

750M
Tier 4A (interim)
Crawler Dozer

*PIN NCDC75000 and above; PIN NDDC70000 and above;
PIN NEDC70000 and above; PIN NFDC70000 and above;
PIN NFC101000 and above*

SERVICE MANUAL

Part number 51418565

2nd edition English

November 2017

Replaces part number 47907863

CASE
CONSTRUCTION



SERVICE MANUAL

**750M Long Track (LT) [NCDC75000 -], 750M Long Track (LT) [NDDC70000 -],
750M Long Track (LT) [NEDC70000 -], 750M Long Track (LT) [NFDC70000 -
], 750M Long Track (LT) - Tier 4A (interim) [NFC101000 -], 750M Wide Track
(WT) / Low Ground Pressure (LGP) [NCDC75000 -], 750M Wide Track (WT)
/ Low Ground Pressure (LGP) [NDDC70000 -], 750M Wide Track (WT) /
Low Ground Pressure (LGP) [NEDC70000 -], 750M Wide Track (WT) / Low
Ground Pressure (LGP) [NFDC70000 -], 750M Wide Track (WT) / Low Ground
Pressure (LGP) - Tier 4A (interim) [NFC101000 -]**

Link Product / Engine

Product	Market Product	Engine
750M Long Track (LT) - Tier 4A (interim) [NFC101000 -]	North America	F5HFL413J*A002
750M Wide Track (WT) / Low Ground Pressure (LGP) - Tier 4A (interim) [NFC101000 -]	North America	F5HFL413J*A002
750M Long Track (LT) [NCDC75000 -]	North America	F5HFL413J*A002
750M Long Track (LT) [NDDC70000 -]	North America	F5HFL413J*A002
750M Long Track (LT) [NEDC70000 -]	North America	F5HFL413J*A002
750M Long Track (LT) [NFDC70000 -]	North America	F5HFL413J*A002
750M Wide Track (WT) / Low Ground Pressure (LGP) [NCDC75000 -]	North America	F5HFL413J*A002
750M Wide Track (WT) / Low Ground Pressure (LGP) [NDDC70000 -]	North America	F5HFL413J*A002
750M Wide Track (WT) / Low Ground Pressure (LGP) [NEDC70000 -]	North America	F5HFL413J*A002
750M Wide Track (WT) / Low Ground Pressure (LGP) [NFDC70000 -]	North America	F5HFL413J*A002

<https://www.ebooklibonline.com>

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

<https://www.ebooklibonline.com>

Contents

INTRODUCTION

Maintenance	00
[00.150] Start-up.....	00.1
[00.AAA] Maintenance generic sub-group.....	00.2
Engine	10
[10.001] Engine and crankcase	10.1
[10.216] Fuel tanks	10.2
[10.206] Fuel filters	10.3
[10.202] Air cleaners and lines	10.4
[10.250] Turbocharger and lines.....	10.5
[10.501] Exhaust Gas Recirculation (EGR) exhaust treatment.....	10.6
[10.400] Engine cooling system	10.7
[10.414] Fan and drive	10.8
[10.310] Aftercooler.....	10.9
[10.304] Engine lubrication system.....	10.10
Power coupling	19
[19.100] Drive shaft.....	19.1
Hydrostatic drive	29
[29.218] Pump and motor components.....	29.1
[29.202] Hydrostatic transmission	29.2
Brakes and controls	33
[33.110] Parking brake or parking lock	33.1
[33.202] Hydraulic service brakes	33.2
Hydraulic systems	35
[35.000] Hydraulic systems.....	35.1
[35.300] Reservoir, cooler, and filters.....	35.2

[35.104] Fixed displacement pump	35.3
[35.359] Main control valve	35.4
[35.741] Dozer blade cylinders	35.5
[35.525] Auxiliary hydraulic valves and lines	35.6
Tracks and track suspension	48
[48.130] Track frame and driving wheels	48.1
[48.100] Tracks	48.2
[48.134] Track tension units	48.3
[48.138] Track rollers	48.4
[48.140] Dropbox and final drive	48.5
Cab climate control	50
[50.100] Heating	50.1
[50.104] Ventilation	50.2
[50.200] Air conditioning	50.3
Electrical systems	55
[55.000] Electrical system	55.1
[55.100] Harnesses and connectors	55.2
[55.015] Engine control system	55.3
[55.201] Engine starting system	55.4
[55.301] Alternator	55.5
[55.302] Battery	55.6
[55.202] Cold start aid	55.7
[55.011] Fuel tank system	55.8
[55.014] Engine intake and exhaust system	55.9
[55.640] Electronic modules	55.10
[55.030] Service brake electrical system	55.11
[55.512] Cab controls	55.12
[55.050] Heating, Ventilation, and Air-Conditioning (HVAC) control system	55.13

[55.518] Wiper and washer system.....	55.14
[55.408] Warning indicators, alarms, and instruments	55.15
[55.989] Exhaust Gas Recirculation (EGR) electrical system	55.16
[55.DTC] FAULT CODES.....	55.17
Lubrication system.....	71
[71.460] Grease lubrication system	71.1
Dozer blade and arm.....	86
[86.110] Dozer blade	86.1
Tools	89
[89.128] Ripper assembly	89.1
Platform, cab, bodywork, and decals.....	90
[90.150] Cab.....	90.1
[90.151] Cab interior.....	90.2
[90.154] Cab doors and hatches	90.3
[90.120] Mechanically-adjusted operator seat.....	90.4
[90.124] Pneumatically-adjusted operator seat.....	90.5
[90.110] Operator platform less cab	90.6



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 CASE CONSTRUCTION Sales and Service Networks.

Safety rules

750M

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 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

General maintenance safety

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

Service the machine on a firm, level surface.

Install guards and shields after you service 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 that 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 the equipment is securely supported.

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

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

Stop the engine, remove the key, and relieve pressure before you connect or disconnect fluid lines.

Stop the engine and remove the key before you connect or disconnect electrical connections.

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

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

The engine, transmission, exhaust components, and hydraulic lines may become hot during operation. Take care when you service such components. Allow surfaces to cool before you handle or disconnect hot components. Wear protective equipment when appropriate.

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

General battery safety

Always wear eye protection when you work with batteries.

Do not create sparks or have open flame near a battery.

Ventilate the area when you charge a battery or use a battery in an enclosed area.

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

When you weld on the machine, disconnect both terminals of the battery.

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

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

Follow the manufacturer's instructions when you store and handle 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.

Only trained service technicians can service, repair, or recharge the air-conditioning system.

 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.

