

Oil System Update

Service Category Service

Section Function Group 221

Technician Skill Level A

Market North America

Applicability

VOLVO

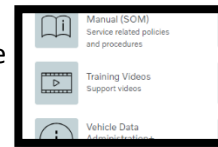
Years	Models
2025	VNL

Introduction

Volvo Trucks has identified that certain VNL model vehicles equipped with the 13L engine may encounter low oil pressure faults. The oil pump stator may wear against the oil pump housing, resulting in premature pump wear and reduced oil pressure. Please follow the instructions below to replace the oil pump, oil control valve, oil control feed lines and install an Accessory kit 85170727.

Taking the truck out of service immediately for this campaign is unnecessary, but the repair should be completed at the next convenient opportunity. This repair, however, must be performed before the truck is sold to any customer.

For detailed instructions on completing this repair, please refer to the installation video available on the Trucks Dealer Portal (TDP) under the Training Video APP. <https://devguide.volvotrucks.us/video-library/>



Production Change Information

This bulletin applies to vehicles built within the specified production changes below.

Brand	Engine	Emission Level	Starting Build Date	Ending Build Date
Volvo	13L	EM-USA24	08-Jan-2024	24-July-2024

Warranty Information

Engine oil should be claimed in other cost.

This repair is covered by an authorized Service Program. Reimbursement is obtained through the normal claim handling process.		
Claim Type (used only when uploading from the Dealer Bus. Sys.)		B
Main Labor Code	Description	Hours
1720-16-09-01	Campaign, general (0.1) X 36	3.6
Causal Part	23297893	
SCC Authorization Code	S0203	
Expiration Date	October 31, 2025	

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Parts Information

Part Numbers	Part Names	Quantity
24672305	Oil pump	1
24362082	Pipe	1
24362448	Pipe	1
24362440	Pressure pipe	1
969446	Flange screw	2
969445	Flange screw	4
24386946	Connection block	1
24528310	Control valve	1
21092243	Sealing ring	4
22194880	Sealing ring	2
21780376	Sealing ring	1
23896921	Sealing ring	2
23759508	Oil filter kit (cartridge type)	2 (if applicable)
23151592	Oil filter (spin on type)	2 (if applicable)
CHO257008GALLON3 or MVBV5W30DRUM or MVBV5W30PAIL	Engine oil	10 Gals

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Required Tools & Equipment

- N/A

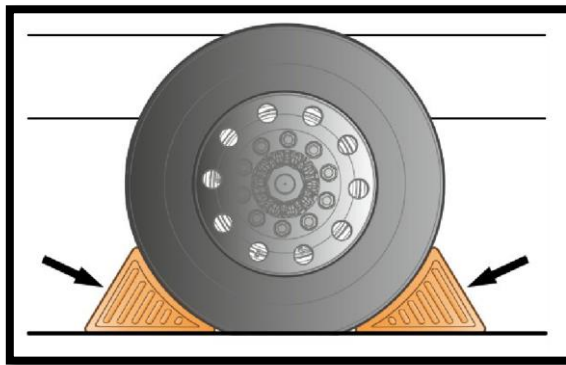
Calibration Information

- N/A

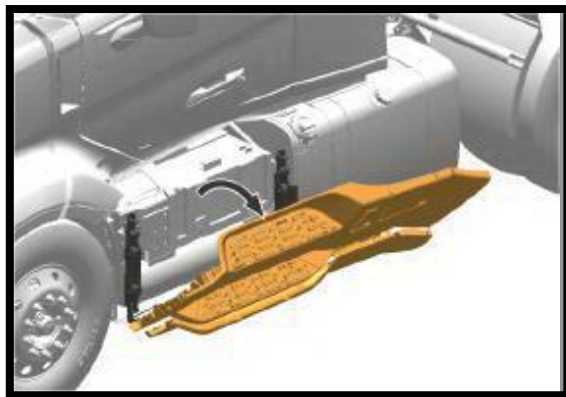
Repair Procedure

Oil pump replacement

1. Secure truck for service.
2. Apply the parking brake.
3. Place the gear lever in neutral.
4. Install the wheel chocks.



5. Unlatch the fairing.
6. Remove the tether.
7. Remove the fairing.

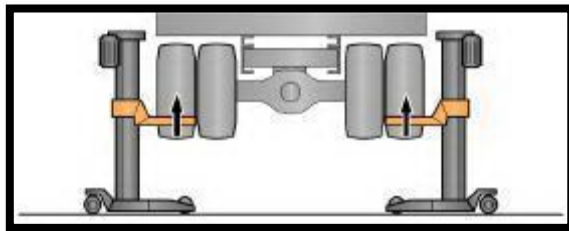


8. Decommission the low voltage system following Operation **3100-09-01-06 Low Voltage System, Decommissioning** in Impact.
9. Unlatch and raise hood.
10. Remove the dipstick.

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11. Raise the vehicle and support.



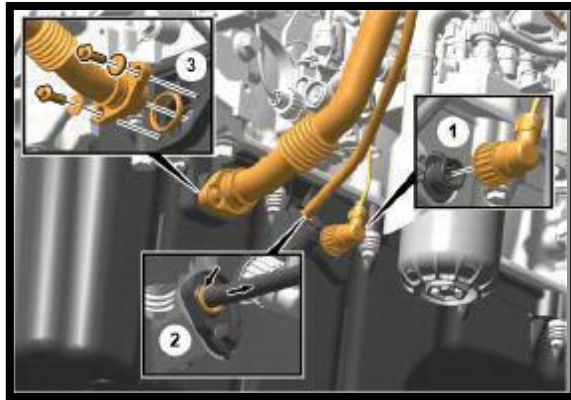
12. Position a draining container.
13. Remove the drain plug along with the gasket.
14. Drain the oil.
15. Install the gasket on the plug.
16. Install the drain plug and torque to spec.



