

Coffee Express 200 Multi

Coffee Express Harvester

SERVICE MANUAL

Part number 48149556

English

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SERVICE MANUAL

Coffee Express 200 Multi MWM Engine [PRCYE200THPB00400 -]

Contents

INTRODUCTION

Engine.....	10
[10.001] Engine and crankcase	10.1
[10.210] Lift pump and lines	10.2
[10.206] Fuel filters	10.3
[10.202] Air cleaners and lines	10.4
[10.414] Fan and drive	10.5
[10.216] Fuel tanks	10.6
[10.254] Intake and exhaust manifolds and muffler	10.7
[10.400] Engine cooling system	10.8
[10.304] Engine lubrication system.....	10.9
Rear axle system.....	27
[27.120] Planetary and final drives	27.1
Hydraulic systems.....	35
[35.000] Hydraulic systems.....	35.1
[35.300] Reservoir, cooler, and filters.....	35.2
[35.105] Charge pump.....	35.3
Frames and ballasting	39
[39.100] Frame	39.1
Steering.....	41
[41.216] Cylinders	41.1
Electrical systems.....	55
[55.927] Shaking control system	55.1
[55.100] Harnesses and connectors.....	55.2
[55.301] Alternator.....	55.3
[55.302] Battery.....	55.4

[55.012] Engine cooling system	55.5
[55.520] Cab harvesting controls	55.6
[55.201] Engine starting system	55.7
Platform, cab, bodywork, and decals	90
[90.150] Cab	90.1



INTRODUCTION

Safety rules

General safety regulations

General Aspects

- Strictly follow repair and maintenance procedures.
- Do not wear rings, wrist watches, jewelry, accessories, unbuttoned items of clothing, unsecured clothing like ties, torn clothing, scarves, or open jackets or shirts with open zippers that could get caught in moving parts. Use approved safety clothing, such as anti-slip footwear, sleeves, protective goggles, helmets, etc.
- Wear safety goggles with side shields when cleaning parts using compressed air.
- Worn or damaged cables and chains are not reliable. Do not use these elements in lifting or towing operations.
- Use regulation safety equipment, such as approved eye protection, helmets, clothes, sleeves, and special footwear whenever you are welding. All individuals near the welding process must use regulation eye protection. Never look at the welding arc without using suitable eye protection.
- Never perform any repairs on the machine if there is someone in the operator seat, except when the person is a qualified operator who is helping with the service to be performed.
- Never operate the machine or use accessories from a place other than the operator seat or next to the machine when operating the fender switches.
- Never perform any operations on the machine with the engine running, except when specifically instructed to do so. Shut down the engine and release all the pressure from the hydraulic circuits before removing covers, cases, valves, etc.
- You must conduct all repair and maintenance operations with the utmost care and attention.
- Disconnect the batteries and put warning labels on all of the controls to warn that the machine is being repaired. Lock the machine and all the equipment that you remove.
- Never check or fill the fuel tank or batteries or use starting fluid when you are smoking or near a naked flame, because these fluids are flammable.
- The fuel filling gun must remain in contact with the filler neck. Maintain the contact until the fuel stops flowing into the tank in order to avoid sparks caused by static electricity build-up.
- To transport a faulty machine, use a trailer or a low loader platform trolley, if available.
- To load and unload the machine from the mode of transportation, choose a flat area that offers firm support for the wheels of the truck or trailer. Securely fasten the machine to the platform of the trailer or truck, in accordance with the transporter's requirements.
- Always use hoist mechanisms with an appropriate capacity for lifting or moving heavy components.
- Chains must always be securely fastened. The fastening device must have sufficient capacity to support the intended load. It is prohibited for bystanders to be near the fastening position.
- The work area must always be clean and dry. Clean it immediately if any water or oil is spilled.
- Never use gasoline, diesel, or other flammable liquids for cleaning. Use only non-toxic solvents.
- Do not allow cloths soaked with oil or grease to accumulate because they can cause a fire risk. Always keep these cloths in a metal container.

