

SERVICE MANUAL

T8.275 / T8.300 / T8.330 /

T8.360 / T8.390

Powershift Transmission (PST)

Tractor

PIN ZCRC02583 and above

Part number 47533594

1st edition English

April 2013



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INTRODUCTION

Safety rules

T8.275 NA, T8.300 NA, T8.330 NA, T8.360 NA, T8.390 NA

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 and on machine decals, 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 which, if not avoided, will result in death or serious injury. The color associated with DANGER is RED.

 **WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury. The color associated with WARNING is ORANGE.

 **CAUTION**, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. The color associated with CAUTION is YELLOW.

FAILURE TO FOLLOW DANGER, WARNING, AND CAUTION MESSAGES COULD RESULT IN DEATH OR SERIOUS INJURY.

Machine safety

NOTICE: Notice indicates a situation which, if not avoided, could result in machine or property damage. The color associated with Notice is BLUE.

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 which 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

T8.275, T8.300, T8.330, T8.360, T8.390

Standard safety precautions

Be informed and notify personnel of the laws in force regulating safety, and provide documentation available for consultation.

- Keep working areas as clean as possible.
- Ensure that working areas are provided with emergency boxes. They must be clearly visible and always contain adequate sanitary equipment.
- Fire extinguishers must be properly identified and always be clear of obstructions. Their efficiency must be checked on a regular basis and personnel must be trained on proper interventions and priorities.
- Keep all emergency exits free of obstructions and clearly marked.
- Smoking in working areas subject to fire danger must be strictly prohibited.

Prevention of injury

- Wear suitable work attire and safety glasses with no jewelry such as rings and chains when working close to engines and equipment in motion.
- Wear safety gloves and goggles when performing the following operations:
 - Topping off or changing lubrication oils.
 - Using compressed air or liquids at a pressure greater than **2 bar (29 psi)**.
- Wear a safety helmet when working close to hanging loads or equipment working at head level.
- Always wear safety shoes and fitting clothes.
- Use protection cream for hands.
- Change wet clothes as soon as possible.
- In the presence of voltages exceeding **48 - 60 V**, verify the efficiency of the ground and mass electrical connections. Ensure that hands and feet are dry and use isolating foot boards. Workers should be properly trained to work with electricity.
- Do not smoke or start an open flame close to batteries and any fuel material.
- Place soiled rags with oil, diesel fuel or solvents in specially provided anti-fire containers.
- Do not use any tool or equipment for any use other than what it was originally intended for. Serious injury may occur.
- If running an engine indoors, make sure there is a sufficient exhaust fan in use to eliminate exhaust fumes.

During maintenance

- Never open the filler cap of the cooling system when the engine is hot. High temperature liquid at operating pressure could result in serious danger and risk of burn. Wait until the temperature decreases under **50 °C (122 °F)**.
- Never add coolant to an overheated engine and use only appropriate liquids.
- Always work when the engine is turned off. Certain circumstances require maintenance on a running engine. Be aware of all the risks involved with such an operation.
- Always use adequate and safe containers for engine fluids and used oil.
- Keep engine clean of any spilled fluids such as oil, diesel fuel, and or chemical solvents.
- Use of solvents or detergents during maintenance may emit toxic vapors. Always keep working areas aerated. Wear a safety mask if necessary.
- Do not leave soiled rags that may contain any flammable substances close to the engine.
- Always use caution when starting an engine after any work has been performed. Be prepared to cut off intake air in case of engine runaway.
- Never disconnect the batteries while the engine is running.

- Disconnect the batteries prior to performing any work on the equipment.
- Disconnect the batteries to place a load on them with a load tester.
- After any work is performed, verify that the battery clamp polarity is correct and that the clamps are tight and safe from accidental short circuit and oxidation.
- Before disconnecting any pipelines (pneumatic, hydraulic, fuel pipes, etc.), verify that all pressure has been released. Take all necessary precautions bleeding and draining residual pressure. Always wear the proper safety equipment.
- Do not alter the lengths of any wires.
- Do not connect any electronic service tool to the engine electrical equipment unless specifically approved by Iveco.
- Do not modify the fuel system or hydraulic system unless approved by Iveco, Any unauthorized modification will compromise warranty assistance and may affect engine operation and life span.

