

11 37 020**Removing and installing/replacing
servomotor for eccentric shaft (N55)****Warning!**

The preloading on the throttle return springs increases as the rotation on the worm gear increases. **Danger of injury!**

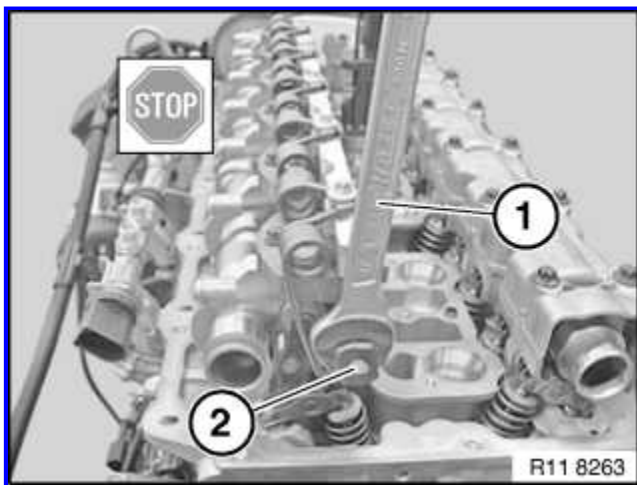
The eccentric shaft may only be twisted on the mounting flats for protection.

Risk of damage to the eccentric shaft gearing and to the servomotor worm drive.

The eccentric shaft must **not** spring back to the minimum stroke stop. **Risk of damage!**

*Necessary preliminary tasks:*

- Remove [cylinder head cover](#).
- Remove [ignition coils and injector shafts](#) of cylinders 1 to 4.

**Warning!**

Heed stop installation instructions.

The eccentric shaft on the mounting flats (2) must only be turned with an open-end spanner (1) for support.

Heed the following work instructions.

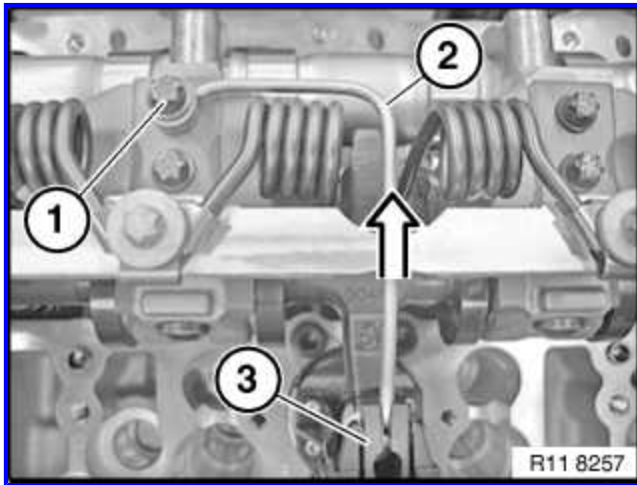
After the motor stops, the eccentric shaft is in the maximum stroke position.

If the actuator drive is defective, the eccentric shaft is located in an undetermined position.

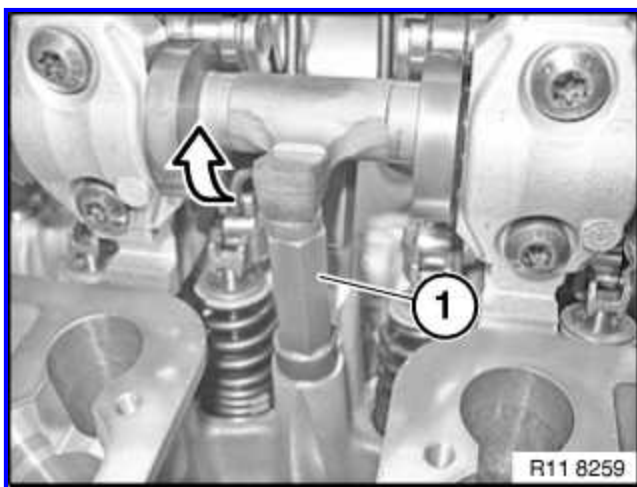
Release bolt (1) on the oil spray nozzle.

