

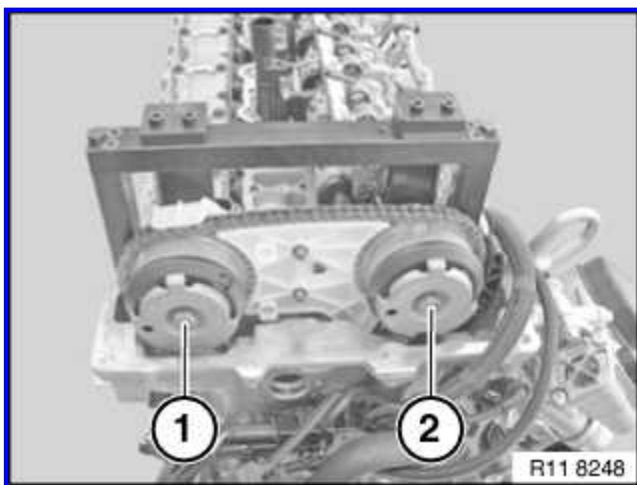
11 36 046**Removing and installing or replacing
intake and exhaust camshaft adjusters
(N55)****Special tools required:**

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

*Necessary preliminary tasks:*

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

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**Important!**

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

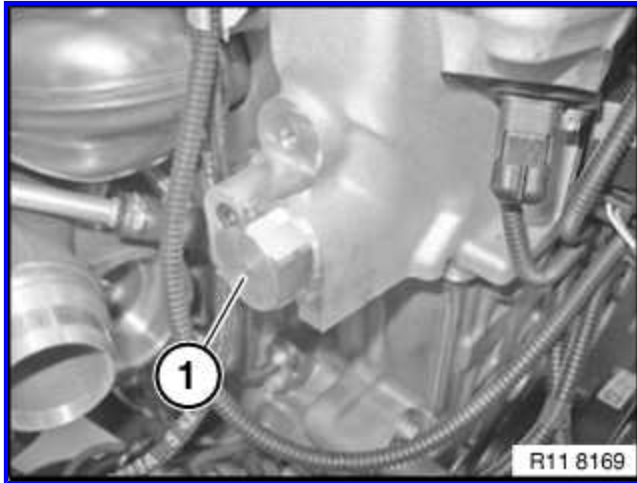
Modify special tool [11 4 280](#) for N55 engine.

Release central bolts (1 and 2).

Release chain tensioner (1).

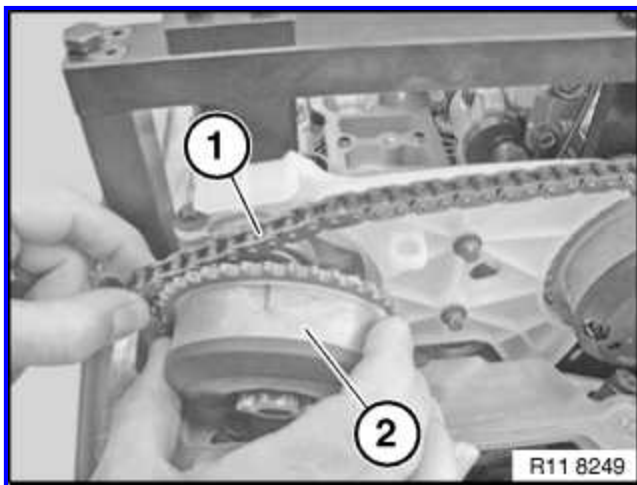
Tightening torque [11 31 7AZ](#).

Important!

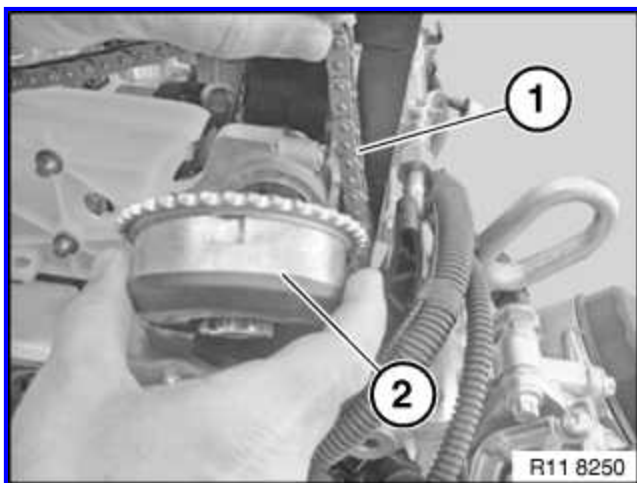


Have a cleaning cloth ready. A small quantity of engine oil will emerge after the screw connection has been released.
Make sure no engine oil runs onto belt drive.

Installation note:
Replace sealing ring.



