**Special tools required:**

- 11 2 250
- 11 4 471
- 11 4 472
- 11 9 590
- 11 9 630

**Important!**

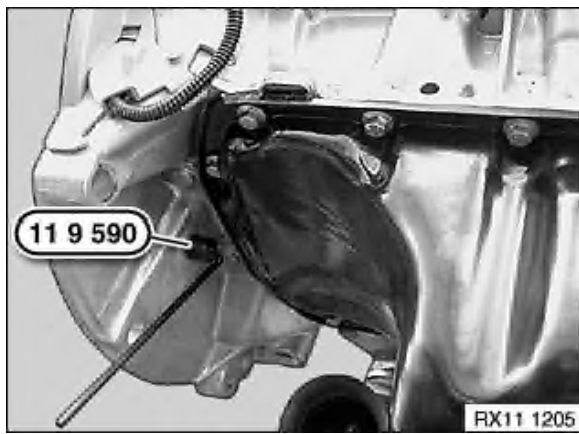
Fit new cylinder head screws.

Do not wash off bolt coating.

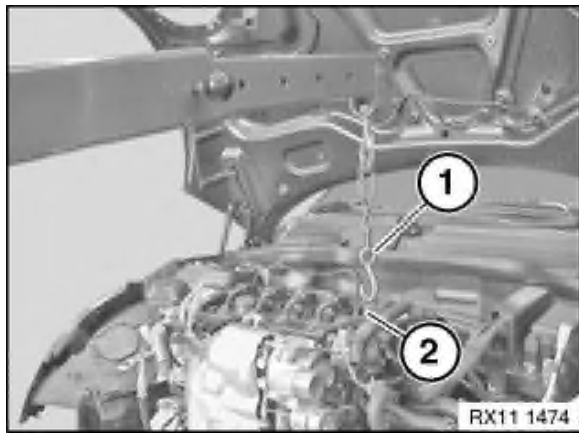
There must not be any coolant, water or oil present in the pocket holes (**risk of corrosion and cracking**)

*Necessary preliminary tasks:*

- Remove exhaust system.
- Drain coolant.
- Drain engine oil.
- Remove intake air manifold.
- Remove oil dipstick.
- Detach coolant hoses from cylinder head.
- Remove oil dipstick guide tube.
- Remove cylinder head cover.
- Remove solenoid valve from adjustment unit.
- Remove inlet adjustment unit.



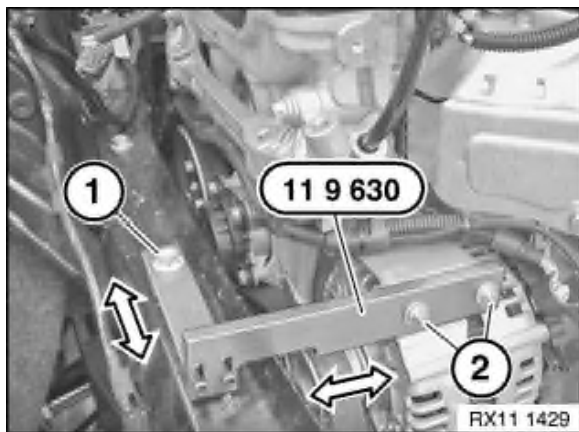
Secure crankshaft with special tool 11 9 590 .



*Note:*

Remove and install cylinder head in installed state.

Suspend engine with engine crane (1) from lifting eye (2).



*Note:*

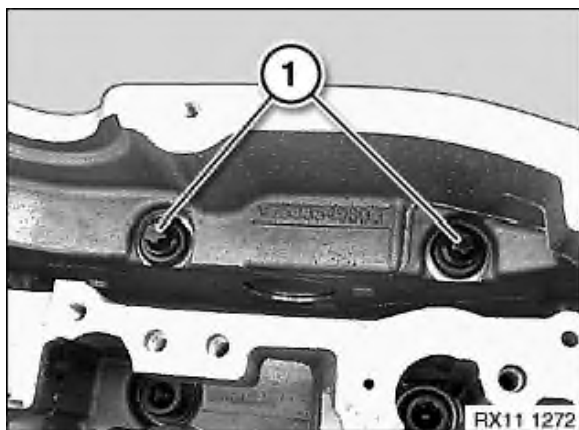
Remove and install cylinder head in installed state.

Move front panel into assembly position.

