

SERVICE MANUAL

E485C EVO / E505C EVO Tier III Crawler Excavator

Part number 48044251

English

September 2016





SERVICE MANUAL

E485C EVO Crawler excavator LC version (TIER 3)
E505C EVO Crawler excavator LC version (TIER 3)

Contents

INTRODUCTION

Engine.....	10
[10.001] Engine and crankcase	10.1
[10.102] Pan and covers	10.2
[10.106] Valve drive and gears	10.3
[10.101] Cylinder heads	10.4
[10.105] Connecting rods and pistons.....	10.5
[10.103] Crankshaft and flywheel.....	10.6
[10.216] Fuel tanks	10.7
[10.206] Fuel filters	10.8
[10.218] Fuel injection system.....	10.9
[10.250] Turbocharger and lines.....	10.10
[10.254] Intake and exhaust manifolds and muffler	10.11
[10.501] Exhaust Gas Recirculation (EGR) exhaust treatment.....	10.12
[10.400] Engine cooling system	10.13
[10.414] Fan and drive	10.14
[10.310] Aftercooler.....	10.15
[10.304] Engine lubrication system.....	10.16
[10.408] Oil cooler and lines.....	10.17
Hydraulic systems.....	35
[35.000] Hydraulic systems.....	35.1
[35.300] Reservoir, cooler, and filters.....	35.2
[35.104] Fixed displacement pump.....	35.3
[35.106] Variable displacement pump	35.4
[35.102] Pump control valves.....	35.5
[35.359] Main control valve.....	35.6
[35.357] Pilot system	35.7

<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>

[35.752] Hydraulic fan drive cooling system	35.8
[35.355] Hydraulic hand control	35.9
[35.356] Hydraulic foot control.....	35.10
[35.352] Hydraulic swing system	35.11
[35.353] Hydraulic travel system	35.12
[35.354] Hydraulic central joint	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
[35.360] Hammer and rotating bucket hydraulic system	35.17
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
[55.000] Electrical system	55.1
[55.100] Harnesses and connectors.....	55.2
[55.525] Cab engine controls.....	55.3
[55.015] Engine control system.....	55.4
[55.201] Engine starting system	55.5
[55.301] Alternator.....	55.6
[55.302] Battery.....	55.7

[55.202] Cold start aid	55.8
[55.010] Fuel injection system	55.9
[55.014] Engine intake and exhaust system.....	55.10
[55.989] Exhaust Gas Recirculation (EGR) electrical system	55.11
[55.012] Engine cooling system	55.12
[55.013] Engine oil system	55.13
[55.640] Electronic modules	55.14
[55.512] Cab controls.....	55.15
[55.036] Hydraulic system control	55.16
[55.051] Cab Heating, Ventilation, and Air-Conditioning (HVAC) controls.....	55.17
[55.050] Heating, Ventilation, and Air-Conditioning (HVAC) control system.....	55.18
[55.416] Swing control system	55.19
[55.417] Travel control system	55.20
[55.530] Camera.....	55.21
[55.518] Wiper and washer system.....	55.22
[55.404] External lighting	55.23
[55.514] Cab lighting	55.24
[55.408] Warning indicators, alarms, and instruments	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
[90.150] Cab.....	90.1
[90.156] Cab windshield and windows	90.2
[90.120] Mechanically-adjusted operator seat.....	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.

