



# ET1785A

## BMW (B48) VALVE GATE / PRESSURE SPRING TOOL



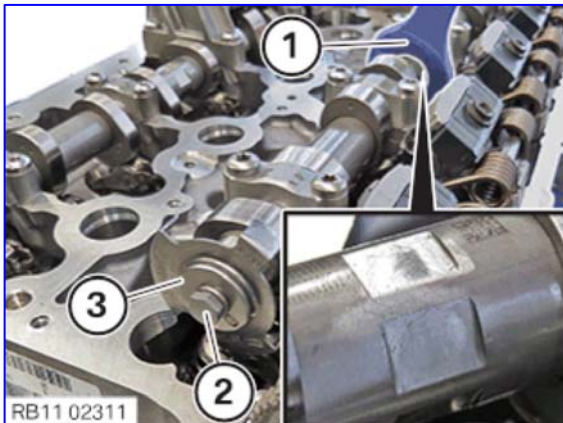
- Removing and installing | replacing intermediate levers
- For positioning the sliding block.
- **BMW OEM Equiv: 2 359 088 / 2 359 089**



Note:

Special tool 2 359 088 consists of two parts:

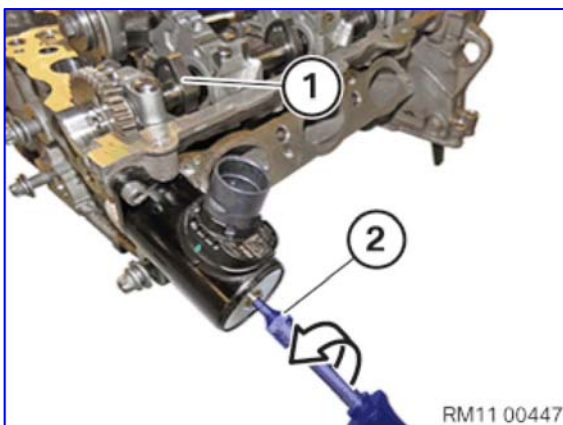
- (1) Torsion spring clamping lever
- (2) (2) Fixture (fitting aid) for clamping lever



Fix intake camshaft with an open-end spanner (1).

Release screw (2).

Remove the camshaft sensor wheel (3).



Slowly adjust eccentric shaft (1) to minimum stroke via servomotor using 4 mm hexagon socket wrench (2).

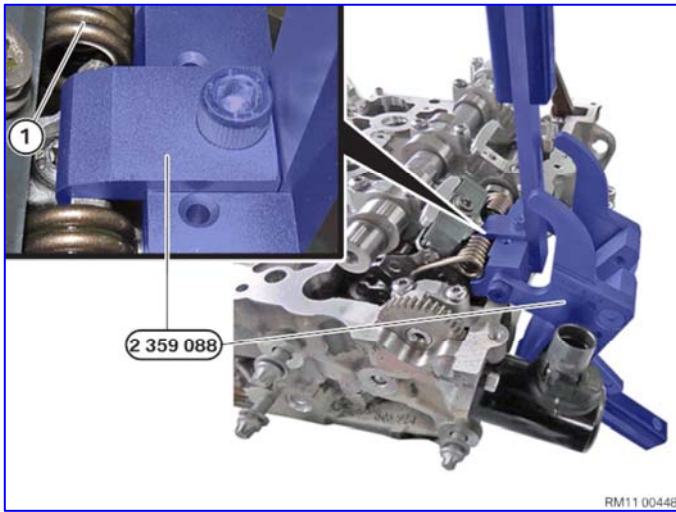


Note:

The cam (1) of the intake camshaft must not contact on the intermediate lever when removing the torsion spring. Rotate engine further as necessary with special tool [11 6 480](#) .

Important!

Do not crank engine in reverse direction!