Safety rules - Ecology and the environment

750M

NA

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 CONSTRUCTION strongly recommends that you return all used batteries to a CASE 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



SERVICE MANUAL

Engine

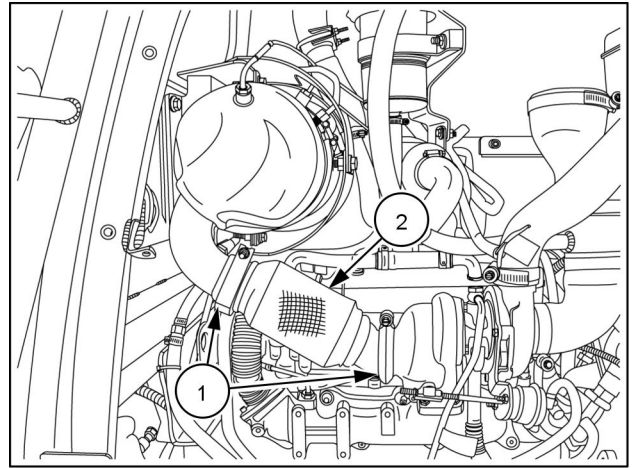
**750M Long Track (LT) [NCDC75000 -], 750M Long Track (LT) [NDDC70000 -],
750M Long Track (LT) [NEDC70000 -], 750M Long Track (LT) [NFDC70000 -
], 750M Long Track (LT) - Tier 4A (interim) [NFC101000 -], 750M Wide Track
(WT) / Low Ground Pressure (LGP) [NCDC75000 -], 750M Wide Track (WT)
/ Low Ground Pressure (LGP) [NDDC70000 -], 750M Wide Track (WT) /
Low Ground Pressure (LGP) [NEDC70000 -], 750M Wide Track (WT) / Low
Ground Pressure (LGP) [NFDC70000 -], 750M Wide Track (WT) / Low Ground
Pressure (LGP) - Tier 4A (interim) [NFC101000 -]**

Engine - Remove

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.
5. Turn master battery disconnect switch to the OFF position.
6. Disconnect all battery cables at batteries.
7. Remove cooling package. See **Radiator - Remove (10.400)**.

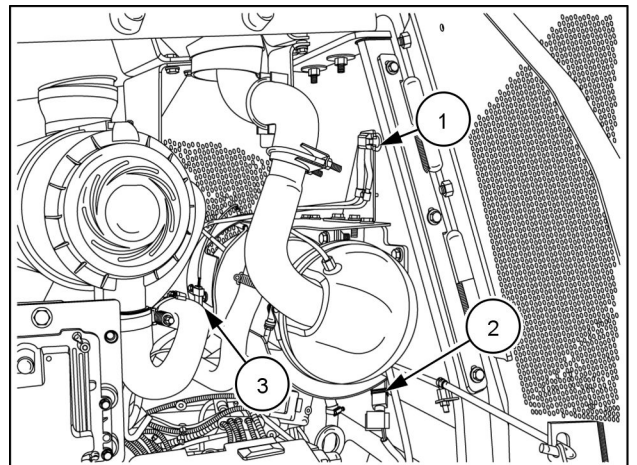
NOTICE: Emissions sensors in the exhaust system and on the vehicle may be damaged by vibration from use of impact wrenches or hammers during service work. Avoid using these tools when servicing components close to the sensors. Remove the sensors with care if use of these tools cannot be avoided.

8. Remove two clamps (1) and remove turbocharger to diesel oxidation catalyst flex tube (2). Close all openings to prevent contamination or damage.



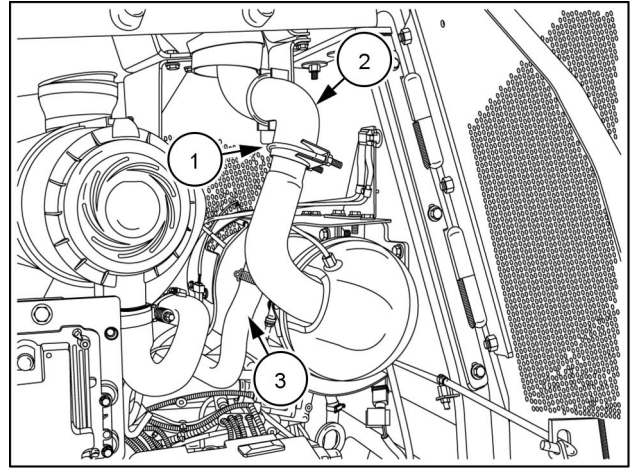
RAIL13DOZ0307BA 1

9. Disconnect exhaust pressure sensor connector (1), lambda sensor connector (2), and two exhaust temperature sensor connectors (3).



RAIL13DOZ0314BA 2

10. Remove clamp (1) from exhaust extension pipe (2) and remove exhaust extension pipe. Close all openings.

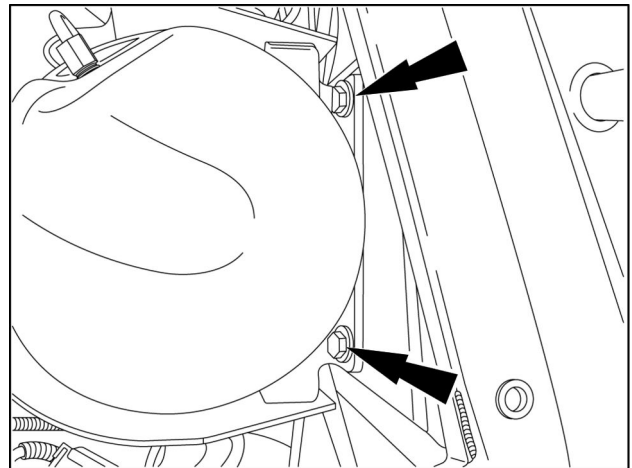


RAIL13DOZ0314BA 3

11. Disconnect aspirator tube (3) at exhaust. Close all openings.

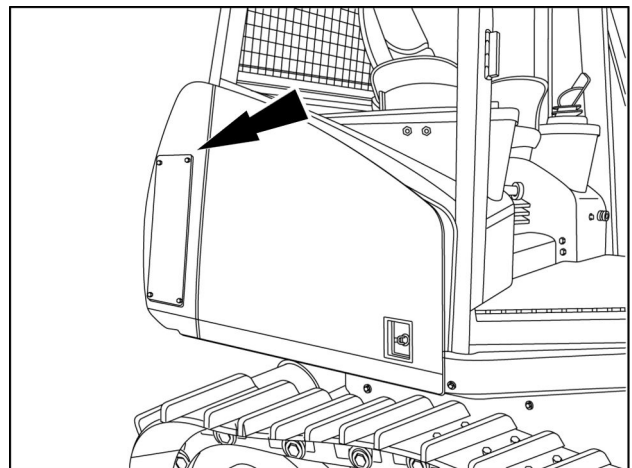
NOTICE: Diesel oxidation catalyst weighs approximately 45 kg (100 lb). Use caution when removing to prevent personal injury or property damage.

12. Attach an appropriate lifting device to diesel oxidation catalyst.
13. Remove four bolts and washers and remove diesel oxidation catalyst.



