

Press Release

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New Loctite 5189 sealant used for 1.0L EcoBoost “Engine of the Year”

Exceptional flexibility and blow-out resistant sealant

Working in conjunction with Ford Motor Company, Henkel – the world’s largest adhesives manufacturer – has developed an anaerobic gasketing sealant for highly stressed engine joints. With exceptional flexibility, Loctite 5189 meets the requirements of the on line blow-out test and thus eliminating the cost of extensive manual rework and offering robust sealing for high volume engine manufacturing.

New engine development effort is geared not only to generating high performance with reduced fuel consumption and low CO₂ emissions, but also to ever more compact dimensions. The general trend for compact yet high power engines means very highly stressed engine joints. Henkel can now offer a solution in the form of a new, exceptionally flexible liquid gasketing sealant. This “formed-in-place” (FIP) flange sealant developed by Henkel in close cooperation with Ford has been tested and approved for use in a number of different Ford engines as a means of offering a robust and cost effective sealing solution. Loctite 5189 is used, for example, to seal the cam caps on the 1.0 liter EcoBoost engine and for highly stressed joints on the 1.6 liter EcoBoost engines at Ford. The 125 PS (123 BHP/92kW) 1.0 liter engine installed in the Focus and Fiesta as well as other Ford models was recently named overall winner in the 2013 International Engine of the Year Awards. In explaining its decision, the jury made particular mention of the economic everyday qualities of the gasoline power unit.

Quantified test results showing reduced reject rates and operating costs

Each engine is tested to ensure seal integrity and the challenge for the automobile manufacturer is to offer leak free engines to ensure warranty costs are minimized. “In order to ensure leak free engines and the reduction of re-work, we asked Henkel to



develop a gasketing compound with high flexibility and blow out resistance so engines pass the quality test first time,” says Ford’s Mr. Tsunou Chang, Senior Sealing Engineer at Ford Motor Company.

Loctite 5189 from Henkel does indeed enable substantial reductions in both reject rates and process costs in engine production. Aside from its short curing time, the gasketing sealant is also characterized by its good adhesion to metallic surfaces, particularly aluminum. Rather than becoming glass-hard once cured, Loctite 5189 offers long term flexibility compared to previous gasketing sealants enabling it accommodate flange movement on highly stressed joints. Ford began using Loctite 5189 in production of its 1.0 liter and 1.6 liter EcoBoost engines in January 2014 and the product will be used globally by the end of 2014.

Henkel is able to call upon decades of experience and engineering know-how gained in the service of the automotive industry. It can offer customers a comprehensive support package ranging from advice on product design to performance and quality testing of new designs in Henkel’s Garching facility near Munich (Germany), one of its global engineering centers.

More than just a common goal

The two companies are linked by a business relationship that goes back more than 40 years. Henkel is Ford’s preferred supplier of engineering adhesives and sealants for its globally distributed engine manufacturing operations. This status has been achieved as a result of Henkel’s focus on providing a customer service that enables companies like Ford to constantly push the boundaries of technology and gain competitive edge. Ford’s corporate mission is to implement a “One Ford” strategy, which includes ensuring that products like Loctite 5189 liquid gasket sealant are used as extensively and as uniformly as possible in all the company’s production facilities worldwide. This is an ambition in which Henkel is keen to support its customers by making successful innovations available in consistent quality around the world.

For more information, visit our website www.henkel.com/automotive.

Loctite is a registered trademark of Henkel and/or its affiliates in Germany and elsewhere.

Henkel operates worldwide with leading brands and technologies in three business areas: Laundry & Home Care, Beauty Care and Adhesive Technologies. Founded in 1876, Henkel holds globally leading market positions both in the consumer and industrial businesses with well-known brands such as Persil, Schwarzkopf and Loctite. Henkel employs about 47,000 people and reported

sales of 16.4 billion euros and adjusted operating profit of 2.5 billion euros in fiscal 2013. Henkel's preferred shares are listed in the German stock index DAX.

Photo material is available at <http://www.henkel.com/press>

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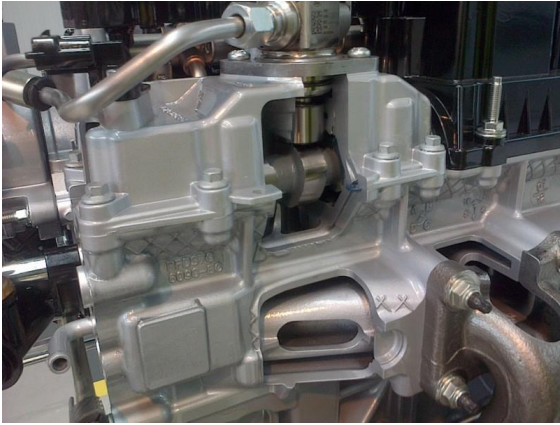
The following material is available:



Highly stressed engine joints on Ford 1.0 and 1.6 liter EcoBoost engines are sealed with the anaerobic gasketing sealant from Henkel.



The “squeeze out” of the sealant at the interface with the cam cover and the rheology of the sealant ensures instant blow out resistance.



Loctite 5189 is used to seal highly stressed joints on the 1.6 liter EcoBoost engines at Ford, such as the fuel injection pump bracket and vacuum pump joints. The anaerobic gasket is highly flexible even after heat aging and thus is suitable for dynamic joints.