



Removal and refitting of the rotation device

Special tools:

- Rotation device: 100320

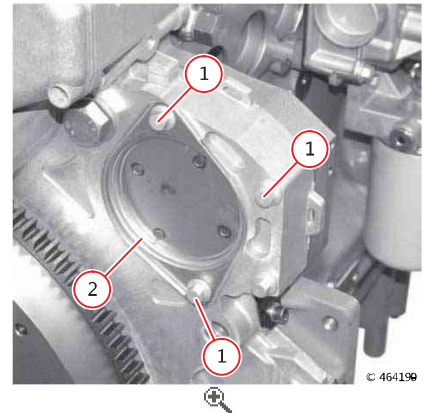


NOTE

Depending on the number of gear teeth, the rotation tool 100330 may also be used.

Removal

- Remove screws (1).
- Remove cover (2).



1.

Fitting the rotation device

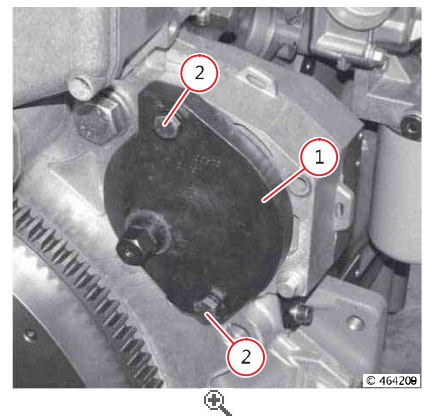
- Insert rotation device (1).



NOTE

The toothed wheel of the rotation device must mesh with the teeth of the camshaft gear.

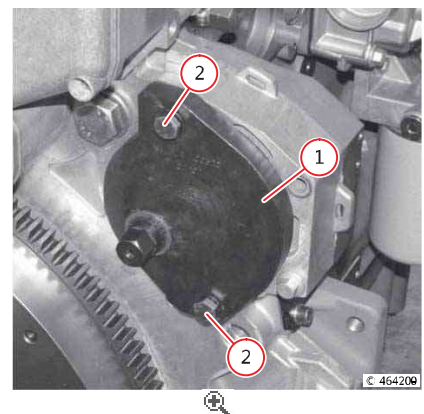
- Tighten screws (2).



1.

Removal of the rotation device

- Remove screws (2).
- Remove rotation device (1).



1.

- Clean the mating surfaces of the cover plate and the gearbox cover.
- Fit a new O-ring (1).
- Lightly lubricate the O-ring.

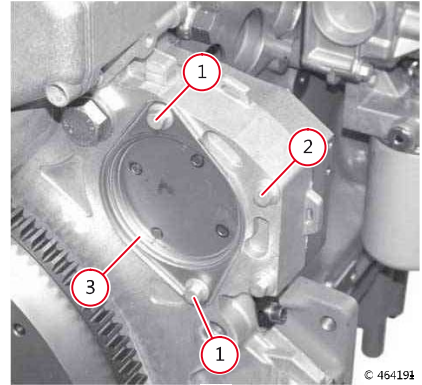


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2.

- Fully press down the cover (3).
- Tighten the screw (2): 30 Nm.
- Tighten the screws (1): 21 Nm.



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3.

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Removing and fitting the V-belt pulley

Commercially available tools:

- Torque wrench
- Rotation angle gauge: 8189
- Box spanner insert Torx E20: 8114

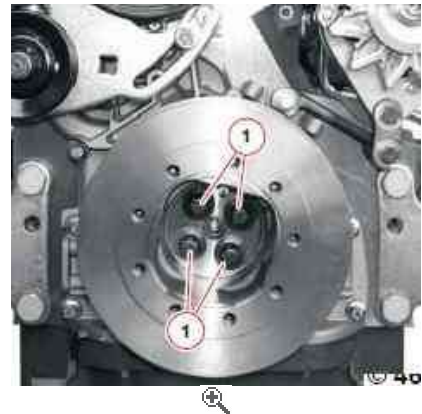
Removing the V-belt pulley

- Loosen screws (1).
- Remove the V-belt.



