



Technical Report #21

***Recommendations for injector assembly in Hyundai
D4EA and D4EB engines***

Informe Técnico

Purpose

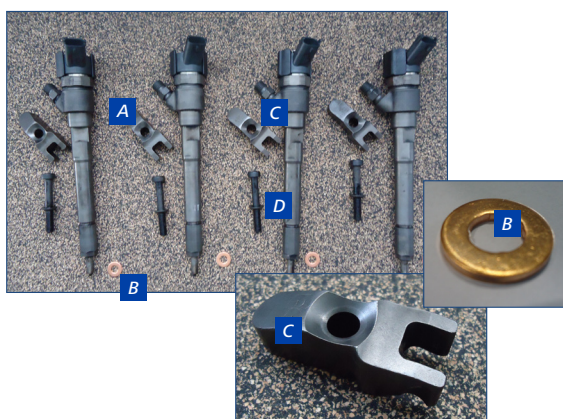
Describe the steps carried out for assembling the injectors in such engines.

Introduction

D4EA engine from Korean manufacturer HYUNDAI, has 4 cylinders in line and consequently 4 fuel injectors, one per cylinder. These injectors are piezoelectric type, used in vehicles because of its greater precision and for obtaining better fuel economy and improve engine performance. When a repair that involves having to remove the cylinder head cover, you must remove the fuel injectors. Once disassembled, it is highly recommended to replace gaskets, seals and washers.

Assembling recommendations

All the injectors out of the engine have the appearance shown below:

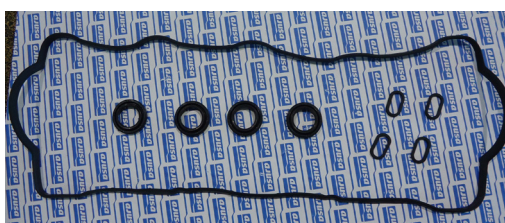


- A** Piezoelectric injector
- B** Washer injector firewall.
- C** Injector retaining barrette.
- D** Retaining bolt.

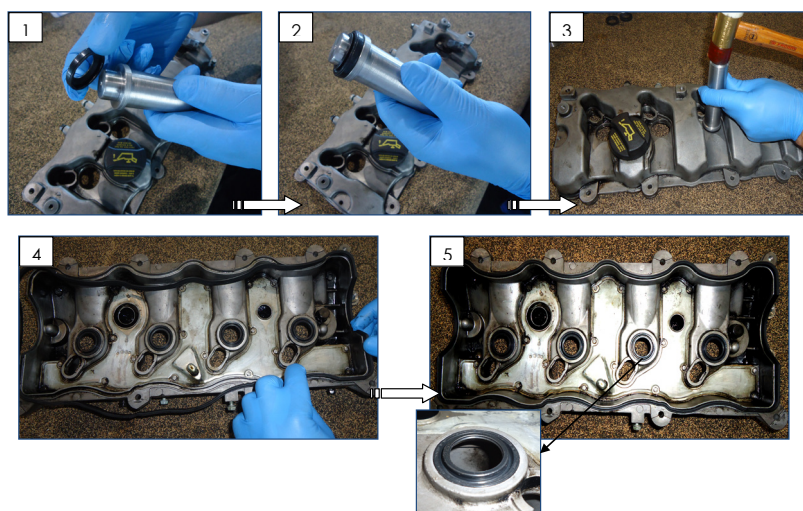
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Preparation and installation of the cylinder head

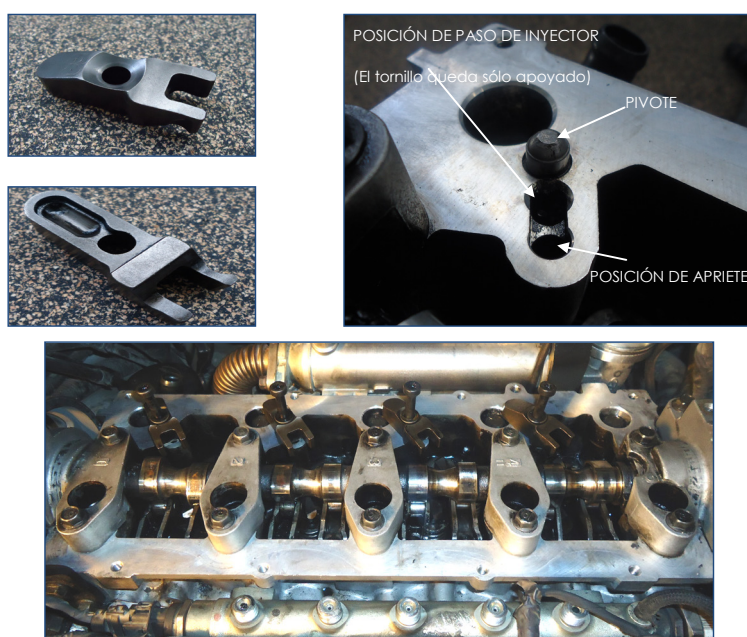
First the cylinder head cover must to be placed, to do that, replace before the head cover gasket and oil injector seals with new ones:



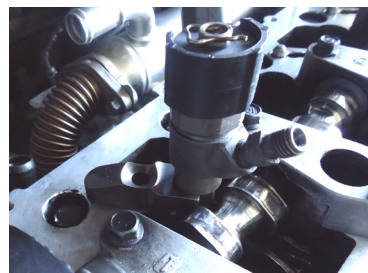
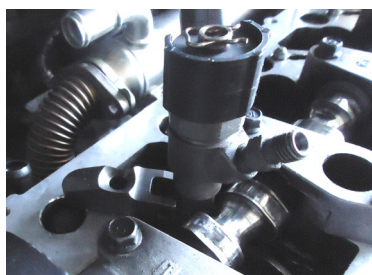
For the installation of the new injector oil seals will use the special tool that allows us to put them level and positioned correctly. Then place the gasket in housing without applying any sealant in this section.



