



MAN Engines fulfills strict California Air Resources Board CHC emissions requirements

Munich, 23/04/2024

- **"In-use performance standard" for commercial harbour ships**
- **Certified V12 engines for heavy and medium-duty applications**
- **Extremely low particulate matter (PM) content of 0.0067 g/kWh**
- **Exhaust gas aftertreatment system with SCR and DPF approved from MAN**

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MAN Engines is the first engine manufacturer to offer marine engines for the commercial sector to meet the stringent CARB CHC in-use performance emission standards. This new Commercial Harbor Craft (CHC) regulation from the California Air Resources Board (CARB) was updated in early 2023 to reduce emissions from harbor vessels near the California coast. CARB approval for CHC In-Use Performance Standards is only granted to engines that have been equipped and certified by the manufacturer with diesel particulate filter (DPF) and SCR systems (SCR – selective catalytic reaction). On the other hand, for the alternative approval of engines with higher limits of the CARB CHC Level 3, elaborate test runs and durability tests must be carried out in operation in order to obtain the certification of after-market solutions for DPF.

MAN engines that comply with these stricter emission requirements are based on certified EPA Tier 4 engines from the current portfolio. In order to meet the strict limits, the exhaust gas aftertreatment system, which consists of only an SCR catalytic converter for EPA Tier 4, is additionally supplemented by a diesel particulate filter at the factory. "Our customers receive a system completely from a single source. That's why the engine, diesel particulate filter and SCR system are perfectly matched to each other," says

MAN Truck & Bus is one of Europe's leading commercial vehicle manufacturers and transport solution providers, with an annual revenue of about 11 billion euros (2022). The company's product portfolio includes vans, trucks, buses/coaches and diesel and gas engines along with services related to passenger and cargo transport. MAN Truck & Bus is a company of TRATON GROUP and employs approx. 33,000 people worldwide.



Werner Kübler, Head of Engineering at MAN Engines. MAN Engines has already been successfully using this system in the marine sector since 2020 for the EU Stage V emission standard and offers a broad engine portfolio for this purpose. For the CARB CHC in-use performance standard, MAN Engines offers three different power ratings – all based on the twelve-cylinder MAN D2862:

- D2862 LE44A: 735 kW (1,000 hp) at 1,800 rpm for heavy duty applications
- D2862 LE43B: 882 kW (1,200 hp) at 2,100 rpm for medium duty applications
- D2862 LE48B: 1,066 kW (1,450 hp) at 2,100 rpm for medium duty applications

While the EPA Tier 4 emissions standard sets a limit for particulate matter of 0.04 g/kWh, the latest EU legislation for inland waterway vessels (Stage V) requires a much lower 0.015 g/kWh. The CARB CHC in-use performance standard further reduces this limit to 0.0067 g/kWh. The limit values for nitrogen oxides (NOx) remain equally low at 1.8 g/kWh for all variants. "The In-Use Performance Standard further tightens the requirements for engines in operation, making it the best choice for sustainable drives. With the outstanding values of our solutions, we are once again demonstrating the market leadership of MAN Engines," says Kübler.

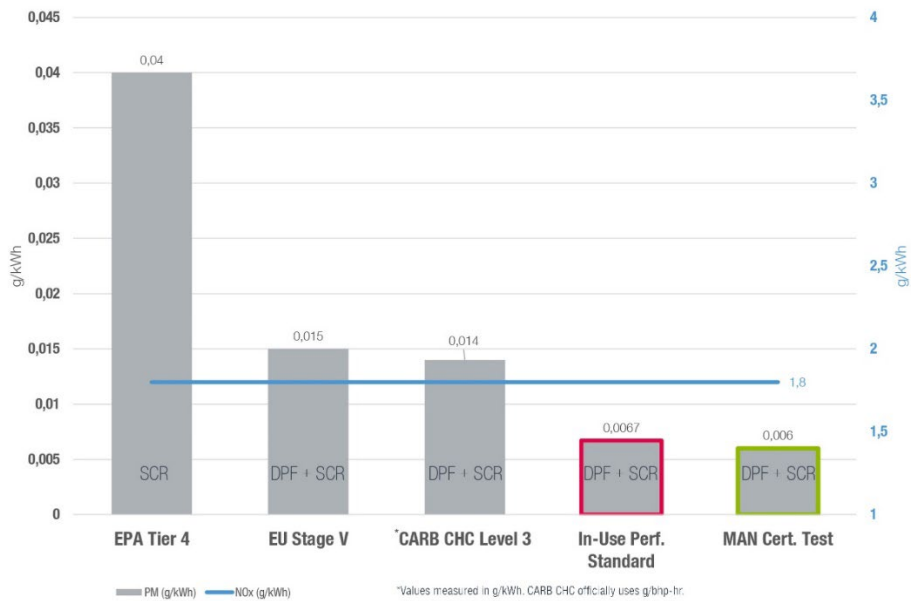
MAN Engines has many years of expertise in exhaust gas aftertreatment systems, whether as SCR-only solutions or in combination with a diesel particulate filter. Thousands of Group-owned trucks and buses that meet the latest EURO standards contribute to this, as do countless applications in agricultural machinery or in workboats with EU Stage V, US EPA/CARB Tier 4, China 3 or IMO Tier III emission standards.

