



CONTACTS



POLISHING TECHNOLOGY®

Located in Gaillard, LAM PLAN specializes in industrial lapping and polishing solutions.

For 60 years, LAM PLAN teams have been designing and providing equipment and preparations guaranteeing its customers performance, quality and productivity.



SDS

Safety data sheets

Download all the safety data sheets in PDF format LAM PLAN according to the REACH and CLP regulations:
(Classification Labelling Packaging).



fdsen.lamplan.com

CATALOGS

The 4 catalogues in English

Download in PDF format LAM PLAN the LAM PLAN catalogs and find all the polishing technologies.



caten.lamplan.com

MANUALS

Instructions for use

Download in PDF format the operating instructions and manuals of the different LAM PLAN machines and products.



manen.lamplan.com



VIDEOS

Machine and product films

Watch the videos of our different machines by scanning the QRcode located on the «machine» pages of this catalog using your smartphone and find all of our videos.



viden.lamplan.com

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For all questions

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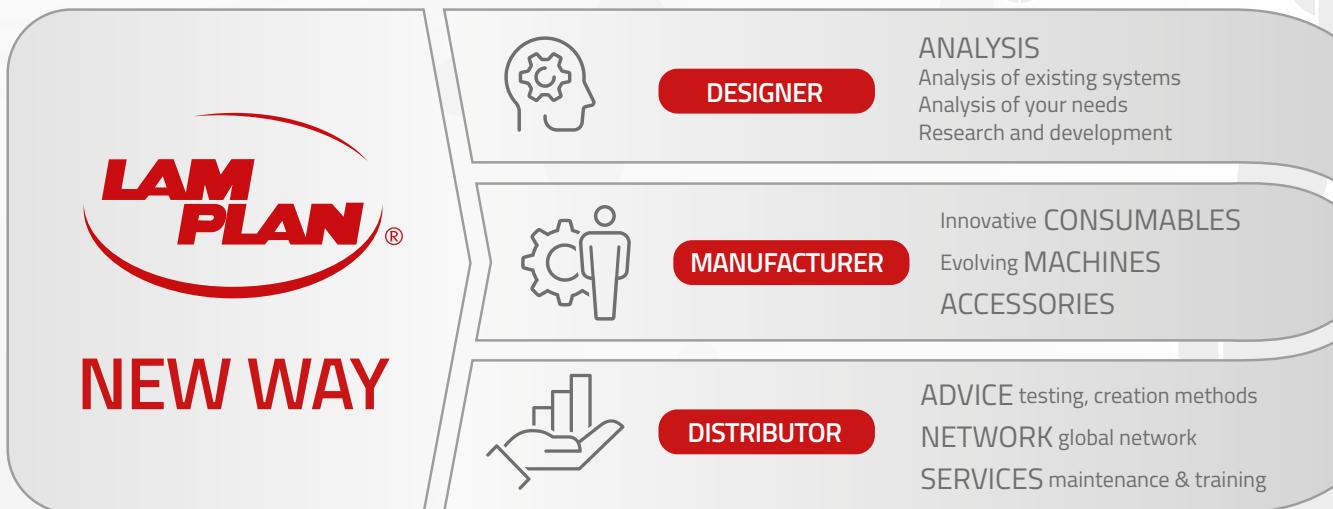




LAM PLAN NEW WAY

is a commitment, to devote all our resources to working together to find innovative and effective solutions that will enable you to achieve new goals in

SURFACE PREPARATION



Innovative consumables

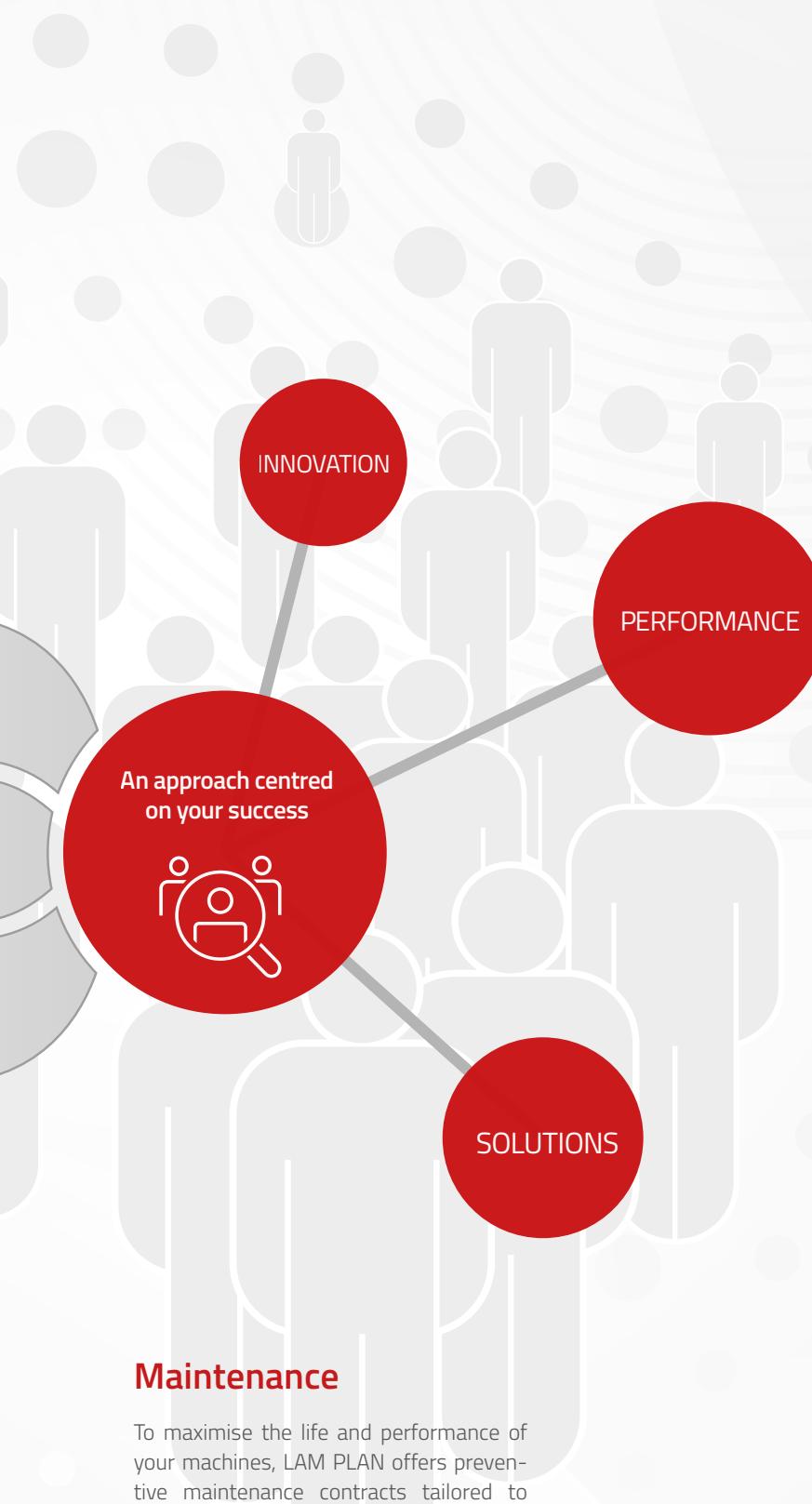
Our expertise extends from analysis to the development of products and processes to meet the specific requirements of each application. Whether we are talking about abrasives or substrates, thanks to our research and commitment we make metallography and lapping easier and more efficient. We work every day to create consumables that are easier to use, more respectful of the health of users and the environment, without compromising on quality.

