

Assembly

Special Tool(s) / General Equipment

 3031054	303-1054 Locking Tool, Timing Belt Tensioner
 E62051	303-1178 Timing Tool Camshaft
 E62035	303-1179 Holding Wrench, Crankshaft
 E62050	303-1180 Installer, Crankshaft Front Seal
 E62048	303-1181 Installer, Crankshaft Rear Seal
 E62027	303-1182 Timing Tool, Crankshaft
 21148	303-318 Aligner/Installer, Crankshaft Front Seal
Piston Ring Compressor	
Round-Ended Steel Rule	

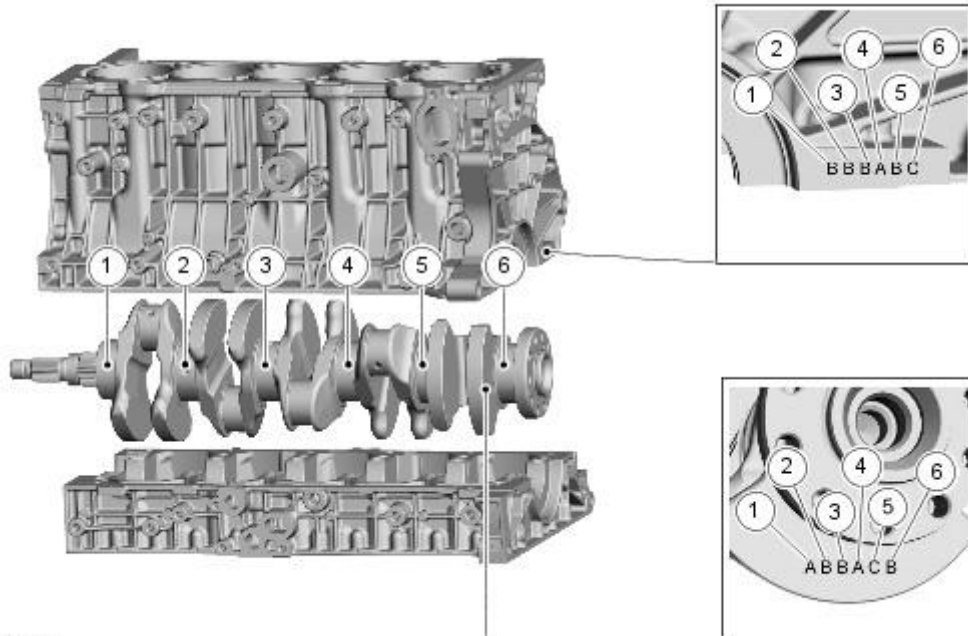
Materials


Name	Specification
Flange Sealant - Anaerobic LP 5U7J-M2G348-BA	WSK-M2G348-A7

Engine Oil - 5W-30

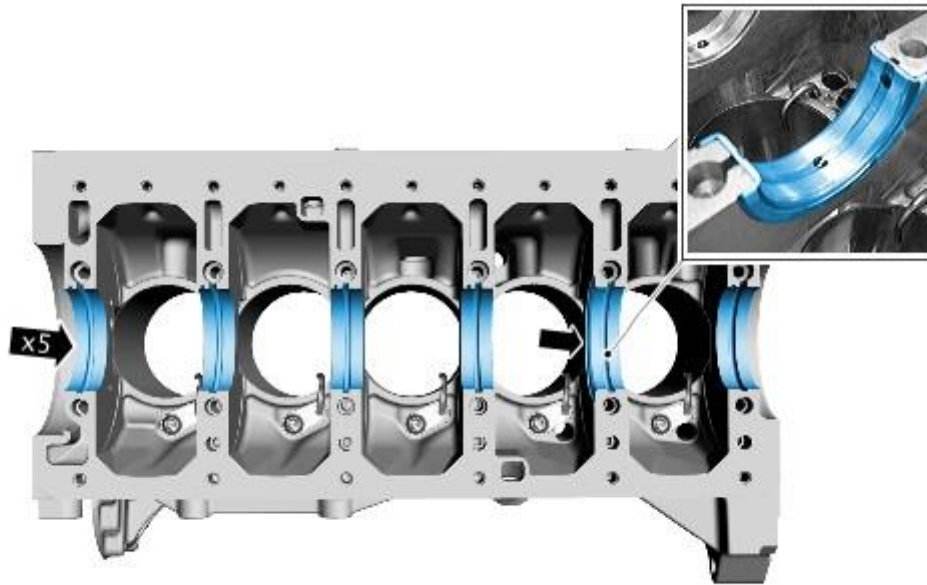
WSS-M2C913-C

1. **NOTE:** This step is only necessary when installing a new component.
Refer to: [Specifications](#) (303-01D Engine - 2.5L Duratec-ST (166kW/226PS) - VI5, Specifications).




2.  **NOTICE:** Make sure that the components are installed to the position noted before removal.
Apply a thin coating.

