

MARPRIME SYSTEM

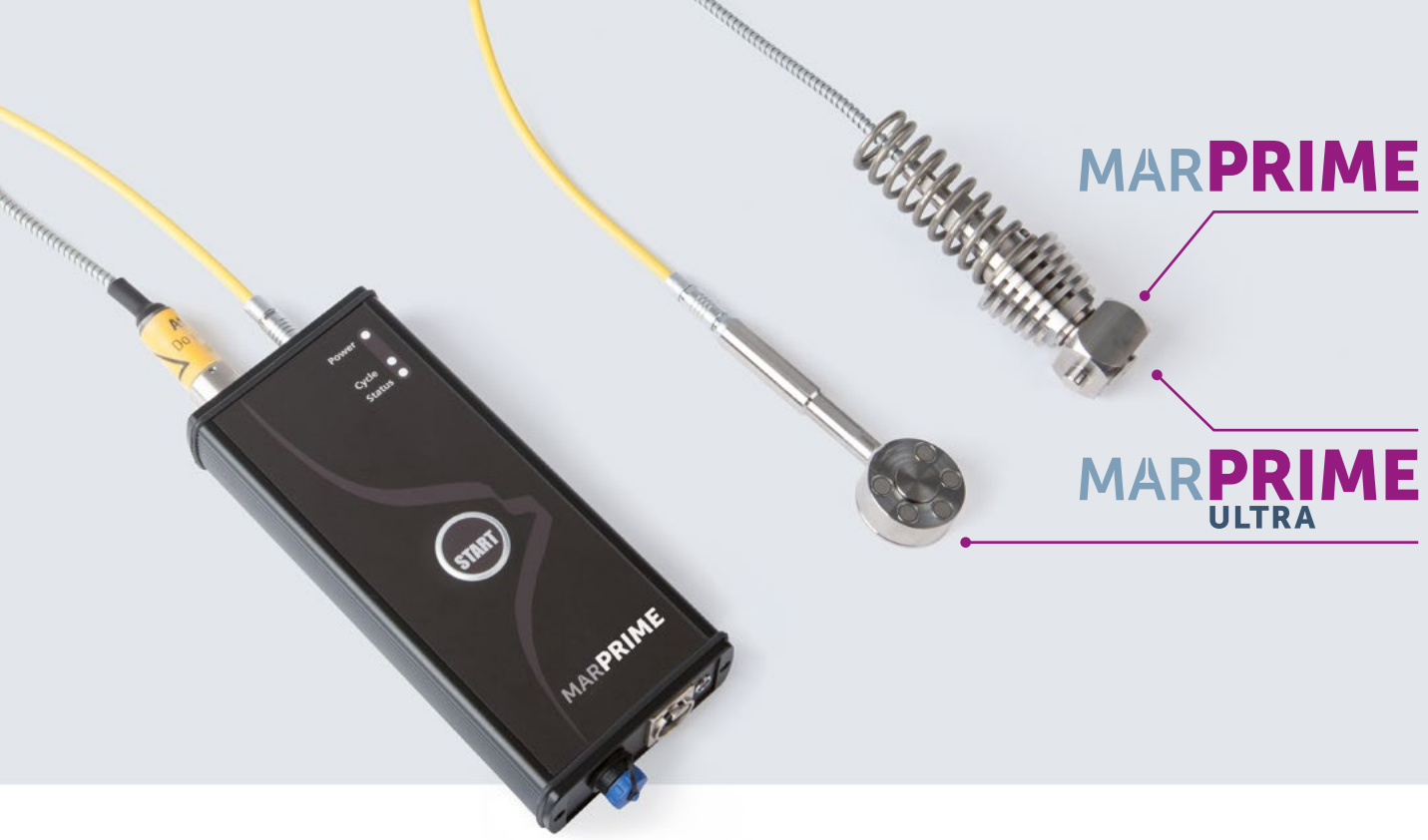
The all-in-one solution of cylinder pressure handheld devices



The MarPrime system is a simple, user-friendly device for measuring cylinder pressure. It is designed to measure and analyze the combustion process of 2- and 4-stroke marine diesel engines and stationary power plants. This easy-to-use system offers the potential to gauge all the engines in your machine room and draw up well-founded diagnostic reports quickly with a high degree of accuracy.

Together with MarPrime Ultra and MarPrime Instruct, a single unit is now able to offer you full assessment of your engines in one hand: The MarPrime System.

Precision made in Germany.



MarPrime System: Precise one-hand diagnosis with one click.

The MarPrime system uses a high performance electric pressure transducer of well proven design which allows the cylinder pressure to be measured very accurately. With the MarPrime handheld device you have a "one-hand/one-person" tool which quickly and easily collects and records the full range of engine performance data.

