

Metallographic machines and accessories

Heraeus Kulzer

Heraeus Kulzer GmbH
Division Technique
Philipp-Reis-Str. 8/13
61273 Wehrheim, Germany
Tel.: +49 (0) 6081/959-360 oder 332
Fax: +49 (0) 6081/959-398
technik.wehrheim@kulzer-dental.com
www.kulzer-technik.de



CUTLAM micro 2.0
Precision cutting machine

CUTLAM micro 2.0

Precision cutting machine

The CUTLAM micro 2.0 is a compact laboratory micro-saw intended for precision cuts on the most sensitive materials. The speed range and the cutting chamber capacity make this machine incredibly versatile. You can use it for a wide range of applications with a great variety of cut-off discs (Al₂O₃, SiC, Diamond,) up to a diameter of 200 mm.

A wide range of clamps is available, enabling you to clamp almost any type of component or material.

The 3.5" tactile screen let select the different functions using an easy to use, intuitive interface. The machine is held in position using vice-tightened holding arms, with a wheel located outside the cutting chamber. This enables micrometric movement along the Z axis; you can track the movement visually on the screen (accurate to 0,02 mm). Thanks to the zeroing system, you can make incredibly accurate parallel cuts.

The cutting progress is either controlled manually or with a counterweight system specially adapted to delicate cuts. A rocker arm compensates for the component's weight, and another enables you to adjust the applied load with precision.

Fitted with a large-capacity (10 liters), independent filtration / decanter / recirculation tank, it is easy to perform long cuts under ideal cooling conditions. The CUTLAM micro 2.0 has been designed to simplify maintenance and cleaning operations: the base of the cutting chamber is lined to prevent the loss of small pieces and components, a 100 µm fabric filter at the decanter inlet filters out the largest particles, and the remainder of the filtration is accomplished by decanting into the compartmented tank.

Built upon a robust, mechanically welded chassis sheathed with a painted sheet-steel body, the CUTLAM micro 2.0 is particularly stable and is not prone to vibration, saving valuable laboratory workspace. The hinged transparent hood ensures hygiene and safety thanks to an automatic shut-off if opened, and also gives easy access to the component clamps.

CUTLAM micro 2.0	Specifications
Art.-no.	66057146
Type	Precision cutting machine
Disc diameter	75 - 200 mm
Inside diameter	12,7 mm
Standard flanges diameter	50 mm
Rotating speed	variable 2000 - 4000 r/min (optional low speed 50 - 1000 r/min)
Input	0.6 kW
Standard voltage	230 V – 50 Hz, single phase
Lateral arm displacement	Stroke 80 mm (accuracy 0,02 mm)
Cooling system	Recirculation system, 10 l, 2 chambers, 100 µm filter, 800 l / min pump driven by the machine
Preload weight	2 x 200 g
Dimensions W x D x H	430 x 300 x 450 mm
Weight	40 kg

Subject to technical changes!

CUTLAM micro 2.0 - Accessories	
66057261	Set of flanges Ø 35 mm for cut-off wheels 75 - 100 mm
66057262	Set of flanges Ø 50 mm for cut-off wheels 125 - 150 mm
66057263	Set of flanges Ø 75 mm for cut-off wheels up to 200 mm
66050360	Cylindric sample holder for samples Ø 12 - 50 mm
66050358	Sample holder, V-shaped for samples up to Ø 30 mm
66050359	Sample holder, double V-shaped for samples up to Ø 12 mm
66050356	Sample holder for irregular samples
66054648	Cutting fluid 721, 1 x 5.000 ml



CUTLAM 1.1

Manual wet cutting machine for samples
up to 110 mm diameter

CUTLAM 1.1

Wet cutting machine with vertical movement

The CUTLAM 1.1 is a versatile, high-performance cutting machine for cutting a wide variety of materials for metallography in the wet cutting process.

