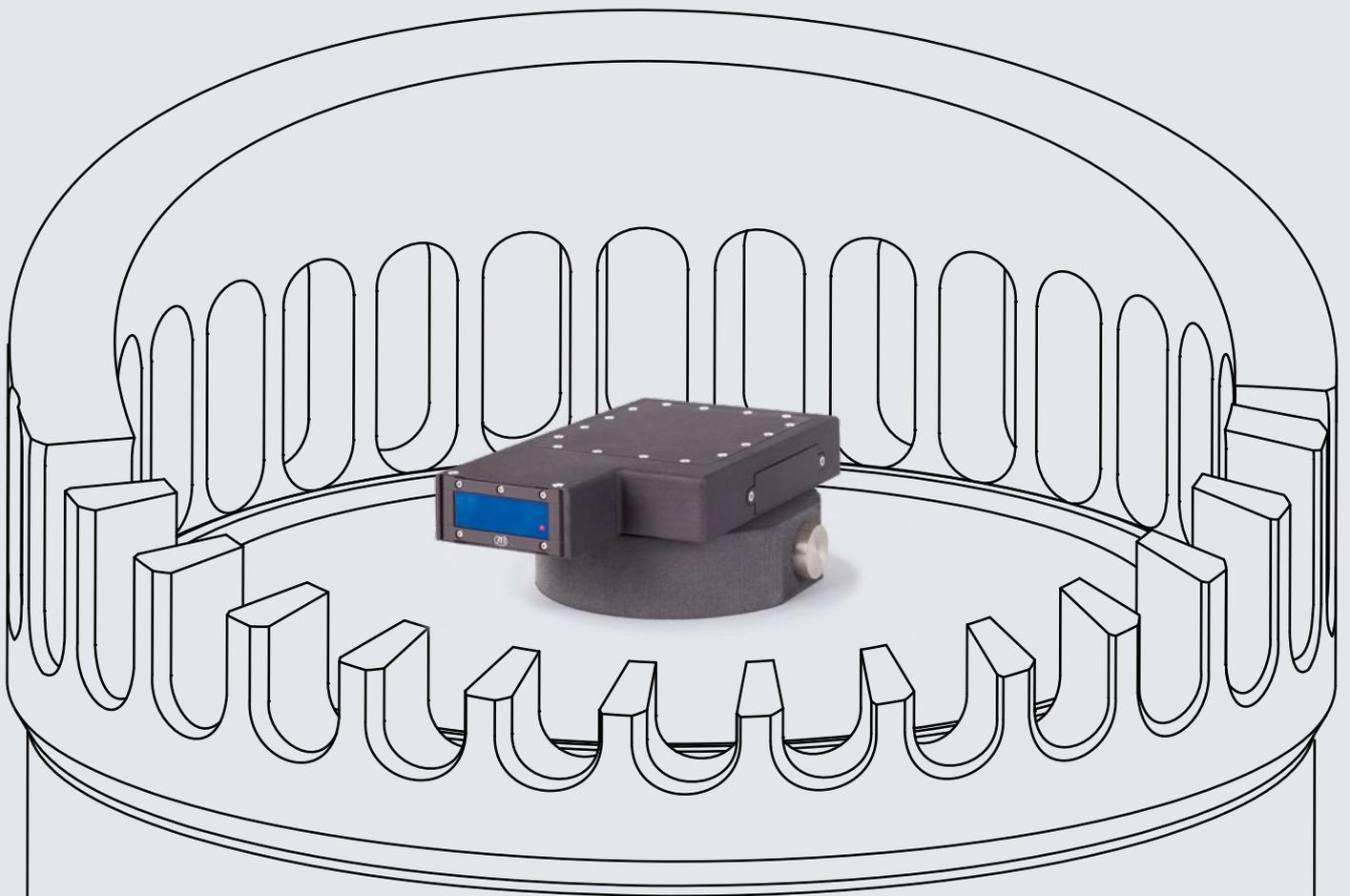


# MARLINER

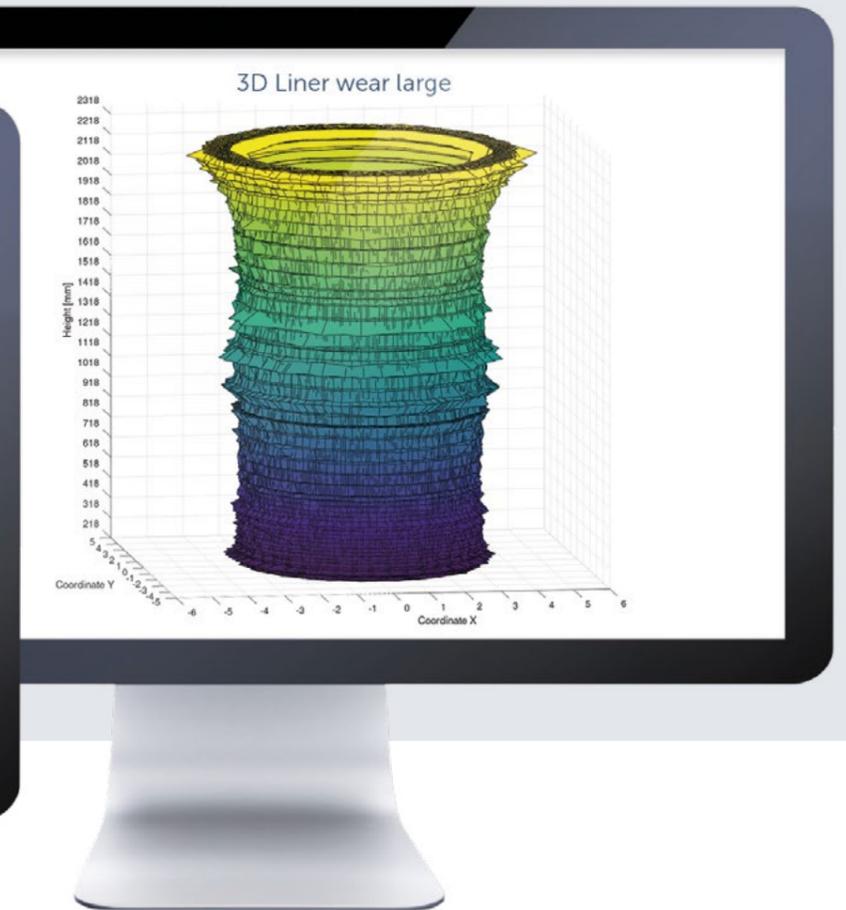
