

PUMA® 185
PUMA® 200
PUMA® 220
PUMA® 185 CVT
PUMA® 200 CVT
PUMA® 220 CVT
PUMA® 240 CVT
TIER 4B (FINAL)
Tractor

SERVICE MANUAL

Part number 47936453

English

November 2015

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Link Product / Engine

Product	Market Product	Engine
PUMA® 185 CVT	Asia Pacific	F4DFE613K*B006
PUMA® 185 CVT	Australia New Zealand	F4DFE613K*B006
PUMA® 185 CVT	Middle East Africa	F4DFE613K*B006
PUMA® 200 CVT	Asia Pacific	F4DFE613J*B006
PUMA® 200 CVT	Middle East Africa	F4DFE613J*B006
PUMA® 200 CVT	Australia New Zealand	F4DFE613J*B006
PUMA® 220 CVT	Australia New Zealand	F4DFE613H*B003
PUMA® 220 CVT	Asia Pacific	F4DFE613H*B003
PUMA® 220 CVT	Middle East Africa	F4DFE613H*B003
PUMA® 240 CVT	Middle East Africa	F4DFE613B*B006
PUMA® 240 CVT	Australia New Zealand	F4DFE613B*B006
PUMA® 240 CVT	Asia Pacific	F4DFE613B*B006
PUMA® 185	Middle East Africa	F4DFE613K*B006
PUMA® 185	Australia New Zealand	F4DFE613K*B006
PUMA® 185	Asia Pacific	F4DFE613K*B006
PUMA® 200	Middle East Africa	F4DFE613J*B006
PUMA® 200	Asia Pacific	F4DFE613J*B006
PUMA® 200	Australia New Zealand	F4DFE613J*B006
PUMA® 220	Asia Pacific	F4DFE613H*B003
PUMA® 220	Australia New Zealand	F4DFE613H*B003
PUMA® 220	Middle East Africa	F4DFE613H*B003

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INTRODUCTION

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.

Safety rules - 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.

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.
- The air-conditioning system contains gases that should not be released into the atmosphere. Consult an air-conditioning specialist or use a special extractor to 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 IH strongly recommends that you return all used batteries to a CASE IH dealer, who will dispose of the used batteries or recycle the used batteries properly. In some countries, this is a legal requirement.



Mandatory battery recycling

NOTE: The following requirements are mandatory in Brazil.

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

Points of sale are obliged to:

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



SERVICE MANUAL

Engine

**PUMA® 185 CVT , PUMA® 185 , PUMA® 200 CVT , PUMA® 200 , PUMA® 220
CVT , PUMA® 220 , PUMA® 240 CVT**

Engine - Remove

Prior operation:

Separate the front axle and front frame from the engine, for further information refer to **Front frame - Remove (39.100)**

Prior operation:

Remove the left-hand fuel tank, for further information refer to **Fuel tank - Remove (10.216)**

Prior operation:

Remove the selective catalytic reduction (SRC) muffler, for further information refer to **Selective Catalytic Reduction (SCR) muffler and catalyst - Remove (10.500)**

Prior operation:

Remove the engine hood, for further information refer to **Hood - Remove (90.100)**

⚠ WARNING

Heavy objects!

Lift and handle all heavy components using lifting equipment with adequate capacity. Always support units or parts with suitable slings or hooks. Make sure the work area is clear of all bystanders.

Failure to comply could result in death or serious injury.

W0398A

⚠ WARNING

Avoid injury!

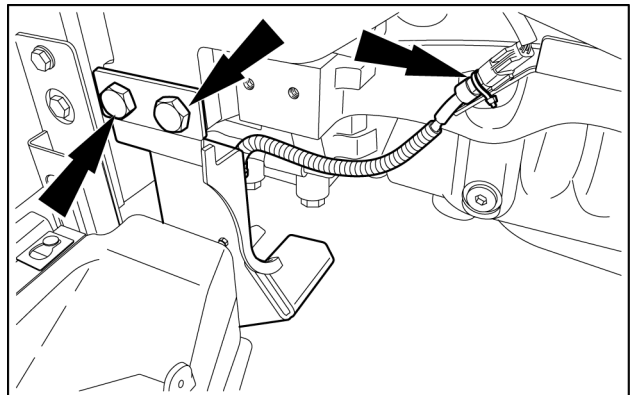
Handle all parts carefully. Do not place your hands or fingers between parts. Use Personal Protective Equipment (PPE) as indicated in this manual, including protective goggles, gloves, and safety footwear.

Failure to comply could result in death or serious injury.

W0208A

NOTICE: Avoid DEF/AdBLUE® contamination of the electrical connector by disconnecting the DEF/AdBLUE® connectors first.

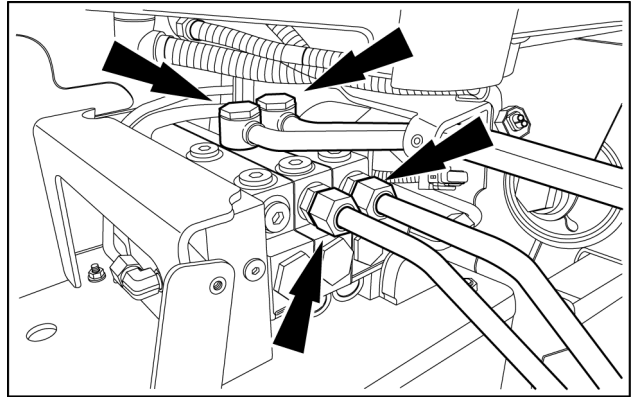
1. Disconnect the radar electrical connector (if fitted).
2. Remove the radar (if fitted).



