

ISTA system version 4.14.14.17050

Data version R4.14.14

Programming - data

VIN TT07533

Vehicle MINI/R56/HAT/Cooper/N12/MANUAL/ECE/RL/2007/03

Int.lev.works -

Int.lev.(cur.) -

Int.lev.(tar.) -

Mileage -

11 31 005

Checking camshaft timing (N12)



Special tools required:

- [11 9 540](#)
- [11 9 590](#)
- [11 9 340](#)
- [00 9 460](#)



Important!

Modified procedure for timing.

The timing is not determined in the firing TDC position of cylinder no. 1.

All pistons are in the 90° position.

Check locking of adjusters.

Observe direction of rotation (direction of rotation clockwise when viewed towards timing drive side).

A reverse rotation of the engine is not permitted, test adjustment values will be distorted.

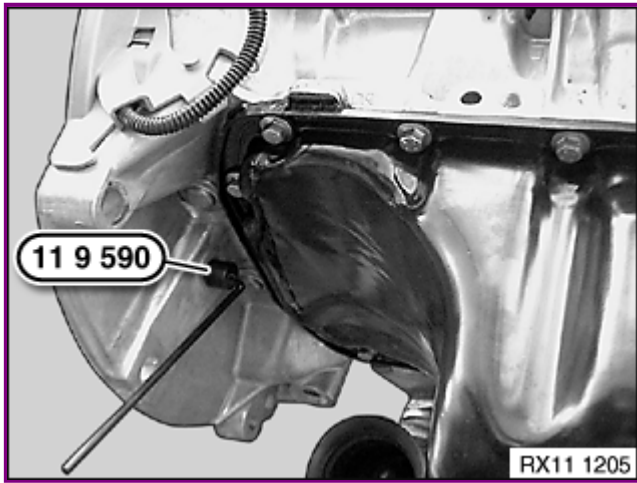


Necessary preliminary tasks:

- Remove [cylinder head cover](#).
- Remove front right wheel arch cover.

Important!

Danger of mixing up dowel hole.



Balance hole and special tool dowel hole can be mixed up; all pistons must be in the 90° position.

If necessary, determine by means of spark plug bore.

Rotate crankshaft at central bolt.

Position crankshaft with special tool [11 9 590](#).

Do not remove special tool [11 9 590](#) during repair work.



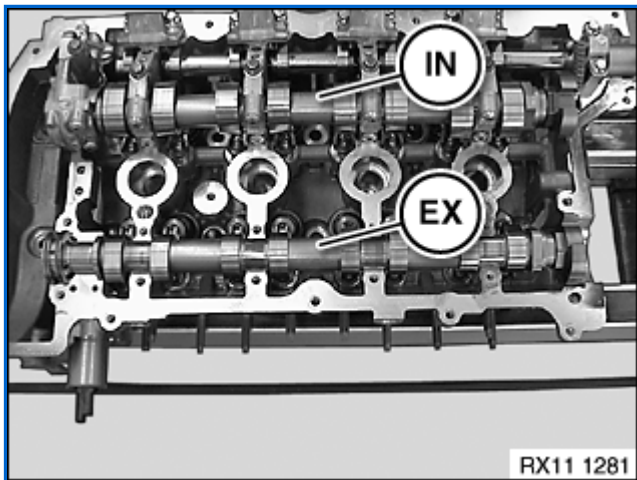
Important!

Check locking on VANOS adjustment units.

Attempt to rotate camshaft in direction of rotation at hexagon head.

The adjusters are locked in the initial position when the camshafts are non-positively connected to the adjusters.

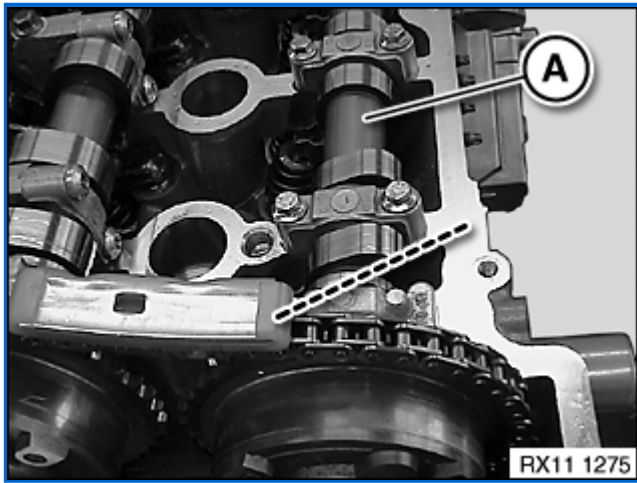
If no fixed connection to the camshaft can be established, the adjuster is faulty and must be replaced.