The machine meets all work and safety criteria for the metallographic laboratory. The CUTLAM 1.1 optionally works with cutting wheels of 250 mm or 300 mm.

The easy handling and robust design with a strong 3.8 kW motor and adjustable rotating speed (1000 - 4000 rpm) allows to cut work pieces up to a diameter of 110 mm (with a 300 mm cutting wheel).

The adjustable water supply with adjustable spray heads for cooling the cutting surface prevents the burning of the work piece.

The circulation cooling is operated by a pump, which is controlled by the device software.

The slightly sloping to the rear design of the base plate conveys the residues directly in the drain gutter to a drain system with 100 µm filter into a 60-liter tank system with removable settling tank.

The wide opening wheel guard allows access to the complete sample space and the large work table (400 x 300 mm). This makes an easy change of the cutting wheel and clamping and positioning of the work piece in the clamping device.

The dual clamping device (accessory) fastens the sample both-sided the cutting area by an eccentric-system.

The transparent wheel guard, when closed, affords an optimal field of vision of the cutting process. The CUTLAM 1.1 is equipped with an energy saving inside LED light. Opening the wheel guard is only possible when the cutting wheel is fully stopped.

CUTLAM 1.1	Specifications
Art.-no.	66056184
Type	vertical cutting machine
Disc diameter	250 – 300 mm
Inside diameter	32 mm
Rotating speed	variable 1000 - 4000 rpm
Feeding	manual
Input	3.8 kW
Standard voltage	400 V, 3 phase – 50 Hz
Cutting capacity	110 mm (with 300 mm cutting wheel)
Worktable	4 slots, corrosion-resistant 400 x 300 mm
Cooling-cleaning system	60l tank with settling tank, 100 µm filter, pump, flushing system with adjustable spray heads, port system (feed/drain line)
Light	LED
Housing	steel, powder-coated, color RAL 9003
Dimensions W x D x H	630 x 650 x 820 mm
Weight	125 kg

Subject to technical changes!

CUTLAM 1.1 - Accessories	
66050361	Universal clamping device 61 clamping height: 8 - 102 mm, max. clamping power: 12 kN/sqmm
66054171	Dual clamping device with quick-release system, 2 x 2 items 80 x 40 mm, clamping lever left and right without baseplate for max. clamping area, jaw width: 80 mm, jaw height: 45 mm
66054173	Dual clamping device, 2 x 2 items 80 x 40 mm without baseplate for max. clamping area, jaw width: 80 mm, jaw height: 45 mm
66056185	Cabinet for CUTLAM steel framework, powder-coated, color white, RAL 9003 to integrate the circulation cooling system, storage compartment for cutting wheels and accessory, adjustable base, dimensions (W x D x H): 630 x 800 x 835 mm
66054648	Cutting fluid 721, 1 x 5.000 ml



CUTLAM 2.0 / 3.0

Wet cutting machine with manual vertical and orbital cutting movement

CUTLAM 2.0 / 3.0

Wet cutting machine with vertical and orbital movement

The CUTLAM 2.0 / 3.0 is a versatile, high-performance cutting machine for cutting a wide variety of materials for metallography in the wet cutting process.

The machine meets all work and safety criteria for the metallographic laboratory. The CUTLAM 2.0 / 3.0 optionally works with cutting wheels of 250 mm or 300 mm.

The easy handling and robust design with a strong 3.8 kW motor and adjustable rotating speed (1000 - 4000 rpm) allows to cut work pieces up to a diameter of 110 mm (with a 300 mm cutting wheel).

The spacious sample space has cut outs on both sides of the wheel guard and allows an easily feeding and cutting of longer work pieces.

The adjustable water supply with adjustable spray heads for cooling the cutting surface prevents the burning of the work piece.

The circulation cooling is operated by a pump, which is controlled by the device software.

The slightly sloping to the rear design of the base plate conveys the residues directly in the drain gutter to a drain system with 100 µm filter into a 60-liter tank system with removable settling tank.