Tightening torque: [11 37 4AZ](#).

Unclip oil spray nozzle (2) from the bracket on the actuator



drive (3) in direction of arrow.



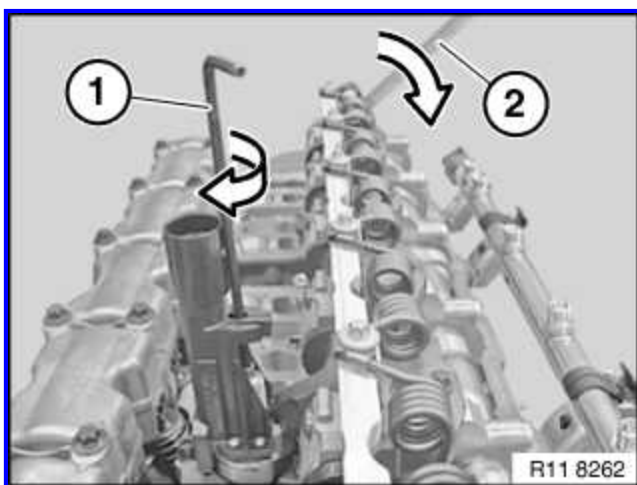
If the eccentric shaft is not on maximum stroke, the eccentric shaft must be adjusted to maximum stroke.

Important!

Fix eccentric shaft with an open-end spanner (kickback danger)

Adjust eccentric shaft only on the hexagon socket of the actuator drive (preload).

Remove minimum stroke stop (1).



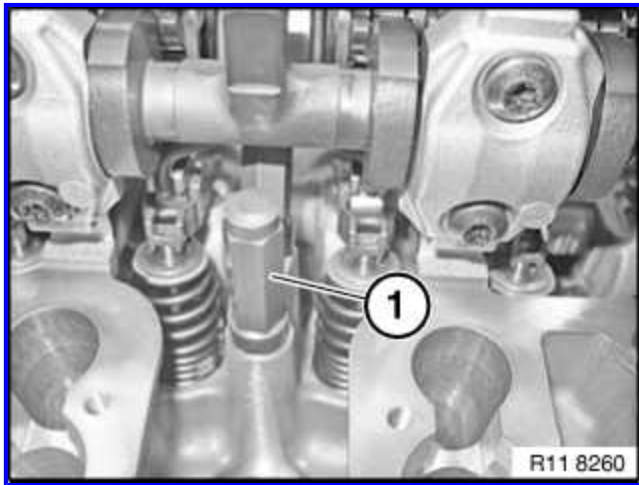
Turn 4-mm hexagon socket wrench (1) clockwise in direction of arrow (maximum stroke).

Secure eccentric shaft with an open-end spanner (2) for support in direction of arrow.

Fix eccentric shaft with an open-end spanner (2) (kickback danger)

Remove minimum stroke stop (1).