Technical support

Our ability to continually innovate enables us to meet the specific challenges of each customer. LAM PLAN is committed to designing bespoke solutions through a dedicated test centre, where we model and test surface preparation methods prior to production on site. Our manufacturing and quality control processes ensure that each solution precisely meets the end-user's expectations.

Scalable machines

Every project is unique and requires tailor-made solutions. That's why we offer a complete range of machines and consumables designed to meet the specific needs of each customer.



Maintenance

To maximise the life and performance of your machines, LAM PLAN offers preventive maintenance contracts tailored to each piece of equipment. These regular interventions ensure that the condition of your machines is monitored, reduce breakdowns and optimise the management of production stoppages.

POLISHING TECHNOLOGY®

We specialise in the design and manufacture of innovative solutions for lapping, polishing and metallography. For decades, we have been committed to providing our customers with state-of-the-art equipment and high-quality consumables, meeting the most stringent requirements.

Our solutions cover a wide range of industrial needs, guaranteeing precise, reliable results for surface finishing in all sectors of activity.



Take a virtual tour of our test centre on
360en.lamplan.com



Download our test request form
METALLOGRAPHY
testen.lamplan.com



Download our test request form
LAPPING & POLISHING
testen.lamplan.com

CERTIFIED COMPANY **ISO 9001**

ISO 9001 certification is the cornerstone of our approach to continuous improvement and to listening to our customers' needs in order to respond in the most appropriate way. This certification of the quality management system within our organisation provides you with a guarantee of continuous monitoring of the performance of our system, products and services, our objective: **the satisfaction of our customers.**

THE COMMERCIAL NETWORK



LAM PLAN is present throughout the world thanks to an extensive network of technical and commercial partners, made up of skilled professionals ready to meet your lapping, polishing, metallography and shape polishing needs.



Worldwide sales network



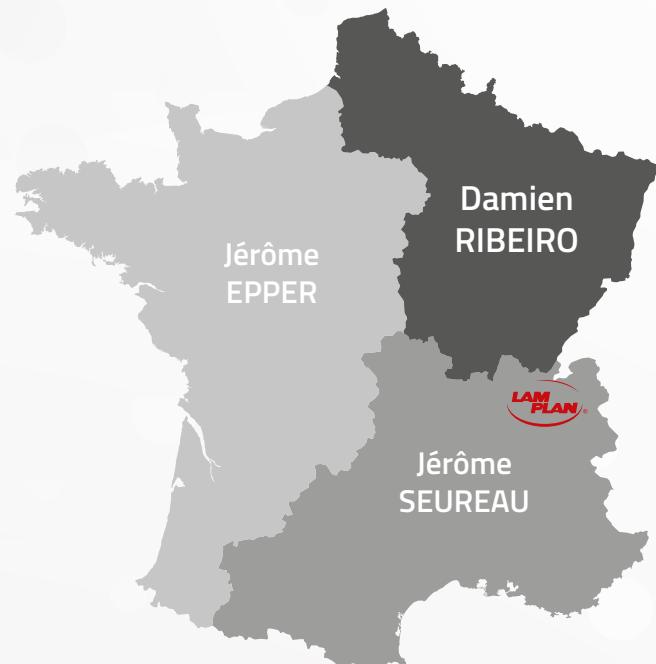
If you are looking for a LAM PLAN subsidiary or distributor LAM PLAN in the world, find the country of your choice from the list of our distributors on our website with this flash code.

All requests from other countries are handled directly by our head office in France.

Languages spoken : English, Italian, German and French.