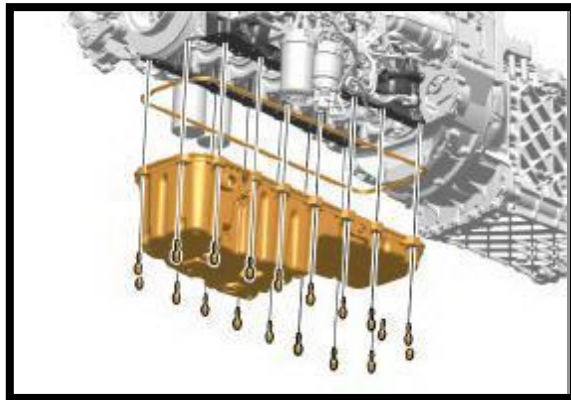
Tightening torque	
Oil pan, drain plug	60 ±10 Nm (44 ±7 lb ·ft)

17. Disconnect the connector (1).
18. Depress the release ring (2) remove the dipstick pipe.
19. Remove the screws and washers.
20. Remove the pipe (3).
21. Remove the sealing ring.

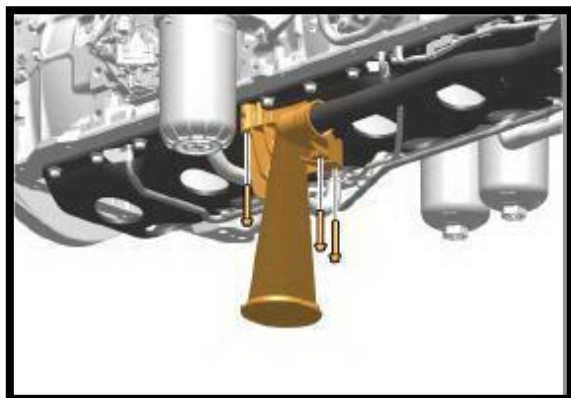
Oil System Update



22. Remove the screws.
23. Remove the oil pan.

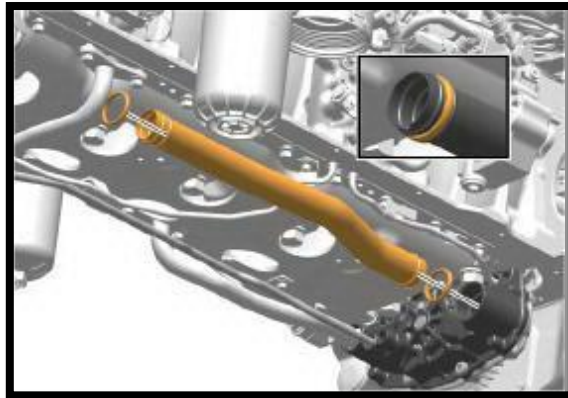


24. Remove the screws.
25. Remove the strainer.

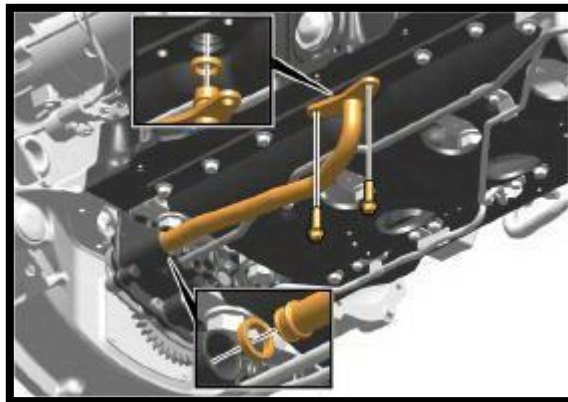


26. Remove the pipe.
27. Remove the sealing rings.

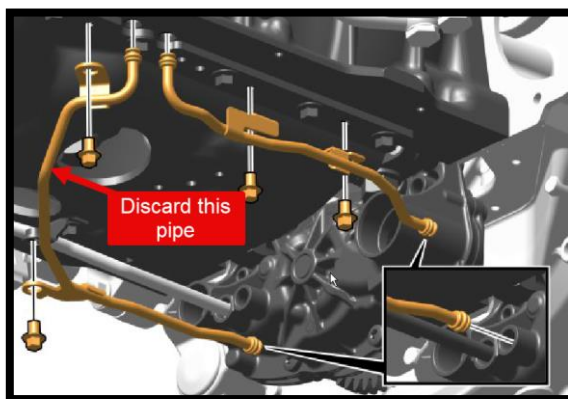
Oil System Update



28. Remove the screws.