1.

- Fit the rotation device.
[See para. Removal and refitting of the rotation device](#)
- Fastening flywheel with rotation tool.
- Unscrew the screws (1) using the box spanner insert.
- Remove the V-belt pulley.




2.

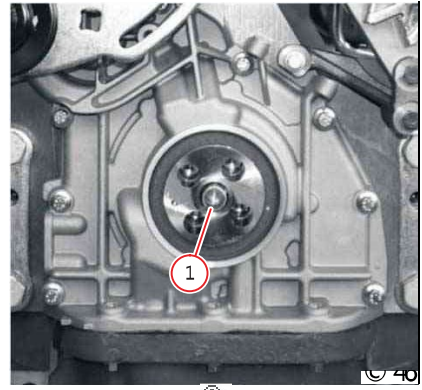
- Visually inspect the component.



3.

Fitting the V-belt pulley

-  **NOTE:**
Check that bush (1) is present.



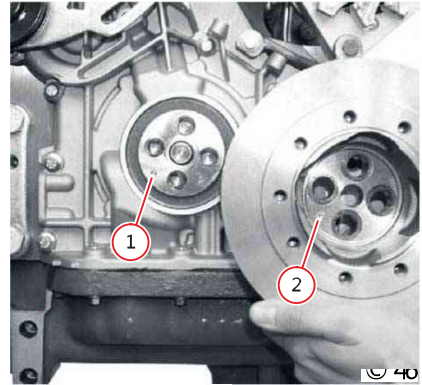
1.

- o Fit the V-belt pulley.



NOTE:

The hole (1) must be aligned with the hole (2).



2.



WARNING

The screws must be renewed after being removed.



NOTE:

Screws: M16 x 1,5

- o Tighten the new screws using the socket wrench insert and the rotation angle gauge: 40 Nm + 60° + 60°
- o Remove the rotation device.
See para. Removal and refitting of the rotation device
- o Fit the V-belt.
See para. Removal and refitting of the alternator (with drivebelt)



3.



Fitting, removing, checking and setting adjuster rod

Commercially available tools:

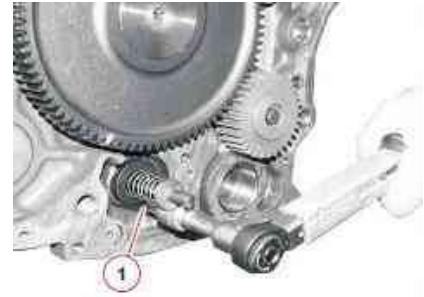
- Sliding gauge

Special tools:

- Adjustment tool: 100800

Remove the adjuster rod

- Disassemble the speed regulator.
[See para. Removing and fitting the engine governor](#)
- Disassemble the gear case cover.
[See para. Disassembly and assembly of the gear case cover](#)
- Disassemble the injection pump.
[See para. Fitting and removing injection pump](#)
- Remove screw (1).



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1.

- Remove the adjuster rod



© 46326-0

2.

- Inspect the adjuster rod
- Measure the width of the groove (1): $5 (+0.03, -0.06)$ mm.



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3.

Fitting the adjuster rod

- Fit the adjuster rod



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1.
 - o Fit and tighten the new screw (1): 10 Nm.



WARNING

Self-locking screw!

- o Assemble the gear case cover.
See para. Disassembly and assembly of the gear case cover



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2.
 - o Lowly push the adjustment rod towards the arrow.



NOTE

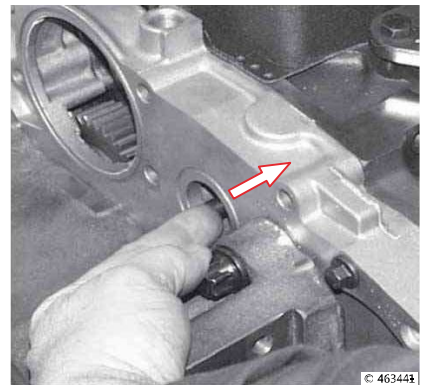
Stop position! There must not be irregular resistance.