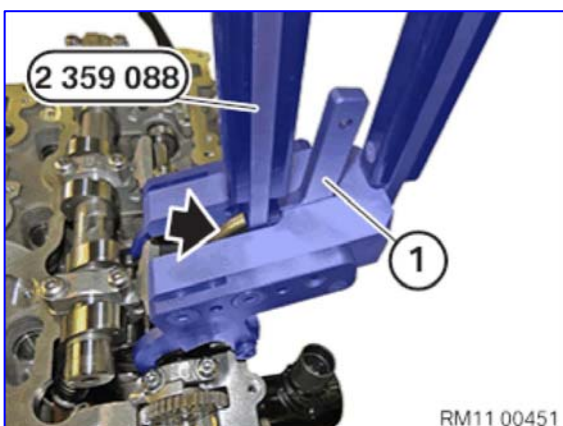
Position special tool 2 359 088 on torsion spring (1). Important! The special tool must lie flat on the cylinder head.



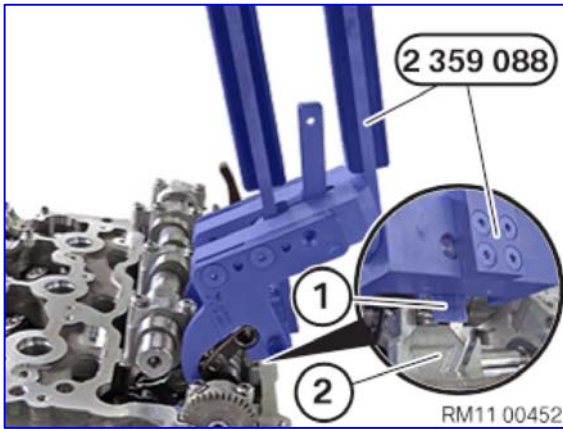
Important!  
Risk of damage!  
Both torsion springs (1) on the left and right must be positioned in the lateral guide of special tool 2 359 088 .



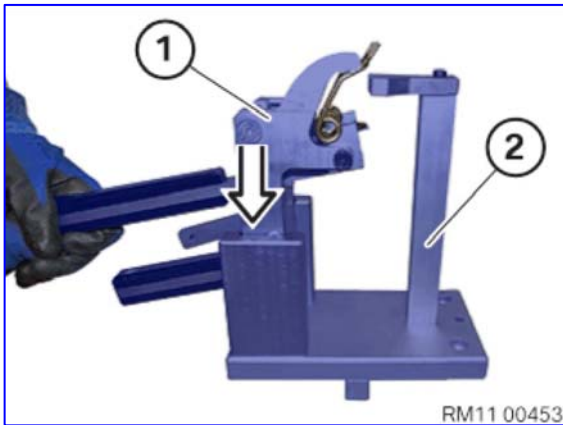
Warning!  
Risk of injury in event of incorrect use.  
Important!  
Improper handling. Risk of damage!  
Preload return spring with lever (1) on special tool 2 359 088 in direction of arrow.



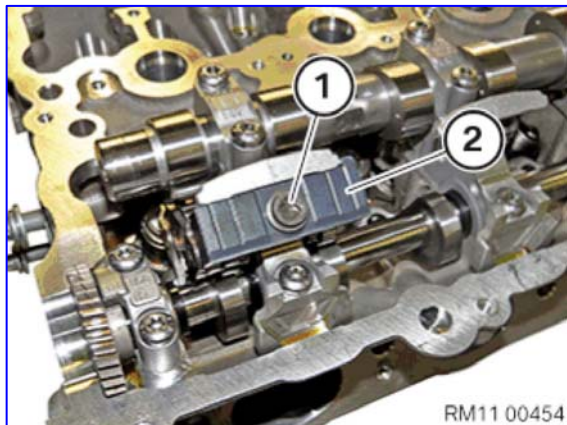
Lock special tool 2 359 088 with catch on lever (1).



