

## Overview Water and Oil Test Kits

### 1. WIO CHECK

- A simply and quick Water-in-Oil Measuring Test Kit to determine water-in-oil.
- Reagents and consumables for 35 Water in Oil- tests are included in the initial test kit



<b>FEATURES</b>	<p><b>Parameters to measure</b> <b>Water-in-oil</b></p> <ul style="list-style-type: none"> <li>• Measuring range: 0 - 0.4 or 0 – 1.0 vol. % H<sub>2</sub>O</li> <li>• Measuring time: up to 20 min.</li> <li>• Accuracy: +/- 3%</li> </ul>
<b>BENEFITS</b>	<ul style="list-style-type: none"> <li>• The WIO CHECK keeps on with the tradition to use a pressure gauge and to indicate the water in oil directly in vol. % H<sub>2</sub>O</li> <li>• Direct read-out of water content in vol. %</li> <li>• Only one reagent is necessary</li> <li>• Applicable for all mineral oil-based fluids</li> <li>• Easy to handle even for untrained personnel and for transport</li> <li>• Reagents are non-hazardous goods in terms of transportation</li> </ul>

## **2. TWIN CHECK**

- Cost-effective option for on-site water-in-oil and BN measurement.
  - Reagents and consumables for 25 BN- tests and for 35 Water in Oil- tests are included in the initial test kit



<p><b>FEATURES</b></p>	<p><b>Parameters to measure</b></p> <p><b>Water-in-oil</b></p> <ul style="list-style-type: none"> <li>• Measuring range: 0 – 1.0 vol. % H<sub>2</sub>O</li> <li>• Measuring time: depends on the measured value (min. 2 - max. 20 min.)</li> <li>• Accuracy: +/- 3 %</li> </ul> <p><b>Base number:</b></p> <ul style="list-style-type: none"> <li>• Measuring range: 0 – 100 BN</li> <li>• Measuring time: depends on the measured value (min. 2 - max. 20 min.)</li> <li>• Accuracy: +/- 1BN</li> </ul>
<p><b>BENEFITS</b></p>	<ul style="list-style-type: none"> <li>• <b>Applicable for all mineral oil-based fluids</b></li> <li>• <b>Improved design with easy-to-follow navigation menu for high accuracy measurements</b></li> <li>• <b>Internal memory chip with average data storage capacity of 2.5 years</b></li> <li>• <b>Digital read-out of test results</b></li> <li>• <b>USB to serial cable connectivity for data transfer and trend analysis</b></li> <li>• <b>BN determination: 6 modes for up to 6 various oil grades of different engines</b></li> <li>• <b>Maintenance and repair on board is possible</b></li> <li>• <b>Reagents are non-hazardous goods in terms of transportation</b></li> </ul>

### **3. ALWAVIS CHECK**

- VARIO – Lube Oil Test Kit for 3 different tests
  - Water-in-Oil
  - Base Number
  - Viscosity comparator
- Reagents and consumables for 25 BN tests and for 35 Water in Oil- tests are included in the initial test kit



The following test devices are included:  
 TWIN CHECK  
 VISCOSITY COMPARATOR

<b>FEATURES</b>	<p><b>Parameters to measure</b></p> <p><b>Water-in-oil</b></p> <ul style="list-style-type: none"> <li>• Measuring range: 0 – 1.0 vol.% H<sub>2</sub>O</li> <li>• Measuring time: about 20 min.</li> <li>• Accuracy: +/- 3%</li> </ul> <p><b>Base Number</b></p> <ul style="list-style-type: none"> <li>• Measuring range: 0 – 100 BN</li> <li>• Measuring time: about 20 min.</li> <li>• Accuracy: +/- 1 BN</li> </ul> <p><b>Oil Viscosity</b></p> <ul style="list-style-type: none"> <li>• Measuring range: max. lube oil</li> <li>• Measuring time: about 3 min.</li> </ul>
<b>BENEFITS</b>	<ul style="list-style-type: none"> <li>• <b>Convenient size, easy to transport</b></li> <li>• <b>Simple, quick and efficient tests</b></li> <li>• <b>Direct read-out of test results</b></li> <li>• <b>Easy to use even for untrained personnel</b></li> <li>• <b>Reagents are non-hazardous goods in terms of transportation</b></li> </ul>

