

11 21 500

Replacing crankshaft (N55)

**Special tools required:**

- [00 2 010](#)
- [00 9 120](#)
- [11 4 370](#)
- 11 4 440
- [11 4 470](#)
- [11 6 251](#)
- [11 6 252](#)
- [11 9 360](#)

**Important!**

Aluminium screws/bolts are permitted with and without colour coding (blue).

Aluminium screws/bolts must be replaced each time they are **released**.

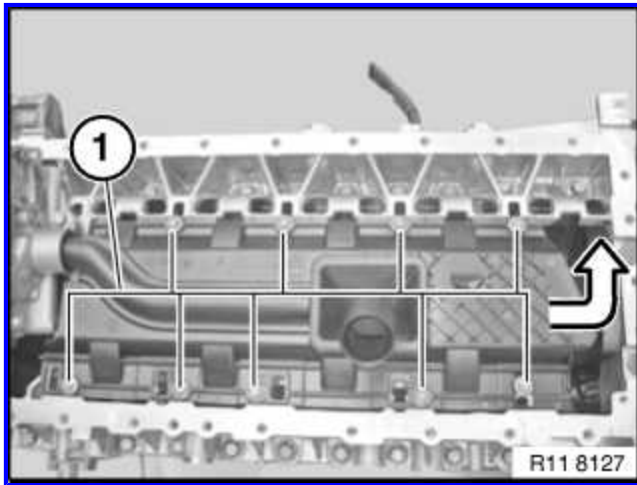
For reliable identification:

Aluminium screws/bolts are **not magnetic**.

Jointing torque and angle of rotation must be observed without fail (**risk of damage**).

*Necessary preliminary tasks:*

- Remove [engine](#)
- Mount engine on [assembly stand](#)
- Remove [vibration damper](#)
- Remove [oil sump](#)
- Remove [oil pump](#)
- Remove timing [chain module](#)
- Remove oil pump/vacuum pump [chain module](#)
- Remove [cylinder head](#).
- Remove [flywheel](#)
- Removing all [pistons](#)



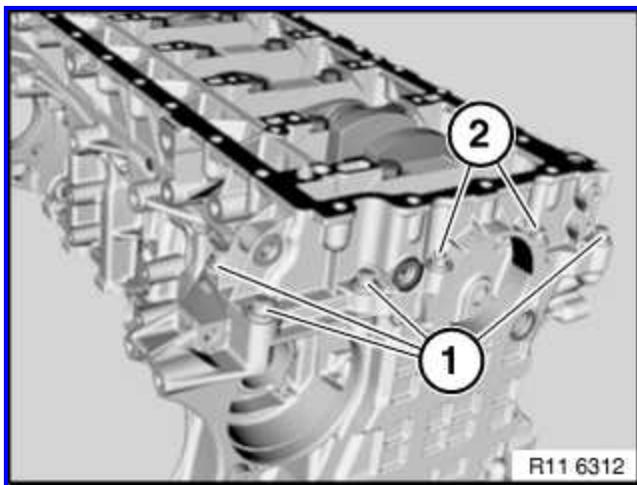
Release screws (1).

Tightening torque [11 13 5AZ](#).

Installation note:

Replace aluminium screws.

Remove oil deflector with integrated intake snorkel.

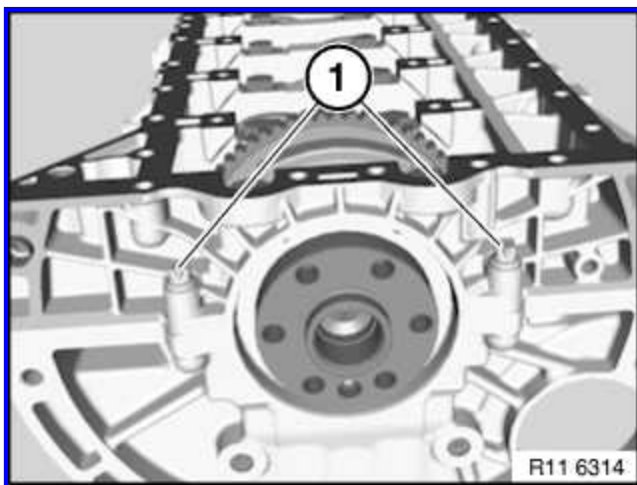


Release aluminium screws (1).

