

11 31 505**Adjusting timing of camshaft(s) (N55)****Special tools required:**

- [00 9 120](#)
- 00 9 250
- [11 4 280](#)
- [11 4 281](#)
- [11 4 282](#)
- [11 4 285](#)
- [11 4 290](#)
- [11 9 340](#)

**Important!**

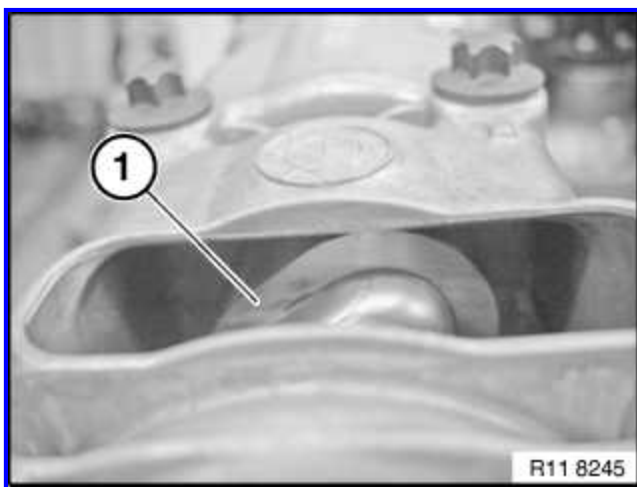
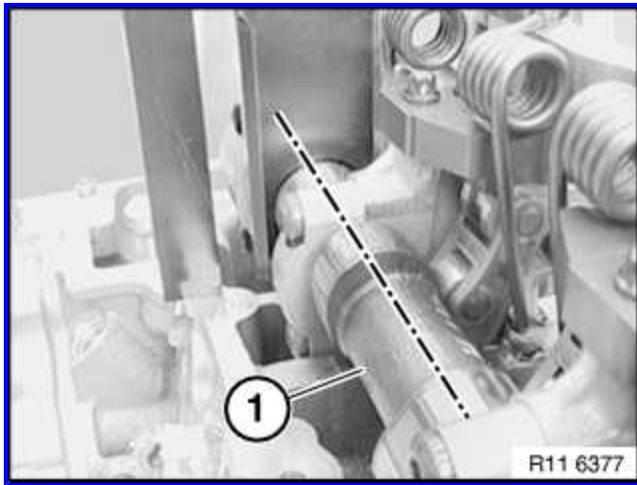
For the positioning of the special tool [11 4 281](#) on the mounting flats of the intake camshaft, a collision with the cylinder throttle return spring 1 can occur.

Rework special tool [11 4 281](#) on the basis of the following [description](#).

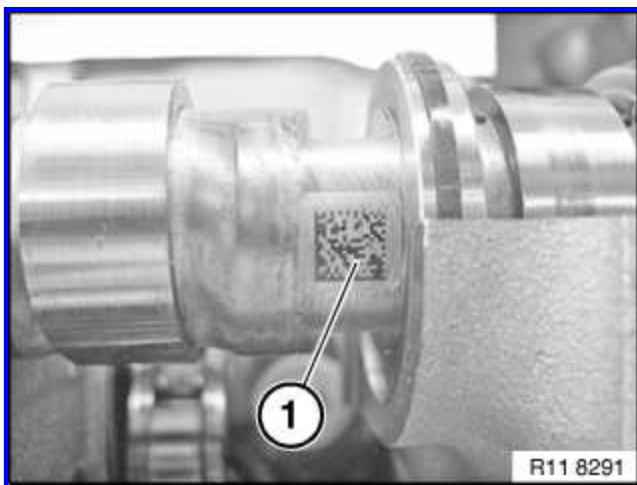
**Necessary preliminary tasks:**

- Remove [cylinder head cover](#).
- Check [timing](#).

With 1st cylinder in TDC firing position, cams of intake camshaft (1) at 1st cylinder point upwards at an angle.



With 1st cylinder in TDC firing position, cams of the exhaust camshaft (1) point upwards at an angle.



Part numbers (2) on intake and exhaust camshafts (1) point upwards.