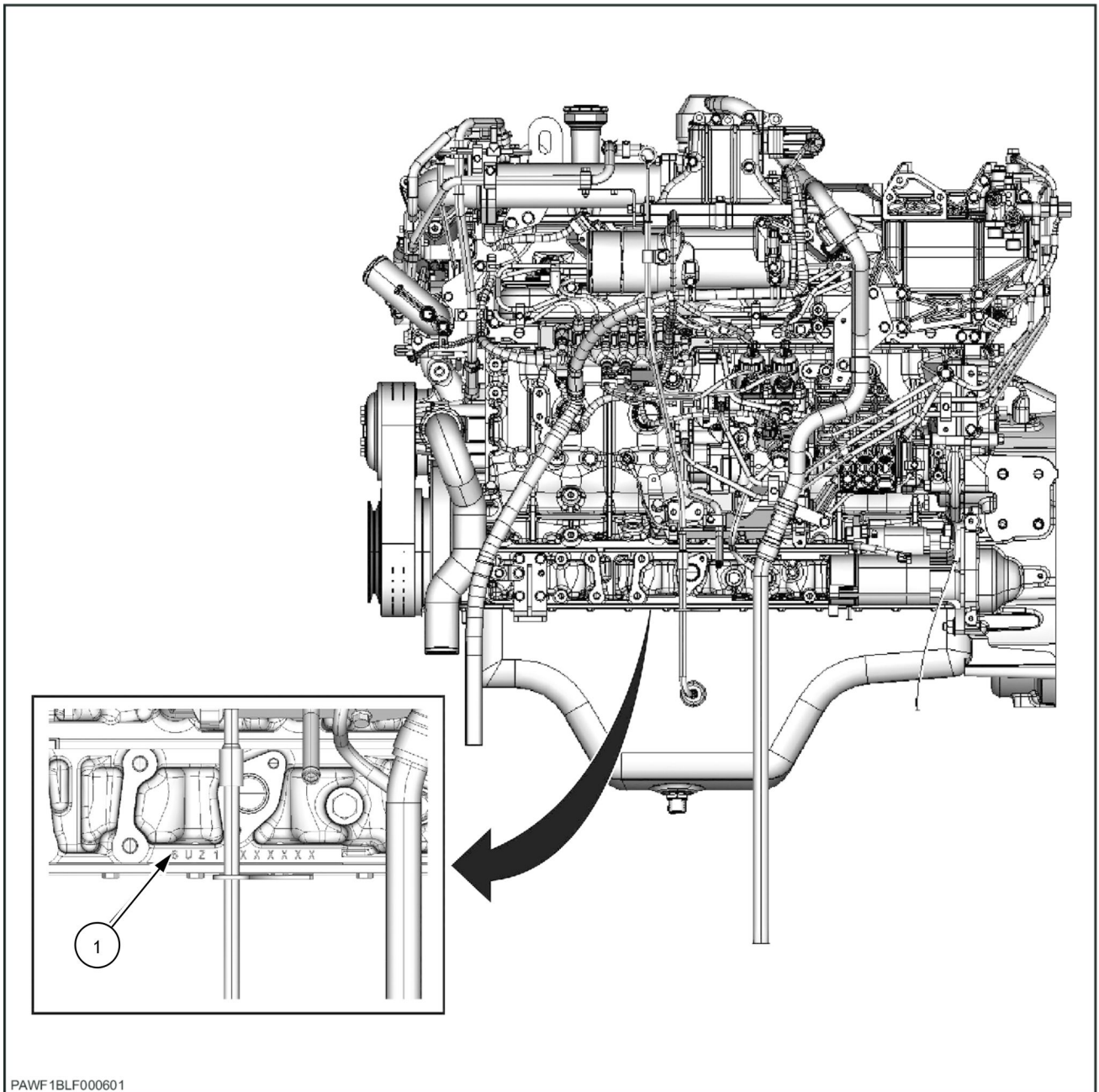


SERVICE MANUAL

Engine

**E485C EVO Crawler excavator LC version (TIER 3)
E505C EVO Crawler excavator LC version (TIER 3)**

Engine - Identification

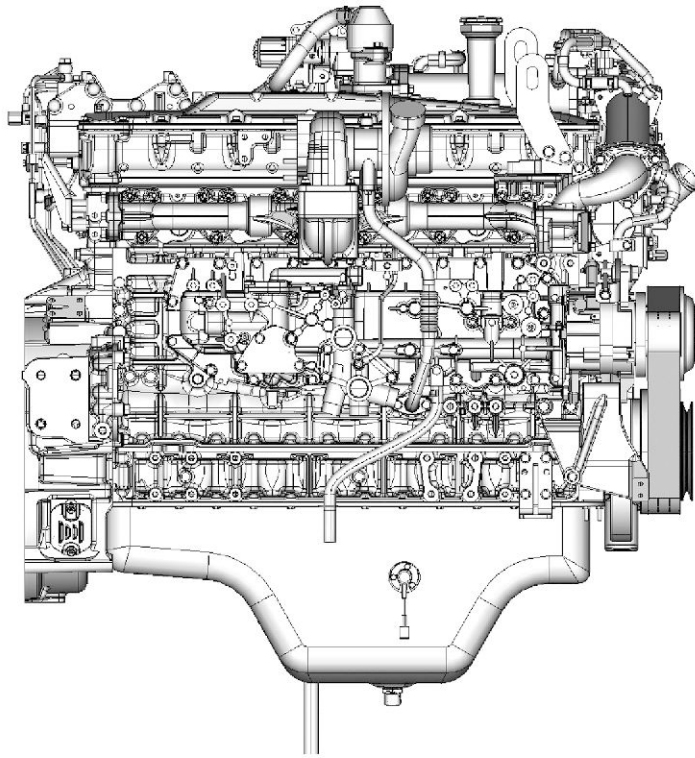


PAWF1BLF000601 1

1. Engine number stamping

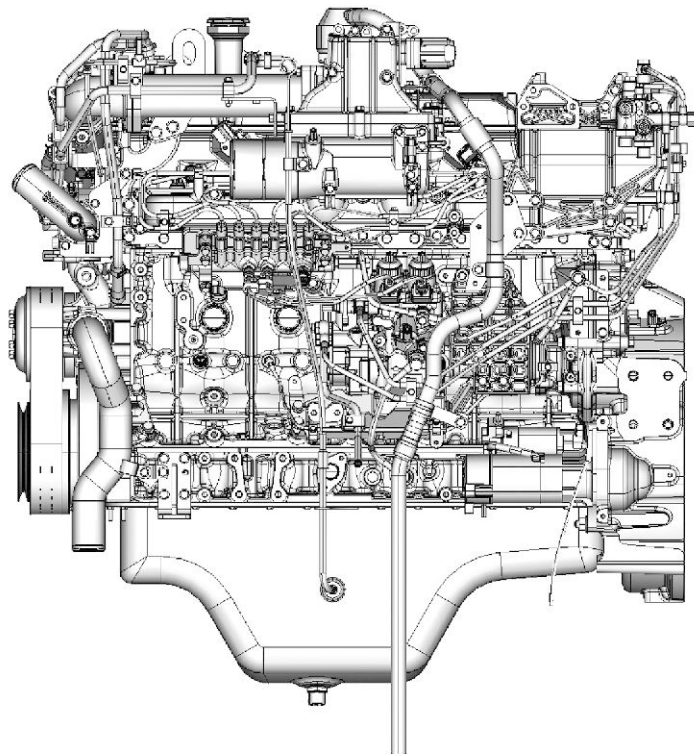
Engine - External view

Engine structural diagram



PAWF1BMF001601

PAWF1BMF001601 1



PAWF1BMF001501

PAWF1BMF001501 2

Engine - Prepare

⚠ WARNING

Escaping fluid!

Hydraulic fluid or diesel fuel leaking under pressure can penetrate the skin and cause infection or other injury. To prevent personal injury: Relieve all pressure before disconnecting fluid lines or performing work on the hydraulic system. Before applying pressure, make sure all connections are tight and all components are in good condition. Never use your hand to check for suspected leaks under pressure. Use a piece of cardboard or wood for this purpose. If injured by leaking fluid, see your doctor immediately.

Failure to comply could result in death or serious injury.

W0178A

⚠ WARNING

Avoid injury!

Shut off the engine, remove the key, and make sure all motion is stopped before servicing the machine.

Failure to comply could result in death or serious injury.

W1128A

⚠ WARNING

Crushing hazard!

The lifting systems must be operated by qualified personnel who are aware of the correct procedures to follow. Make sure all lifting equipment is in good condition, and all hooks are equipped with safety latches.

Failure to comply could result in death or serious injury.

W0256A

⚠ WARNING

Heavy objects!

Lift and handle all heavy components using lifting equipment with adequate capacity. Always support units or parts with suitable slings or hooks. Make sure the work area is clear of all bystanders.