Release aluminium screws (2).

Installation note:

Replace aluminium screws.



Release aluminium screws (1).

Installation note:

Replace aluminium screws.

Note:

Graphic shows N52.

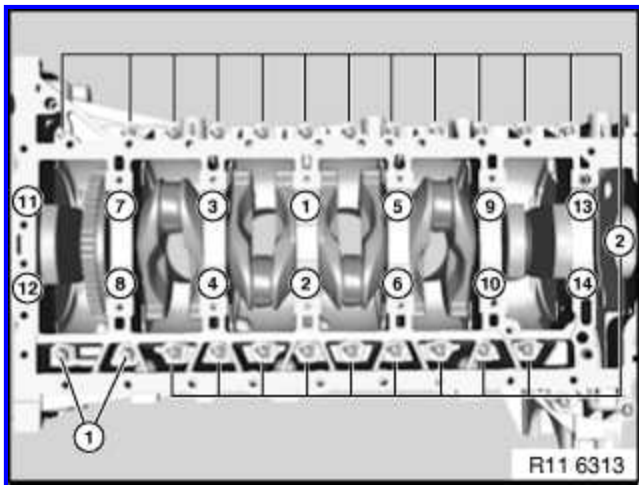
Release screws (1).

Unfasten screws (2).

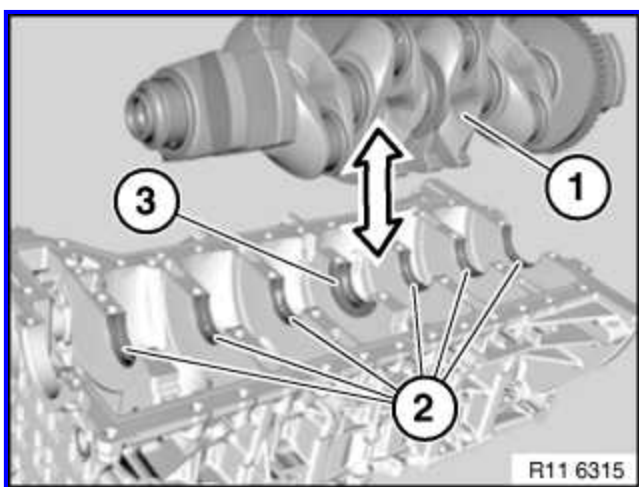
Installation note:

Replace aluminium screws.

Release steel screws (14 to 1) from outside inwards.



Remove crankcase lower section upwards.



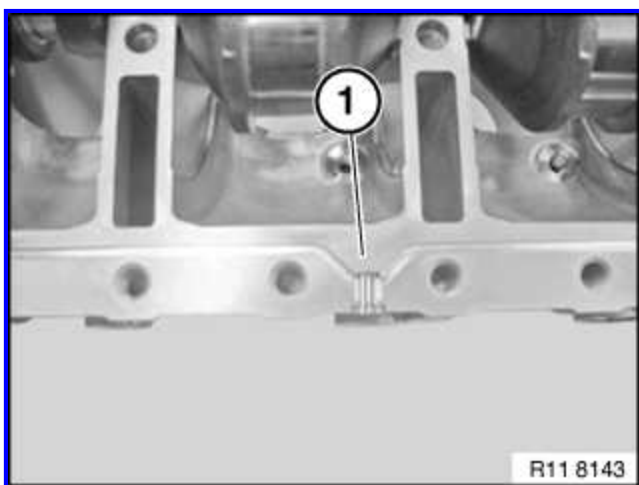
Important!

Remove crankshaft with aid of a second person.

Weight of crankshaft approx. 25 kilograms.

Remove crankshaft (1) upward in direction of arrow.

Remove [bearing shells](#) (2) and guide bearing shell (3), replace if necessary.