29. Remove the pressure pipe.
30. Remove the sealing rings.

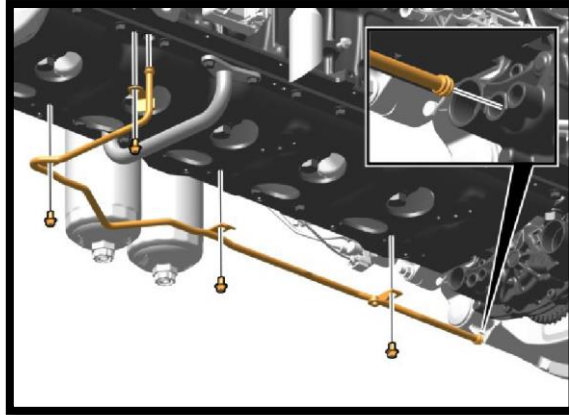


31. Remove the screws.
32. Remove the pipes along with the brackets.
33. Discard the long pipe.

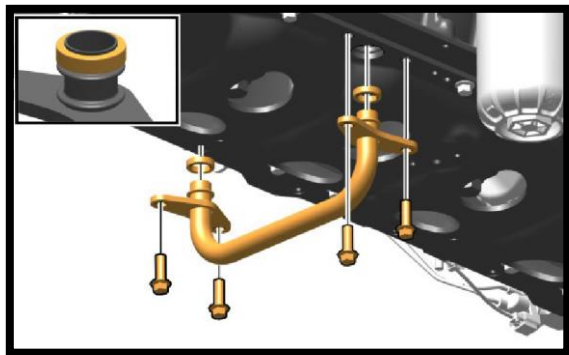


34. Remove the screws.
35. Remove the pipe along with the brackets.
36. Discard the pipe.

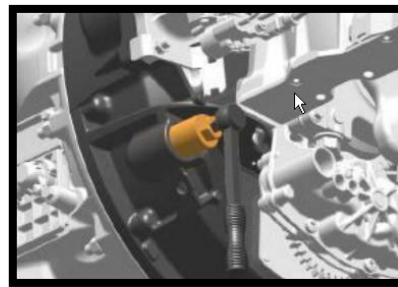
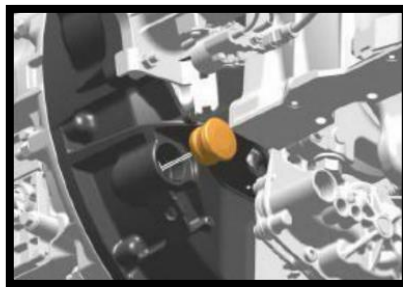
Oil System Update



37. Remove the screws.
38. Remove the pipe.
39. Discard the pipe.



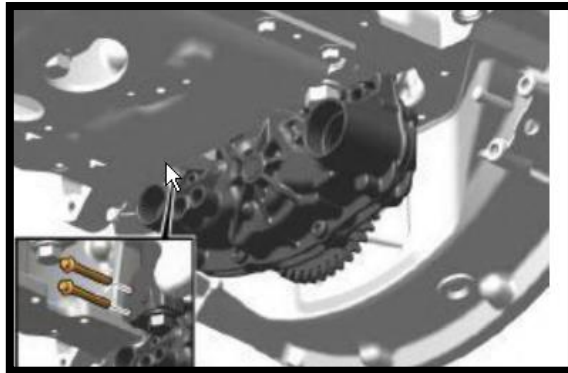
40. Remove the plug.
41. Install the tool.



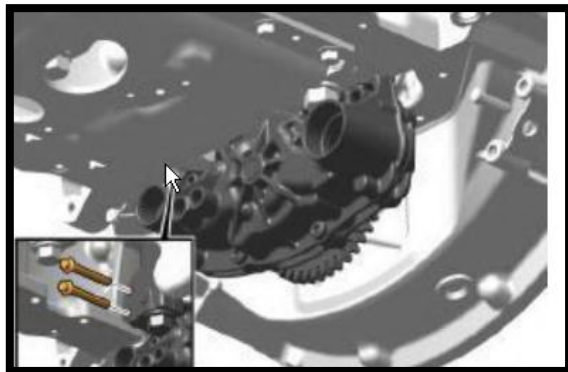
Required material	
Cranking tool	88840317