Failure to comply could result in death or serious injury.

W0398A

⚠ WARNING

Explosion hazard!

Batteries emit explosive gases. Always ventilate when using in an enclosed area or when charging. Keep the battery away from sparks, open flames, and other ignition sources.

Failure to comply could result in death or serious injury.

W0369A

NOTICE: *Keep away from flames.*

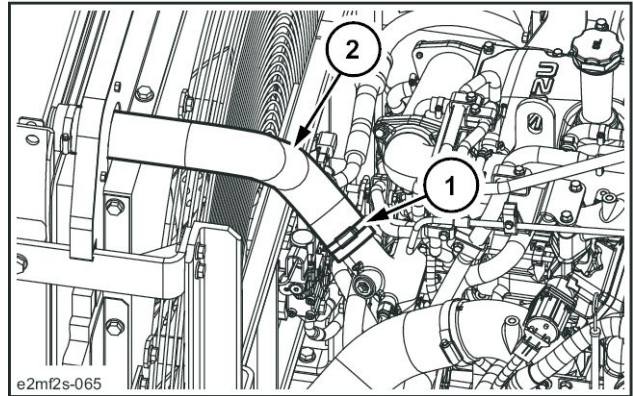
NOTICE: *The air conditioner circuit is filled with high pressure gas, gas may spray out dangerously when loosening lines.*

Items to prepare:

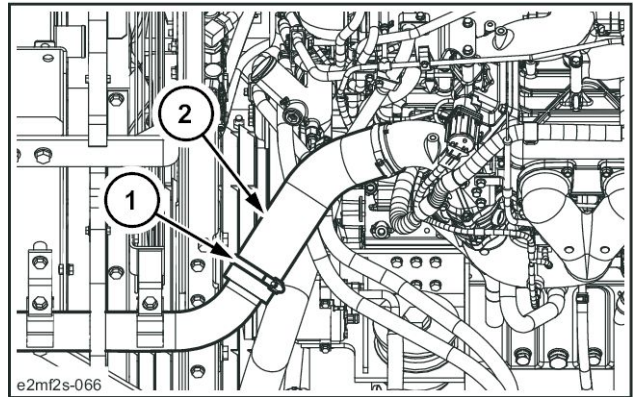
- Wrenches [**7 mm, 8 mm, 13 mm, 17 mm, 19 mm, 36 mm**]
- Box wrench [**41 mm**]
- Shackle (with the required lifting capacity) x 2
- Wire rope (with the required breaking load)
- Liftcrane (with the required lifting capacity)
- Marking pen
- Cap
- Plug
- Waste oil can
- Rag
- Cleaning fluid
- Wood plank, etc.

Engine - Remove

1. Drain the engine oil.
2. Drain the radiator coolant. (For details, see **Radiator - Remove (10.400)**)
3. Remove the engine hood. (For details, see **Hood - Remove (90.100)**)
4. Remove the muffler. (For details, see **Exhaust muffler - Remove (10.254)**)
5. Remove the hydraulic pump. (For details, see **Pump - Remove (35.106)**)
6. Use a wrench [**7 mm**] to loosen the hose band **(1)** on the radiator, and then remove the upper hose **(2)**.



7. Use a wrench [**8 mm**] to loosen the hose band **(1)** on the intercooler, and then remove the hose **(2)**.
 - Use caps to cover the lines and hoses to prevent any entry of water, dust or dirt.





Suggest:

If the above button click is invalid.

