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# TECHNICAL REPORT

Cylinder head gasket  
assembly. Tips and cautions





## 01 purpose

To report to the customer about tips and cautions in the **cylinder head gasket assembly**.

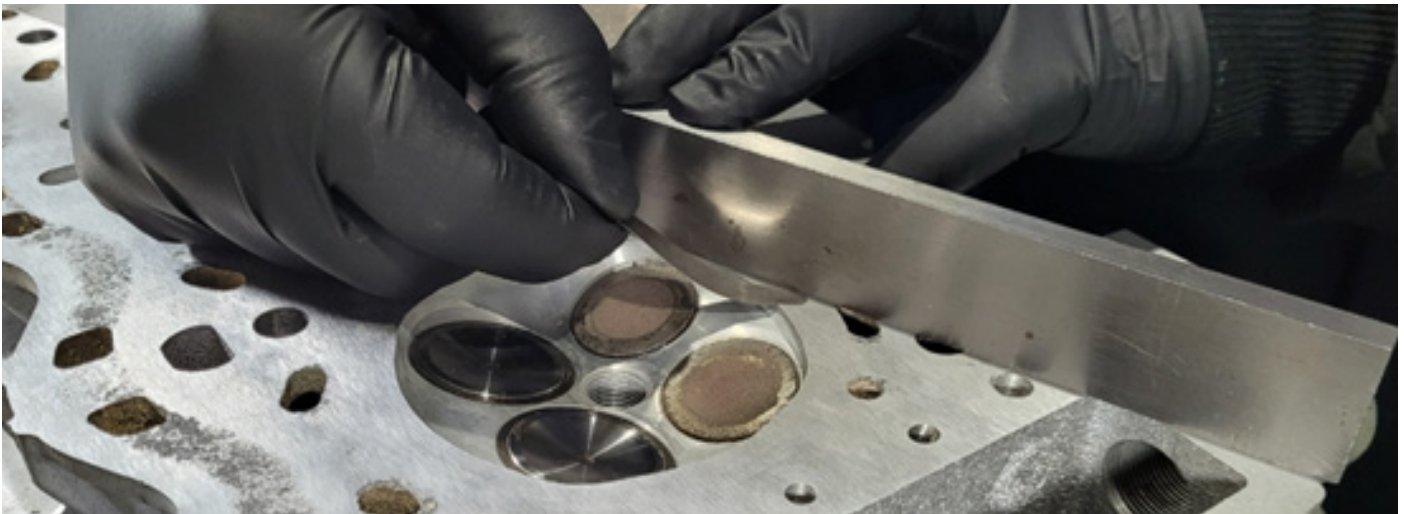
## 02 previous steps

- To let **cooling the engine** to room temperature. This is very important in aluminium cylinder heads.
- To **open the cap of the expansion tank** of the cooling circuit.
- To **loosen up the cylinder** head bolts in reverse order of tightening.
- To **clean and degrease block and cylinder head** by the gasket surface using no metal tools to avoid damage it. It is important that block and cylinder head are fully clean and free of particles.
- To introduce a **tap tool** with the same metric and pitch as bolts into their housings of the block and next, to extract the dirt blowing or vacuuming inside bolt housings.



## 03 checks to be carried out

- To check the flatness of the block and cylinder head by the gasket surface. Deformation must not exceed, in general, the value of 0,5mm. Depending on engine, this value can be different.



In case of there is a **deformation higher** than allowed, cylinder head and block **must be resurfaced**. In case of block is resurfaced, we will measure the height of piston to block`s plane to choose the thickness of cylinder head gasket to use.



## ADDITIONAL INFORMATION



For more information about choice of cylinder head gasket depending on height of piston to block's plane, please visit [TIP 26](#).  
"Thickness of head gasket depending on piston overheight"

In case of it is **not necessary to resurface** block and cylinder head and any component (connecting rods, pistons, crankshaft...) have not been replaced, **we will assembly the same cylinder head's thickness** than the one there was previously. We will choose our new cylinder head gasket, checking that marks of new gasket are the same in quantity and placement than the ones which ancient one had.

- To check that **roughness of block and cylinder head** are inside of parameters allowed.

ROUGHNESS ALLOWED IN BLOCK / HEAD ( $\mu\text{m}$ )		
	MLS	FIBER
ALUMINIUM ALOY	0.5 - 1	2.3 (máx.)
CAST IRON	1.5 - 1.8	3.8 (máx.)