BAIL13TR01648AB 1

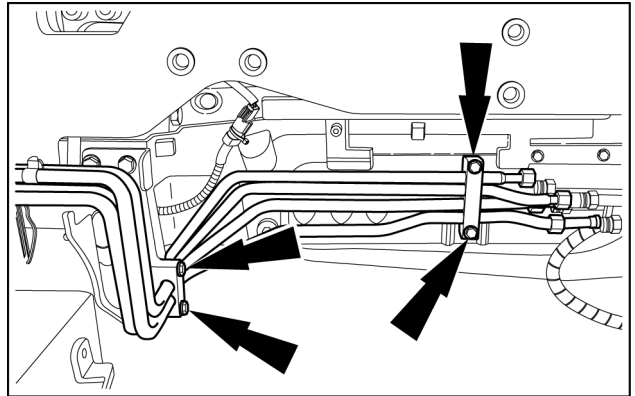
Vehicles with front hitch

2. Disconnect the mid-mount pipes from the mid-mount valve.



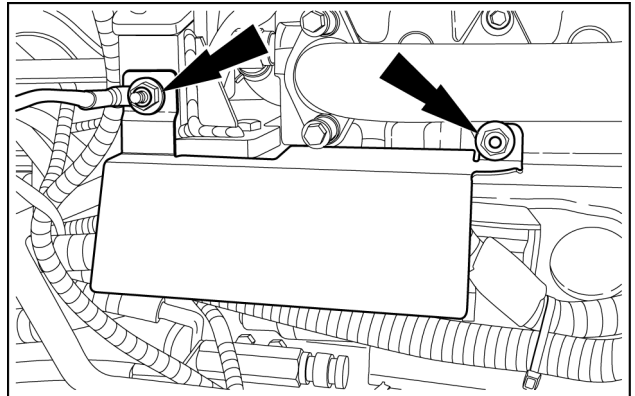
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3. Remove the front hitch pipes.



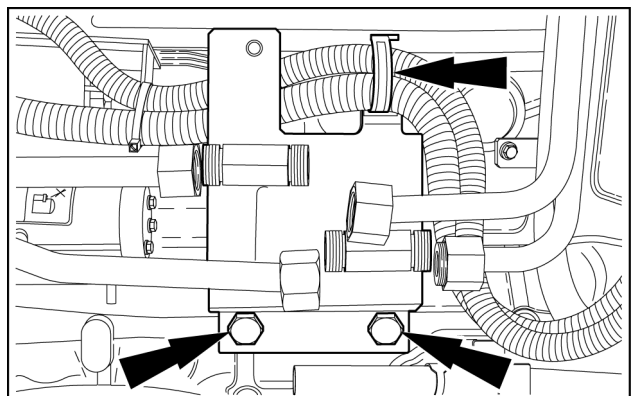
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4. Remove the starter motor cover.



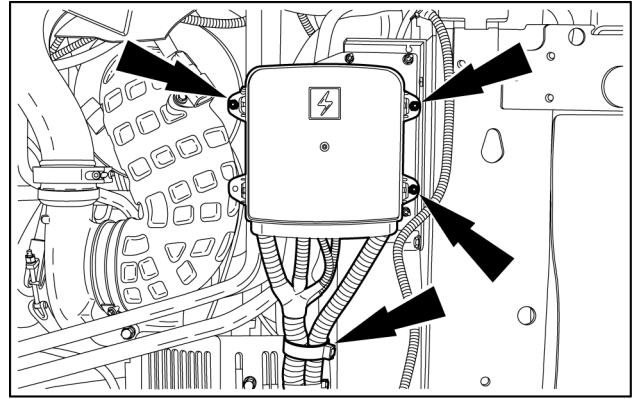
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5. Remove the oil cooler pipe bracket.



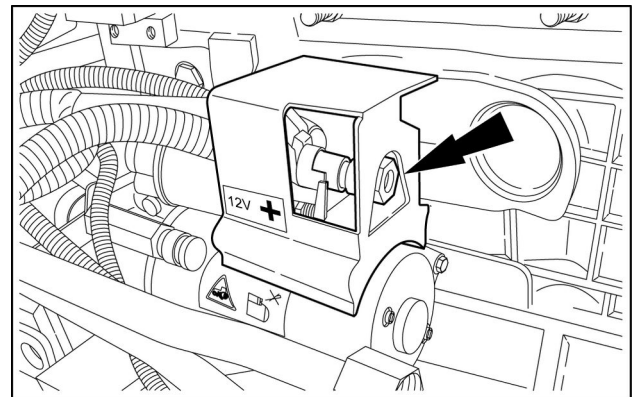
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6. Detach the fuse box and position it to one side.



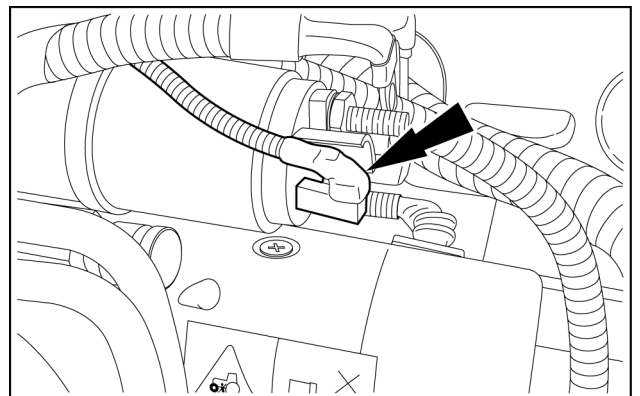
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7. Disconnect the starter motor positive cables.