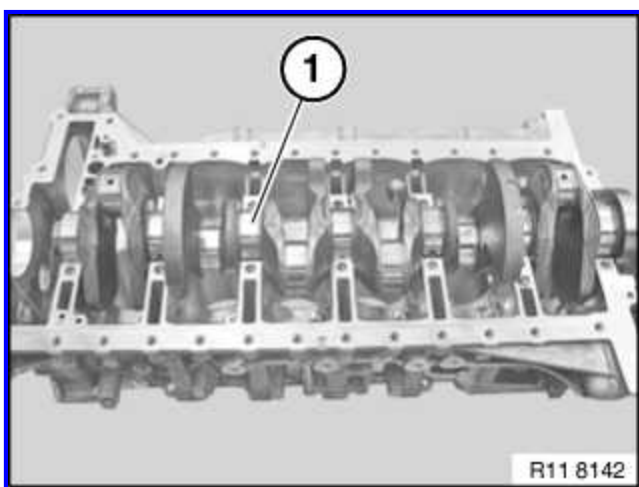
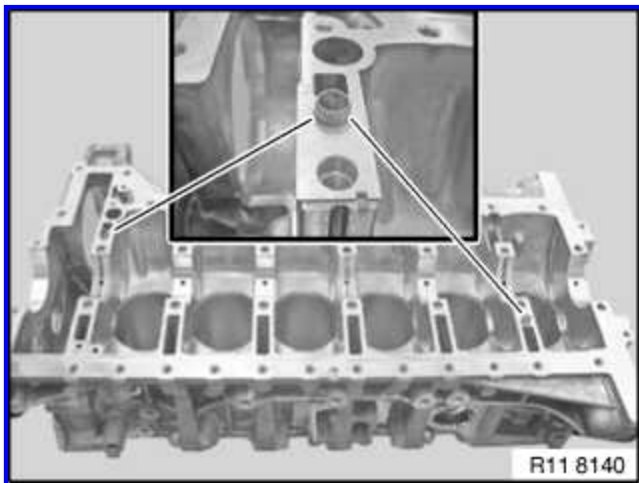
Clean all sealing surfaces (1) with special tool [11 4 470](#).

Check fitting sleeves for damage and secure seating; replace if necessary.

Install all [bearing shells](#).

Installation note:

Oil all bearing points adequately with engine oil.

