

## Press Release

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### **Lower Emissions and Less Noise: First Atribo DMU for Trenitalia Driven by Voith RailPacks leaves PESA**

Trenitalia, the main rail operator in Italy, has ordered 40 diesel-driven ATR220 railcars from the Polish manufacturer PESA. The initial start-up of the first three-car vehicle powered by two Voith RailPacks has just been successfully performed. The engines have been upgraded and adapted to the new Stage IIIB emission standard specifically for this application. In addition to RailPacks with T211 transmissions and Voith/MAN engines, the Voith delivery scope for this project includes SK/KE 485 gear units, as well as cardan shafts and Scharfenberg couplers. The DMU has been now transported to the destination country in order to complete the homologation process and to be commissioned by the end of 2014.

The integrated Voith/MAN inline 6-cylinder engine complies with railway standards and meets the corresponding requirements for functional stability, durability and profitability. In order to achieve superior energy efficiency with low fuel consumption, whilst also complying with the emission levels laid out in Directive 97/68/EC Stage IIIB, the engine is fitted with an exhaust after-treatment system in accordance with the SCR (selective catalytic reduction) process. This enables the nitrous gases found in the exhaust fumes to be reduced in a targeted manner by injecting a urea-water solution into the exhaust system through the removal of oxygen. The same technology is also used in trucks. The advantage of this setup is that it is tested in high-volume applications and is designed specifically for rail operations.

A technical highlight is the way in which the engine is started with the aid of double layer capacitors, which replace the starting battery. The advantages of this solution are obvious: significantly lower weight, longer service life and, above all, outstanding cold start behavior.

The two Voith RailPacks enable the railcar to drive at speeds of up to 130 km/h. Their electronic control is linked to all other drive component control systems, resulting in just one common interface. This ensures that the RailPack is optimally integrated into the vehicle. The drive control, transmission of the operating conditions and relevant diagnostic procedures can therefore be easily carried out.

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For the benefit of the passengers, Voith has also considerably reduced the noise levels of the cooling system. A specifically developed software program ensures that the fan speeds remain optimally adjusted. Thanks to this "Super Silent" solution, noise levels are significantly reduced while the train is at a station.

Page 2 of 3

New ATR 220 Tr vehicles will be brought into service in the regions of Marche, Tuscany, Abruzzo, Campania and Calabria. The railcars are fitted with additional features such as air conditioning, Internet-ready devices, and a comprehensive passenger information system. With an overall length of 55.57 meters, they can hold up to 312 passengers.

Voith maintains a long-standing partnership with PESA. The very first Voith RailPack was developed for PESA in 2001. Since then, Voith has produced and delivered over 1,000 RailPacks with a wide output range, which are in operation in trains all over the world.



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Page 3 of 3

First Atribo DMU for Trenitalia leaves PESA after successful initial start-up.

Voith Turbo, a Group Division of Voith GmbH, is a specialist for intelligent drive solutions. Customers from highly diverse industries such as oil and gas, energy, mining and metal processing, ship technology, rail and commercial vehicles rely on advanced technologies from Voith Turbo.

Voith sets standards in the markets energy, oil & gas, paper, raw materials and transportation & automotive. Founded in 1867, Voith employs more than 43,000 people, generates €5.7 billion in sales, operates in over 50 countries around the world and is today one of the biggest family-owned companies in Europe.

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