



TCT60 Lands First Low-Speed Application

[Augsburg, 15.06.2021]

PBST has announced the first installation of its TCT60 turbocharger in a two-stroke application. The turbocharger is bound for an MAN B&W 6G70ME-C10.5 LP-SCR engine, currently under construction by HSD Engine in Korea.

The two-stroke engine's shop test successfully took place in April 2021. Owing to Covid-19, a reduced test-bed team – comprising local HSD, MAN PrimeServ and PBST staff – participated on-site, while remote support was provided by a PBST development team and performance engineers in Copenhagen via an MAN PrimeServ EyeTech link – an assisted-reality, remote-support tool that facilitates mobile video-conferences via data glasses.

Hyundong Hwang, Manager Initial Design Team, HSD Engine, said: “HSD is proud to be the first engine builder to apply the PBST TCT60 turbocharger to a two-stroke application. We thank PBST for their great support during the turbocharger matching, especially considering the unique constraints imposed by the pandemic.”

Manuel Stork, Head of Sales & License, Turbocharger & Exhaust Gas Treatment, Asia Pacific, PBST, said: “It's a significant step for the PBST portfolio as another turbocharger type makes its debut in the market. Thanks to great support locally – as well as remotely from MAN Energy Solutions in Augsburg and Copenhagen – we managed to smoothly execute the shop test despite the limitations imposed by the pandemic. Notably, the TCT60 matched first time with the engine without requiring the changing of any flow parts – to HSD's great satisfaction.”

TCT series

PBST launched the TCT turbocharger series in 2019, starting with the TCT40, and subsequently followed by the TCT50 and TCT60. Ultimately, the series will comprise six frame-sizes, ranging from TCT30 to TCT80.

The newly developed radial compressor and axial turbine are key components of the series. Both have been developed with the latest simulation technologies, paired with new design features, resulting in a very compact and lightweight turbocharger design. Thanks to its superior charging efficiencies, wide compressor maps and ample matching options, TCT turbochargers can easily be matched to a large range of engines. Their variability covers not only a wide range of engine-tuning options and fuel types, but also all new requirements of today's exhaust-gas after-treatment systems for IMO Tier III operations.

In general, TCT turbochargers offer the following features:

- long TBOs
- maintenance-friendly service concept
- highest efficiency levels



- compact and lightweight design
- high-performance bearings.

For two-stroke engines, TCT-series turbochargers are suitable for engines ranging from 5.5 MW up to 24 MW per turbocharger. Typical applications include as prime movers for container vessels, large bulk carriers or tankers.

However, TCT turbochargers are high-performance solutions and not just aimed at low-speed engines; they are also extremely suitable for the two-stage turbocharging of four-stroke, medium-speed engines. For MAN's Ecocharge systems, they are paired with TCX series turbochargers as high-pressure stages. In this configuration, turbocharging efficiency levels of up to 80% – a market-leading accomplishment – can be achieved. Medium-speed engines with Ecocharge systems provide fuel-efficient power for a great variety of applications like the world's most prestigious cruise ships, but also power plants that supply electricity to entire cities.



The PBST TCT60 type turbocharger pictured during the shop test at HSD Engine

With more than 85 years of experience, PBST offers smart and holistic air-management solutions with single- and two-stage turbochargers and integrated exhaust gas after-treatment systems. These are employed in a broad range of applications within, among others, the marine, power-generation, rail, industrial and construction-machinery segments. Supported by the MAN PrimeServ after-sales network – and with production sites in Germany, the Czech Republic and China – PBST provides extensive local and global customer service. PBST is a brand of MAN Energy Solutions SE.