



PRECISION CUTTING

# MICRACUT

125/150

# MICRACUT®

125/150



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

## MICRACUT 125

MICRACUT 125 accepts diamond wafering blades up to 125 mm(5") diameter and the wheel speed is continuously variable from 0 to 600 RPM. Gravity feed and drag lubrication make the MICRACUT 125 easy and convenient to use. The coolant tray can be removed for cleaning without having to remove the blade. Most sample configurations can be gripped with the variety of specimen vises which are available. The sample holding arm incorporates a digital micrometer adjustment which enables the operator to place the sample precisely where the cut is desired. Dead weights in 25 gram increments are applied directly to the arm. The sliding weight at the back of the arm allows intermediate forces to be applied. Available blade dressing chuck dresses the diamond disc while sample cutting is continued. Once the cut is done, MICRACUT125 automatically stops and sounds an audible signal to notify the operator that the cutting sequence is finished.



MICRACUT 125 Low speed saw



Low deformation cutting



Splash guard supplied as standard



Built - in micrometer for precision sectioning

## Design & Operation



MICRACUT 125 and MICRACUT 150 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's design and operation. Additionally, low kerf-loss and sample holding versatility makes the MICRACUT an essential part of the modern day laboratory. The cut surface is ready for microscopic examination with minimal polishing.

## MICRACUT 150

MICRACUT 150 accommodates diamond and abrasive wheels up to 150 mm (6") diameter and the speed range is between 0 and 1000 rpm. The gravity feed loading design minimizes sample deformation. The sliding weight arm with counterweight allows precise force application. The digital micrometer enables the operator to set the cutting width with a resolution of 1 micron. The digital micrometer is interchangeable and the customer can mount other types of micrometers if and whenever required. The coolant tray is removable from the front of the instrument for easy cleaning.

MICRACUT 150's cutting chamber is fully enclosed by a transparent hood. Blade dresser is optionally available. At the end of the cut, an audible signal notifies the operator.

Optional Cutting Table Attachment is available for manual cutting of extra flat large specimens and PCB's.



MICRACUT 150 Precision saw



Sliding weight arm conveniently placed



A variety of specimen vises are available for different applications



Cutting table attachment to cut flat specimens and PCB's

## Specifications

### MICRACUT® 125

MICRACUT 125 Low speed precision cutter, 50 W powerful DC motor, variable speed from 0-600 rpm, built-in digital micrometer, counterbalanced feed, automatic cut-off switch, with built-in coolant system and ready for operation. / Without specimen vises.

Order No: 16 01

Accessories:

GR 0406 Swivel arm unit for angular cutting.

GR 0408 Dressing Unit for MICRACUT 125

### MICRACUT® 150

MICRACUT 150 Precision cutter, with touch-pad controls, 100 W powerful DC cutting motor, variable speed 0-1000 rpm, with digital micrometer cross feed for specimen positioning, counterbalanced sliding weight system, removable cooling unit, automatic cut-off switch, for cutting discs of upto 150 mm diameter and ready for operation. / Without specimen vises.

Order No: 16 03

Accessories:

GR 0212 Cutting Table Attachment for manual cutting of extra flat large specimens and PCB's on MICRACUT 150

GR 0409 Dressing Unit for MICRACUT 150



MICRACUT-125

MICRACUT-150

Order No	16 01	16 03
Cutting Power, W	50	100
Positioning range, X-axis (mm)	25	25
Wheel speed, (rpm)	0-600	0-1000
Cutting Method	Chop	Chop
Wheel diameter, (mm)	Ø125	Ø150
Cutting Capacity Ø, (mm)	Ø40	Ø50
Size W+ (Mic.) x D x H, (cm)	42 x 38 x 31	51 x 43 x 34
Weight, (kg)	25	28
Mains, (V)	1 phase, 230V, 50Hz. AC	1 phase, 230V, 50Hz. AC

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

### Specimen Visers & Flanges

GR 0410 FLANGE SET Ø 75 mm  
( for arbor dia Ø 12.17 - Ø 25.4 )



GR 0411 FLANGE SET Ø 100 mm  
( for arbor dia Ø 12.17 - Ø 25.4 )



