# Grindometers

**(VF2104, VF2105, VF2106, VF2107, VF2108, VF2110, VF2111, VF2112, VF2113, VF2118, VF2124, VF2120, VF2121, VF2122, VF2123)**

## 1. Product Description

Precision instrument to determine particle size and fineness of many materials like paints, lacquers, pigments, filler, chocolate etc..

TQC Sheen Grindometers are available in three models:

- Double grooves with graded slopes graduated in different parameters: Microns, NS (Hegman) and PCU (North)
- Single wide groove with parameters: Microns and Hegman.
- Single groove with only Microns.

Gauge and bevelled scraper are made of Sub Zero Vacuum hardened medical grade stainless tool steel and have an accuracy of 2 µm.

### Specifications

All models come with a base and a scraper.

**Base**

| | |
|---|---|
| Material | ASAB Stavax ESR medical grade stainless tool steel. Sub Zero Vacuum hardened (+1756°C to -70°C), hardness HRC 55 (through hardened*) |
| Surface treatment | polished |
| Overall accuracy | ± 2 µm |
| Dimensions | 175 x 60 x 12mm |
| Groove length | 120mm |

**Scraper**

| | |
|---|---|
| Material | ASAB Stavax ESR medical grade stainless tool steel. Sub Zero Vacuum hardened (+1756°C to -70°C), hardness HRC 55 (through hardened*) and tempered. |
| Surface treatment | black chromed |
| Overall straightness | ± 2 µm 75 x 38 x 8mm |

**Through hardening versus Case-hardening or surface hardening Through-hardening means the metal uniformly is hardened throughout the piece. Case- or surface (face / frame) hardening only hardens the top layer of the metal. Once the top layer is degraded excessive wear and tear will occur on the product limiting its life time and affecting accuracy.*

**Double groove Grindometers Din-ISO**

| | |
|---|---|
| Art. Nr. | VF2110 |
| Range | 0-15 micron, 10-8,5 PCU, 8-6,8 Hegman |
| Graduation | 1,5 micron |
| Groove | Double, 2 x 12 mm |

| | |
|---|---|
| Art. Nr. | VF2111 |
| Range | 0-25 micron, 10-7,5 PCU, (north), 8-6 Hegman (NS) |
| Graduation | 2,5 micron |
| Groove | Double, 2 x 12 mm |

| | |
|---|---|
| Art. Nr. | VF2112 |
| Range | 0-50 Micron, 10-5 PCU, (north), 8-4 Hegman (NS) |
| Graduation | 5 micron |
| Groove | Double, 2 x 12 mm |

| | |
|---|---|
| Art. Nr. | VF2113 |
| Range | 0-100 Micron, 10-0 PCU, (north), 8-0 Hegman (NS) |
| Graduation | 10 micron |
| Groove | Double, 2 x 12 mm |

| | |
|---|---|
| Art. Nr. | VF2118 |
| Range | 0-250 Micron, 10-0 PCU, (north), 8-0 Hegman (NS) |
| Graduation | 25 micron |
| Groove | Double, 2 x 12 mm |

| | |
|---|---|
| Art. Nr. | VF2124 |
| Range | 0-500 Micron, 10-0 PCU, (north), 8-0 Hegman (NS) |
| Graduation | 50 micron |
| Groove | Double, 2 x 12 mm |

**Single groove Grindometers Din-ISO**

| | |
|---|---|
| Art. Nr. | VF2104 |
| Range | 0-15 micron |
| Graduation | 1,5 µm (micron) |
| Groove | Single, 12 mm |

| | |
|---|---|
| Art. Nr. | VF2105 |
| Range | 0-25 µm micron |
| Graduation | 2.5 micron |
| Groove | Single, 12 mm |

| | |
|---|---|
| Art. Nr. | VF2106 |
| Range | 0-50 µm micron |
| Graduation | 5 micron |
| Groove | Single, 12 mm |

| | |
|---|---|
| Art. Nr. | VF2107 |
| Range | 0-100 micron |
| Graduation | 10 micron |
| Groove | Single, 12 mm |

| | |
|---|---|
| Art. Nr. | VF2108 |
| Range | 0-250 micron |
| Graduation | 25 micron |
| Groove | Single, 12 mm |

**Wide Grindometers Din-ISO**

| | |
|---|---|
| Art. Nr. | VF2120 |
| Range | 0-15 µm (micron), 8-6.8 NS (Hegman) |
| Graduation | 1.5 µm (micron) |
| Groove | Wide, 37 mm |

