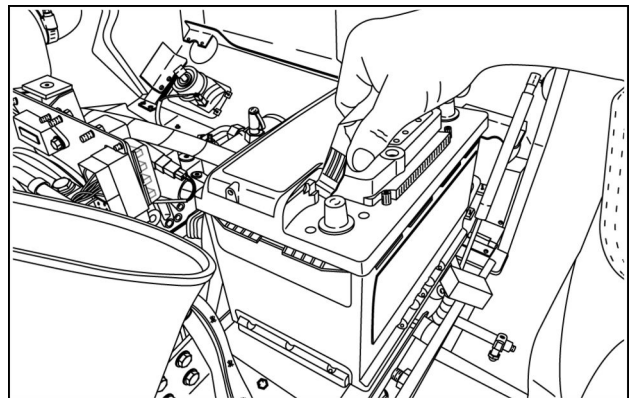
RAIL15COM0201AA 3

4. Remove the mounting bracket.



RAIL15COM0204AA 4

5. Lift the battery out of the engine compartment.
6. Set the new battery in place.
7. Connect the battery. Connect the positive (+) terminal first, then connect the negative (-) terminal.



RAIL15COM0202AA 5

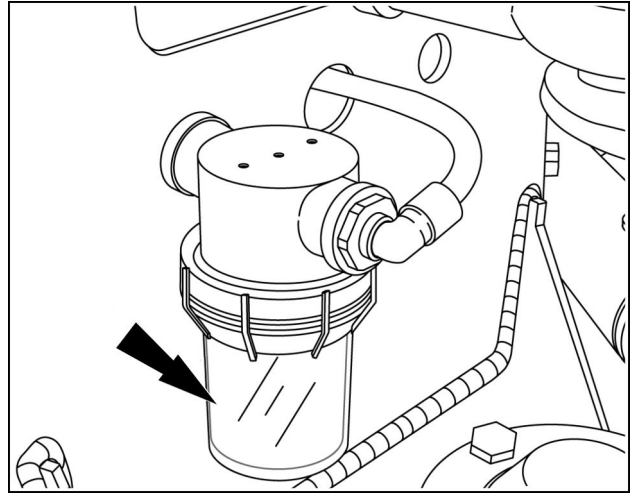
11. **⚠ WARNING**

Electrical shock hazard!
Before working on any part of the electrical system, disconnect the battery ground cable. Complete all electrical work before connecting the cable.
Failure to comply could result in death or serious injury.

W0129A

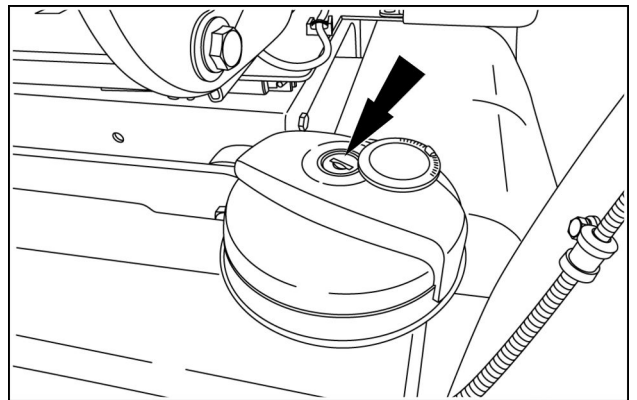
Remove and clean the plastic container of the water filter.

NOTICE: You must remove the plastic container if there is a risk of freezing temperatures. The water will crack the container if it were to freeze.



RAIL15COM0211AA 4

12. Install and lock the cap of the water tank.



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