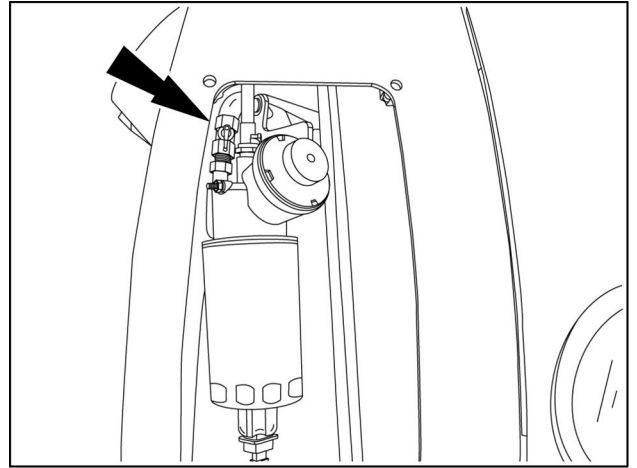
RAIL13DOZ0347AA 4

14. Remove four bolts and remove right rear fuel filter access panel.



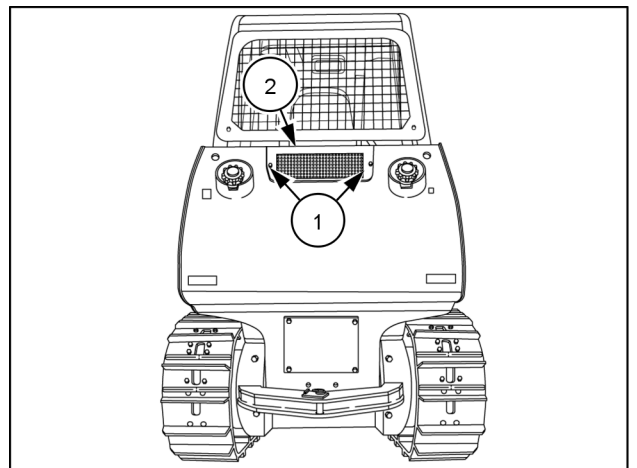
RAIL13DOZ0362AA 5

15. Close fuel supply valve.



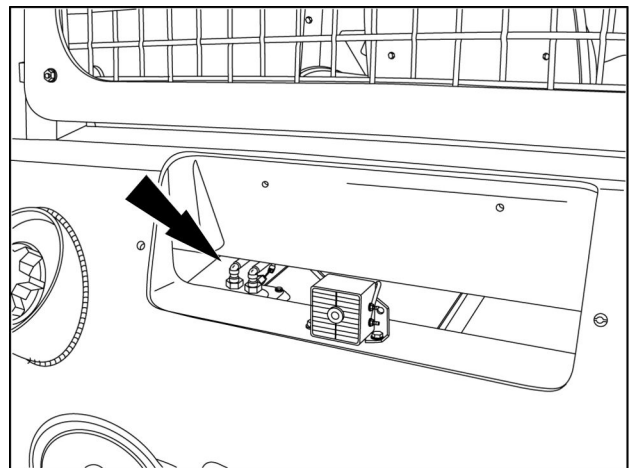
RAIL13DOZ0363AA 6

16. Remove two thumb screws (1) and remove backup alarm cover (2).



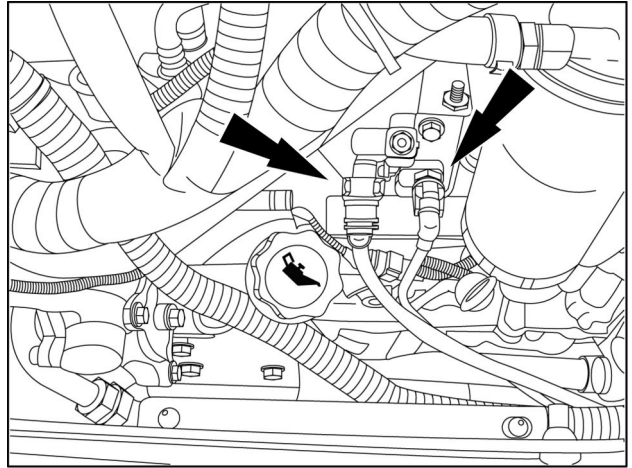
RAIL13DOZ0324AA 7

17. Disconnect fuel return line from tank.



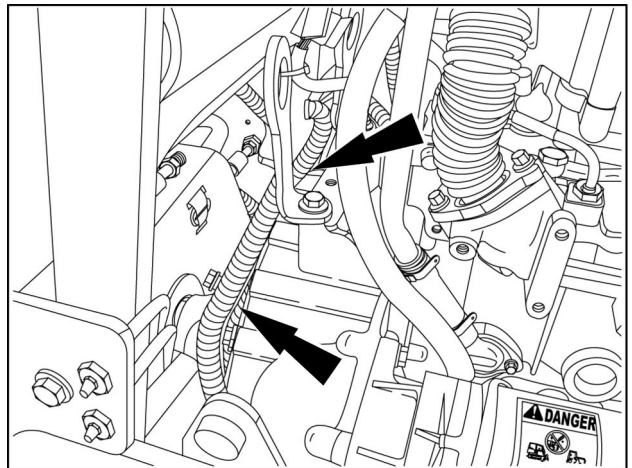
RAIL13DOZ0365AA 8

18. Disconnect fuel supply and return lines to engine.



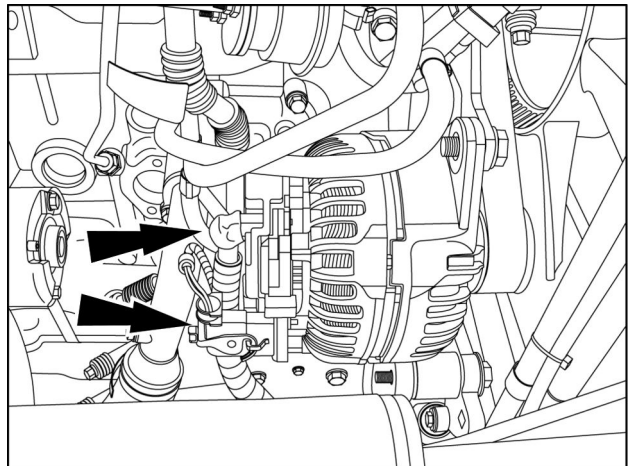
RAIL13DOZ0366AA 9

19. Remove wiring harness clamps and remove wiring harness from rear of engine.



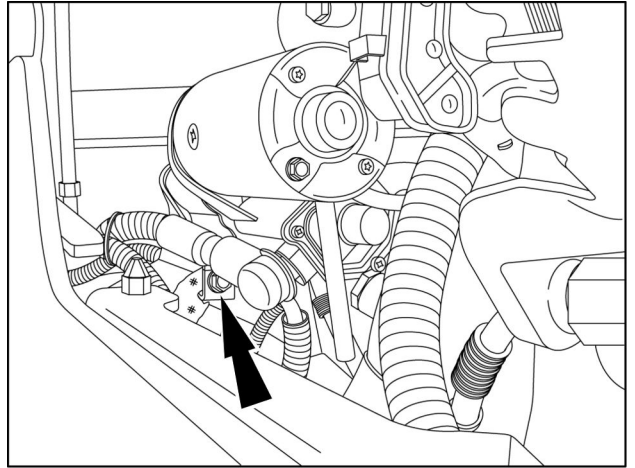
RAIL13DOZ0370AA 10

20. Disconnect all electrical connections from alternator.



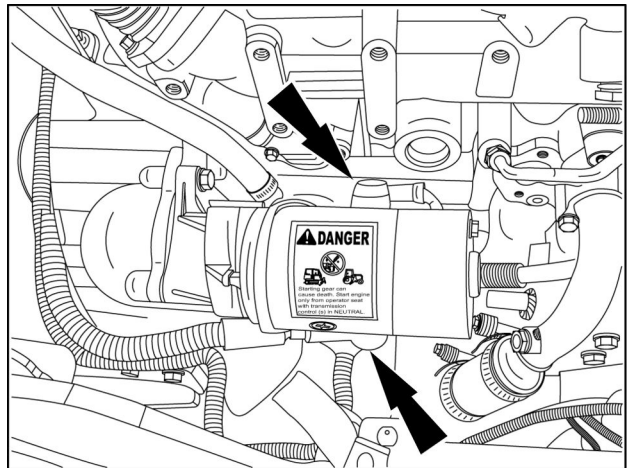
RAIL13DOZ0328AA 11

21. Remove lower starter bolt and disconnect ground cable.



