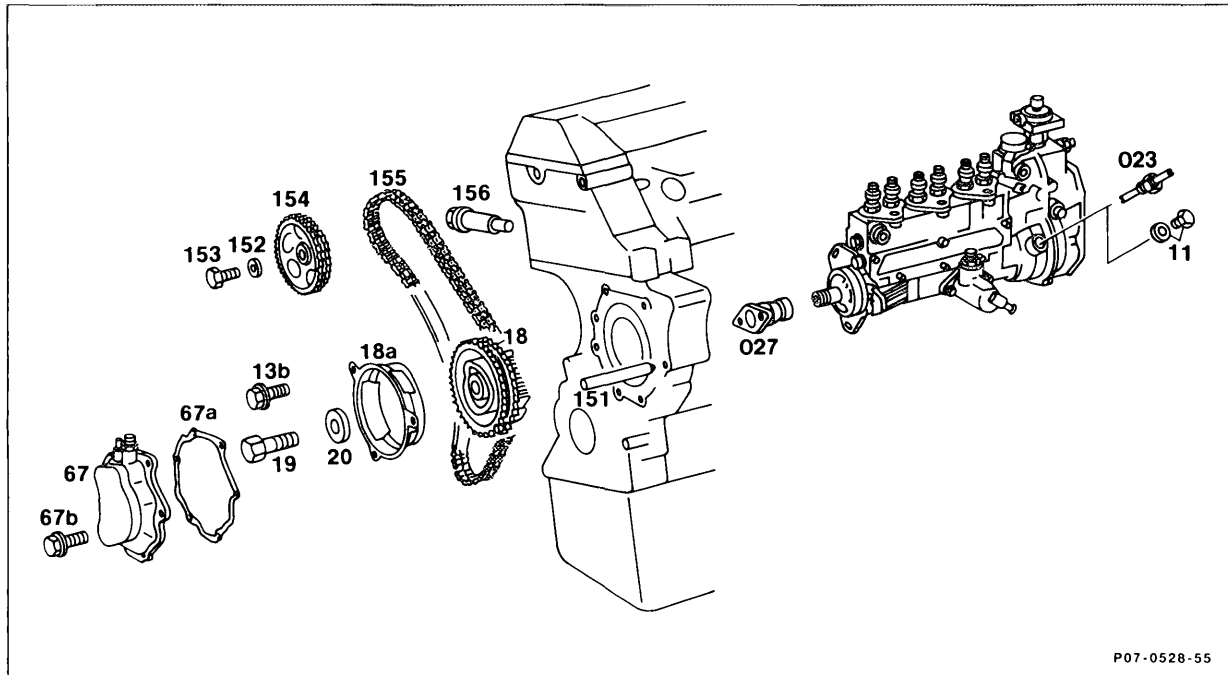


07.1-240 Removal and Installation of injection timing device - Turbodiesel

Vacuum pump removed (43-610)



| | |
|--|---|
| Cylinder head cover | remove, install. |
| Engine or crankshaft | position on 15° ATDC. |
| Camshaft gear (154) and timing device (18) | fix in position to timing chain with hose strap. |
| Chain tensioner (156) | remove, install (05-310). Tightening torque 80 Nm. |
| Bolt (153) for camshaft gear | unbolt, reinstall. Tightening torque 45 Nm. Note washer (152). |
| Camshaft gear (154) | remove, install. |
| Central fastening bolt (19) | unbolt, reinstall, tightening torque 40-50 Nm. |

Caution!
Left-hand thread

Check washer (20), replace if necessary.

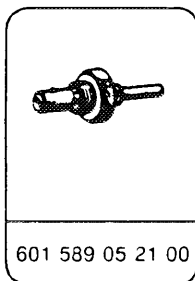
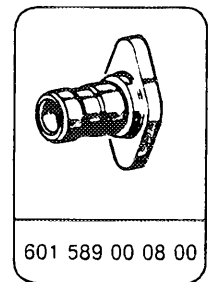
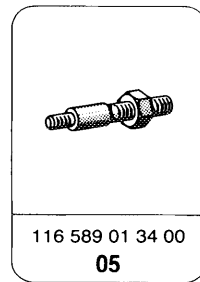
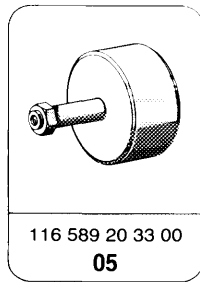
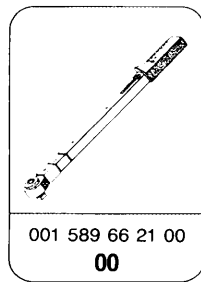
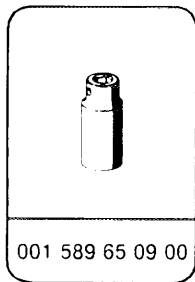
| | |
|-------------------------------------|--|
| Locking pin (151) | withdraw with threaded pin (116 589 01 34 00) and impact puller (116 589 20 33 00). |
| Mounting basket (18a) | remove, install. |
| Timing chain (155) | press to the outside with metal strips (approx. 0.5 x 70 x 120) and withdraw timing device (18) with universal pliers. |
| Timing device (18) | remove, install. |
| Screw plug with seal (11) | remove from injection pump (1). |
| Injection pump | turn with serrated wrench (027) and lock in position with locking bolt (023). |

Caution!

