

1150M
Stage IIIB
Crawler Dozer

PIN NGC105100 and above

SERVICE MANUAL

Part number 48080034

1st edition English

April 2017

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CASE
CONSTRUCTION



SERVICE MANUAL

**1150M Long Track (LT) - Tier 4B (final) and Stage IIIB [NGC105100 -]
1150M Wide Track (WT) / Low Ground Pressure (LGP) - Tier 4B (final) and
Stage IIIB [NGC105100 -]**

Link Product / Engine

Product	Market Product	Engine
1150M Long Track (LT) - Tier 4B (final) and Stage IIIB [NGC105100 -]	Europe	F4HFE613F*A002
1150M Wide Track (WT) / Low Ground Pressure (LGP) - Tier 4B (final) and Stage IIIB [NGC105100 -]	Europe	F4HFE613F*A002

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INTRODUCTION

Foreword - Important notice regarding equipment servicing

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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 CASE CONSTRUCTION Sales and Service Networks.

Safety rules

1150M

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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 - Personal safety

1150M

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General maintenance safety

Keep area used for servicing the machine clean and dry. Clean up spilled fluids.

Service machine on a firm level surface.

Install guards and shields after servicing the machine.

Close all access doors and install all panels after servicing the machine.

Do not attempt to clean, lubricate, clear obstructions or make adjustments to the machine while it is in motion or while the engine is running.

Always make sure working area is clear of tools, parts, other persons and pets before you start operating the machine.

Unsupported hydraulic cylinders can lose pressure and drop the equipment causing a crushing hazard. Do not leave equipment in a raised position while parked or during service, unless securely supported.

Jack or lift the machine only at jack or lift points indicated in this manual.

Incorrect towing procedures can cause accidents. When towing a disabled machine follow the procedure in this manual. Use only rigid tow bars.

Stop the engine, remove key and relieve pressure before disconnecting or connecting fluid lines.

Stop the engine and remove key before disconnecting or connecting electrical connections.

Scalding can result from incorrect removal of coolant caps. Cooling system operates under pressure. Hot coolant can spray out if a cap is removed while the system is hot. Allow system to cool before removing cap. When removing a cap turn it slowly to allow pressure to escape before completely removing the cap.

Replace damaged or worn tubes, hoses, electrical wiring, etc.

Engine, transmission, exhaust components, and hydraulic lines may become hot during operation. Take care when servicing such components. Allow surfaces to cool before handling or disconnecting hot components. Wear protective equipment when appropriate.

When welding, follow the instructions in the manual. Always disconnect the battery before welding on the machine. Always wash your hands after handling battery components.

General battery safety

Always wear eye protection when working with batteries.

Do not create sparks or have open flame near battery.

Ventilate when charging or using in an enclosed area.

Disconnect negative (-) first and reconnect negative (-) last.

When welding on the machine, disconnect both terminals of the battery.

Do not weld, grind, or smoke near a battery.

When using auxiliary batteries or connecting jumper cables to start the engine, use the procedure shown in the operator's manual. Do not short across terminals.

Follow manufacturer's instructions when storing and handling batteries.

Battery post, terminals, and related accessories contain lead and lead compounds. Wash hands after handling. This is a California Proposition 65 warning.

Battery acid causes burns. Batteries contain sulfuric acid. Avoid contact with skin, eyes, or clothing. Antidote (external): Flush with water. Antidote (eyes): flush with water for 15 minutes and seek medical attention immediately. Antidote (internal): Drink large quantities of water or milk. Do not induce vomiting. Seek medical attention immediately.

Keep out of reach of children and other unauthorized persons.

 Air-conditioning system 

The air-conditioning system is under high pressure. Do not disconnect any lines. The release of high pressure can cause serious injury.

The air-conditioning system contains gases that are harmful to the environment when released into the atmosphere. Do not attempt to service or repair the system.

Service, repair, or recharging must be performed only by a trained service technician.

 Personal Protective Equipment (PPE) 

Wear Personal Protective Equipment (PPE) such as hard hat, eye protection, heavy gloves, hearing protection, protective clothing, etc.

 Do Not Operate tag 

Before you start servicing the machine, attach a 'Do Not Operate' warning tag to the machine in an area that will be visible.



SERVICE MANUAL

Engine

**1150M Long Track (LT) - Tier 4B (final) and Stage IIIB [NGC105100 -]
1150M Wide Track (WT) / Low Ground Pressure (LGP) - Tier 4B (final) and
Stage IIIB [NGC105100 -]**

Engine - Remove

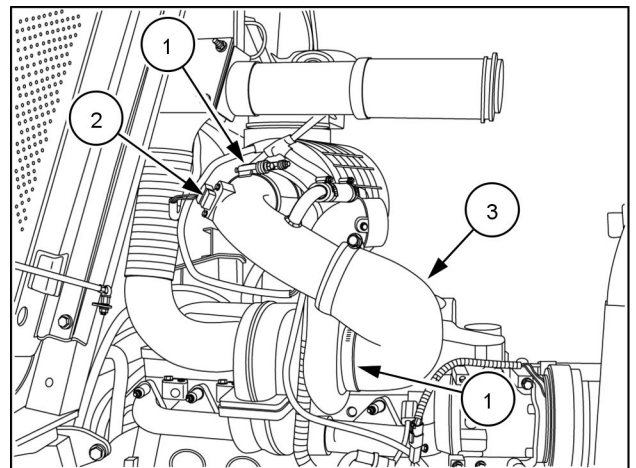
1150M

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1. Park machine on a firm, level surface.
2. Lower all equipment to the ground.
3. Engage parking brake and shut engine off.
4. Relieve system of hydraulic pressure by actuating all hydraulic functions. Remove key when complete.