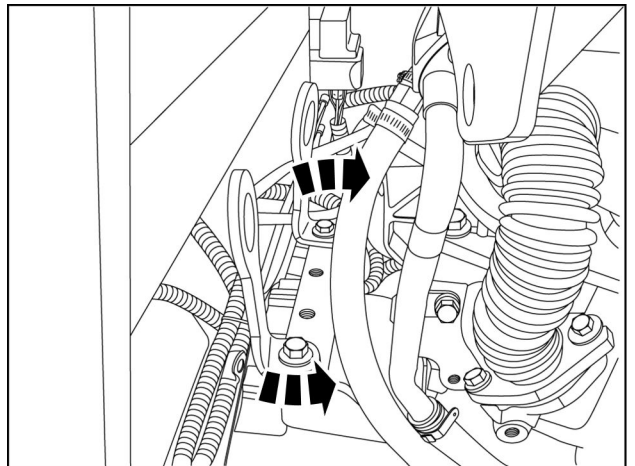
RAIL13DOZ0517AA 12

22. Disconnect electrical connections from starter.



RAIL13DOZ0369AA 13

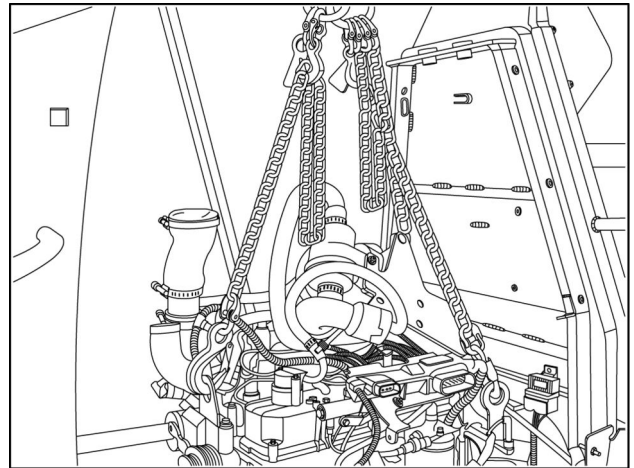
23. Rotate lifting brackets to provide clearance for installing lifting device.



RAIL13DOZ0371AA 14

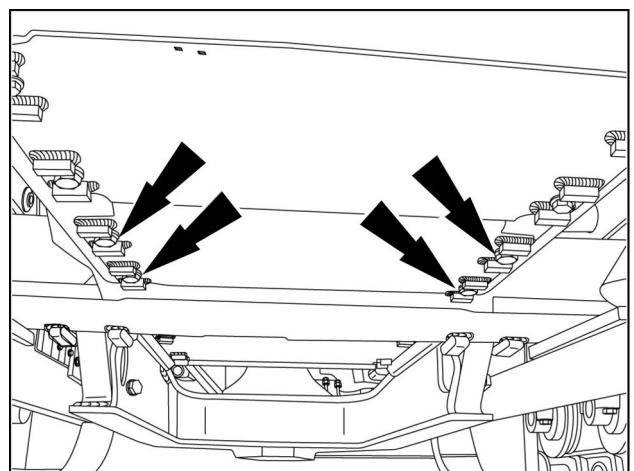
NOTICE: Engine weighs approximately 386 kg (850 lb). Use proper lifting equipment to prevent personal injury or property damage.

24. Attach an appropriate lifting device to engine.



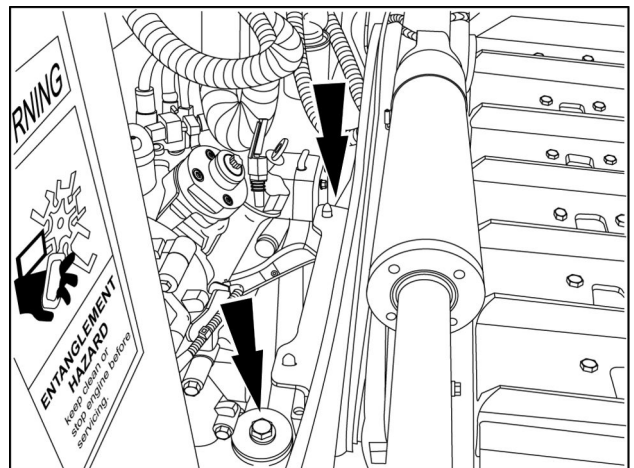
RAIL13DOZ0372AA 15

25. Remove four bolts and washers and remove middle front belly pan.



RAIL13DOZ0373AA 16

26. Remove four motor mount bolts and washers.



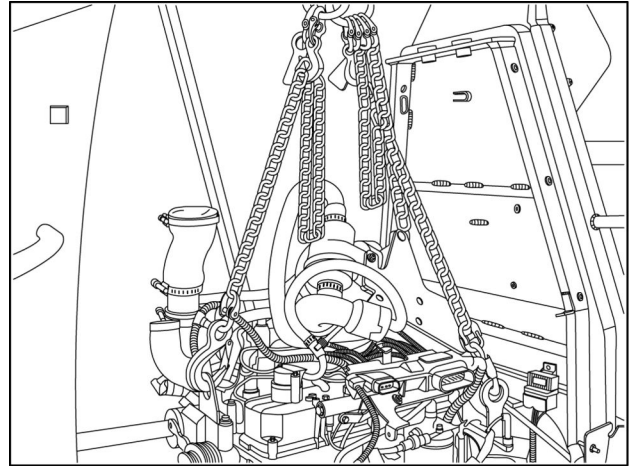
RAIL13DOZ0375AA 17

27. Move engine forward to disengage driveshaft from hydraulic pump. Remove engine from machine.
28. Repair or replace components as necessary.

