

## Operating Manual

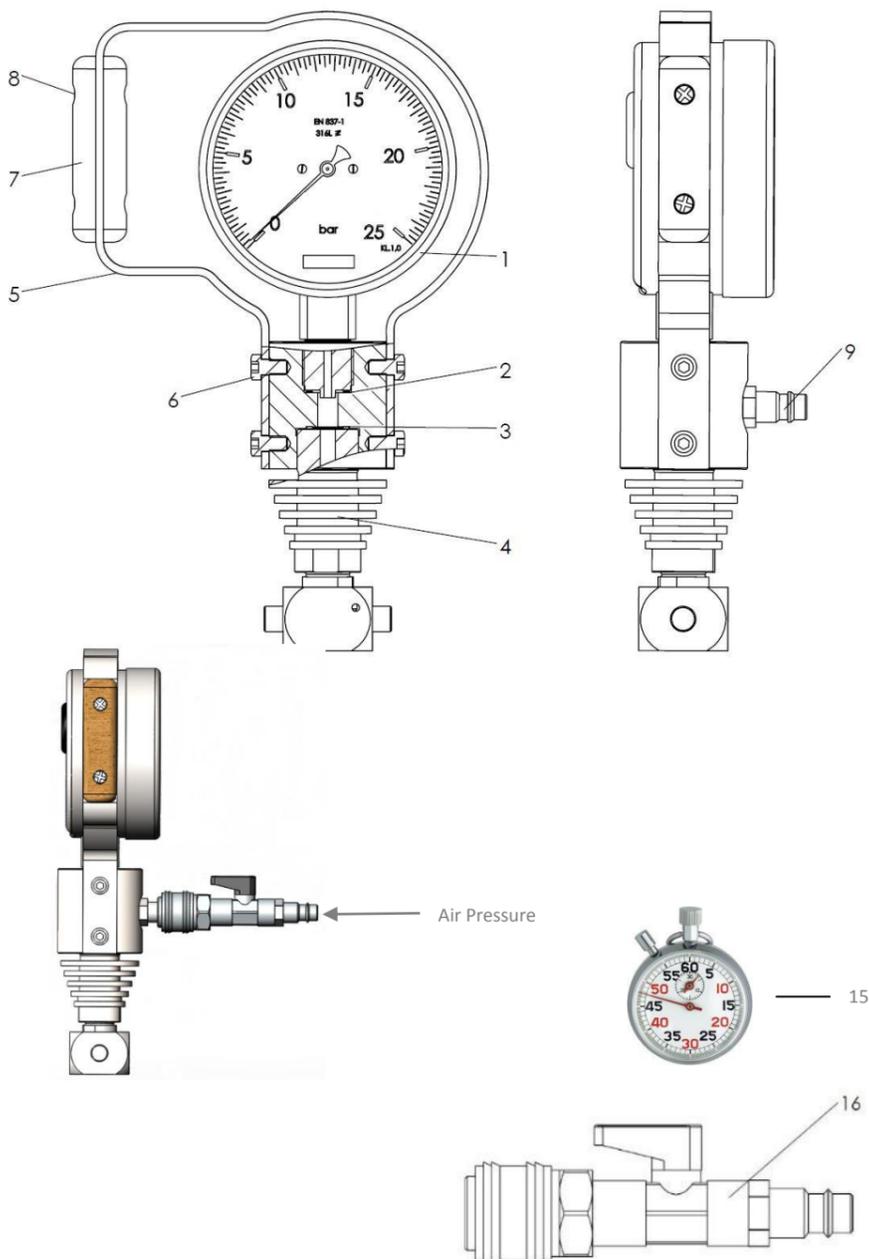
Combustion Chamber Tester

**MarComp®**

Precision made in Germany

[www.maridis.de](http://www.maridis.de)

### Design



### General

The operating manual provides instructions on the proper use of the product. Please observe all safety instructions and precautions in order to avoid risks while using the product. MARIDIS GmbH is not responsible for any damages or personal injuries caused by improper handling of the product or incorrect operation. The operating manual and this product are mainly intended for trained English speaking technicians. Moreover, any other instruction for the operation or use of combustion engines, particularly for on-board marine operation, shall apply. If you should detect any errors, deficiencies or violations of the regulations indicated in this operating manual please immediately report them to the below mentioned address. Please use the operating manual for your measurements and keep it available.

Hazard symbols (source: DIN 4844-2; www.wikimedia.org):

-  General caution
-  Warning of harmful or irritant substances
-  Warning sign
-  Warning of hot surfaces
-  Warning of harmful or irritant substances

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### Part List

Item	Description	Part Number
1	Manometer NG 100 KI.1,0 (0-25bar)	10.011
2	Profile Washer Cu 3/8 "	10.016
3	Washer Cu 12x16x1.5	10.004
4	Lower Part	10.006
5	Bracket	10.002
6	Allen Screw M6x10	10.008
7	Wooden Grip	10.007
8	Screw Sleeve	10.009
9	Compressed Air Connection NW7.2	10.020

### Accessories and Tools

10	Box	10.010
11	Knob	13.101
12	MarComp Measuring Log	10.017
13	MarComp Manual	10.018
14	MarComp Certificate	10.019
15	Stop Watch	10.021
16	Pressure-Air-Connector	10.022

Notice: Whenever ordering spare parts, be sure to include the factory part.