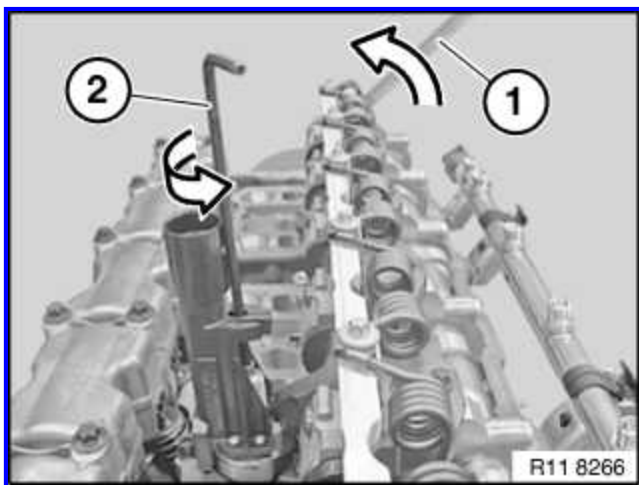
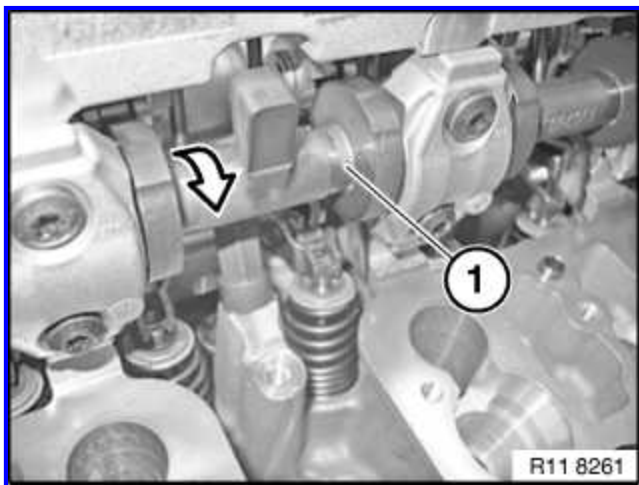
Tightening torque: [11 37 5AZ](#).



Adjust eccentric shaft (1) to minimum stroke in direction of arrow via servomotor.

Important!

Secure eccentric shaft with an open-end spanner (kickback danger)



Slowly adjust eccentric shaft in direction of arrow to minimum stroke via the servomotor with a 4-mm hexagon socket wrench (2) and an open-end spanner (1).

Important!

Secure eccentric shaft with an open-end spanner (1) (kickback danger)

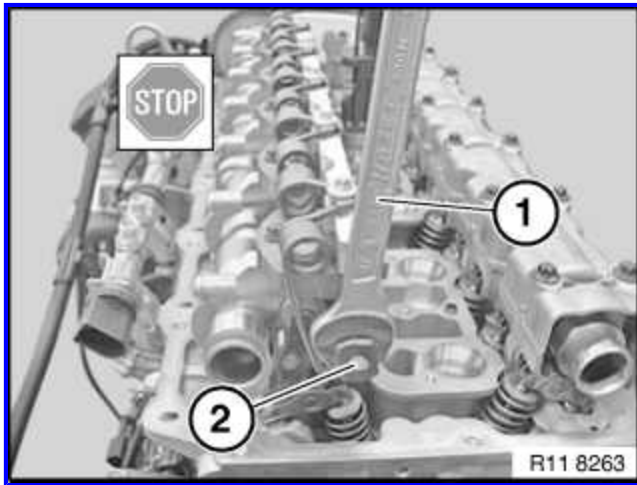
Release gearing of the eccentric shaft from worm drive.

Important!

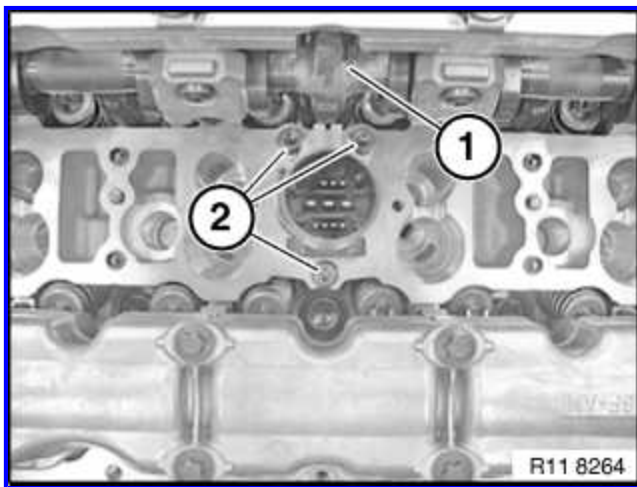
Eccentric shaft (2) is no longer connected to the worm drive of the servomotor in this working position.

Turn eccentric shaft (2) approximately 90° further with an open-end spanner (1).

Secure eccentric shaft (2) against kickback with the assistance



of a second person.