Engine - Install

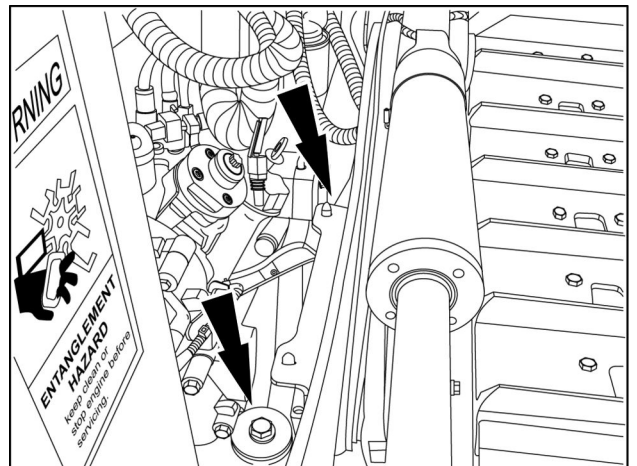
NOTICE: Engine weighs approximately 386 kg (850 lb). Use proper lifting equipment to prevent personal injury or property damage.

1. Attach an appropriate lifting device to engine.



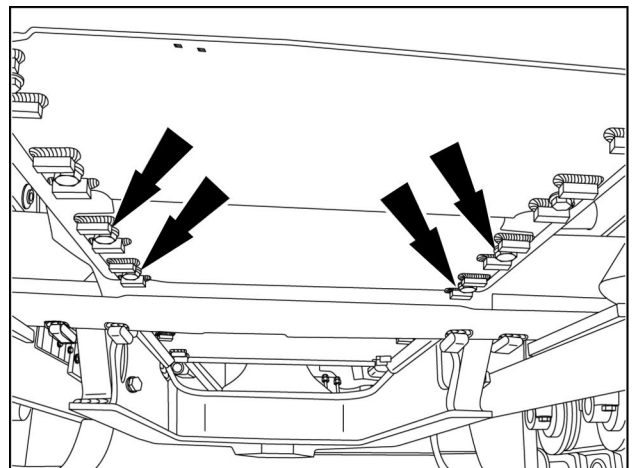
RAIL13DOZ0372AA 1

2. Install engine to machine and engage driveshaft to hydraulic pump. Grease driveshaft yoke.
3. Install four motor mount bolts and washers and tighten to 205 – 230 N·m (151 – 170 lb ft).



RAIL13DOZ0375AA 2

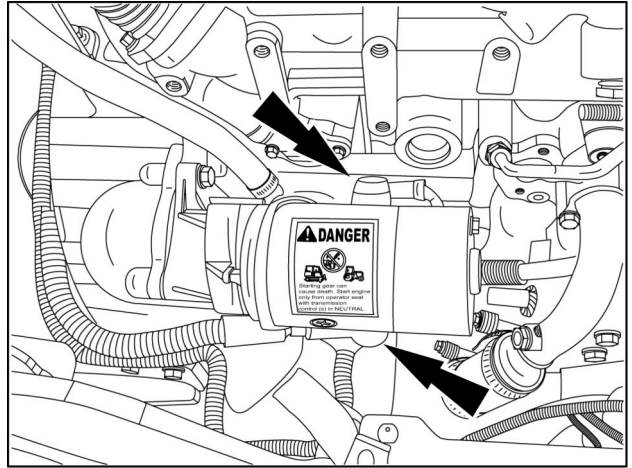
4. Install middle front belly pan with four bolts and washers.



RAIL13DOZ0373AA 3

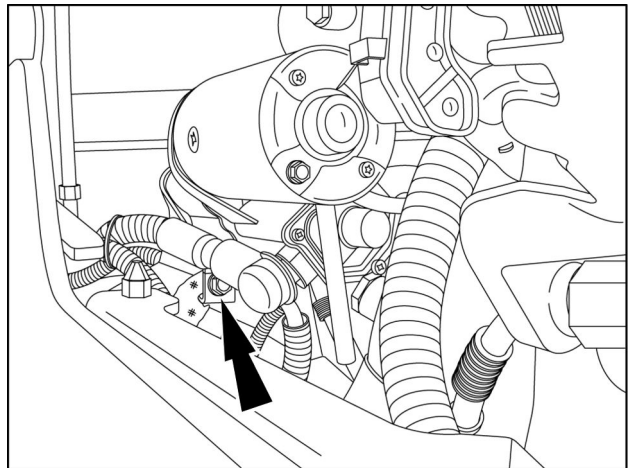
5. Remove lifting device from engine.