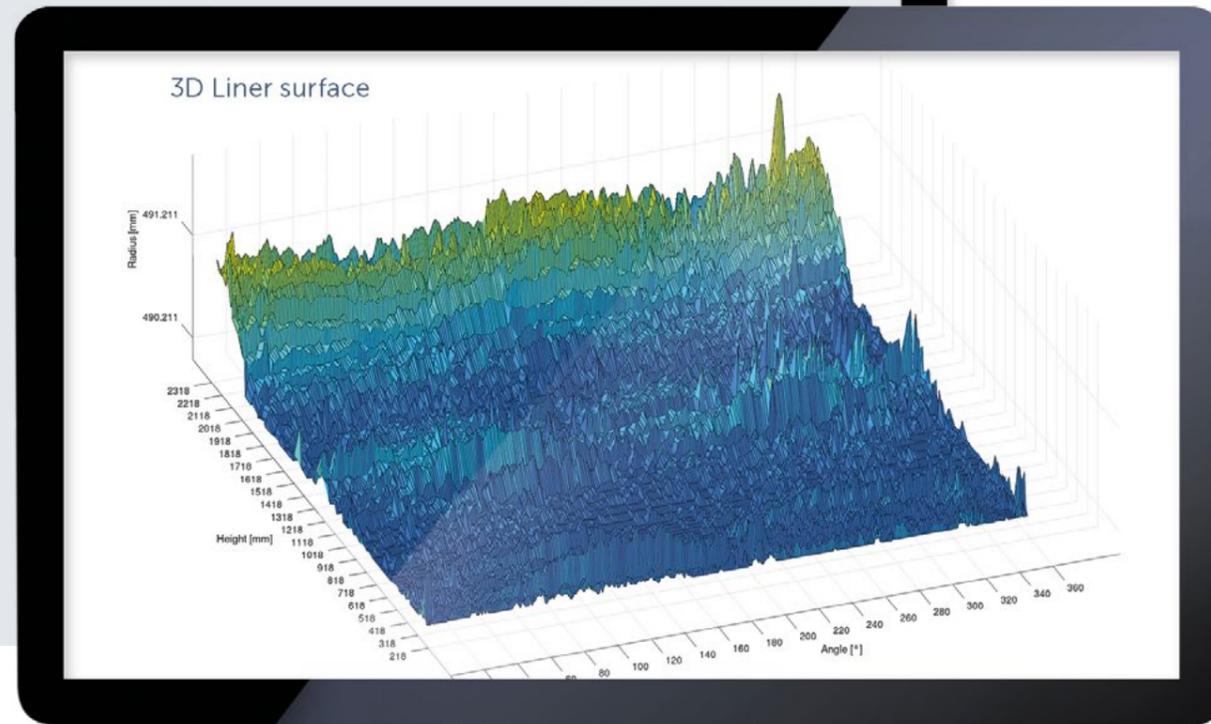
## Inspecting without dismantling: Revolutionary cylinder liner inspection