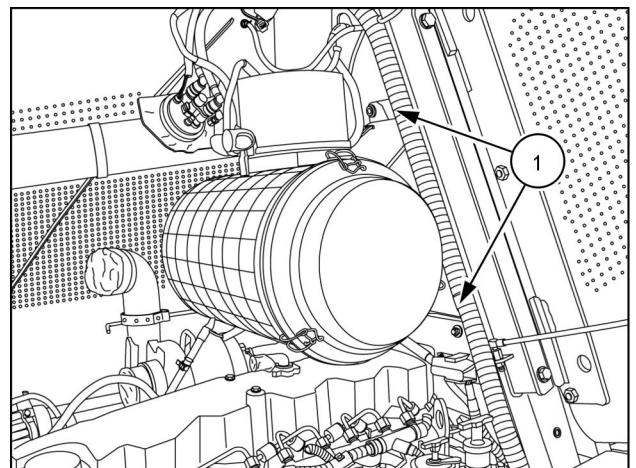
NOTE: Wait 90 seconds after engine shutdown before turning master battery disconnect switch OFF. After engine shutdown, the Selective Catalytic Reduction (SCR) system module continues to run and conducts a purge cycle.

5. Turn master battery disconnect switch to the OFF position.
6. Remove cooling package. See **Radiator - Remove (10.400)**.
7. Loosen clamps (1), disconnect electrical connectors (2), and remove air cleaner hose (3). Close all openings.



RAIL12DOZ0705BA 1

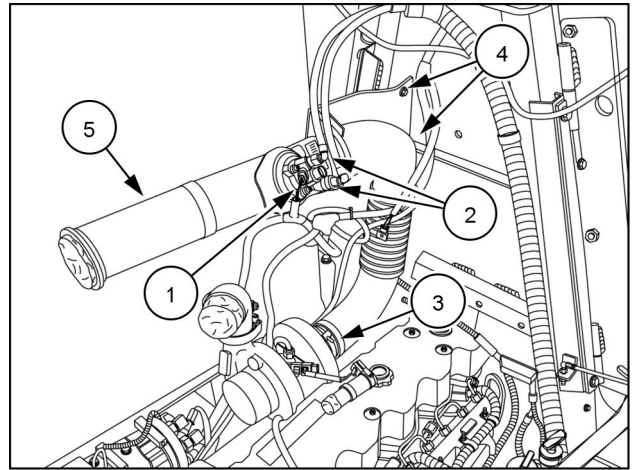
8. Disconnect electrical connector, remove six bolts and washers (1), and remove air filter assembly with bracket. Close all openings.



RAIL12DOZ0706BA 2

NOTICE: Emissions sensors in the exhaust system and on the vehicle may be damaged by vibration from use of impact wrenches or hammers during service work. Avoid using these tools when servicing components close to the sensors. Remove the sensors with care if use of these tools cannot be avoided.

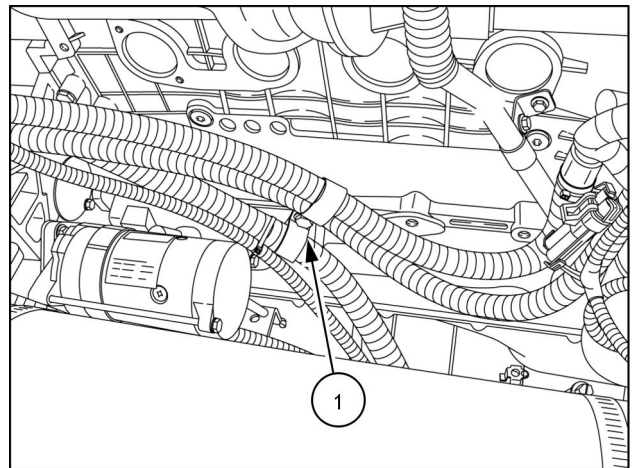
9. Disconnect electrical connectors (1) and disconnect DEF/AdBlue supply and return hoses (2). Remove clamp (3), two bracket bolts and washers (4), and turbocharger to muffler pipe (5). Close all openings.



RAIL12DOZ0707BA 3

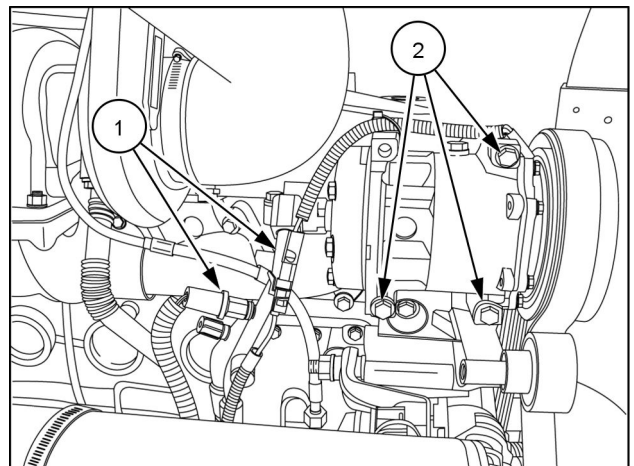
NOTE: Evacuation of the air conditioning system is not required for engine removal.

10. Remove air conditioning and heater hose clamp (1) from engine block.



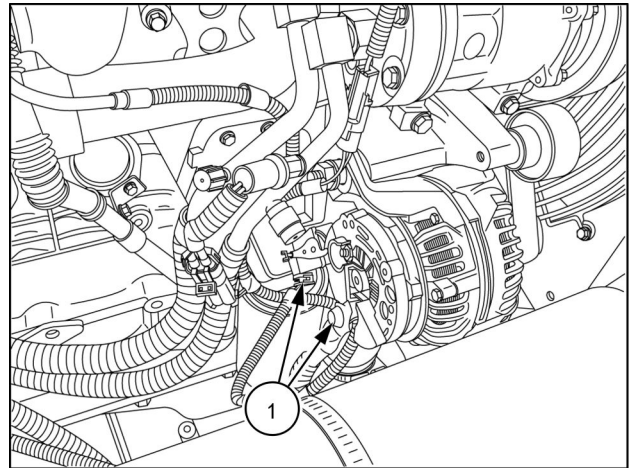
RAIL12DOZ0708BA 4

11. Disconnect electrical connectors (1), remove three bolts (2), and set air conditioning compressor (with hoses attached) aside.