French sales network

North - North East		Paris and West		South East	
Damien RIBEIRO		Jérôme EPPER		Jérôme SEUREAU	
Departments		Departments		Departments	
02	59	14	49	01	38
08	60	16	50	03	42
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A SALES TEAM AT YOUR SIDE

We are proud to introduce our LAM PLAN sales team.

Passionate and dedicated, this sales force is made up of six talented professionals.

Each member of our team brings a unique set of skills and experience to meet the varied needs of our customers and guide them towards the most appropriate solutions.

At LAM PLAN, our sales team works with our technical and R&D teams to provide you with tailor-made solutions to meet your specific needs. We firmly believe in building lasting relationships with our customers, based on trust, integrity and innovation. Trust our team to guide you through our diverse range of products and services.

We are here for you
every step of the way.



Daniel FERRAT

Sales Director

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With 35 years' experience in the polishing and lapping industry, Daniel began his career in France as a salesman. From 2001, he played a central role in LAM PLAN's export development. Daniel took over the management of our team in 2020 with determination and strategic vision. His leadership inspires our team to achieve excellence and exceed customer expectations.



Guillaume LARDON

**Export area manager
Europe - North and East**

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Guillaume joined LAM PLAN's export department in 2016.

Building on the experience he gained at the head office, he decided to get more involved in the field as of 2018.

He is in charge of prospecting and development
in Northern and Central Europe.

Through his commitment, Guillaume maintains strong relationships with our strategic customers and distributors.



Julien CARRIER

**Technical expert
France and exports**

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Julien, our technical expert, has in-depth knowledge of our machines, products and services. He is the link between customers' needs and LAM PLAN's innovative solutions. Julien assesses our customers' investment needs and organises the commissioning, maintenance or upgrading of existing equipment.



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Commercial technicians France

Sales force for France, from their respective sectors, they collaborate fully in growing the business, identifying new opportunities and establishing promising relationships with our customers. Jérôme E., Damien and Jérôme S. are experienced professionals with in-depth knowledge of their areas of responsibility. The experience and training they have acquired have enabled them to become specialists in surface preparation.

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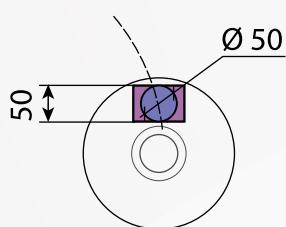
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CUTTING



MADE IN FRANCE

**CUTLAM®micro 2.0**Laboratory precision
micro cutting machine**Theoretical cutting capacity - Ø 200 mm disc**

(Varies according to the vice used and the diameter of the disc).



10-litre settling tank with 100 µ filter.

Manual micrometric adjustment of
the Z axis.**CUTTING MACHINES****CUTLAM®micro 2.0**

Designed for precision cutting, its speed range and cutting chamber capacity make it a highly versatile machine.

The sample is held in position using a vice-tightened holding arm and the wheel located outside the cutting chamber enables a micrometric movement along the Z axis; the movement can be tracked directly on the screen (accurate to 0,02 mm) Thanks to the zeroing system, very accurate parallel cuts can be performed.

A wide range of vices is available, enabling you to clamp any type of component or material. The cutting progress is either controlled manually or with a counterweight system specially adapted to delicate cuts. A rocker arm balances the implement weight, and another one permits to adjust the applied load with precision.

Fitted with a large-capacity (10 litres, large for the machine's size), independent filtration/decanting/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 equipped with an inlet filter to prevent the loss of small parts and components. A 100 µ fabric filter at the decanter inlet filters out the largest particles, and the remainder of the filtration is accomplished by decanting into a 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 you valuable laboratory work space.

Faced with the constant evolution of the materials and the quality standards, LAM PLAN is a reference partner for the preparation of the samples for the metallographic analysis.

Our technical solutions and our customised methods will ensure you reliable and reproducible results. We are fully committed to the quality of the samples.

CUTTING MACHINES

Technical data	CUTLAM®micro 2.0
Cut-off wheel Ø	75 to 200 mm
Shaft Ø	12,7 mm
Standard flanges Ø	50 mm
Lateral arm displacement (Z axis)	Stroke 80 mm (accuracy 0,02 mm)
Preload weight	2 x 200 g
Vertical movement	Manual
Motor power	0,6 kW
Rotational speed	Variable, from 200 to 4000 rpm
Protection	Transparent cover with locking system
Touch screen 3,5"	Intuitive and graphic interface
Voltage	230 V - 50 Hz single phase
Dim. W x H x D	430 x 300 x 450 mm (H cover open: 644 mm)
Weight	40 kg
Reference	60 CTM20 00



Set of Ø 35 mm and Ø 75 flanges for discs from 75 to 200 mm.



Sample holder with multi screw clamping for irregular parts.
6 saw vises.
Maximum height: 25 mm.
60 CTM03 50



V sample holder with clamping screw.
Maximum capacity: Ø 24 mm.
60 CTM03 20



Sample holder double vice with clamping screw.
2 screw lengths available.
Maximum capacity: Ø 12 mm.
60 CTM03 30



Sample holder double vice with clamping screw.
2 screw lengths available.
Maximum capacity: Ø 12 mm.
60 CTM03 40



Cylindrical sample holder with clamping screw.
4 serration vises.
Maximum capacity: Ø 12 > 50 mm.
60 CTM03 10



Small vice with clamping screw.
Maximum opening: 15 mm.
Jaws: W 15 mm x H 6,3 mm
60 CTM02 10



Medium vice with clamping screw.
Maximum opening: 24 mm.
Jaws: W 25 mm x H 10 mm
60 CTM021 10



CUTTING MACHINES

CUTLAM®micro 3.0

MADE IN FRANCE

The CUTLAM®micro 3.0 is a bench-top cut-off machine for laboratories looking for an automatic machine for long, high-precision cuts, offering high capacity in a compact package. Thanks to the many ways in which the disc and table can be moved, even the most complex jobs are possible.

