

# Kyma Diagnostic Tool Box



**Reliable data for shaft torque and power are vital for verification of propulsion characteristics of a vessel and for safe operation of the main engine. These data are also key figures for evaluation of hull and propeller condition. Fast response to deterioration in vessel propulsion is critical for cost efficient operation and optimal planning of docking schedules.**

Kyma has for 20 years supplied the marine industry with accurate and reliable shaft power meter systems. With installations on more than 600 vessels world-wide, Kyma is today among the leading suppliers of this kind of technology.

*All components, tools and accessories are packed into a carrying suitcase. A fully portable solution for transport in rough environments at shipyards, in ports and at sea.*



In order to meet an increasing market demand, we have designed the Kyma Test Power Meter, TPM. This is a lightweight portable instrument for temporary installation on propeller shafts.

The measurement principle is based on the well-proven strain gauge technology as applied for the permanent type Kyma Shaft Power Meters.

Kyma Test Power Meter is a user-friendly instrument, designed for marine application and manufactured according to the highest standards of quality assurance.

- Applicable for a wide range of shaft diameters and speeds.
- Simple installation and calibration. Half a day work by one person.
- High accuracy and repeatability.
- Compact, waterproof design.
- Contact free signal transmission.
- Digital display unit.
- Selectable system of units.
- Serial output connection.



*The center of attention during vessel speed trial. A user friendly display unit provides accurate information of instant and averaged propulsion data.*

Kyma Ship Performance

The most sophisticated solution for overall vessel performance monitoring

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# ***Kyma Diagnostics toolbox***

An important tool for the ship owner.

A separate software module, *Kyma Diagnostics toolbox*, can be added to the KSP software for statistical analysis of Long trend data as generated in the KSP system, see picture next side.

The purpose of the *Diagnostics toolbox* is to provide an efficient tool to give operator and ship-owner a clear message of vessel condition related to hull, machinery or propeller by a Performance status indication.

This software toolbox will include additional features for setting time of any major event that will cause a break of a trend line. Typical event date will be 'Start of dry docking', 'End of dry docking', 'Propeller polishing', 'Start of lay-up' etc.

After last event setting, the system will automatically generate a bench-mark level which will be the basis for checking condition of main engine, propeller and hull with regard to deterioration of performance in last/recent period.

Three levels of deterioration from bench-mark can be set by operator.

Level 1 is defined as Green zone, and will be in range from benchmark level to -5%.

Level 2 is defined as Yellow zone, and will be in range from -5 to -10%.

Level 3 is defined as Red zone, and will be in range from -10% and down.

Zone levels are adjustable by operator.

Vessel performance status will be indicated by zone color flag in upper right corner of all reports generated by the KSP system. Operator can then by a glance see the status of the vessel with regard to performance without going into details of numerical calculations and evaluation.

A detailed report with all statistical data can be provided at any time for last period performance trend. This report will in addition to the graphical presentation of trend development also give a prediction at what time yellow (or red) zone will be reached with present development.

This separate software module can be integrated with standard KSP system software.