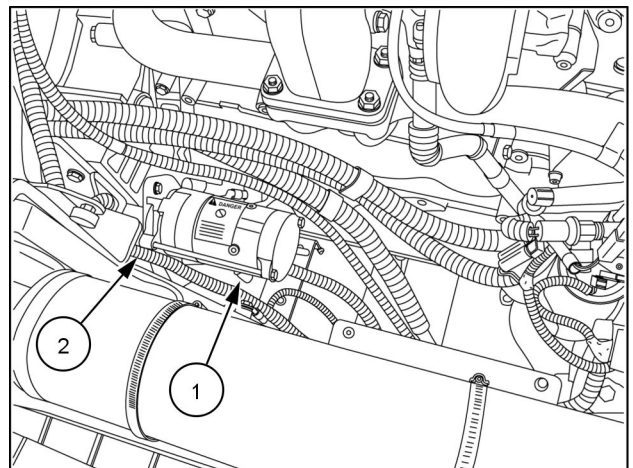
RAIL12DOZ0727BA 5

12. Disconnect all electrical connections **(1)** from alternator.



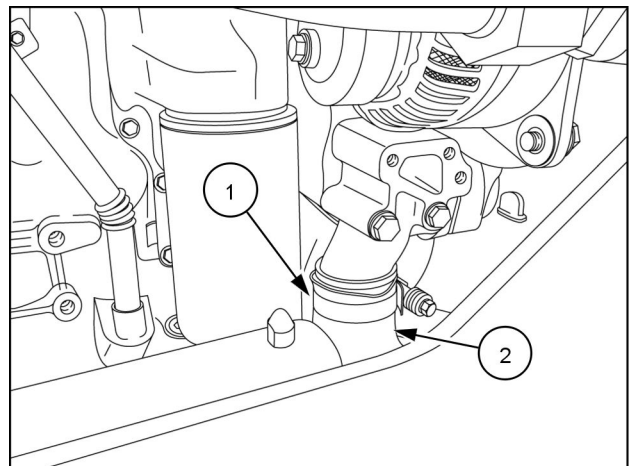
RAIL12DOZ0786BA 6

13. Remove starter electrical connections **(1)**. Remove starter mounting bolt **(2)** and remove ground strap.



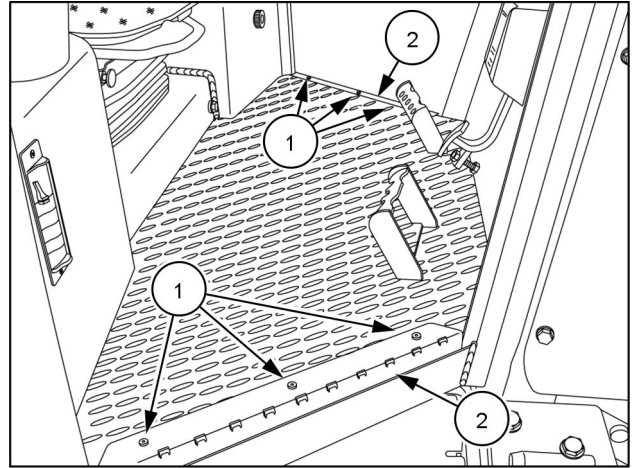
RAIL12DOZ0949BA 7

14. Loosen clamp **(1)** and remove lower radiator hose **(2)**. Close all openings.



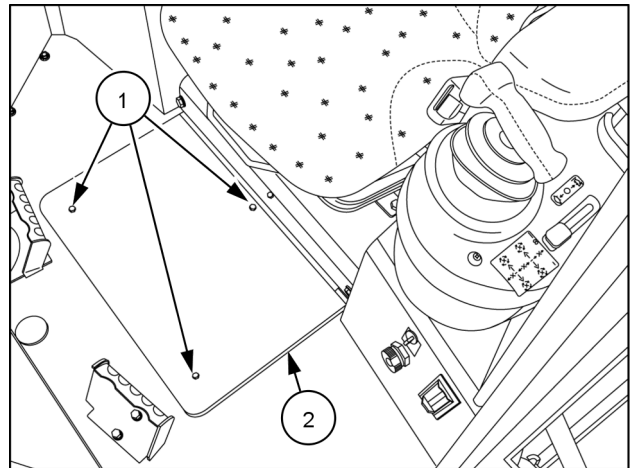
RAIL12DOZ0710BA 8

15. Remove six screws (1), two cab floor mat brackets (2), and cab floor mat.



RAIL12DOZ0738BA 9

16. Remove three bolts and washers (1) and remove cab floor access panel (2).

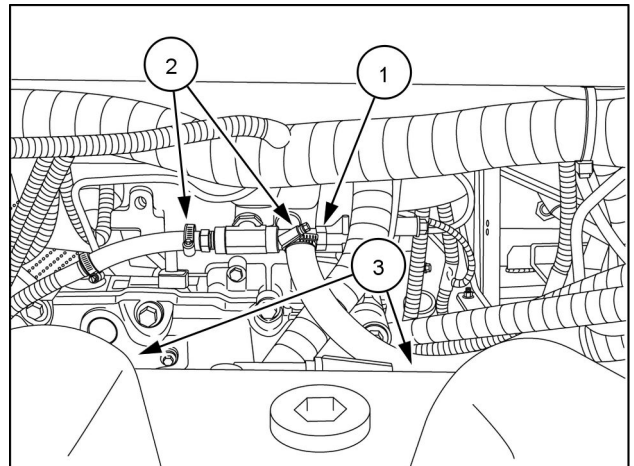


RAIL12DOZ0739BA 10

