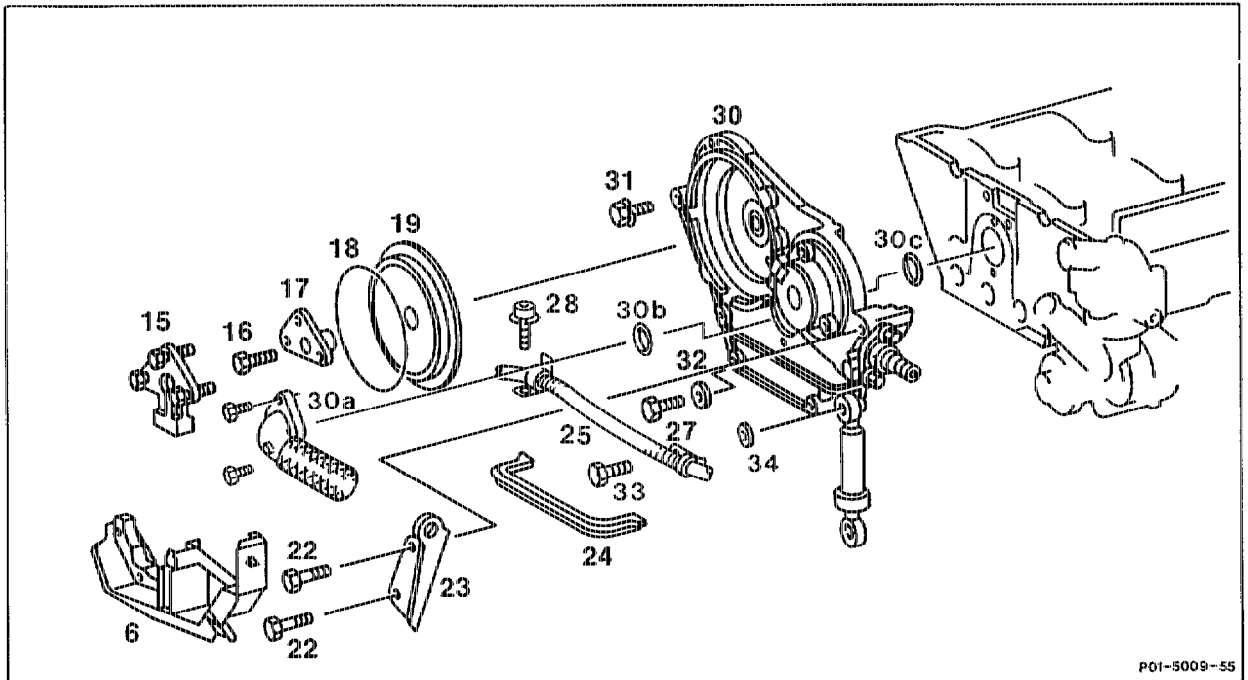


## 01-2120 Removing and installing front cover at top

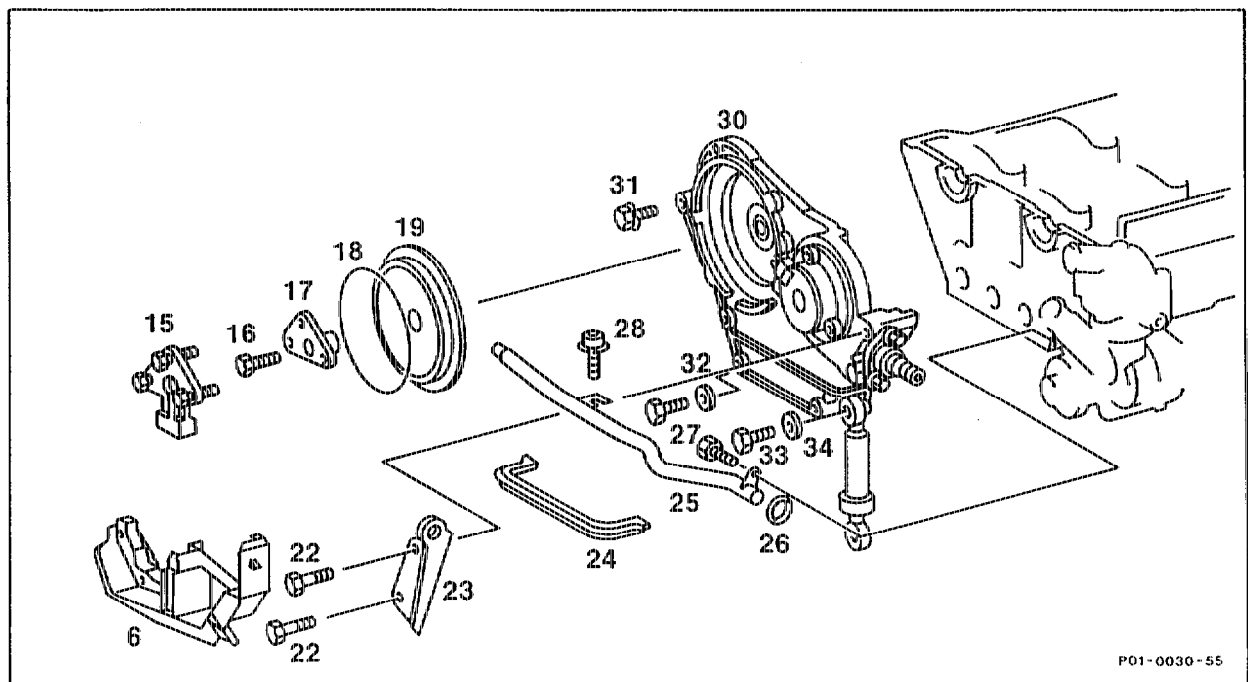
Preceding work:  
Follower at camshaft removed (01-2130).

Operation no. of operation texts and work units or standard texts  
and flat rates:  
01-5700

### A. Engines with CFI and LH-SFI



Engine 104.98



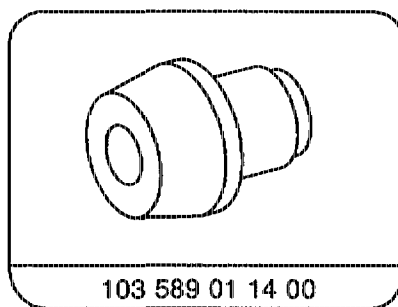
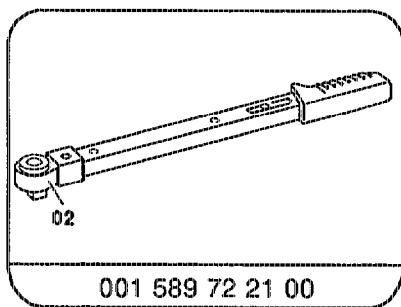
Engine 104.99

|  |  |
|--|--|
| Engine 104.990: .....  | drain coolant at radiator, pour in (20-0100).  |
| Guide rail at top .....  | remove, install (05-3400).   |
| Heating water return pipe (25) or high voltage<br>cable trnl. 4 of timing case cover ..... | unbolt, bolt on.   |
| Shock absorber (34) of tensioning device<br>of front cover .....                           | unbolt, push down and turn, bolt on (21 Nm).   |
| Engine 104.990: .....  | remove connection fitting for coolant return,<br>install (21 Nm), replace O-rings (30b + 30c). |
| Front cover (30) at top .....  | remove.  |
|  | <b>Note</b>  |
|  | If the front cover is replaced, the camshaft<br>position sensor must be adjusted.              |
|  | Clearance 0.2 to 0.6 mm (AR15.12-2143G).   |
| Gasket (24) .....  | replace.   |
| Cover .....  | install with bottom right bolt (32), seal, bolt on<br>(21 Nm) (steps 9 to 13).                 |
| Screw plug to guide rail bolt .....  | unscrew, screw on (step 6).  |
| If parts are replaced, adjust position sensor.   |  |
| Clearance 0.2 mm to 0.6 mm.  |  |