Starting

- Never start the engine in enclosed spaces that are not equipped with a suitable exhaust system or gas-extraction system.
- Never bring your head, body, arms, legs, feet, hands, or fingers close to fans or rotating belts.

Engine

- Always loosen the radiator cap slowly before removing it, in order to dissipate the system pressure. You must top up the coolant with the engine stopped.
- Do not fill up the fuel tank when the engine is running.
- Never adjust the fuel injection pump when the machine is in motion.

- Never lubricate the machine when the engine is running.

Electrical systems

- If it is necessary to use auxiliary batteries, you must connect the cables on both sides as follows: (+) to (+) and (-) to (-). Avoid causing the terminals to short circuit. The gas that the batteries release is highly flammable. During charging, leave the battery compartment open to improve ventilation. Avoid sparks and naked flames near the battery. Do not smoke.
- Do not charge the batteries in enclosed spaces.
- Always disconnect the batteries before carrying out any type of servicing on the electrical system.

Hydraulic system

- A little fluid coming out of a small bore could be almost invisible, but strong enough to penetrate the skin. For this reason, never use your hands to check for leaks. Instead, use a piece of cardboard or wood. If any fluid penetrates your skin, seek medical assistance immediately. Failure to seek immediate medical assistance could result in serious infections or dermatitis.
- Always read the system pressure using suitable gauges.

Wheels and tires

- Make sure that the tires are correctly inflated at the pressure specified by the manufacturer. Inspect the rims and tires regularly for any damage.
- Remain next to the tire when filling it with air.
- Only check the pressure when the platform is unloaded and the tires are cold, in order to prevent inaccurate readings caused by overpressure.
- Never cut or weld a rim with a full tire fitted.
- To remove the wheels, lock both the front and rear wheels of the machine. Lift the machine. Install stable and secure supports under the machine, as per the legislation in force.
- Deflate the tire before removing any objects that may be caught in the tire tread.
- Never inflate tires using flammable gases, as they could cause explosions and injure bystanders.

Remove and install

- Lift and handle all heavy components using hoist devices of appropriate capacity. You must suspend the parts using suitable hooks and slings. Use the hoist eyes provided for this purpose. Be careful if there are any bystanders near the hoisted load.

Safety rules

Health and safety precautions

Many of the procedures involved in machine maintenance and repair services involve physical hazards and other health risks. This section lists some of these hazardous procedures and the materials and equipment associated with them.

Acids and alkalis

Avoid splashing into your eyes and nose, or onto your skin and clothing. Wear suitable sleeves and protective goggles. Irritate and corrode the skin, eyes, nose, and throat. Causes burns. Do not inhale the fumes.

Adhesives and sealants

These are highly flammable. You must store them in no smoking areas. Use applicators when possible or secondary containers. The containers must be labeled.

Resin-based adhesives/sealants

Skin contact could result in irritation, dermatitis, and the absorption of toxic or harmful chemicals through the skin. Splashes could cause eye injuries. Ensure that there is adequate ventilation and avoid contact with the skin and the eyes. Follow the manufacturer's instructions.

Ensure that there is adequate ventilation as volatile harmful or toxic chemicals may be released.

Anti-freeze

These are highly flammable. You must store them in no smoking areas.

Anti-freeze can be absorbed through the skin in toxic or harmful quantities. Ingesting anti-freeze can cause death and you must seek medical assistance immediately.

Chemicals – General

You must always take care when using and handling chemicals such as solvents, sealants, adhesives, paints, foam resins, battery acids, anti-freeze, brake fluid, oils and greases. They may be harmful, toxic, corrosive, irritant, or highly flammable. They may also emit hazardous fumes or dust.

Do

Remove chemicals from skin and clothing as soon as possible after contact. Change very dirty clothes and make provision for cleaning them.

Read and strictly adhere to the safety recommendations on the chemical containers.