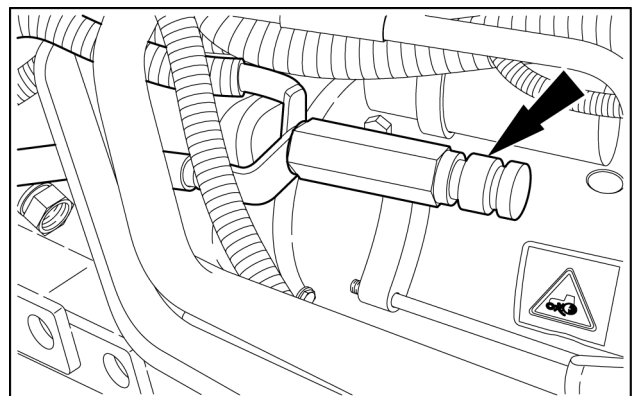
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8. Disconnect the starter motor electrical connector.



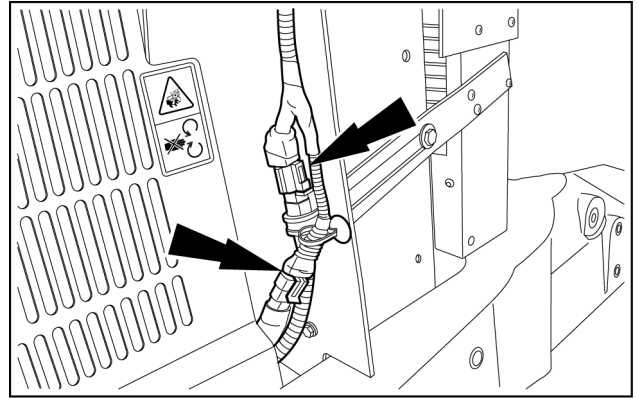
BAIL13TR01660AB 8

9. Disconnect the starter motor negative terminal.



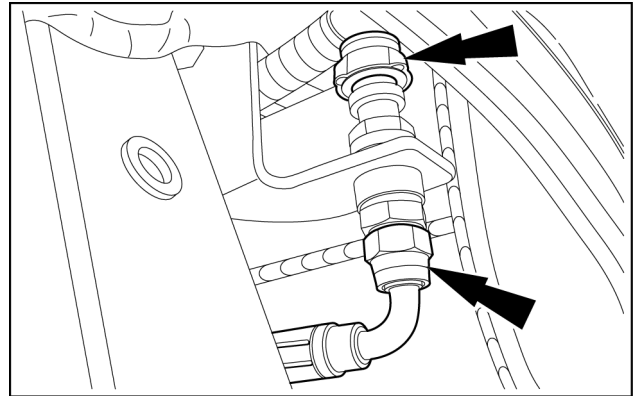
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10. Disconnect the front axle electrical connectors.



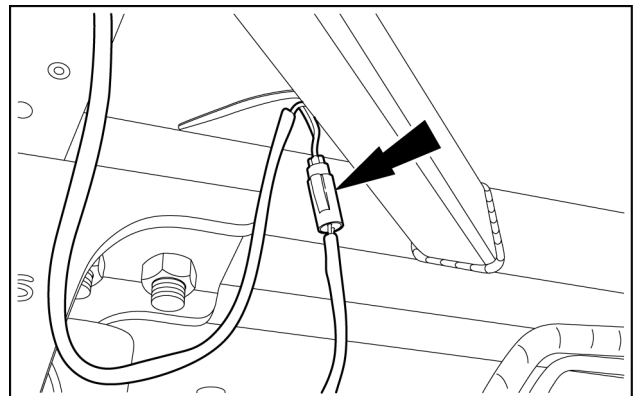
BAIL13TR01683AB 10

11. Disconnect the brake master cylinder oil supply pipes.



BAIL14TR00279AB 11

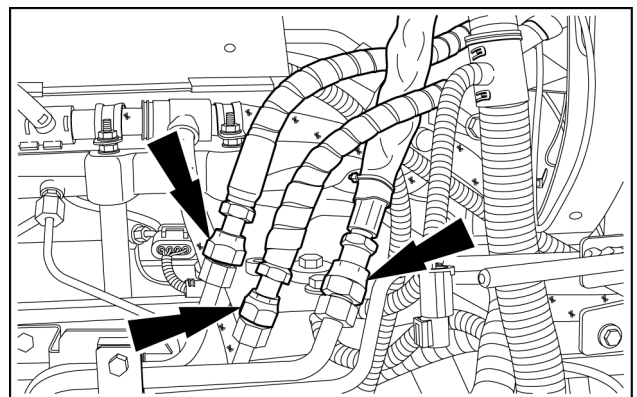
12. Disconnect the cab hand rail light electrical connectors (on both sides).