For engine equipped with an electronic control unit

- Do not weld on any part of the equipment without removing the control unit.
- Remove the in case of work requiring heating over **80 °C (176 °F)**.
- Do not paint the components and the electronic connections.
- Do not alter any data filed in the electronic control unit driving the engine. Any manipulation or alteration of electronic components will void engine warranty assistance and may affect the correct working order and life span of the engine.

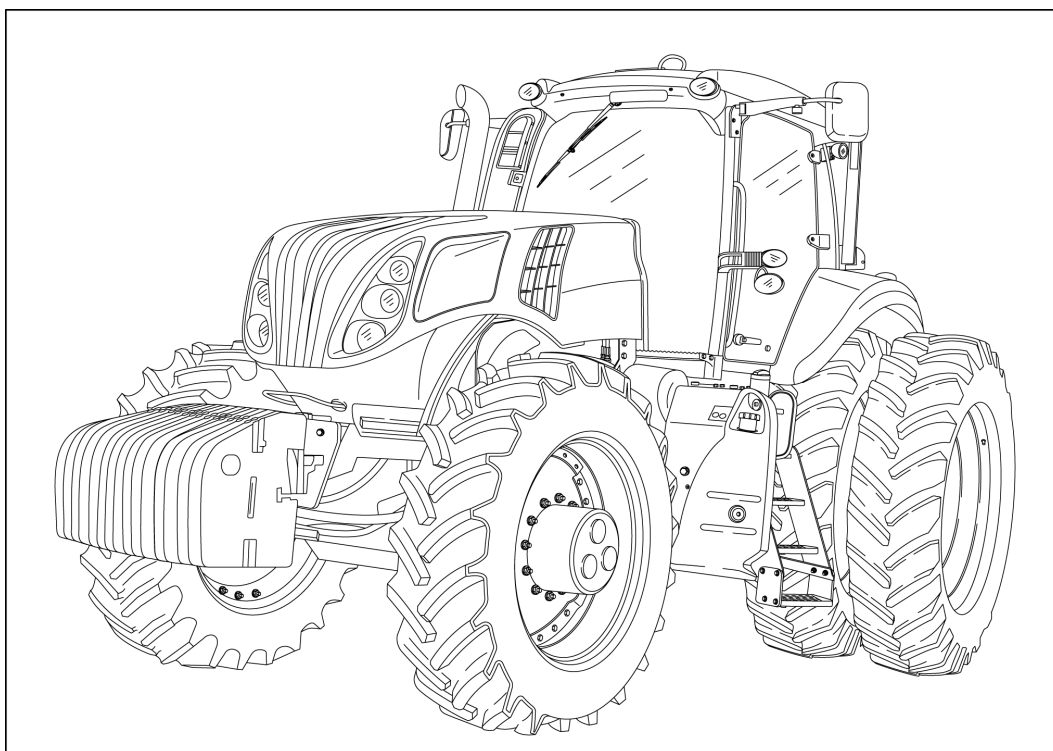
Respect of the Environment

- Respect of the environment should be of primary importance. Take all necessary precautions to ensure personnel's safety and health.
- Inform the personnel of the laws regarding the dispensing of used engine fluids.
- Handle batteries with care, storing them in a well ventilated environment and within anti-acid container.



SERVICE MANUAL

Engine



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T8.390 NA

Engine - Remove

T8.275, T8.300, T8.330, T8.360, T8.390

Prior operation:

Disconnect the batteries — **Battery - Disconnect (55.302)**

Prior operation:

Remove the hood — **Hood - Remove (90.100)**

Prior operation:

Recover the refrigerant — **Air conditioning - Recover (50.200)**

Prior operation:

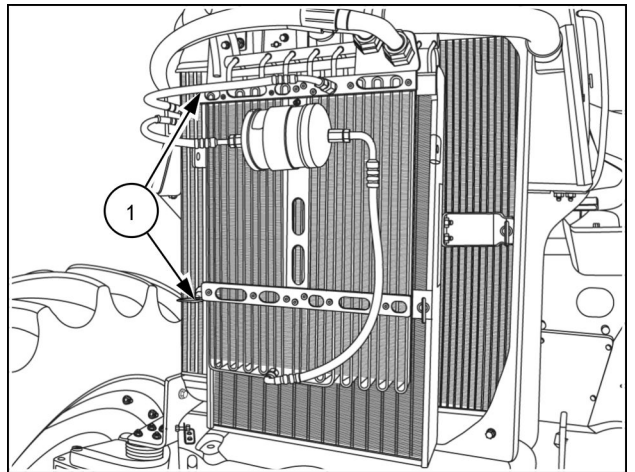
Drain the coolant — **Engine cooling system - Emptying (10.400)**

ATTENTION: For tractors equipped with front PTO/hitch, refer to steps **81– 96** for additional disassembly instructions.

NOTE: Clean all fittings before disconnecting.

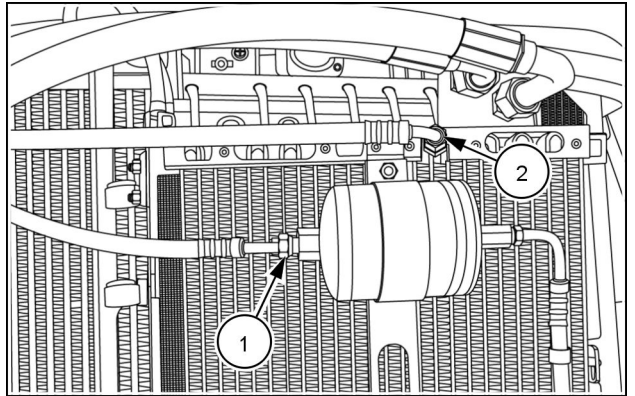
NOTE: Cap or plug all lines and ports when disconnecting hydraulic components.

1. Remove the nuts **(1)** securing the condenser/fuel cooler.



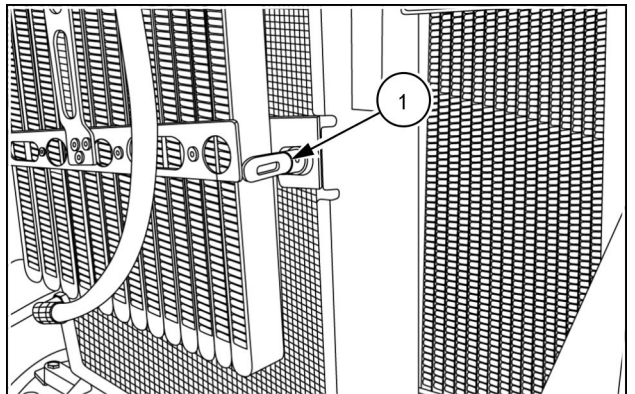
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2. Disconnect the refrigerant hose from the receiver/dryer **(1)** and the condenser outlet hose **(2)**.



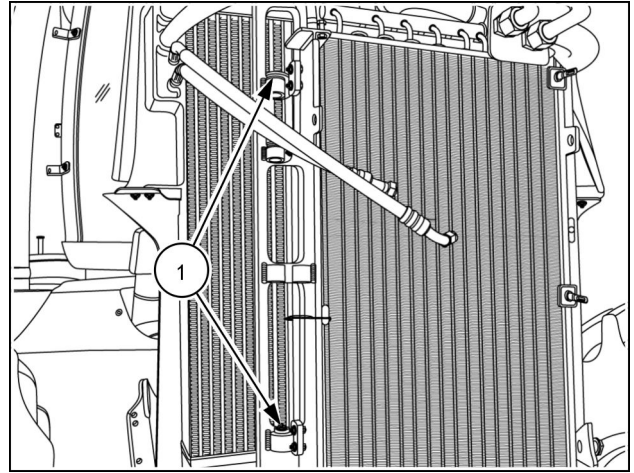
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3. Open the latch **(1)**, and carefully remove the cooler from its mounting and set aside.