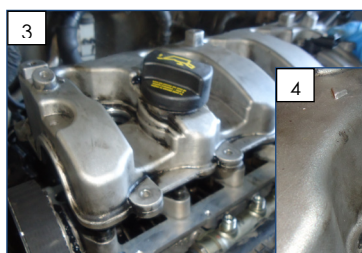
Before proceeding to placing the cover it position, place the four locking barrettes of the injectors on the pivots of the cylinder head with the bolt inserted in the hole of the barrette in the rearmost position to allow the passage of the injector; in this position the pin hole coincides with a cut out in the cylinder head where the bolts support and subsequently serves as a guide, while in the forward position, where the bracket embraces the injector, coincides with the threaded hole of the cylinder head where the bolt will be tighten to secure.



For better understanding of the movement of the barrette holder, the pictures will be shown without the cylinder head cover:

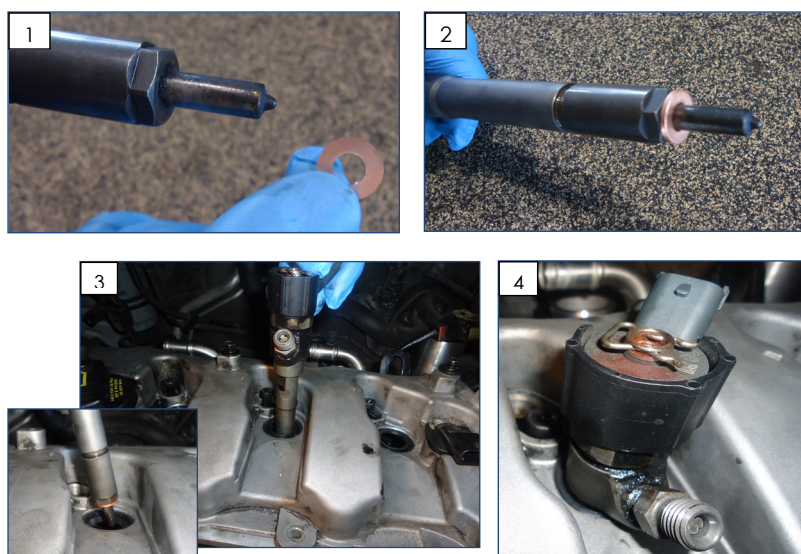


To installation of the cylinder head cover, apply uniform sealant bead shaped over the camshafts bridges as noted below and position once before the sealant begins to crosslinking. It is very important not to hit the bolts of the barrettes to prevent fall out of position. Once positioned, ensure that the bolts are held in place and are accessible from the holes of the cover. Finally give the tightening to cover bolts cross from the center towards the sides of 0.9 Nm.

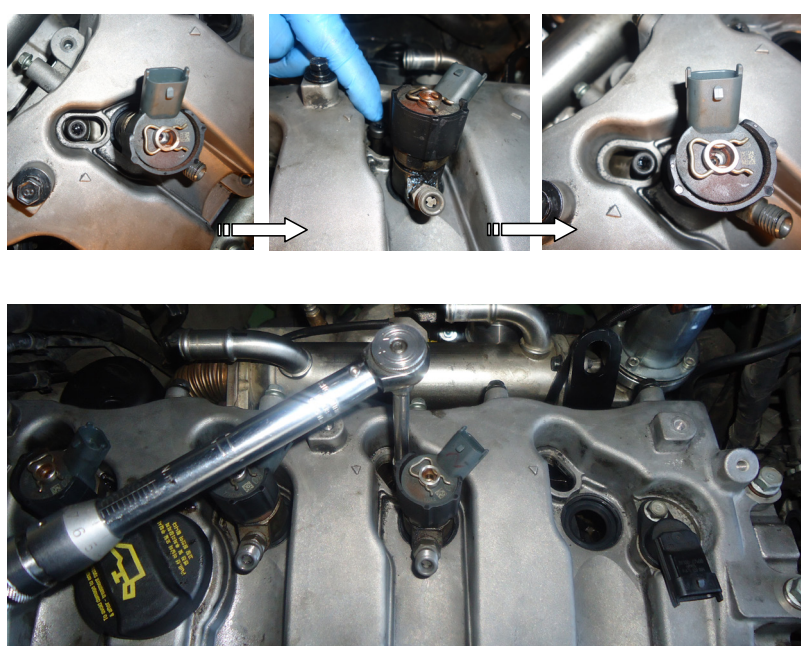


2 Injector's installation

After placing the cylinder head cover, proceed to insert the injectors in the holes with the new washer placed in position, the design of the washer prevents it falling down the injector position. In this step you must take care not to hit the retaining barrettes.



After inserting the injectors move the bolt to the forward position for the barrette to hold the injector. In that position it is possible to tighten the bolt with a torque of 26 ± 2 Nm.



Finally, fit the caps for the holes of the retaining bolts with the new gaskets.

