

**GRINDOMETERS – FINENESS OF GRIND GAUGES**

VF2104, VF2105, VF2106,

VF2107, VF2108, VF2110, VF2111, VF2112, VF2113, VF2118, VF2124, VF2120, VF2121, VF2122, VF2123

MANUAL

**1 PRODUCT DESCRIPTION**

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

TQC 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.

**2 SPECIFICATIONS AND ARTICLE NUMBERS**

**All models come with a base and a scraper.**

**Base :**

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  
175 x 60 x 12mm with 120mm groove length

**Scraper:**

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 models:****VF2110**

TQC Grindometer Din-ISO  
Range: 0-15 micron, 10-8,5 PCU, 8-6,8 Hegman  
Graduation: 1,5 micron  
Groove: Double, 2 x 12 mm

**VF2111**

TQC Grindometer Din- ISO  
Range: 0-25 micron, 10-7,5 PCU, (north), 8-6 Hegman (NS)  
Graduation: 2,5 micron  
Groove: Double, 2 x 12 mm

**VF2112**

TQC Grindometer Din- ISO

Range: 0-50 Micron, 10-5 PCU, (north), 8-4 Hegman (NS)

Graduation: 5 micron

Groove: Double, 2 x 12 mm

**VF2113**

TQC Grindometer Din- ISO

Range: 0-100 Micron, 10-0 PCU, (north), 8-0 Hegman (NS)

Graduation: 10 micron

Groove: Double, 2 x 12 mm

**VF2118**

TQC Grindometer Din-ISO

Range: 0-250 Micron, 10-0 PCU, (north), 8-0 Hegman (NS)

Graduation: 25 micron

Groove: Double, 2 x 12 mm

**VF2124**

TQC Grindometer Din-ISO

Range: 0-500 Micron, 10-0 PCU, (north), 8-0 Hegman (NS)

Graduation: 50 micron

Groove: Double, 2 x 12 mm

**Single groove models****VF2104**

TQC Grindometer DIN-ISO

Range: 0-15 micron

Graduation: 1,5 µm (micron)

Groove: Single, 12 mm

**VF2105**

TQC Grindometer DIN-ISO

Range: 0-25 µm micron

Graduation: 2.5 micron

Groove: Single, 12 mm

**VF2106**

TQC Grindometer DIN-ISO

Range: 0-50 µm micron

Graduation: 5 micron

Groove: Single, 12 mm

**VF2107**

TQC Grindometer DIN-ISO

Range: 0-100 micron

Graduation: 10 micron

Groove: Single, 12 mm

**VF2108**

TQC Grindometer DIN-ISO

Range: 0-250 micron

Graduation: 25 micron

Groove: Single, 12 mm

**Wide groove models****VF2120**

TQC Grindometer DIN-ISO

Range: 0-15 µm (micron), 8-6.8 NS (Hegman)

Graduation: 1.5 µm (micron)

Groove: Wide, 37 mm

**VF2121**

TQC Grindometer DIN-ISO

Range: 0-25 µm (micron), 8-6 NS (Hegman)

Graduation: 2.5 µm (micron)

Groove: Wide, 37mm

**VF2122**

TQC Grindometer DIN-ISO

Range: 0-50 µm (micron), 8-4 NS (Hegman)

Graduation: 5 µm (micron)

Groove: Wide, 37mm

**VF2123**

TQC Grindometer DIN-ISO

Range: 0-100 µm (micron), 8-0 NS (Hegman)

Graduation: 10 µm (micron)

Groove: Wide, 37mm

**3 STANDARDS**

Look up the appropriate standard for a correct execution of the test.

ASTM D 1210, ASTM D 1316, JIS K 5600-2-5, ISO 1524, DIN EN 21524, BS 3900-C6

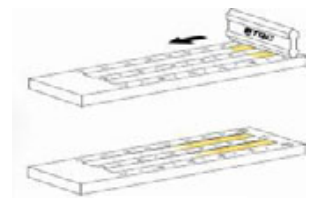
**4 TAKING A READING**

When using the gauge, take care of not to damage the surface of the gauge or the edges of the scraper.

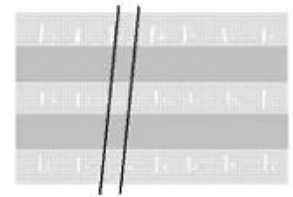
Ensure the surface of gauge and edge of the scraper is clean from material residue, oil, etc.

Perform a preliminary test to determine the size of gauge most suitable for the fineness of grind characteristics of the material being tested.

1. Place the gauge on a flat, horizontal and non-slip surface, with the zero mark on the scale closest to the user.
2. Place a suitable amount of the material in the deep end of each groove.
3. Place the scraper on the surface of the gauge behind the material. Use both hands to hold the scraper as shown in **Picture 1**.
4. 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.
5. 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.

**Picture 1**

6. Find a band across the grooves of 3mm wide which contains 5 to 10 particles of the material as shown in **Picture 2**. Read the position of the upper limit of this band on the scale and record this value.
7. Use a suitable solvent to clean the gauge and also the scraper.
8. Perform 2 more tests and calculate the average value of the results. The average value is the fineness of grind of the material.

**Picture 2**

## 5 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.

## 6 DISCLAIMER

---

The information given in this manual is not intended to be exhaustive and any person using the product for any purpose other than that specifically recommended in this manual 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 manual 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 manual is liable to modification from time to time in the light of experience and our policy of continuous product development.