Release upper alternator screws, do not remove alternator.

Remove right engine mount.

Secure special tool 11 9 630 with standard bolts (1 and 2).



Release screws (1).

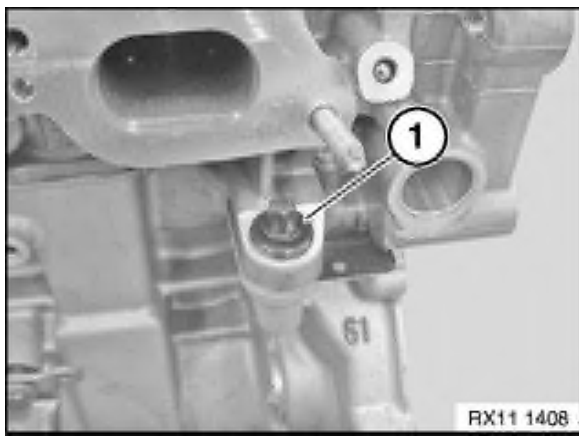
**Important!**

If the timing chain is stowed in the gearcase, the crankshaft must no longer be rotated.

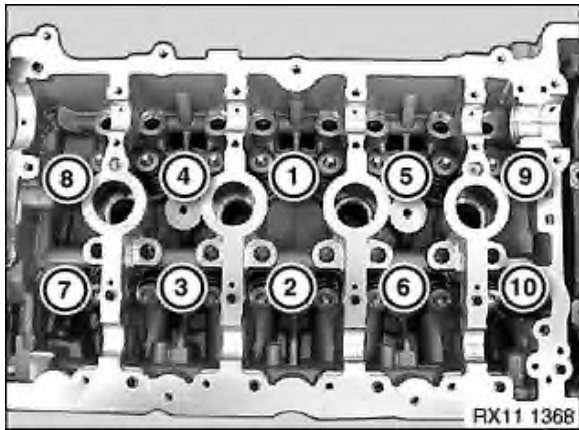
The timing chain may jam on the crankshaft gear.

*Installation:*

Only during assembly is the timing chain lifted out with a hook.



Release screw (1).

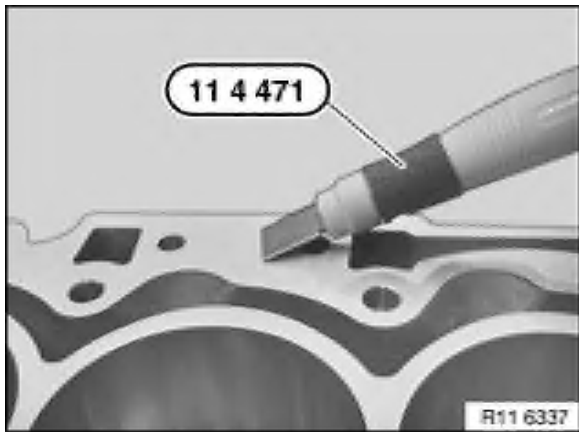


Release cylinder head bolts with special tool 11 2 250 .  
Release cylinder head bolts from outside inwards (10 to 1).

*Note:*

Remove shims with a magnet.

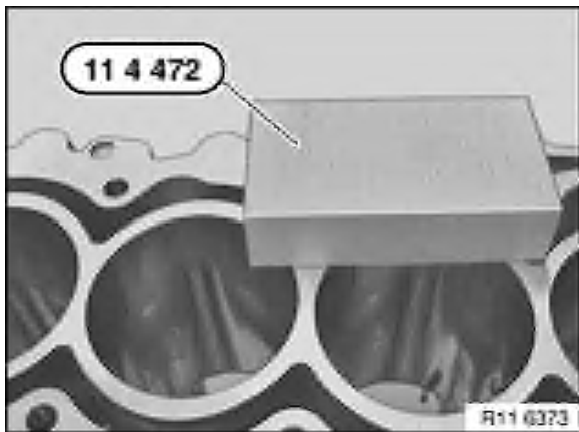
Illustration shows camshafts removed.



Use special tool 11 4 471 to remove coarse gasket remnants from sealing faces of cylinder head and crankcase.

**Important!**

Do not use any metal-cutting tools.



Remove fine gasket remnants with special tool 11 4 472 .