BAIL14TR00280AB 12

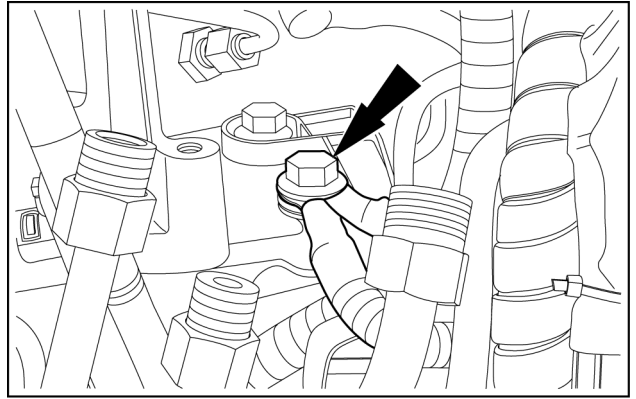
13. 1. Disconnect the steering pipes.
2. Disconnect the brake pipe.

NOTE: Mark the hoses to aid installation.



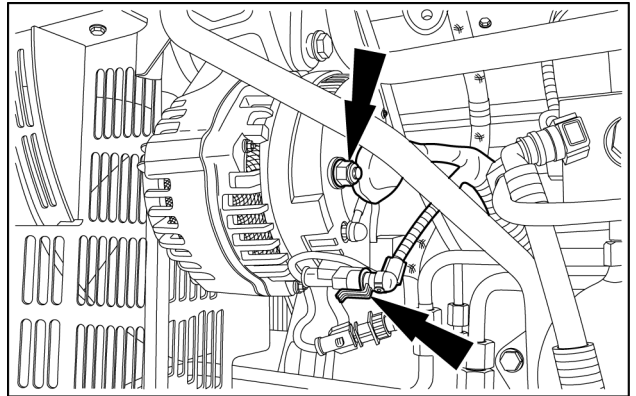
BAIL14TR00281AB 13

14. Disconnect the ground cables.



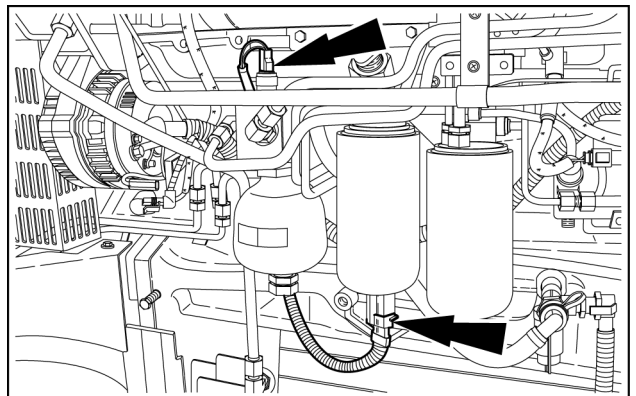
BAIL14TR00282AB 14

15. Disconnect the generator electrical connectors.



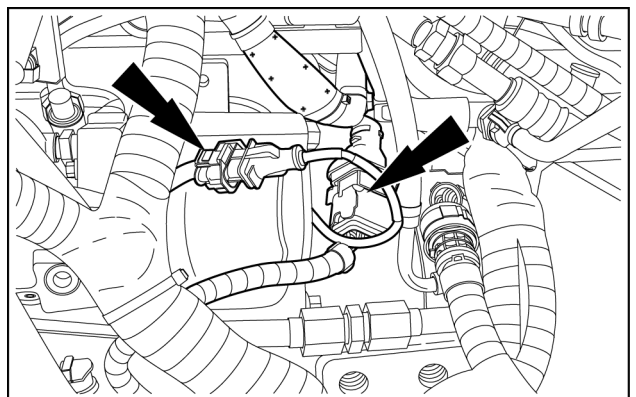
BAIL14TR00283AB 15

16. 1. Disconnect the brake accumulator electrical connector.
2. Disconnect the water-in-fuel sensor electrical connector.



BAIL14TR00284AB 16

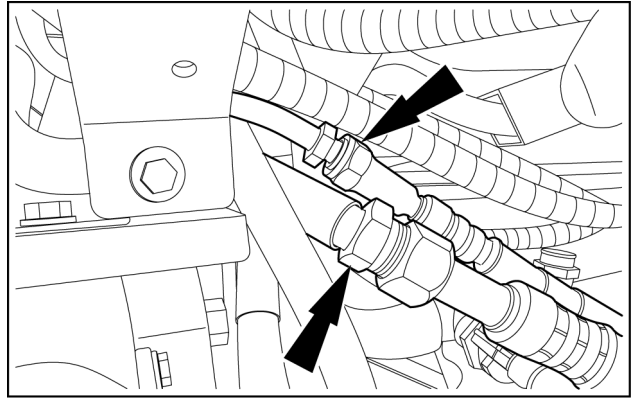
17. 1. Disconnect the flywheel speed sensor electrical connector.
2. Disconnect the engine wiring harness.



BAIL14TR00285AB 17

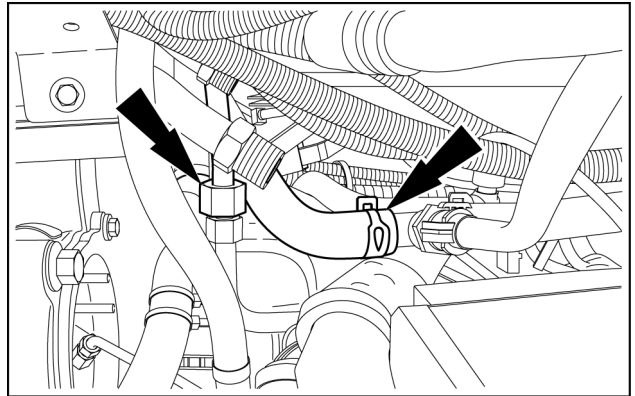
18. Disconnect the air conditioning (A/C) pipes.