Large capacity compact cutting machine

It is fitted with a large: 320 x 540 mm chamber, and equipped with a grooved aluminium table, sized 210 x 210 mm, and stainless steel interchangeable pallets.

The large capacity of the CUTLAM®micro 3.0 relies on the use of 200 mm cut-off wheel, combined with a vertical movement range of 100 mm (Z axis) and a longitudinal range of 270 mm (Y axis).

Precision

Axis positioning accuracy is 0.01 mm, which can be viewed on screen. Feed speeds during the cutting phase are adjustable from 0.1 to 20 mm/sec. Use of the intelligent feed management system (see next page for an explanation of this device) will automatically reduce the axis feed rate to a minimum value of 0.02 mm/sec.

Always in control

A large touchscreen with a graphical user interface makes it easy to get to grips with the machine intuitively. All positioning and cutting parameters are continuously visible on the screen. A joystick is used to quickly position the cutting point. In automatic and semi-automatic mode, an estimated cutting time is displayed.

2 cutting modes are available: manual and automatic.

 **CUTLAM®micro 3.0**

High-precision automatic 2 axes* cutting machine

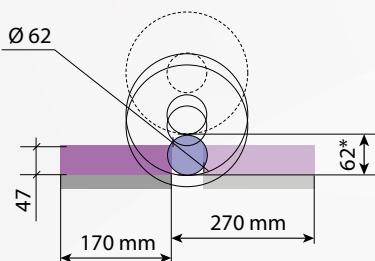
*optional 3rd (X)



300 programs can be stored in the built-in memory, including:
start position, feed speed, rotational speed, cutting mode.

Theoretical cutting capacity - Ø 200 mm disc

*space under disc



CUTTING MACHINES

Efficiency: 5 key points for higher productivity

1. Powerful motor of 1,1 kW.
2. Sequential cutting mode for a maximum cooling.
3. Ingenious feed speed control:
 - The feed speed is pre-set, and will be automatically reduced if the load on the cutting wheel increases. The pre-set speed returns when the load on the wheel decreases.
 - It improves the quality of the cut by limiting the heat damages on the samples.
 - Suitable for irregular samples and/or materials with heterogeneous hardness.
 - It prevents the wheel from breaking in case of overload.
 - It allows you to always work at maximum speed without any risk of damage.
4. Optional cross-feed table (X axis) manual or motorised for repetitive parallel cuts.
5. Independent lubrication/cooling system, composed of a 100 μ washable filter, and a 30 litres sedimentation tank with multi-point nozzle, insures excellent cooling of the sample and the cutting wheel even during intensive use.

Options

Manual cross-feed table (X axis) to cut parallel sections stroke 55 mm accurate to 0,01 mm	60 CTM31 00
Motorised cross feed table (X axis) to cut parallel sections stroke 50 mm, accurate to 0,01 mm	60 CTM34 00
Positioning laser	60 CTM35 00

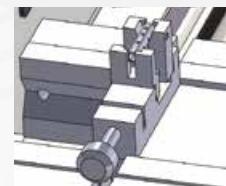
Technical Data	CUTLAM®micro 3.0
Cut-off wheel Ø	75 to 200 mm
Shaft Ø	12,7 mm
Standard flanges Ø	75 mm
Passage under the disc	62 mm (with a Ø 200 mm disc)
Max cutting capacity	Ø 62 mm (with a Ø 200 mm disc)
Vertical movement	Z axis 100 mm automatic
Longitudinal movement	Y axis 270 mm automatic
Transversal movement	X axis 55 mm manual or 50 mm motorised (optional)
Cooling/ Lubrication	Decantation tank, 2 chambers, Input 100 μ m filter, Pump 800 L/hour driven by the machine.
Motor power	1,1 kW
Rotational speed	Variable, from 1000 to 4000 rpm.
Cutting modes	Manual and automatic
Feed speed control	0.1 to 10 mm/sec. programmable automatic continuous or sequenced feed/torque control. 0.1 to 20 mm/sec. in manual mode.
Lightening	LED
Protection	Transparent cover with locking system
Voltage	230 V - 50 Hz simple phase
Dim. W x H x D	620 x 470 x 750 mm (H cover open 812 mm)
Weight	80 kg
Reference	60 CTM30 00

**Tool for axial cutting of Ø 4 mm parts**

This device, used in conjunction with quick release clamps, enables manual positioning following the X axis, ensuring cutting precision and repeatability.

NEW

60 CTM03 93



60 CTM35 00



60 CTM31 00



60 CTM34 00



60 CTM01 10/20/30



60 CT200 40



60 CTM36 00



60 CTM32 00



60 CTM33 00



60 M0100 00

Accessories

Set of flanges Ø 35 mm for cut-off wheels Ø 75 to 100 mm	60 CTM01 10
Set of flanges Ø 50 mm for cut-off wheels Ø 125 to 150 mm	60 CTM01 20
Set of flanges Ø 75 mm for cut-off wheels until Ø 230 mm	60 CTM01 30
Independent double vice (right and left) screw tightening	60 CT200 40
Right vice with fast tightening, small model	60 CTM32 00
Left vice with fast tightening, small model	60 CTM33 00
Universal clamping Kopal 54	60 CTM36 00
Cabinet: 1 drawer, 1 storage in the door + integration of the recirculation tank	60 M0100 00

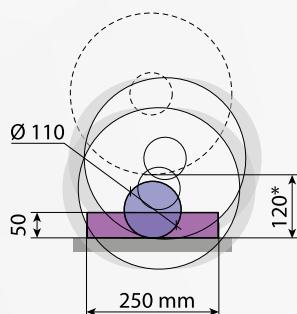


CUTLAM®

Manual cutting machine
vertical motion

Theoretical cutting capacity - Ø 305 mm disc

*space under disc



CUTTING MACHINES

CUTLAM® 1.1

MADE IN FRANCE

The CUTLAM® 1.1 is a universal cut-off machine. User-friendly and robust, it offers high cutting capacity thanks to its offset motor design. It allows you to introduce simple, versatile equipment based on first-class components into your laboratory.