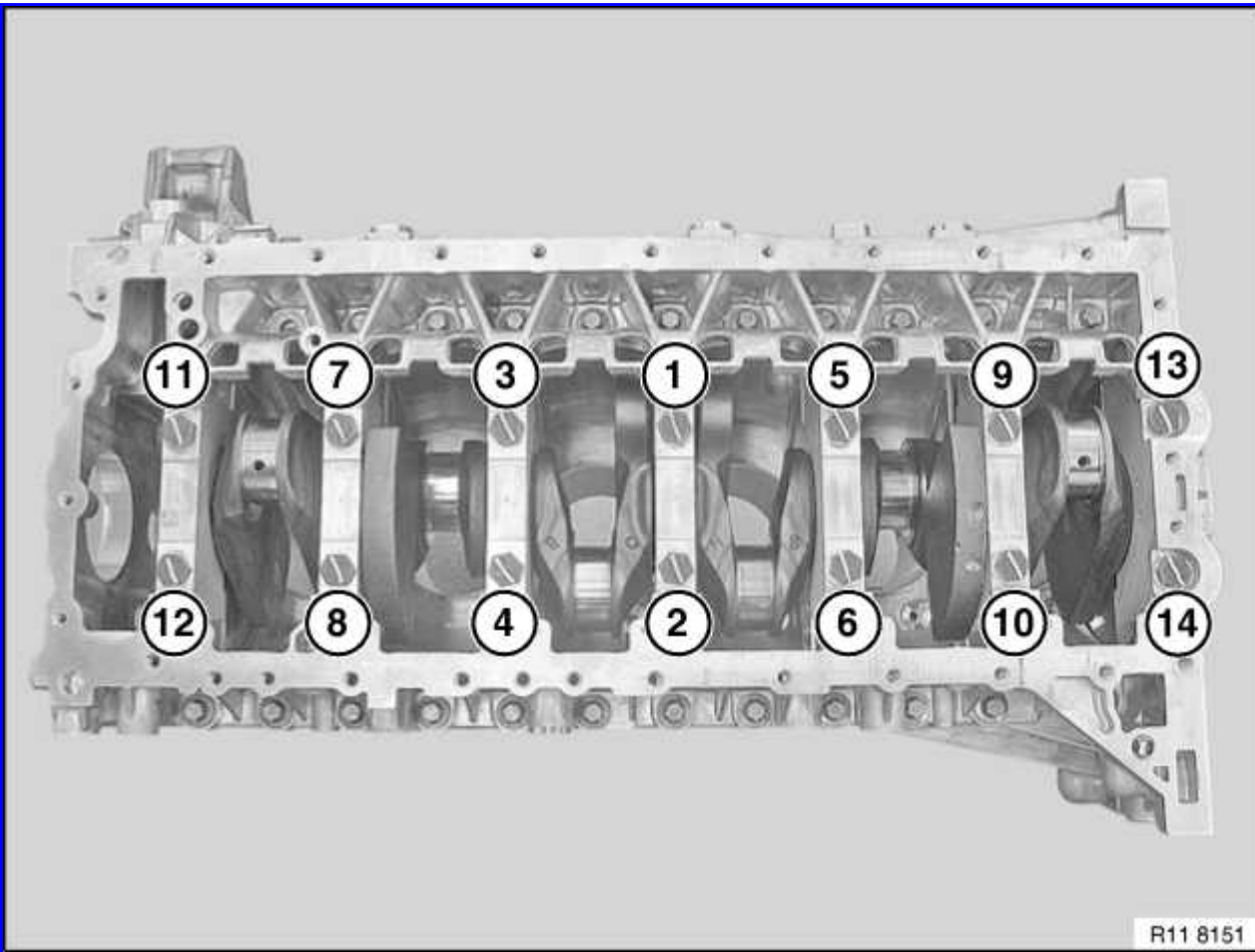
**Important!**

Insert crankshaft with aid of a second person.

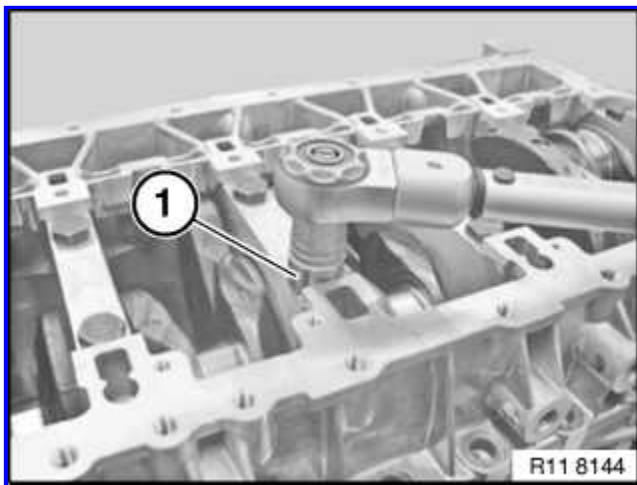
Weight of crankshaft approx. 25 kilograms.

Insert crankshaft (1).

Fit crankcase lower section (watch fitting bushes).