When working with chemicals, wash before breaks, and before eating, smoking, drinking, or using the bathroom. Keep work areas clean, organized, and free of spillages. Store according to local and national legislation. Keep chemicals out of the reach of children.

Do not

Do not mix chemicals, except in accordance with the manufacturer's instructions. Some substances could form other chemical substances that are toxic or harmful, emit toxic or harmful fumes, or become explosive after mixing. Do not spray chemicals, especially solvent-based chemicals, in enclosed spaces.

Do not apply heat or flames to chemicals, except in accordance with the manufacturer's instructions. Some are highly flammable or could release toxic or harmful fumes.

Do not leave containers open. The fumes emitted could accumulate in toxic, harmful, or explosive concentrations. Some fumes are heavier than air and will accumulate in confined areas, trenches, etc. Do not put chemicals in unmarked containers.

Do not clean your hands or clothes with chemicals. Chemicals, particularly solvents and fuels, dry out the skin and can cause irritation and dermatitis. Some can be absorbed through the skin in toxic or harmful quantities.

Do not use empty containers to store other chemicals, except when they have been cleaned under supervision. Do not attempt to sniff or inhale chemicals. Rapid exposure to high concentrations of fumes can be toxic or harmful.

Anti-corrosive protective material

These materials are varied and you must follow the manufacturers' instructions. They may contain solvents, resins, petroleum derivatives, etc. You must avoid contact with the skin and the eyes. You must carry out spraying with adequate ventilation and never in enclosed spaces.

Post

Dust, powders, or clouds may be irritant, harmful, or toxic. Avoid inhaling the chemical powders or dusts that result from dry abrasion services. Use respiratory protection if ventilation is not adequate.

Electric shock

Electric shocks result from the use of faulty electrical equipment or from incorrect use.

You must keep electrical equipment in good condition and test it frequently.

Electrical equipment must be protected by a fuse with an appropriate nominal capacity.

Use low-voltage equipment (**110 volt**) for work lights and inspection lights, wherever possible. Use pneumatic equipment instead of electrical equipment wherever possible.

In the event of electrocution:

- Turn off the electricity before approaching the victim.
- If that is not possible, push or pull the victim away from the source of the electricity using a dry, non-conductive material.
- If you have been trained, start giving first aid.
- Seek medical assistance.

Exhaust fumes

These fumes contain asphyxiating, toxic or harmful chemical substances. You must only run engines in adequate extraction or general ventilation conditions, and never in enclosed spaces.

Fiber insulation

The fibrous nature of cut surfaces and edges can cause skin irritation. In general, the effect is physical and not chemical. You must take precautions to avoid excessive skin contact. Take care when organizing your work methods. Wear sleeves.

Fire

Many materials relating to vehicle repair are highly flammable. Some release toxic or harmful fumes when burned.

Scrupulously observe the fire prevention safety recommendations when storing and handling flammable materials or solvents, particularly in the vicinity of electrical equipment or welding processes.

Before using any electrical or welding equipment, ensure that there is no risk of fire. Always have an appropriate fire extinguisher nearby when using welding or heating equipment.



SERVICE MANUAL

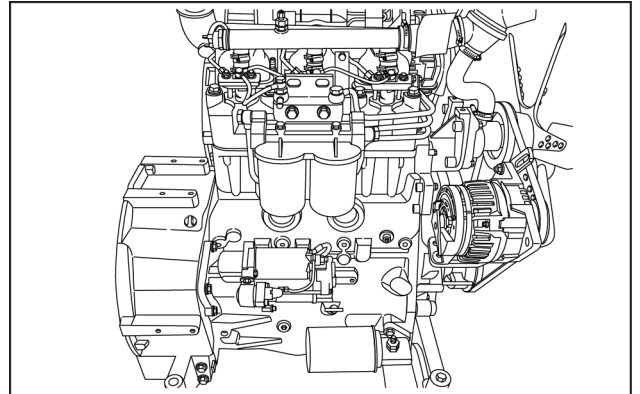
Engine

Coffee Express 200 Multi MWM Engine [PRCYE200THPB00400 -]