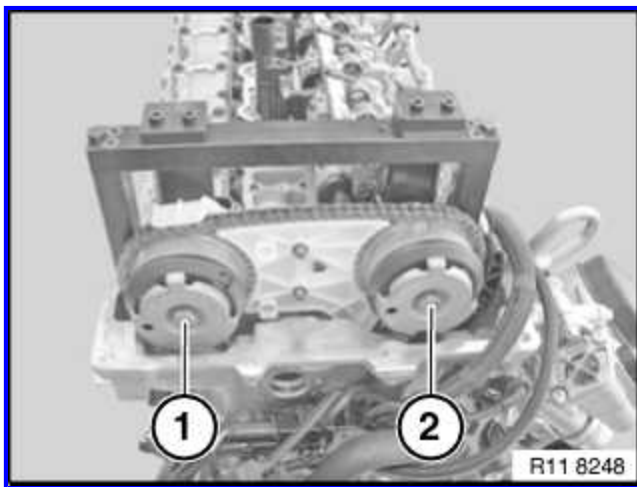
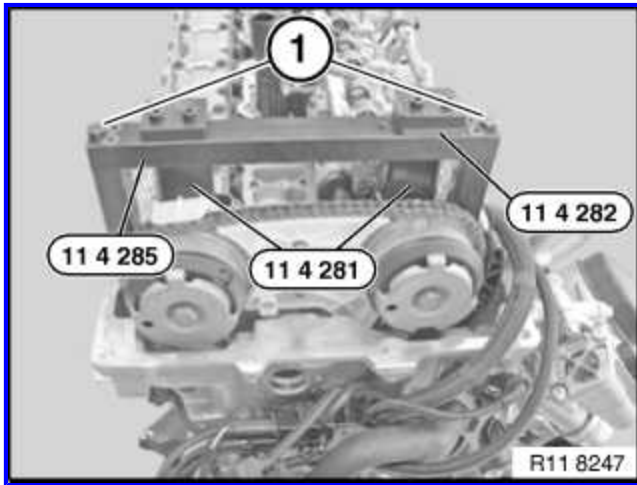
Secure special tool [11 4 285](#) with bolts (1) to cylinder head.

Note:

Fit special tool [11 4 282](#) underneath on side of intake camshaft.

Mount reworked special tool [11 4 281](#) on the intake camshaft.

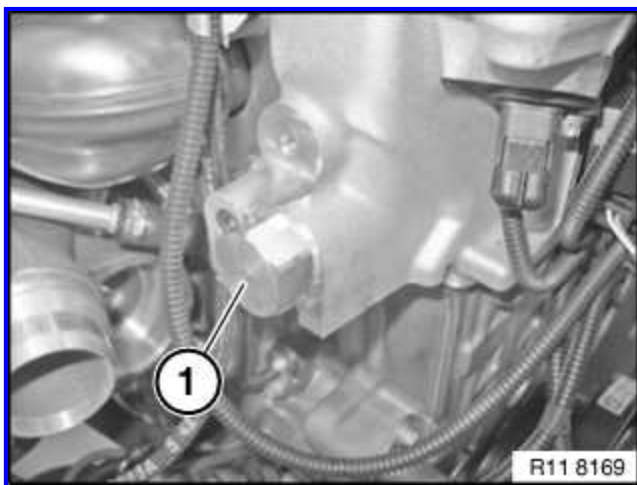
Mount special tool [11 4 281](#) on the exhaust camshaft.



Important!

Only use special tool [11 4 280](#) to loosen central bolts (1 and 2) of VANOS unit.

Release central bolts (1 and 2).



Release chain tensioner (1).

Tightening torque [11 31 7AZ](#).

Important!

Have a cleaning cloth ready. A small quantity of engine oil will emerge after the screw connection has been released.

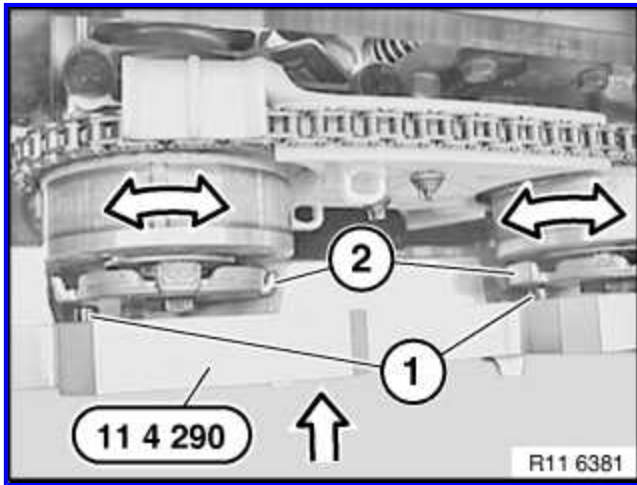
Make sure no engine oil runs onto belt drive.

Installation note:

Replace sealing ring.

Turn increment wheel (2) in direction of arrow until retaining pins (1) on special tool [11 4 290](#) match up.

[11 4 290](#) Slide on special tool in direction of arrow.



Use bolts to fasten special tool [11 4 290](#).

