

SERVICE MANUAL

E385C EVO

E405C EVO

Hydraulic Excavator

Part Number

48024968

1st Edition

English 08/2016



NEW HOLLAND

CONSTRUCTION



SERVICE MANUAL

**E385C EVO CRAWLER EXCAVATOR - TIER3
E405C EVO MASS EXCAVATOR MODEL-TIER 3**

Contents

INTRODUCTION

Engine.....	10
[10.106] Valve drive and gears	10.1
[10.101] Cylinder heads	10.2
[10.105] Connecting rods and pistons.....	10.3
[10.103] Crankshaft and flywheel.....	10.4
[10.218] Fuel injection system.....	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
[10.001] Engine and crankcase	10.10
[10.102] Pan and covers	10.11
[10.206] Fuel filters	10.12
[10.216] Fuel tanks	10.13
[10.250] Turbocharger and lines.....	10.14
[10.254] Intake and exhaust manifolds and muffler	10.15
[10.304] Engine lubrication system.....	10.16
Hydraulic systems.....	35
[35.000] Hydraulic systems.....	35.1
[35.300] Reservoir, cooler, and filters.....	35.2
[35.106] Variable displacement pump	35.3
[35.102] Pump control valves.....	35.4
[35.304] Combination pump units	35.5
[35.359] Main control valve.....	35.6
[35.352] Hydraulic swing system	35.7
[35.353] Hydraulic travel system	35.8

<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>

[35.354] Hydraulic central joint	35.9
[35.355] Hydraulic hand control	35.10
[35.356] Hydraulic foot control.....	35.11
[35.357] Pilot system	35.12
[35.360] Hammer and rotating bucket hydraulic system	35.13
[35.736] Boom hydraulic system	35.14
[35.737] Dipper hydraulic system.....	35.15
[35.738] Excavator and backhoe bucket hydraulic system.....	35.16
Frames and ballasting	39
[39.140] Ballasts and supports	39.1
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
Cab climate control	50
[50.100] Heating.....	50.1
[50.200] Air conditioning.....	50.2
Electrical systems	55
[55.301] Alternator.....	55.1
[55.302] Battery.....	55.2
[55.010] Fuel injection system.....	55.3
[55.014] Engine intake and exhaust system.....	55.4
[55.989] Exhaust Gas Recirculation (EGR) electrical system	55.5
[55.012] Engine cooling system	55.6
[55.013] Engine oil system	55.7
[55.051] Cab Heating, Ventilation, and Air-Conditioning (HVAC) controls.....	55.8
[55.050] Heating, Ventilation, and Air-Conditioning (HVAC) control system.....	55.9

[55.518] Wiper and washer system.....	55.10
[55.404] External lighting	55.11
[55.000] Electrical system	55.12
[55.015] Engine control system.....	55.13
[55.036] Hydraulic system control	55.14
[55.100] Harnesses and connectors.....	55.15
[55.201] Engine starting system	55.16
[55.202] Cold start aid	55.17
[55.408] Warning indicators, alarms, and instruments	55.18
[55.416] Swing control system	55.19
[55.417] Travel control system	55.20
[55.512] Cab controls.....	55.21
[55.514] Cab lighting	55.22
[55.525] Cab engine controls.....	55.23
[55.530] Camera.....	55.24
[55.640] Electronic modules.....	55.25
[55.992] Anti-theft system	55.26
[55.DTC] FAULT CODES.....	55.27
Booms, dippers, and buckets	84
[84.910] Boom	84.1
[84.912] Dipper arm	84.2
[84.100] Bucket.....	84.3
Platform, cab, bodywork, and decals.....	90
[90.120] Mechanically-adjusted operator seat.....	90.1
[90.150] Cab.....	90.2
[90.156] Cab windshield and windows	90.3
[90.100] Engine hood and panels	90.4



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.

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 - General information

Cleaning

Clean the metal parts with cleaning solution that meets the standard and steam cleaning. (except for bearings)

After cleaning, dry well, and inject oil in all parts.

Also inject oil into the bearings after drying.

Inspection

When disassembling parts, check all the parts.

If there are any worn or damaged parts, replace them.

Inspect carefully to prevent initial breakdowns.

Bearing

Replace any loose bearings.

Air dry bearings before installing them.

Needle bearing

When inserting needle bearings, be very careful not to damage them.