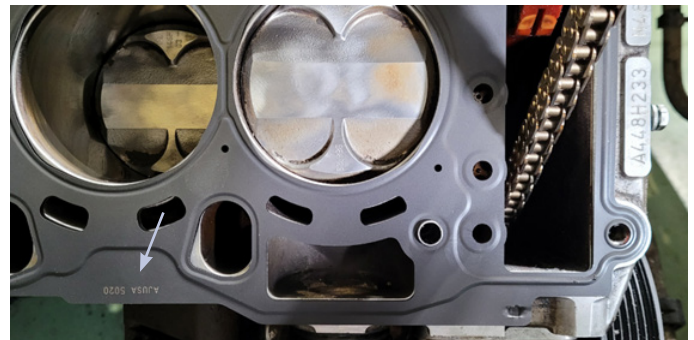
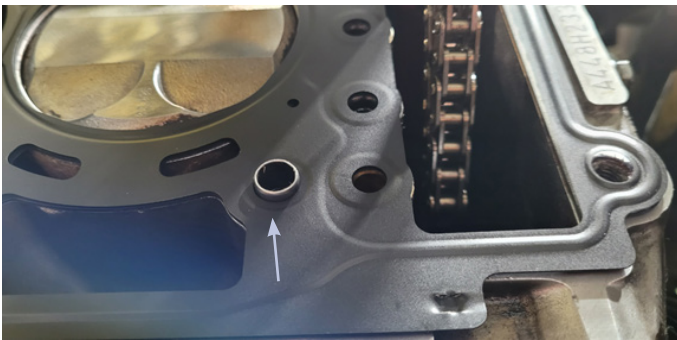
- To check the heigh of cylinder sleeve to block's plane.
- To check the height of combustion chamber to cylinder head in indirect injection Diesel engines.
- To check the cylinder head gasket elected belongs to the engine. This checking can be made through **Ajusa Catalog**.





## 04 assembly

- To place the cylinder head gasket through appropriate tools and always with the mark **“TOP”** up.

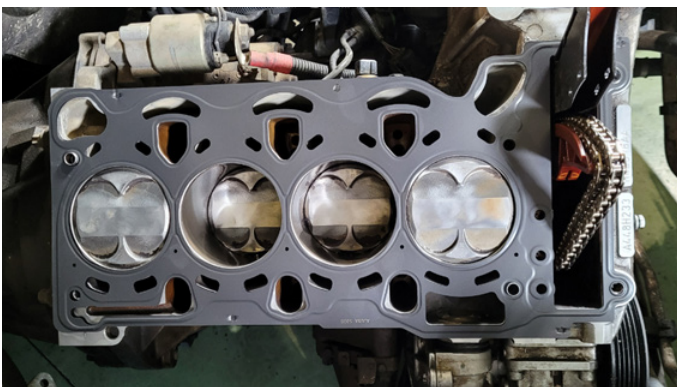


## WARNING

**Not assembly the same cylinder head gasket** for the second time.

**Not applicate over the gasket**, products as greases or sealants except if it is indicated by the manual.

- To check that gasket holes of coolant and oil match up with the block's ones and vice versa.



- To place the bolts in **their housings**.

## WARNING

In case of bolts **do not need TTY (torque to yield fastener)**, these ones can be reused. In this case, it is recommended to **clean the thread bolts with a metal brush** and check they are in perfect conditions to be reused.

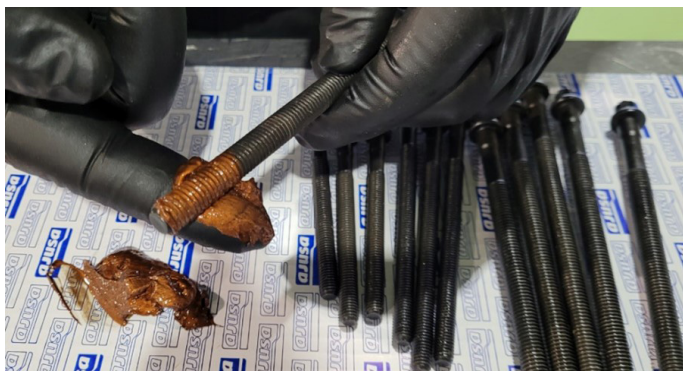
- Finally, to **apply the torque to bolts following the order and specifications** described in the sheet of torque which Ajusa includes with all their cylinder head gaskets or in the manual of the vehicle.



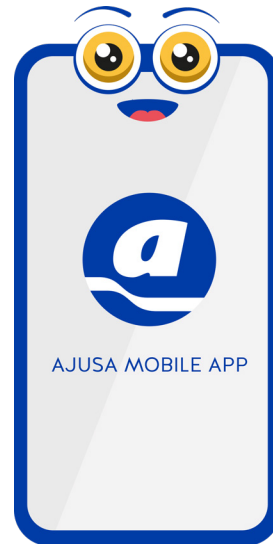
## WARNING

In cases of TTY (torque to yield fastener) is indispensable using new cylinder head bolts.

To decrease friction in the tightening process, bolts must be **lubricated on their thread and under their heads**. For it, we can use copper grease or oil removing the excess with a paper towel.



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