#### 4. LUBE OIL CHECK 5

- VARIO – Lube Oil Test Kit for 5 different tests: Water-in-Oil, Base Number, Viscosity comparator, Salt water contamination, Insolubles
  - Reagents and consumables for 25 BN- tests, 35 Water in Oil- tests, for 30 Salt Water contamination tests, Consumables for 240 Insoluble tests are included in the initial test kit



The following test devices are included:  
 TWIN CHECK  
 VISCOSITY COMPARATOR  
 SPOT CHECK  
 SALT CHECK ISCOSITY COMPARATOR  
 SPOT CHECK  
 SALT CHECK

<h3>FEATURES</h3>	<p><b>Parameters to measure</b></p> <p><b>Water-in-oil</b></p> <ul style="list-style-type: none"> <li>• Measuring range: 0 – 1.0 vol.% H2O</li> <li>• Measuring time: about 20 min.</li> <li>• Accuracy: +/- 3%</li> </ul> <p><b>Base Number</b></p> <ul style="list-style-type: none"> <li>• Measuring range: 0 – 100 BN</li> <li>• Measuring time: about 20 min.</li> <li>• Accuracy: +/- 1 BN</li> </ul> <p><b>Oil Viscosity</b></p> <ul style="list-style-type: none"> <li>• Measuring range: max. lube oil</li> <li>• Measuring time: about 3 min.</li> </ul> <p><b>Spot Test</b></p> <ul style="list-style-type: none"> <li>• Measuring range: go/ no go</li> <li>• Measuring time: about 1 min.</li> </ul> <p><b>Salt Water Contamination</b></p> <ul style="list-style-type: none"> <li>• Measuring range: go/ no go</li> <li>• Measuring time: about 10 min.</li> </ul>
<h3>BENEFITS</h3>	<ul style="list-style-type: none"> <li>• <b>Convenient size, easy to transport</b></li> <li>• <b>Regular on-site oil condition monitoring</b></li> <li>• <b>Precise test results</b></li> <li>• <b>Easy to use even for untrained personnel</b></li> <li>• <b>Reagents are non-hazardous goods in terms of transportation</b></li> </ul>

## 5. LUBE OIL CHECK 6

- ➔ VARIO – Lube Oil Test Kit for 6 different tests  
Water-in-Oil, Base Number, Viscosity comparator, Falling Ball Viscosity Test, Salt water contamination, Insolubles, Viscosity, falling ball
- ➔ Reagents and consumables for 25 BN- tests, 35 Water in Oil- tests, for 30 Salt Water contamination tests, Consumables for 240 Insoluble tests, are included in the initial test kit



<p><b>FEATURES</b></p>	<p><b>Parameters to measure</b></p> <p><b>Water-in-oil</b></p> <ul style="list-style-type: none"> <li>• Measuring range: 0 – 1.0 vol.% H<sub>2</sub>O</li> <li>• Measuring time: about 20 min.</li> <li>• Accuracy: +/- 3%</li> </ul> <p><b>Base Number</b></p> <ul style="list-style-type: none"> <li>• Measuring range: 0 – 100 BN</li> <li>• Measuring time: about 20 min.</li> <li>• Accuracy: +/- 1 BN</li> </ul> <p><b>Oil Viscosity</b></p> <ul style="list-style-type: none"> <li>• Measuring range: max. lube oil</li> <li>• Measuring time: about 3 min.</li> </ul> <p><b>Falling Ball Viscosity Test</b></p> <ul style="list-style-type: none"> <li>• Measuring range: 10 – 999 mm<sup>2</sup>/s</li> <li>• Measuring time: about 5 min.</li> <li>• Accuracy: +/- 3 %</li> </ul> <p><b>Spot Test</b></p> <ul style="list-style-type: none"> <li>• Measuring range: go/ no go</li> <li>• Measuring time: about 1 min.</li> </ul> <p><b>Salt Water Contamination</b></p> <ul style="list-style-type: none"> <li>• Measuring range: go/ no go</li> <li>• Measuring time: about 10 min.</li> </ul>
<p><b>BENEFITS</b></p>	<ul style="list-style-type: none"> <li>• <b>Convenient size, easy to transport</b></li> <li>• <b>Regular on-site oil condition monitoring</b></li> <li>• <b>Precise test results</b></li> <li>• <b>Easy to use even for untrained personnel</b></li> <li>• <b>Reagents are non-hazardous goods in terms of transportation</b></li> </ul>

