Press release

Diesel Common Rail System
New world record with Bosch diesel technology
23,000 kilometer long reliability test without failure

September 2012

- Melbourne to St. Petersburg in 17 days on clean diesel
- Common rail technology making diesel engines cleaner and economical since 1997

St. Petersburg – Moscow. A Volkswagen Touareg TDI Clean Diesel SUV equipped with Bosch's diesel technology has set a new world record – Melbourne to St Petersburg rally in just 17 days. Adventurer and off-road driver Rainer Zietlow and his team, traveled the 23,000 kilometers from earth's southernmost city of over a million inhabitants to its northernmost counterpart in record time.

"The Melbourne to St. Petersburg drive is the third one after our Argentina to Alaska journey of 2011 and Chilean volcano Ojos del Salado in the Atacama Desert in 2005, which yet again underlines the right choice we have made by relying on the vehicle powered by Bosch diesel technology – power, speed, and reliability in the most challenging driving conditions", says Rainer Zietlow.

The basis for the cost-effective, clean and powerful diesel engine installed in the Volkswagen Touareg TDI Clean Diesel is the advanced electronically-controlled fuel injection Common Rail System (CRS3-20) developed by Bosch, the leading manufacturer of diesel fuel injection systems. The tour running through nine countries, several climatic zones and changing altitudes posed no problem for the technology – the system passed this reliability test without a single failure despite the harsh conditions of the Melbourne – St. Petersburg Rally.

Future common-rail technology with up to 2,500 bar

The name "common rail" is a reference to the pressure accumulator from which fuel is injected at high pressure into the cylinders via the injectors connected to it. The possibility of multiple injections that this allows makes engines quieter and reduces fuel consumption, as well as cutting emissions of CO2 and other pollutants. The first generation of common-rail systems operates at a pressure of 1,350 bar, but today's CRS2 achieves up to 2,000 bar. Fuel is precisely metered by solenoid valves that allow up to eight single injections per power cycle. CRS2 can be used around the world in all passenger car classes as well as in light commercial vehicles and the off-highway

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segment. Bosch also offers CRS3 with piezo injectors for the most demanding applications. This makes it possible to meter the tiniest amounts of fuel even more precisely for pre- and post-injection, which serves to further reduce NOx emissions and make the engine operate even more quietly. Common Rail System developers have achieved reliability even with low-quality diesel fuel, which is important in the Russian context. Due to the control using a piezoelectric element, which is ten times more powerful than solenoid control, injectors are less sensitive to particles present in the fuel.

"In the past, diesel engines were seen as economical and robust. The modern common-rail diesel is just as efficient and durable, but it is also extremely dynamic, comfortable, and eco-friendly. Common-rail high-pressure injection, in conjunction with turbo charging, has revolutionized the diesel engine," says Dr. Markus Heyn, executive vice president passenger cars of Bosch Diesel Systems division. In this system, the injection pressure is as high as 2,200 bar. Bosch engineers are already working on common-rail systems with 2,500 bar and more. This means the diesel engine is well equipped for the future. In conjunction with NOx exhaust gas treatment such as Bosch Denoxtronic, common-rail technology makes it possible to meet the strictest emissions regulations, including Euro 6 in Europe from 2014 or Tier 2 Bin 5 in the United States. Diesel vehicles equipped with the necessary technology are already available in the European and U.S. markets.

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The Bosch Group is a leading global supplier of technology and services. In the areas of automotive and industrial technology, consumer goods, and building technology, more than 300,000 associates generated sales of 51.5 billion euros in fiscal 2011. The Bosch Group comprises Robert Bosch GmbH and its roughly 350 subsidiaries and regional companies in some 60 countries. If its sales and service partners are included, then Bosch is represented in roughly 150 countries. This worldwide development, manufacturing, and sales network is the foundation for further growth. Bosch spent some 4.2 billion euros for research and development in 2011, and applied for over 4,100 patents worldwide. With all its products and services, Bosch enhances the quality of life by providing solutions which are both innovative and beneficial.

The company was set up in Stuttgart in 1886 by Robert Bosch (1861-1942) as "Workshop for Precision Mechanics and Electrical Engineering." The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant up-front investments in the safeguarding of its future. Ninety-two percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust. The remaining shares are held by the Bosch family and by Robert Bosch GmbH.

Further information is available online at www.bosch.ru and www.bosch.com.