NOTE: Make sure that all openings are sealed. Use new blanking caps.



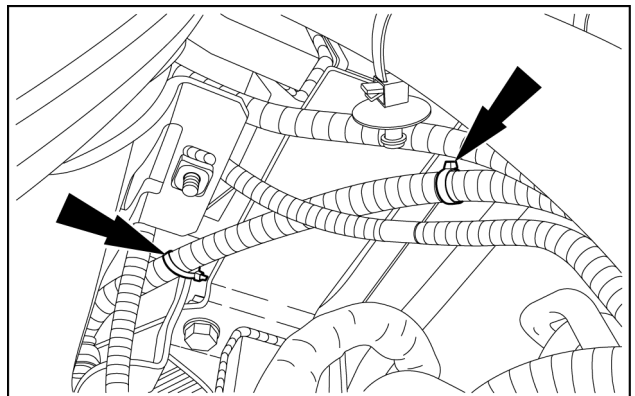
BAIL14TR00286AB 18

19. 1. Disconnect the coolant hose.
2. Disconnect the brake pipe.



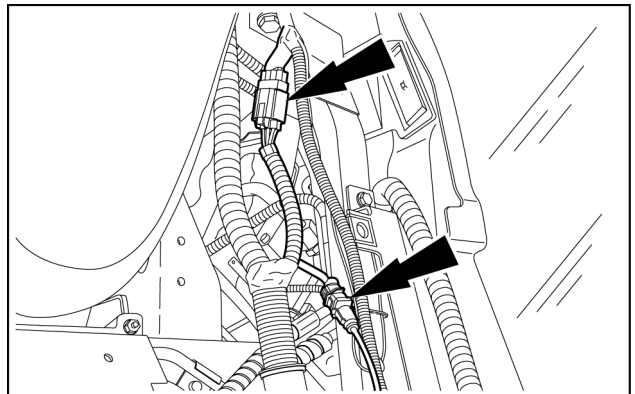
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20. Cut the cable ties.



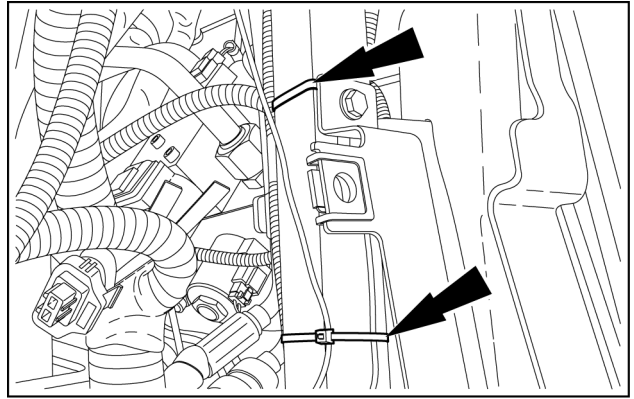
BAIL14TR00288AB 20

21. 1. Disconnect the Diesel Oxidation Catalyst (DOC) electrical connector.
2. Disconnect the hood wiring harness electrical connector.



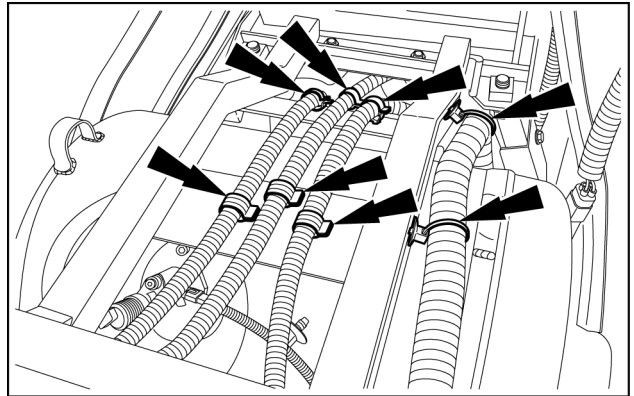
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22. Cut the cable ties.



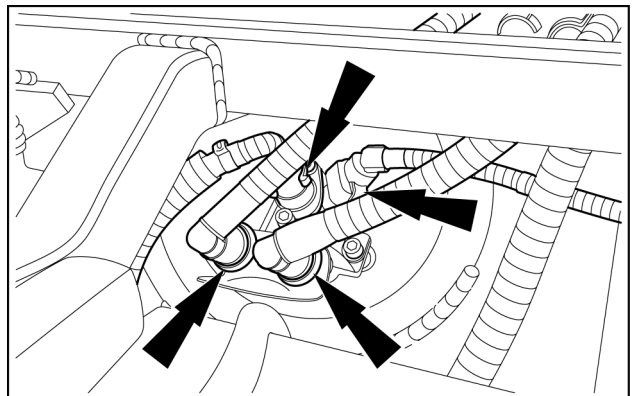
BAIL14TR00290AB 22

23. 1. Detach the DOC wiring harness and the **DEF/AdBLUE®** lines.
2. Detach the wiring harness.



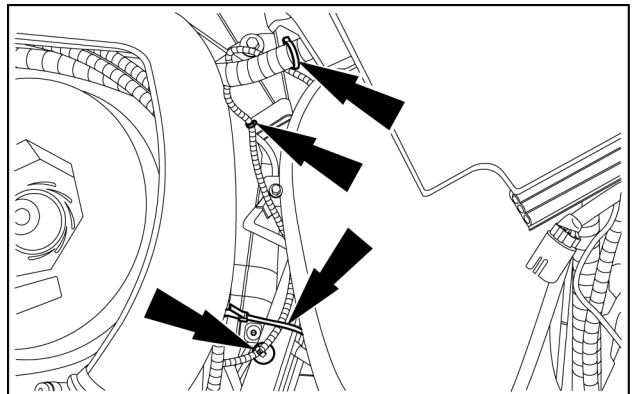
BAIL14TR00291AB 23

24. Disconnect the dosing module.
1. Disconnect the **DEF/AdBLUE®** lines.
2. Disconnect the dosing module electrical connector.



