

SERVICE MANUAL

DI40B Crawler Dozer

Part number 47998871
English
March 2016





SERVICE MANUAL

D140B XLT PAT [HBZN140BPDAC00286 -]

Link Product / Engine

Product	Market Product	Engine
D140B XLT PAT [HBZN140BP-DAC00286 -]	Latin America	F4HE9684K*J100

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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 NEW HOLLAND CONSTRUCTION Sales and Service Networks.

Foreword - How to use and navigate through this manual

This manual has been produced by a new technical information system. This new system is designed to deliver technical information electronically through web delivery (eTIM), DVD, and paper manuals. A coding system called SAP has been developed to link the technical information to other Product Support functions, e.g., Warranty.

Technical information is written to support the maintenance and service of the functions or systems on a customer's machine. When a customer has a concern on their machine it is usually because a function or system on their machine is not working at all, is not working efficiently, or is not responding correctly to their commands. When you refer to the technical information in this manual to resolve that customer's concern, you will find all the information classified using the SAP coding, according to the functions or systems on that machine. Once you have located the technical information for that function or system, you will then find all the mechanical, electrical or hydraulic devices, components, assemblies, and sub assemblies for that function or system. You will also find all the types of information that have been written for that function or system: the technical data (specifications), the functional data (how it works), the diagnostic data (fault codes and troubleshooting), and the service data (remove, install adjust, etc.).

By integrating SAP coding into technical information, you will be able to search and retrieve just the right piece of technical information you need to resolve that customer's concern on his machine. This is made possible by attaching 3 categories to each piece of technical information during the authoring process.

The first category is the Location, the second category is the Information Type and the third category is the Product:

- LOCATION - the component or function on the machine, that the piece of technical information is going to describe (e.g., Fuel tank).
- INFORMATION TYPE - the piece of technical information that has been written for a particular component or function on the machine (e.g., Capacity would be a type of Technical Data describing the amount of fuel held by the fuel tank).
- PRODUCT - the model for which the piece of technical information is written.

Every piece of technical information will have those three categories attached to it. You will be able to use any combination of those categories to find the right piece of technical information you need to resolve that customer's concern on their machine.

That information could be:

- the procedure for how to remove the cylinder head
- a table of specifications for a hydraulic pump
- a fault code
- a troubleshooting table
- a special tool

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. NEW HOLLAND CONSTRUCTION strongly recommends that you return all used batteries to a NEW HOLLAND CONSTRUCTION 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

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 and on machine safety signs, 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. The color associated with DANGER is RED.

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

 CAUTION indicates a hazardous situation that, 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 that, if not avoided, could result in machine damage 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 damage 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.



SERVICE MANUAL

Engine

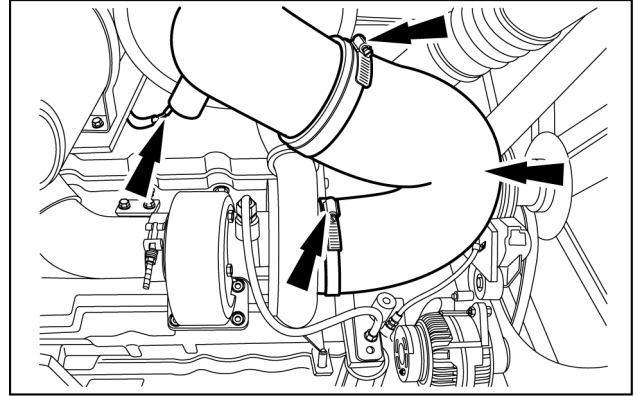
D140B XLT PAT [HBZN140BPDAC00286 -]

Engine - Remove

1. Remove radiator.

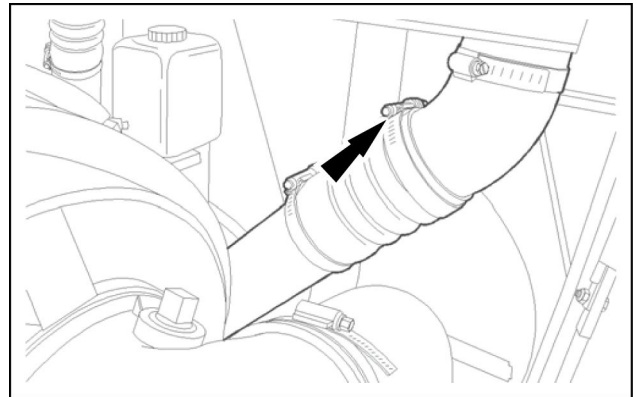
NOTE: If the machine is equipped with a brush-type shield, continue to item 2. Otherwise, go to item 3.