The wide opening wheel guard allows access to the complete sample space and the large work table (400 x 300 mm). This makes an easy change of the cutting wheel and clamping and positioning of the work piece in the clamping device.

The dual clamping device (accessory) fastens the sample both-sided the cutting area by an eccentric-system.

The transparent wheel guard, when closed, affords an optimal field of vision of the cutting process. The CUTLAM 2.0 / 3.0 is equipped with an energy saving inside LED light. Opening the wheel guard is only possible when the cutting wheel is fully stopped.

The cleaning is done by a separate cleaning unit which is fixed on the side of the machine. Due to the flexible feed line and the metered water jet it is possible to clean the machine easily and quickly.

CUTLAM 2.0 / 3.0	Specifications
Art.-no.	66054174 (66054176)
Type	vertical/orbital cutting machine
Disc diameter	250 – 300 mm
Inside diameter	32 mm
Rotating speed	variable 1000 - 4000 r/min
Feeding	manual
Input	3.8 kW
Standard voltage	400 V, 3 phase – 50 Hz
Cutting capacity	110 mm (with 300 mm cutting wheel)
Worktable	4 slots, corrosion-resistant 400 x 300 mm
Cooling-cleaning system	60l tank with settling tank, 100 µm filter, pump, flushing system with adjustable spray heads, port system (feed/drain line)
Light	LED
Housing	steel, powder-coated, color RAL 9003
Dimensions W x D x H	630 x 650 x 820 mm
Weight	135 kg

Subject to technical changes!

CUTLAM 2.0 - Equipment options	
66054177	Automatic for orbital movement, variable oscillation speed, adjustable at the front panel of the machine

CUTLAM 2.0 / 3.0 - Accessories	
66050361	Universal clamping device 61 clamping height: 8 - 102 mm, max. clamping power: 12 kN/sqmm
66054171	Dual clamping device with quick-release system, 2 x 2 items 80 x 40 mm, clamping lever left and right without baseplate for max. clamping area, jaw width: 80 mm, jaw height: 45 mm
66054173	Dual clamping device, 2 x 2 item 80 x 40 mm without baseplate for max. clamping area, jaw width: 80 mm, jaw height: 45 mm
66056185	Cabinet steel framework, powder-coated, color white, RAL 9003 to integrate the circulation cooling system, storage compartment for cutting wheels and accessory, adjustable base, dimensions (W x D x H): 630 x 800 x 835 mm
66054648	Cutting fluid 721, 1 x 5.000 ml



PRESSLAM 2.0 / 2.0+
Automatic hot mounting press

PRESSLAM 2.0 / 2.0+

Automatic hot mounting press

The PRESSLAM machines are high quality, robust mounting presses which provide fast and safe embeddings. The space saving machines are equipped with a water saving program. About the easy to use touch screen all settings of the four parameters heating time, temperature, pressure, and cooling time can be controlled. The control has 60 memory locations for individual embedding programs and a USB port for charging and storing data. The mounting presses have four different choices for the pressure control:

- Pressure admission at the beginning of the program
- Increasing pressure with increasing temperature
- Pressure admission on reaching the maximum temperature
- Pressure admission only during the cooling time

The machines have a head which is equipped with an additional heating- and cooling-system. By this construction the time needed is reduced by up to 40% for each embedding operation.

The PRESSLAM machines can be adapted to other cylinder diameter easily and without tools. The standard cylinders for the PRESSLAM 2.0 are available in diameters of 25 mm, 30 mm and 40 mm. The PRESSLAM 2.0+ can be equipped with a 50 mm or 2" cylinder.

By using of separators in the pressing cylinder it could be produced two mounts in one embedding process.