The spacious cutting table is made from corrosion-resistant cast iron, and is easily accessible thanks to the fully-open bonnet and remote motor mounting. The 4 perpendicular grooves allow workpieces up to 120 mm thick to be clamped. The CUTLAM® 1.1 can be fitted with grinding wheels from Ø 250 to 300 mm.

Equipped as standard with a variable speed drive and a powerful 3.8 kW motor particularly suited to 300 mm diameter wheels, the CUTLAM® 1.1 can withstand intensive use. The high-capacity recirculation system, mounted on castors with pre-filter and decantation compartments, ensures optimum lubrication and cooling via multi-point spraying.

The cutting chamber is illuminated by a heavy-duty aluminium LED spotlight. The machine's protective bonnet is made up of 2 parts: a large glazed area to ensure good visibility of the cutting chamber, and a lacquered metal belt to give this protective element great rigidity. An interlocking system locks the protective cover when the grinding wheel is rotating.

This machine has 2 side openings, enabling it to cut bars with a maximum diameter of 60 mm.

An external hand shower and inclined cutting chamber base make cleaning easy, while a strainer prevents samples from being swallowed up in the large-diameter flow.

Technical Data	CUTLAM® 1.1
Cut-off wheel Ø	250-305 mm
Shaft Ø	25,4 mm
Standard flanges Ø	80 mm
Max cutting capacity	Ø 110 mm (Ø 305 mm disc)
Passage under the disc	120 mm (Ø 305 mm disc)
Vertical movement	Manual
Lubrification	Recirculation system, 60 litres, on casters, integrated cleaning system, with shower head located outside the cutting chamber
Motor power	3,8 kW
Rotational speed	Variable, from 1000 to 4000 rpm
Table	Stainless steel, 400 x 300 mm
Type of groove	T groove 12 mm (2 longitudinals, 2 transversals)
Lightening	LED
Protection	Transparent cover with locking system
Body	Epoxy painted coated steel
Voltage	400 Volts - 50 Hz (three-phase)
Dim. W x H x D	630 x 650 x 820 mm - H opened cover: 820 mm
Weight	125 kg
Reference	60 CT110 00

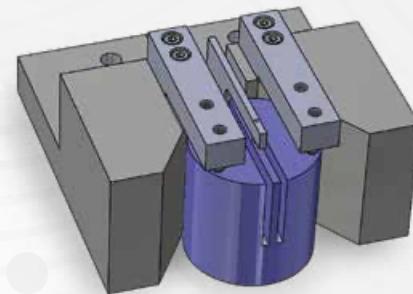
CUTTING MACHINES

Example of application: cutting of a sphere

One of the recurrent issues remaining in the cutting processes is the clamping of spherical parts. The implementation of this kind of vice on the CUTLAM® 1.1 enables to cut spheres having a diameter going from 30 mm to 60 mm.

**Example of application: cutting of a glass cylinder with double wheel**

Tooling allowing the removal of a 3 mm slice from a glass cylinder Ø 50 mm, height 50 mm. This article includes the supply and installation of a specific clamp and a double grinding wheel on a CUTLAM® 1.1 machine.

**Accessories**

Fast tightening double vice system	60 CT200 20
Double transverse quick-clamping vices for table 60 CT205 20, right-hand lever. Jaws: W 80 x H 45 mm	60 CT206 20
Screw tightening double vice system	60 CT200 40
Universal clamping vice KOPAL 61	60 081282 20
Clamping flange adjustment	60 081282 40
Long shaft for clamping flange KOPAL	60 00285 90
Cabinet: 1 drawer, 1 storage + integration of the recirculation tank	60 MO100 00
Universal table (X axis) for parallel cuttings	60 CT205 20
A1 aspiration/filtration set (see specific page)	60 CT204 00



60 081282 40



60 00285 90



60 081282 20



60 CT206 20



60 CTC20 520



Recirculation system 60 L



60 CT200 40



60 CT200 20



Interlocking

CUTLAM® support cabinets**Solid painted-steel piece of furniture specially designed for CUTLAM® products.**

It contains a storage door for tools and cut-off wheels, a drawer on top and a space for the recirculation tank. This piece of furniture is stable and has adjustable feet.

For CUTLAM® micro 3.0 and CUTLAM® 1.1

Dimensions W x H x D: 630 x 800 x 835 mm.

Reference: 60 MO100 00

For CUTLAM® 3.1

Dimensions W x H x D: 700 x 800 x 1050 mm.

Reference: 60 MO310 00





MADE IN FRANCE

CUTLAM®3.1

The CUTLAM®3.1 is the ultimate development of LAM PLAN and is the most advanced automatic Ø 300 mm cut-off machine in its market sector.

Largest cut-off area on the market of Ø 300 mm cut-off machines

The CUTLAM®3.1 offers an unprecedented cutting capacity, the machine table can move forward and backward automatically over a distance of 300 mm. New, the cut-off wheel has an automatic and linear top-to-bottom movement. With this linear movement, this new-generation of cutting machine offers a 140 mm space under the cutting wheel. The CUTLAM®3.1 has a cover which includes opening side to cut bars.