Apply grease to the section where the needle bearing will be inserted.

Gear

Check that there is no wear and no damage.

Oil seal, O-ring, gasket

Always install new oil seals, O-rings, and gaskets.

Apply grease to sections where oil seals and O-rings will be inserted.

Shaft

Check that there is no wear and no damage.

Check the bearings and check for damaged oil seals on the shaft.

Service parts

Install NEW HOLLAND CONSTRUCTION genuine service parts.

When placing an order, check the parts catalog. It contains the NEW HOLLAND CONSTRUCTION genuine part numbers.

Any breakdowns arising from the installation of non-genuine parts are not covered by the warranty.

Lubricants (fuel, hydraulic oil)

Use the oil from the specified company or specified in the operator's manual or service Manual.

Any breakdowns arising from any fuel or hydraulic oil other than those specified are not covered by the warranty.



SERVICE MANUAL

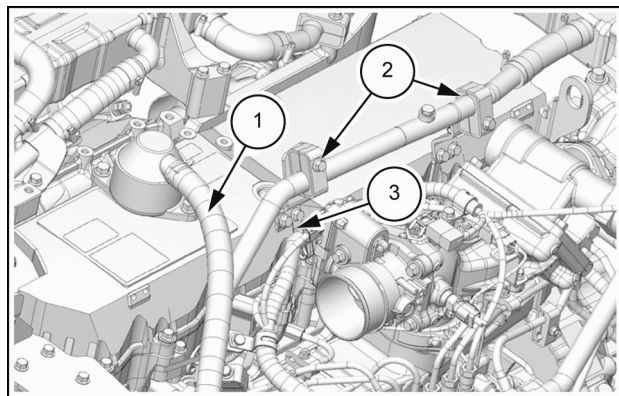
Engine

**E385C EVO CRAWLER EXCAVATOR - TIER3
E405C EVO MASS EXCAVATOR MODEL-TIER 3**

Valve cover - Remove

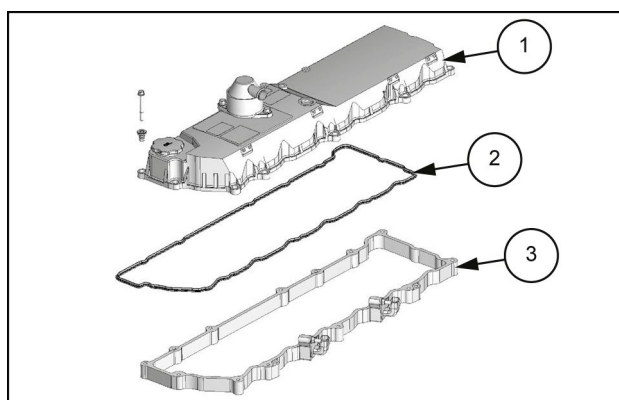
Cylinder head cover removal

1. Disengage the water pipe bracket **(2)** from the cylinder head cover.
2. Disengage the ventilation hose **(1)** from the air breather.
Disengage the clip **(3)**.



SMIL14CEX2969AB 1

3. Remove the cylinder head cover **(1)** from the lower cover **(3)**.
4. Remove the head cover gasket **(2)** from the cylinder head cover **(1)**.