Remove locking bolt.

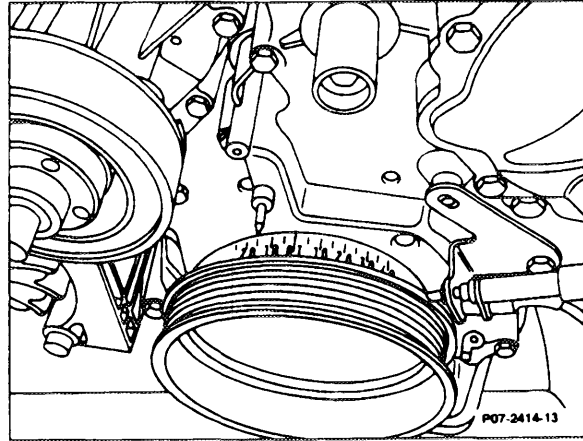
| | |
|--------------------------------|--|
| Engine or crankshaft | crank 1 revolution by hand and check TDC setting on crankshaft and camshaft. |
| Start of delivery | check (07.1-112), set if necessary (07.1-117). |

Special tools

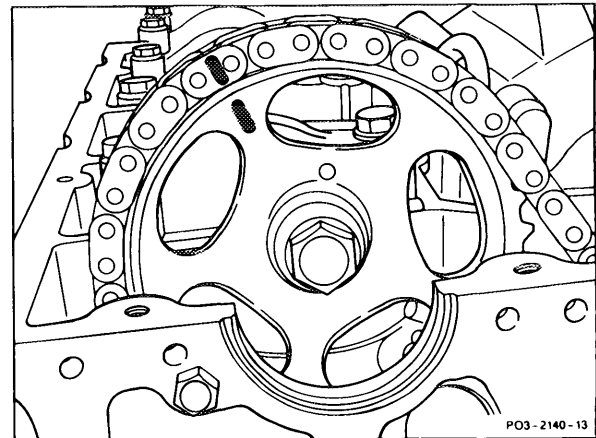


Removal and Installation

- 1 Remove cylinder head cover.
- 2 Turn engine to 15° ATDC of no.1 cylinder.

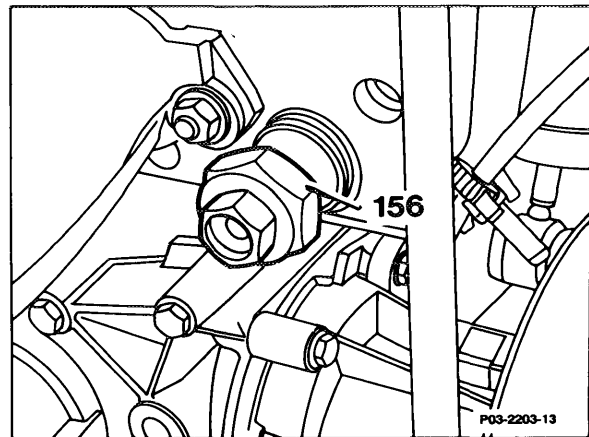


- 3 Fix camshaft gear and timing device in place with cable strap.

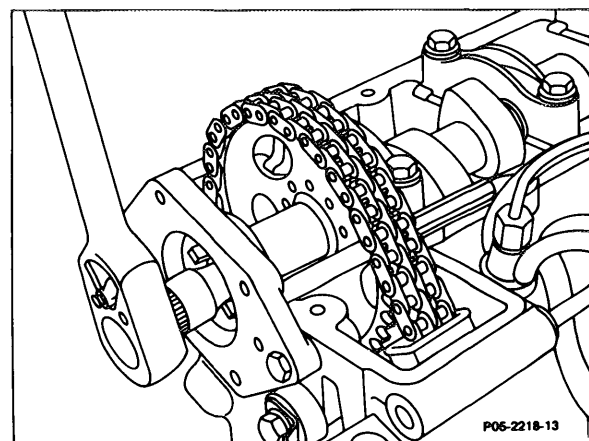


Camshaft gear

- 4 Remove chain tensioner (156) to relieve the load on the timing chain (05-310).