Engine - Overview

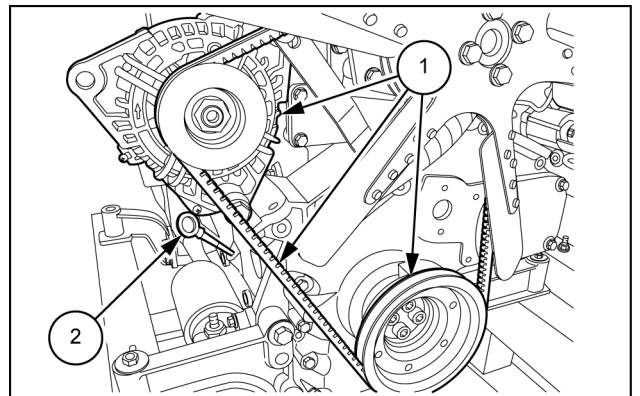
Engine identification

General side view



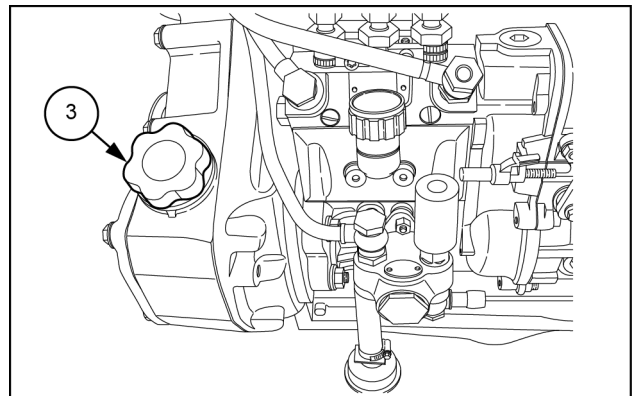
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1. Belt, pulleys, alternator side view
2. View of oil dipstick



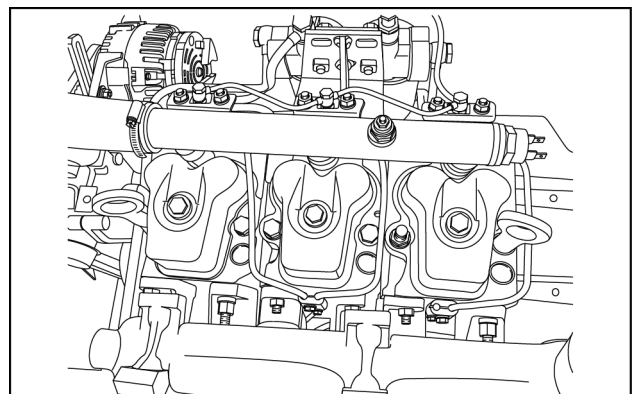
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3. Engine oil filler neck



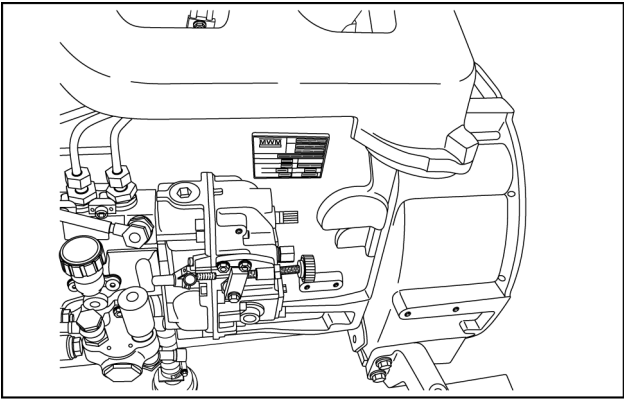
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Top view of valve cover/engine head