PRESSLAM 2.0 and 2.0+ - Accessories

66054168	Separator 25 mm for double embedding
66054169	Separator 30 mm for double embedding
66054170	Separator 40 mm for double embedding
66058087	Separator 50 mm for double embedding

Specifications

PRESSLAM 2.0 (PRESSLAM 2.0+)

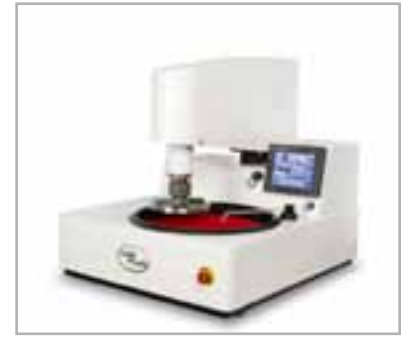
Art.-no.	66054167 (66058086)
Type	Automatic hot mounting press with heating- and cooling system in the head piece for fast embeddings
Equipment	Touch screen display, Internal memory for 60 embedding programs, USB port for charging/storing embedding programs, fully automatic, electronic control, quick fastener-system, automatic safety lock, pneumatic controlled, 4 different programs for pressure control, adjustable, cooling-system with water saving program, easy change of the press cylinder, double embedding is possible
Sample size	∅ 25 bis 40 mm (∅ 25 - 50 mm and 2")
Heating power	4 x 600 W (cylinder), 2 x 400 W (head piece)
Thermostat settings	20 - 200 °C
Preheating function	40 °C
Heating cycle	0 - 30 min
Cooling cycle	0 - 30 min
Pneumatic pressure	0 - 1000 daN
Pressure connection	6 - 10 bar
Standard voltage	230 V/50 Hz
Housing	steel, powder-coated color RAL 9003
Dimensions W x D x H	250 x 470 x 680 mm
Weight	71 kg

Subject to technical changes!



MASTERLAM 1.0 / 1.1

Grinding and polishing machine with central pressure and oscillating head (optional)



MASTERLAM 1.0 / 1.1

Grinding and polishing machine with central pressure and oscillating head (optional)

The MASTERLAM 1.0 is a 1-spindle grinding and polishing machine suitable for all types of sample preparation which can be performed automatically. The machine is intended for use by support discs with a diameter of 200 - 300 mm. The rotating speed from 20 – 650 rpm is adjustable (clockwise / counterclockwise). As an alternative for wheels with a diameter of 350 / 400 mm is the version MASTERLAM 1.1 available.

The automatic head works with pneumatic central pressure (5 - 400 N). Rotation direction (clockwise / counterclockwise) and rotational speed (10 – 150 rpm) are independently adjustable. Optionally, the head can be ordered with an oscillating movement. Movement and speed is adjustable. The intake for the specimen holder is standardized, thus specimen holder from other manufacturers are also useable. The specimen holder is designed for up to 9 samples. A LED light is used for an optimal illumination of the working area.

The solid and durable design with aluminum frame with painted metal housing and a powerful electric motor (0.75 kW) allows a maximum stress and ensures a high quiet running of the machine. All electronic and pneumatic components meet the highest quality and safety standards.

About the easy to use touch screen all settings of the disc and the head are controlled as well as the spray intervals of the connected dosing system "DISTRILAM". The control has 250 memory locations for individual preparation programs and a USB port for charging and storing data.

With the slewing and removable water valve the working disc is flushed equally during operation. The water flow is manually controlled using the rotary knob. A magnetic valve automatically stops the water supply when the machine is switched off. With the extendable water hose, the basin can easily be flushed and cleaned.