6. Connect electrical connections to starter.



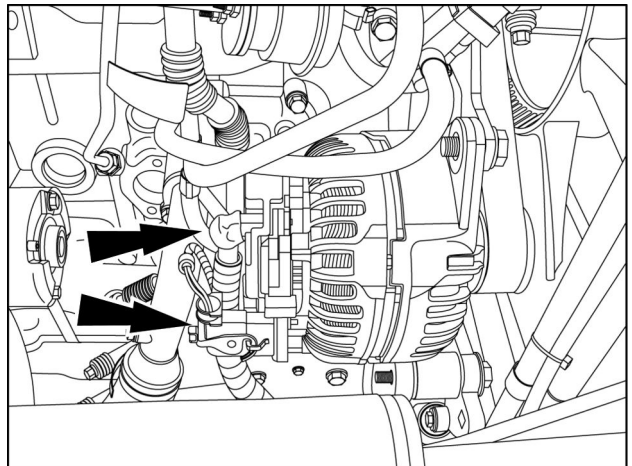
RAIL13DOZ0369AA 4

7. Apply **LOCTITE® 242®** to lower starter bolt and install ground cable to starter.



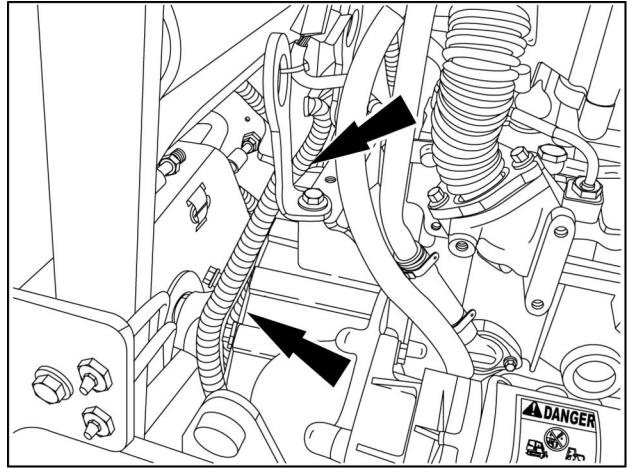
RAIL13DOZ0517AA 5

8. Connect electrical connections to alternator.



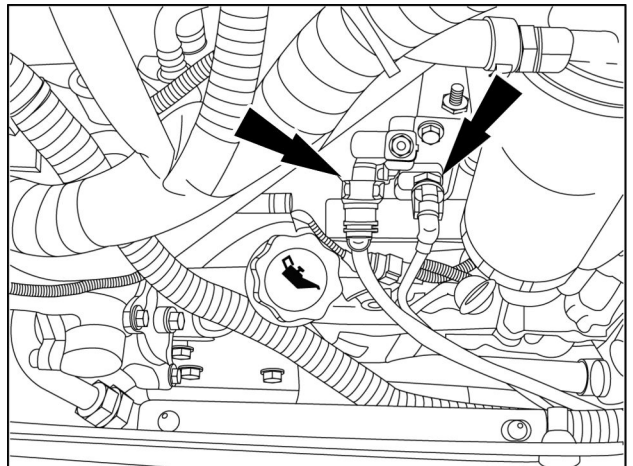
RAIL13DOZ0328AA 6

9. Install wiring harness and clamps to rear of engine.



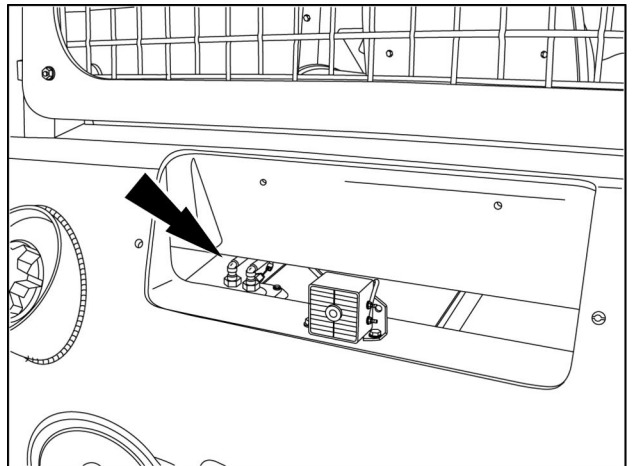
RAIL13DOZ0370AA 7

10. Connect fuel supply and return lines to engine.



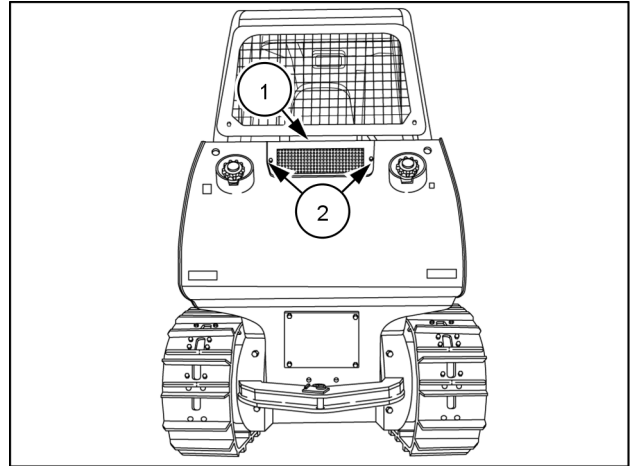
RAIL13DOZ0366AA 8

11. Connect fuel return line to tank.



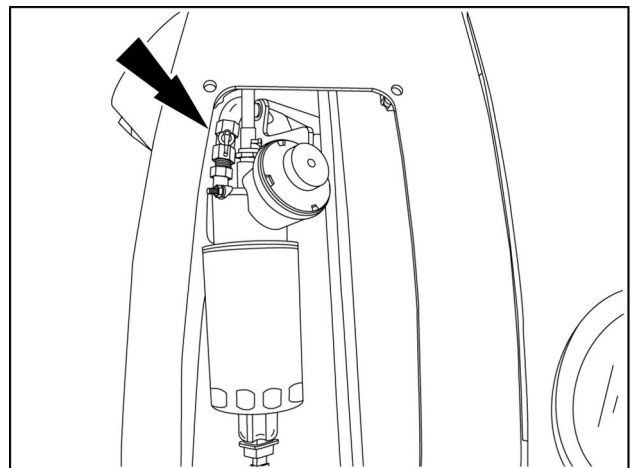
RAIL13DOZ0365AA 9

12. Install backup alarm cover (1) with two thumb screws (2).



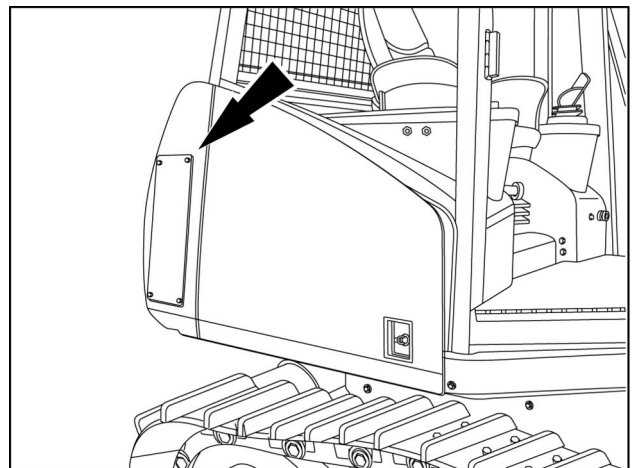
RAIL13DOZ0324AA 10

13. Open fuel supply valve.



RAIL13DOZ0363AA 11

14. Install right rear fuel filter access panel with four bolts.



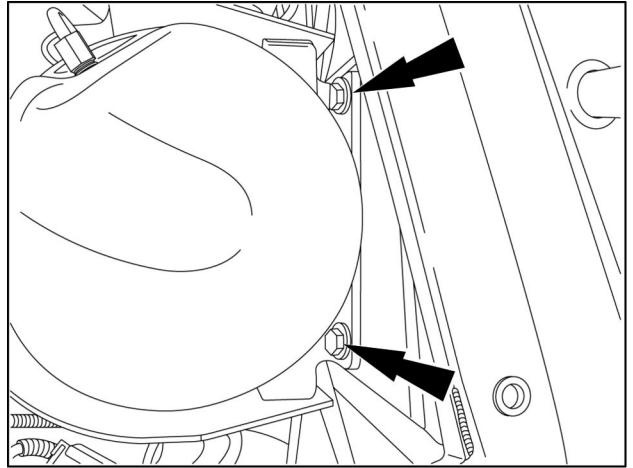
RAIL13DOZ0362AA 12

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.

NOTICE: Diesel oxidation catalyst weighs approximately 45 kg (100 lb). Use caution when installing to prevent personal injury or property damage.