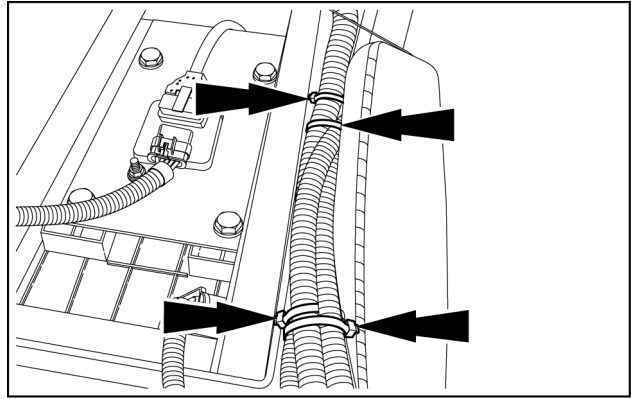
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25. 1. Detach the wiring harness.
2. Cut the cable ties.



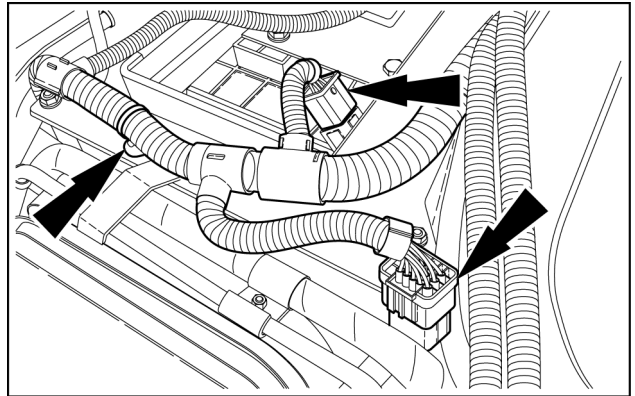
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26. Cut the cable ties.



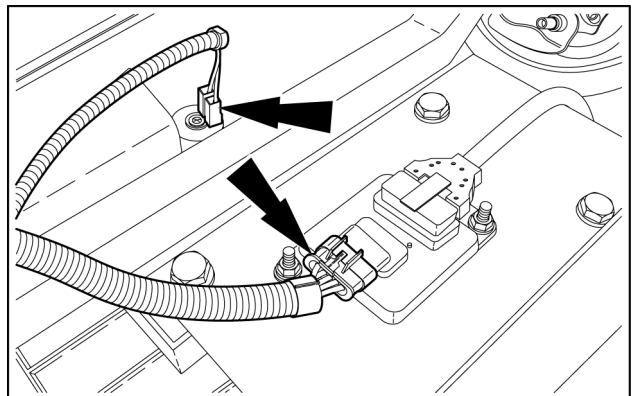
BAIL14TR00294AB 26

27. 1. Disconnect the fan electrical connector.
2. Disconnect front hitch electrical connector.



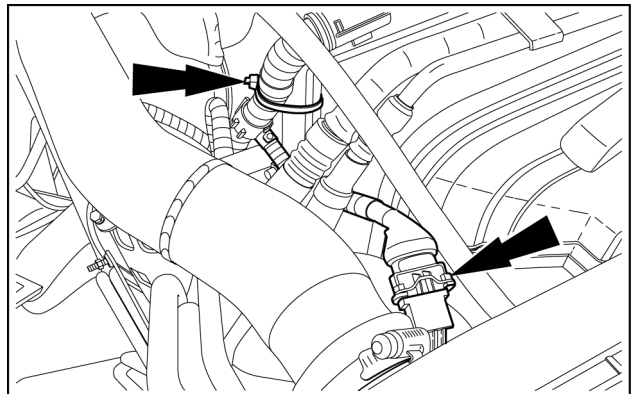
BAIL14TR00295AB 27

28. 1. Disconnect the NOx amplifier electrical connector.
2. Disconnect the coolant level sensor electrical connector.



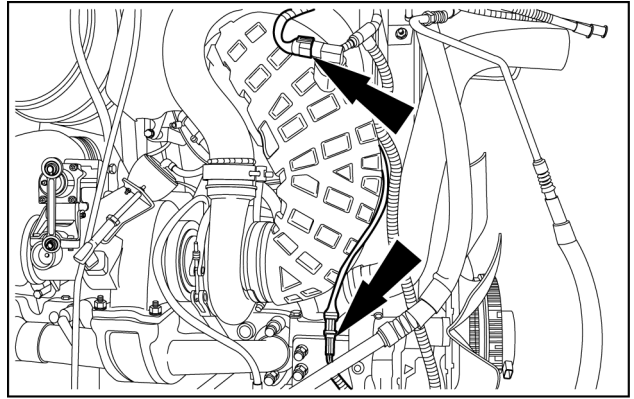
BAIL14TR00296AB 28

29. 1. Disconnect the AC pressure switch electrical connector..
2. Cut the cable tie.