2. Install appropriate lifting equipment on the brush-type shield. Remove the two lower bolts and the jam nuts. Remove the two upper bolts and the fixing washers of the brush-type shield. Remove the brush-type shield.
3. Remove the side doors of the engine compartment.
4. Loosen the air filter hose clamps. Remove the hose. Disconnect the electrical connectors from the air restriction indicator.



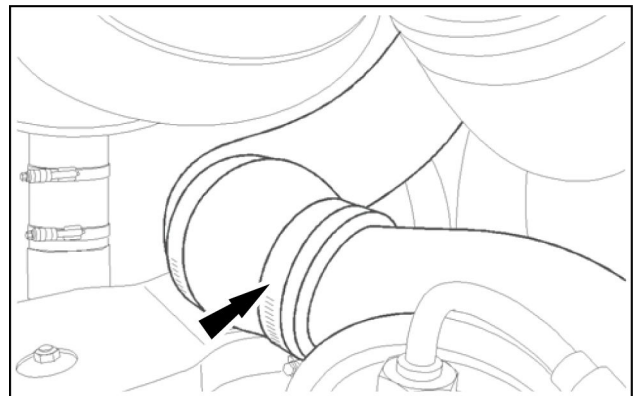
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5. Loosen the inlet hose clamp of the intake air cooler.



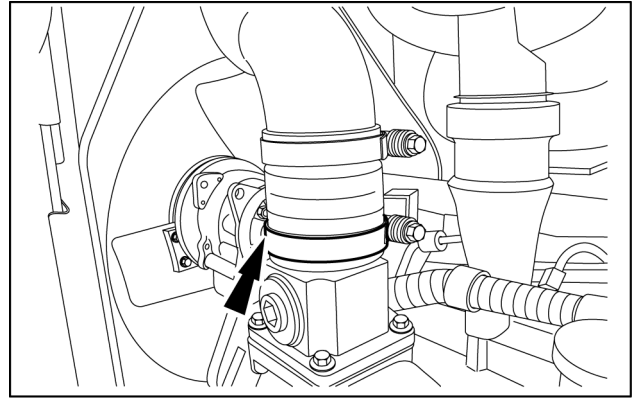
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6. Loosen the hose clamp from the intake air cooler located on the turbocharger outlet. Remove the intake air cooler line.



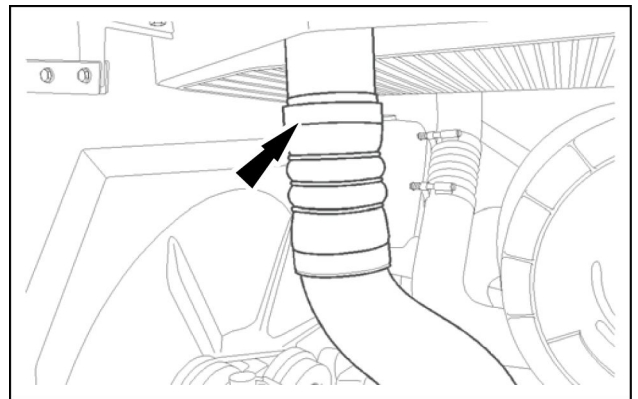
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7. Loosen the engine inlet hose clamp.



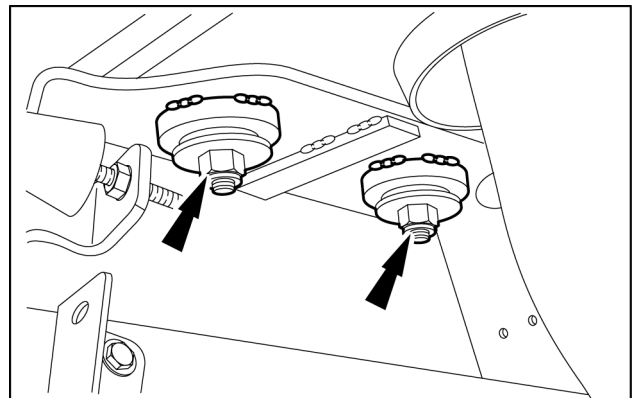
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8. Loosen the outlet hose clamp of the intake air cooler. Remove the intake air cooler line.