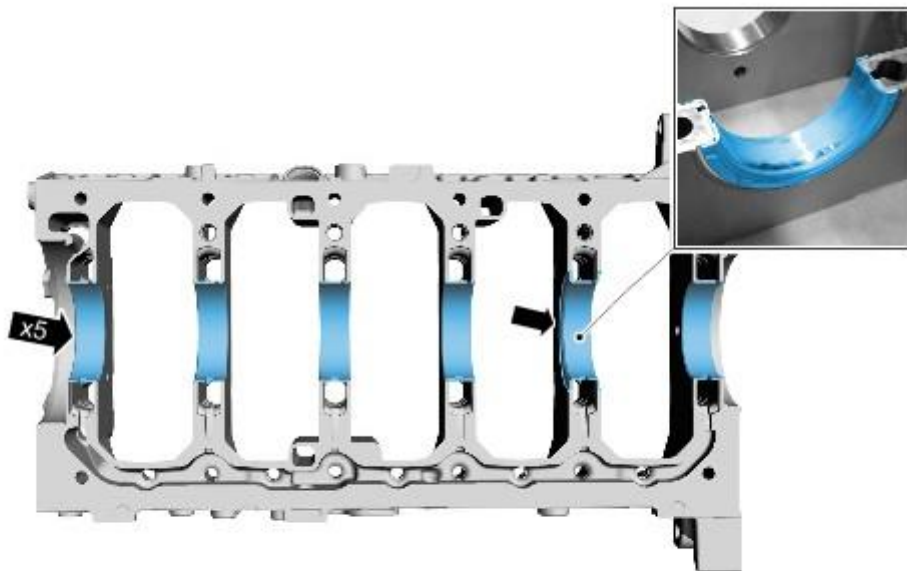
Material: [WSS-M2C913-C](#) (Engine Oil - 5W-30 /)



E122293

3.  **NOTICE:** Make sure that the components are installed to the position noted before removal.
Apply a thin coating.

Material: [WSS-M2C913-C \(Engine Oil - 5W-30 / \)](#)



E122294

4.

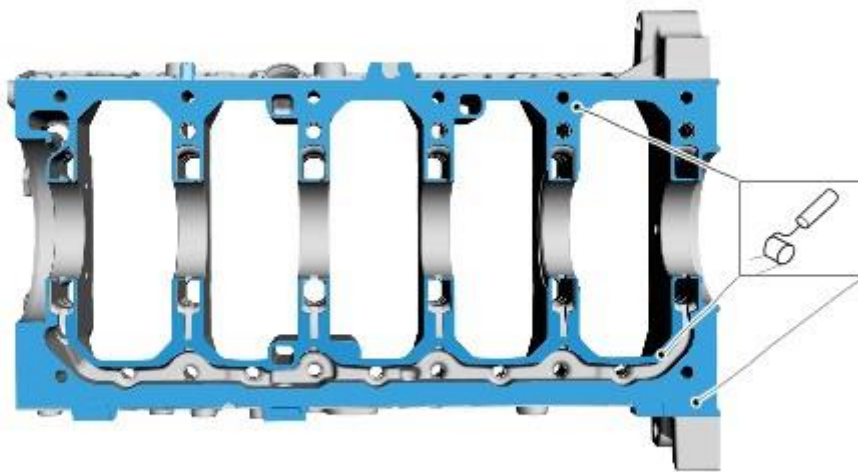


E122227




5. NOTE: The component must be installed within 5 minutes of applying the sealant.

Material: WSK-M2G348-A7 (Flange Sealant - Anaerobic LP / 5U7J-M2G348-BA)



E122323

6.  NOTICE: Make sure that new bolts are installed.

Torque:

Stage 1:

M10: 1-12 20 Nm

Stage 2:

M10: 1-12 45 Nm

7. *Torque:*

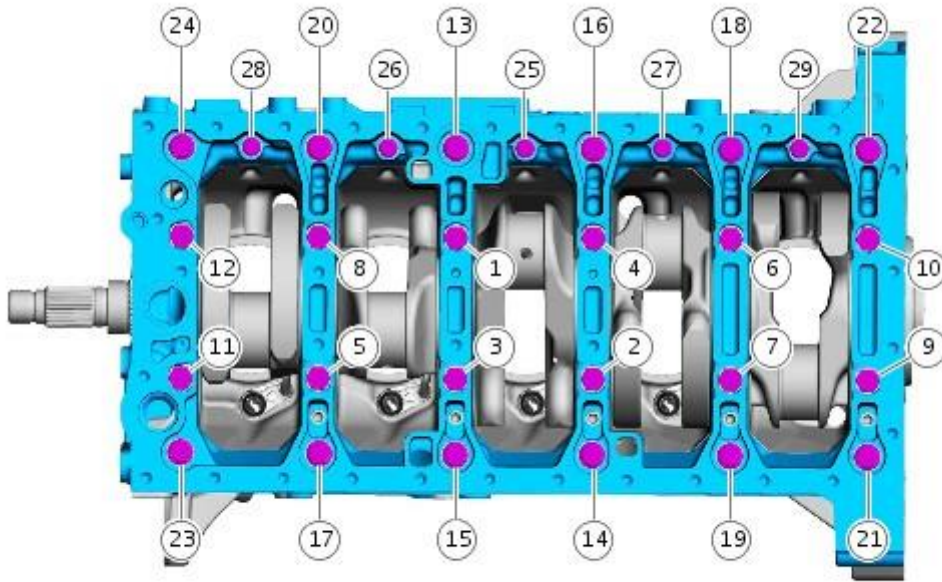
M8: 13-24 24 Nm

8. *Torque:*

M7: 25-29 17 Nm

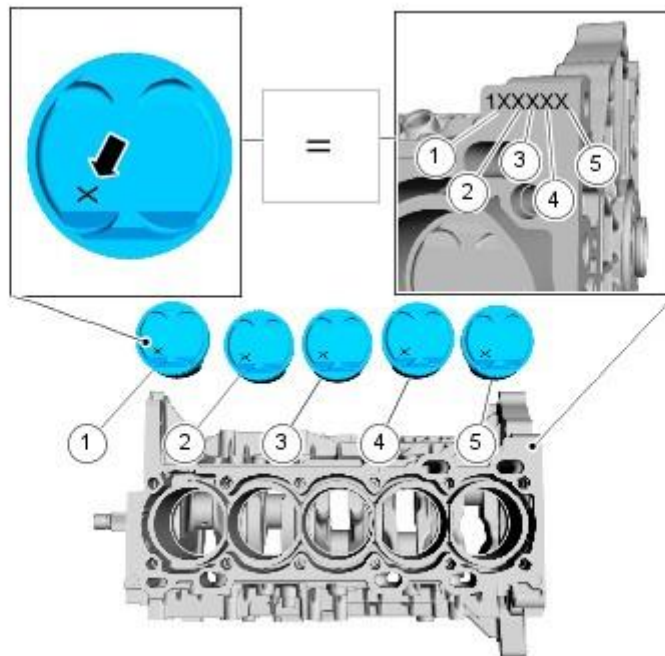
9. *Torque:*

M10: 1-12 90°



E122331

10. NOTE: This step is only necessary when installing a new component.




E122634

11.  NOTICE: Make sure that the components are installed to the position noted before removal.
Use the General Equipment: [Piston Ring Compressor](#)



E122334



12.  **NOTICE:** Make sure that the components are installed to the position noted before removal.
Apply a thin coating.


Material: WSS-M2C913-C (Engine Oil - 5W-30 /)




E77266



13. **NOTICE:**

 Make sure that the components are installed to the position noted before removal.

 Make sure that new bolts are installed.
Apply a thin coating.

Material: WSS-M2C913-C (Engine Oil - 5W-30 /)

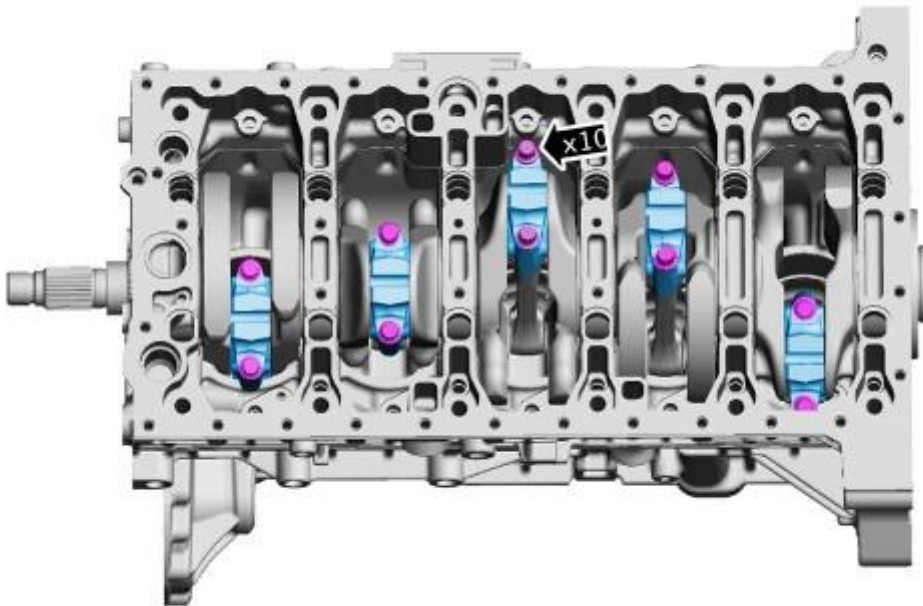
Torque:

Stage 1:

30 Nm

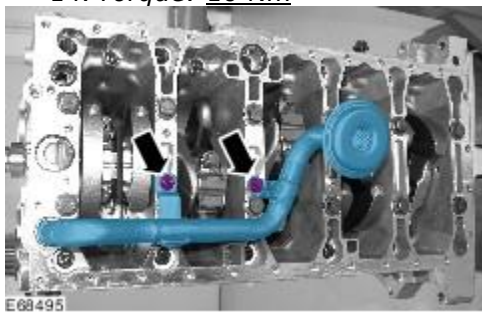
Stage 2:

90°



E122335

14. Torque: 10 Nm

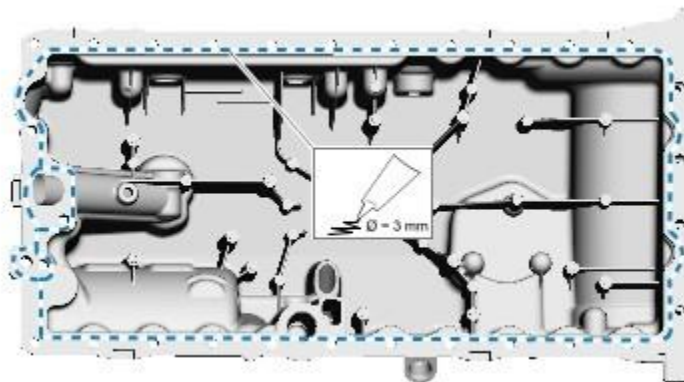


E68495



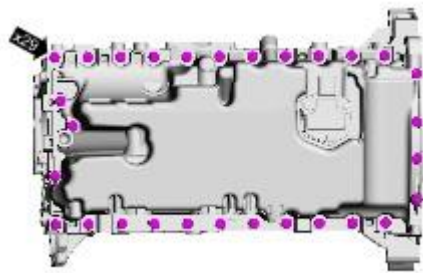
15. NOTE: The component must be installed within 5 minutes of applying the sealant.