- 5 Remove bolt for camshaft gear on camshaft; hold crankshaft in place when performing this step.
Tightening torque 45 Nm.
Remove camshaft timing gear.



6 Remove central fastening bolt (19); hold crankshaft in place when performing this step.

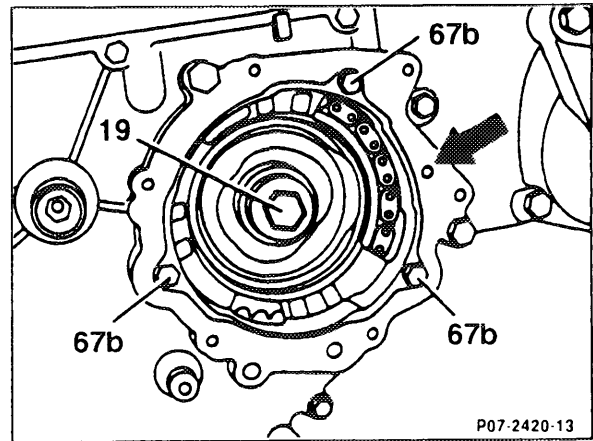
Caution!

Left-hand thread

7 Withdraw locking pin (arrow) and remove mounting basket.

Impact extractor
M6 threaded pin

Special tool 116 589 20 33 00
Special tool 116 589 01 34 00



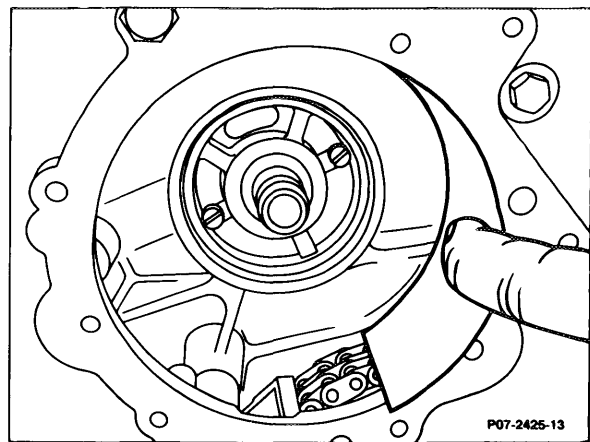
8 Press timing chain out of the way with metal strips and use universal pliers to withdraw timing device.

Shop-made metal strips

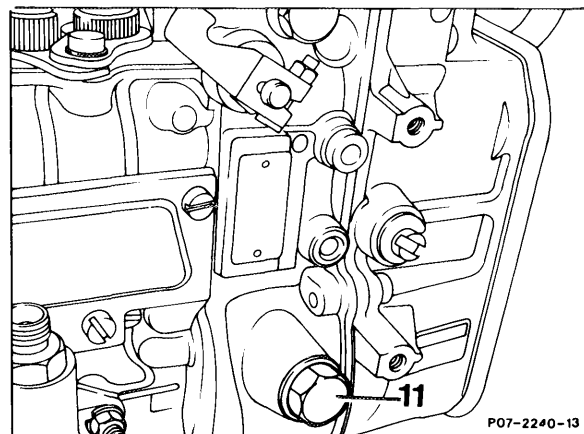
Thickness approx. 0.5 mm

Length approx. 140 mm

Width approx. 070 mm

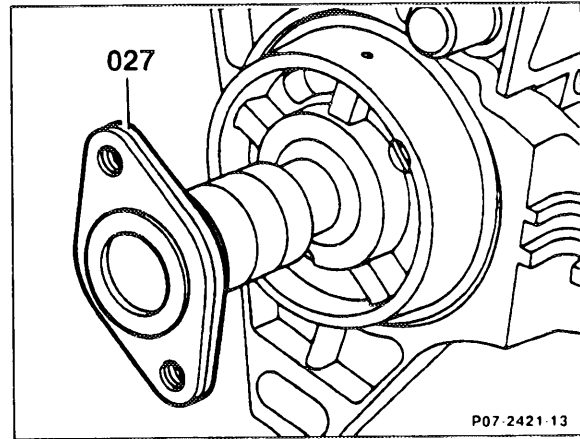


9 Unscrew plug (11).



10 Use serrated wrench (027) to turn injection pump on injection pump camshaft until the lug of the governor is visible in the hole. In this position, push in locking bolt (023) until it is felt to engage and tighten union nut by hand.

027 Serrated wrench
Special tool 601 589 00 08 00



11 Install timing device. Tighten central fastening bolt to 40–50 Nm.

Caution!

Left-hand thread

12 Remove locking bolt (023) otherwise the injection pump will be damaged when engine is started.

13 Assemble engine.

14 Test start of delivery with digital tester (07.1–112), set if necessary (07.1–117).

023 Locking bolt
Special tool 601 589 05 21 00