#### Tightening torques in Nm

|   |     |
|---|-----|
| Cylinder head cover to cylinder head            | 10  |
| Distributor rotor to follower (reference value) | 2.5 |
| Front cover at top to cylinder head             | 21  |
| Follower to camshaft                            | 16  |

#### Special tools



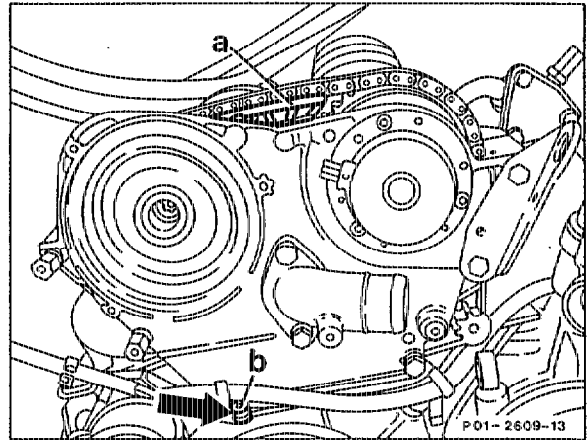
## Removing, installing

1 Engine 104.990: drain coolant at radiator (20-2100).

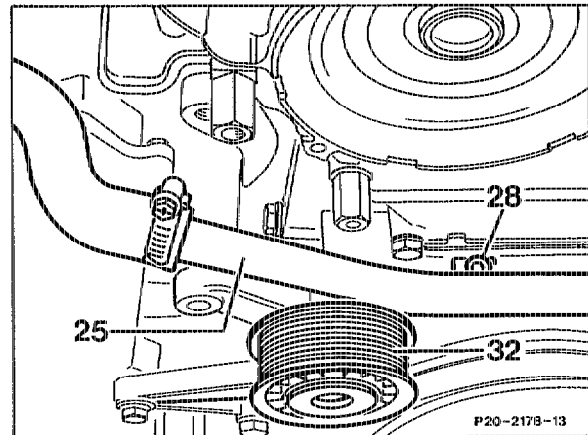
2 Remove guide rail at top (a) (05-3400).

### Note

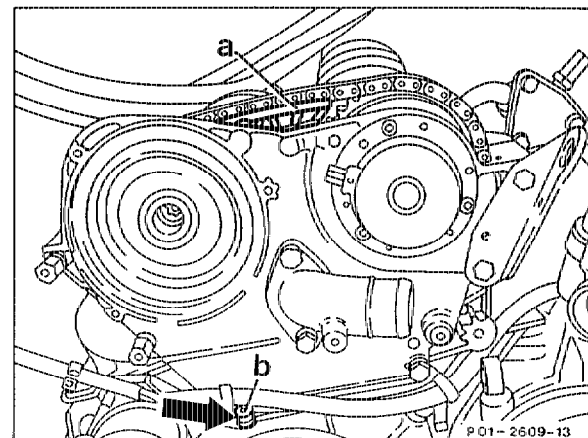
If the top curved guide rail (a) is taken out of its mounting, the pressure pin in the chain tensioner is moved one detent in the pressure direction. The chain tensioner must be removed to avoid the timing chain being over-tensioned.



3 Engine 104.98: unbolt heating water return pipe (25) from the fan bearing bracket (28).  
Unbolt guide pulley (32).



4 Engine 104.99: unbolt cable terminal 4 between high voltage distributor and ignition coil from timing case cover (b).

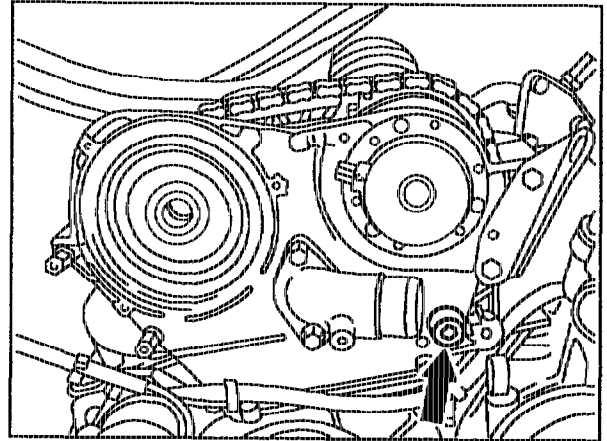


5 Unplug connectors at position sensor, camshaft and solenoid.

6 Unbolt screw plug (arrow).

**Installation note**

Push back spacer pin to enable front cover to be more easily installed. Install front cover, screw on plug (arrow).



