

# ZGR 2020-2024 Grindometer

## Instruction Manual





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## Exclusion of liability

Illustrations, descriptions as well as the technical specifications conform to the instruction manual at hand at the time of publishing or printing. However, Zehntner GmbH Testing Instruments policy is one of continuous product development. All changes resulting from technical progress, modified construction or similar are reserved without obligation for Zehntner to update.

Some of the images shown in this instruction manual are of a pre-production model and/or are computer generated; therefore the design / features on the final version of this instrument may differ in various aspects.

The instruction manual has been drafted with the utmost care. Nevertheless, errors cannot be entirely excluded. The manufacturer will not be liable for errors in this instruction manual or for damages resulting from any errors.

The manufacturer will be grateful at any time for suggestions, proposals for improvement and indications of errors.

## 1 Description of device

The ZGR 2020-2024 Grindometers are according to Hegman for determination of fineness of grind of coating materials, printing inks, pastes and similar products.

### Application areas:

- For very different industries, e.g. for the paint, varnish, printing ink, food, cosmetics, paper and detergents industries
- Laboratory test instrument for quality control and experimental purposes
- Applicable to practically all pigmented systems

### In particular, this instrument has the following features

- Easy to handle
- Easy to clean

## 2 Safety information

### 2.1 Symbols used



This note comprises instructions to be observed in order to follow directions, specifications, proper working procedure and to avoid data loss, damage or destruction of the instrument.



This note signifies a warning about dangers to life and limb if the apparatus is handled improperly. Observe these notes and be particularly careful in these cases. Also inform other users on all safety notes. Besides the notes in these instruction manual the generally applicable safety instructions and regulations for prevention of accidents have to be taken into account.

### 2.2 Safety notes and hints



The ZGR 2020-2024 Grindometers are exclusively intended for determination of fineness of grind of coating materials, printing inks, pastes and similar products. Any other use is considered as not being in accordance with the intentions of the manufacturer. The manufacturer is not liable for damage resulting from inappropriate application. The user bears the full responsibility.



**Zehntner GmbH Testing Instruments** refuses all warranty and liability claims for damages caused by usage of the ZGR 2020-2024 in combination with **non-original accessories**, or accessories from 3<sup>rd</sup> party suppliers.

- ! Unauthorized modifications and changes of the ZGR 2020-2024 are not allowed.
- ! Reproduction without permission is not allowed.
- ! For the operation of the ZGR 2020-2024 apply all local safety regulations.

### 3 Delivery of device

#### 3.1 Damages during carriage

At the receipt of the goods, check for any visible damages at the outer packing. If it is unharmed you can sign the receipt of the documents. If you do suspect by your visual impression that damage has occurred, make a note of the visible damage on the delivery receipt or freight papers and get the carrier to countersign it.

Moreover, the courier service must be held responsible for the damage in writing.

If a hidden damage is discovered while unpacking, you have to inform and hold the courier service immediately liable in the following way: "When opening the parcel we had to notice that ... etc." This superficial checking of the goods has to be done within the time limit set by the courier service, which is normally 7 days. However, the period could be less. Hence, it is recommended to check the exact time limit when receiving the goods.

If there are any damages also inform your authorized Zehntner agent or **Zehntner GmbH Testing Instruments** immediately.

#### 3.2 Shipment



In case the device needs to be transported again at a later time, it has to be packaged properly. Preferably, use the original packaging for later shipments. Additionally put filling material into a cardboard box in order to protect the device of shock during carriage.

### 3.3 Standard delivery

Following parts are included in the delivery:

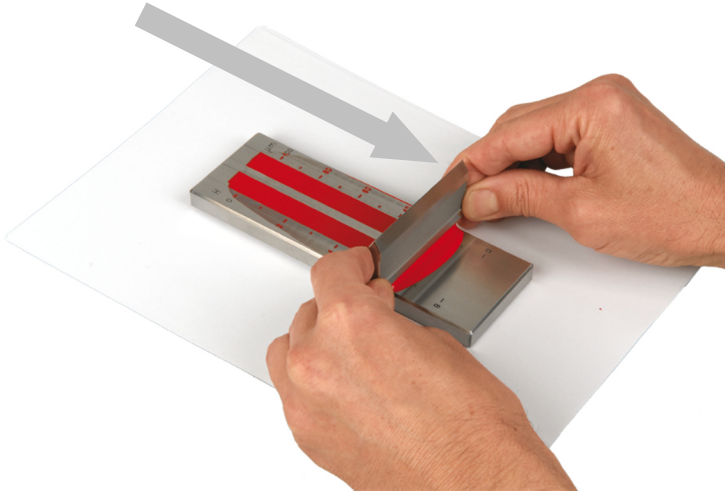
1 grindometer	
1 scraper	
1 microfiber cleaning cloth	
1 certificate of manufacturer	
1 carrying case	

### 3.4 Options

<ul style="list-style-type: none"><li>• ZRT 2025 Groove Depth Meter</li></ul>	
<ul style="list-style-type: none"><li>• ACC591 calibration and certification (incl. certificate)</li></ul>	

## 4 Handling

- Place the clean and dry grindometer on a horizontal flat, antiskid surface.
- Place the material (free of air bubbles) to be tested in the deep end of the paths, so that it overflows the paths slightly.
- Place the scraper edgewise and parallel to the width of the grindometer on the deepest point of the grooves and draw it within a few seconds (see the standards) to a point beyond the zero depth of the grooves.