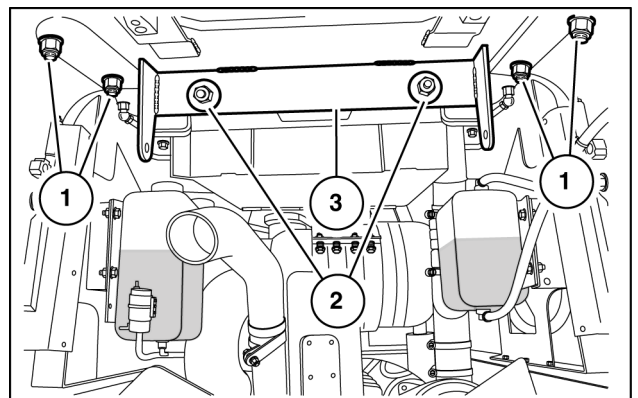
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9. Install lifting equipment on the hood.
10. Remove the two nuts and the washers (2) from the rear of the engine hood.



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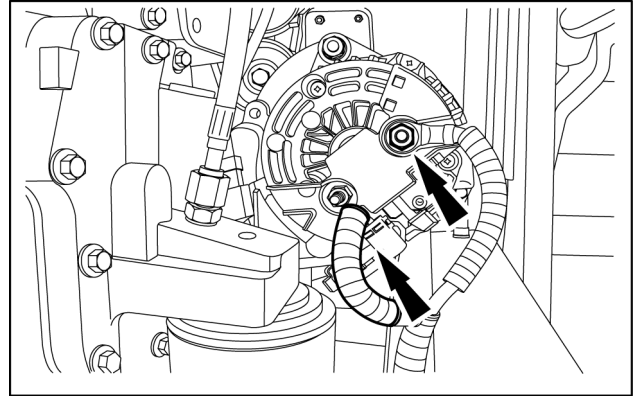
11. Remove the four bolts (1), the hood mounting bolts (2), and the strap from the radiator (3).



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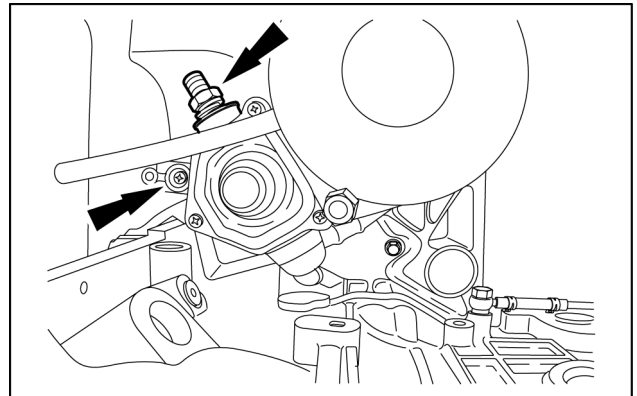
12. Remove the hood, the air filter, and the intake air cooler from the machine.

13. If the machine is equipped with a heater, loosen the clamps. Disconnect the heater hoses. Cap the end of the hoses to prevent the spillage of coolant.
14. Disconnect the wires from the alternator.



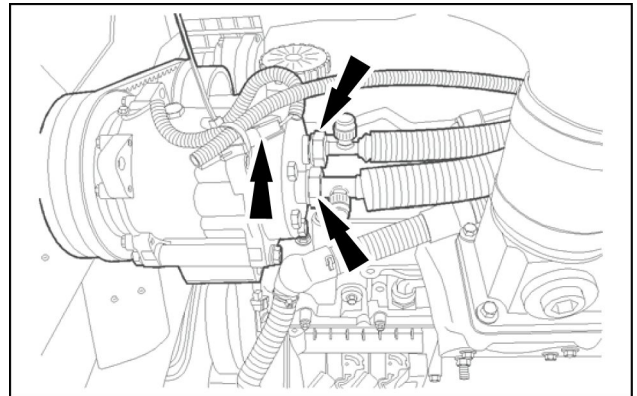
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15. Disconnect the battery cable and the wires of the starter motor wiring harness.