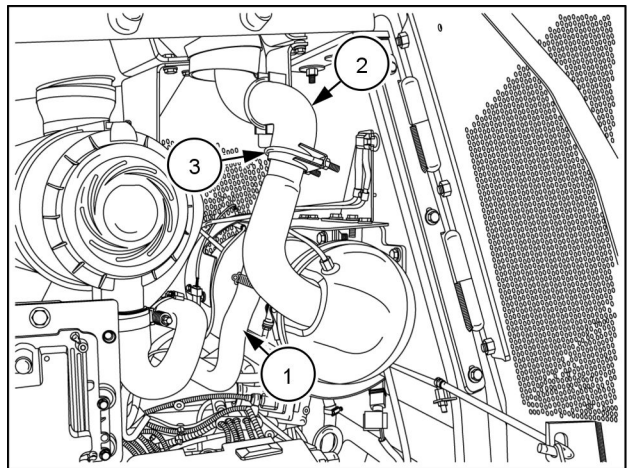
15. Attach an appropriate lifting device to diesel oxidation catalyst.

16. Install diesel oxidation catalyst to machine with four bolts and washers.



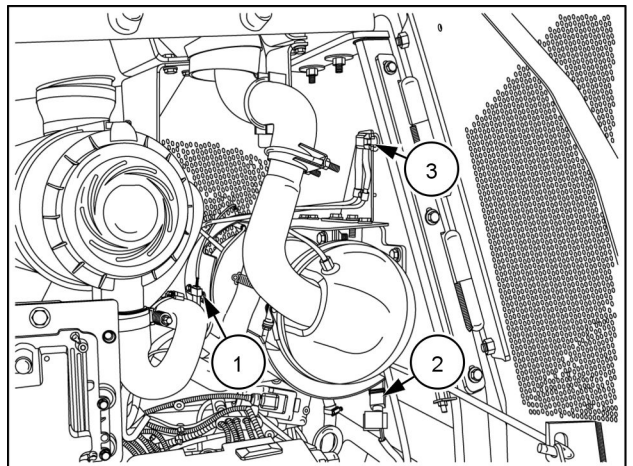
RAIL13DOZ0347AA 13

17. Remove lifting device from diesel oxidation catalyst.
18. Connect aspirator tube (1) to exhaust.



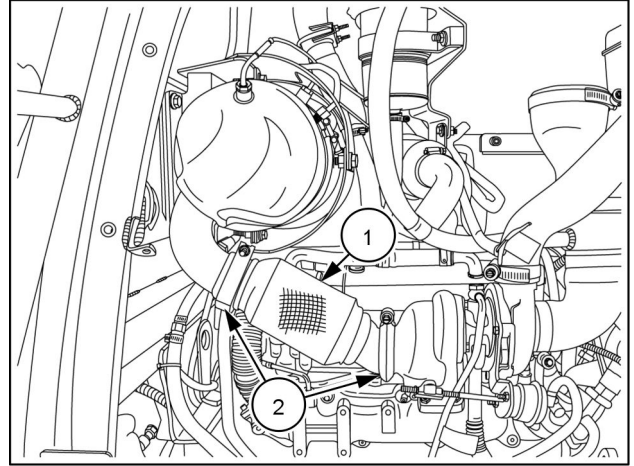
RAIL13DOZ0314BA 14

19. Install exhaust extension pipe (2) with clamp (3).
20. Connect two exhaust temperature sensor connectors (1), lambda sensor connector (2), and exhaust pressure sensor connector (3).



RAIL13DOZ0314BA 15

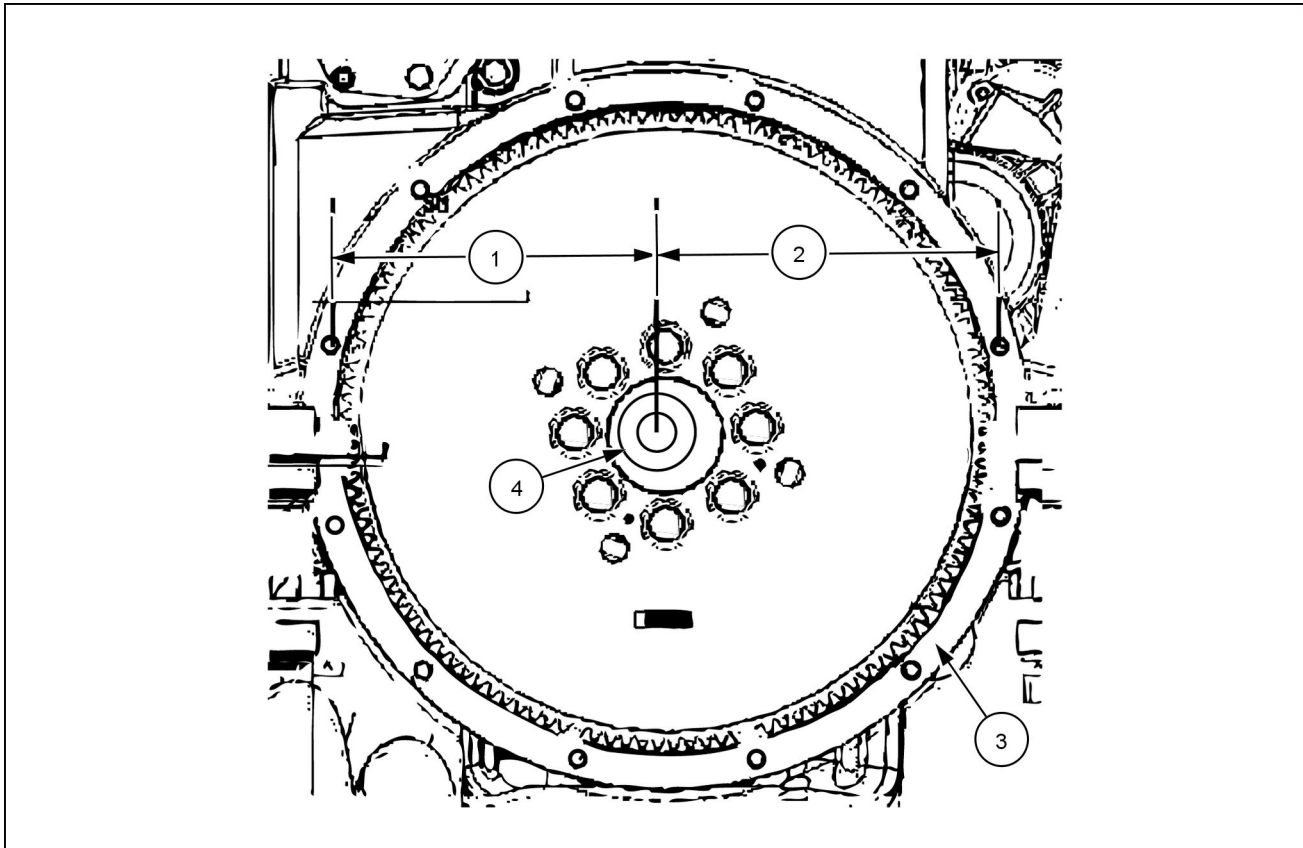
21. Install turbocharger to diesel oxidation catalyst flex tube **(1)** with two clamps **(2)**.