Fast data transfer via network or USB connection and an automatic detection of the device guarantee an easy operation when reading out and displaying data. Using the supplied software the measured pressure sequences can be displayed accurately as a function of the crank angle.

MarPrime Instruct: Full-featured, optimizing software solution

Together with our indication device MarPrime Ultra, the software MarPrime Instruct makes any other additional software obsolete.

MarPrime Instruct determines the performance of your engine and enables you to compare it with other parameters. A complete tool to assist you while operating engines, fleets and power plants.

MarPrime Ultra: Ultrasonic sound sensor for perfect timing

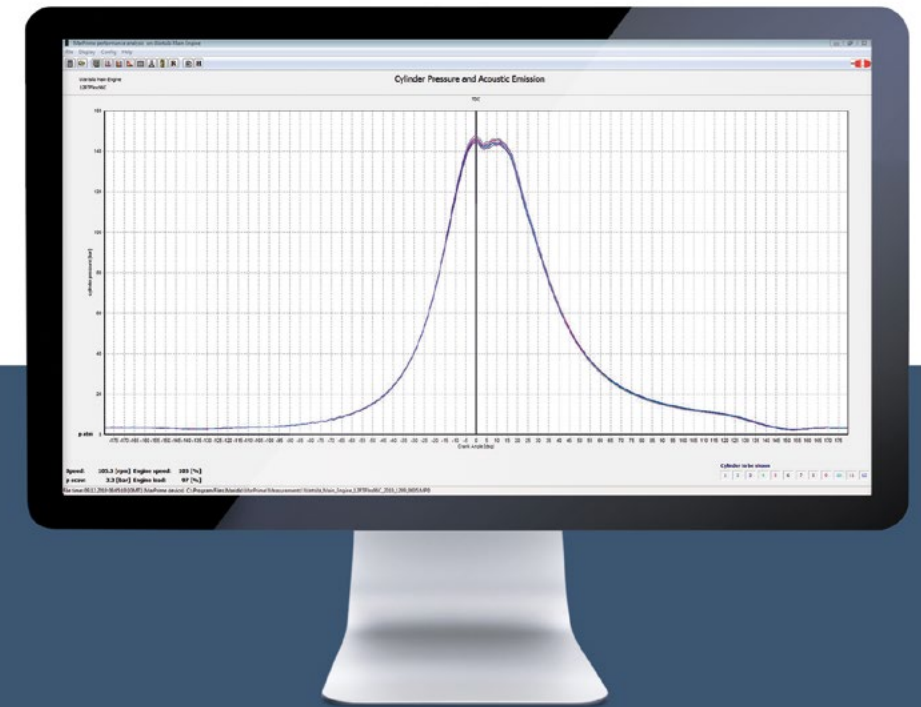
An additional feature in the MarPrime Ultra version is the ultrasonic sensor. It enables the engine timing – such as the start and finish of the injection process and the engine valve timing – to be determined very precisely. However, its main function is to determine the leak tightness of the valve unit, which it does by analysing and displaying the sound of the fluid flow at points where leakages occur. The ultrasonic measurement supports you in detecting damage of the valves at an early stage and enables overhauls based on the condition of the engine.

MarPrime Basic Software: Nothing to add

The included, basic software of the Marprime System requires no additional installation of pick-up sensors or crankshaft position transmitters and will carry out the TDC correction of the pressure sequences automatically. Based on the measured pressure curve and the TDC correction further parameters like mean indicated/effective pressure, compression pressure and engine power will be calculated.

The most important process parameters (such as maximum pressure, average indicated pressure, compression pressure

and engine output) are displayed in the form of graphs, bar charts and statistics. Report functions are also provided. All thresholds can be customized according to which engine you deploy, and one click will give you an immediate overview of the entire engine process.



The measurement information provided by the MarPrime System can be used for :

- Optimizing the engine operation
- Monitoring the load balance
- Checking the valve timings
- Reducing fuel consumption and emissions
- Determining condition of the cylinder head assembly
- Reducing costs of replacement parts and maintenance

Supported operating systems

- Microsoft® Windows all series

Computer requirements

- Pentium IV processor or higher
- 512 MB RAM or more
- At least 500 MB free disk space
- Display with 1024 x 768 resolution or higher
- CD-ROM drive
- Mouse
- Network communication or USB port

Scope of supply

- MarPrime handheld device
- Pressure sensor
- Carrying case
- Manual
- Software CD
- Indicator knob
- Power charger, adaptor and cable
- Network and USB cable
- Ultrasonic sound sensor, cable (only with MarPrime Ultra)



Analyze, optimize, operate efficiently

MarPrime Instruct was created for optimizing the engine operation for low fuel and cylinder consumption and high engine reliability. Errors and saving potentials will be identified and analyzed and clear instructions for efficient usage will be shown to the operator.



