

Clutch kit conversion kit stretch bolts

It has come to the attention of the Valeo Service UK Warranty team that when fitting a Valeo conversion kit the original bolts from the original flywheel have been used and not the bolts supplied with the Valeo conversion kit. It is vitally important that the new bolts are used when fitting a Valeo conversion kit as they are supplied with specifically designed stretch bolts.

Why can I not use the Original Bolts?

Firstly, it is important to note all bolts stretch when they are tightened, sometimes they stay within their 'elastic limit' and sometimes they do not. This depends on various different factors, such as length of use, torque capacity, environment and other factors. When fitting clutch bolts, the standard method requires the use of a torque wrench. The tightening torque is calculated to apply the correct stretch, and so put the correct load on the joint. A bolt that has been previously used may already be stretched and may require different torque settings. This can be difficult to determine. The condition of the thread and lubricant on the thread can also be affected. Even using a bolt a second time when the thread is polished can give a different load on the bolt. For these reasons Valeo strongly recommend not using the original / used bolts.

Why do Valeo use Stretch Bolts?

Stretch bolts aim to eliminate some of the above problems. A steel bolt will extend steadily in proportion to load up to its elastic limit. At that point, it yields, and takes on permanent deformation. For a short while the material continues to extend steadily for very small increases in load (the load/extension curve being virtually horizontal), and after that it takes only very small loads to keep stretching it to the point of failure.

In use, they are tightened by stretching them to a specific amount. This is calculated to take them a short way past their yield point, to the point where the load extension curve is horizontal. The load in the bolt and hence the load on the joint is accurately known, as opposed to being at some ill-defined point on the elastic part of the load extension curve.

Because the deformation is permanent, and further extension reduces the load applied, it is not possible to check the tightness of the bolts after a period of use. Valeo advise not to reuse them, as they would not apply the correct load to the joint. For this reason, Valeo supply all conversion kits with stretch bolts.

