precision cutting

MICRACUT

MICRACUT

PTS Physical Test Solutions

MICRACUT®
125/150/175/200

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 family of precision cutters are available in 4 different versions:

MICRACUT 125 Low Speed Saw
MICRACUT 150 Precision Cutter
MICRACUT 175 High Speed Linear Precision Cutter
MICRACUT 200 High Speed Table Feed Precision Cutter

MICRACUT 125 Low Speed Saw

MICRACUT 150 Precision Cutter

MICRACUT 125 Low Speed Saw
MICRACUT 150 Precision Cutter

Desing & 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 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, MICRACUT 125 automatically stops and sounds an audible signal to notify the operator that the cutting sequence is finished.

MICRACUT 150 accomodates 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 a standard feature. 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 200
High Speed Table-Feed Precision Cutter

Large cutting chamber for fast and efficient precision cutting (MICRACUT 200)

Design & Operation

MICRACUT 200 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 DC cutting motor has variable cut-off wheels speeds from 400 up to 4000 rpm allowing both high speed and low speed cutting. By moving the cutting table, MICRACUT 200 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 2 microns positioning accuracy. Optional stand with manual positioning can accomadate all MICRACUT specimen vises with devotail 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.

The preselection of the feed rate (0,02 – 1,5 mm/sec) and force is possible on the front panel. The feed rate is automatically adjusted, if needed reduced, resulting in perfect cuts and eliminating sample and machine damage.

MICRACUT 200 High speed Table-Feed Precision Cutter

GR 0548

GR 0546

GR 0556

Clamping Tools

Various clamping tools and accessories are available for different specimen geometry and applications. For details of the specimen vises, please see page 5.
Accessories available for MICRACUT 200 are as follows:

GR 0546 Automatic X-axis table for digital positioning and digital readout in the X-axis with 2 microns positioning accuracy.
GR 0547 Stand for specimen vises with devotail plates.
GR 0556 Manual X-axis positioning unit, including the stand for specimen vises with devotail plates.
GR 0548 Quick acting clamping vise assembly.
1501 Vertical Clamping Device with clamping shoe.

Specimen Vises and Flanges

		MICRACUT 125	MICRACUT 150	MICRACUT 175	MICRACUT 200	SPECIMEN VISE/FLANGE
FLANGES	GR 0410 FLANGE SET Ø 75 mm (for arbor dia. Ø 12.7 - Ø 25.4)	*	*	*	*	
	GR 0411 FLANGE SET Ø 100 mm (for arbor dia. Ø 12.7 - Ø 25.4)		*	*	*	
SPECIMEN VISES	GR 0400 UNIVERSAL SPECIMEN VISE	*	*	*	*	
	GR 0401 SPECIMEN VISE FOR LONG SPECIMENS	*	*	*	*	
	GR 0402 SPECIMEN VISE FOR ROUND AND MOUNTED SPECIMENS Ø32mm.	*	*	*	*	
	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 0210 UNIVERSAL SPECIMEN VISE FOR MICRACUT175/200			*	*	
	GR 0430 SPECIMEN VISE (TEARDROP SHAPE) FOR SPECIMENS Ø 18-40 mm.	*	*	*	*	
	GR 0431 SPECIMEN VISE (TEARDROP SHAPE) FOR SPECIMENS Ø 5-20 mm.	*	*	*	*	
	GR 0402 SPECIMEN VISE FOR ROUND AND MOUNTED SPECIMENS UPTO Ø40mm.	*	*	*	*	

Specifications

MICRACUT®-125

MICRACUT 125 Low speed precision cutter, 40 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 0409 Dressing Unit

MICRACUT®-175

MICRACUT 175 Automatic High Speed Linear Precision Cutting and Grinding Instrument, microprocessor controlled, with variable cut-off wheel speed from 400 to 4000 rpm, 400 Watt cutting motor, 50mm cutting capacity (100mm with rotation), load application up to 60N, automatic feeding with adjustable feed speed, motorised positioning system with digital readout, positioning accuracy 2 microns, touch-pad control panel for parameter settings, last settings retained in memory, with built-in sample rotation, with recirculation cooling unit, complete and ready for operation. Without specimen vises.
Order No: 17 01
Accessories:
GR 0211 Cutting Table Attachment for manual cutting of extra flat large specimens and PCB's on MICRACUT 175

MICRACUT®-150

MICRACUT 150 Precision cutter,with touch-pad controls, 90 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.
Accessories:
GR 0212 Cutting Table Attachment for manual cutting of extra flat large specimens and PCB's on MICRACUT 150
GR 0409 Dressing Unit

MICRACUT®-200

MICRACUT 200 Automatic High Speed Precision Cut –off Machine, with moving table cutting system, microprocessor controlled, with variable cut-off wheel speed from 400 to 4000 rpm, 800 watt cutting motor, automatic feeding with adjustable feed speed, motorised positioning system with digital readout, touch pad control panel for parameter settings, last settings retained in memory, with built-in recurcilation cooling unit, without clamping tools and specimen vises.
220 V, 50 Hz, AC.
Order No: 17 02
Accessories:
GR 0546 Automatic X-axis table for digital positioning and digital readout in the X-axis with 2 microns positioning accuracy.
GR 0547 Stand for specimen vises with devotail plates.
GR 0556 Manual X-axis positioning unit, including the stand for specimen vises with devotail plates.
GR 0548 Quick acting clamping vise assembly.
1501 Vertical Clamping Device with clamping shoe.

	MICRACUT PRECISION CUTTING INSTRUMENTS			
				
Instrument	**MICRACUT-125**	**MICRACUT-150**	**MICRACUT-175**	**MICRACUT-200**
Order No.	16 01	16 03	17 01	17 02
Cutting Capacity, mm	40	50	50	60
Moter Power, W	60	90	400	800
Disc Diameter, mm	125	150	175	200
Positioning range X-axis,mm	25	25	50	50
Positioning range Y-axis,mm	-	-	100	180
Positioning accuracy, X-axis, mic.	2	2	2	2
Feed rate mm/sec	-	-	0,010-1,5	0,02-1,5
Cutting speed, rpm	0-600	0-1000	400-4000	400-4000
Cutting Method	Chop	Chop	Linear	Table-feed linear
Size W x D x H cm	28 X 29 X 31	37 X 41 X 33	54 X 60 X 32	62 X 74 X 44
Weight, kg.	13	35	80	90
Mains	1ph, 220V, 50Hz AC	1ph, 220V, 50Hz AC	1ph, 220V, 50Hz AC	1ph, 220V, 50Hz AC

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