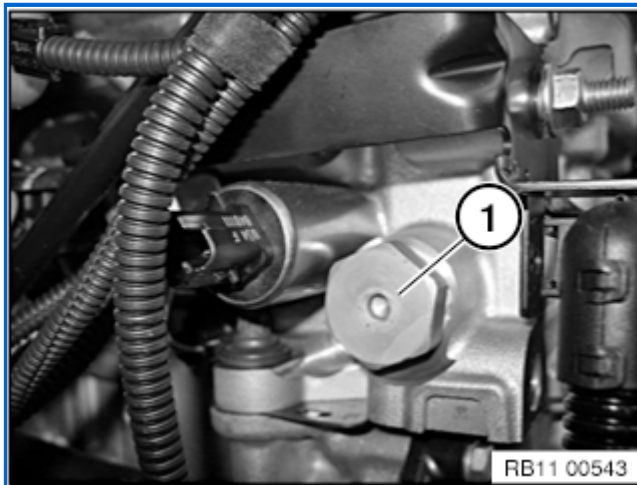
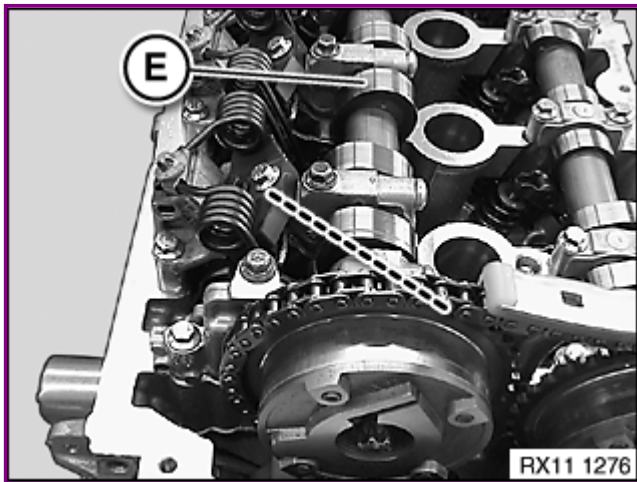
Both camshafts are in the correct installation position when the designation (IN) for inlet camshaft points upwards.

In the case of the exhaust camshaft, the designation EX must point upwards.

Position of exhaust camshaft (A) points at an angle to the right in an upper outward direction



Position of inlet camshaft (E) points at an angle to the left in an upper outward direction.



Partially release positive battery cable.

Release chain tensioner (1).

Tightening torque: [11 31 4AZ](#).

Important!

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

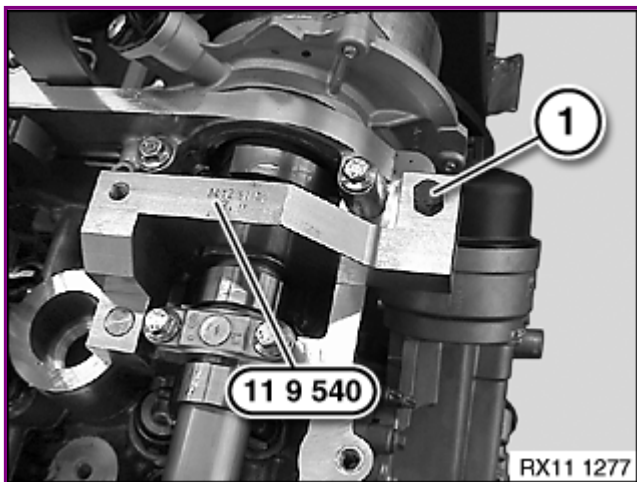
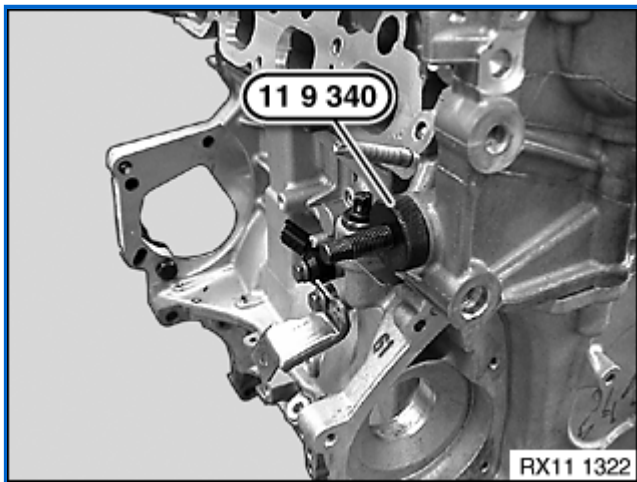
Make sure no oil runs onto the belt drive.

Installation note:

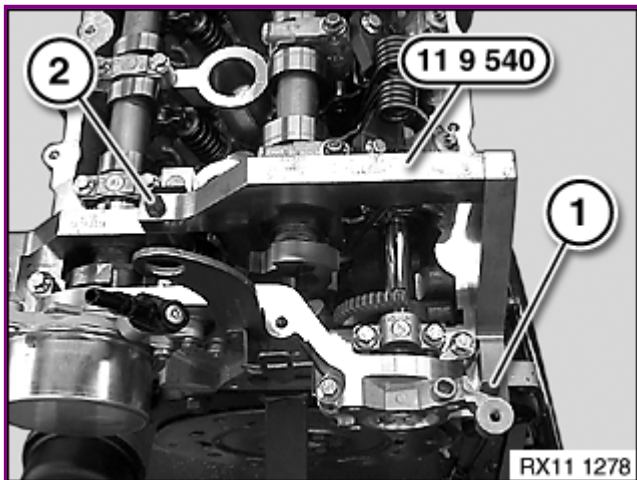
A new sealing ring must be installed by service personnel when the chain tensioner is fitted.

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

Pre-tension timing chain with special tool [00 9 460](#) to 0.6 Nm.



Place (position) special exhaust tool [11 9 540](#) on mounting flats of exhaust camshaft.



Place (position) special intake tool [11 9 540](#) on mounting flats of intake camshaft.



Important!

Observe direction of rotation (direction of rotation always clockwise when viewed towards timing drive side).

A reverse rotation of the engine is not permitted, test adjustment values will be distorted.

If necessary, adjust [valve timing](#).

Assemble engine.