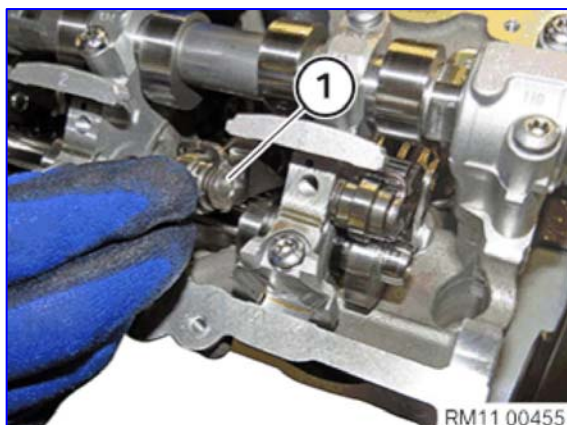
Carefully lift special tool [2 359 088](#) .  
 Feed special tool [2 359 088](#) with torsion spring (1) out of cylinder head (2).



Warning!  
 Risk of injury in event of incorrect use.  
 Clamping lever (1) is preloaded.  
 Important!  
 Improper handling. Risk of damage!  
 Secure fixture (2) for clamping lever in vice.  
 Position clamping lever (1) with torsion spring in fixture (2).  
 Carefully unlock and slowly open clamping lever (1).  
 Remove torsion spring.  
 Set down all torsion springs neatly in special tool [11 4 480](#) .

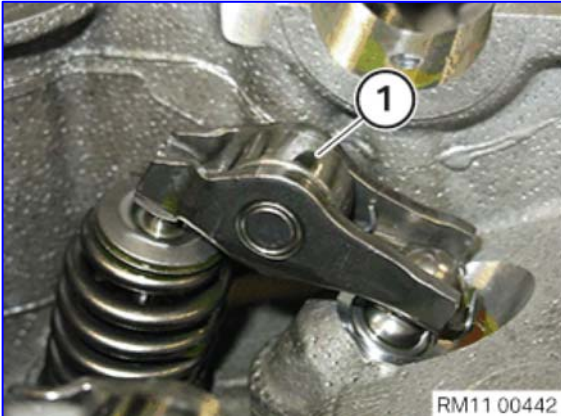


Release screw (1) of gate (2).  
 Place all gates (2) in neat order in special tool [11 4 480](#) .



Remove all intermediate levers (1).  
 Place all intermediate levers (1) in neat order in special tool [11 4 480](#) .

## Installation:



Important!

Before installing intermediate levers, make sure rocker arms (1) are correctly positioned.

Risk of damage!



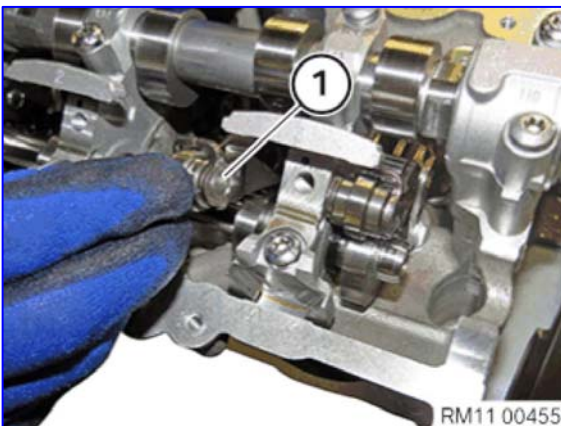
Note:

All intermediate levers are classified.

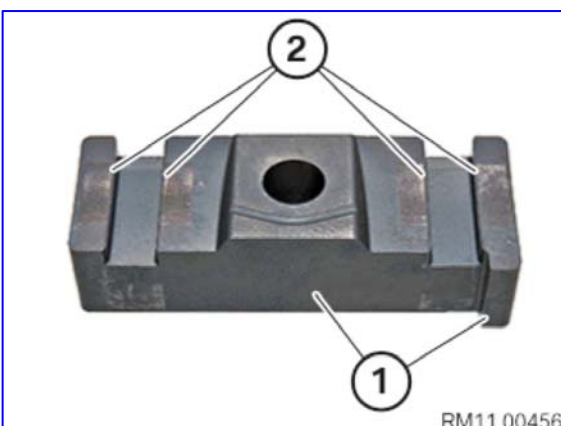
All intermediate levers must be reinstalled in the same positions in an engine which has already been in use.