17. Close valve (1) and disconnect two heater hoses (2) at rear of engine. Close all openings.

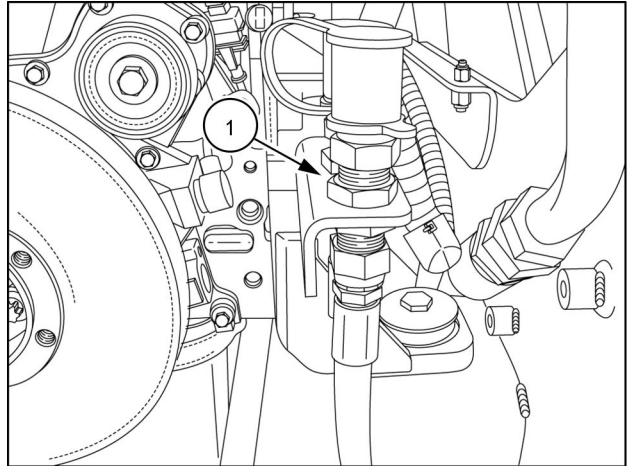
NOTE: View is forward from cab floor access.

18. Remove two clamp bolts (3) and remove wiring harness from rear of engine.



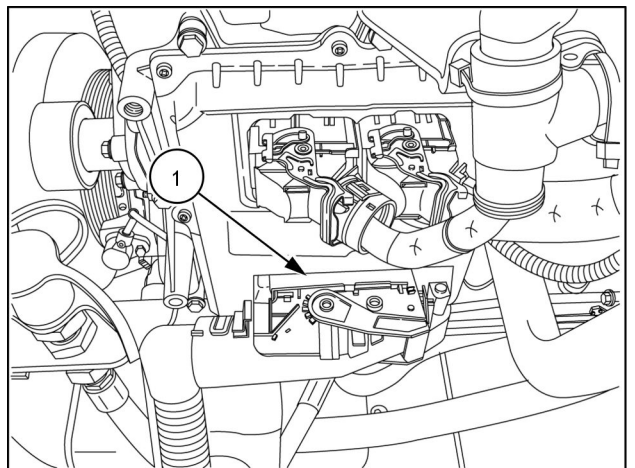
RAIL12DOZ0923BA 11

19. Disconnect coolant quick drain/fill line **(1)** at engine bracket. Close all openings.



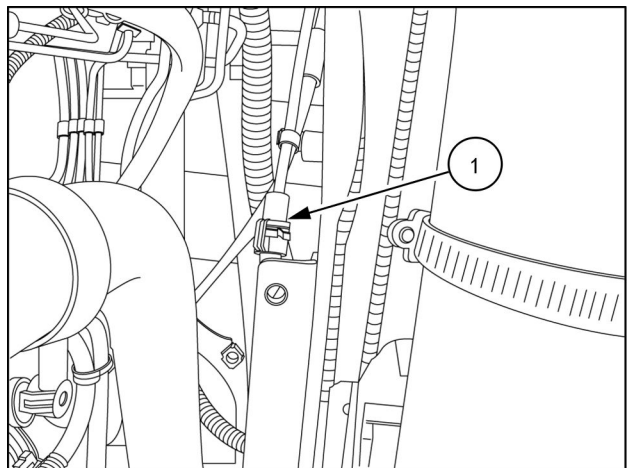
RAIL12DOZ0711BA 12

20. Disconnect main wiring harness connector **(1)** at ECU.



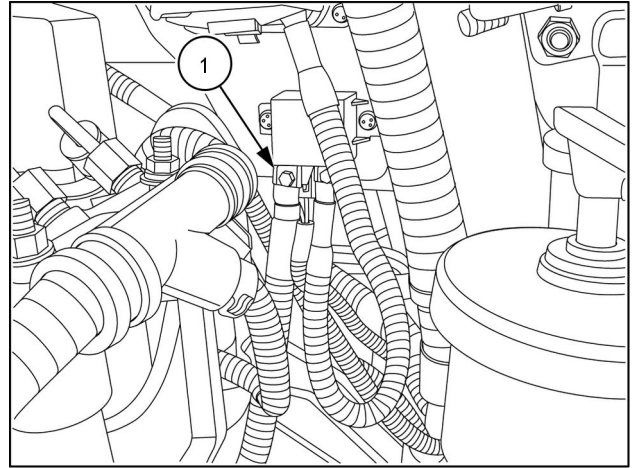
RAIL12DOZ0712BA 13

21. Disconnect fuel supply and return lines **(1)** at left side front frame.



RAIL12DOZ0924BA 14

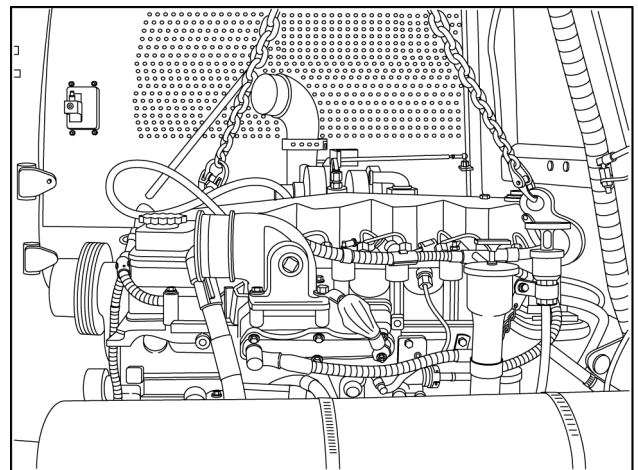
22. Disconnect positive lead (1) from intake air heater relay.