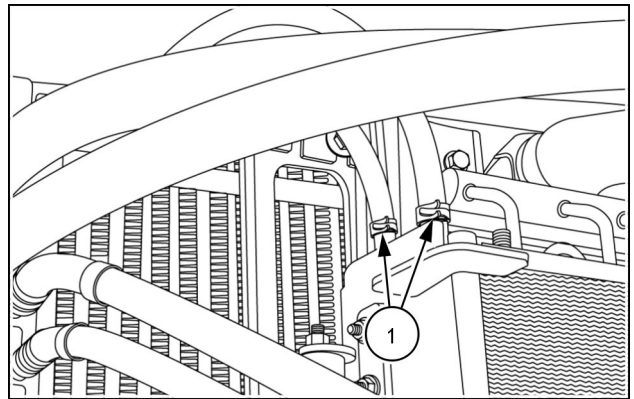
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4. Remove the nuts **(1)** securing the oil cooler to its support bracket.



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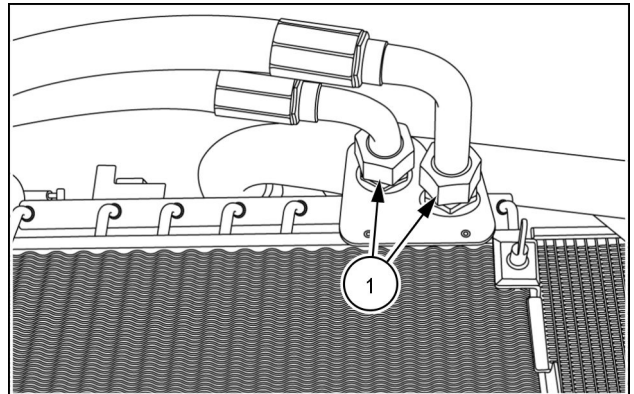
5. Disengage the hose clamps **(1)**, tag and remove the fuel hoses at the cooler.



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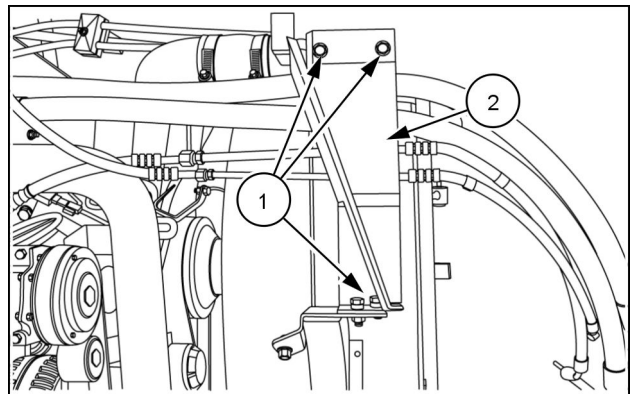
6. Loosen the hydraulic hose fittings **(1)** at the oil cooler. Remove the hoses. Carefully remove the cooler and set aside.

NOTE: Be prepared to collect some hydraulic fluid.



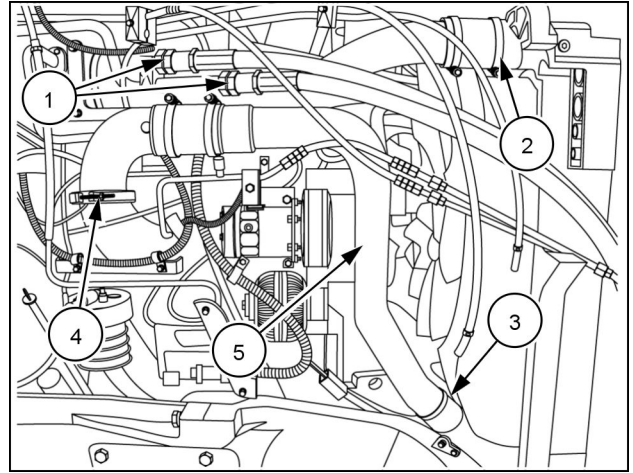
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7. Remove the bolts **(1)** securing the right hose bracket **(2)**.