Material: WSK-M2G348-A7 (Flange Sealant - Anaerobic LP / 5U7J-M2G348-BA)



EB4444

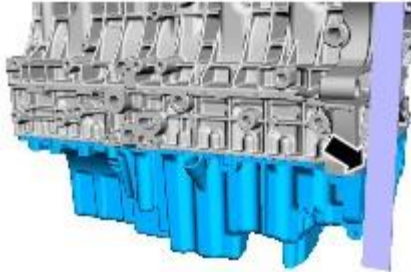
16. NOTE: Only tighten the bolts finger tight at this stage.



E84443



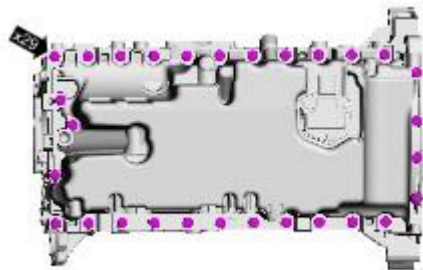
17. Use the General Equipment: [Round-Ended Steel Rule](#)



E84445



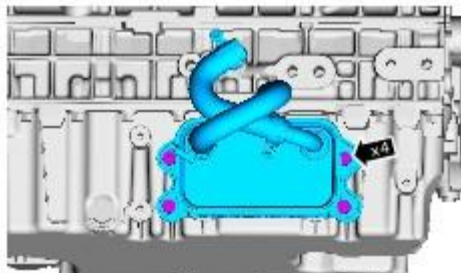
18. Torque: 17 Nm



E84443



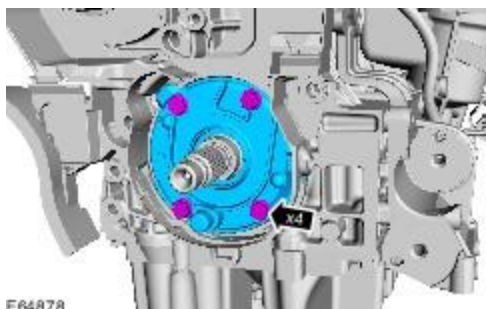
19. Torque: 17 Nm



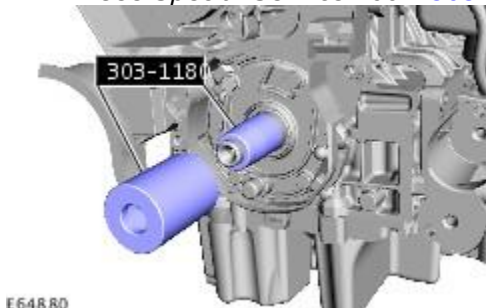
E84582



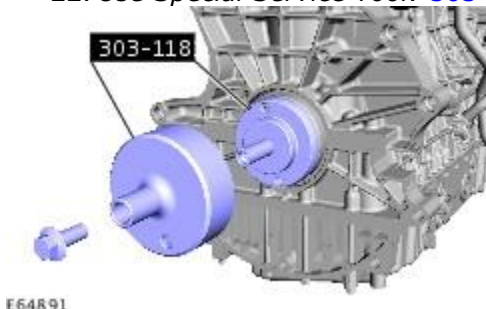
20. Torque: 6 Nm



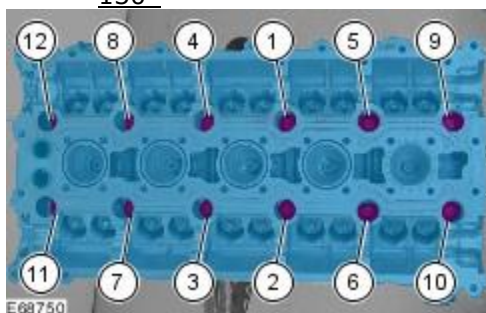
21. Use Special Service Tool: 303-1180.



22. Use Special Service Tool: 303-1181.

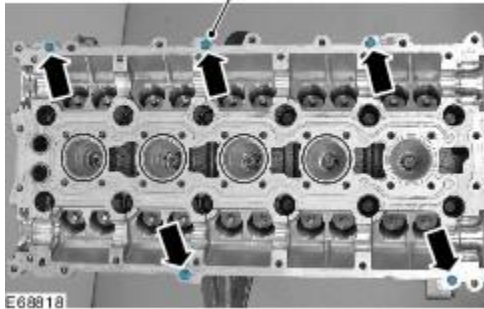
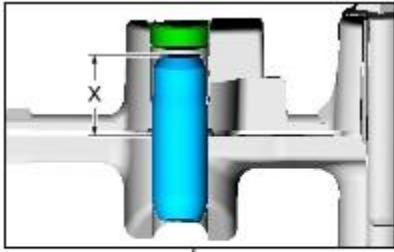


23. Torque:
 Stage 1:
20 Nm
 Stage 2:
60 Nm
 Stage 3:
130°

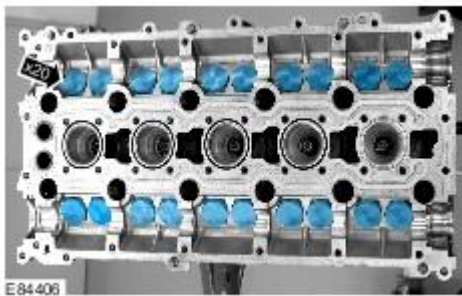


24.