SMIL14CEX2970AB 2

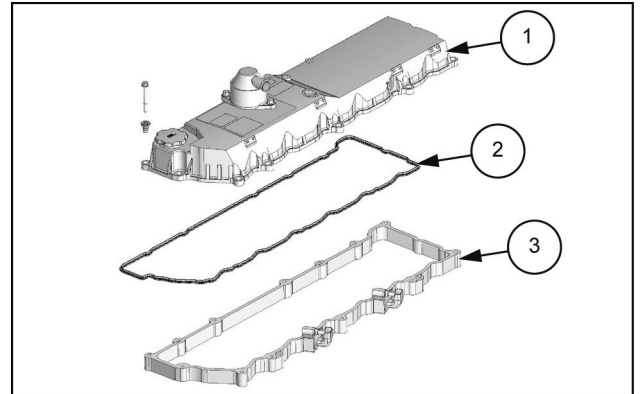
Valve cover - Install

Cylinder head cover installation

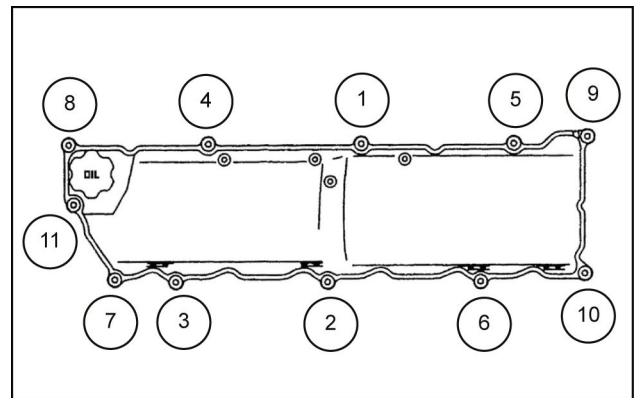
1. Align the head cover gasket (2) to the cylinder head cover (1).
2. Install the cylinder head cover (1) to the lower cover (3).

Tightening torque: **13.0 N·m (115.1 lb in)**

NOTE: Referring to the tightening order in the diagram, temporarily tighten all bolts and then completely tighten them.

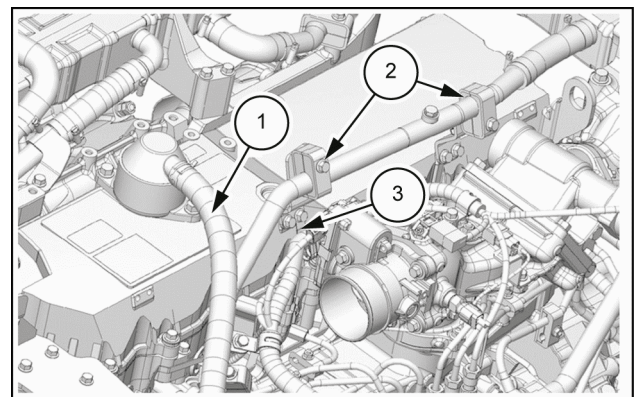


SMIL14CEX2970AB 1



SMIL14CEX2971AB 2

3. Connect the ventilation hose (1) to the air breather.
 4. Connect the water pipe bracket (2) to the cylinder head cover.
- Tightening torque: **20 N·m (14.75 lb ft)**
5. Connect the clip (3).



SMIL14CEX2969AB 3

Cylinder head - Remove

Battery ground cable disconnect

1. Disconnect the battery ground cable from the battery.

Coolant drain

1. Drain the coolant from the radiator.



CAUTION:

- After the coolant is discharged, make sure to tighten the drain plug.

Engine harness disconnect

1. Disconnect the engine harness from the engine assembly.

NOTE: Disconnect each connector.

Turbocharger assembly removal

1. Remove the air cleaner duct from the air cleaner assembly and the turbocharger assembly.
2. Remove the air intake hose from the turbocharger assembly and the intercooler.
3. Remove the exhaust pipe from the turbocharger.
4. Disconnect the oil feed pipe (1) from the turbocharger assembly.

NOTE: Remove the clip (2).

5. Remove the oil feed pipe from the pipe bracket.

NOTE: Remove the clip (2).

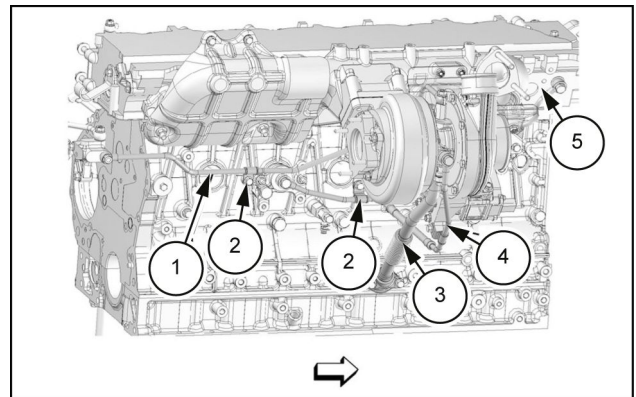
6. Disconnect the oil return pipe (3) from the turbocharger assembly.
7. Remove the oil return pipe (3) from the cylinder block.
8. Disconnect the water return pipe (5) from the turbocharger assembly.
9. Remove the water return pipe (5) from the cylinder head assembly.
10. Disconnect the water feed pipe (4) from the turbocharger assembly.

NOTE: Remove the clip (2).

