



Precision-Diamond-Scriber MR 200

Manual scribing for precise cutting of structured silicon wafers

MR 200 – the ideal tool for REM-preparations in semiconductor technology

The setup and the equipment of **MR 200** provides high precision scribing for defined cutting of structured silicon wafers. The **MR 200** is an indispensable tool, in particular for REM preparations in semiconductor technology. The **MR 200** is also suited for singling of chips in low numbers, for example in laboratory use.



Technical Parameters

- Basic frame of extruded profile
- Size (B×T×H): app. (400×800×600) mm
- weight app. 20 kg
- electromagnetic scribing power generation (on inquiry: pneumatic scribing power generation for

higher scribing force)

- control of scribing diamond by footswitch (lowering, lift off)
- adjustable scribing power (10 g...120 g, others on inquiry)
- Width of scribing groove ca. 5 μm ...10 μm (dependent on scribing power and material)
- adjustable lowering speed
- adjustable height of scribing diamond
- adjustable work angle of scribing diamond
- extraction of scribing particle by vacuum
- high quality Zoom-microscope with step less adjustment of magnification in the range 8×...40×
- hair cross eyepiece for exact adjustment of scribing line according edges, structures and reference marks etc.
- resolution of optics better 10 μm at magnification 10×
- teflon coated vacuum-wafer-chuck, mounted of x/y-stage, diameter 200 mm (on inquiry 100 mm)
- angle fine adjustment of wafer chuck by micrometer screw (10 μm resolution = 0.006°)
- exact 90°-rotation of the chuck without switch off of vacuum
- adjustable stops for 90°-rotation of the chuck
- manual x/y-stage, stroke

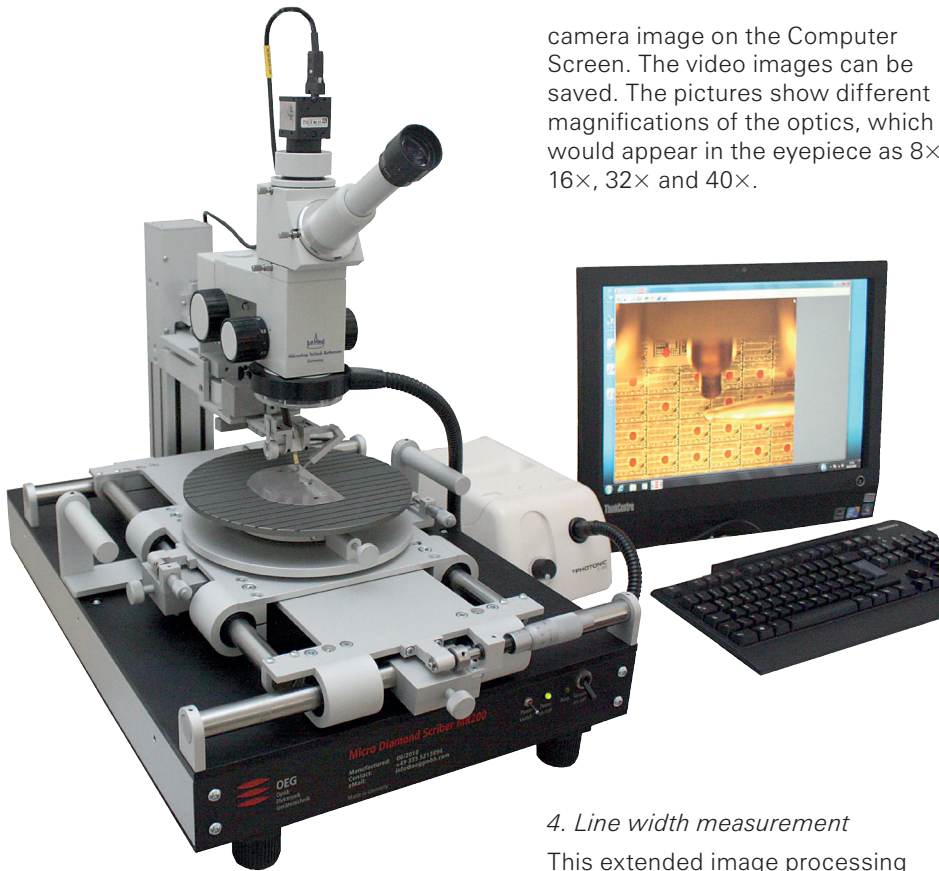


(200×200) mm for scribing movement and rough positioning

- 25 mm Micrometer screw for fine positioning crosswise to scribing direction
- 10 mm micrometer screw for fine positioning in scribing direction
- LED ring light with brightness control and power supply
- minimum specimen size app.: (10×10) mm
- wafer thickness: all standard thicknesses of si-wafers
- materials: silicon, GaAs, (other materials on inquiry)
- video system (also with image processing software) as attachment available

Optics

The high quality zoom optics allows stepless adjustment of magnification from 8× to 40×. Many attachments for additional features are available for the microscope.



camera image on the Computer Screen. The video images can be saved. The pictures show different magnifications of the optics, which would appear in the eyepiece as 8x, 16x, 32x and 40x.

Exact scribing, easy operation

After positioning the substrate on the chuck, the microscope is focused on the wafer surface. By manual driving of the table into x- and y-direction, the scribing line can be adjusted to reference marks or structures on the specimen. The high quality zoom microscope allows a fast change between overview and detailed inspection of the specimen. Using the fine adjustment of the x/y-table the wafer can be positioned very accurate. The touchdown point of the scribing diamond can be adjusted. The hair cross of the eye piece or the hair cross on the monitor defines the touchdown point of the scribing diamond. The scribing diamond is controlled by a foot switch (raise/lower), so that the scribing movement can be controlled with both hands.

If the scribing line is defined, the diamond is lowered by help of the foot switch. For scribing the wafer, the complete chuck is moved manually.

4. Line width measurement

This extended image processing software enables additionally the high accurate line width measurement with subpixel resolution.

Optional attachments

1. Digital gauge 100 mm or 200 mm

The gauges allow the high accurate positioning of the wafer table crosswise to scribing direction. One purpose is the scribing of accurate grids.

2. Upgrade kit for camera adaption

The upgrade kit for adaption of a CCD-camera consists of the according microscope building groups.

Additionally necessary is the camera itself and a monitor or PC with image processing.

Customer can choose own solutions for that or use the OEG offer for camera and PC with software.

3. Color-video system

This option consists of a Color-Camera 1,3 MPixel resolution, an All-In-One Computer and an Image processing software. The software enables the presentation of the