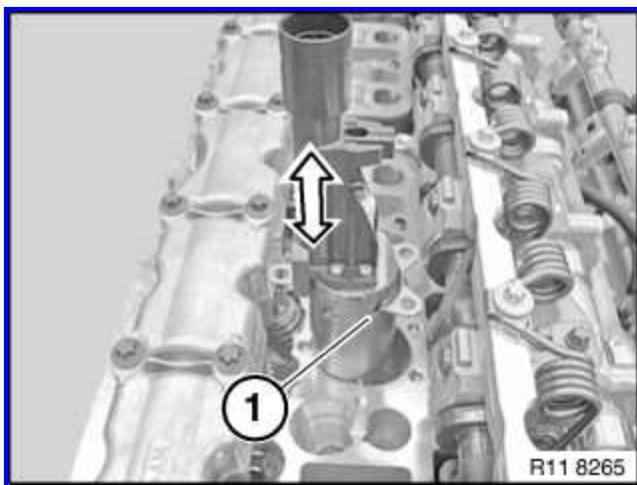


Important!

Eccentric shaft (1) is located in a relaxed position.

Secure eccentric shaft (1) against kickback with the assistance of a second person.

Unfasten screws (2).



Remove servomotor (1) upward in direction of arrow.

Installation note:

Clean blind holes with compressed air.

Install servomotor (1) downward in direction of arrow.

Secure eccentric shaft against kickback with the assistance of a second person.

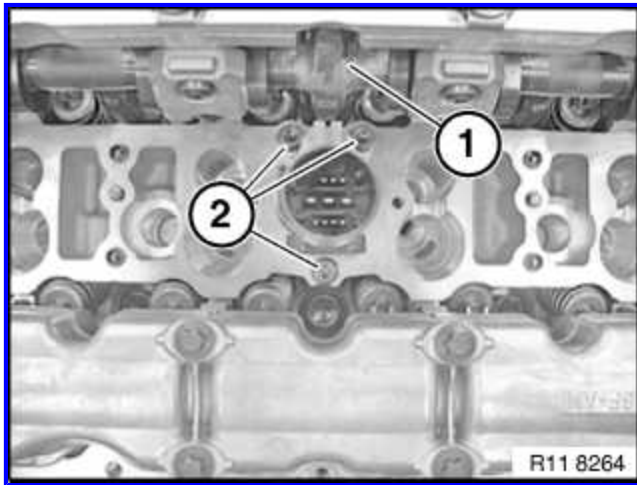
Installation note:

The gearing of the eccentric shaft and the worm gear must be greased with [Long-time PD 1 \(4.1\)](#).

Installation note:

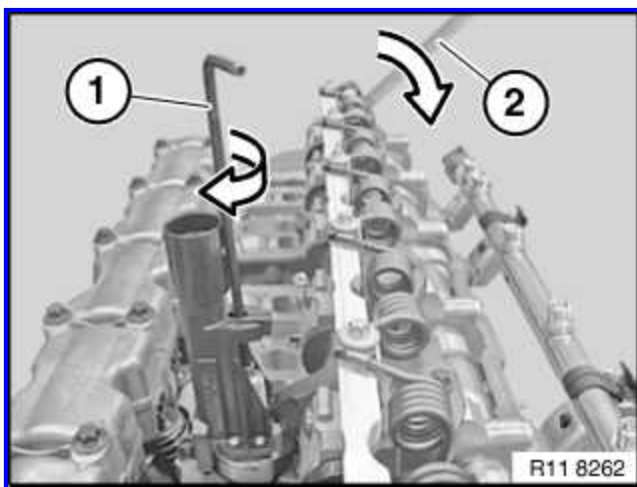
Eccentric shaft and worm drive must now be joined.

Carefully mate eccentric shaft gear in the worm shaft of the servomotor by simultaneously pressing and turning on the actuator drive.



