

Ultra Fasteners

Next-generation of Ultra High Tensile Strength Fasteners allow more compact design



Nedschroef Ultra Fasteners is a complete range of Ultra High Strength Steel Fasteners (grade 13.9 and higher). Ultra Fasteners have been developed to meet the increased demands placed on fasteners to enable efficient downsizing. The steel used for Ultra Fasteners is stronger than regular bolt steel. This means that smaller bolt designs can generate the same clamp force as before – or even higher clamp forces. Ultra Fasteners are made from a new generation of micro-alloyed martensite steels which combine ultra high tensile strength with excellent toughness and resistance to hydrogen embrittlement. The steel is extremely clean and the unique chemical composition creates a very fine grain size and a dispersion of nano-sized particles, the two features which generate ultra high strength levels, as well as the ability to trap hydrogen atoms. There is no need to change existing production methods and equipment.

Field of application

Ultra Fasteners allows reduction of the size and weight of combustion engines, which means lower CO₂ emissions. Ultra High Tensile Strength Fasteners are designed for highly loaded internal engine joints, but may also be successfully used in other areas. Typical applications are: connecting rods, cylinder head joints, main bearing joints and fly wheels.

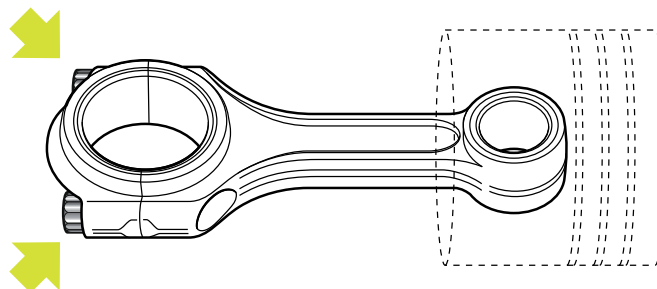
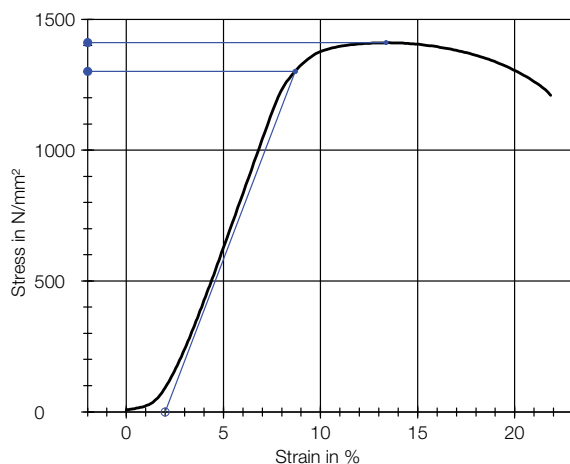
Besides a broad selection of standard solutions, Nedschroef offers the integrated production, design and systems engineering capacity required to create bespoke solutions for even the most specific and demanding requirements at an attractive price point. Our engineers are ready to work together with you to create the best solution for your own application...

For more information: www.nedschroef.com

 **NEDSCHROEF**

one step ahead...

Consistent strength, smaller parts

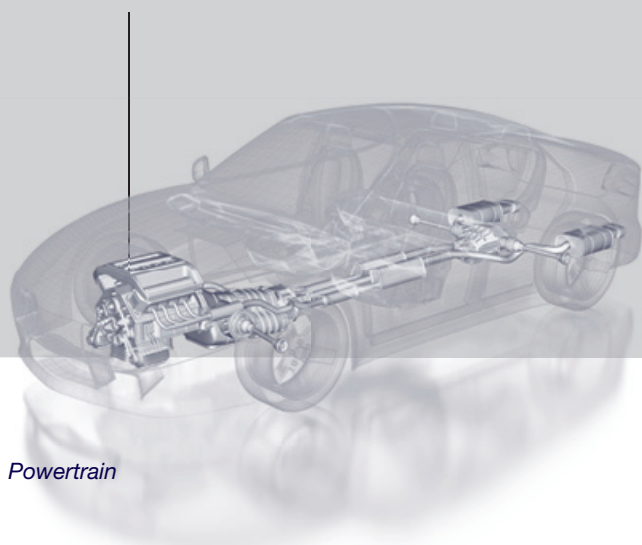


The new generation of Nedschroef Ultra Fasteners enables a more compact design of the connecting rod, and therefore also a more compact design of the crankshaft. This saves weight and space of all components in the joint and allows complete engine downsizing.

Dimensions

All products in our fastener portfolio can be offered as Ultra Fasteners. All joints are capable of carrying the load of these stronger fasteners and can be joined together by our grade Ultra Fastener products.

Crankshaft, connecting rods, cylinder head joint, main bearing joint and flywheel applications.



Powertrain

Properties

- Joining of highly loaded joints
- Increased clamp force of existing joints
- Specifications (14.9):
 - R_m : min 1400 N / mm²
 - $R_{p0.2}$: min 1260 N / mm²
 - HV10: 420-470
 - A_5 : min 9%
 - Z: min 48%

Advantages

- More compact designs
- Supports highly-loaded designs
- No risk of failure due to fastener material brittleness
- In line with ISO898-1
- Standard assembly methods and equipment may be used
- Nedschroef can offer nuts suitable for 14.9 screws/bolts

We can currently offer Ultra Fasteners as grade 13.9 and grade 14.9.

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For over a century, Koninklijke Nedschroef Holding B.V. has developed, manufactured and supplied fasteners and special parts for the automotive industry. In addition, we design and produce superior forming machines and tools for the metal forming industry.

Nedschroef delivers world-class services and innovative, cost-effective solutions. Our expanding global operations offer everything from product design and development to delivery, installation and service, supported by a vast global partner network. 1,600 people at 24 facilities, including six centres of competence, in 14 countries worldwide are committed to our Full Service Provision concept.