Easy to use

The CUTLAM®3.1 is extremely simple to operate with its large touch screen (5.7 inches) and intuitive interface. The 2 motorised axes of CUTLAM®3.1 (optional 3rd axis) can be controlled manually by two joysticks located near the control screen. The internal memory allow to save over 256 cutting programs, which can also be imported or exported via a USB port.

A great variety of possible setting configuration

The rotation speed of the cutting wheel and the feed speed of the axes can be programmed so as to prevent any deterioration or deformation of the samples. 3 cutting modes are possible: manual (via joysticks), semi-automatic and automatic. The movements of the axes can be continuous or sequenced.

The CUTLAM®3.1 is also equipped with the smart motion function: the definition of an acceptable torque for the cutting wheel, with the touch screen will automatically regulate the feed speed of the axes.

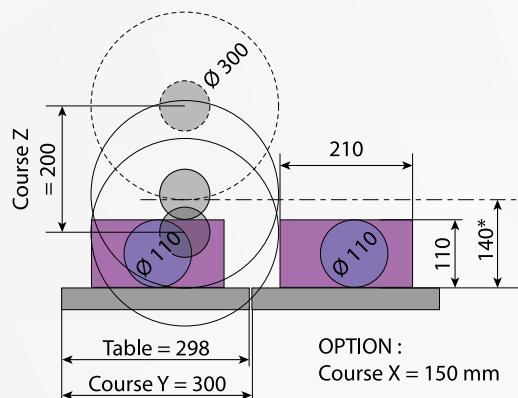
This option makes it possible to cut materials with different hardnesses (e.g. steel with an HVOF coating) without having to modify the feed speed. This option allows to avoid long testing campaigns to define the correct feed speed.

 **CUTLAM®3.1**
Automatic and programmable cutting
machine with 2 or 3 motorised axes*,
equipped with a Ø 300 mm cut-off wheel

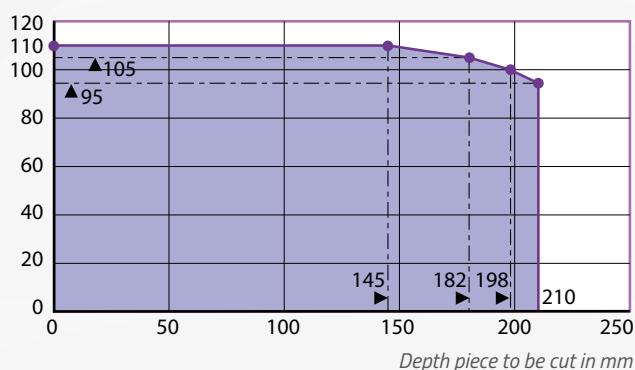
*Optional motorised 3rd Axis (X)

Theoretical cutting capacity - Ø 300 mm disc

*space under disc



Height cut piece
to be cut in mm



CUTTING MACHINES

Many cutting possibilities are offered

This automatic cut-off machine makes it possible to cut vertically (along axis Z), over a maximum stroke of 200 mm, or to cut horizontally along axis Y, over a maximum stroke of 300 mm.

It is also possible to combine the two Z and Y movements. Thus, your machine will be able to perform cutting passes with a pass number and depth, which can be programmed.

This machine can optionally be equipped with a manual or automatic X axis for cutting parallel sections.

**Your safety, our priority**

An interlocking device maintains the cover in its closed position when the cutting wheel is rotating. When the cover is open, any axes movement (controlled by the joysticks) is only possible when the technician presses the "man present" button.

Technical Data	CUTLAM®3.1
Cut-off wheel Ø	250 to 305 mm
Shaft Ø	25,4 mm
Max cutting capacity	Ø 110 mm
Space between the cut-off wheel and the table (with disc Ø 300 mm)	140 mm
Table	Stainless steel 574 x 298 mm
Longitudinal movement - table	300 mm
Vertical movement - wheel	200 mm
Transversal movement	150 mm (optional)
Motor power wheel	3,8 kW
Cooling/Lubrication	Recirculation system, 60 litres decantation tank, 2 chambers, Input 100 µm filter, 800 L/hour pump driven by the machine
Disc rotation speed	From 1000 to 4000 rpm
Cutting mode	Manual, semi-automatic, automatic
Feed speed control	From 0.1 to 20 mm/s, continuous or sequenced. Intelligent motion: automatic check of the feed motion according to the resulting torque on the cutting wheel motor
Lighting	LED strip
Protection	Cover secured by interlocking Man present button for operating the axes when the cover is open
Voltage	400 Volts - 50 Hz (three-phase + ground)
Dim. W x H x D	900 x 700 x 1000 (H. cover open 1100 mm)
Weight	210 kg
Reference	60CT30100



Support cabinet with integrated cooling system (60 litres).

Options

Manual X axis-table, stroke: 150 mm	60 CT31A20
Automatic X axis-table, stroke: 150 mm	60 CT31A30
Laser positioning device	60 CT31A10



60 CT31A30



60 CT31A20



60 CT31A10

Accessories

Double independent vice (left and right) with a screw-type tightening system	60 CT200 40
Double independent vice (left and right) with a fast tightening system	60 CT200 20
Cabinet for CUTLAM®3.1	60 M0310 00
Aspiration/filtration set (see specific page)	60 CT204 00



60 CT200 40



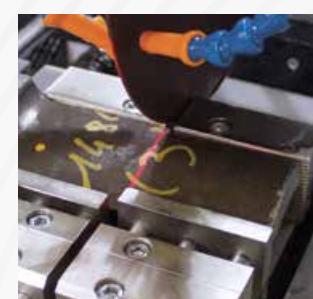
60 CT200 20



60 M0310 00



Quick positioning with joysticks.
Touch screen with graphical interface.