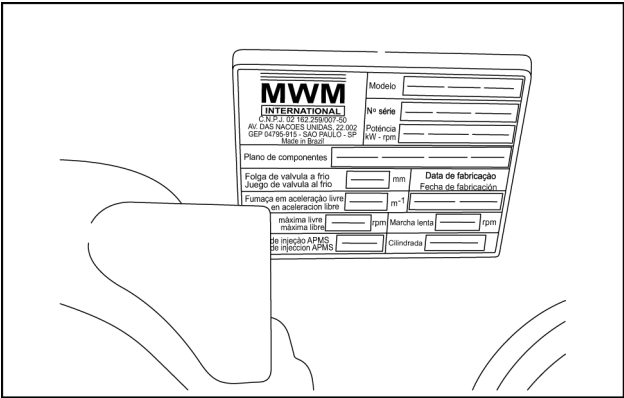
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View of injection pump, identification plate and flywheel housing.



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View of MWM engine identification plate



SOIL14COF0104AA 6

MOTORES MWM BRASIL MWM MOTORES DIESEL LTDA. São Paulo - SP / C.P. 7679 / P.O. Box 7679 C.G.C. 33.065.681/0001-25 MADE IN BRAZIL	Modelo	D229-3 CNH	
	N° série	A1N074702	
	Potência kW - rpm	40,0	2,500
Plano de componentes		9 . 229 . 59 . 00 . 101 . 9	
Folga de válvula a frio Juego de válvula al frio	0,20 mm	Data de fabricação Fecha de fabricacion	
Fumaça em aceleração livre Humo en aceleracion libre	m ⁻¹	08/01/2009	
Rotação máxima livre Rotacion máxima libre	rpm	Marcha lenta	700 rpm
Ponto de injeção APMS Punto de inyeccion APMS	23,00	Cilindrada	2,941

BRIL12SP0167A0A 7

MWM engine identification plate

The engine identification code indicates the engine type, cylinder, use for which it has cylinder capacity, intended use, etc.

D	D: Diesel engine
229	Serial number
EC	Economic combustion
3	Number of cylinders

Engine technical data

Model	Diesel – MWM D229–3
Power	40 kW (54 Hp)
Nominal speed	2500 RPM
Cylinders	3
Cylinder displacement	2940 CC
Helix	17 in

Engine service information

For engine repair services, contact the nearest authorized MWM network.

Engine - Remove

⚠ WARNING

Avoid injury! Always do the following before lubricating, maintaining, or servicing the machine.

1. Disengage all drives.
2. Engage parking brake.
3. Lower all attachments to the ground, or raise and engage all safety locks.
4. Shut off engine.
5. Remove key from key switch.
6. Switch off battery key, if installed.
7. Wait for all machine movement to stop.

Failure to comply could result in death or serious injury.

W0047A

⚠ 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

⚠ WARNING

Hot surface possible!

Wait for all components to cool before performing any operation.

Failure to comply could result in death or serious injury.

W0251A

⚠ DANGER

Heavy parts!

Support designated component(s) with adequate lifting equipment.

Failure to comply will result in death or serious injury.

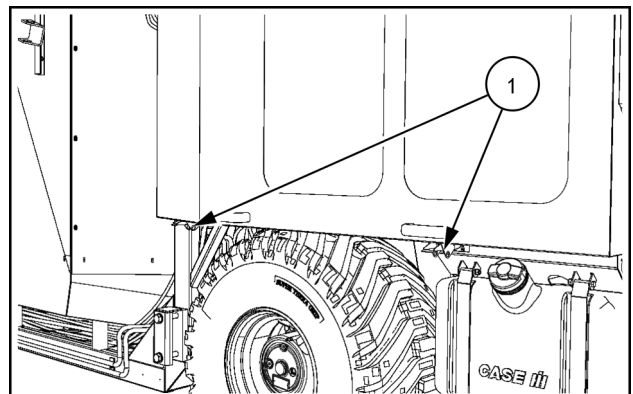
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NOTE: The lifting equipment must have a capacity of at least 370 kg (815,71 lb).