42. Rotate the crankshaft to enable access to the oil pump screws.
43. Remove the screws.

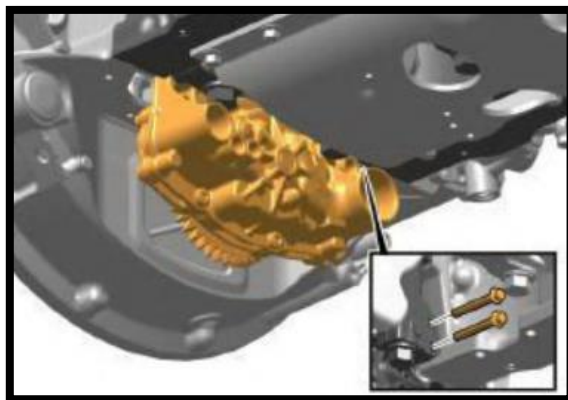
Oil System Update



44. Rotate the crankshaft to enable access to the oil pump screws.
45. Remove the screws.

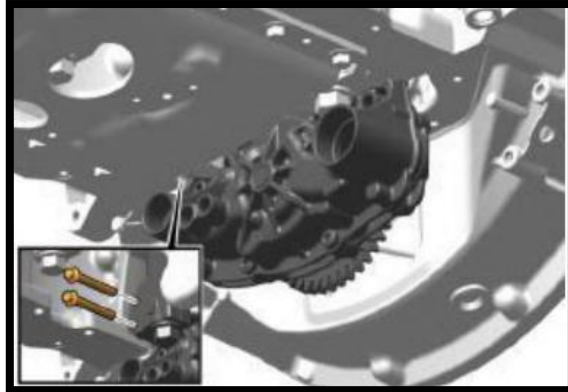


46. Remove the oil pump.
47. Install the new updated oil pump **24672305**.
48. Install the screws.



49. Rotate the crankshaft to enable access to the oil pump screws.
50. Install the screws.

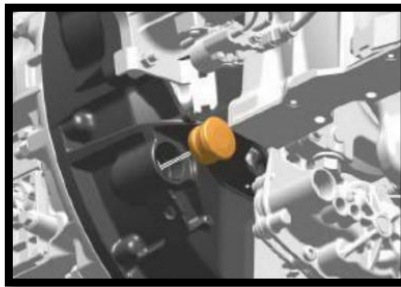
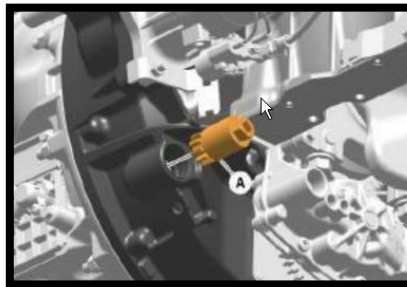
Oil System Update



Tightening torque		
Oil pump, screw	1.	Tightening sequence: 2-3
		12 ±4 Nm
	2.	Tightening sequence: 1-2-3-4
		24 ±4 Nm



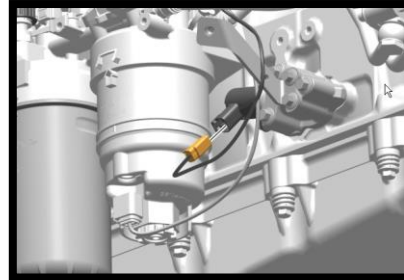
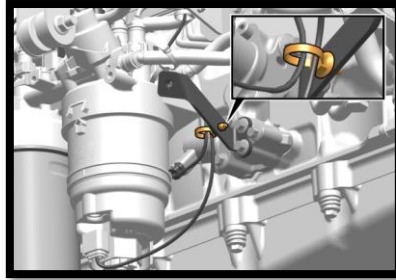
51. Remove the tool.
52. Install the plug.



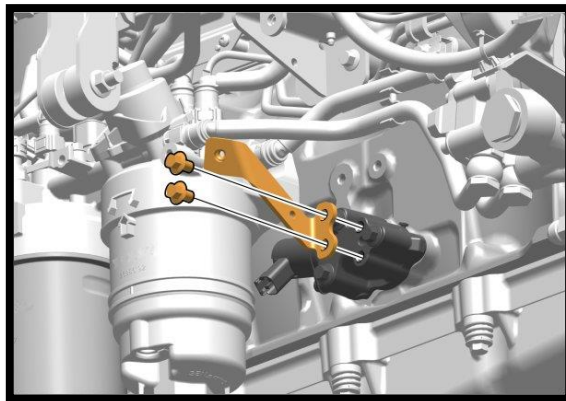
Oil Control Valve Replacement

53. Clean the surrounding area.
54. Remove the cable tie.
55. Disconnect the connector.

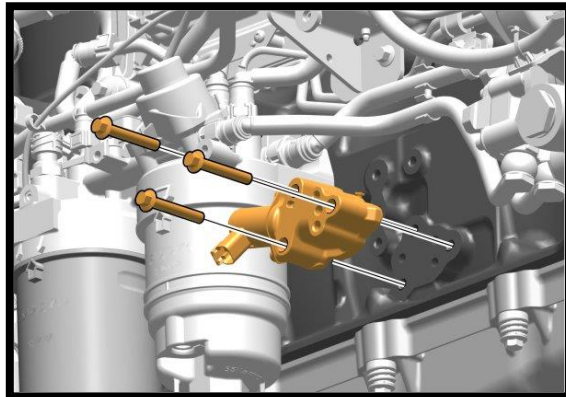
Oil System Update



56. Remove the screws.
57. Remove the bracket.

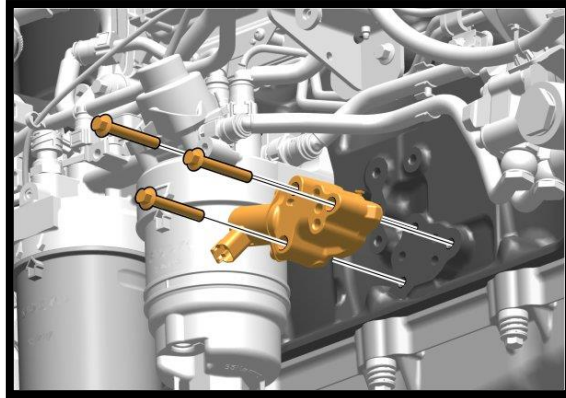


58. Remove the screws.
59. Remove the valve.



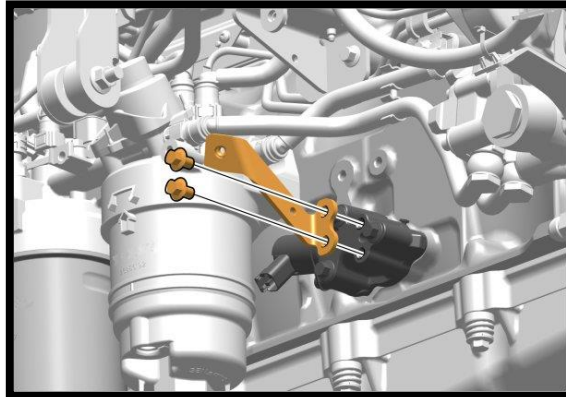
60. Clean the block surface.
61. Install the new oil control valve **24528310**.
62. Install the screws.

