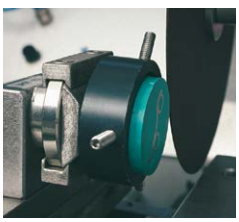
metkon
Technology behind Specimen

PRECISION CUTTING

MICRACUT 202



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CRACUT 202
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MICRACUT 202

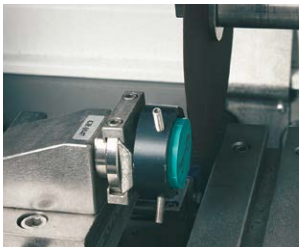
MICRACUT 202 precision cutters are used for precise and deformation-free cutting of "Metals, Ceramics, Electronic Components, Crystals, Composites, Biomaterials, Sintered Carbides, Minerals, etc." MICRACUT 202 has its place in virtually any metallurgical, geological, electronics, research, biomedical or industrial laboratory. The applications are endless.

- Modern and sturdy design
- Extraordinary access for easy handling
- Ergonomic joystick control offers excellent application versatility
- Programmable with colored HMI touch screen controls
- Automatic cut-off wheel positioning
- Inbuilt recirculation coolant tank

DESIGN

MICRACUT 202 precision cutters are capable of cutting most materials such as, brittle or ductile metals, hard or soft metals, composites, ceramics, rocks, biomaterials, laminates, etc. They are designed for cutting all types of materials with minimal structural deformation. The structural integrity of the sample is maintained through MICRACUT 202's design and operation. Additionally, low kerf-loss and sample holding versatility makes the MICRACUT 202 an essential part of the modern day laboratory. The cut surface is ready for microscopic examination with minimal polishing.

MICRACUT 202 is built on precisely manufactured heavy duty aluminium frame providing stable and vibration resistant base for precision components and linear bearings. The cutting compartment is fully enclosed. The front sliding door and side cover can be completely opened for easy access and handling to all sides. Powerful cutting motor (1.1 kW) has variable cut-off wheel speeds from 100 up to 5000 rpm allowing both high speed and low speed cutting. Wide range of clamping tools can be used on the T-slotted moving table. The optional X - axis table with motorized drive mechanism positions the specimen with high positioning accuracy. Optional stand can accommodate all MICRACUT specimen vises with dovetail plates. The height of the cut-off wheel (Z-axis) can be adjusted automatically. Diamond, CBN and abrasive cut-off wheels up to 200 mm diameter can be used. By height adjustment (Z-axis), the wheel wear is easily compensated. Different flange sets are available which can be selected according to the requirement of maximum cutting capacity or max. wheel support. Various clamping tools and accessories are available for different specimen geometry and applications. For details of the specimen vises, please see the back page. A large window of Lexan and a sealed LED lamp in the cutting chamber allow precise observation of the cutting process at an optimum degree of safety.



Safety

MICRACUT 202 precision cutters has the highest safety standards. The interlocking safety device does not allow the motor to be started unless the sliding door or the corner door are closed. The sliding door and corner door cannot be opened before the cutting motor is stopped. The electronic brake system, which is a standard feature, brings the cutter to a quick full stop in seconds after it has been switched off. Easily accessed and operated emergency stop button ensures immediate shut down.

MICRACUT 202 precision cutters has advanced techniques and software with programmable HMI touch screen controls increasing the productivity, sample consistency and minimize operator intervention. Control of X/Y/Z Axis can also be performed with the ergonomic proportional Joystick that offers smooth and precise positioning.

Cutting Parameters

The preselection of the cutting force level as well as the setting of cutting feed rate (0,005-3mm/sec) is possible from the touch screen LCD. The feed rate is automatically adjusted, if needed reduced, resulting in perfect cuts and eliminating sample and machine damage. Pulse cutting mode is a standard feature for cutting extra hard specimens. Integrated speed regulating unit is available to adjust the cut-off wheel speed between 100-5000 rpm.

Multi-Slice Cutting

The optional automatic x-table allows programmable plane parallel sectioning. Slices of equal thickness with number of slices as well as programming slices of different thickness is possible.

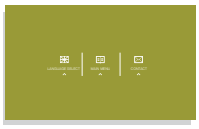
Programmable Return Positions

MICRACUT 202 has 3 different stop modes:
Stay at the end of cutting: Stops when the specimen has been cut through.
Back to starting point: Stops when it has returned to its starting point.
Back to reference point: Stops when the ultimate reset point in all axes has been reached.