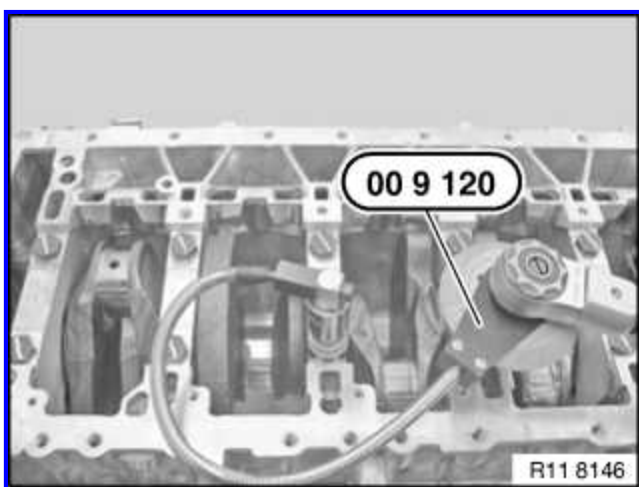
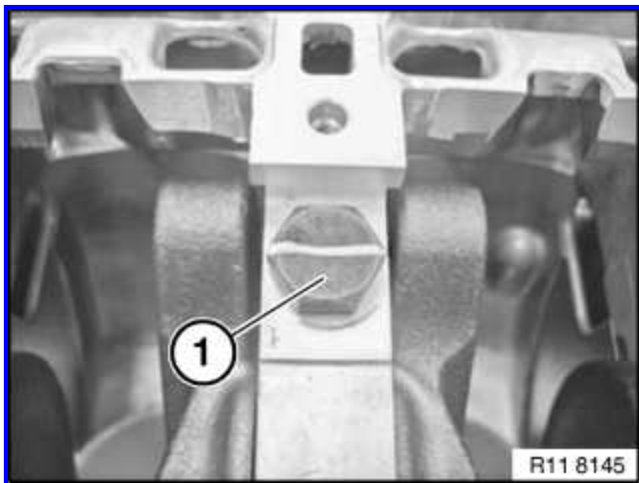


Follow tightening/torque sequence for the steel bolts (1 to 14).



[Join](#) steel bolts (1).

Mark across all steel bolts (1) with a coloured mark.

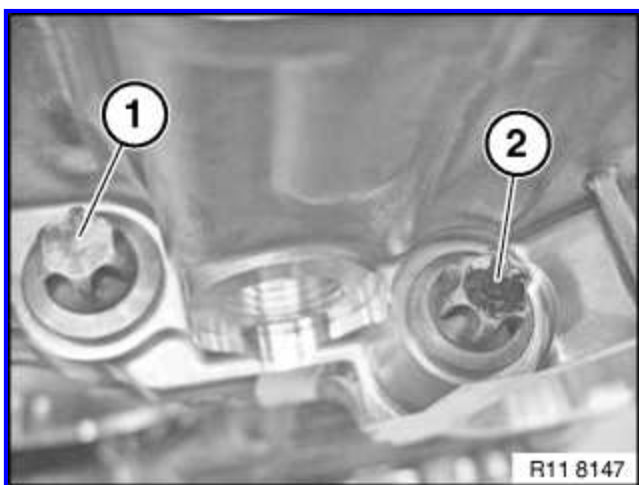


Tighten all steel bolts with a special tool [00 9 120](#).

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

Installation note:

All steel bolts must be positioned the same with respect to the coloured mark after being fastened (see illustration R 11 8151).



Installation note:

Aluminium bolts (1) and (2) can have a blue coloured mark.

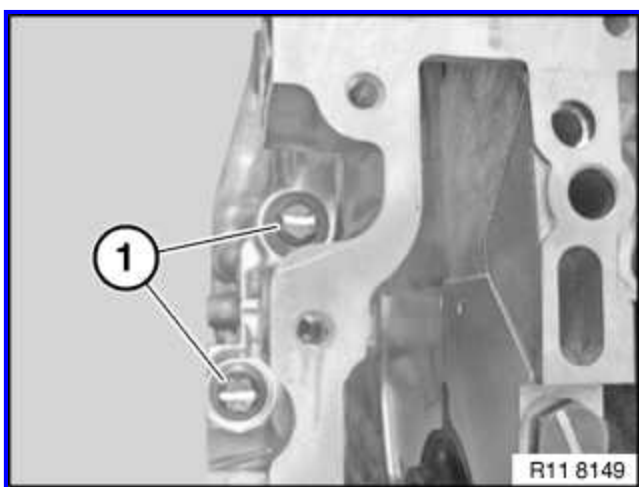
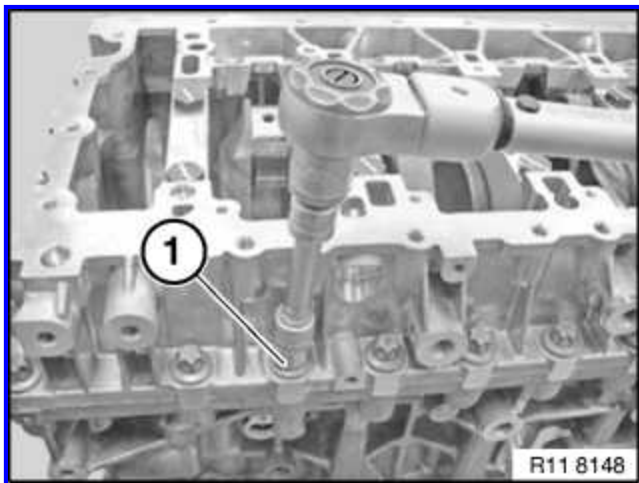
Aluminium screws/bolts are **not magnetic**.