GR 0400  
UNIVERSAL SPECIMEN VISE



GR 0401  
SPECIMEN VISE FOR LONG  
SPECIMENS



GR 0402  
SPECIMEN VISE FOR AROUND AND  
MOUNTED SPECIMENS Ø 32 mm



GR 0403  
SPECIMEN VISE FOR IRREGULARLY SHAPED  
SPECIMENS



GR 0404  
SPECIMEN VISE FOR ADHERING  
SPECIMENS



GR 0405  
SPECIMEN VISE FOR  
BIOMEDICAL SAMPLES



GR 0406  
SWIVEL ARM UNIT FOR ANGULAR  
CUTTING



GR 430  
SPECIMEN VISE ( TEARDROP SHAPE )  
FOR SPECIMENS Ø 18-40 mm



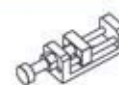
GR 0431  
SPECIMEN VISE ( TEARDROP SHAPE )  
FOR SPECIMENS Ø 5-20 mm



GR 0434  
SPECIMEN VISE FOR ROUND AND  
MOUNTED SPECIMENS UPTO  
Ø 40 mm



GR 0453  
FASTENER VISE FOR LONGITUDINAL SECTIONING  
OF SCREWS, FASTENERS TUBES, ETC.  
FROM 12 to 45 mm. IN LENGTH



Distributor:



**metkon®**  
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PRECISION CUTTING

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176/201



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## MICRACUT 176

MICRACUT® 176 is a HMI touch screen controlled high speed linear precision cutting and grinding instrument. It 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 transparent hood is equipped with a safety switch to prevent the cutting motor from starting when the hood is open. Motorized drive mechanism positions the specimen head in X-direction with 5 microns accuracy with 55 mm range. Precise setting of the depth in Y-direction is possible in a range of 100 mm. Powerful cutting motor has variable cut-off wheel speeds from 500 up to 5000 rpm allowing both high speed and low speed cutting. Diamond, CBN and abrasive cut-off wheels up to 175mm diameter can be used for cutting. Sample Rotation can be selected from the front touch screen LCD reducing the contact area between the cut-off wheel and the sample. This doubles the sectioning capacity, maximizes the sample cooling and reduces the cutting time. Multi-slice automatic serial cutting of plane parallel sections is possible. Precision grinding on MICRACUT® with pre-defined amount of material removal can be carried out by using diamond cup wheel. The preselection of the feed rate (0,020-1,5mm/sec) is possible and it is automatically adjusted, if needed reduced, resulting in perfect cuts and eliminating sample and machine damage. All specimen vises for MICRACUT® can be used with or without dovetail plates enabling the operator to clamp the sample into the specimen vise outside the cutting chamber and then insert into the fixture of the specimen head. The universal vise is the most versatile type. It will hold round, square, elongated end even irregular specimens. Tear-drop shaped vises are good for fairly thick and regular shaped specimens. Where it is not possible to fix specimen with any of the standard vises, a special vise may be designed according to the customers specific requirements.



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



Various specimen vises can be mounted on dovetail plate



Spacious cutting chamber

# MICRACUT 201

MICRACUT 201 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 transparent hood is equipped with interlocking safety switch. Powerfull cutting motor has variable cut-off wheel speeds from 400 up to 5000 rpm allowing both high speed and low speed cutting. By moving the cutting table, MICRACUT 201 can cut larger and deeper samples. Wide range of clamping tools can be used on the T-slotted moving table. Optional X - axis table with motorized drive mechanism positions the specimen with 5 microns positioning accuracy. Optional stand can accomodate all MICRACUT specimen vises with dovetail plates. The height of the cut-off wheel (Z-axis) can be adjusted up to 45 mm. 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.



Automatic X-axis positioning unit



Manual X-axis positioning unit



Stand for specimen vises



Stand with rotation



Quick acting clamping vise assembly



Vertical clamping device



Blade dresser available for dressing even during cutting



Recirculating coolant tank with 4,5 lt capacity

MICRACUT 201 has advanced techniques and software with programmable HMI touch screen controls increasing the productivity, sample consistency and operator comfort.

## Cutting Parameters:

The preselection of the cutting force level as well as the setting of cutting feed rate (0,020 - 1,5mm / 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.

## 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 201 has 3 different stop modes:

Auto stop: Stops when the specimen has been cut through.

Relative Stop: Stops when it has returned to its starting point.