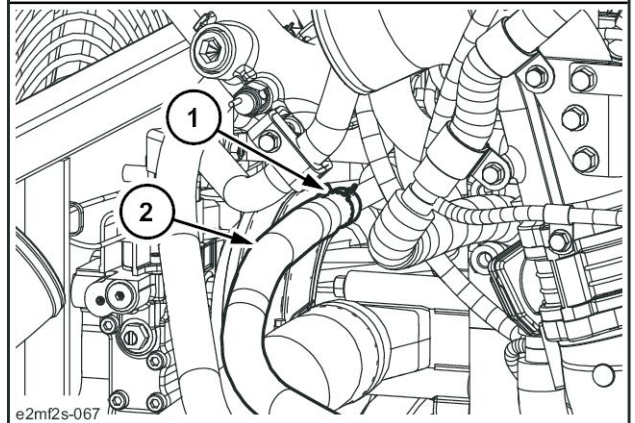
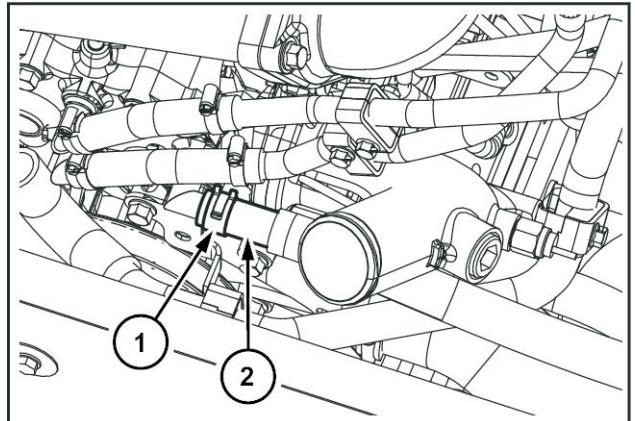
Please download this document

first, and then click the above link

to download the complete manual.

Thank you so much for reading

8. Remove the hose band (1), and then remove the heater hose (2). Install caps or plugs to the engine and hoses to prevent any entry of water, dust or dirt.



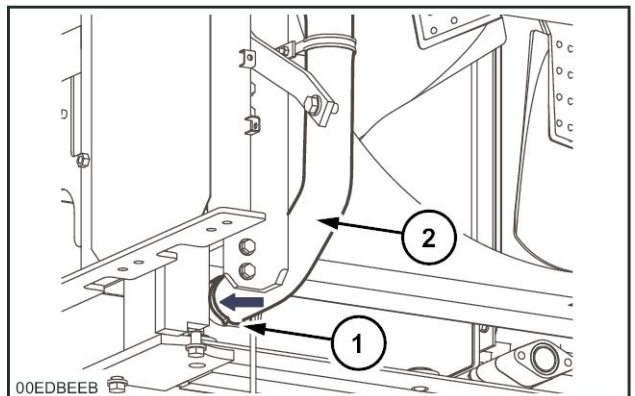
e2mf2s-067

E2MF2S-067 3

9. Use a wrench [7 mm] to loosen the hose band (1) on the radiator, and then remove the lower hose (2).

- Use caps to cover the radiator and hoses to prevent any entry of water, dust or dirt.
- Before removing the radiator hose, completely drain the coolant.

Tightening torque for band installation: **4.9 - 5.9 N·m (3.614 - 4.352 lb ft)**



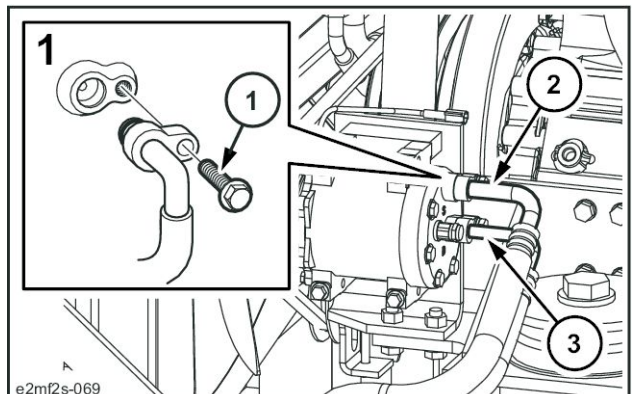
00EDBEEB

00EDBEEB 4

10. Use a wrench [13 mm] to loosen the line bolts (1) at 2 locations, and then remove the 2 lines (2) and (3) from the compressor.

- Always remove the low-pressure (suction side) line (2) first.
- Install caps or plugs to the compressor and lines to prevent any entry of water, dust or dirt.

Tightening torque for bolt installation: **19.6 - 24.5 N·m (14.5 - 18.1 lb ft)**



e2mf2s-069

E2MF2S-069 5

<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>