Important!

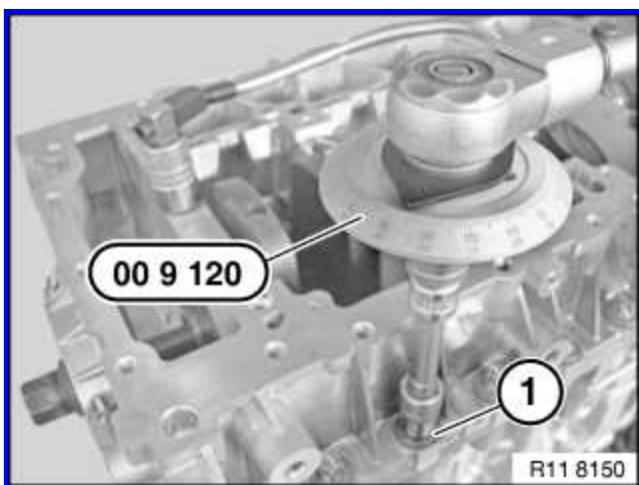
In the case of aluminium screws, jointing torque and angle of rotation must be observed without fail.

[Join](#) all aluminium bolts (1) from inside toward the outside.

Tightening torque [11 11 2AZ](#).



Mark across all aluminium bolts (1) with a coloured mark.



Tighten all aluminium bolts (1) only with special tool [00 9 120](#).

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

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

Installation note:

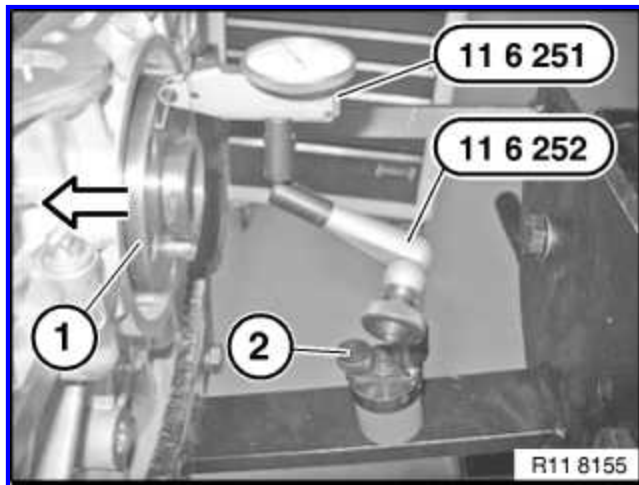
All aluminium bolts must be equally positioned with respect to the coloured mark after being fastened.

Fit special tool [11 6 252](#) with magnetic foot on special tool 11 4 440.