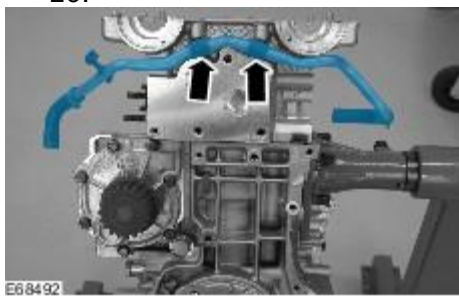
- X = 15 mm.



25.

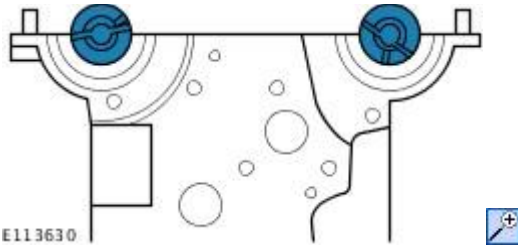


26.



27. Apply a thin coating.

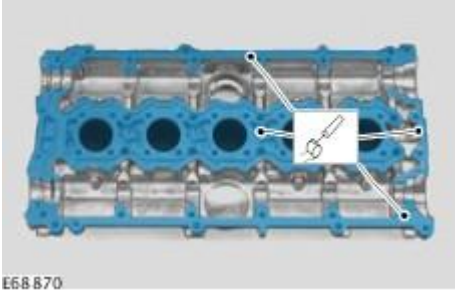
Material: WSS-M2C913-C (Engine Oil - 5W-30 /)



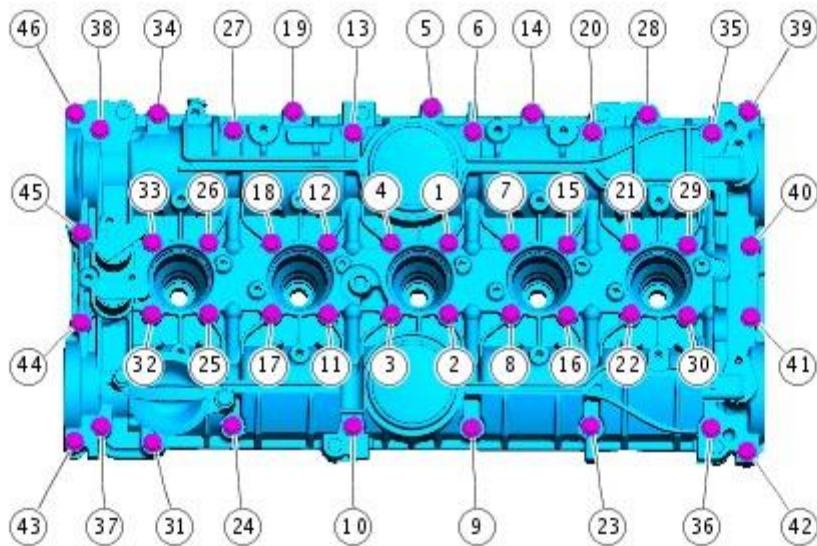
CAMSHAFT TRIGGER 8658597 – INTAKE

CAMSHAFT TRIGGER 8658598 - EXHAUST

28. Material: [WSK-M2G348-A7 \(Flange Sealant - Anaerobic LP / 5U7J-M2G348-BA\)](#)



29. Torque: 17 Nm



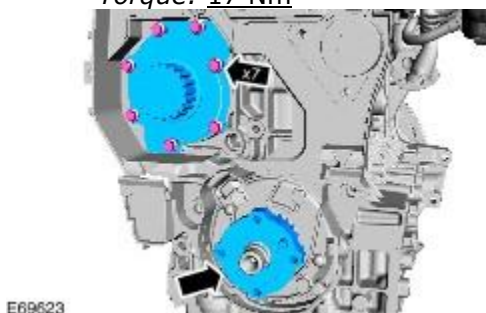
E87508

30. Use Special Service Tool: [303-318](#).

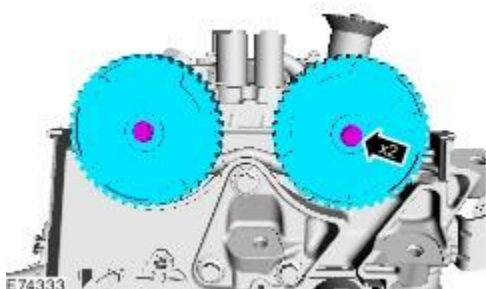


31. NOTE: The crankshaft timing pulley can only be installed in 1 position on the crankshaft splines.

Torque: 17 Nm

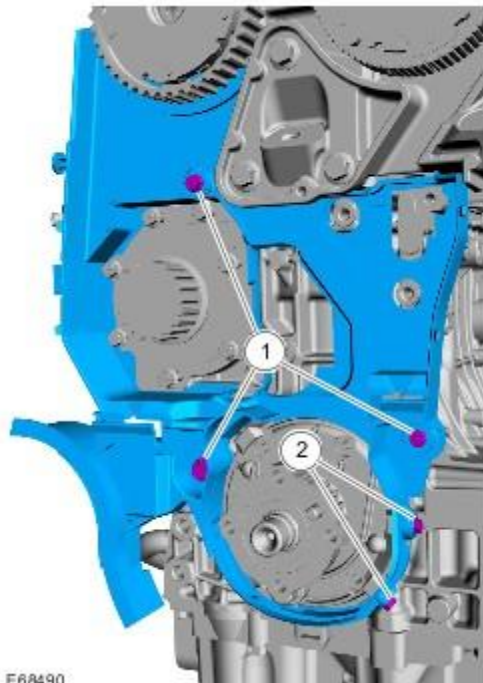


32. NOTE: Only tighten the bolts finger tight at this stage.



33.