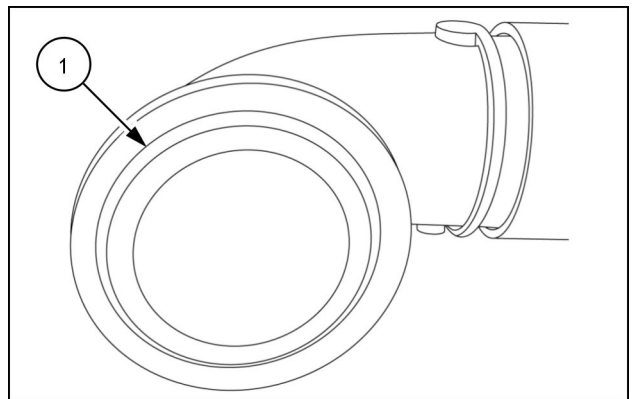
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8. Tag and remove the hydraulic hoses **(1)**.
9. Loosen the clamp **(2)** on the air cooler tube.
10. Loosen the clamp **(3)** at the air cooler outlet tube.
11. Remove the clamp **(4)** at the elbow to the intake manifold.
12. Remove the tube assembly **(5)** and set aside.



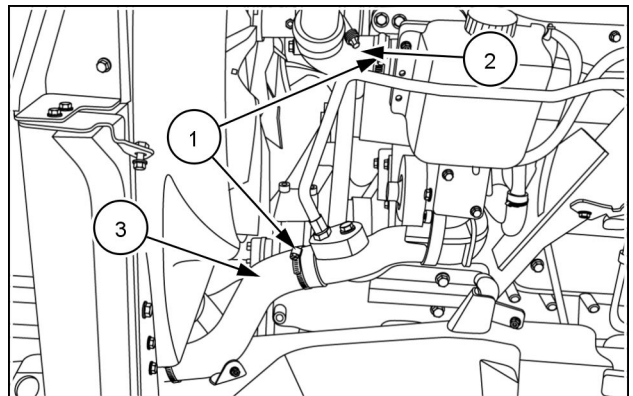
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13. Remove and discard the intake elbow O-ring seal **(1)**.



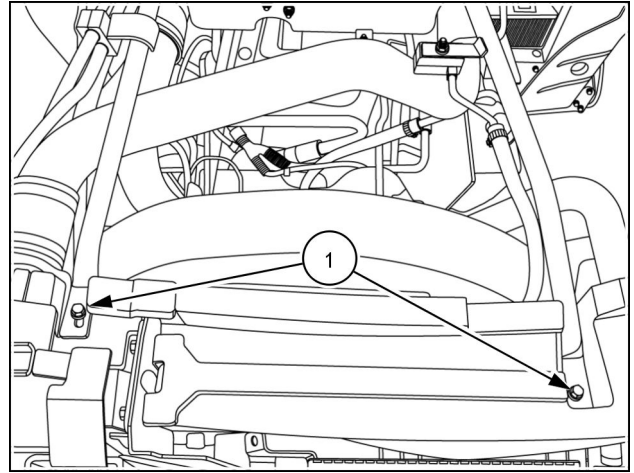
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14. Loosen the clamps **(1)** and disconnect the engine coolant outlet **(2)** and inlet hoses **(3)**.



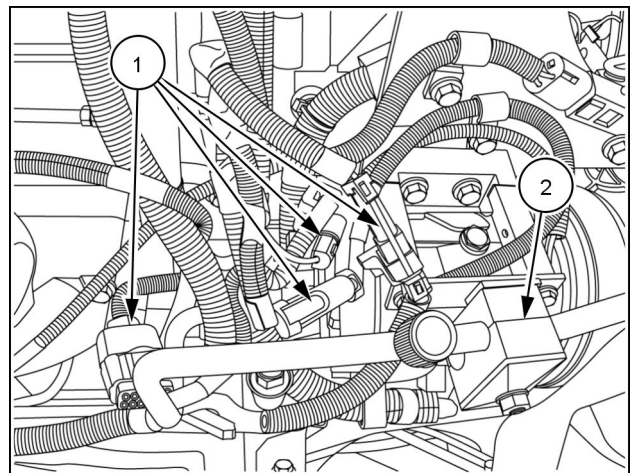
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15. Remove the bolts **(1)** securing the line/harness bracket to the cooler assembly.