RAIL12DOZ0925BA 15

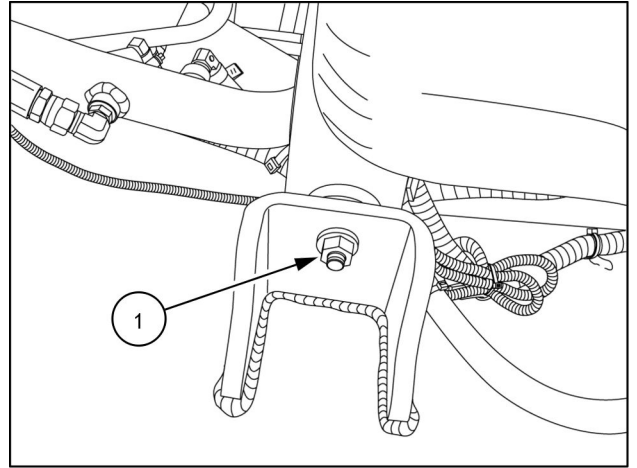
NOTICE: Engine weighs approximately 635 kg (1400 lb). Use proper lifting equipment to prevent personal injury or property damage.

23. Support engine with an appropriate lifting device.

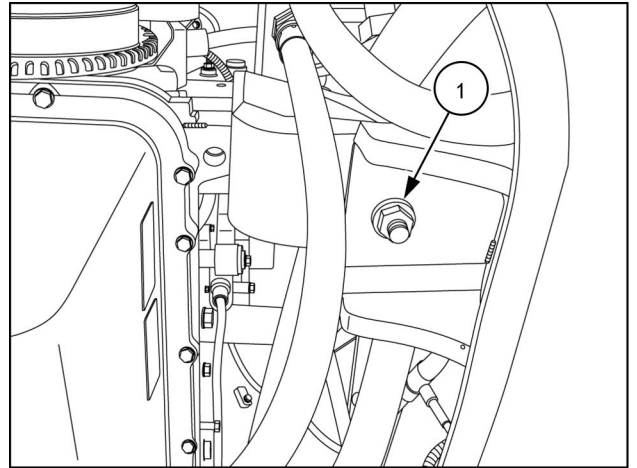


RAIL12DOZ0713BA 16

24. Remove two front motor mount bolts, washers, and nuts **(1)**. Note location and quantity of washers for installation.

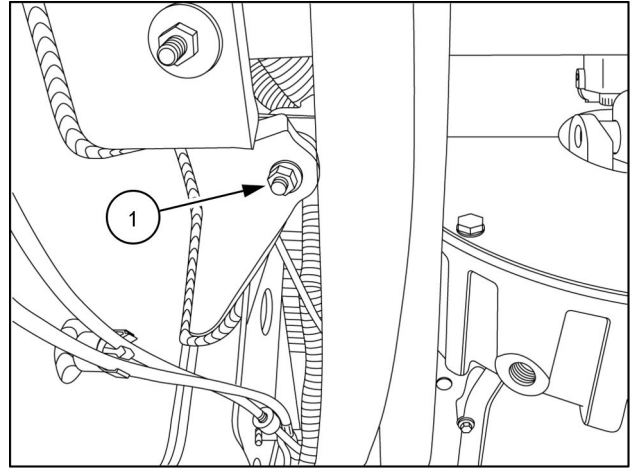


RAIL12DOZ0717BA 17

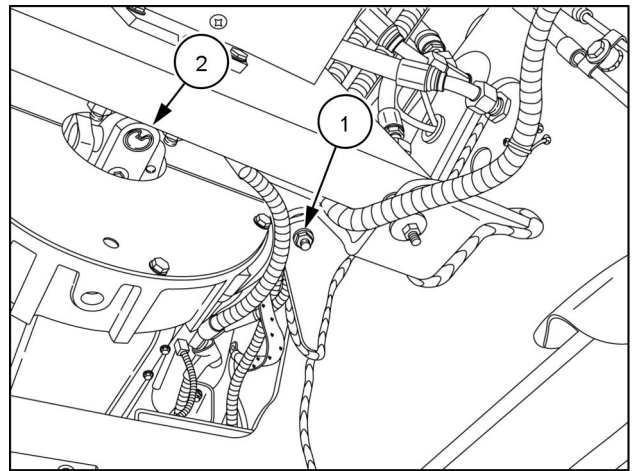


RAIL12DOZ0718BA 18

25. Remove two rear motor mount bolts, washers, and nuts **(1)**.
26. Lift engine slightly and move forward to disengage driveshaft **(2)** from pump. Continue lifting engine to remove.



RAIL12DOZ0720BA 19



RAIL12DOZ0719BA 20

27. Repair or replace components as necessary.

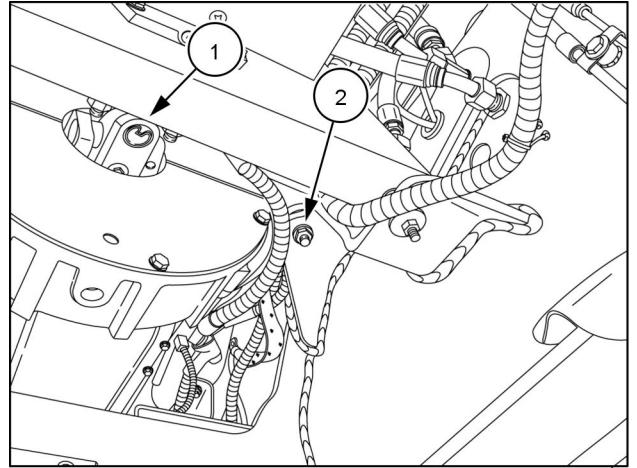
Engine - Install

1150M

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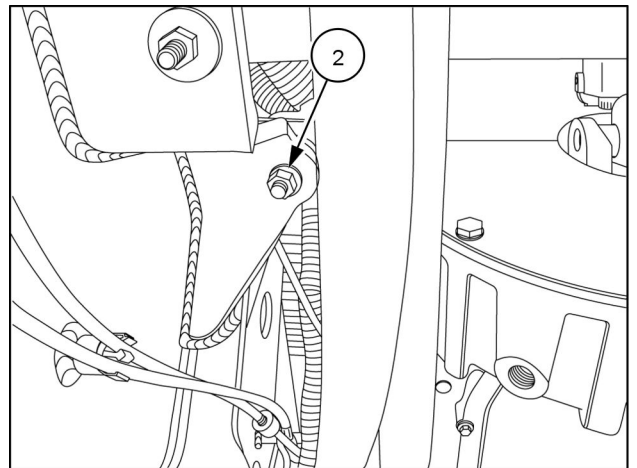
NOTICE: Engine weighs approximately **635 kg (1400 lb)**. Use caution when handling to prevent injury.