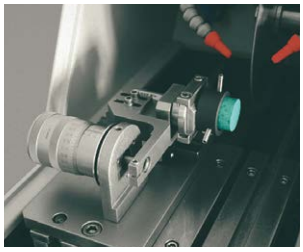
Database

A library of 99 different cutting programs with related specimen name or number can be saved with all cutting parameters which can be recalled at any time. Data with Metkon cutting consumables is also listed for easy selection.

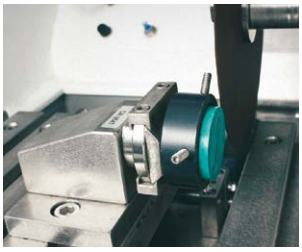
Coloured HMI touch screen controls with various cutting methods and database with cutting programs and maintenance monitoring



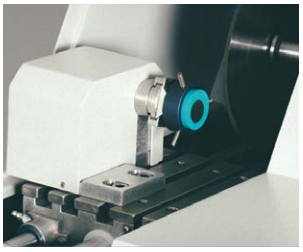
Automatic X-axis positioning



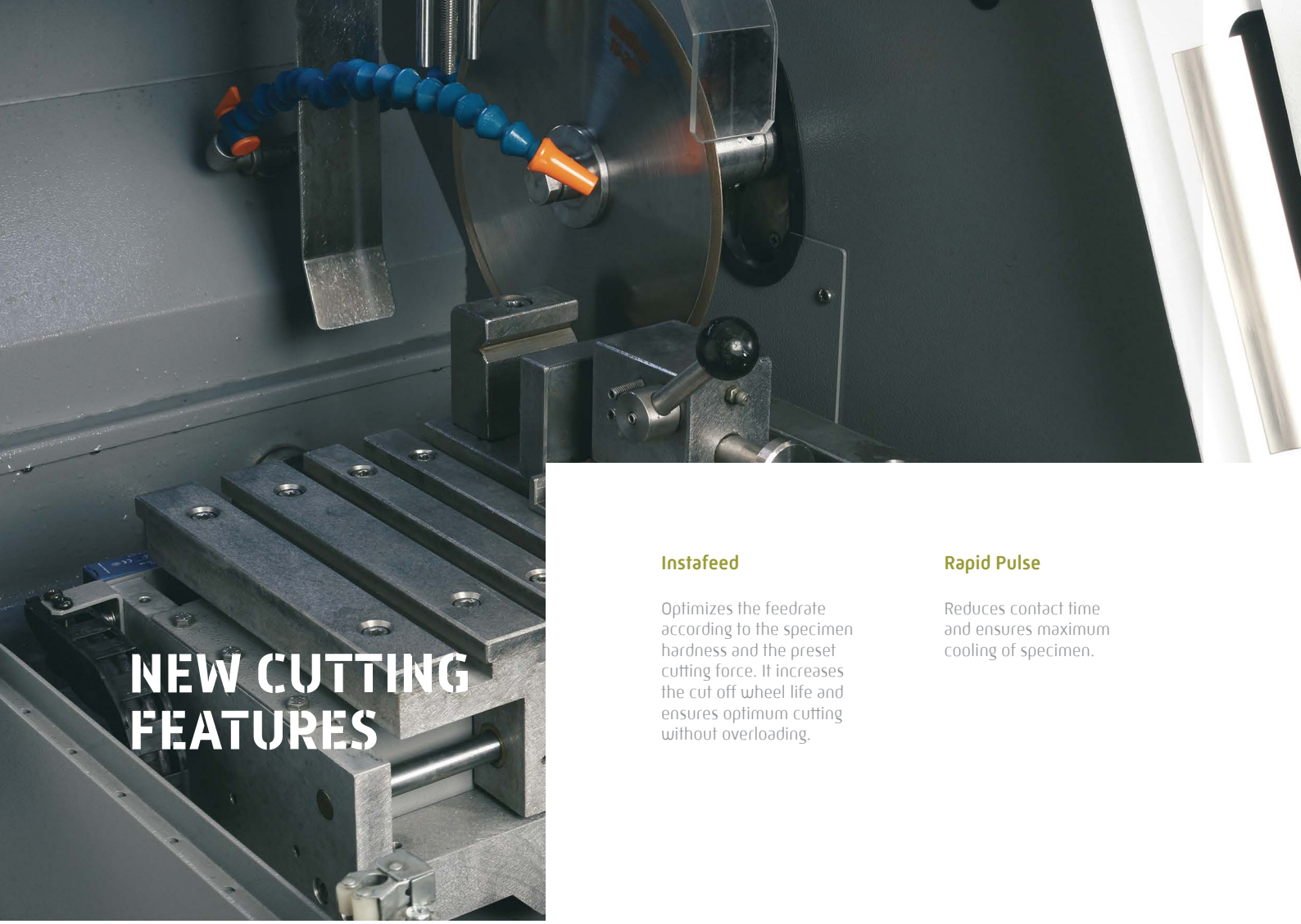
Manual X-axis positioning unit



Stand for specimen vises



Stand with rotation



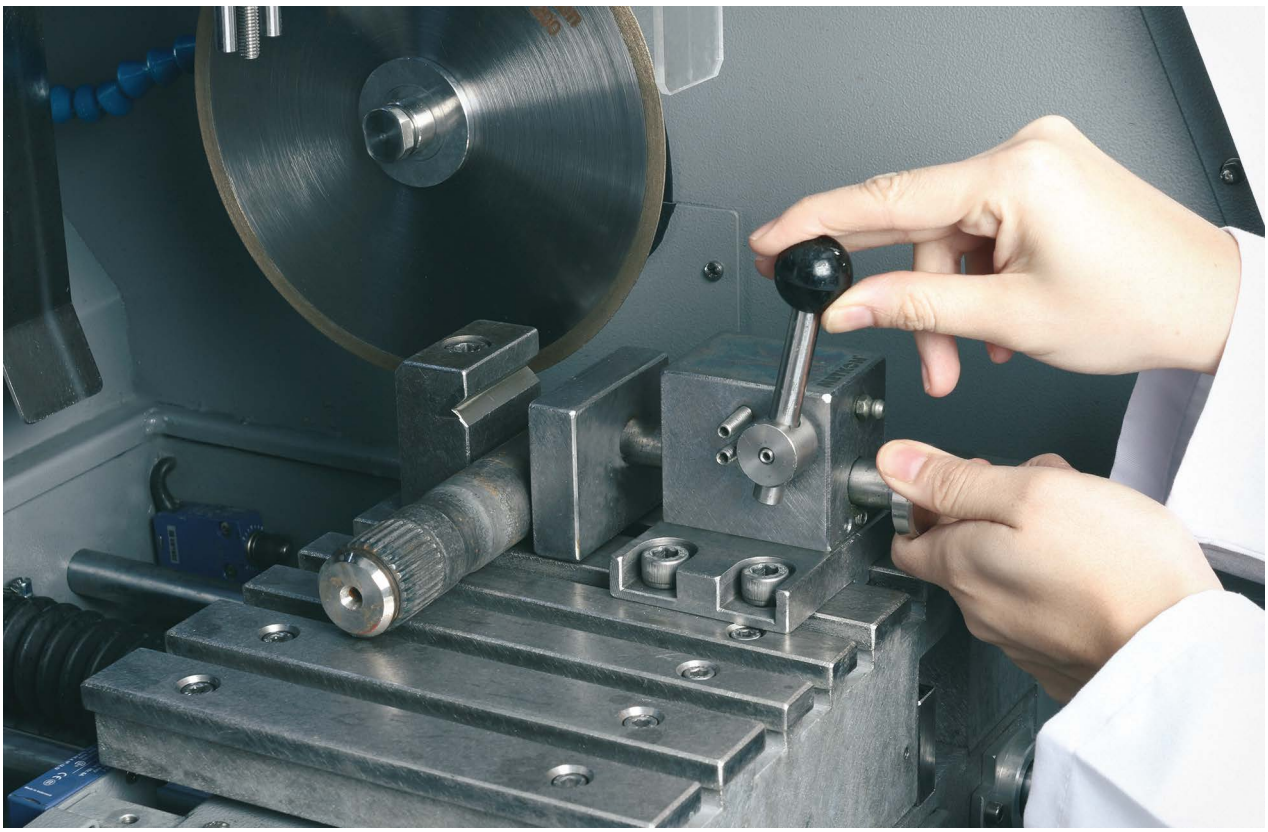
NEW CUTTING FEATURES

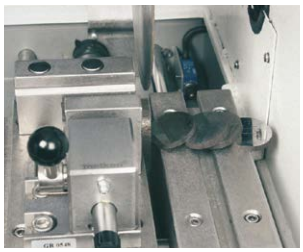
Instafeed

Optimizes the feedrate according to the specimen hardness and the preset cutting force. It increases the cut off wheel life and ensures optimum cutting without overloading.