11. Remove the water feed pipe (4) from the cylinder block.

NOTE: Remove the clip (2).

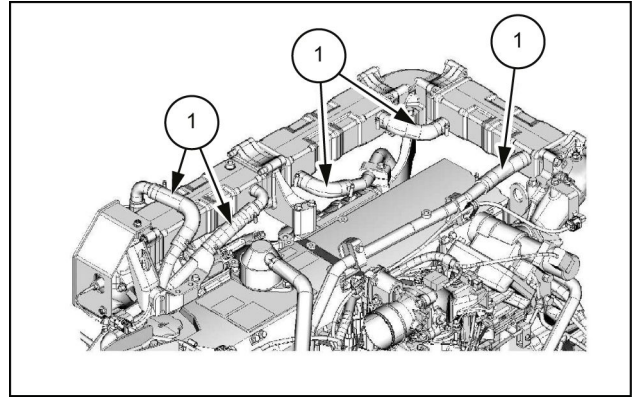
12. Disconnect the harness connector from the turbocharger assembly.
13. Remove the turbocharger assembly from the exhaust manifold.



SMIL14CEX2955AB 1

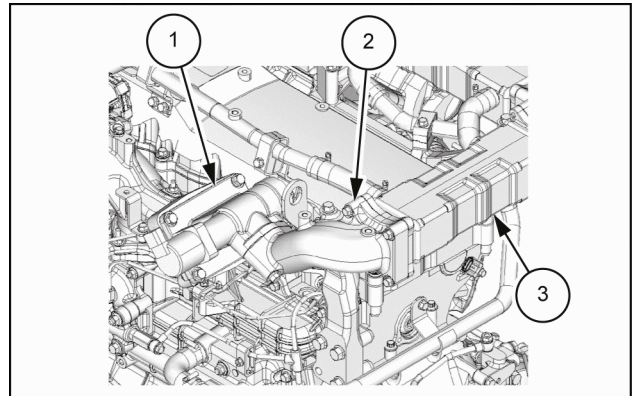
EGR cooler removal

1. Disconnect the water rubber hose **(1)** from the EGR cooler.



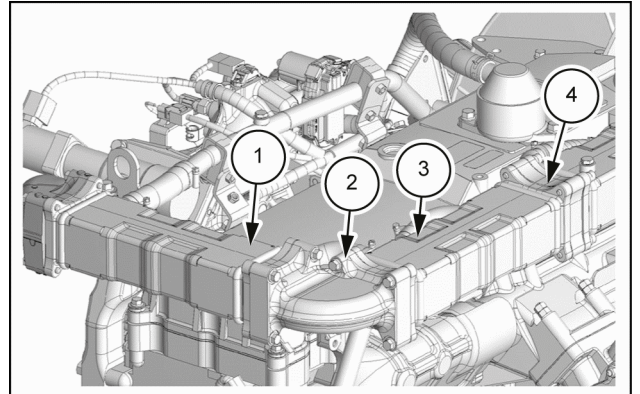
SMIL14CEX2982AB 2

2. Remove the EGR pipe B **(2)** from the EGR valve **(1)** and the EGR cooler C **(3)**.



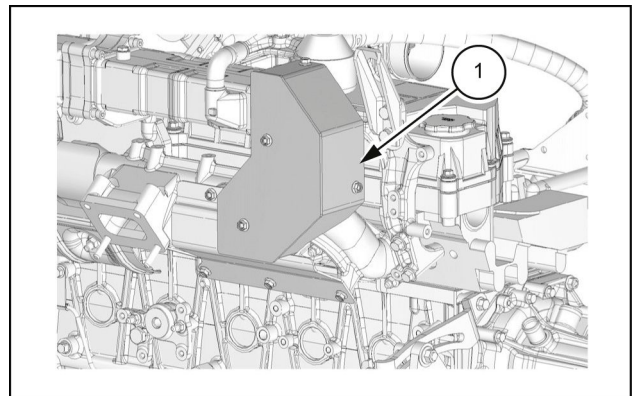
SMIL14CEX2983AB 3

3. Remove the EGR cooler C **(1)** from the EGR bracket C.
4. Remove the EGR bracket C **(2)** from the EGR cooler B.
5. Remove the EGR cooler B **(3)** from the EGR cooler bracket A.
6. Remove the EGR cooler bracket A **(4)** from the EGR cooler A.