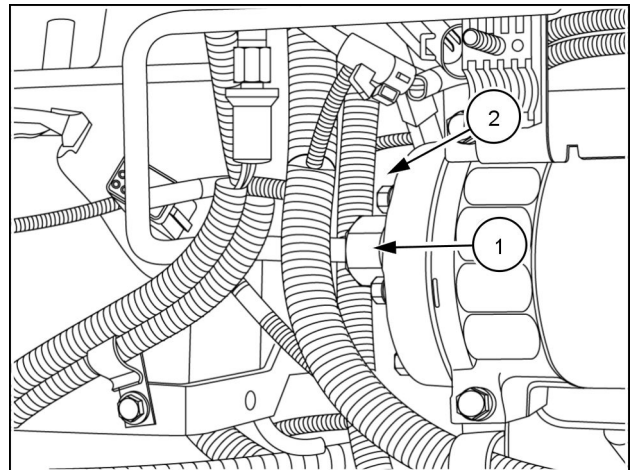
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16. On the right hand side at the A/C compressor, disconnect the four harness connectors **(1)**. Remove the A/C line clamp **(2)**.



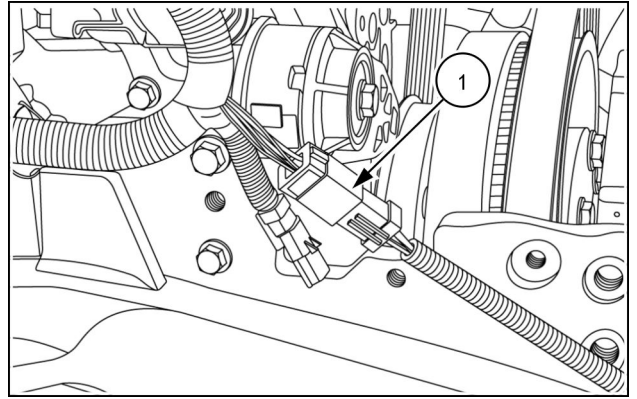
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17. Disconnect the high pressure **(1)** and suction **(2)** A/C lines from the compressor.



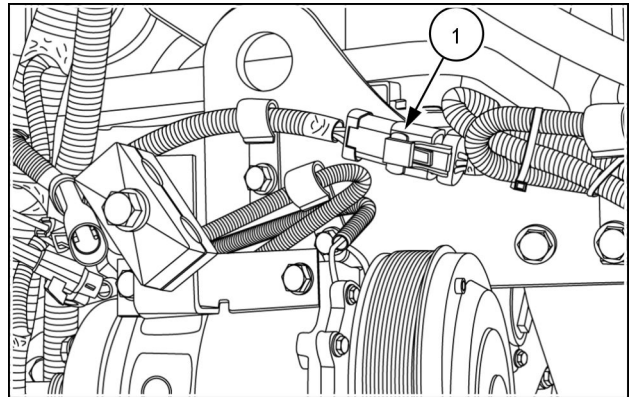
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18. If equipped, disconnect the harness connector **(1)** for the suspended axle.



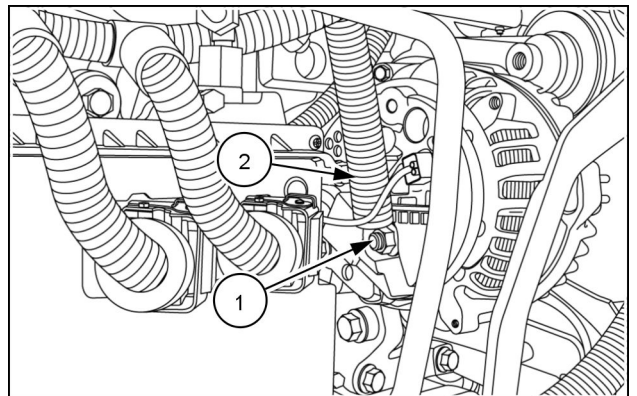
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19. Disconnect the harness connector **(1)** for the fan drive.