Reduce downtimes and unplanned repairs: MarLiner effortlessly finds its way, collects all data with laser-sharp precision and gives you full control regarding wear of liners and more. Our new, quick and economical way of liner inspection uses Big Data to analyze the condition of your cylinder liners.

## MarLiner essentials: All advantages at a glance

- + Easy and effective handling – insert, let go and receive results immediately
- + Full, independent control over cylinder liner wear, diameter, ovality and inside pictures
- + Efficiency in time and costs, because of a single, practical device
- + Inspections in 10 to 30 minutes per cylinder, no calibration needed
- + 12,000 measuring points per liner, multiple report formats
- + Independent, quick execution of a Scavenge Port Inspection



## Take full control without any operational disruption

Today, the immediate identification of issues concerning the frequently changing cylinder condition of the main engine is essential for planning, consumption and success. Emissions requirements are also subject to permanent change.

MarLiner gives you clear insights and immediately names the solutions. MARIDIS costumers receive a inspection strategy that includes the overall status and a preview for the main engine. Planning security, cost reduction and improvements for every vessel are the results. With MarLiner, no dismantling of the main engine or immobilization of the ship is necessary for inspections.

### Optional inspection models

- Accompanying prognostic inspection series on the cylinder condition for your long-term planning
- Targeted cylinder condition forecast for a long-term planning of spare parts acquisition
- Research-related inspection plan to check cylinder condition while testing new spare parts



### Operational mode, step by step

MarLiner is delivered in a sturdy transport case. Its included software for reading out data can be installed effortlessly. The device is inserted through the air slots of the liner and positioned on the piston with an insert aid. After centering it on the piston, the insert aid is removed.

The values for the cylinder liner reports are read directly from the device and created by the software. The condition is now determined, giving you clear indications whether the liner is worn and if a liner exchange is necessary. No further research is needed.

### Inside MarLiner: Data for decision making

MarLiner checks the surface of the affected liner in a previously unknown level of detail by consistently scanning from BDC to TDC. This is delivered in a three-dimensional view.

From 12,000 data points generated per liner, MarLiner designs a single practically usable report with easily accessible graphics, clear tables and immediately applicable results. For this purpose, two datasets are compared and trends are checked in order to generate tabular and graphical results that clearly illustrate the exact condition of the liner: Easily understandable results for immediate decision making.



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## Technical key data

- No engine service required
- Cost-efficient measuring, no further human interference necessary
- Objective, reproducible results, full data and pictures
- Camera with special lights for photography
- Highly detailed camera-based inspection, laser-based sensor
- Engine problem analysis for overhaul and exchange
- Lifespan prediction and extension, wear rate calculation per liner
- Post purchase and pre-dock inspections for better budget planning
- Control and reduction of lub oil consumption
- Strictly status-based maintenance planning, trend computation between checks
- Data validation by extensive post-processing

## Performance specifications

- Laser linearity  $\geq 500 \mu\text{m}$
- Laser reproducibility  $20\text{--}40 \mu\text{m}$
- Laser measurement rate  $4 \text{ kHz}$
- Liner measuring on site (bore  $500\text{--}980 \text{ mm}$ )
- $3,600$  measuring values per turn
- $\approx 10\text{--}30$  min per liner
- $> 200$  turns per liner
- Up to  $40$  pictures per liner

We love  
Diesel engines.

Contact us and learn more about our product range and services:

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