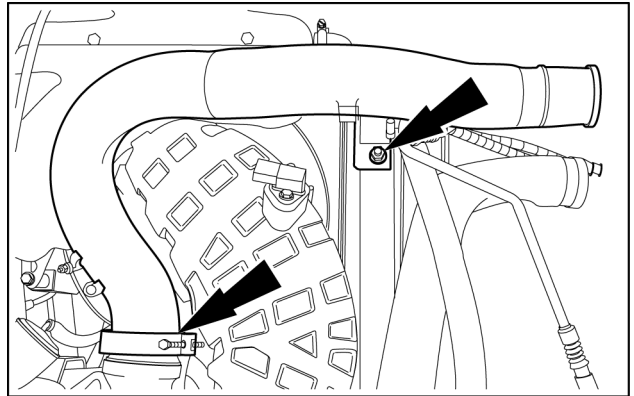
BAIL14TR00297AB 29

30. 1. Disconnect the air intake sensor electrical connector.
2. Disconnect the A/C compressor electrical connector.



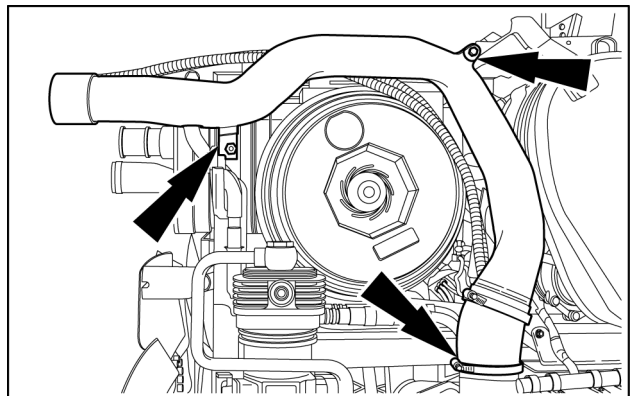
BAIL14TR00316AB 30

31. Remove the right-hand air intake pipe.



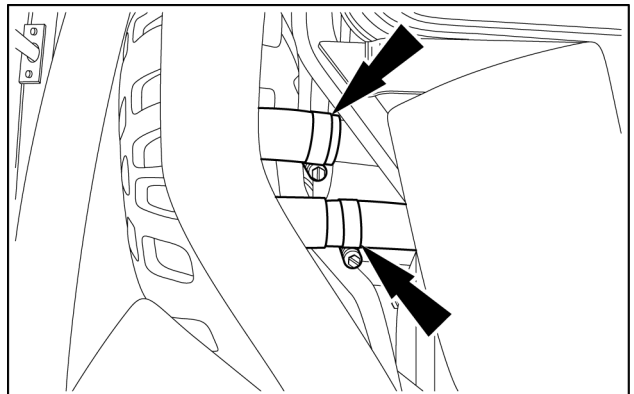
BAIL14TR00317AB 31

32. Remove the left-hand air intake pipe.



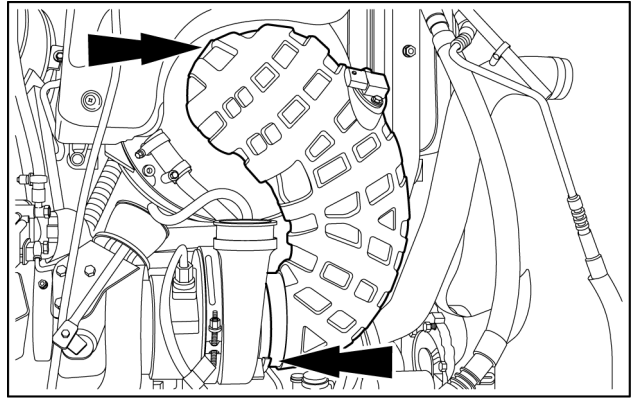
BAIL14TR00318AB 32

33. 1. Disconnect the air compressor supply pipe.
2. Disconnect the valve cover breather pipe.



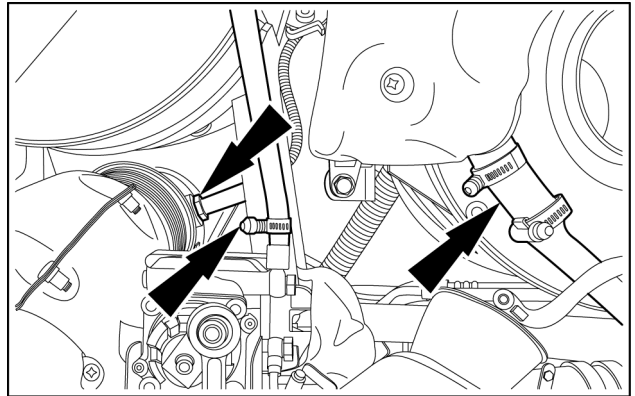
BAIL14TR00319AB 33

34. Remove the air cleaner outlet pipe.



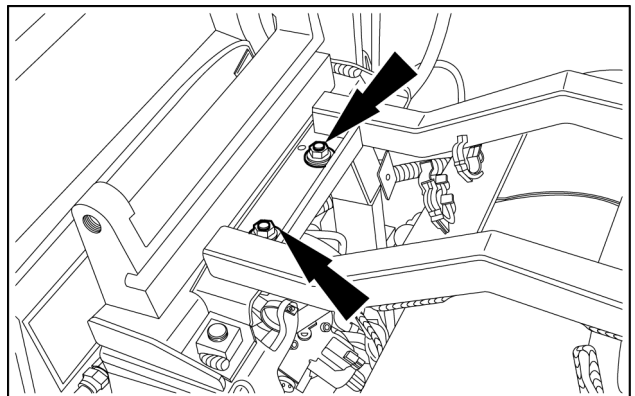
BAIL14TR00320AB 34

35. 1. Disconnect the coolant hose from the exhaust flap.
2. Disconnect the coolant expansion tank hose.
3. Remove the up-stream Nox sensor.