## **6. FUEL AND LUBE OIL TEST CABINET**

Fuel and Lube Oil Test Cabinet for up to 10 tests

- Viscosity (absolute and comparison)
- Density
- Water-in-Oil
- Base Number
- Viscosity comparator
- Salt water contamination
- Compatibility / Stability
- Insolubles and

**optional:**

- Pour Point, Flash Point (please let us know whether these items are interesting for you, and we will quote)



**The following test devices are included:**

TWIN CHECK  
VISCOSITY COMPARATOR  
VISCO DENS PLUS  
SPOT CHECK  
SALT CHECK  
COMPATIBILITY CHECK

**Option:**

Flash Point Check and Pour Point Check

- Reagents are non-hazardous goods in terms of transportation
- Reagents and consumables
  - for 25 BN- tests are included in the initial test kit
  - for 35 Water in Oil- tests are included in the initial test kit
  - for 30 Salt Water contamination tests
- Consumables for 240 Insoluble tests

## **7. FLASH POINT CHECK (T 750, V 750),**

→ A closed cup Flash Point Test specified by ISO, DIN EN and ASTM.

The FLASH POINT CHECK can be offered as a stand-alone device or as included in our FUEL AND LUBE OIL TEST CABINET. (not offered here)

- FLASH POINT CHECK T in a separate test case
- FLASH POINT CHECK V without test case (for storage in a cupboard or in a test cabinet)



<b>FEATURES</b>	<p><b>Measuring range: 25 - 200 °C</b></p> <p><b>Measuring time: about 15 min.</b></p> <p><b>Accuracy: +/- 2 % &lt; 100 °C +/- 6 °C &gt; 100 °C</b></p>
<b>BENEFITS</b>	<ul style="list-style-type: none"> <li>• <b>Closed cup method relying on ISO 2719 DIN EN 22719 and ASTM D-93</b></li> <li>• <b>Flash point read-out in °C</b></li> <li>• <b>Approved by German Navy for field use</b></li> </ul>

### **8. VISCO DENS PLUS**

Heated Electronic Falling Ball Viscosity Measuring Device for **Viscosity** and **Density**

- Measuring range for viscosity:
  - 1 – 999mm<sup>2</sup>/s
- Measuring range for density:
  - 0.82 – 1.05g/ml



<b>FEATURES</b>	<p><b>Measuring range:</b></p> <ul style="list-style-type: none"> <li>• Viscosity: 1 - 999 mm<sup>2</sup>/s</li> <li>• Density: 0.82 – 1.05 g/ml</li> </ul> <p><b>Measuring temperature:</b> 40°C, 50°C, 80°C</p> <p><b>Measuring time:</b> about 15 min.</p> <p><b>Oil sample:</b> approx. 200 ml</p> <p>Accuracy: +/- 3 %</p>
<b>BENEFITS</b>	<ul style="list-style-type: none"> <li>• Only one device to measure two important parameters</li> <li>• No oil sample change for each test</li> <li>• Three different temperatures applicable</li> <li>• Four different hydrometers with automatically converted density value to 15 °C</li> </ul>

As you can see, the VISCO DENS PLUS is a combined device for the measurement of viscosity and density.  
It is NOT necessary to use another measurement instrument for the measurement of density only.



## 9. VISCO CYLINDER

- LOW VIS
- STANDARD

Electronic Falling Ball Viscosity Measuring Device.  
 The VISCO CYLINDER is able to take automatically and to display falling time and temperature.

- Measuring range:
  - LOW VIS:
    - 1 – 10 mm<sup>2</sup>/s
  - STANDARD
    - 10 – 999 mm<sup>2</sup>/s



<b>FEATURES</b>	<b>Measuring range Visco Cylinder STANDARD:</b> <ul style="list-style-type: none"> <li>• Viscosity: 10 - 999 mm<sup>2</sup>/s</li> </ul> <b>Measuring range Visco Cylinder LOW:</b> <ul style="list-style-type: none"> <li>• Viscosity: 1-10 mm<sup>2</sup>/s</li> </ul> <b>Measuring time:</b> about 5 min. <b>Accuracy:</b> +/- 3 %
<b>BENEFITS</b>	<ul style="list-style-type: none"> <li>• Precise measurement sensors to take the falling time</li> <li>• Quick and accurate test results</li> <li>• Two versions of the device for different oil types</li> <li>• No supplementary chemicals required</li> <li>• Easy to use for untrained personnel</li> </ul>

## 10. **JUNG CHECK**

Such a device is also available as an “analogue” falling ball viscosity meter. The JUNG CHECK Falling Ball Viscosity Measuring Device provides a reliable and effective analysis method to define whether the viscosity of lubricating and hydraulic oils corresponds to the general oil viscosity standards or not.