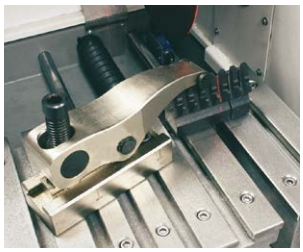
Rapid Pulse

Reduces contact time and ensures maximum cooling of specimen.

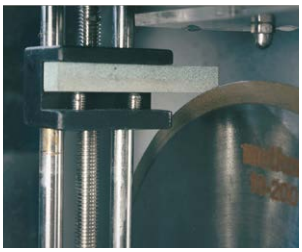




Quick acting clamping vise assembly



Vertical clamping device



Blade dresser available for dressing even during cutting

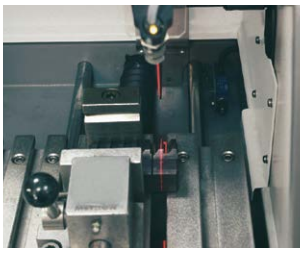
Recirculating coolant tank with 9 lt capacity

SPECIMEN VISES & FLANGES

Many sample preparation applications require the sectioning of a specimen from a small or irregularly shaped sample or component part. The small size or irregular sample shape can create positioning and clamping difficulties for the operator. To overcome these difficulties,

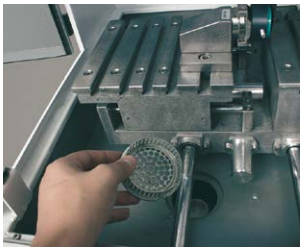
METKON offers a number of special clamping devices for use with MICRACUT 202 precision cutters. METKON precision cutters are equipped with stainless T - slot clamping tables. All clamping devices are made of corrosion resistant material and can be attached to the cutters T - slot beds in seconds for fast and positive clamping of parts having virtually any configuration.

Ergonomic Joystick Control



Laser Alignment Unit

Easy Exchange of Cut Off Wheel



Sample Basket to Catch Small Samples

ACCESSORIES

Laser Alignment Unit

Rapid and accurate positioning of the cut-off wheel and helps to define the exact cutting line.

Blade Dressing Unit

Ensures an easy and fast dressing of diamond and CBN cutting wheels even during cutting operation.

Rotation Stand

Increases the cutting capacity and reduces the contact area. Ensures fast cutting of extremely hard materials. Reduces the cutting time especially for pipes, tubes or round specimens.

SPECIFICATIONS

ORDER NO	17 07	17 07 - AX
MODEL NO	202	202-AX
Disc Diameter, (mm)	Ø200 mm	Ø200 mm
Cutting Capacity, ø (mm)	Ø75 mm	Ø75 mm
Cutting Capacity, # (mm)	#50x175 mm	#50x175 mm
Z-Axis Movement	Automatic	Automatic
Y-Axis Movement	Automatic	Automatic
X-Axis Movement	-	Automatic
Z-Axis Range (mm)	45 mm	45 mm
Y-Axis Range (mm)	210 mm	210 mm
X-Axis Range (mm)	-	60 mm
X-Axis Resolution, mm	-	0.014 mm
Table Feed Speed, (µm/s)	5 - 5000 µm/s	5 - 5000 µm/s
Table Dimensions, mm	365 x 205 mm	(305+60) x 205 mm
T- Slot, mm	12	12
Rotary Clamping Device	Yes	Yes
Pulse Cutting	Yes (Rapid Pulse Cutting)	Yes (Rapid Pulse Cutting)
Automatic Feedrate	Yes (Instafeed Cutting)	Yes (Instafeed Cutting)
Cutting Motor Power, (kW) (S1)	1.1 kW	1.1 kW
Disc Speed, (RPM)	100 – 5000 RPM	100 – 5000 RPM
Cooling Unit, (lt)	9 lt (integrated)	9 lt (integrated)
Joystick	Yes (2-axes proportional speed control with button)	Yes (3-axes proportional speed control with button)
HMI Touch Screen, (inch)	7"	7"
Program Capacity	99	99
Illumination	LED	LED
Laser	Yes (Optional)	Yes (Optional)
Dressing During Cutting Operation	Yes (Optional)	Yes (Optional)
Motor Drive System	Direct Drive	Direct Drive
Dimensions, WxDxH, (mm)	738 x 750 x 636h mm	738 x 750 x 636h mm
Weight	150 kgs	150 kgs