1. *Torque: 25 Nm*
2. *Torque: 12 Nm*



34. NOTE: Install all the bolts finger tight before final tightening.

1. Torque:

Stage 1:

35 Nm

Stage 2:

75°

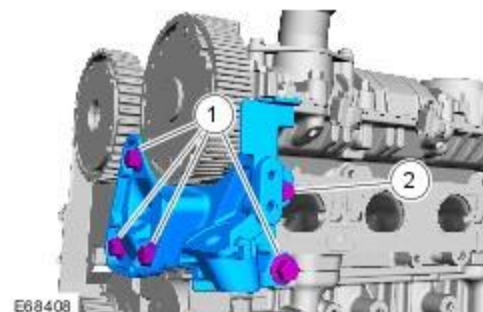
2. Torque:

Stage 1:

15 Nm

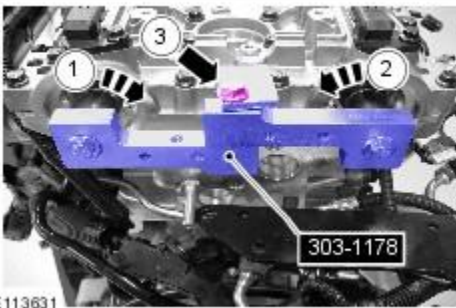
Stage 2:

90°



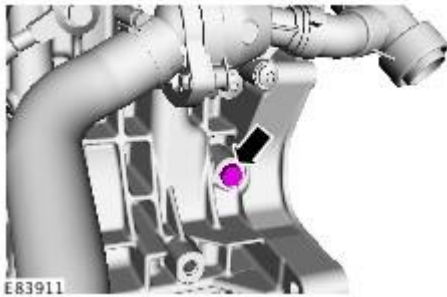
35. Install Special Service Tool: [303-1178](#).

Torque: 10 Nm




E113631

36.

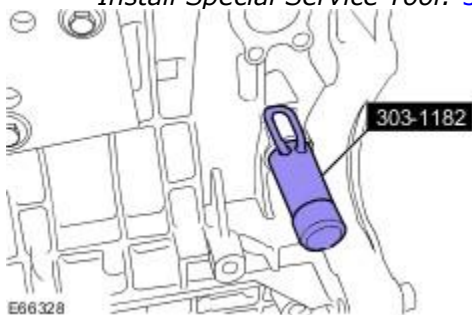


E83911




37.  **NOTICE:** Only rotate the crankshaft clockwise.
Rotate the crankshaft slowly until the crankshaft stops.

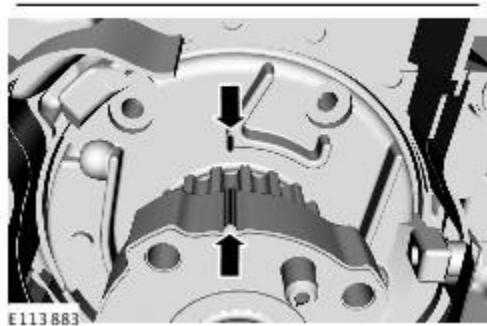
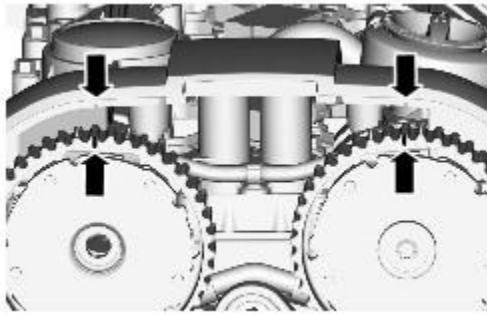
Install Special Service Tool: 303-1182.



E66328



38.  **NOTICE:** Make sure that the installation marks are aligned.