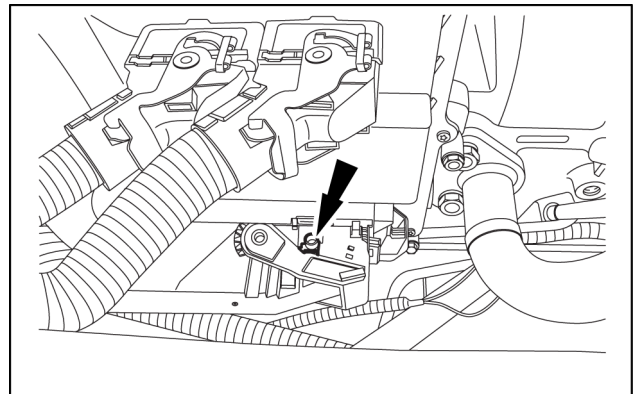
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16. Discharge the air-conditioning system. See **Air conditioning - Charging (50.200)**. Disconnect the clutch electrical connector and the compressor hoses. Plug the ends of the hoses and the fittings.



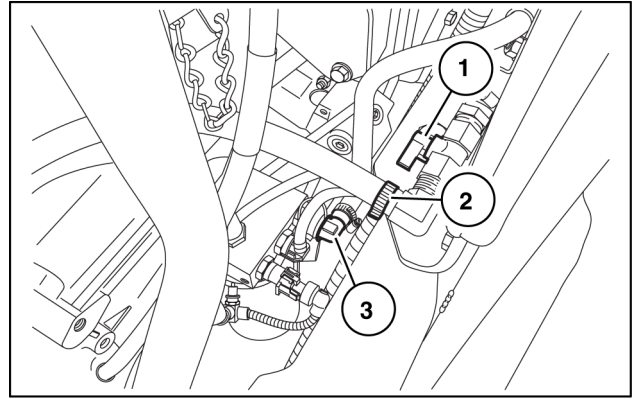
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17. Disconnect the electrical connector of the Engine Control Unit.



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18. Close the fuel valve (1). Disconnect the fuel line from the valve (2) and from the engine (3).

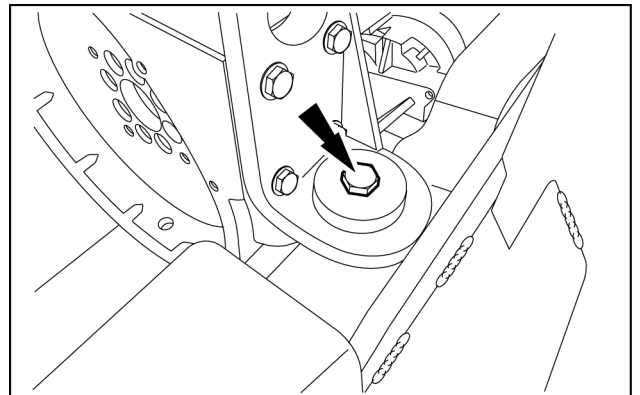


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19. Disconnect the ground cable from the extension housing.

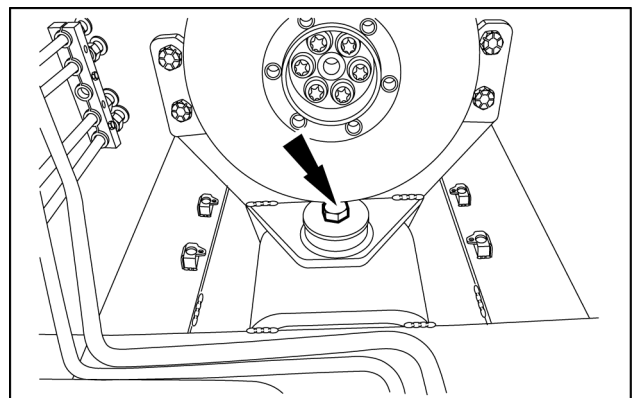
NOTE: Tilt the cab or ROPS canopy. See **Roll Over Protective Structure (ROPS) frame - Tilt (90.114)**.