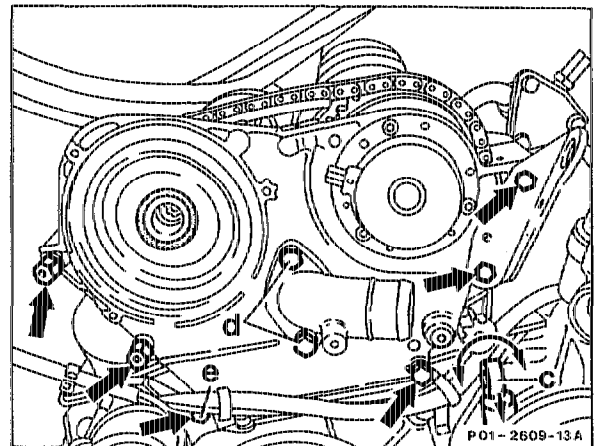
P01-5889-13

7 Unbolt shock absorber (c) tensioning device from front cover, push down and turn.

8 Unscrew bolts (arrows) for front cover, take off cover with bolt item (e).  
Engine 104.99: bolts (d) only in case of coolant return through the front cover.

**Installation note**

Pay attention to packing at shock absorber of tensioning device.

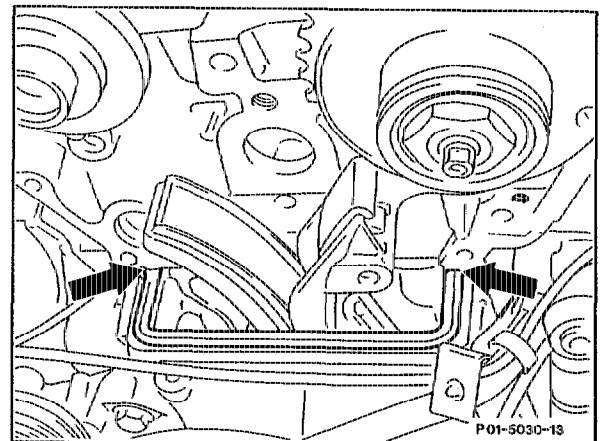


P01-2609-13A

9 For sealing, apply sealant 002 989 45 20 in each case in the form of a dot into the oil-free groove of the timing case cover on the left and right at the joint (arrows) to the cylinder head.

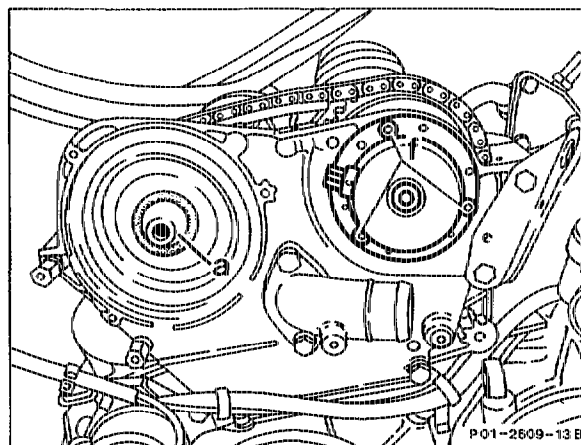
10 Insert new gasket dry (without sealant) into the oil-free groove. Coat the top side of the gasket with a little engine oil.

