



Successful Sea Acceptance Trials of first RENK AED drives

A stunning mega-yacht needs an extraordinary propulsion. The 110-meter long yacht with 3500-ton displacement was built at a shipyard in the Netherlands and features our all-new propulsion system Advanced Electric Drive (AED). Final sea acceptance trials resulted in performance far beyond expectations emphasizing the AED's key benefits - lightweight, compact and low-noise performance.

Highest demands in quality, innovations and extraordinary design with high-glossy interior and outside surfaces are dominating this special yacht. For this project, normal diesel propulsion was rejected as the owner decided to go with a futureproof electric drive. Direct electric drives were too heavy and too big in size, so the selection met the successful development of the RENK AED.

The trend of electrifying of propulsion systems was identified by RENK propulsion experts very early, mainly coming from yachts, frigates, research vessels and special naval vessels. RENK naval division was developing for some time an alternative electric drive train solution as replacement of huge and heavy direct electric drives. This lightweight and compact alternative is fitting perfectly in the narrow machinery spaces of the new designed mega yacht, which is designed to provide as much as space to the owner.

The long-term experience in building low noise gears was the foundation to combine a high-speed electric motor, much more compact in size and only one fourth of the weight of a direct drive, with a reduction gear on a common base frame, soft elastically mounted to the ships foundation. The complete AED module results in approximately half of the weight of a comparable direct electric drive.

This all-new patented idea was combined with a market analysis that sowed requirements for 1,500 kW up to 6,000 kW. This first contracted shipset delivers a power of 4,000 kW on medium voltage, tested under full load at the new-built testing facilities at RENK headquarter in Augsburg. The tests also showed very satisfying noise performance and proved the basic idea, as now proven under harsh sea conditions.

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RENK AG is a manufacturer of special gear units and transmissions for tracked vehicles, industrial applications and the shipbuilding industry as well as components for propulsion technology and test systems, supplying customers all over the world. On the world market the company holds a leading position for automatic transmissions for tracked vehicles, gear systems for navy vessels and horizontal slide bearings.

MAN SE, Munich holds a majority share of RENK AG. The MAN Group is one of Europe's foremost industrial players in the sector of Transport-Related Engineering.

After the delivery of both drive modules in March 2015 to the shipyard, it took a certain while to receive the first results from the sea acceptance trials. And the results were extremely positive: all trials completed successfully and at much lower noise levels than specified! The official acceptance was scheduled end of July 2018, represented by owner's representative, Lloyd's Register of Shipping and one of the owner of the shipyard. RENK is very graceful in having been able to realize an all-new product, never built before. All team members working on this project are proud that the very first AED even underpassed the noise specifications by far, which is also a result of a good interacting of the AED with a superior ship structure.

In the meantime, the AED is considered widely in newbuilding projects. Another shipset was recently delivered and will start its operation on a research vessel for the Australia's Antarctic division, used for low speed propulsion during research activities. Some frigate programs are on the near horizon that will combine AED with diesel or gas turbines, providing efficient propulsion and low noise up to a speed of 15 knots.

RENK is looking forward to a growing population of AEDs worldwide and the possibility to prove the competence of RENK in delivering propulsion systems rather than just a gear manufacturer.



AED mounted on RENK test rig