20. The wiring harnesses and the hoses of the heater (if equipped) can be pulled into the hydrostatic compartment and moved away.
21. Install lifting equipment on the engine.
22. Remove the mounting bolts from the rear of the engine.



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23. Remove the mounting bolt from the front of the engine.



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24. Lift the engine slightly. Move the engine forward. Slide the drive shaft to disconnect the drive shaft from the hydro pumps until the bulkhead engine is freed.
25. Remove the engine from the machine.



Suggest:

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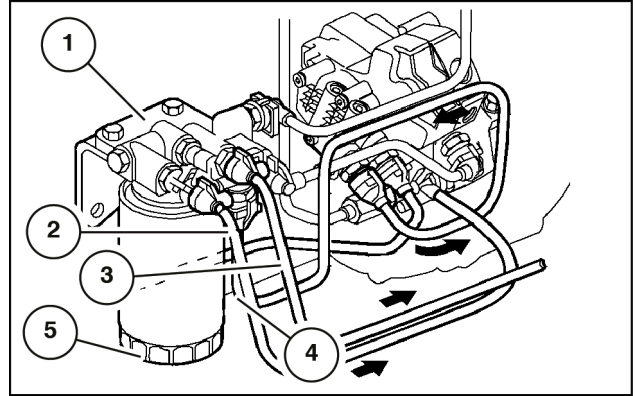
Engine - Disassemble

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Reconditioning the engine on the workbench

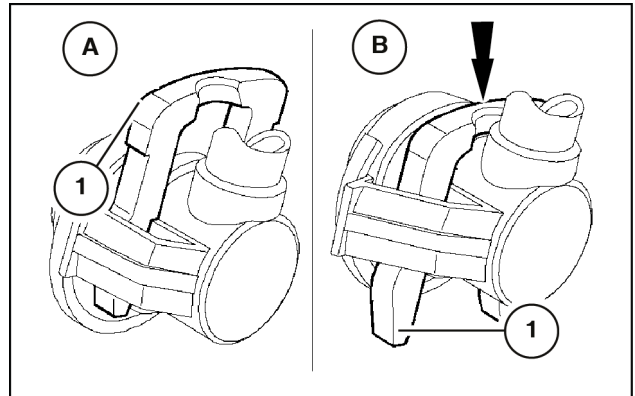
1. Remove the drain plug from the crankcase to drain the engine oil.
2. Use the supports to secure the engine to the trestle as follows (work from the left-hand side of the engine).
 - Use a suitable tool to remove the fuel filter (5) from its bracket (1).
 - Disconnect the low pressure lines (2), (3), and (4) from the fuel filter bracket (1).
 - Remove the fuel filter bracket (1) from the engine block.



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3.

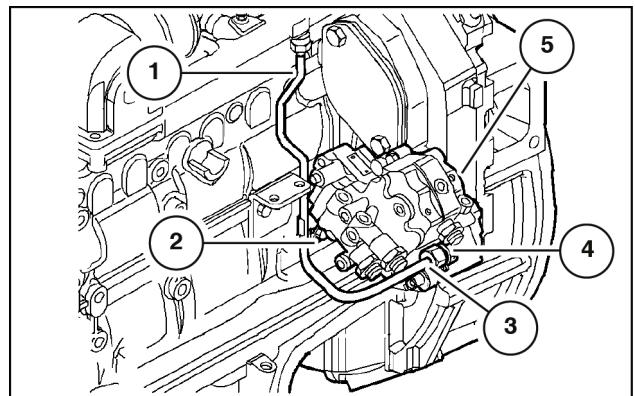
NOTICE: Push the clamp (1), as shown in Fig. 2, to disconnect the low pressure fuel lines (2), (3), and (4) from the corresponding fittings. After you disconnect the lines, put the clamp (1) back in the position shown in Fig. 2 to prevent the deformation of the clamp.



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4. Disconnect the fuel line (1) from the "common rail" and from the high pressure pump (5). Remove the mounting bolts (2) to remove the fuel line.

NOTICE: When you loosen the fitting (3) of the fuel line (1), use an appropriate wrench so that the fitting (4) of the high pressure pump (5) does not turn.



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