- o Release the adjustment rod.



NOTE

The adjuster rod must be returned to its initial position from any other position by spring force. Starting position!



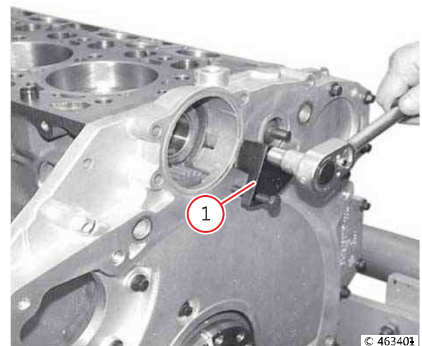
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- 3.

Measuring the travel of the adjuster rod (with injection pumps removed)

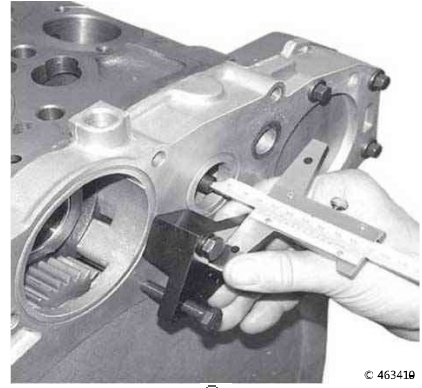
- o Assemble the adjustment device (1).



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1.
 - o Move the adjustment rod to the stop position.
 - o Measure the distance between the adjustment rod and the adjustment device.



© 463410



2.

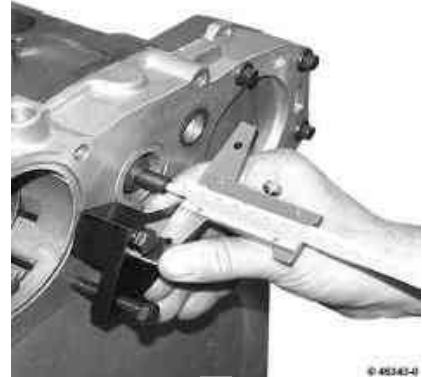
- o Release the adjustment rod.



NOTE

Starting position!

- o Measure the distance between the adjustment rod and the adjustment device.
 - The difference between the start and stop position indicates the stroke of the adjustment rod.



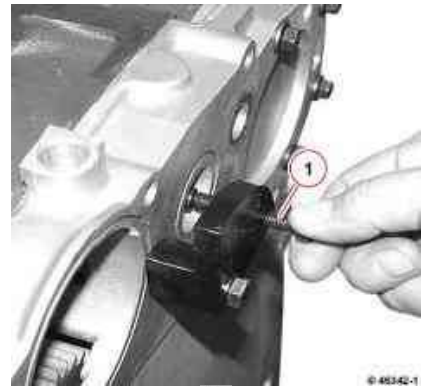
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Calculation example:	
Target:	Adjustment rod stroke
Data:	-
Measured value:	Stop position (a), (a) = 30.7 mm. Start position (b), (b) = 13.4 mm
Calculation:	Dimension (a) - dimension (b)
The results of all this are:	= 17.3 mm
Nominal dimension	= 17.0 mm - 17.5 mm

3.

- o Rotate the adjustment tool.
- o Turn the knurled screw (1) as far as the stop position.
- o Assemble the injection pump.
See para. Fitting and removing injection pump



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4.

Measuring the travel of the adjuster rod (with injection pumps installed)

- o Assemble the adjustment device (1).



1.

- o Move the adjustment rod to the stop position.
- o Measure the distance between the adjustment rod and the adjustment device.



2.

- o Release the adjustment rod.



NOTE

Starting position!