1. Attach an appropriate lifting device to engine.
2. Lower engine into machine. Driveshaft (1) must engage pump.



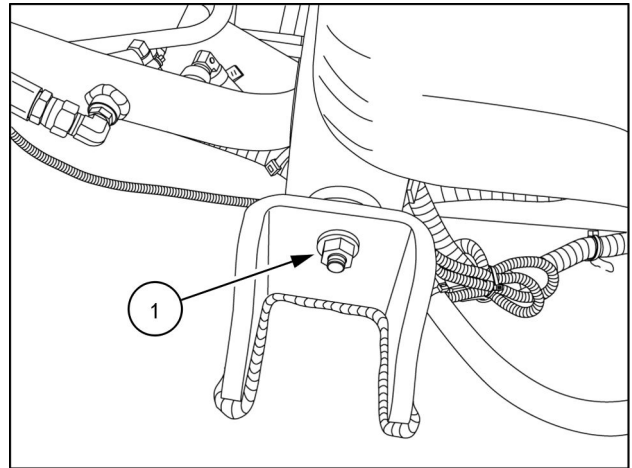
RAIL12DOZ0719BA 1

3. Install two rear motor mount bolts, washers, and nuts (2). Install washers as noted during removal. Torque to **205 – 231 N·m (151 – 170 lb ft)**.

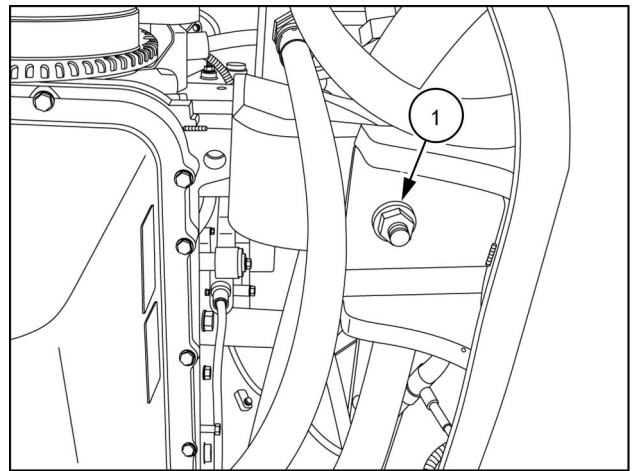


RAIL12DOZ0720BA 2

4. Install two front motor mount bolts, washers, and nuts **(1)**. Install washers as noted during removal. Torque to **205 – 231 N·m (151 – 170 lb ft)**.