Absolute Stop: Stops when the ultimate reset point in all axes has been reached.

## Database

A library of 25 different cutting programs with related specimen name or number can be saved with all cutting parameters which can be recalled at anytime. Data with Metkon cutting consumables is also listed for easy selection.



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



## 17 05 MICRACUT 176

Automatic High Speed Precision Cut-off and Grinding Machine, Programmable with 3,8" HMI touch screen control, with variable cut-off wheel speed from 500 to 5000 rpm, compact motor, 50 mm cutting capacity(100 mm with rotation), load application up to 60 N, automatic feeding with adjustable feed speed, motorised positioning system on the horizontal x-axis with positioning accuracy 2 microns, built-in sample rotation, library of cutting programs and with recirculation cooling unit, complete and ready for operation. Without specimen vises.

230 V, 50 Hz, AC.

Includes a standard set of cutting consumables composed of;

\*1 pc. Diamond cutting Disc 150 mm dia.

\*An assortment of 20 abrasive thin cut-off wheels 150 mm dia.

\*4 lt of Micracool cooling fluid.

## 17 06 MICRACUT 201

Automatic High Speed Precision Cut-off Machine, Programmable with 3,8" HMI touch screen control, with moving table feed system, compact cutting motor, with variable cut-off wheel speed from 500 to 5000 rpm, automatic feeding with adjustable feed speed, motorised positioning system with digital readout on the LCD, library of cutting programs for different materials, with built-in recirculation cooling unit, complete and ready for operation.

Without clamping tools and specimen vises.

230 V, 50 Hz, AC.

Includes a standard set of cutting consumables composed of;

\*1 pc. Diamond cutting Disc 200 mm dia.

\*An assortment of 20 abrasive thin cut-off wheels 200 mm dia.

\*4 lt of Micracool cooling fluid.



MICRACUT-201

MICRACUT-176

Order No	17 06	17 05
Wheel diameter, (mm)	Ø 200	Ø175
Cutting Capacity Ø, (mm)	Ø75	Ø50
Cutting Capacity #, (mm)	40 X 150	30 X 60
Positioning range X-axis, (mm)	25	55
Positioning range Y-axis, (mm)	180	100
Positioning range Z-axis, (mm)	45	0
T-Slot table dimension, (mm)	196 X 190	-
T-Slot dimension, (mm)	12	-
Cutting Power kW (S1)	0,75	0,37
Cutting Power kW (S3)	1	0,5
Wheel speed, (rpm)	500-5000	500-5000
Parallel Cutting X-axis	Optional	Standard
Positioning Accuracy X-axis, (µ)	5	5
Feedrate y-axis, (µ/s)	20-1500	20-1500
Cutting Method	Table feed	Linear
HMI Touch Screen controller, (inch)	3,8"	3,8"
Rotational Cutting	Optional	Standard
Pulse Cutting	Yes	Yes
Cup grinding	Yes	Yes
Size WxDxH, (cm)	660 X 750 X 450	560 X 620 X 385
Weight, (kg)	100	110
Cooling unit, (lt)	5.5 lt.	4.5 lt.
Mains, (V)	1 phase, 230V 50Hz.AC	1 phase, 230V 50Hz.AC

## Accessories and Clamping Tools for MICRACUT 201:

- GR 0824** Automatic X-axis positioning unit for programmable positioning in the X-axis with serial plane parallel cutting capability.(0-30 mm)
- GR 0825** Manual X-axis positioning unit for specimen vises with dovetail plates.(0-25 mm)
- GR 0547** Stand for specimen vises with dovetail plates.
- GR 0826** Stand with rotation for specimen vises with dovetail plates
- GR 0548** Quick acting clamping vise assembly
- GR 0010** Prism Jaw Block Set for round specimens
- GR 0011** Rubber coated jaw block set for sensitive specimens
- GR 0201** Jaw set for cutting extra short and small workpieces with X-axis table
- 15 05** KKP 040 Vertical Clamping Device, with clamp.shoe,MCR 201/Geocut
- GR 0551** Quick Clamping Vise for longitudinal sectioning of bolts and fasteners

## Specimen Visers & Flanges

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( for arbor dia Ø 12.17 - Ø 25.4 )



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( for arbor dia Ø 12.17 - Ø 25.4 )



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SPECIMEN VISE FOR LONG SPECIMENS



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