Oil System Update

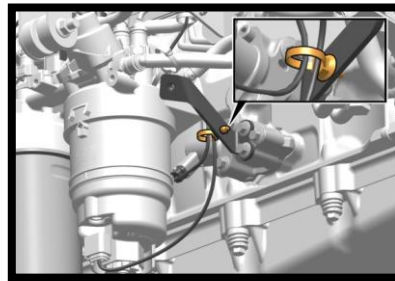
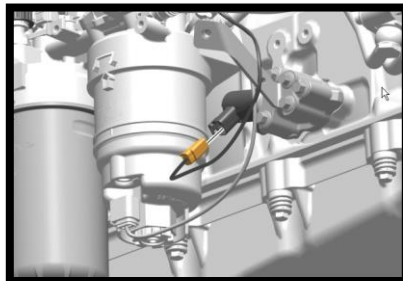


Tightening torque	
Oil control valve, screws	24 ±4 Nm (18 ±3 lb ·ft)

63. Install the bracket.



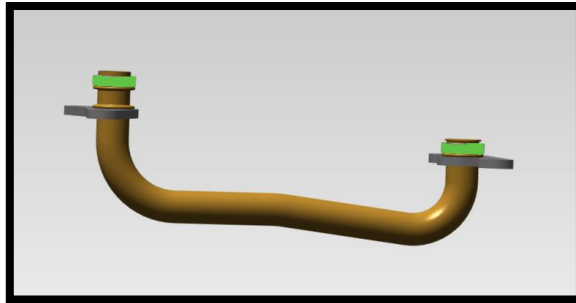
64. Connect the connector.
65. Install cable tie.



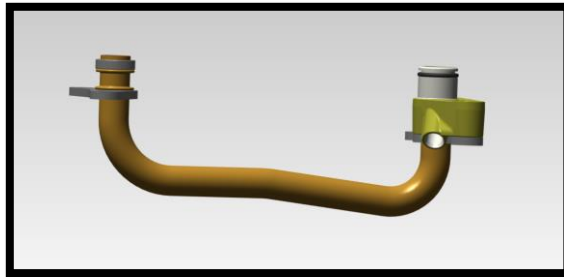
Oil control Piping Install and Routing

66. Ensure the new pressure tube **24362440** has sealing rings installed as shown below.

Oil System Update



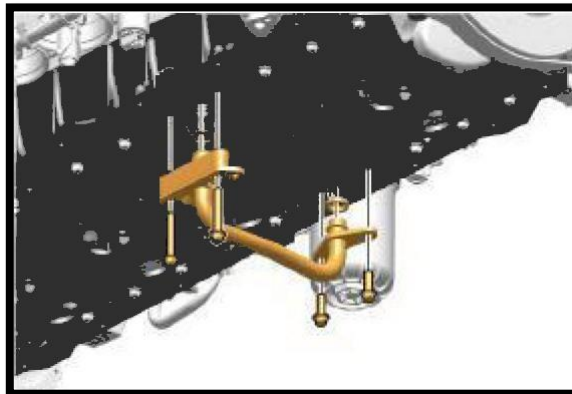
67. Ensure the connecting block **24386946** has a sealing ring installed.
68. Lubricate the sealing rings.
69. Insert the short end of the pressure tube **24362440** into the connecting block **24386946**.



70. Install the connecting block and pressure tube into the block using two **969446** screws and two **969445** screws.

Important Note!

Ensure the dowel pin in the connecting block aligns with the hole in the stiffener frame.



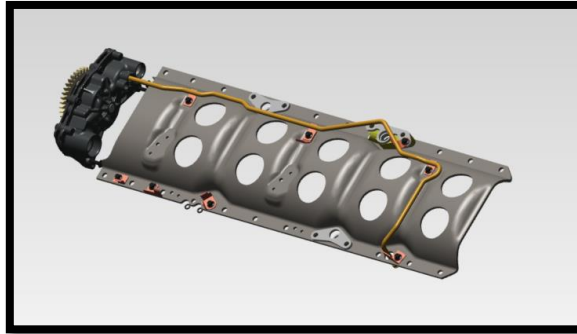
Tightening torque

Reinforcement frame, screw	1.	45 ± 5 Nm (33 ± 4 lb _f -ft)
	2.	$60 \pm 5^\circ$

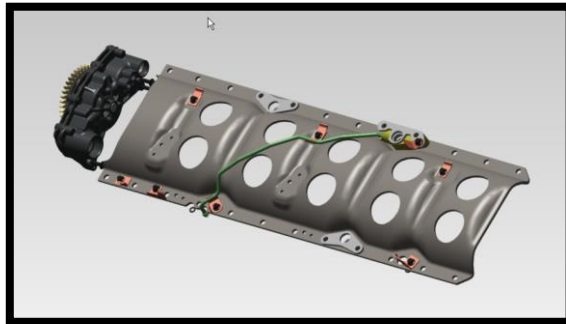
71. Ensure the new pipe **24362448** has sealing rings installed.

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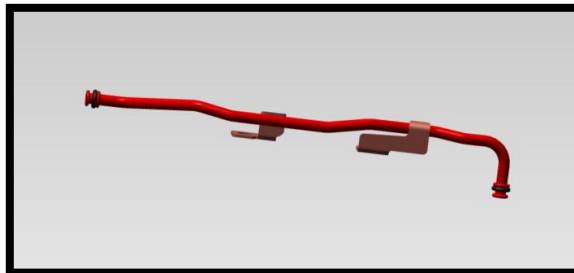
72. Lubricate the sealing rings.
73. Install the pipe **24362448** into the oil pump and then into the block.