According to the Californian Air Resources Board (CARB), the revised CHC regulation is expected to result in an 89 percent reduction in diesel black particulate matter and a 52 percent reduction in nitrogen oxides by 2035. The CHC includes various types of vessels owned by private and public entities, including tugboats/tugboats, ferries, pilot vessels, workboats, barges,

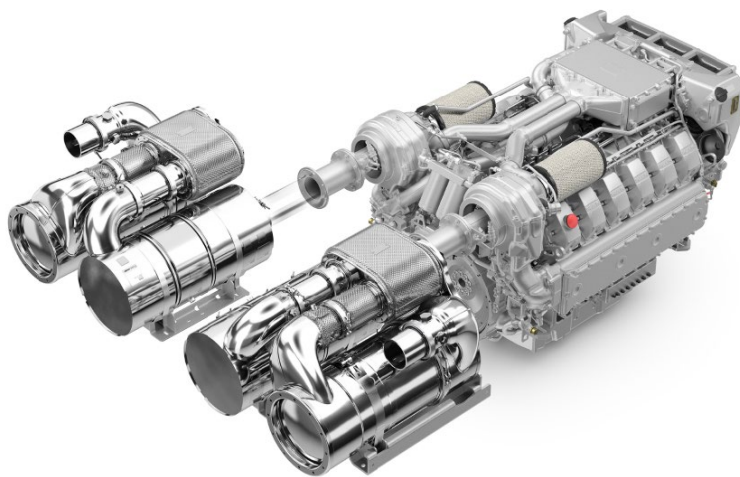


dredging vessels, research vessels, crew and supply vessels, excursion boats, charter fishing boats, and commercial fishing vessels.

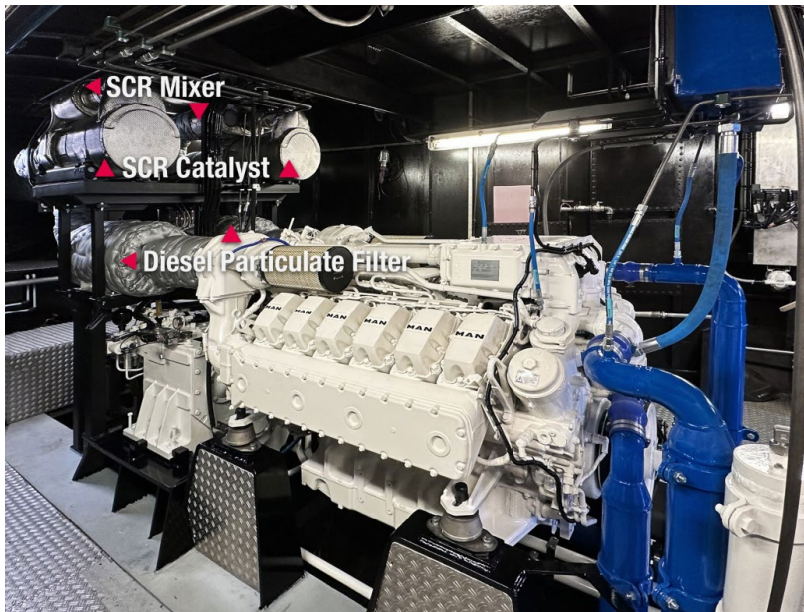
Pictures:



MAN Engines offers V12 engines for the strictest "in-use performance standard" for commercial harbor craft (CHC) in California.



For the CARB CHC in-use performance regulation, MAN Engines offers three different power ratings – all twelve-cylinder MAN D2862.



Picture: © de Groot Marine Service
The compact exhaust gas aftertreatment system from MAN Engines consists of an SCR system and diesel particulate filter and is perfectly matched to the engine. As a result, MAN Engines complies with EU Stage V and the even stricter CHC regulations in-use performance standard of CARB.



Picture: © de Groot Marine Service