Positioning laser.

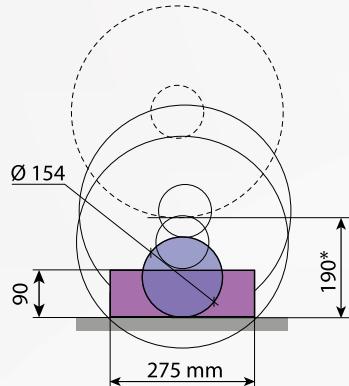


CUTLAM[®] 4.0

High-capacity automatic cutting machine

Theoretical cutting capacity - Ø 400 mm disc

*space under disc



CUTTING MACHINES

MADE IN FRANCE

CUTLAM[®] 4.0

The CUTLAM[®] 4.0 is designed especially for manufacturing companies with high standards who are looking for high-quality and reliable equipment for heavy-duty use with a great cutting capacity.

The CUTLAM[®] 4.0 is a pedestal-mounted single-block machine with an integrated recirculation/decanter tank. The wheel's vertical descent can be controlled automatically (oleo pneumatic) or manually using the joystick. The maximum cutting descent is 240 mm.

Adapted for intensive use on heavy components, the CUTLAM[®] 4.0 is fitted with a powerful 5.5 kW motor.

The wheel's speed is adjustable from 1000 to 4000 rpm, the feed speed is adjustable. 2 cutting modes are available: sequential automatic with adjustable frequency or continuous.

An end of cycle sensor shuts off the machine and automatically raises the wheel after each operation.

The controls are easy to use and intuitive: they are centralized on the 5.7" arm-mounted touch-screen.

The cover opening clears 3 sides, guaranteeing easy loading of heavy or bulky parts. Removable gates to the left and right enable you to cut long bars.

The wide cast-iron clamp bench has 6 T-longitudinal grooves and 5 transversal grooves, and as an optional extra may be made mobile along the X and the Y axes.

The multi-point hose over the wheel and part ensures optimum cooling for high-quality cuts and consistent results.

In the standard configuration, the work area is illuminated by a adjustable spotlight, and an external shower head is provided for cleaning the cutting area.

In order to optimise your equipment according to your needs, a variety of accessories and optional extras are available.



CUTTING MACHINES



Transversal table X axis 120 mm stroke

Technical Data	CUTLAM® 4.0
Cut-off wheel Ø	300 to 400 mm
Shaft Ø	25,4 mm
Standard flanges Ø	100 mm
Max cutting capacity	Ø 154 mm or 145 x 160 mm or 90 x 275 mm (with a Ø 400 mm disc) + right and left opening for long parts
Passage under the disc	190 mm (with a Ø 400 mm disc)
Vertical movement	Manual
Lubrification	Recirculation system, 140 litres, on casters Cleaning system integrated, with a shower head outside of the cutting chamber
Motor power	5,5 kW
Rotational speed	Variable, from 1000 to 4000 rpm
Arm speed advance	5 to 200 mm/min during cutting
Table	Double grooved treated cast iron, 400 x 400 mm
Type of groove	T groove 12 mm (6 longitudinal, 5 transversal)
Lightening	LED
Protection	Cover with locking system
Body	Steel coated with epoxy paint
Pneumatic feeding compressed air	6 bars filtered 5 µ
Electrical power	6 kW cumulative
Electrical consumption	24 Ah
Voltage	400 Volts - 50 Hz (three-phase)
Dim. W x H x D	818 (+ 300 mm with control panel) x 1802 x 1280 mm
Weight	650 kg
Reference	60 CT40A 00



Option

Positioning laser 60 CT403 00



Accessories

Universal clamping KOPAL 61	60 081282 20
Lift for KOPAL 61	60 081282 40
Long cam for KOPAL 61	60 00285 90
Independent double vice (right and left) with fast tightening system	60 CT400 20
Double vice with fast tightening system (left and right side of the wheel)	60 CT200 20
Double vice with screw tightening system (left and right side of the wheel)	60 CT200 40



60 081282 40



60 00285 90



60 081282 20



60 CT400 20



60 CT200 20



60 CT200 40

Machine variations

Table with manual transversal displacement (X axis) of a 120 mm stroke	60 CT40A 10
Table with manual longitudinal displacement (Y axis) of a 180 mm stroke	60 CT40A 20



CUTTING MACHINES

MADE IN FRANCE

CUTLAM®5.0

The CUTLAM®5.0 is a pedestal-mounted machine with an integrated recirculation/decanter tank. It represents the ultimate equipment in terms of high-capacity programmable automatic cutting machines. Power and advanced control of the cutting steps will guarantee first class efficiency and productivity.

Wheel and table movements

Fitted in standard with a Ø 355 mm wheel, which produces an automatic vertical and longitudinal movement.

The automatic transverse movement is carried out by an optional cross-feed table.

Controls

Programming is performed via a large touch screen with a graphical interface that ensures you an intuitive use. Cutting parameters are continuously visible on the screen. Fast positioning of the cutting point is provided by the use of a joystick.

The internal memory allows you to store 300 programs that can be transferred via USB.

Easy programming

Depending on the location of the sample on the table, and on its dimensions, the screen will indicate the various necessary and possible moves in order to complete the cut. This data can then be saved.