Slightly lift timing chain (1) and remove exhaust camshaft adjuster (2) from exhaust camshaft.
Slightly tilt exhaust camshaft adjuster (2) and remove upward.

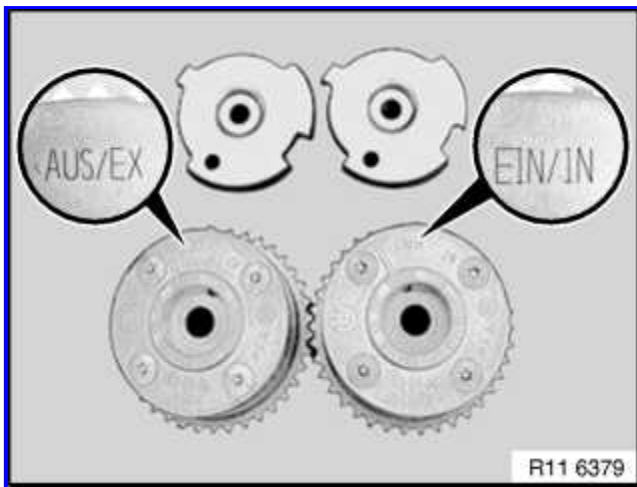


Slightly lift timing chain (1) and remove intake adjuster (2) from intake camshaft.
Slightly tilt intake adjuster (2) and remove upward.

Important!

Risk of mixing up the intake and exhaust camshaft adjusters.

Danger of engine damage!

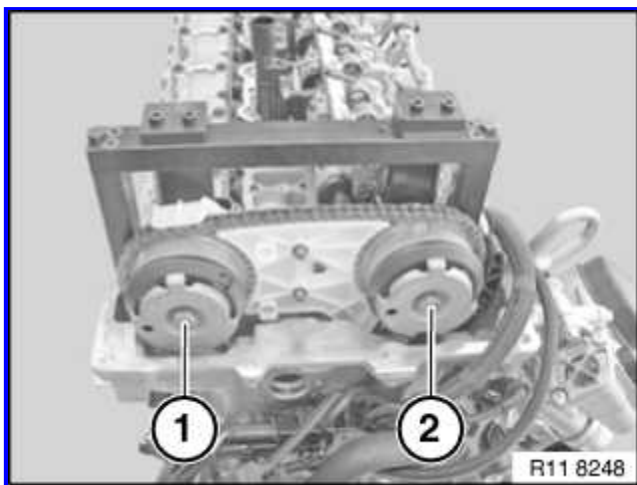


Intake and exhaust camshaft adjusters are different.

The variable camshaft timing control is marked with AUS/EX for the exhaust camshaft.

The variable camshaft timing control is marked with EIN/IN for the intake camshaft.

The increment wheels can be fitted alternatively.



Installation note:

Replace central bolts.

Place intake adjuster onto intake camshaft.

Place exhaust camshaft adjuster onto exhaust camshaft.

Installation position of intake and exhaust camshaft adjusters can be freely selected.

Insert central bolts (1) until stop.

Release central bolts (1) again by a 90° turn.

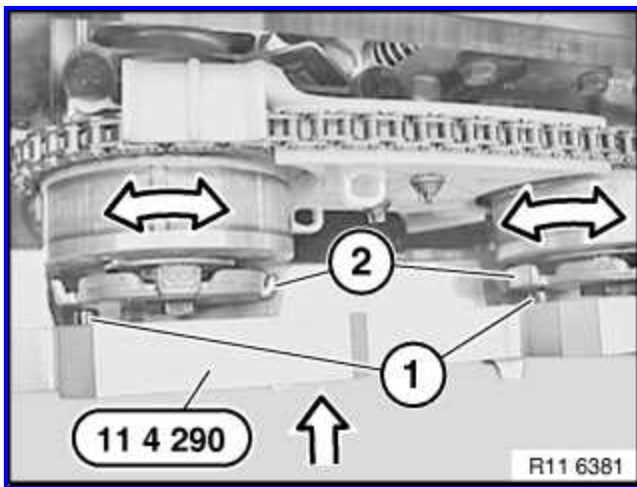
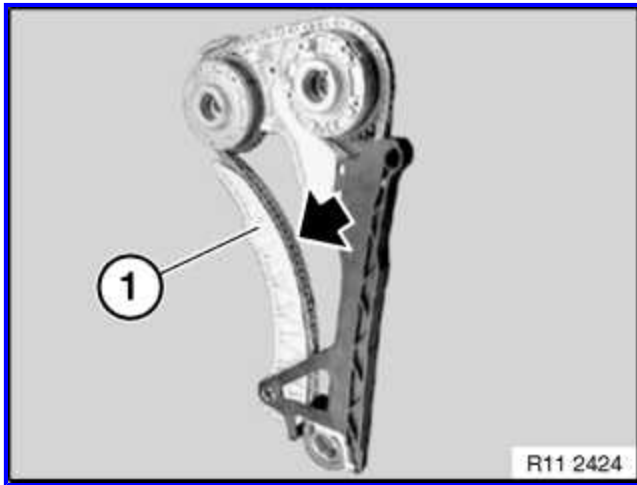
Important!