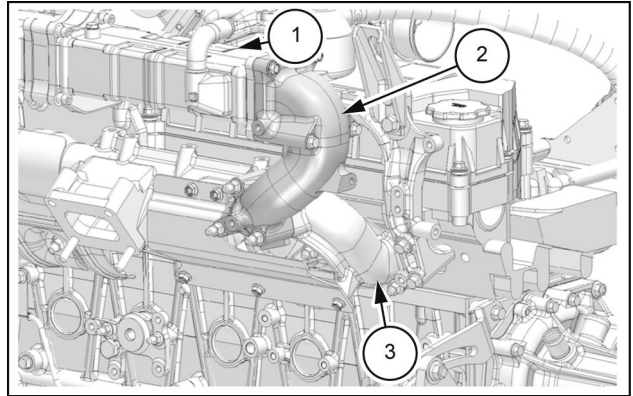
SMIL14CEX2984AB 4

7. Remove the EGR heat protector **(1)** from the EGR pipe A.



SMIL14CEX2978AB 5

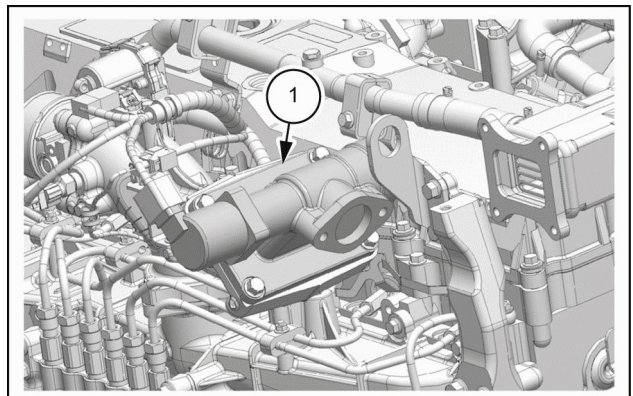
8. Remove the EGR cooler A (1) from the EGR pipe A (2).
9. Remove the EGR pipe A (2) from the exhaust manifold (3).



SMIL15CEX3419AB 6

EGR valve removal

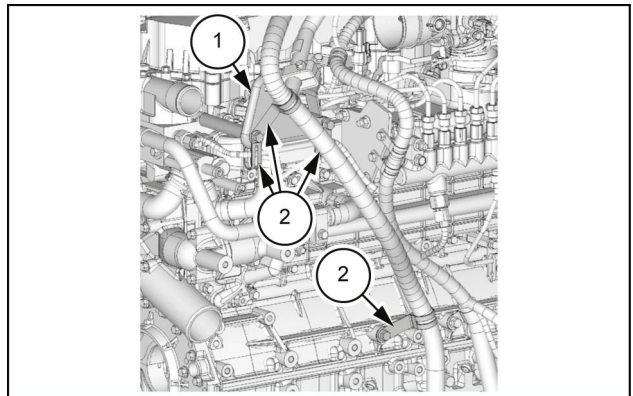
1. Disconnect the harness connector from the EGR valve (1).
2. Remove the EGR valve (1) from the inlet pipe.