<b>FEATURES</b>	<b>Measuring range:</b> <ul style="list-style-type: none"> <li>• Viscosity: 10 - 999 mm<sup>2</sup>/s</li> </ul> <b>Measuring time:</b> about 5 min. Accuracy: +/- 3 %
<b>BENEFITS</b>	<ul style="list-style-type: none"> <li>• Quick determination of oil quality</li> <li>• No supplementary chemicals required</li> <li>• Accurate test results</li> </ul>

**11. VISCOSITY COMPERATOR**

The VISCOSITY COMPERATOR providing a go/ no go answer whether the viscosity is still in OK range or any action is recommendable.



The **VISCOSITY COMPERATOR** Is included in the most of our oil test kits (see above).

<b>FEATURES</b>	<b>Measuring range:</b> <ul style="list-style-type: none"> <li>• Max. lube oil</li> </ul> <b>Measuring time:</b> about 3 min.
<b>BENEFITS</b>	<ul style="list-style-type: none"> <li>• No chemicals required</li> <li>• Quick to apply</li> <li>• Operationally effective</li> <li>• Easy to use for untrained personnel</li> </ul>

## **12. CAT FINES CHECK**

The CAT FINES CHECK is a test kit to determine Catalytic Fines (called Cat Fines) in fuel oils.



- Reagents and consumables for 48 tests are already included in the initial test kit
- Reagents are **non-hazardous goods in terms of transportation**
- Because of the attractive price for consumables and reagents per test, the easy handling and the fast possibly execution of the test (up to 8 tests can be carried out at the same time) it is possible to examine the Cat Fines contamination of the fuel at several neuralgic points during the engine operation.

<b>FEATURES</b>	<b>Measuring time:</b> about 15 min. <ul style="list-style-type: none"> <li>• Up to 8 simultaneous measurements possible</li> <li>• Visually quantifiable</li> </ul>
<b>BENEFITS</b>	<ul style="list-style-type: none"> <li>• Easy and quick test method</li> <li>• Applicable for all types of heavy fuel oil</li> <li>• Demonstrative test results</li> <li>• Easy to use even for untrained personnel</li> <li>• Cost-effective testing method</li> </ul>

### **13. IRON Test Kit**

Our IRON CHECK E Test Kit is in the position to measure the so-called **TOTAL IRON** and the **CORRODED IRON** in Cylinder Drain Oils (CDO) as an indication for **abrasive** and **corrosive wear of** combustion chamber components of 2-stroke Diesel engines.

- Reagents and consumables for **48 tests are included** in the initial test kit
- **Reagents are non-hazardous goods** in terms of transportation
- With the test kit it is possible to distinguish between **ferromagnetic / elementary iron ("abrasive" iron)** and **"corroded" iron (iron ions, resulting from cold corrosion)**



<p><b>FEATURES</b></p>	<p><b>Measuring range:</b> 15/20-1100 mg/kg (ppm)  <b>Measuring temperature:</b> 70 °C  <b>Measuring time:</b> about 15 min. for two cylinders drain oil samples  <b>Measurement method:</b> chroma meter with LED transmitted light source  Accuracy: +/- 20 mg/kg (ppm) (confirmed repeatability of test results)</p>
<p><b>BENEFITS</b></p>	<ul style="list-style-type: none"> <li>• Precise semi-automatic measurement of iron content</li> <li>• Processing of two samples simultaneously (effective time-saving technique)</li> <li>• Easy-to-read, digital display of test results</li> <li>• No need to use colour reference chart</li> <li>• Early warning of corrosion problems in case of regular application</li> <li>• Efficient adjustment of lubrication of crosshead engines</li> </ul>