1 Input mask and assessment.

Features at a glance:

- + Input & evaluation mask
- + ISO correction
- + Engine performance field for propulsion engine
- + Engine layout diagram
- + Engine diagnosis with diesel expert system
- + Optimizing tool
- + Report system

Get started right away

After the cylinder pressure measurement with MarPrime upload the data file, record the additional parameters by hand as usual and enter them into the input mask. A review is carried out immediately and will be displayed in plain and simple data.

A practical universal evaluation concept, implemented in software, coming directly from the operating ship. Take a closer look!

2 Engine performance field

- Measurements are displayed in the performance field of the engine
- For the purpose of comparison the measurements are ISO corrected and displayed as reference to the shop test

3 Engine layout presentation

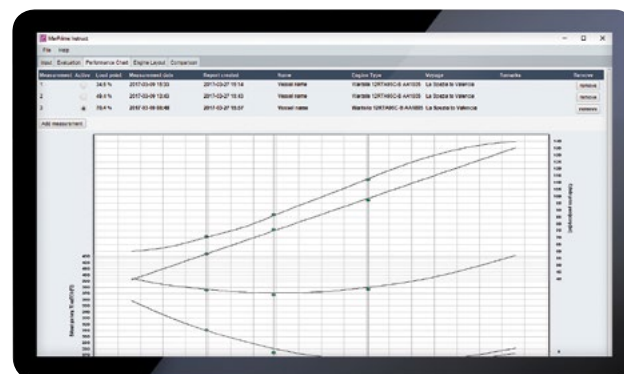
- Engine layout presents the measurements in connection with the state of the propulsion system / propeller curve for sea going vessels

4 Machine diagnosis & recommendation

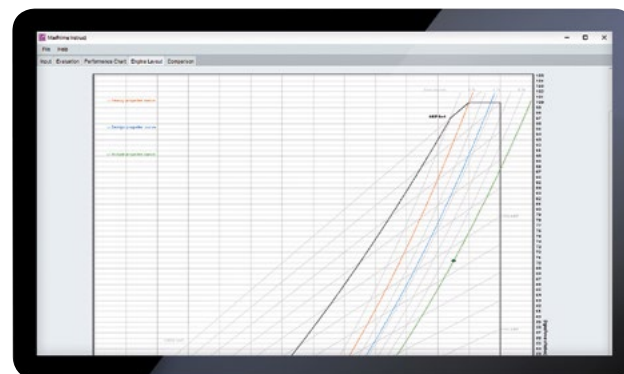
- Evaluation and summary take place via an implemented expert system
- Engine parameters are presented and evaluated in an alarm management system which links to recommended actions
- Option to optimize parameters such as fuel consumption and cylinder oil consumption

1 Use the input mask

- Enter all parameters required in addition to the usual cylinder pressure measurement
- For a quick overview regarding the engine condition a traffic-light-system is implemented



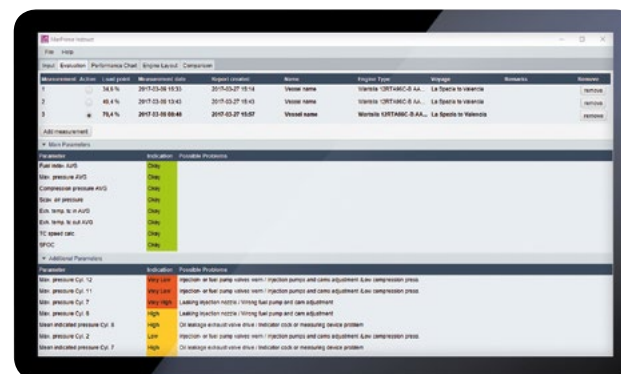
2 Check measurements and all parameters in the engine performance field.



3 View measurements in the engine layout and compare.

5 Comparison function

- The comparison function is capable of comparing several measurements with one another
- Compare measurements of time, of different vessels or power plants



4 Evaluation by expert system and reporting options.



5 Compare measurements of time, different vessels or power plants.

6 Easy-to-use report system

- All data can be exchanged between the programs as file or PDF
- Use your database just like any other business documents
- Easy-to-use reporting application allows better communication between engine operator and manager of fleet or manager of energy efficiency

7 SEEMP – Ship Energy Efficiency Management Plan

- MarPrime Instruct supports improvement of the ship's efficiency, reporting and monitoring
- It contributes to the SEEMP initiative for monitoring, implementing improvements and reporting of efficiency
- The expert system gives improvement advises for engines and the propulsion system without additional expenses

8 Optional MSC cloud services

- Optional cloud services can be used for maritime and power plant applications and data can be accessed web-based
- The combination of this data with other products results in a logical extension to products
- Examples for product extensions: Power Meter MarTorque or our Noon-To-Noon Report with certified CO2 monitoring
- Your benefit: Online access to your data from everywhere

MARIDIS

MARITIME DIAGNOSIS & SERVICE



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Carrying case