SMIL14CEX2987AB 7

Oil separator bracket removal

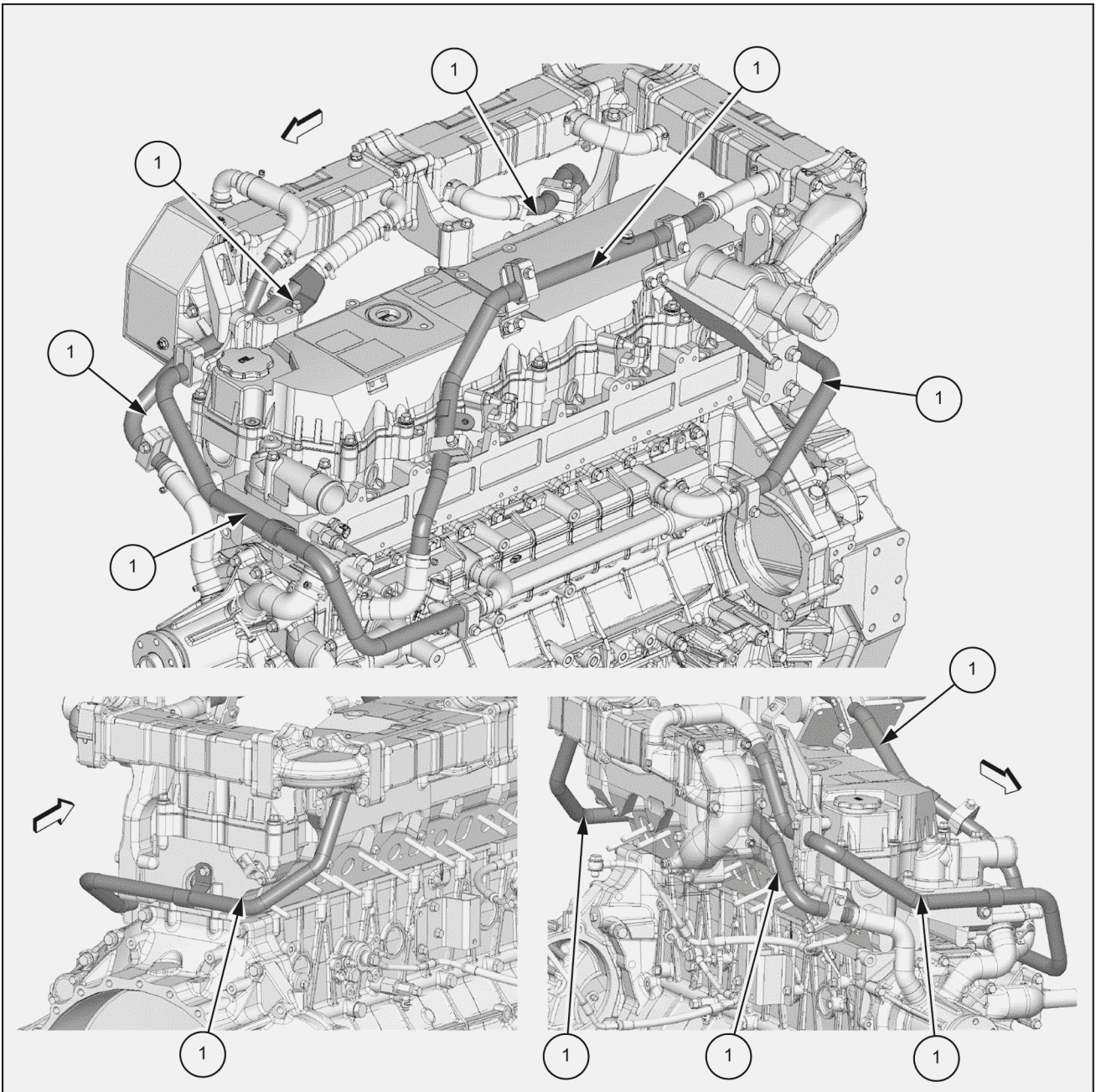
1. Remove the clip (2) from the cylinder block.
2. Remove the ventilation hose from the air breather.
3. Remove the oil separator bracket (1) from the cylinder head assembly.



SMIL14CEX2988AB 8

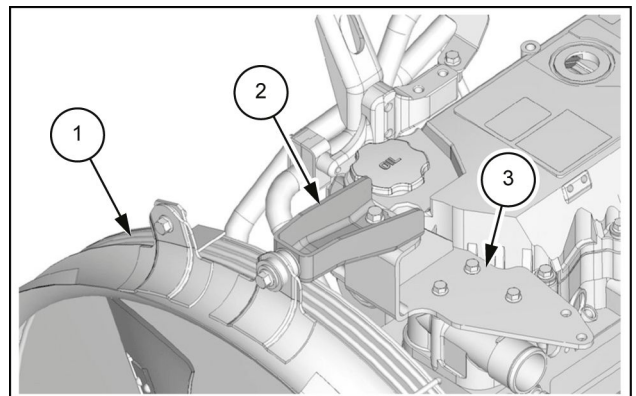
EGR cooler water pipe removal

1. Remove the EGR cooler water pipe (1) from the engine assembly.



SMIL14CEX2989GB 9

2. Remove the fan guide stay (2) from the fan guide (1) and the fan guide bracket (3).



SMIL14CEX2990AB 10



Suggest:

If the above button click is invalid.