Prior operation:

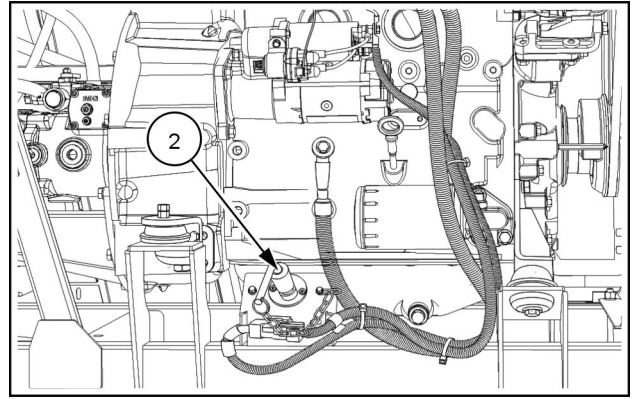
Engine – Overview

1. Release the latches (1). Open the engine compartment.



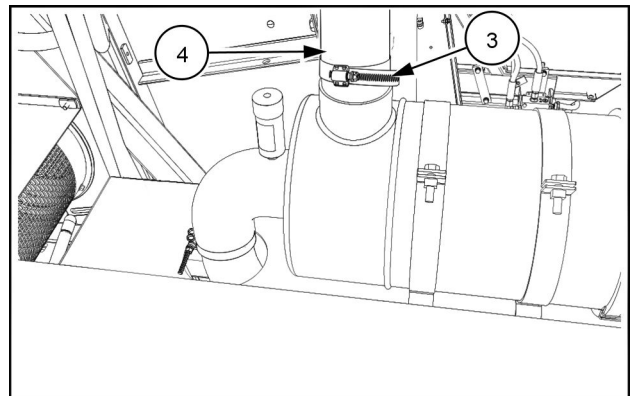
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2. Shut down the master switch **(2)** of the harvester.



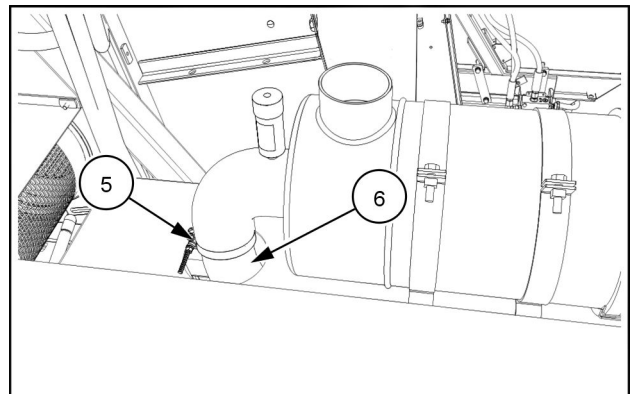
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3. Loosen the clamp **(3)**. Remove the flexible tube **(4)** from the air filter housing.



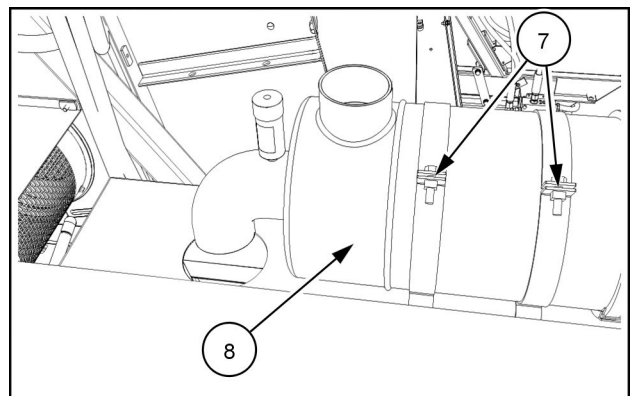
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4. Loosen the clamp **(5)**. Remove the flexible tube from the air filter housing **(6)**.