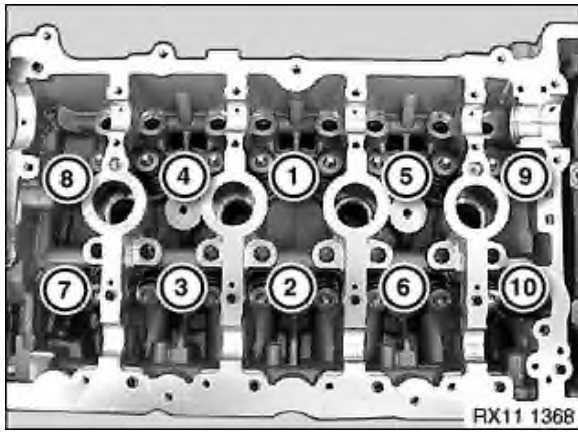
**Important!**

Do not use any metal-cutting tools.

There must not be any coolant, water or oil present in the pocket holes (**risk of corrosion and cracking**)

Clean all pocket holes.

Replace cylinder head gasket.



### Important!

Fit new cylinder head screws.

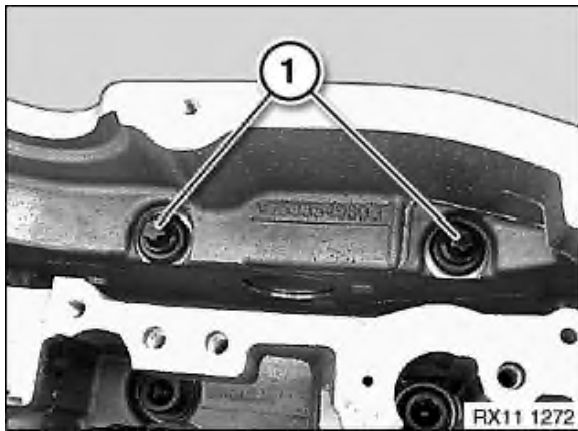
Do not wash off bolt coating.

Attach shims to cylinder head bolts.

Shims can drop into the engine (**risk of damage!**)

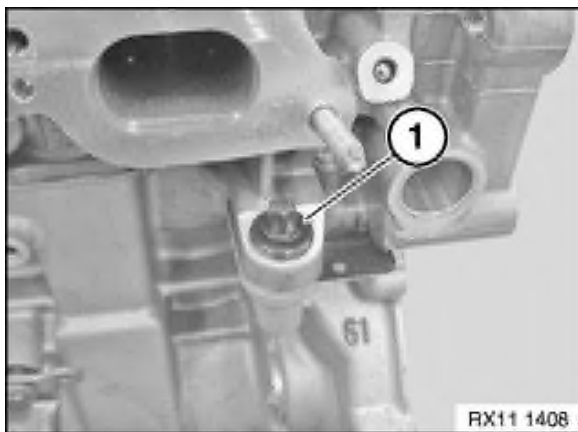
Secure cylinder head bolts from inside outwards (1 to 10).

Tightening torque: 11 12 2AZ .



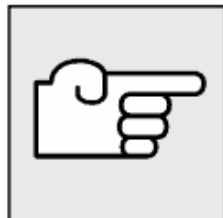
Secure bolts (1).

Tightening torque: 11 12 1AZ .



Tighten the screw (1).

Tightening torque: 11 12 3AZ .



Assemble engine.

## 11 12 Cylinder Head with Cover

	Type	Thread	Tightening specification	Measure
1AZ Cylinder head bolts	N14	M8x95	Replace screws Jointing torque 1st angle of rotation 2. Angle of rotation	15 Nm 90 ° 90 °
2AZ Cylinder head bolts	N14	M10x145	Replace screws Jointing torque 1st angle of rotation 2. Angle of rotation	30 Nm 90 ° 90 °
3AZ Cylinder head bolts	N14	M8x35	Replace screws	30 Nm
4AZ Cylinder head cover to cylinder head	N14	M6x30		10 Nm
5AZ Ground cable to cylinder head cover	N14	M5		10 Nm
6AZ Inlet camshaft bearing cap to cylinder head	N14	M6		10 Nm
7AZ Exhaust camshaft bearing cap to cylinder head	N14	M6		10 Nm
8AZ Lifting lug to cylinder head	N14	M8x20 M8x25		20 Nm
9AZ Acoustic cover to cylinder head cover	N14	M6x40		8.5 Nm