



MAN Diesel & Turbo Achieves Major TCR Milestone 10,000th delivery celebrated 12 years after introduction

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MAN & Diesel Turbo, Augsburg reports that it recently delivered the 10,000th turbocharger from its TCR radial-type turbocharger series. The MAN TCR14 unit was produced for a 5L23/30H GenSet for Oldendorff Carriers GmbH & Co., one of the world's largest dry-bulk shipping companies based in Lübeck, Germany. The Jinling-built 38,000-dwt bulker is the second in a series of four vessels, all propelled with MAN two-stroke and auxiliary engines.

Dirk Balthasar, Vice President and Head of Turbocharger Sales & Promotion, MAN Diesel & Turbo, said: "The information garnered from over 10,000 TCR turbochargers in the field gives us a huge insight into their overall performance. The TCR series was introduced in 2004, meaning that many of these turbochargers have run for over 10 years and have had a second major overhaul. We calculate our accumulated TCR service experience now as more than 200 million operating hours. We use this knowledge to constantly improve the TCR series."

Balthasar concluded: "This strategy can be seen to have paid dividends with this impressive sales milestone and the fact that TCR turbochargers enjoy broad support across the market and supercharge both MAN and non-MAN engine designs."

Oldendorff's newbuilding bulker also has a Tier II MAN B&W 5S50ME-B9.3 main propulsion engine, built by Yichang Marine Diesel (YMD), and is also optimised with a highly efficient TCR22, the largest radial-type turbocharger in the world.

Through 95 years of steady growth, Oldendorff Carriers is a specialist in spot markets, industrial contracts and offshore transshipment, and drybulk logistics. It operates about 500 ships – both owned and chartered – that carry about 270 million tons of bulk and unitised cargo around the world per annum.

The TCR series

The MAN TCR Turbocharger series was introduced in 2004 to replace the NR series – in production for nearly 50 years – and to address the very special challenges of high-, medium- and low-speed engines. The MAN TCR represents a completely new design that delivers greater efficiency, the lowest

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possible weight, reduced size/number of components, material optimisation, easier maintenance, and quicker response behaviour during acceleration. Furthermore, advanced materials ensure that the TCR series can boast of extended overhaul intervals, easier maintenance and longer lifetimes.

MAN TCR turbochargers were designed to address the special challenges faced by HFO, MDO, biofuel and gas engines. Seven frame sizes are available for the entire engine power range, from 350 kW to 7 MW per turbocharger.

MAN TCR turbochargers are IMO Tier III compliant and represent a robust, versatile, modular platform that is suitable for a wide variety of high-, medium- and low-speed engine applications. Typical applications for TCR turbochargers, apart from marine GenSets, include marine propulsion engines. TCR turbochargers are also frequently used in small, two-stroke propulsion engines and have proven their excellent reliability operating on HFO and MDO. Besides power generation – where TCR units can be found in all sizes of engines up to 7,000 kW per turbocharger – mining, offshore and locomotive applications are becoming more and more important for the turbocharger.

The TCR series can be equipped with a Variable Turbine Area (VTA) as an option to increase engine efficiency, as employed in most modern, two-stage turbocharging systems. Different options for flow-parts and turbocharger casings allow a perfect fit with a variety of different applications and engine types.

Service Experience

The information garnered from the over 10,000 TCR turbochargers in the field gives a huge insight into their overall performance. With the TCR series having been introduced in 2004, this means that many of these turbochargers have been running for more than 10 years and have already encountered their second major overhaul. If every TCR turbocharger is assumed as running for 5,000 hours per year, this gives an accumulated experience of more than 200 million operating hours. Based on this knowledge, a team of service engineers and R&D specialists within MAN Diesel and Turbo constantly improve the existing TCR turbocharger series. Consequently, TCR turbochargers enjoy

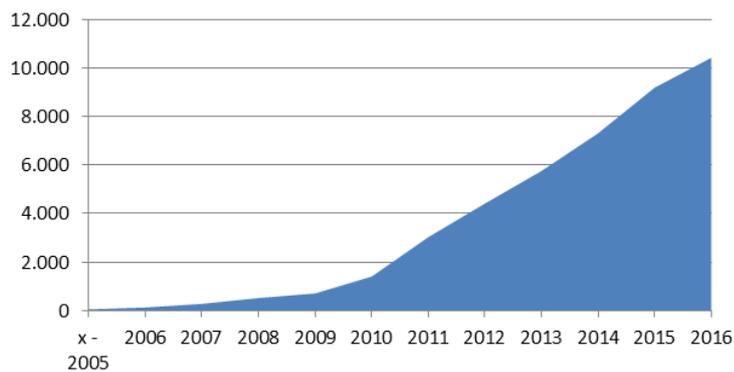
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broad support across the market and supercharge both MAN and non-MAN engine designs.



TCR deliveries (cumulative)

About MAN Diesel & Turbo

MAN Diesel & Turbo SE, based in Augsburg, Germany, is the world's leading provider of large-bore diesel and gas engines and turbomachinery. The company employs around 15,000 staff at more than 100 international sites, primarily in Germany, Denmark, France, Switzerland, the Czech Republic, India and China. The company's product portfolio includes two-stroke and four-stroke engines for marine and stationary applications, turbochargers and propellers as well as gas and steam turbines, compressors and chemical reactors. The range of services and supplies is rounded off by complete solutions like ship propulsion systems, engine-based power plants and turbomachinery trains for the oil & gas as well as the process industries. Customers receive worldwide after-sales services marketed under the MAN PrimeServ brand.

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