17 07 — **MICRACUT 202**

Automatic High Speed Precision Cut-off Machine Programmable with 7" HMI touch screen control, with Siemens PLC control unit, with automatic automatic table feed cutting system, programmable with coloured LCD display of cutting parameters, accurate and motorized positioning of the specimen in X - Y and Z axis with digital readout on the LCD (X-axis for plane parallel cutting is optional), ergonomic joystick with adjustable speed control, integrated feed path control, power dependent adjustable feedrate, variable cutting force, rapid pulse cutting mode, bar graph overload display, compact cutting motor, with variable cutting speed 100-5000 rpm, with electronic brake system, cutting capacity upto 75 mm solid stock, with cut-off wheels upto Ø200 mm, twin T-slotted table (Y-direction only) made of stainless steel, bottom part as rugged alloy base casting, extraordinary access for easy handling with sliding door and side openings, with built-in recirculation cooling unit, with extra advanced cutting methods: "Rapid Pulse Cutting, Instafeed Cutting, Automatic Table Feed Cutting" Ready for operation.

Includes a standard set of cutting consumables composed of;

- 1 pc. Diamond cutting Disc 200 mm dia.
- 10 abrasive thin cut-off wheels 200 mm dia.
- 1 lt of Metcool II cooling fluid.

230 V, 50/60 Hz, AC.

17 07-AX — **MICRACUT 202-AX**

as above(17 07) and including an automatically driven X-axis table with 60 mm travel for programmable serial plane parallel cutting.

Accessories for MICRACUT 202

GR 0115 — Laser alignment unit, for MICRACUT 202 (To be ordered simultaneously together with the machine order)
GR 0412 — Dressing Unit for MICRACUT 202
YM 1590-00 — Dressing Stone

Clamping Tools for MICRACUT 202

GR 0825 — Manual X-axis positioning unit for specimen vises with dovetail plates.(0-20 mm)
GR 0547 — Stand for specimen vises with dovetail plates.
GR 0826 — Stand with rotation for specimen vises with dovetail plates (To be ordered simultaneously together with the machine order)
GR 0548 — Quick acting clamping vise assembly, for MCR 202
GR 0667 — Compact Vise Assembly, Spring Loaded, for MCR 202 (Stainless Steel)
15 05 — KKP 040 Vertical Clamping Device, with clamp. shoe, MCR 202
GR 0551 — Quick Clamping Vise for longitudinal sectioning of bolts and fasteners

Specimen Vises for MICRACUT 202

GR 0210 — Universal Specimen Vise for MICRACUT 200-S/ 202.
GR 0400 — Universal Specimen Vise
GR 0401 — Specimen vise with double parallel vice for long specimens.
GR 0402 — Specimen vise for round and mounted specimens, ø 32mm.
GR 0403 — Specimen vise for irregular shaped specimens.
GR 0404 — Specimen vise for adhering specimens.
GR 0405 — Specimen vise for biomedical samples.
GR 0430 — Specimen vise (teardrop shape) for specimens ø 18-40mm.
GR 0431 — Specimen vise (teardrop shape) for specimens ø 5-20mm.
GR 0434 — Specimen vise for round cylindrical specimens (max. Up to 40 mm dia) .
GR 0453 — Fastener vise for longitudinal sectioning of screws,fasteners tubes, etc. from 12 to 45 mm. in length

Optional Flange Sets for MICRACUT 201

GR 0410 — Set of Flanges, ø75 mm, suitable for 12,7 and 25,4 mm arbor dias.
GR 0411 — Set of Flanges, ø100 mm, suitable for 12,7 and 25,4 mm arbor dias.

Spare Part Kit for MICRACUT 202

GR 1961 — Recommended Set of Spare Parts, MICRACUT 202

*** Other voltages and frequencies available upon request. Please state when ordering. All specifications are subject to change without notice.**

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