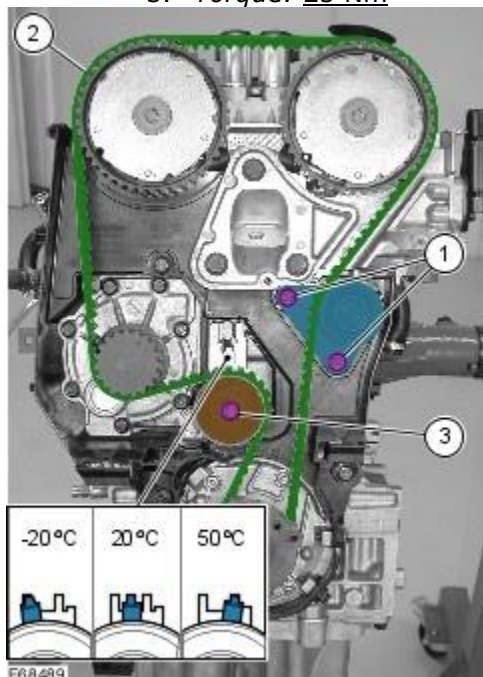


Vehicles with mechanical timing belt tensioner

39. NOTE: Make sure that new components are installed.

1. Torque: 25 Nm

3. Torque: 25 Nm



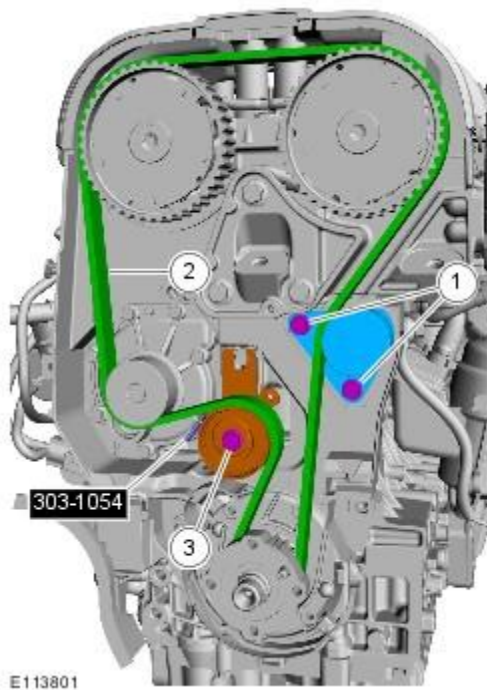
Vehicles with automatic timing belt tensioner


40. NOTE: Make sure that new components are installed.

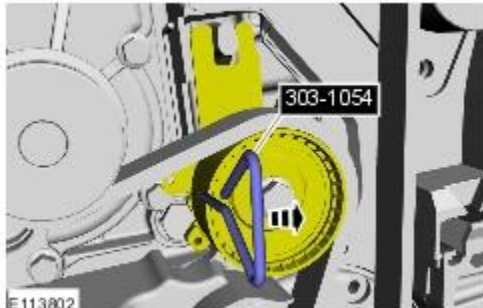
1. Torque: 25 Nm

3. Use Special Service Tool: [303-1054](#).

Torque: 25 Nm

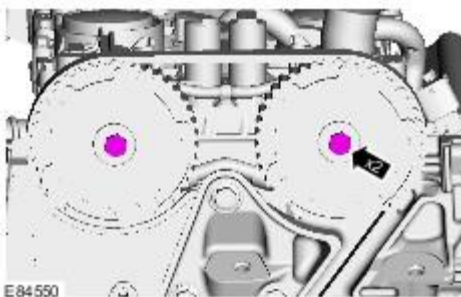


41.  **WARNING:** Take extra care when handling the compressed spring.
Remove Special Service Tool: 303-1054.

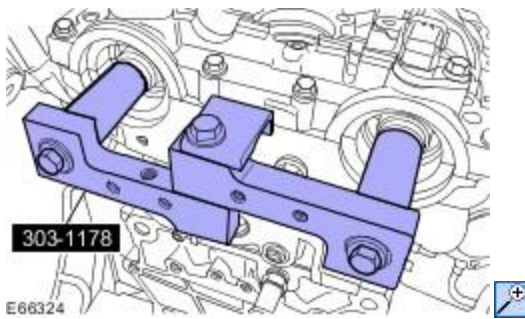



All vehicles

42. Torque: 120 Nm



43. Remove Special Service Tool: 303-1178.

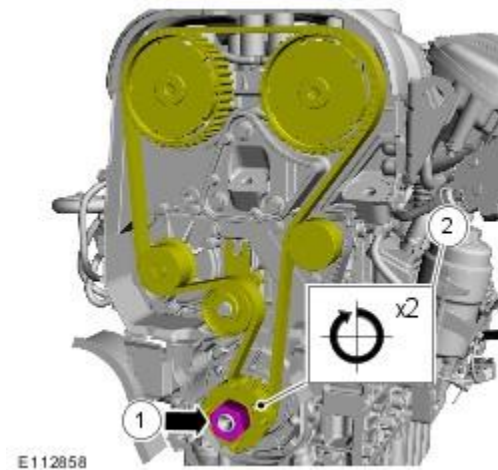



44.  **NOTICE:** Only rotate the crankshaft clockwise.
Rotate the crankshaft slowly until the crankshaft stops.

Remove Special Service Tool: 303-1182.



45.

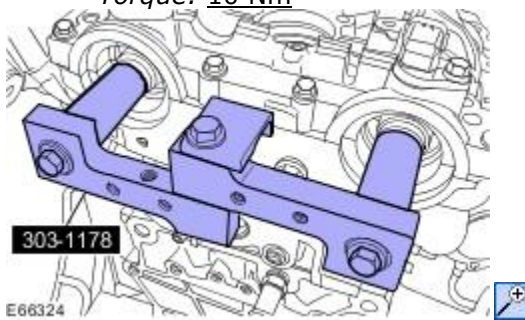



46.  **NOTICE:** Only rotate the crankshaft clockwise.
Rotate the crankshaft slowly until the crankshaft stops.

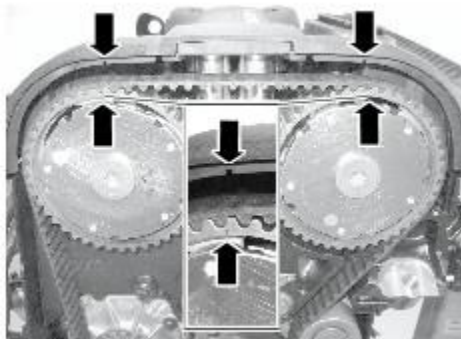
Install Special Service Tool: 303-1182.