## Measuring Procedure and Safety instructions

1. Open the box and take out the Combustion Chamber Tester.
2. Check the indicator and safety instructions for work on non-running engines. Observe all safety instructions.
3. Verify with the help of the engine data whether the supply air pressure (constant dry air pressure) is compatible with the pressure range of the device. Air pressure is 6-9 bar (normal working air pressure; maximum pressure 25 bar).
4. Wear suitable gloves and safety goggles during the entire measuring process.
5. Verify that the engine is not running and caution with hot parts!
6. Connect the Combustion Chamber Tester to the indicator cock and use the turning gear to turn the crank shaft to the valve closed position (TDC 1 for 4 stroke engine; all valves must be closed) of the cylinder being tested.
7. Connect your own supply air to the Pressure-Air-Connector (16) and connect all to Compressed Air Connection NW7.2 (9) and open the valve on the Pressure-Air-Connector (16) and record the pressure decrease and time of pressure decrease after closing the valve.
8. Take the reading of the pressure decrease on the analogue display and observe the pressure unit.
9. Use the Stop Watch (15) for record the pressure decrease time.
10. Write the measurement results in the MarComp measuring log (12).
11. Disconnect the supply air from Pressure-Air-Connector (16).
12. Dismantle the MarComp device from the indicator cock with the provided knob (11).
13. For further measurements please start again with the step 6.
14. Verify the measurements with your engine manual.



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## Application & Product Description

**MarComp** is a Combustion Chamber Tester testing the cylinder tightness after engine manual of the diesel engine for every cylinder station with the indicator cock and the corresponding W1-1/6" standard thread (4)

Examples:

1. If the pressure at the beginning was 6 bar and it took more than 10 sec. for the pressure to drop to 0.5 bar, the result should be acceptable.
2. If the pressure drops directly to 0 bar, it will be possible that one or more valves are sticking or the valve(s) are burnt. A sticking valve will be indicated by the immobility of the valve when the engine is turned. A burnt valve can normally be seen from the exhaust temperature.
3. If the valve clearance is zero, it will also cause a direct pressure drop. Carbon particles that trapped between the valve and the seat when the engine stopped, could also prevent the valve from closing properly thus causing a direct pressure drop.
4. If this is suspected, the engine should run for a few minutes and the test repeated.
5. If a blow-by between the cylinder liner and piston is suspected e.g. due to the fast fouling of filters or high crankcase pressure, it will be best to test all the cylinders and compare the readings. For example: From a six cylinder engine you get a serial: 12, 17, 15, 4, 19 and 18 seconds. This shows that cylinder No. 4 is the one where a blow-by is suspected. This conclusion can be verified by listening for leaking sounds inside crankcase during testing.
6. If time restrictions only allow the overhaul of one piston, the piston of the cylinder with the worst blow-by should be dismantled and inspected. The result of the inspection will give you some indication of the general engine conditions.

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## Technical Specifications

Measuring ranges: 0- 25 bar

Dimensions: 330 mm x 270 mm x 120 mm

Net weight: 2.010kg

Weight incl. box: 3.200kg

Ambient temperature: max. 60°C

Error margin: +/- 1.0%

4 stroke engine

## Copyright

All rights to these operating instructions are reserved. These operating instructions, including extracts thereof, must not be copied or translated into other languages without written permission.

## Warranty

The manufacturer provides a **12 months warranty** for this product, beginning with the date of delivery. The delivery note is proof of guarantee. The warranty encompasses flawless manufacture and functional efficiency. Should defects occur in this regard the manufacturer shall ensure replacement and repair in accordance with the following conditions:

1. The device was not exposed to inappropriate use or incorrect treatment.
2. The defect cannot be attributed to damage caused after delivery to the purchaser.
3. No alterations or maintenance work were performed by unauthorized persons or which are not in agreement with the instructions provided.
4. The defect cannot be attributed either wholly or in part to a cause outside of the device or to the connection of the device to other objects which are not intended for such a purpose.
5. All transport and insurance costs involved in returning the device to the specialist dealer are paid in advance by the purchaser.
6. The manufacturer or the specialist dealer will bear the delivery costs incurred in returning the repaired device if the complaint is justified and the claim is made within the guarantee period. If is not, all costs will be borne by the buyer.
7. The manufacturer accepts no liability above and beyond the warranty claims described above.
8. This manual is subject to change or update without prior notice. Furthermore the general terms and conditions of MARIDIS are valid. These terms and conditions are provided with your delivery note.

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## Maintenance

The **MarComp** Combustion Chamber Tester is designed and can be operated without any intensive maintenance required. All pressurized parts are made of corrosion-resistant materials and do not require any special attention. Make sure that no dirt particles enter into the measuring instrument while in use. After use, the Lower Part (4) should be lightly cleaned. The measuring instrument must only be cooled down in the ambient air. The use of water is not necessary.

After 2 years have the device calibrated to ensure proper functioning. You can send the device directly to MARIDS GmbH for testing or calibration or to any other Service Station recognized by MARIDIS.

## Other Products

### MarPeak Series



MarPeak digital



MarPeak analog

### MarPrime Series



MarPrime

MarPrime Ultra

For more information, please visit our homepage [www.maridis.de](http://www.maridis.de) ;

[www.marprime.com](http://www.marprime.com) & [www.marpeak.com](http://www.marpeak.com)

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