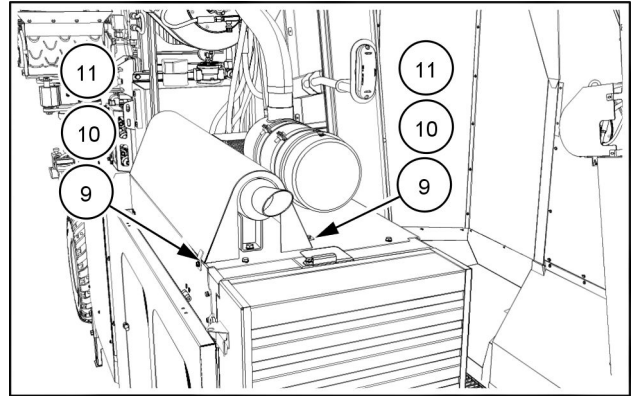
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5. Loosen the bolts that secure the housing onto the cradle **(7)**. Remove the housing **(8)**.



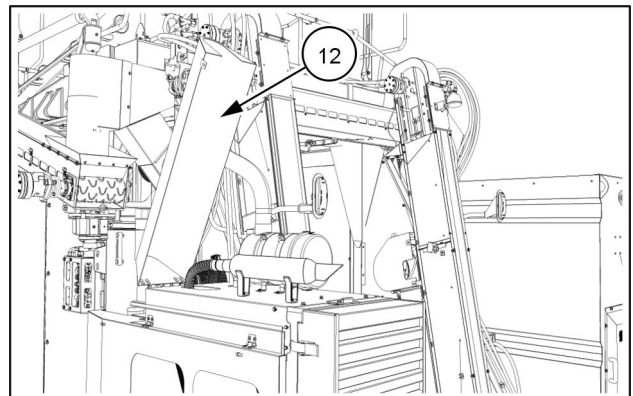
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6. Remove the bolts **(9)**, the washers **(10)**, and nuts **(11)** from the muffler guard.



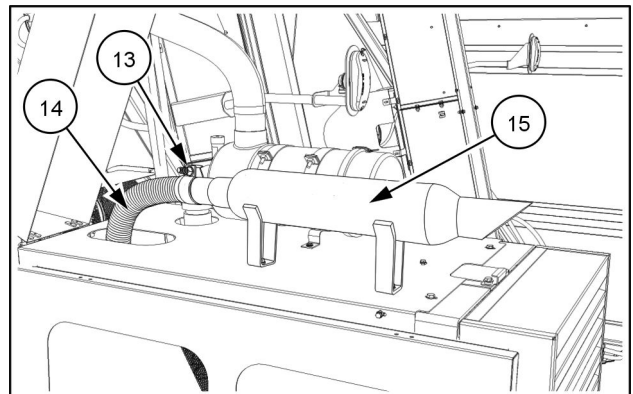
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7. Open the muffler guard **(12)**. Secure the guard so that the guard stays open.