Intermediate levers are classified from 1 to 5.

Only one classification may be fitted per engine.

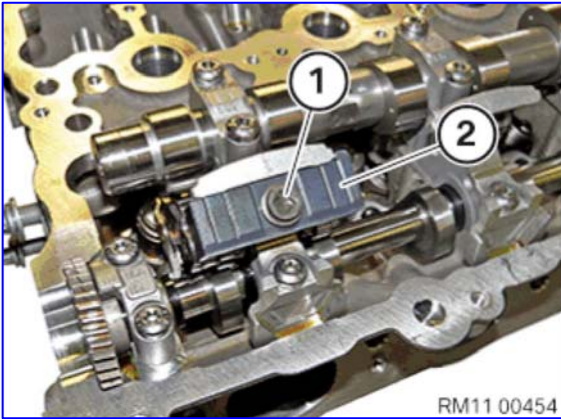


Insert all intermediate levers (1).

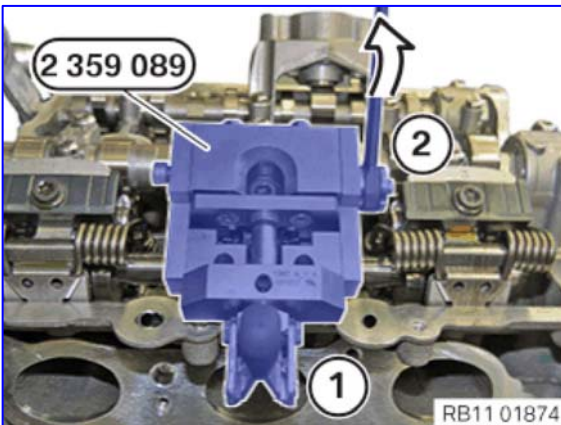


Note:

All contact surfaces (1) of gates must be clean and free from oil and grease. If necessary, clean contact surfaces (1).



Mount gate (2) neatly.  
 Bring screw (1) into position.  
 Check that intermediate levers are in correct installation position.



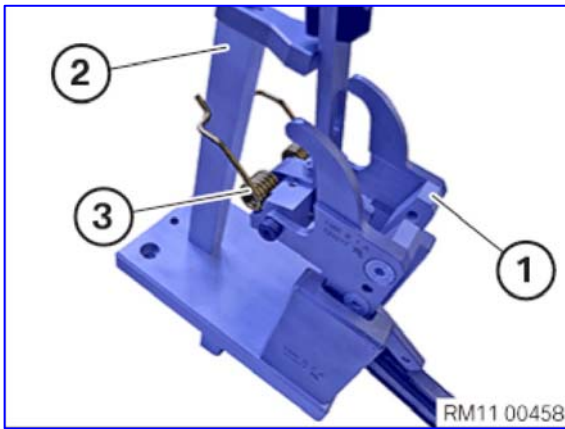
Position special tool 2 359 089 on cylinder head.  
 1. Preload gate with lever  
 2. Abut gate with lever in direction of arrow  
 Fasten screws (1) of gates.  
 Tightening torque 11 37 1AZ.



Important!  
 Special tool 2 359 089 must lie flat on the cylinder head.