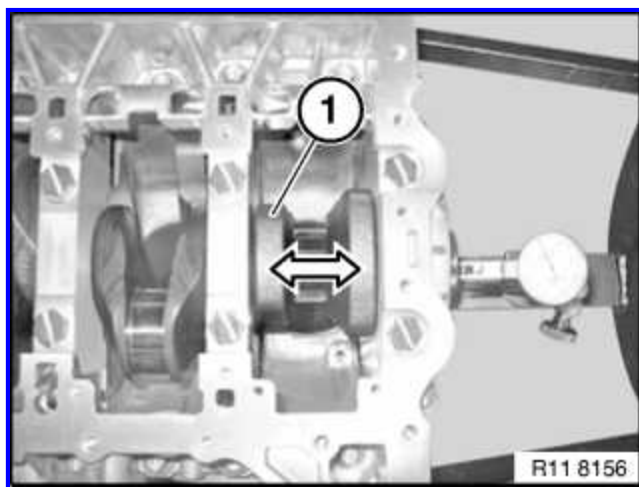
Clamp special tool [11 6 251](#) on special tool [11 6 252](#).

Position special tool [11 6 251](#) with button on the flat side of the crankshaft.

Press crankshaft (1) in direction of arrow up to stop.

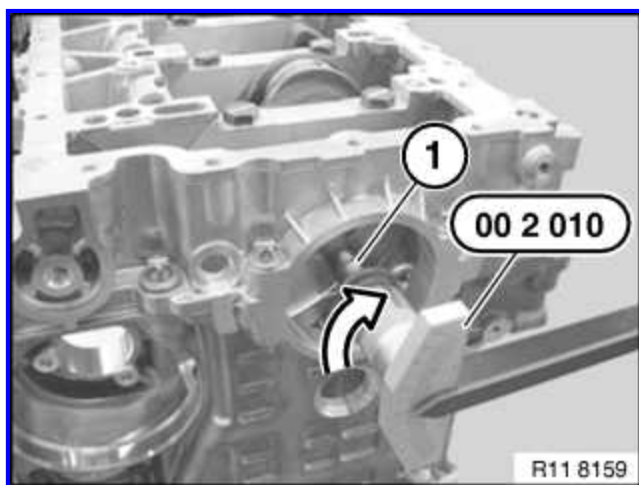


Set dial gauge with knurled screw (2) on zero.



Press crankshaft (1) in direction of arrow from right to left up to stop.

Determine [crankshaft axial clearance](#).

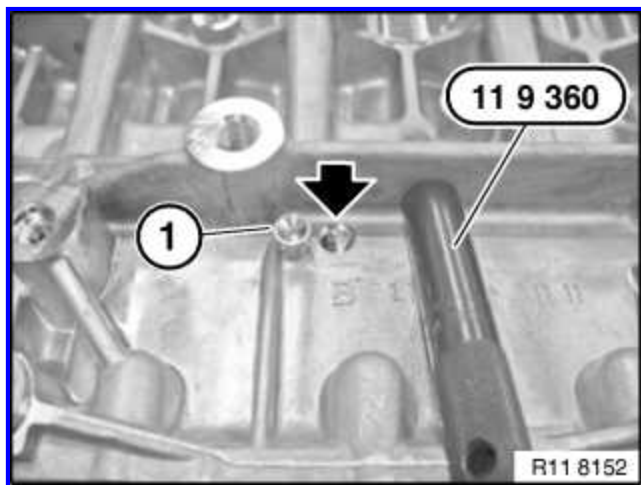


Turn crankshaft (1) via the central bolt with special tool [00 2 010](#) to determine the [coefficient of friction](#).