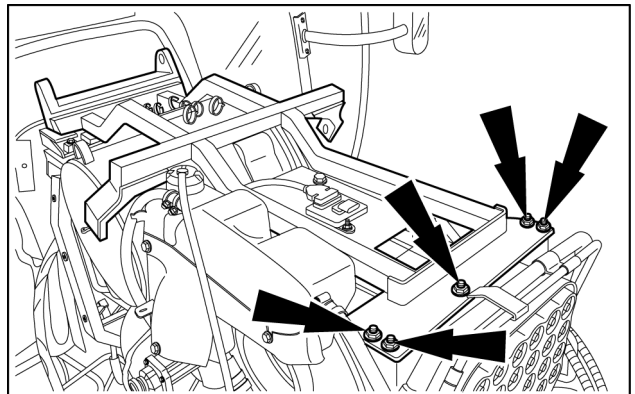
BAIL14TR00321AB 35

36. Disconnect the engine frame upper retaining bolts.



BAIL14TR00323AB 36

37. 1. Remove the engine frame front retaining nuts.
2. Remove the upper part of the engine frame.



BAIL14TR00324AB 37



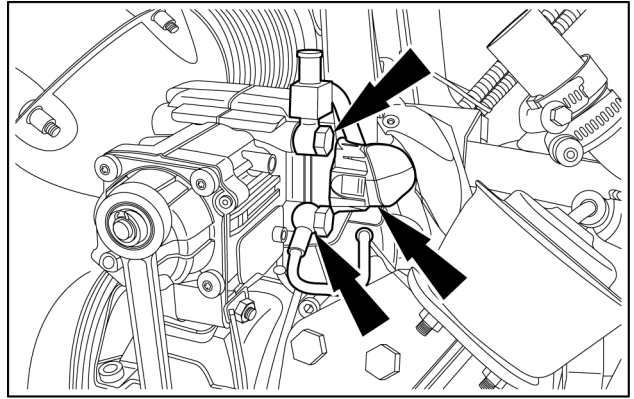
Suggest:

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Please download this document first, and then click the above link to download the complete manual.

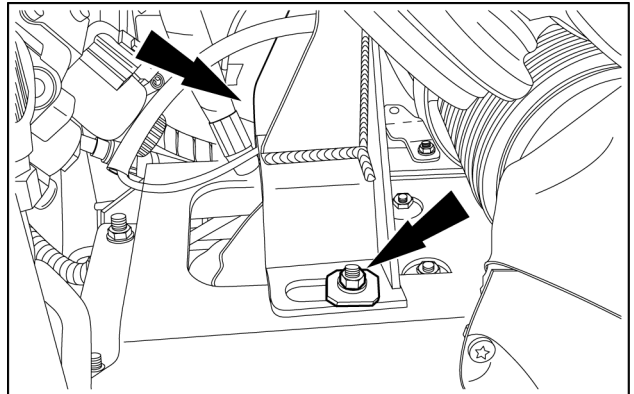
Thank you so much for reading

38. 1. Disconnect the coolant lines from the exhaust flap.
2. Disconnect the exhaust flap electrical connector.



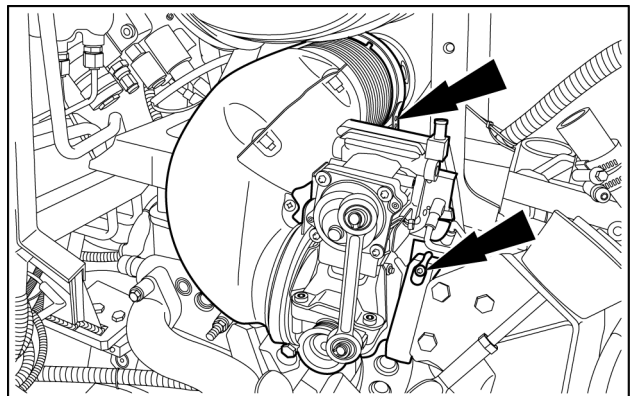
BAIL14TR00325AB 38

39. Remove the DOC frame rear retaining bolts.



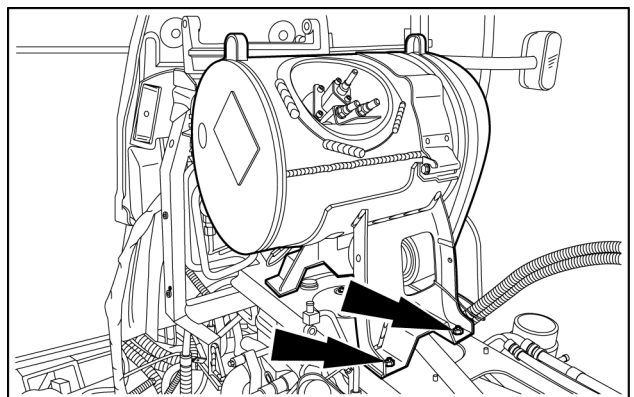
BAIL14TR00326AB 39

40. Remove the exhaust flap and exhaust front pipe.



BAIL14TR00327AB 40

41. Remove the DOC and frame.



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