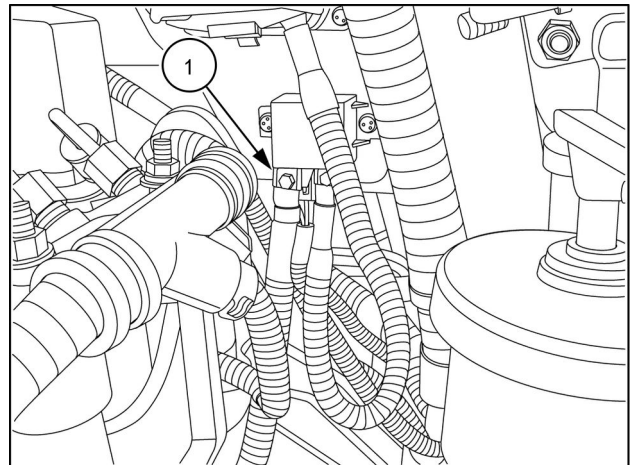


RAIL12DOZ0717BA 3



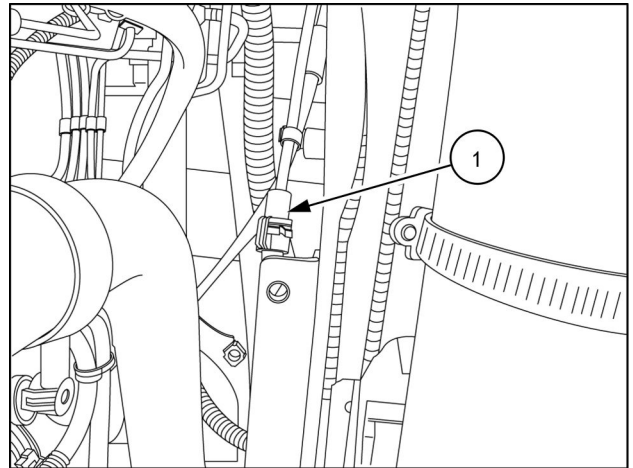
RAIL12DOZ0718BA 4

5. Remove lifting device from engine.
6. Connect positive lead **(1)** to air heater relay.



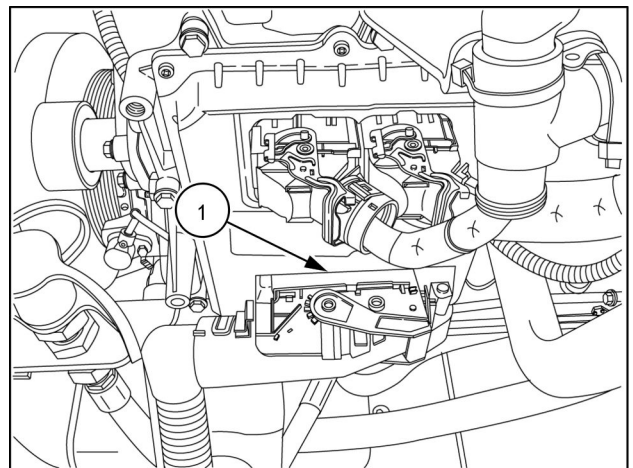
RAIL12DOZ0925BA 5

7. Connect fuel supply and return lines **(1)** at left side front frame.



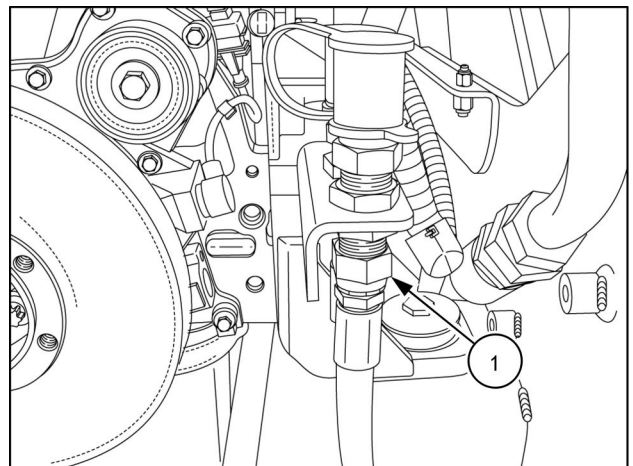
RAIL12DOZ0924BA 6

8. Connect main wiring harness connector **(1)** at ECU.



RAIL12DOZ0712BA 7

9. Connect coolant quick drain/fill line **(1)** at engine bracket.

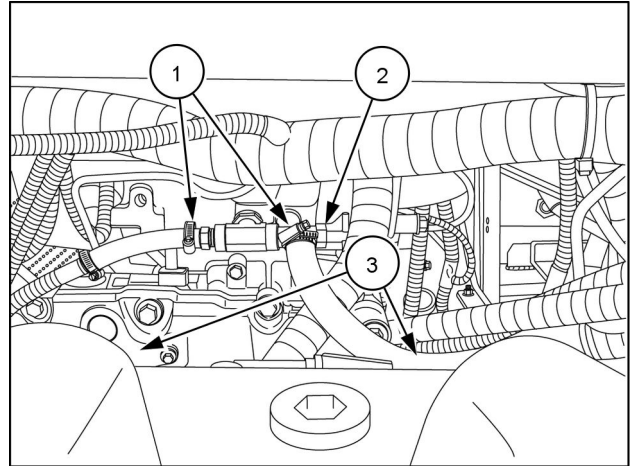


RAIL12DOZ0711BA 8

10. Connect two heater hoses (1) at rear of engine and open valve (2).

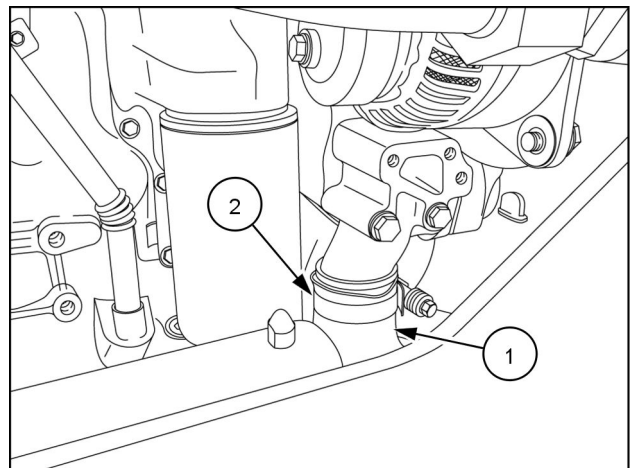
NOTE: View is forward from cab floor access.