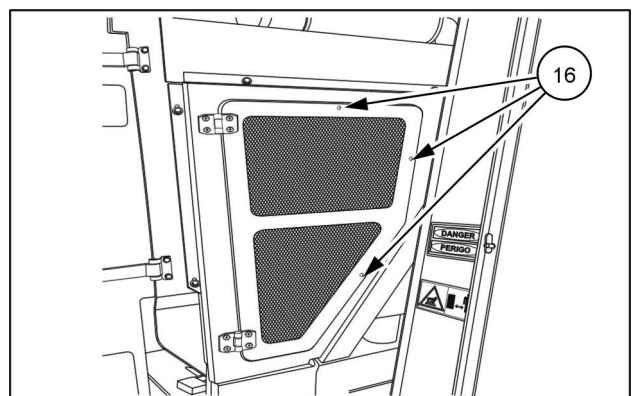
SOIL17COF0079AA 7

8. Loosen the clamp **(13)**. Remove the flexible pipe **(14)** from the muffler **(15)**.



SOIL17COF0081AA 8

9. Position the muffler guard in its housing.
10. Remove the bolts **(16)**. Open the right-hand engine access cover.



SOIL17COF0051AA 9

11. Place a suitable container under the radiator to collect the coolant.

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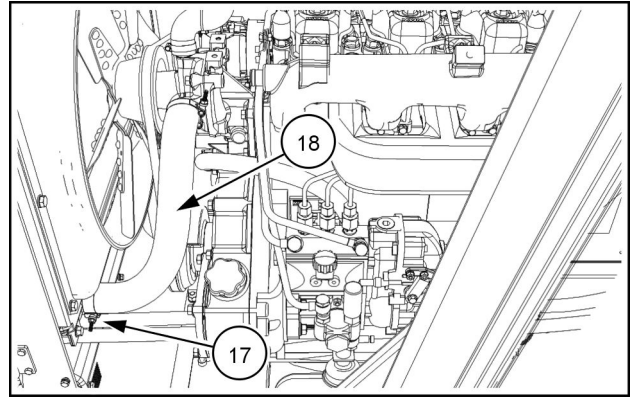


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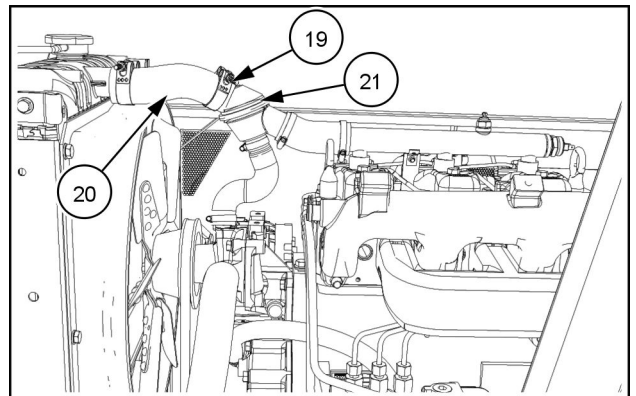
Thank you so much for reading.

12. Loosen the clamp **(17)** of the lower radiator hose **(18)**.
Drain the coolant.



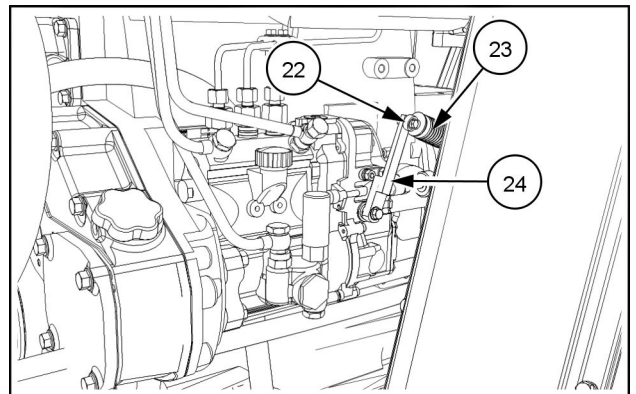
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13. Loosen the clamp **(19)** of the upper radiator hose **(20)**
at the thermostat **(21)**. Remove the hose.



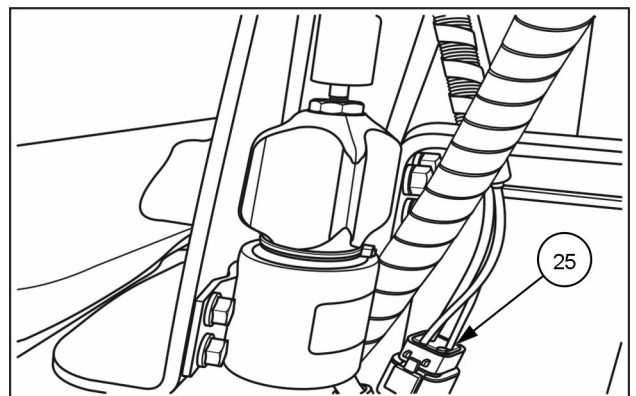
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14. Remove the nut **(22)** that secures the throttle cable **(23)**.
Move the cradle **(24)**.



SOIL17COF0036AA 12

15. Remove the electrical connector **(25)**.



SOIL17COF0040AA 13