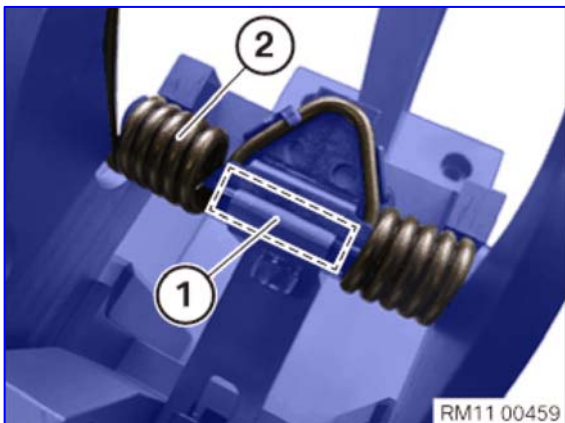


Note:  
 Special tool 2 359 088 consists of two parts:  
 (1) Torsion spring clamping lever  
 (2) Fixture (fitting aid) for clamping lever



Clamp special tool (2) in vice.

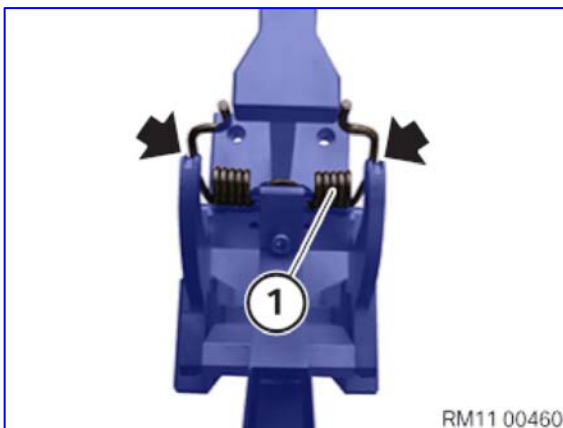
Engage torsion spring (3) in clamping lever (1).



Important!

Danger of injury!

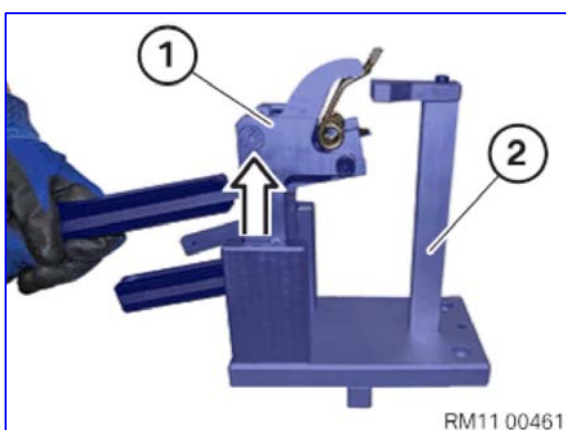
Make sure torsion spring (3) is correctly positioned in clamping lever (1).



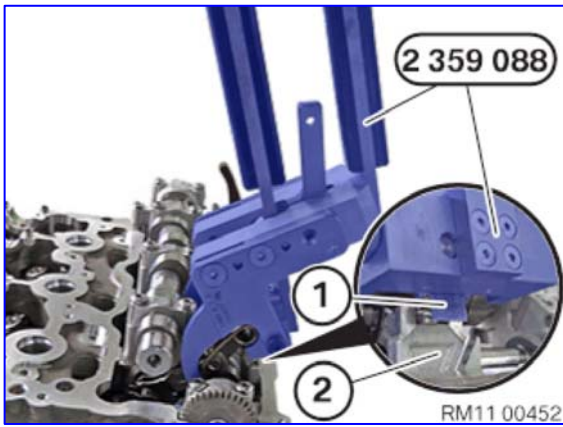
Important!

Risk of damage!