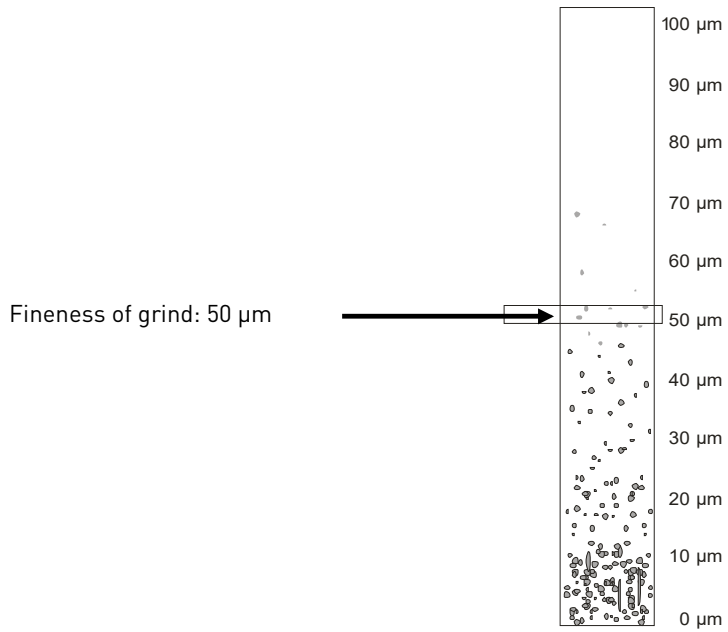


- Within seconds (see the standards) after the completion of the drawdown of the sample, view the grindometer at an right angle to the length of the grooves and at an angle of 20° to 30° to the surface of the grindometer in a light that will make the pattern of the sample in the grooves visible.
- Observe the point where in the grooves particles in a greater number (in accordance with ISO/EN/DIN 5 to 10 particles in an imaginary 3 mm (0.12") wide band) are first visible and read the value on the scale belonging to that point.
- Clean the grindometer and scraper afterwards.






Check grindometer periodically by use of a groove depth meter (see options).

**5 Example of a reading at the grindometer**






## 6 Technical specification

Versions	Number of grooves	Depth of the grooves		Dimensions (LxWxH)	Weight	Standards
2020	2 	0 - 100 µm (0-3.94 mil)	8 - 0 Hegman	grindometer: 174 x 60 x 13 mm (6.85" x 2.36" x 0.51")  scraper: 75 x 40 x 8 mm (2.95" x 1.57" x 0.32")	≈1.2 kg (2.65 lbs)	EN ISO DIN 1524, ASTM D1210, ASTM D1316, EN 21524 (withdrawn 2002)
2021		0 - 50 µm (0-1.97 mil)	8 - 4 Hegman			
2022		0 - 25 µm (0-0.98 mil)	8 - 6 Hegman			
2023		0 - 15 µm (0-0.59 mil)	8 - 6,8 Hegman			
2020.S.1.34.0.100	1 	0 - 100 µm (0-3.94 mil)	8 - 0 Hegman			
2021.S.1.34.0.50		0 - 50 µm (0-1.97 mil)	8 - 4 Hegman			
2022.S.1.34.0.25		0 - 25 µm (0-0.98 mil)	8 - 6 Hegman			
2023.S.1.34.0.15		0 - 15 µm (0-0.59 mil)	8 - 6,8 Hegman			
2020.A	2  *	0 - 100 µm (0-3.94 mil)	8 - 0 Hegman		≈0.5 kg (1.10 lbs)	based on: EN ISO DIN 1524, ASTM D1210, ASTM D1316, EN 21524 (withdrawn 2002)
2021.A		0 - 50 µm (0-1.97 mil)	8 - 4 Hegman			
2022.A		0 - 25 µm (0-0.98 mil)	8 - 6 Hegman			
2023.A		0 - 15 µm (0-0.59 mil)	8 - 6,8 Hegman			



\* Special version (red anodised aluminium) for all transparent coating material.

Versions	Number of grooves	Depth of grooves	Dimensions (LxBxH)	Weight	Standards
2024.0.100.0.50.0.25	3 	0 - 100 µm (0-3.94 mil) 0 - 50 µm (0-1.97 mil) 0 - 25 µm (0-0.98 mil) without Hegman	grindometer: 174 x 90 x 13 mm (6.85" x 3.54" x 0.51") scraper: 100 x 40 x 7 mm (3.94" x 1.57" x 0.28")	≈1.7 kg (3.75 lbs)	based on: EN ISO DIN 1524, ASTM D1210, ASTM D1316, EN 21524 (withdrawn 2002)
2024	on request	depending on version 0 - 1'000 µm (0-39.37 mil), 8 - 0 Hegman, others in µm			

Material	stainless steel, hardened 2020.A - 2023.A: red anodised aluminium
Warranty	2 years

## Glossary

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