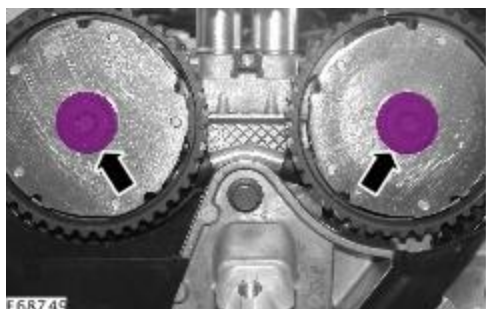
47. Install Special Service Tool: 303-1178.
Torque: 10 Nm



48.  NOTICE: Make sure that the installation marks are aligned.



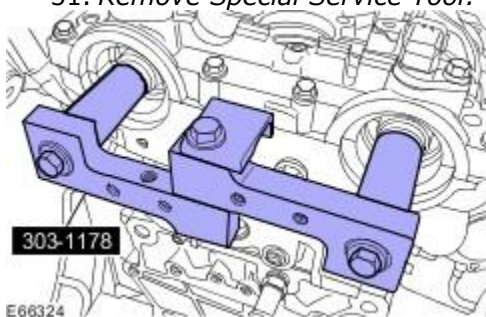
49. Torque: 35 Nm



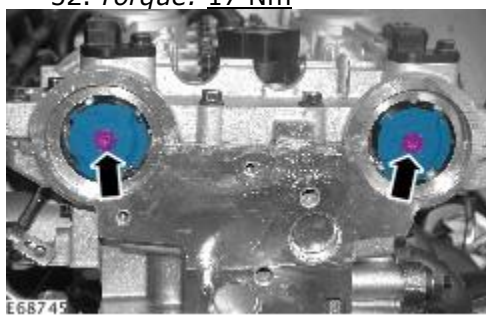
50. Remove Special Service Tool: 303-1182.



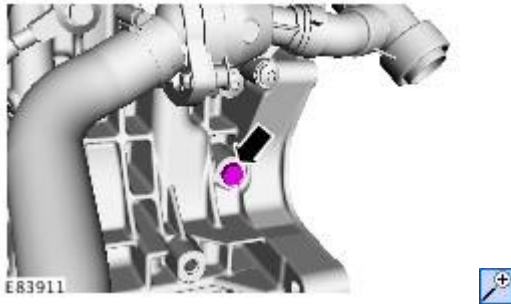
51. Remove Special Service Tool: 303-1178.



52. Torque: 17 Nm

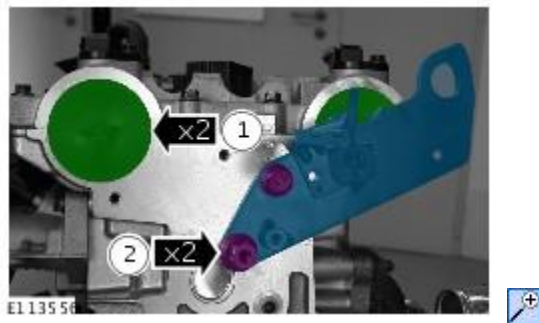


53. Torque: 40 Nm

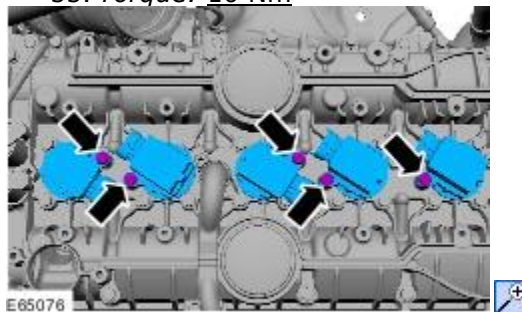


54.

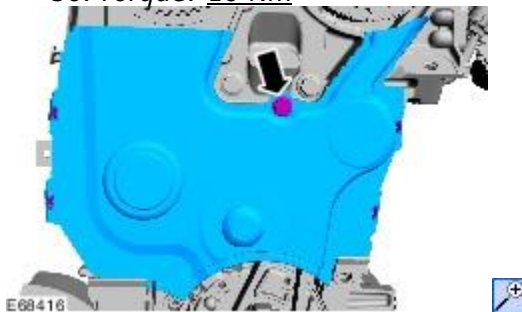
1. NOTE: Make sure that new components are installed.
2. Torque: 40 Nm



55. Torque: 10 Nm



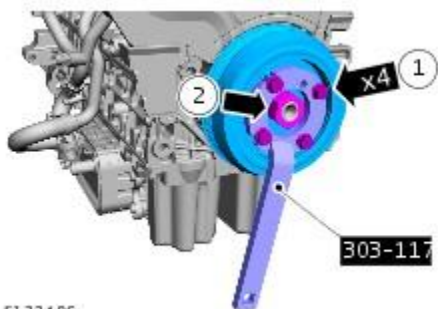
56. Torque: 10 Nm



57.

1. NOTE: Only tighten the bolts finger tight at this stage.
Install Special Service Tool: [303-1179](#).
2. Torque: 180 Nm

58. Remove Special Service Tool: [303-1179](#).



E1224 86

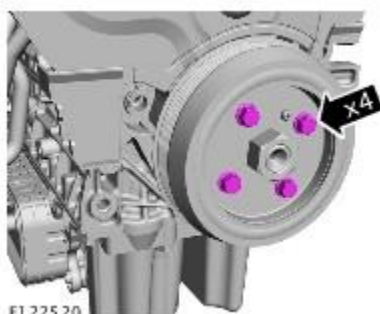
59. *Torque:*

Stage 1:

25 Nm

Stage 2:

60°



E1225 20