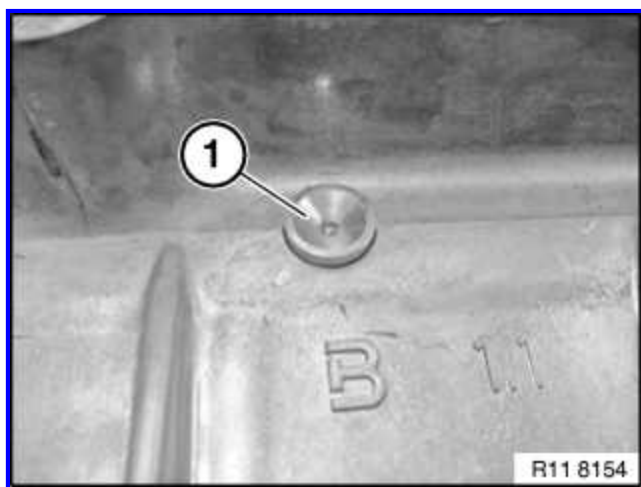
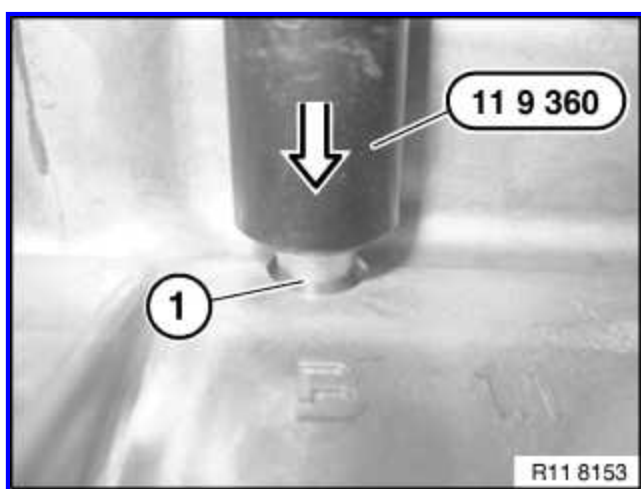
Drive both injector nozzles (1) on left and right on crankcase into the bore hole (see arrow) with special tool [11 9 360](#).

Installation note:

Replace injector nozzles (1).



Drive in both injector nozzles (1) on left and right with special tool [11 9 360](#) into crankcase.



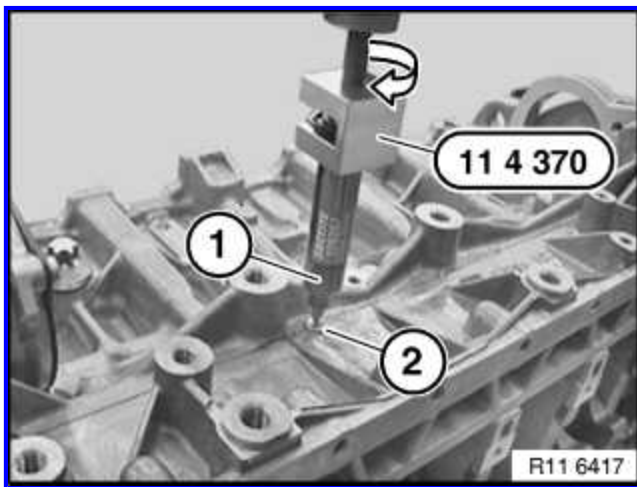
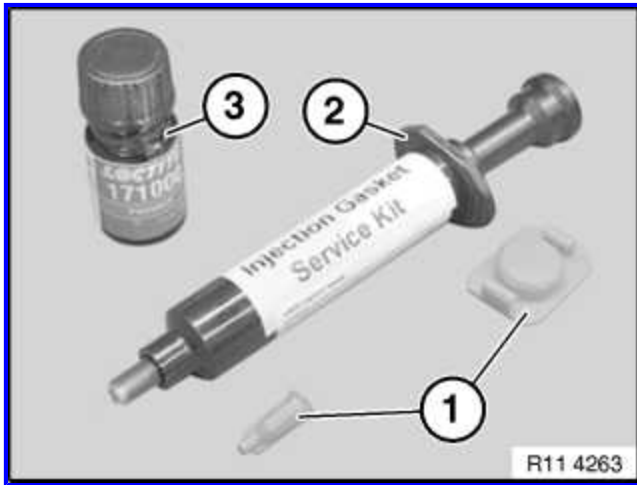
Drive injector nozzle (1) all the way in.

Installation note:

Use [primer 1.3](#) and [liquid sealing compound 1.4](#).

Prepare liquid sealing compound (2) in special tool [11 4 370](#).

Screw on nozzle (1) for injecting sealing compound.



Slowly and evenly insert liquid sealing compound (1) via the injector nozzle with special tool [11 4 370](#) in direction of arrow. Graphic N42.



Replace front [crankshaft seal](#).

Replace [crankshaft seal](#) (transmission side).

Assemble engine.