11. Install wiring harness to rear of engine with two clamps (3).



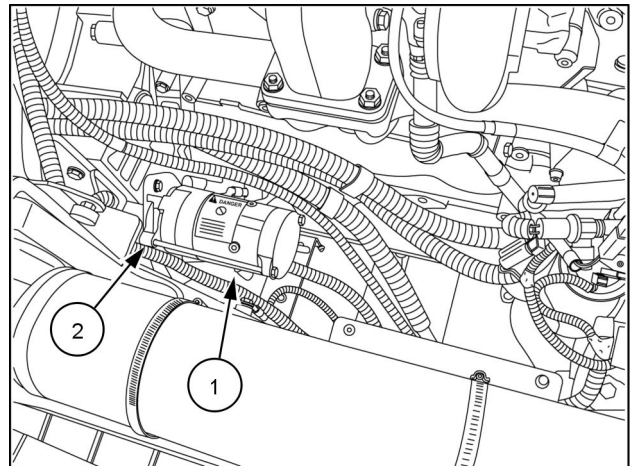
RAIL12DOZ0923BA 9

12. Install lower radiator hose (1) with clamp (2).



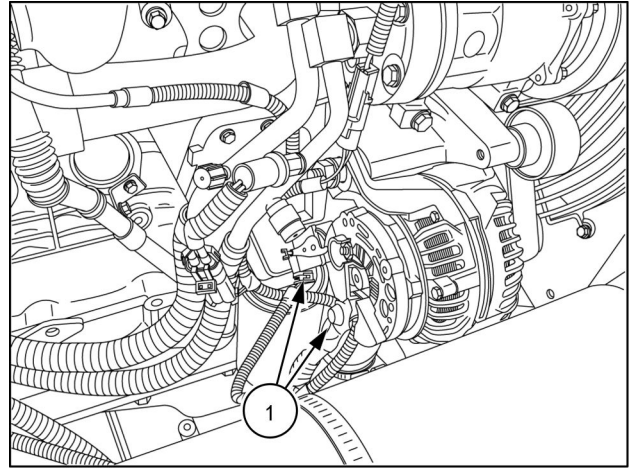
RAIL12DOZ0710BA 10

13. Install electrical connections (1) to starter. Remove starter mounting bolt (2) to install ground strap.



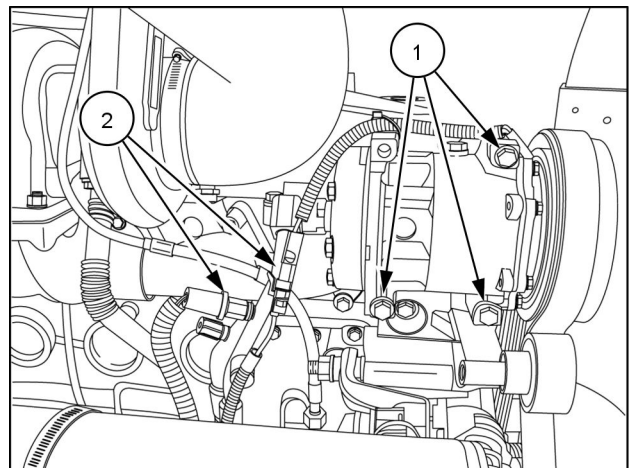
RAIL12DOZ0949BA 11

14. Connect all electrical connections **(1)** to alternator.



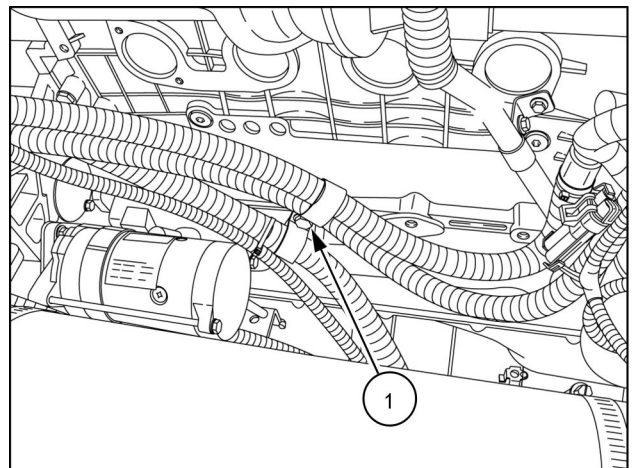
RAIL12DOZ0786BA 12

15. Install air conditioning compressor to engine with three bolts **(1)**. Connect electrical connectors **(2)**.



RAIL12DOZ0727BA 13

16. Install air conditioning and heater hose clamp **(1)** to engine block.



RAIL12DOZ0708BA 14



Suggest:

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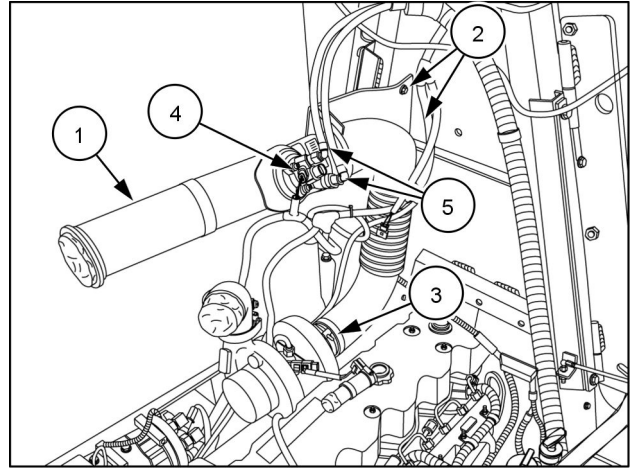
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first, and then click the above link

to download the complete manual.

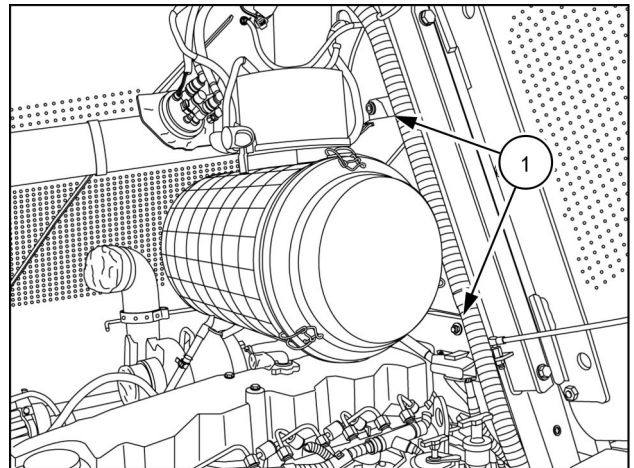
Thank you so much for reading

17. Install turbocharger to muffler pipe (1) with two bracket bolts and washers (2) and connect with clamp (3). Connect electrical connections (4) and connect DEF/AdBlue supply and return hoses (5).



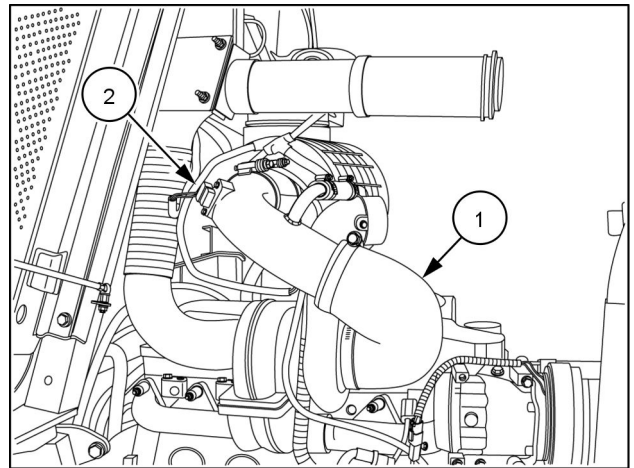
RAIL12DOZ0707BA 15

18. Install air filter and bracket assembly with six bolts and washers (1) and connect electrical connector.



RAIL12DOZ0706BA 16

19. Install air cleaner hose (1) and connect electrical connectors (2).



RAIL12DOZ0705BA 17

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