
Press release

Augsburg, 29.03.2023

MAN Energy Solutions SE
Tegholmegade 41,
2450 Copenhagen SV,
Denmark
www.man-es.com

Group Communications
Nils Søholt
P +45 33 85 26 69
Nils.Soholt@man-es.com

MAN 49/60DF Successfully Passes TAT

Eighteen months of full-scale engine testing culminates in type approval of MAN's flagship engine

MAN Energy Solutions' MAN 49/60DF engine has received its Type Approval after a five-day programme on the testbed at company HQ in Augsburg, Germany. The Type Approval Test (TAT) was witnessed by inspectors representing the ABS, BV, CCS, DNV, LR and RINA classification societies, who signed the test protocol upon the successful completion of the schedule.

Marita Krems, Head of Four-Stroke Marine & License, MAN Energy Solutions, said: "Today marks the latest milestone in the 49/60DF's journey since its concept release in 2018. As we enter a new era of decarbonisation, the 49/60DF is an obvious choice for vessel owners with ambitious, emission-reduction targets that prize full fuel-flexibility and multiple options for clear emission paths."

Thomas Huchatz, Sales Manager Four-Stroke Marine, MAN Energy Solutions, said: "Over the last eighteen months, we have demonstrated the engine's reliability and robustness. The TAT now issued is a certificate of conformity that confirms that the engine meets the regulatory, technical and safety requirements required to enter the marketplace."

Latest dual-fuel model

MAN Energy Solutions announced the launch of the 49/60DF at the 2022 SMM trade fair in Hamburg. The most recent addition to its four-stroke engine portfolio, the dual-fuel engine is capable of running on LNG, diesel and HFO as well as a number of more sustainable fuels including biofuel blends and synthetic natural gas. MAN Energy Solutions states that it sets a benchmark in terms of fuel efficiency within four-stroke engines – both in gas and diesel mode – and therefore minimises fuel costs and potential costs for CO₂-emission certificates.

The new 49/60DF engine platform features MAN's latest technologies, including two-stage turbocharging, second-generation common-rail fuel injection, the SaCoS5000 automation system, and MAN's next-generation Adaptive Combustion Control ACC 2.0 that automatically optimises combustion. The engine also retains well-proven MAN technologies such as the gas-injection system, pilot-fuel-oil system and MAN SCR (Selective Catalytic Reduction) system.

Multiple compliancy paths

The MAN 49/60DF can operate and even start in gas mode where it complies with IMO Tier III without exhaust gas after-treatment. In diesel mode, it complies with Tier III when combined with MAN's SCR system.

Soot emissions in diesel mode are halved due to the second-generation common-rail system 2.2, while the 49/60DF's methane emissions are also drastically reduced in gas mode. The engine's benchmark efficiency and fuel-flexible design offers multiple paths to emission compliancy leading up to 2050, as per the current Fuel EU draft.

The new engine is also methanol-ready, meaning it is inherently ready for retrofit to running on methanol should the demand arise at a later stage. Conversions are straightforward as all engine variants originate from an initial, modular engine design.

Pure diesel version

MAN Energy Solutions is also introducing a pure diesel engine based on the 49/60 platform that will be methanol- and LNG-ready and features the same technology upgrades as its dual-fuel sibling; the engine can also operate on bio-fuels. This pure-diesel version allows MAN's new common-rail system to fully play to its strengths of low-emission and low-vibration operation, paired with the maximum flexibility to design the combustion process to minimise fuel costs. Furthermore, its high power-density extends the power range of inline engines into applications traditionally equipped with V-type engines.



The successful Type Approval Test of the MAN 49/60DF engine was carried out at MAN Energy Solutions HQ in Augsburg, Germany



MAN Energy Solutions enables its customers to achieve sustainable value creation in the transition towards a carbon neutral future. Addressing tomorrow's challenges within the marine, energy and industrial sectors, we improve efficiency and performance at a systemic level. Leading the way in advanced engineering for more than 250 years, we provide a unique portfolio of technologies. Headquartered in Germany, MAN Energy Solutions employs some 14,000 people at over 120 sites globally. Our after-sales brand, MAN PrimeServ, offers a vast network of service centres to our customers all over the world.