11 Coat front cover at the contact surfaces to the cylinder head with sealant 002 989 47 20.



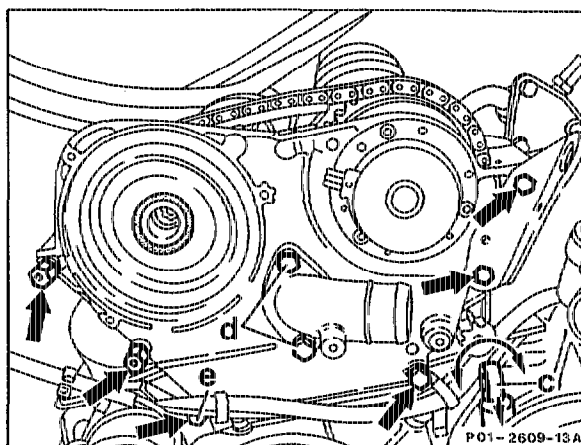
P01-5030-13

12 Fit insertion sleeve (a), part no. 103 589 01 14 00 (for camshaft ID 20 mm) to exhaust camshaft. Coat sealing lip of radial seal all round with engine oil.



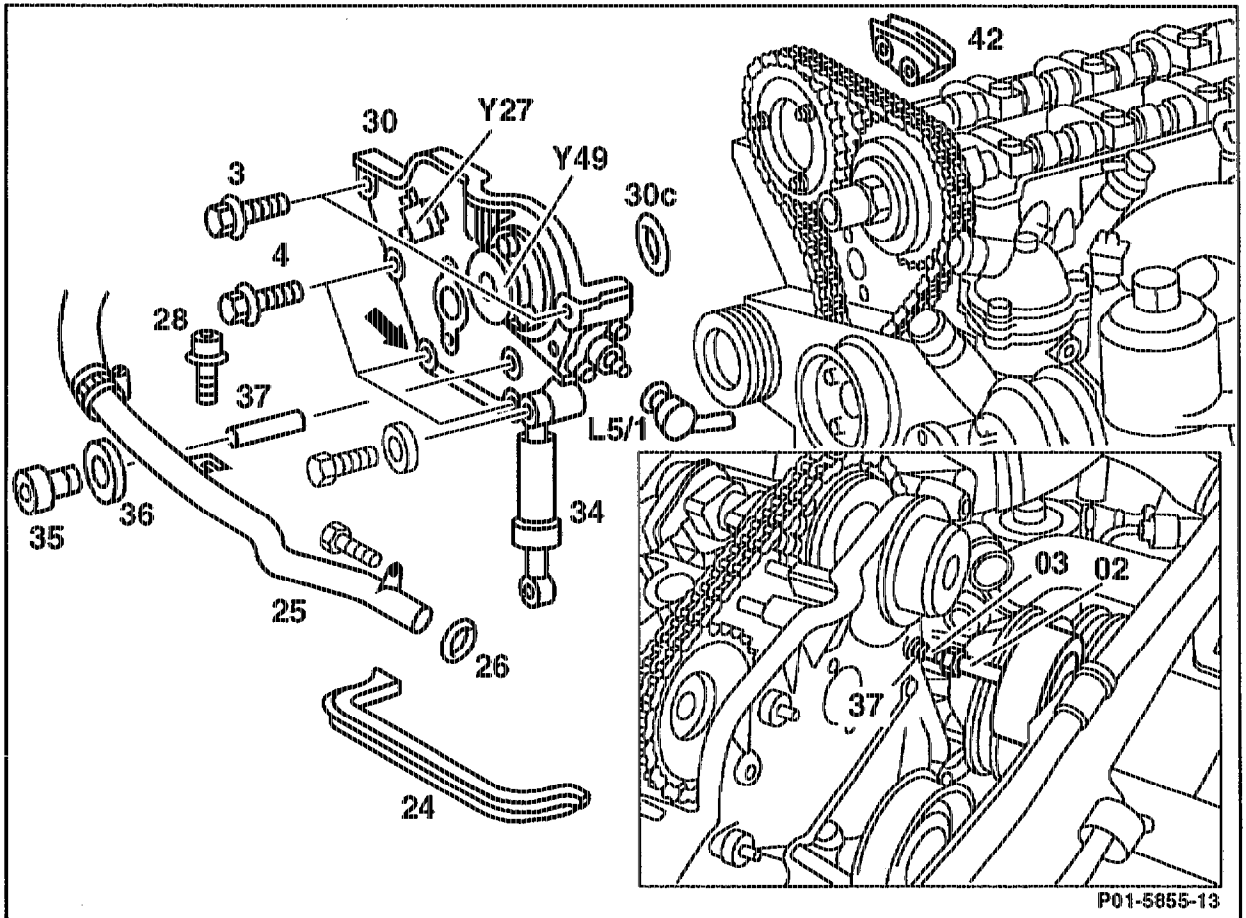
13 Install front cover with inserted bottom right bolt (e). First of all tighten the bottom bolts. Tightening torque 21 Nm.