74. Ensure the new pipe **24362082** has sealing rings installed.
75. Lubricate the sealing rings.
76. Install pipe **24362082** into connecting block and then into the block.



77. Reuse the oil line from the oil pump to the block. Install two new sealing rings **23896921**.

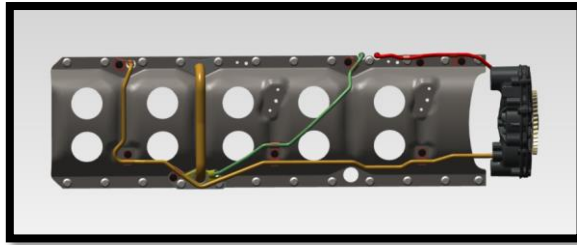


78. Lubricate the sealing rings.
79. Install the line into the oil pump and then into the block.

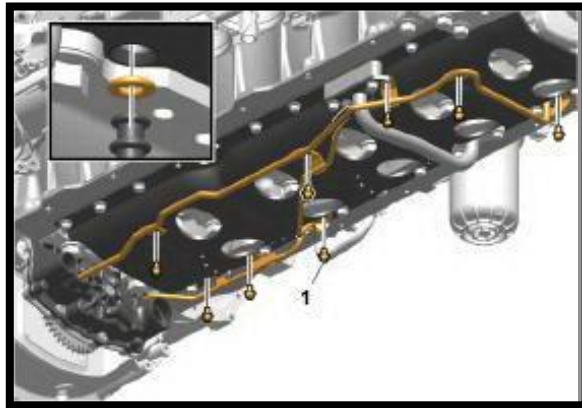


80. All Oil control lines should be routed as shown below.

Oil System Update

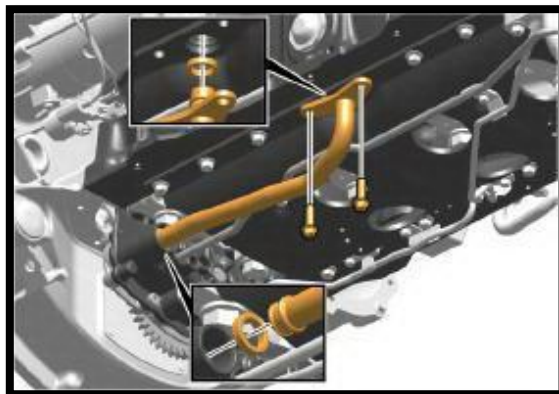


81. Install the 8 bolts removed earlier that secure the oil control lines and torque to spec.



Tightening torque	
Oil pipe, screws	24 ±4 Nm (18 ±3 lb ·ft)

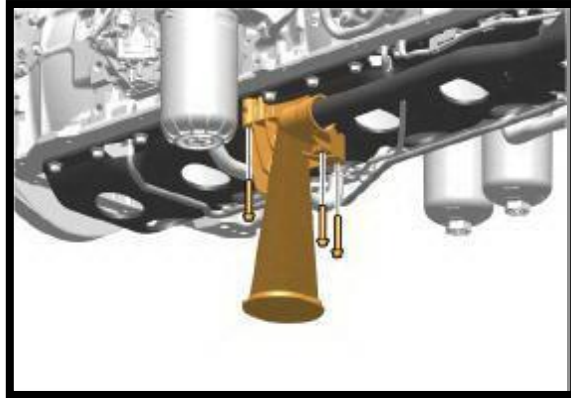
82. Install two new sealing rings **21092243**.
 83. Lubricate the sealing rings.
 84. Install the pressure tube.
 85. Install two new screws **969445** and torque to spec.



Tightening torque		
Reinforcement frame, screw	1.	45 ± 5 Nm (33 ±4 lb _f ·ft)
	2.	60 ± 5°

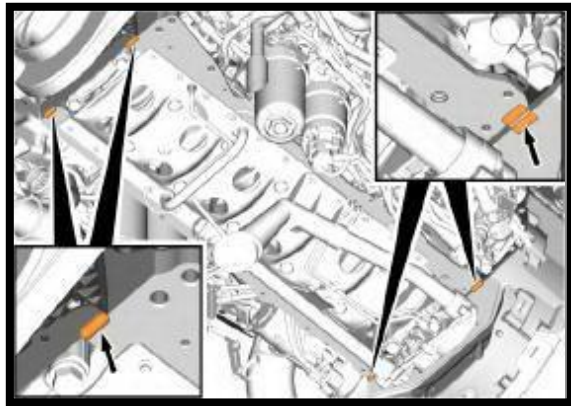
86. Install new sealing rings **22194880** on the strainer tube.
 87. Lubricate the sealing rings.
 88. Install the strainer. Install the screws and torque to spec.