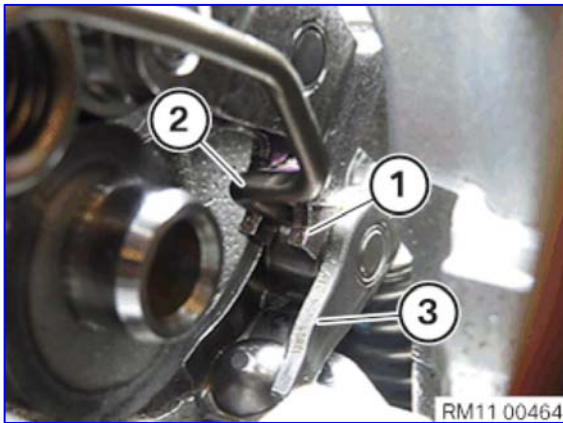
Both torsion springs (1) on the left and right must be positioned in the lateral guide of special tool [2 359 088](#) .  
Ensure correct engagement of clamping lever.



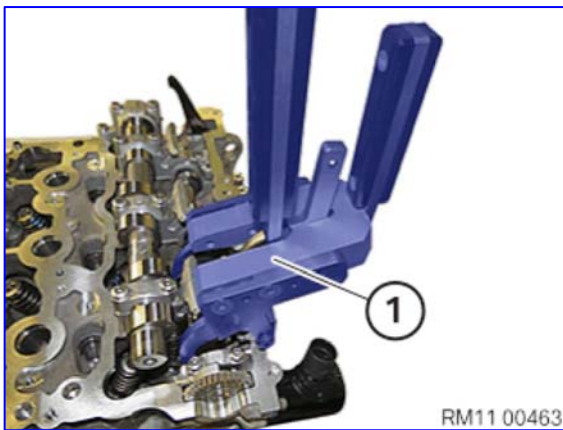
Lift clamping lever (1) with torsion spring out of fixture (2).



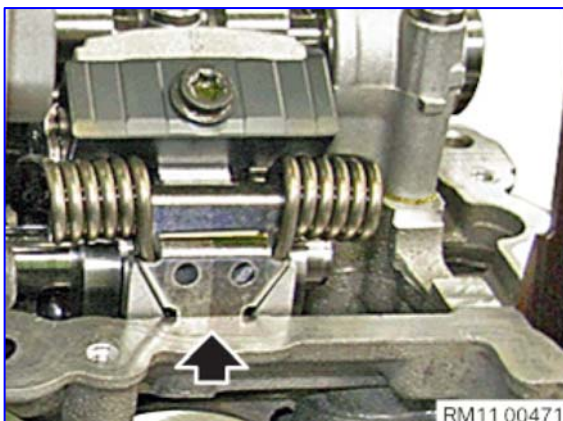
Insert special tool [2 359 088](#) with torsion spring (1) into cylinder head (2).



Engage torsion spring (2) in intermediate lever (1).  
Check that all rocker arms (3) are in correct installation position.

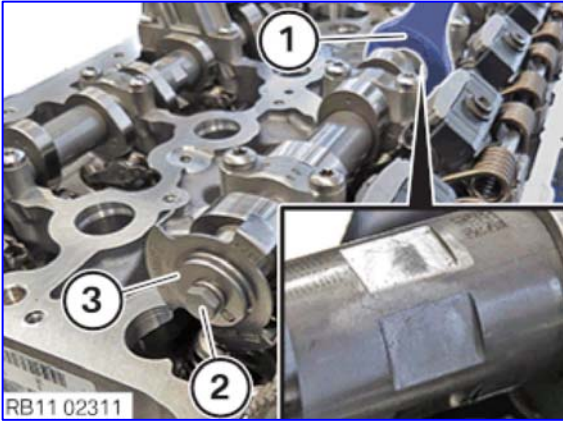


Clamping lever (1) must be lying flat on cylinder head.  
Warning!  
Risk of injury in event of incorrect use.  
Important!  
Improper handling. Risk of damage!  
Carefully unlock clamping lever (1).  
Check torsion spring on intermediate lever to ensure correct installation position.



Ensure correct position of torsion spring in recess on cylinder head.





Fix intake camshaft with an open-end spanner (1).

Position the camshaft sensor wheel (3).

Tighten down screw (2).

Tightening torque [11 31 7AZ](#).