14 Install in the reverse order.



Preceding work:  
Coolant connection fitting at front  
Cover removed (20-1200).

## B. Engines with HFM-SFI



- 3 M8 x 60 bolt + washer
- 4 M8 x 80 bolt + washer

Guide rail at top (42) ..... remove, install (05-3400).

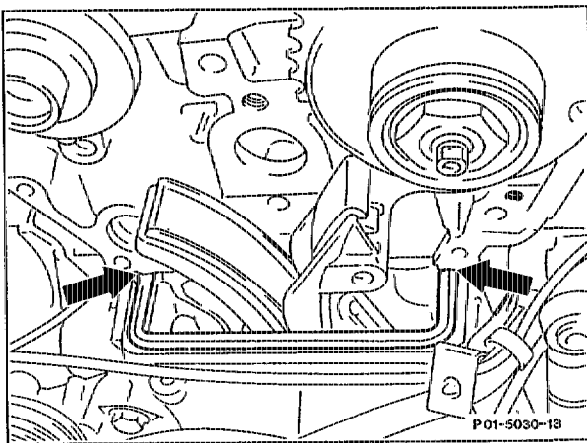
### Note

If the top curved guide rail (42) is taken out of its mounting, the pressure pin in the chain tensioner is moved one detent in the pressure direction. The chain tensioner must be removed to avoid the timing chain being over-tensioned.

Heating water return pipe (25) at fan bearing bracket and coolant pump ..... unbolt, bolt on.

Seal (26) ..... replace.

|  |  |
|--|--|
| Connectors (L5/1) of camshaft position sensor and (Y49) camshaft adjustment actuator ..... | unplug, plug in.   |
| If secondary air injection fitted: .....   | disconnect vacuum pipes and connector at switchover valve (Y27), fit on.                                   |
| If 1st version tensioning device fitted: .....   | unbolt shock absorber of tensioning device (34) at front cover (30), push down, bolt on (21 Nm).           |
| Screw plug (35) with seal (36) .....   | unscrew, screw on.   |
| Top guide rail pin (37) .....  | use impact extractor (02) 116 589 20 33 00 and threaded insert (03) 116 589 01 34 00 in order to pull off. |
| Bolts (3) and (4) at front cover (30) .....  | unscrew, screw on (21 Nm).   |
| Front cover (30) .....   | remove with bottom right bolt (arrow), install.  |
| Seal (30c) and shaped rubber gasket (24) .....   | <p style="text-align: center;">⚠</p> Do not apply pressure to front cover (30) when removing.<br>replace.  |



|   |  |
|---|--|
| Sealant 002 989 45 20 .....                                 | apply on left and right at joint (arrows) to cylinder head in the form of a dot. |
| New shaped rubber gasket (24) .....                         | insert dry (without sealant) into the oil-free groove.                           |
| Top side of shaped rubber gasket .....                      | coat with a little engine oil.   |
| Front cover (30) at contact surfaces to cylinder head ..... | coat with sealant 002 989 45 20.   |

Front cover (30) ..... fit on, first of all tighten bottom bolts (4) (21 Nm).



When installing the front cover (30), ensure that the shaped rubber gasket (24) is not shifted; chamfer edge on cover (30) at bottom for this purpose.

**Note**

If the front cover is replaced, the camshaft position sensor must be adjusted.

Clearance 0.2 to 0.6 mm (AR15.12-2143G).

Engine ..... check run, for leaks.

**Special tools**

