

## Monitoring energy efficiency and emissions in marine diesel engines with the **emissions analyzer testo 350 MARITIME.**



Emission monitoring in international shipping is of increasing significance. While Norway, for example, today already taxes nitrogen oxide (NO<sub>x</sub>) emissions, the MARPOL convention provides for more stringent NO<sub>x</sub> limit values in all emission monitoring areas from 2021 at the latest. The most sustainable option for reducing emissions is the lowering of marine diesel oil (MDO) consumption. Since energy expenditure also represents the largest part of shipping companies' and owners' fixed costs, great value is placed on energy-efficient and low-emission engine operation when carrying out servicing and refitting work.

This is where Wärtsilä Services Switzerland Ltd. comes in. They are the company within Wärtsilä Corporation globally leading the 2-stroke Engine Services, including maintenance and repair services, technical support and upgrading solutions. Wärtsilä Services Switzerland Ltd. is specialized as a provider of maintenance and repair services. Wärtsilä 2-stroke Engine Services have used the emission analyzer testo 350 MARITIME for monitoring measurements on marine diesel engines, and found it to be a very easy-to-handle measurement technology for large ships.



testo 350 probe fixed to the measurement site with a flange.

### The challenge

Staff from Wärtsilä Services Switzerland Ltd. travel the world's seas carrying out servicing and refitting on board. The temperatures and pressures of the ships' diesel engines are tested, in order to guarantee the most energy-efficient operation of the engine plant possible. In the course of these tests, the emission values are also measured. The experts from Wärtsilä Services Switzerland Ltd. are reliant on measurement technology which can be easily transported, and is robust enough to withstand tough conditions at sea. In spite of this, the demands placed on the precision are high, as the measurement values have to be accepted by the classification societies.

"In my view, the testo 350 MARITIME is the ideal emissions analyzer for servicing ships' diesel engines." It's compact and easy to transport, and yet provides stable measurement values which are accepted by the classification societies. And all this at a very good price-performance ratio.

Performance Expert  
Wärtsilä Services Switzerland Ltd.

### The solution

Wärtsilä Services Switzerland Ltd. have been using the emissions analyzer testo 350 MARITIME for onboard measurements and tests on two-stroke marine diesel engines since the end of 2015. Since then, the emissions analyzer has already supported the Swiss service experts in their work on four ships. The testo 350 MARITIME is the first portable emissions analyzer in the world which has a Germaischer Lloyd Certificate No. 37811-12 HH according to MARPOL Annex VI and NOX Technical Code. Gas sampling is carried out using a special sampling probe which can be mounted in the exhaust gas duct using a flange. The certified and resilient electrochemical gas sensors (ECS) record the concentrations of the flue gas components O<sub>2</sub>, CO, NO<sub>x</sub> (NO + NO<sub>2</sub> separately) and SO<sub>2</sub> with a high degree of accuracy and long-term stability. CO<sub>2</sub> is recorded using the certified IR measurement principle.

### The advantages

The testo 350 MARITIME Control Unit is stowed in the convenient and robust trolley together with the analyzer box, the gas sampling probe and the accessories. This allows the instrument to travel around the world with the service experts. Time-consuming and expensive shipping is no longer necessary and the emission analyzer is immediately ready for use. Since many countries prescribe calibration using national gas, the performance experts at Wärtsilä Services, Switzerland have the correct test material pre-delivered to the ship. With the testo 350 MARITIME, he ensures that the legal NO<sub>x</sub> limit values as well as the requirements of the classification societies are adhered to. As a full-function portable analyzer, the testo 350 MARITIME is moreover relatively affordable, and thanks to gas sensors which can be exchanged by the user, is always available.

### More information

You can get more information about the testo 350 flue gas analyzer and answers to all your questions on emission measurement at [www.testo.com](http://www.testo.com).