Oil System Update

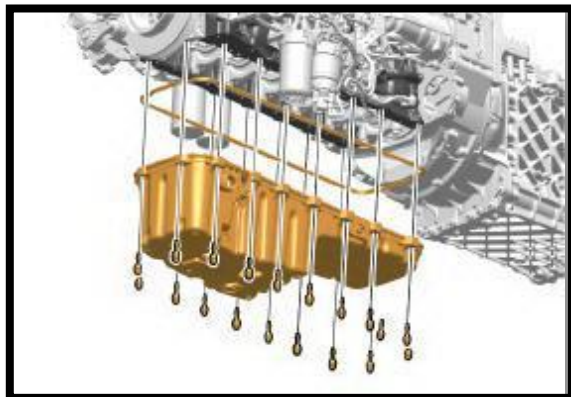


Tightening torque	
Oil strainer, screw	24 ±4 Nm (18 ±3 lb ·ft)

89. Clean the cylinder block.
90. Apply a 2mm bead of recommended sealant to the four spots as shown below.

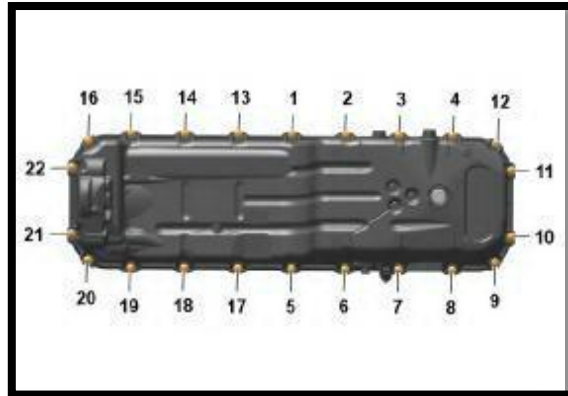


91. Clean the oil pan sealing strip.
92. Install the oil pan.
93. Install the screws and torque to spec.

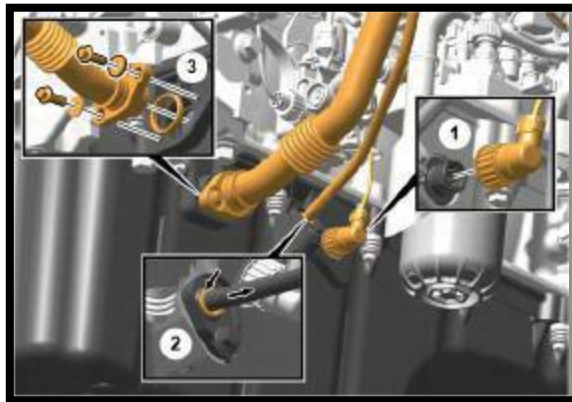


Tightening torque	
Oil pan, screw	Tightening sequence: 1-22
	24 ±4 Nm (18 ±3 lb _f ·ft)

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94. Install sealing ring **21780376** on the oil fill tube (3).
95. Lubricate the sealing ring.
96. Install the pipe (3).
97. Install the washer and screws.
98. Install the dipstick pipe (2).
99. Connect the connector (1).

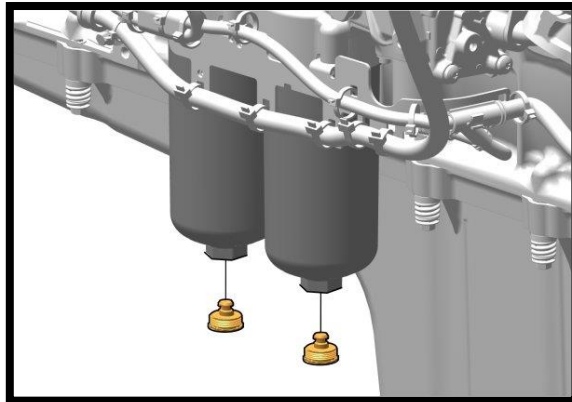


Important Note!

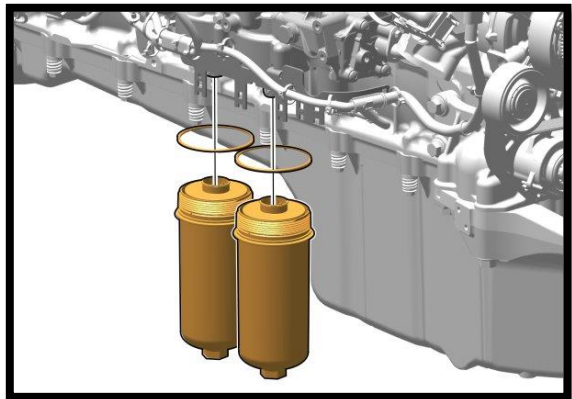
There are two types of oil filters available for order: cartridge-type and spin-on type. When updating the oil system, ensure the oil filters are replaced with the same type as the original.

100. Position a drain pan under the oil filters.
101. Remove the drain plugs.
102. Drain the oil from the filters.

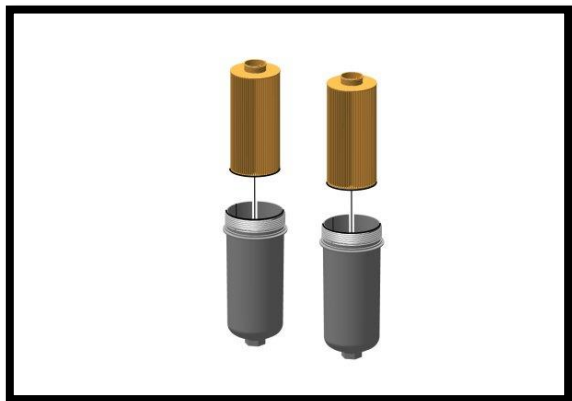
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103. Clean the surrounding area.
104. Remove the filters.
105. Remove the gaskets.