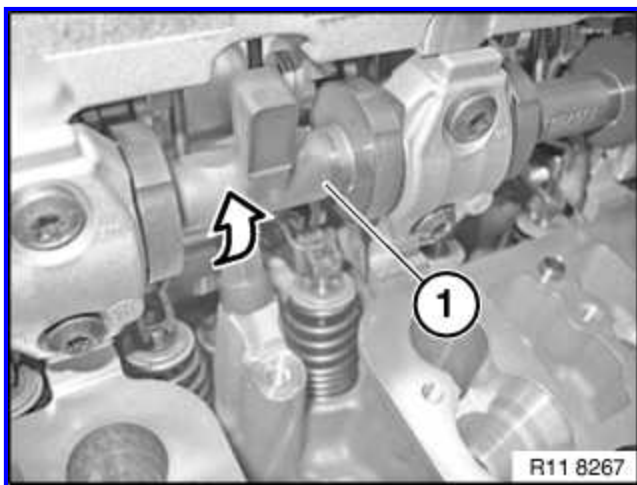
Insert bolts (2).

Tightening torque: [11 37 3AZ](#).



Preload eccentric shaft to maximum stroke with a 4-mm hexagon socket wrench (1) on the servomotor in direction of arrow.

Fix eccentric shaft with an open-end spanner (2) for support and secure (kickback danger).



Adjust eccentric shaft (1) back to maximum stroke in direction of arrow via servomotor.

Important!

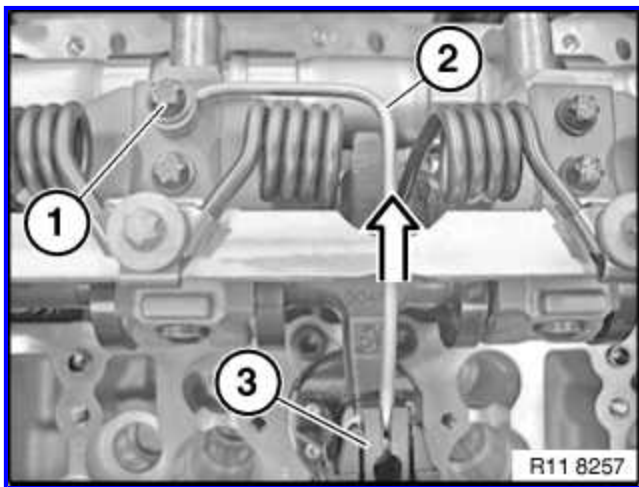
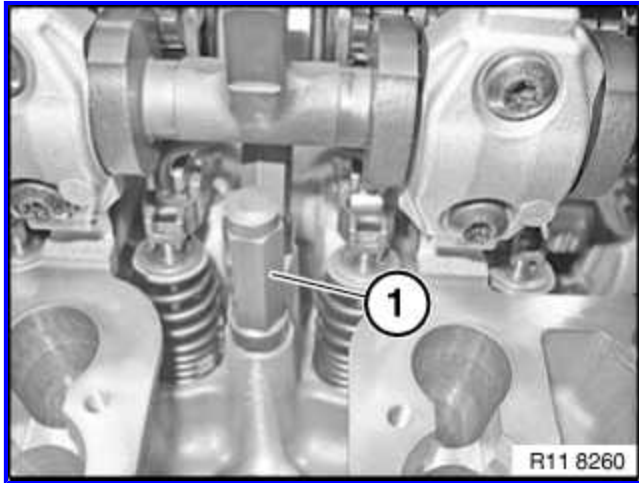
Fix eccentric shaft with an open-end spanner and secure. (kickback danger)

Screw in stop (1) for minimum stroke.

Tightening torque: [11 37 5AZ](#).

Important!

Fix eccentric shaft with an open-end spanner and secure. (kickback danger)



Retract oil spray nozzle (2) on actuator drive (3).

Engage bolt (1) and release back to 90°.

For exact positioning of the oil spray nozzle (2) audibly clip it in at the top.

Secure oil spray nozzle (2) with screw (1).

Tightening torque: [11 37 4AZ](#).



Remove all special tools.

Assemble engine.

Check function of Digital Engine Electronics.

- Service function.
- Drive.
- Digital Motor Electronics
- Valvetronic run-in procedure.