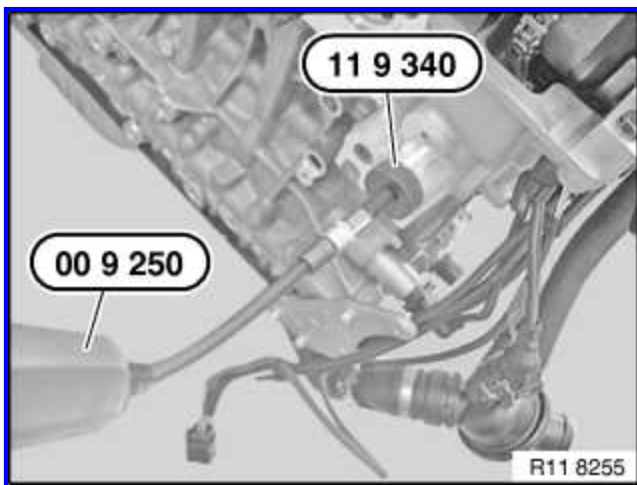
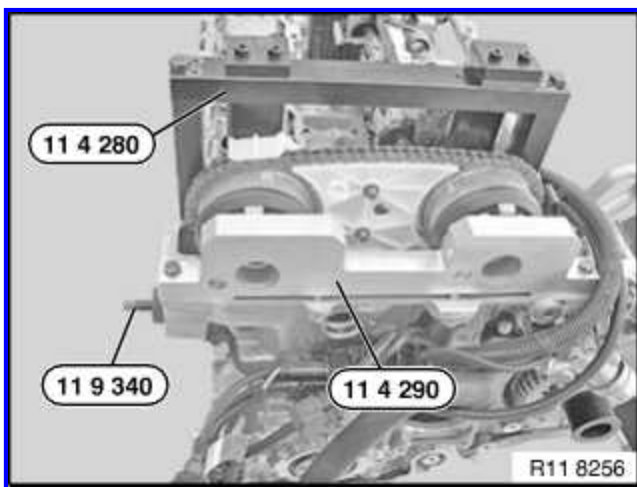
Installation note:

Replace both central bolts.

Screw in both central bolts.

Release both central bolts 90°.

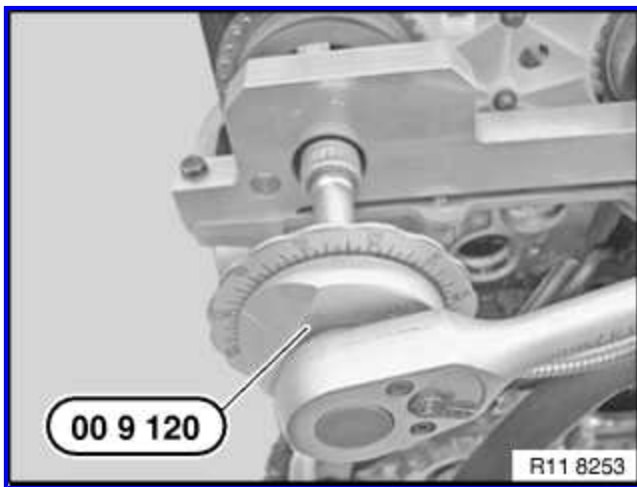
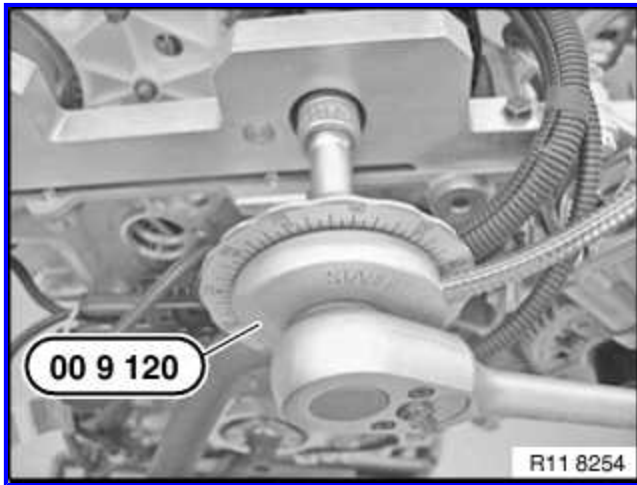
[11 9 340](#) Screw special tool into cylinder head.



Pretension timing chain with special tool [11 9 340](#)
00 9 2500,6 Nm

Use special tool [00 9 120](#) to tighten central bolts of intake adjuster.

Tightening torque [11 36 1AZ](#).



Use special tool [00 9 120](#) to tighten central bolts of exhaust camshaft adjuster.

Tightening torque [11 36 1AZ](#).



Remove all special tools.

Crank engine on the central bolt twice in the direction of engine rotation and check the [timing](#).

Assemble engine.