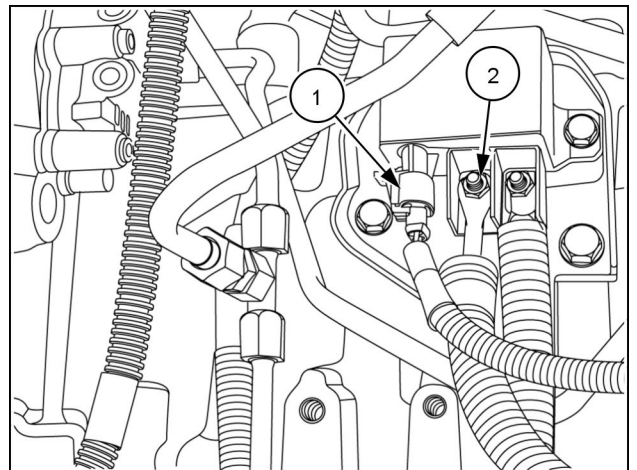
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20. Remove the nut **(1)** and disengage the alternator output cable **(2)**.



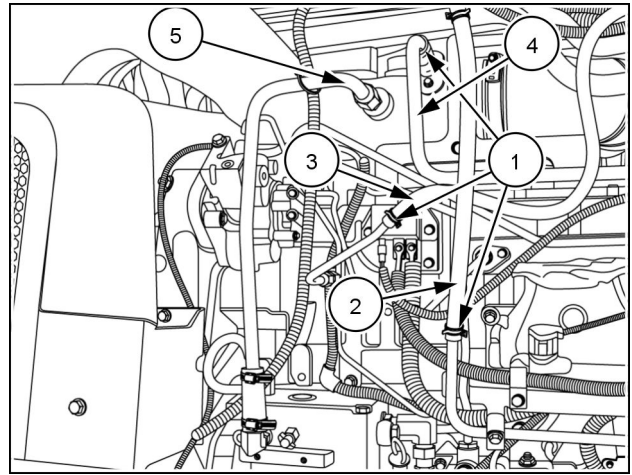
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21. Disconnect the harness connector **(1)** for the engine grid heater and the power supply cable **(2)**.



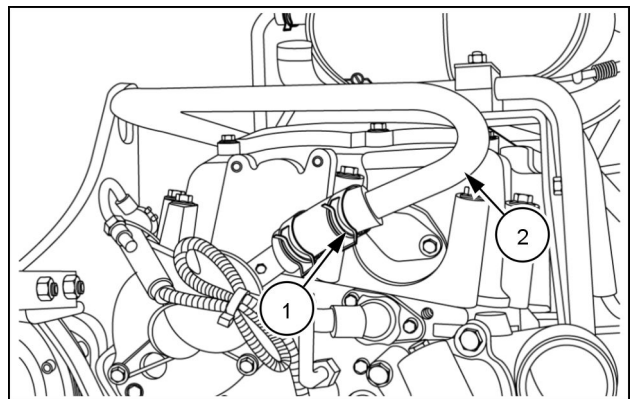
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22. Disengage the hose clamps **(1)** and disconnect the fuel supply **(2)** and return **(3)** hoses.
23. Disconnect the engine blowby recirculation line **(4)**.
24. If equipped, disconnect the air compressor inlet line **(5)**.



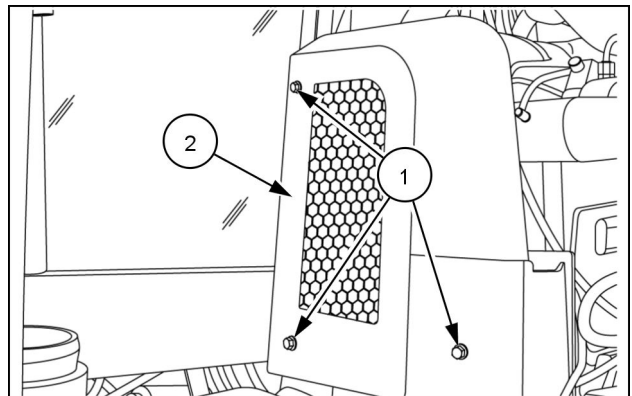
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25. At the front of the engine, disengage the clamp **(1)**, and remove the blowby recirculation tube **(2)** and set aside.