- o Measure the distance between the adjustment rod and the adjustment device.
 - The difference between the start and stop position indicates the stroke of the adjustment rod.



Calculation example:	
Target:	Adjustment rod stroke
Data:	-
Measured value:	Stop position (a), (a) = 30.5 mm. Start position (b), (b) = 13.4 mm
Calculation:	Dimension (a) - dimension (b)
The results of all this are:	= 17.1 mm
Nominal dimension	= >16.8 mm

3.

- o Leichtgängigkeit der Regelstange prüfen.
- o Lowly push the adjustment rod towards the arrow.



NOTE

There must not be irregular resistance.

- o Release the adjustment rod.



NOTE

The adjuster rod must be returned to its initial position from any other position by spring force. Starting position!



4.

Measuring the residual play of adjuster rod for setting the governor correctly

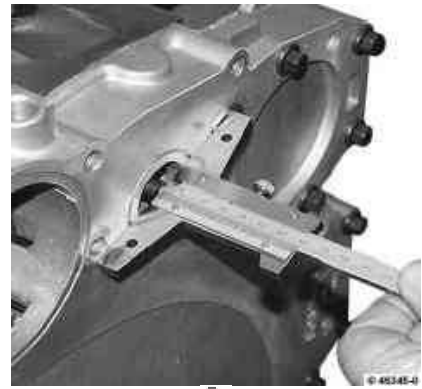
- o Measure the residual value between the gearbox and the stop position.



WARNING

The value measured must be indicated precisely when replacing or repairing the adjuster.

- o Assemble the speed regulator.
See para. Removing and fitting the engine governor



1.



Removal and refitting of the heater

Removal of the heater

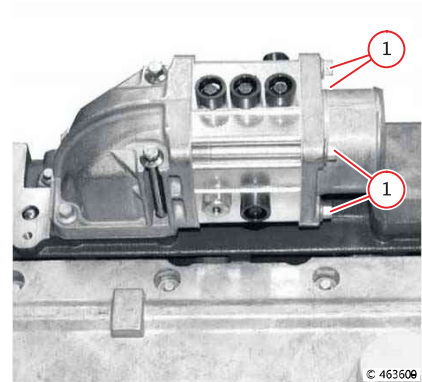
- o Disconnect the wiring connectors.



WARNING

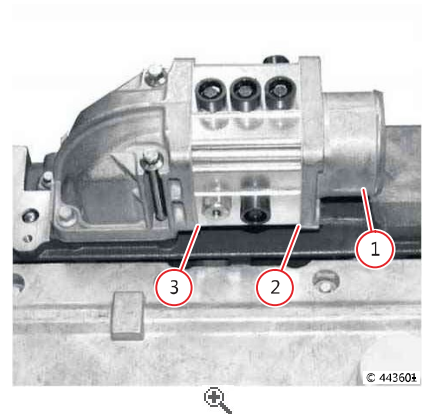
Remove the screws, leaving only the positive terminal screw in place to support the heater.

- o Remove screws (1).



1.

- o Undo hose union (1).
- o Remove seal (2)
- o Remove the heater.
- o Remove seal (3).



2.

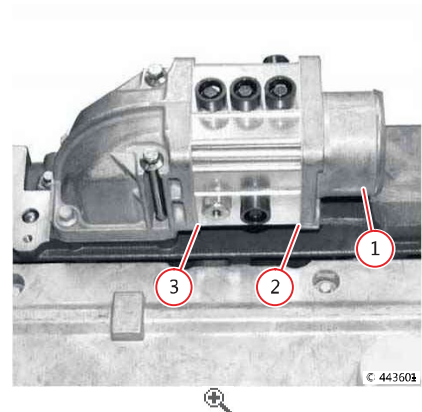
- o Carry out a visual inspection of the component.



3.

Refitting the heater

- o Fit a new O-ring (3).
- o Fit the heater.
- o Fit a new O-ring (2).
- o Reconnect hose union (1).



1.

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