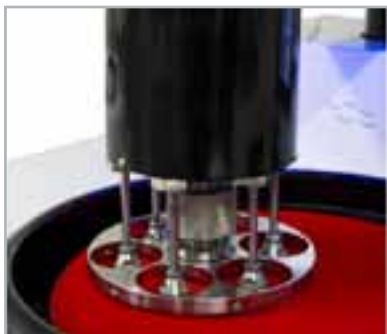
MASTERLAM 1.0 / 1.1	Specifications
Art.-no.	66054144 (66058100)
Type	1-spindle grinding and polishing machine with central pressure and oscillating head (optional)
Disc diameter	250 – 300 mm (350 - 400 mm)
Rotating speed	20 – 650 rpm
Rotating direction	clockwise/counterclockwise adjustable
Input	0.75 kW
Standard voltage	230 V – 50 Hz
Water supply	automatic water stop, removable basin
Housing	steel, powder-coated, color RAL 9003
Dimensions W x D x H	550 x 670 x 580 mm
Weight	85 kg
Automatic head with central pressure	variable speed 10 – 150 rpm, adjustable pressure (5 – 400 N)

Subject to technical changes!

MASTERLAM 1.0 / 1.1 - Accessories	
66054148	Oscillation head, pendulum action and speed variably adjustable
66054149	DISTRILAM - Dosing unit with peristaltic pump
66054151	Specimen holder central pressure, drop shape 6 x 20 - 40 mm
66054152	Specimen holder central pressure, 9 x 30 mm
66054153	Specimen holder central pressure, 6 x 40 mm
66054154	Specimen holder central pressure, 5 x 50 mm
66054155	Specimen holder central pressure, 3 x 40 x 70 mm
66054156	Specimen holder central pressure, 6 x 25 x 34 mm
66054157	Spacer disc Ø 160 mm
64708684	Aluminium support disc, Ø 250 mm
64708685	Aluminium support disc, Ø 300 mm
66058099	Aluminium support disc, Ø 400 mm
66056023	Cover for grinding machines
66054158	Clamping ring for 300 mm support disc
66056025	Splash guard ring, Ø 250 mm
66056185	Cabinet steel framework, powder-coated, color white, RAL 9003 to integrate the circulation cooling system, storage compartment for cutting wheels and accessory, adjustable base, dimensions (W x D x H): 630 x 800 x 835 mm



MASTERLAM 2.0
Grinding and polishing machine
with single pressure



MASTERLAM 2.0

Manual grinding and polishing machine for the metallography with single pressure

The MASTERLAM 2.0 is a 1-spindle grinding and polishing machine suitable for all types of sample preparation. The machine is intended for use by support discs with a diameter of 250 - 300 mm. The rotating speed from 20 – 650 rpm is adjustable (clockwise / counterclockwise).

The automatic head works with manually adjustable pneumatic central pressure (5 - 100 N). Rotation direction (clockwise / counterclockwise) and rotational speed (10 – 150 rpm) are independently adjustable. Optionally, the head can be ordered with an oscillating movement. Movement and speed are adjustable. The intake for the specimen holder is standardized, thus specimen holder from other manufacturers are also useable. A LED light is used for an optimal illumination of the working area.

The specimen holder is designed for up to 6 samples with max. diameter of 50 mm, through the use of spacer rings, smaller sample diameter can be prepared.

The solid and durable design with aluminum frame with painted metal housing and a powerful electric motor (0.75 kW) allows a maximum stress and ensures a high quiet running of the machine. All electronic and pneumatic components meet the highest quality and safety standards.

About the easy to use touch screen all settings of the disc and the head are controlled as well as the spray intervals of the connected dosing system "DISTRILAM". The control has 250 memory locations for individual preparation programs and a USB port for charging and storing data.

With the slewing and removable water valve the working disc is flushed equally during operation. The water flow is manually controlled using the rotary knob. A magnetic valve automatically stops the water supply when the machine is switched off. With the extendable water hose, the basin can easily be flushed and cleaned.

MASTERLAM 2.0	Specifications
Art.-no.	66054159
Type	1-spindle grinding and polishing machine with single pressure, 5,7" Touch screen panel
Disc diameter	250 – 300 mm
Rotating speed	20 – 650 rpm
Rotating direction	clockwise/counterclockwise adjustable
Input	0.75 kW
Standard voltage	230 V – 50 Hz
Water supply	automatic water stop, removable basin
Housing	steel, powder-coated, color RAL 9003
Dimensions W x D x H	550 x 670 x 580 mm
Weight	85 kg
Automatic head with central pressure	variable speed 10 – 150 rpm, adjustable pressure (5 – 400 N), single pressure for up to 6 samples, Ø 50 mm

Subject to technical changes!