Incorrect assembly possible!

Press tensioning rail (1) by hand against guide rail and make sure timing chain is guided in tensioning rail (1).

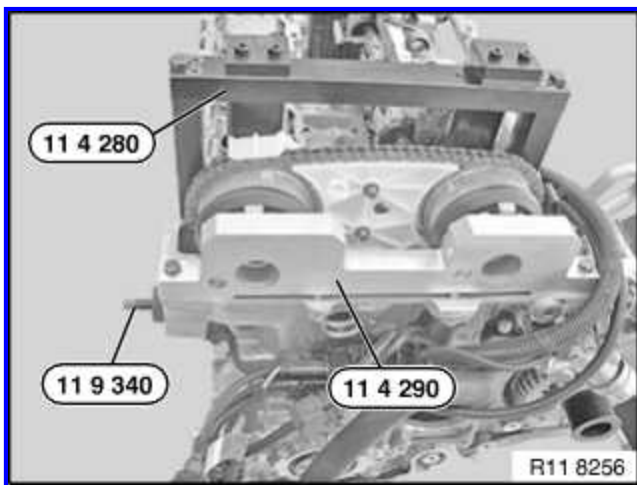
Note:

Schematic representation of removed timing chain module.



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.

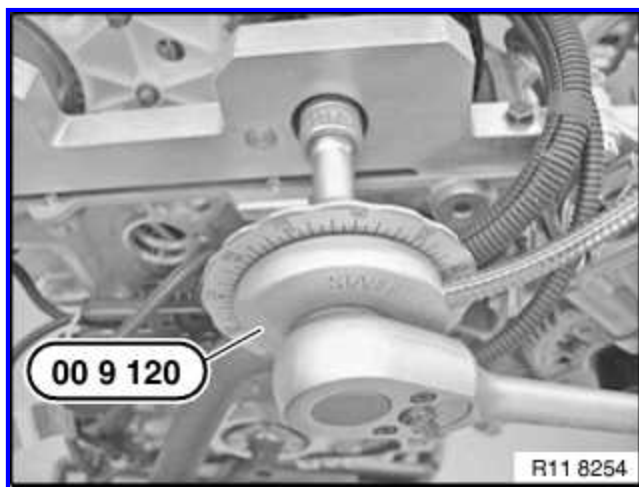
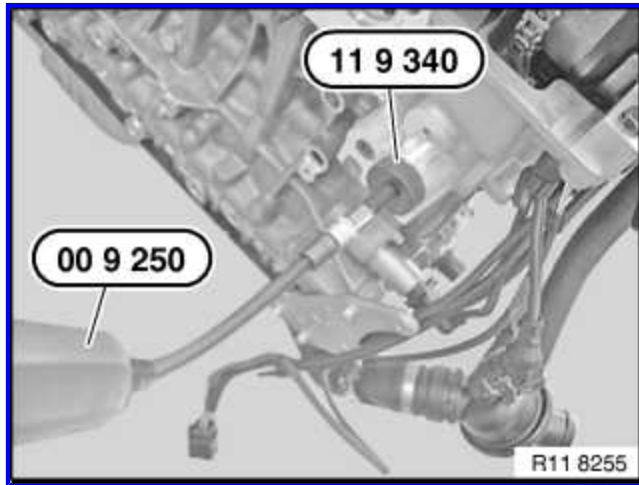


Special tool [11 4 280](#) must be mounted for fastening central bolts

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

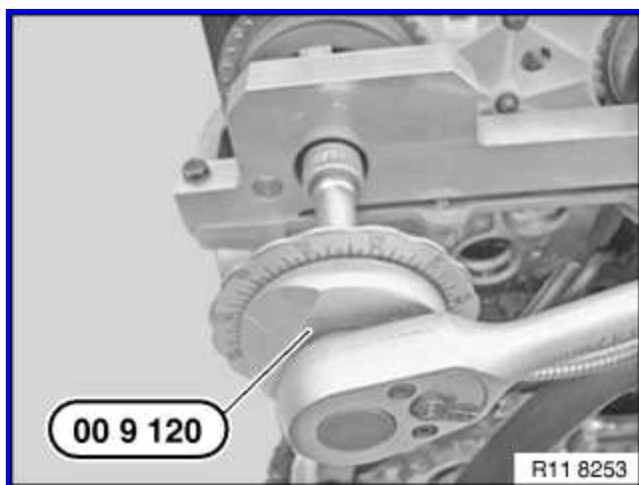
[11 9 340](#) Screw special tool into cylinder head.

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.

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

Assemble engine.