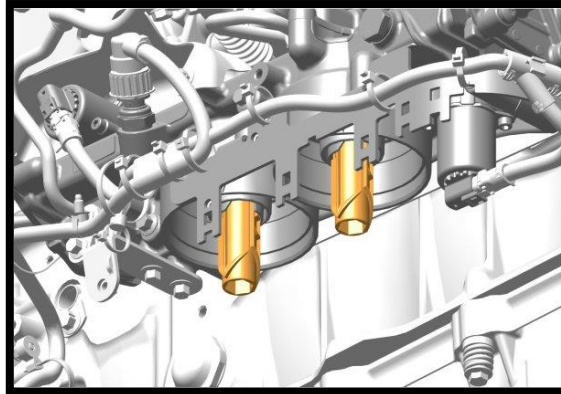


106. Remove the filter elements from the bowls.
107. Drain the bowls.
108. Install the new filter elements.

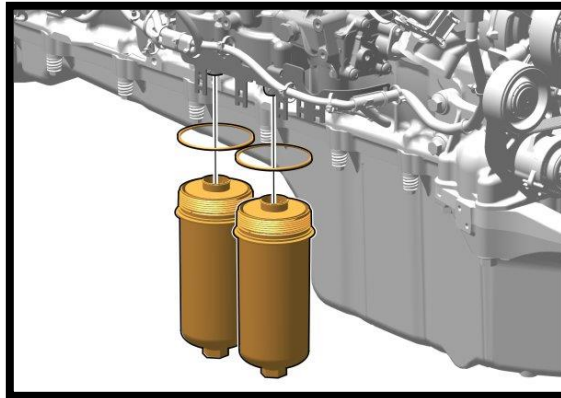


109. Make sure that the pipes are in the correct position and tightened.

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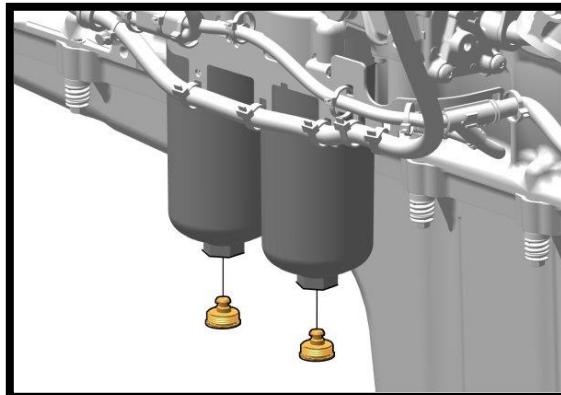


- 110. Install the gaskets.
- 111. Install the filters.
- 112. Torque the filters to spec.



Tightening torque	
Oil filter	25 ±5 Nm (18 ±4 lb ·ft)

- 113. Install the drain plugs and torque to spec.

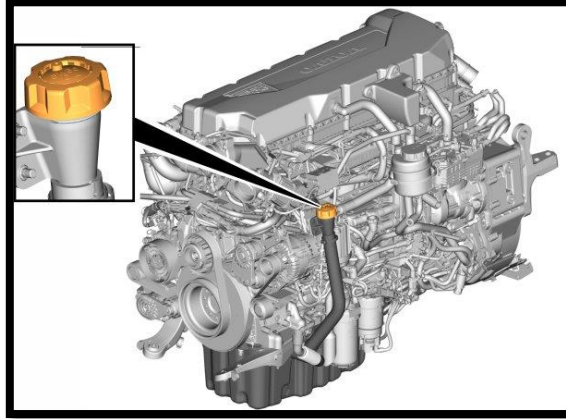


Tightening torque	
Oil filter, drain plug	5 ±2 Nm (4 ±1 lb ·ft)

- 114. Raise vehicle and remove support stands.

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115. Lower vehicle.
116. Remove cap and fill engine with oil.



117. Commission the low voltage system following operation **3100-09-01-05 Low Voltage System, Commissioning** in Impact.

Programming

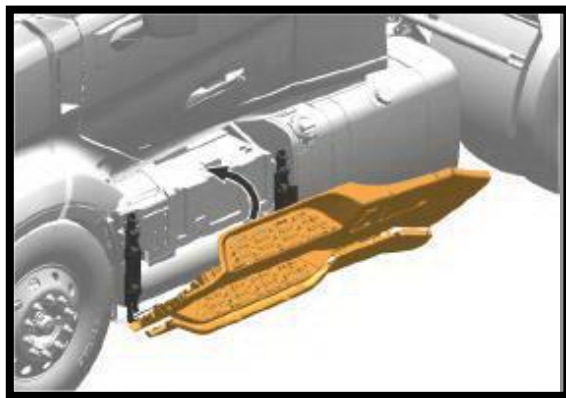
118. Connect to the vehicle using the latest version of PTT.
119. Run Operation **1700-22-03-06** under the Programming Tab to install accessory kit **85170727**.

Finishing Steps

120. Start the engine and check for proper oil pressure and oil leaks.

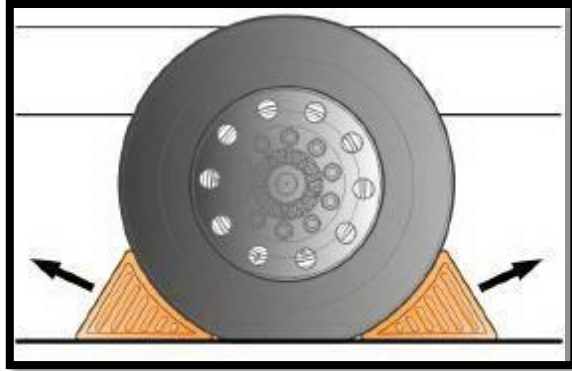
Important Note!
If oil pressure faults exist after the oil system update, verify the Accessory kit was installed properly.

121. Install the fairing.
122. Install the tether.



123. Close and latch the fairing.
124. Close and latch the hood.
125. Remove the wheel chocks.

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126. Return the vehicle to service.