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| | |
|---|---|
| Art. Nr. | VF2121 |
| Range | 0-25 µm (micron), 8-6 NS (Hegman) |
| Graduation | 2.5 µm (micron) |
| Groove | Wide, 37mm |

| | |
|---|---|
| Art. Nr. | VF2122 |
| Range | 0-50 µm (micron), 8-4 NS (Hegman) |
| Graduation | 5 µm (micron) |
| Groove | Wide, 37mm |

| | |
|---|---|
| Art. Nr. | VF2123 |
| Range | 0-100 µm (micron), 8-0 NS (Hegman) |
| Graduation | 10 µm (micron) |
| Groove | Wide, 37mm |

## 2. Standards

ASTM D 1210, ASTM D 1316, JIS K 5600-2-5, ISO 1524, DIN EN 21524, BS 3900-C6
Read the applicable standard for a correct execution of the test.

## 3. Scope of Supply

- Grindometer base
- Scraper
- Pouch
- Manual
- Calibration certificate

## 4. Preparations

- When using the gauge, take care of not to damage the surface of the gauge or the edges of the scraper.
- Ensure the surface of gauge and edge of the scraper is clean from material residue, oil, etc.
- Perform a preliminary test(as described in 5.) to determine the size of gauge most suitable for the fineness of grind characteristics of the material being tested.

## 5. Perform a measurement

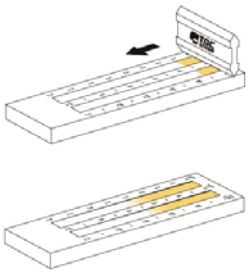

Figure 1

- Place the gauge on a flat, horizontal and non-slip surface, with the zero mark on the scale closest to the user.
- Place a suitable amount of the material in the deep end of each groove.
- Place the scraper on the surface of the gauge behind the material. Use both hands to hold the scraper as shown in Figure 1.
- Pull the scraper along the length of the gauge at a constant speed and apply sufficient downward pressure to clean excess material from the edges of the gauge. This operation takes approx. 1 to 2 seconds.
- View the drawn out material within the next 3 seconds. This avoids inaccurate testing due to evaporation of the material. The material should be viewed at right angles to the length of the groove and at an angle of 20° to 30° with the surface of the gauge.
- Find a band across the grooves of 3mm wide which contains 5 to 10 particles of the material as shown in Figure 2.

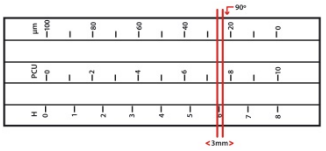

Figure 2

- Read the position of the upper limit of this band on the scale and record this value.
- Use a suitable solvent to clean the gauge and also the scraper.
- Perform 2 more tests and calculate the average value of the results. The average value is the fineness of grind of the material.

## 6. Calibrations

We recommend annual calibration. For calibration, send the instrument, together with a RMA form* to TQC Sheen, Molenbaan 19, 2908 LL Capelle aan den IJssel, NL.

*You can download the RMA form here:
http://www.tqc.eu/en/service/repairs-calibrations/

## 7. Maintenance

- Always clean the instrument after use with a suitable solvent.
- Never clean the instrument by any mechanical means such as a wire brush or abrasive paper. This may cause, just like the use of aggressive cleaning agents, permanent damage.
- The instruments have to be protected from rust when it is not in use. Rust can appear on the instrument when it is used only occasionally and when it is been handled by a user with sweaty hands.
- Always dry the instrument and scraper after use to protect against rust, and apply a thin layer of oil to the surface of the instrument and scraper before storage.
- Always store the instrument in its pouch when not in use.
- Check regularly whether the gauge and the scraper are worn or damaged.
- Always dry the instrument and scraper after use to protect against rust, and apply a thin layer of preservation oil to the surface of the instrument and scraper before storage.

## 8. Disclaimer

The right of technical modifications is reserved.

The information given in this sheet is not intended to be exhaustive and any person using the product for any purpose other than that specifically recommended in this sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. Whilst we endeavour to ensure that all advice we give about the product (whether in this sheet or otherwise) is correct we have no control over either the quality or condition of the product or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability whatsoever or howsoever arising for the performance of the product or for any loss or damage (other than death or personal injury resulting from our negligence) arising out of the use of the product. The information contained in this sheet is liable to modification from time to time in the light of experience and our policy of continuous product development.