MASTERLAM 2.0 - Accessories	
66054149	DISTRILAM - Dosing unit with peristaltic pump
66054161	Specimen holder single pressure 6 x 50 mm
66054162	Separator rings 25 mm 6 pcs.
66054163	Separator rings 30 mm 6 pcs.
66054164	Separator rings 32 mm 6 pcs.
66054165	Separator rings 40 mm 6 pcs.
64708684	Aluminium support disc, Ø 250 mm
64708685	Aluminium support disc, Ø 300 mm
66056023	Cover for grinding machines
66054158	Clamping ring for 300er support disc
66056025	Splash guard ring, Ø 250 mm
66056185	Cabinet steel framework, powder-coated, color white, RAL 9003 to integrate the circulation cooling system, storage compartment for cutting wheels and accessory, adjustable base, dimensions (W x D x H): 630 x 800 x 835 mm



SMARTLAM 2.0

Manual grinding and polishing machine,
for discs with a diameter of 200 - 300 mm



SMARTLAM 2.0

Manual grinding and polishing machine, for discs with a diameter of 200 - 300 mm

The SMARTLAM 2.0 is a 1-spindle grinding and polishing machine suitable for all types of sample preparation which cannot be performed automatically. The machine is intended for use by support discs with a diameter of 200 - 300 mm.

The solid and durable design with aluminum frame with painted metal housing and a powerful electric motor (0.75 kW) allows a maximum stress and ensures a high quiet running of the machine.

The machine has an internal storage to manage up to 250 preparation programs, as well as a USB port to save and load data preparation.

About the easy to use touch screen the rotating speed (clockwise / counterclockwise) can be adjusted continuously. The variable speed control (20 - 650 rpm) with a constant rotational force can be adjusted during operation.

With the slewing and removable water valve the working disc is flushed equally during operation. The water flow is manually controlled using the rotary knob. A magnetic valve automatically stops the water supply when the machine is switched off.

To clean the basin the splash guard ring and the working disk are easy to remove (no tools required). With the extendable water hose, the basin can easily be flushed and cleaned.

For semi-automatic processing of metallographic samples SMARTLAM 2.0 can be equipped with a head with manually adjustable pressure "SPRING LAM". The head works with a central pressure and a specimen holder for 6 samples with max. diameter of 40 mm. About a corresponding timer function, the grinding and polishing times can be set.

SMARTLAM 2.0	Specifications
Art.-no.	66054141
Type	manual grinding and polishing machine, 1-spindle
Disk diameter	200 – 300 mm
Rotating speed	20 – 650 rpm
Rotating direction	clockwise/counterclockwise adjustable
Input	0.75 kW
Standard voltage	230 V – 50 Hz
Water supply	manually adjustable, removable valve, magnetic protection valve
Frame	aluminium
Housing	metal, color RAL 9003
Dimensions W x D x H	450 x 350 x 600 mm
Weight	30 kg

Subject to technical changes!

SMARTLAM 2.0 - Accessories	
66054143	SPRINGLAM - Head with manually adjustable pressure (0 – 250 N), port system for specimen holder with central pressure
64708682	Aluminium support disc, Ø 200 mm
64708684	Aluminium support disc, Ø 250 mm
64708685	Aluminium support disc, Ø 300 mm
66056023	Cover for grinding machines
66056024	Splash guard ring, Ø 200 mm
66056025	Splash guard ring, Ø 250 mm
66056185	Cabinet steel framework, powder-coated, color white, RAL 9003 to integrate the circulation cooling system, storage compartment for cutting wheels and accessory, adjustable base, dimensions (W x D x H): 630 x 800 x 835 mm