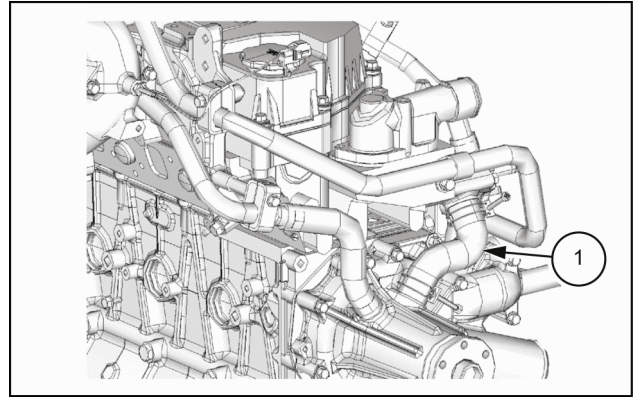
Please download this document

first, and then click the above link

to download the complete manual.

Thank you so much for reading

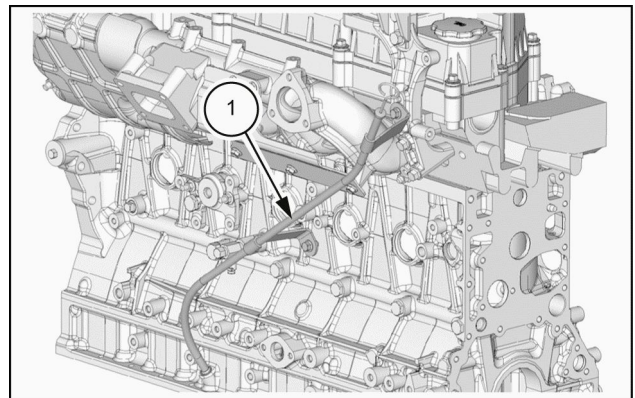
3. Disconnect the radiator upper hose from the water outlet pipe.
4. Remove the water bypass hose (1) from the water pump assembly and the water duct.



SMIL14CEX2991AB 11

Oil level gauge guide tube removal

1. Remove the oil level gauge from the oil level gauge guide tube (1).
2. Disconnect the oil level gauge guide tube (1) from the front engine hanger bracket.
3. Remove the oil level gauge guide tube (1) from the cylinder block.



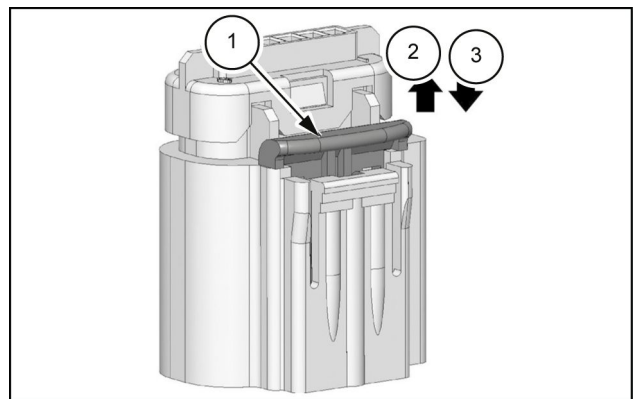
SMIL14CEX2992AB 12

Intake throttle valve removal

1. Remove the air duct from the intake throttle valve.
2. Disconnect the harness connector from the intake throttle valve.

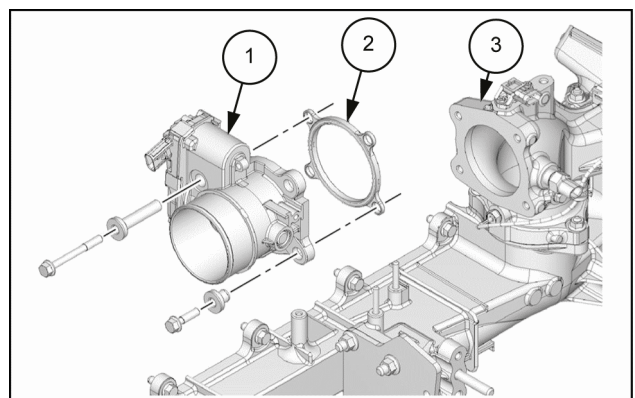
NOTE: Pull the lock operation portion to release the lock.

1. Lock operation section
2. Lock release
3. Lock



SMIL14CEX2993AB 13

3. Remove the intake throttle valve (1) and the gasket (2) from the inlet pipe (3).



SMIL14CEX2994AB 14

<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>