RAIL13DOZ0307BA 16

22. Install cooling package. See **Radiator - Install (10.400)**.
23. Connect batteries.

Engine - Assemble - Driveshaft alignment, engine and tandem pumps



RAIL13DOZ1485FA 1

Item	Description
1	Shaft center to center 9:30 hole
2	Shaft center to center 2:30 hole
3	Flywheel housing
4	Pump shaft

NOTE: All instructions specified are from the perspective of someone sitting in the operator's seat, facing the blade.

1. Angle of the driveshaft is **5.46°**.
2. Coming off the pump shaft centerline, the driveshaft is angled down **.75°** and to the left **5.41°**.
3. The distance from the flywheel housing to the pump mounting bracket is **149 mm (5.9 in)**
4. Measuring from the centerline of the flywheel holes at the 2:30 and 9:30 position, the distance from the 2:30 hole to a vertical plane through the pump shaft is **201.00 mm (7.91 in)**, and the distance from the 9:30 hole to a vertical plane through the pump shaft is **213.00 mm (8.39 in)**.

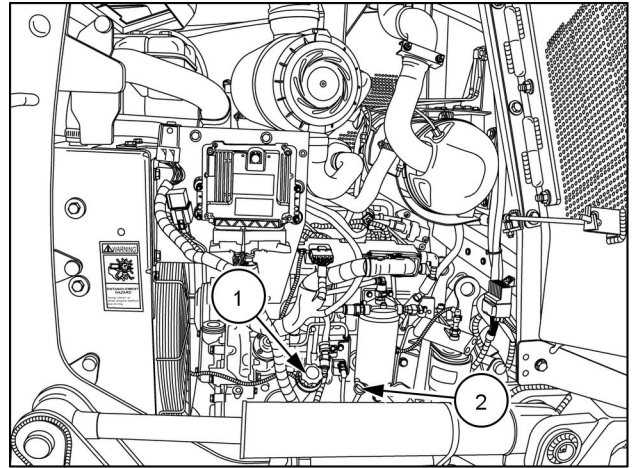
Engine - Check Oil level

The engine oil level should be checked every 10 hour shift or each day, whichever occurs first.

Prior operation:

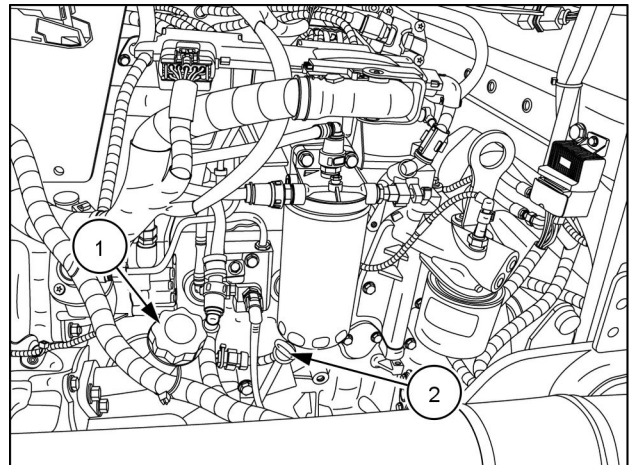
Keep all unauthorized personnel clear of the area. Park the machine on level ground, in neutral with the parking brake applied, and the attachment lowered to the ground, turn off the engine, remove the key, and verify that engine components have cooled or avoid contact. Make sure that all residual pressure is relieved from circuits before beginning maintenance.

The engine oil fill (1) and the oil dip stick (2) are located on the left side of the machine in the front engine compartment.



RAIL13DOZ1197AA 1

1. Remove the dipstick (2) to check the engine oil level.
2. Wipe the dipstick clean and reinsert. The oil level should register at the MAX mark.
3. Add oil, if necessary. Do not over fill engine oil.



RAIL13DOZ1199AA 2

NOTE: This procedure is best performed at the beginning of the work day with the engine cool and all oil drained to the pan.



Suggest:

If the above button click is invalid.

Please download this document

first, and then click the above link

to download the complete manual.

Thank you so much for reading

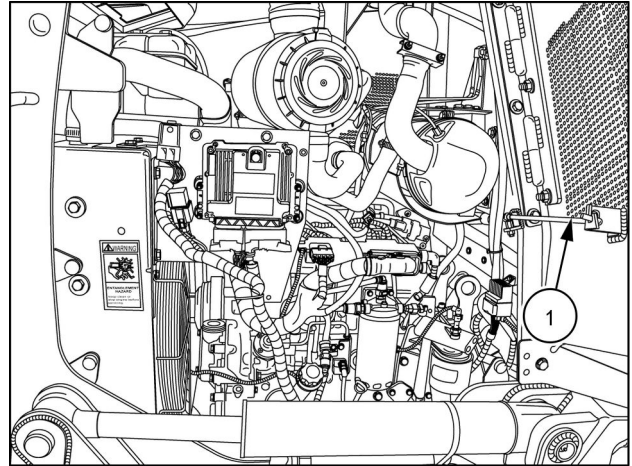
Engine - Replace - Engine oil and filter

Change the engine oil and filter when the hour meter registers 100 hours for a new machine during the initial run-in period. The engine oil and filter should be changed every 500 hours thereafter or more frequently when the engine operating conditions are severe.

Prior operation:

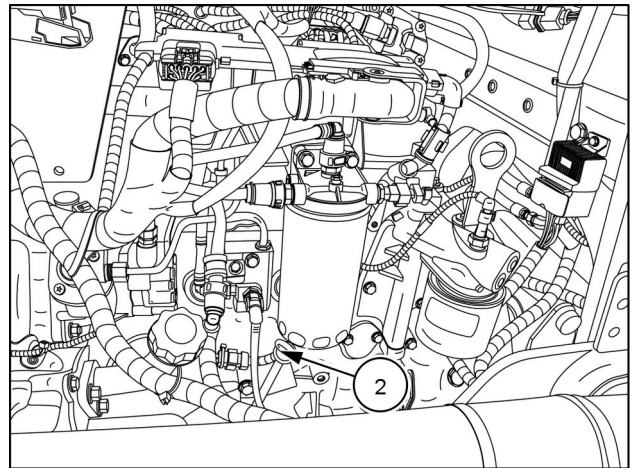
Keep all unauthorized personnel clear of the area. Park the machine on level ground, in neutral with the parking brake applied, and the attachment lowered to the ground, turn off the engine, remove the key, and verify that engine components have cooled or avoid contact. Make sure that all residual pressure is relieved from circuits before beginning maintenance.

1. Open the left front access door, and secure the door open with the door strut (1).
2. Remove the lower engine access panel.



RAIL13DOZ1197AA 1

3. Remove the oil dipstick (2). Warm oil (not hot) along with the removal of the oil dipstick (2) allows the oil to drain faster.



RAIL13DOZ1199AA 2

NOTE: If the machine is so equipped, and the special draining equipment is available, use the engine oil environmental drain located inside the left side engine access door.

<https://www.ebooklibonline.com>

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

<https://www.ebooklibonline.com>