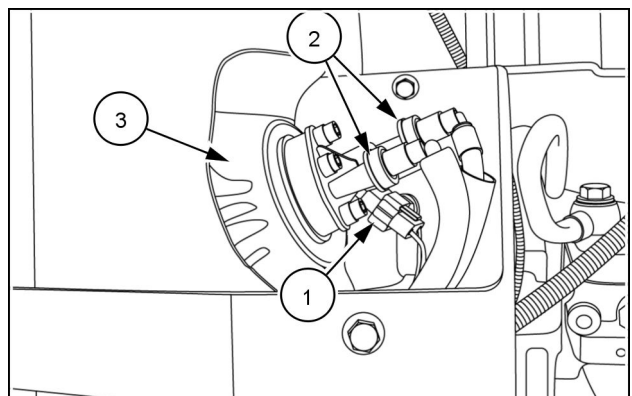
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26. Remove the attaching bolts **(1)**, and remove the exhaust shield **(2)** and set aside.



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27. Disconnect the harness **(1)** and supply and return hose connections **(2)** at the SCR dosing valve **(3)**.



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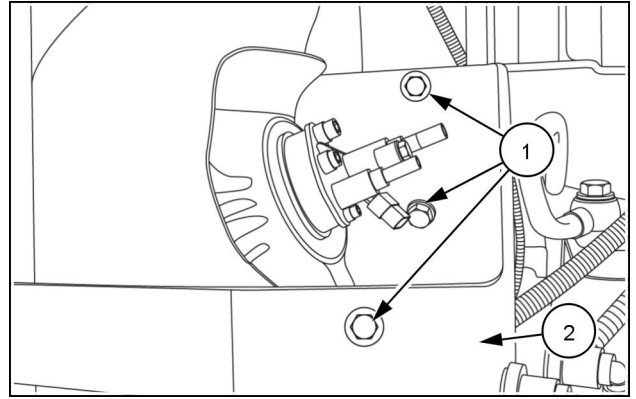
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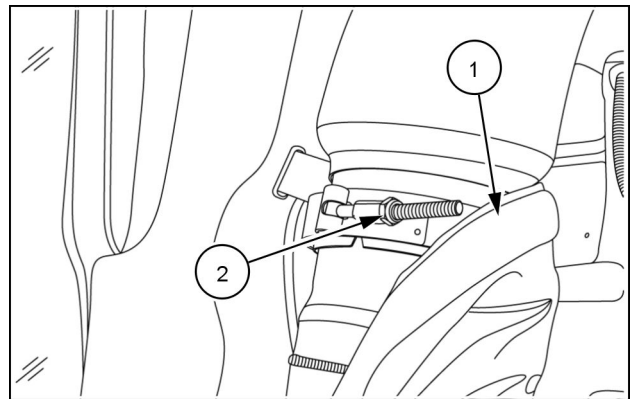
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28. Remove the bolts **(1)** for the exhaust shield bracket. Set the bracket **(2)** aside.



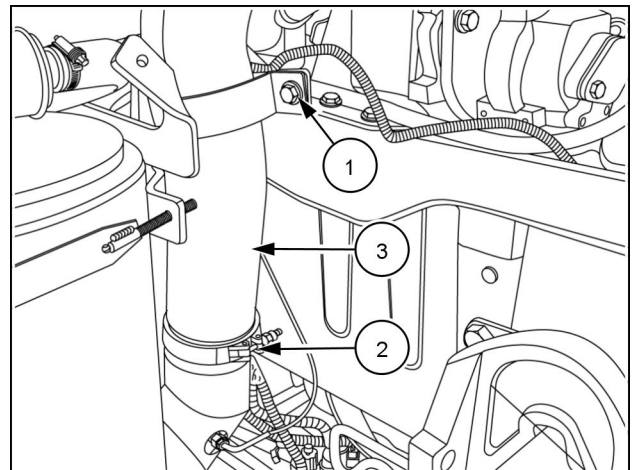
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29. Open the insulation blanket **(1)** and remove the exhaust pipe clamp **(2)**.



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30. Remove the support clamp bolt **(1)** and the lower pipe clamp **(2)**. Remove the pipe **(3)** and set aside.



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