All cutting modes are possible

- Automatic or manual cutting.
- Continuous automatic cutting with ingenious feed speed control:

The feed speed is pre-set, and will be automatically reduced if the load on the cutting wheel increases. The pre-set speed returns when the load on the screen decreases.

It improves the quality of the cut by limiting the thermal damages over the samples.

It is suitable for irregular samples and/or material with heterogeneous hardness.

It prevents the wheel from breaking in case of overload.

It allows you to work at maximum speed without any risk of damage.

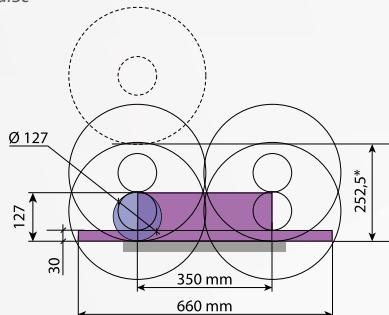
- Automatic sequential cutting for maximum cooling.
- Plunge cutting, horizontal feed cutting and oscillating cutting.
- Repetitive parallel cutting.

**CUTLAM®5.0**

High-capacity 2 or 3 axes programmable automatic cutting machine

Theoretical cutting capacity - Ø 355 mm disc

*space under disc



A spacious cutting chamber: W 408 x D 422 mm
with openings on both right and left sides for the cutting of long samples.



Work area lit
by LED strip

CUTTING MACHINES

Equipment

A high-capacity, independent cooling/recirculation system (140 litres) is located under the machine. The multipoint nozzles insure excellent cooling of the sample and the cutting wheel even during intensive use.



Fast cleaning is made possible thanks to an exterior shower head and a carefully designed cutting chamber.

The wide cutting table: W 408 x D 422 mm is composed of two independent parts. 4 longitudinal grooves and 6 transversal grooves that allow to fix all kind of clamping systems available as options or on the market.

Technical Data	CUTLAM®5.0
Cut-off wheel Ø	355 mm (400 mm optional)
Shaft Ø	25,4 mm
Standard flanges Ø	100 mm
Max cutting capacity	Ø 127 mm (with Ø 355 mm disc) + opening on left and right hand side for long parts
Passage under the disc	252,5 mm (Ø 355 mm disc)
Vertical movement	Z axis stroke 350 mm, speed from 0,1 to 25 mm/sec, speed advanced 50 mm/sec
Longitudinal movement	Y axis stroke 350 mm speed from 0,1 to 25 mm/sec advanced speed 50 mm/sec
Transversal movement	X axis stroke 120 mm (optional)
Lubrification	Recirculation system, 140 litres, on casters Cleaning system integrated, with a shower head outside of the cutting chamber
Motor power	5,5 kW
Rotational speed	Variable, from 1000 to 4000 rpm
Table	Treated aluminium and interchangeable stainless steel plate, W 408 x D 422 mm
Type of groove	T-slots 12 mm (4 longitudinal, 6 transversal)
Lightening	LED strip
Protection	Cover with locking system
Body	Steel coated with epoxy paint
Pneumatic feeding	6 bars filtered 5 µ
Electrical power	12 kW combined
Electrical consumption	32 Ah
Voltage	400 Volts - 50 Hz (three-phase + ground)
Dim. W x H x D	877 (+ 600 mm with control panel) x 1727 x 1800 mm (H. cover open 2272 mm)
Weight	750 kg
Reference	60 CT50A 00



Options

Machine for cut-off wheel Ø 400 mm	60 CT503 00
Positioning laser	60 CT506 00



Accessories

Universal clamping KOPAL 61	60 081282 20
Lift for KOPAL 61	60 081282 40
Long cam for KOPAL 61	60 00285 90
Independent double vice (right and left) with fast tightening system	60 CT400 20
Double vice with fast tightening system (left and right side of the wheel)	60 CT200 20
Double vice with screw tightening system (left and right side of the wheel)	60 CT200 40



Machine variations

Motorised cross-feed table (X axis) stroke 120 mm, accuracy 0,05 mm	60 CT50A 10
Motorised cross-feed table (X axis) stroke 380 mm, accuracy 0,05 mm	60 CT50A100

ACCESSORIES FOR CUTTING MACHINES

Vices, clamping and accessories
for CUTLAM® micro range

Designation	CUTLAM® micro			Ref.
	1.1	2.0	3.0	
 Multi-screw sample holder for irregular parts	✓	✓		60 CTM03 50
 Screw vice holder Ø 12 mm max	✓	✓		60 CTM03 30
 Screw V-shape sample holder Ø 24 mm max	✓	✓		60 CTM03 20
 Screw double vice sample holder Ø 12 mm max	✓	✓		60 CTM03 40
 Screw cylindrical sample holder Ø 12 mm to 50 mm	✓	✓		60 CTM03 10
 Small vice with screw tightening system Stroke: 15 mm Jaws: W 15 x H 6,3 mm	✓	✓		60 CTM02 10
 Medium vice with screw tightening system Stroke: 24 mm Jaws: W 25 x H 10 mm	✓			60 CTM02110
 Universal clamping KOPAL 54		✓		60 CTM36 00

ACCESSORIES FOR CUTTING MACHINES

Designation	CUTLAM®micro			Ref.
	1.1	2.0	3.0	
Transversal table (X movement) to execute parallel cuts Manual movement with a roller Stroke: 55 mm Precision: 0,01 mm. Can receive right vice reference 60 CTM32 00.		✓		60 CTM31 00
Automatic transversal table (X movement) Stroke: 50 mm Precision: 0,01 mm		✓		60 CTM34 00
Small right vice with fast tightening system Stroke: 53 mm Jaws: W 47 x H 32 mm		✓		60 CTM32 00
Small left vice with fast tightening system Stroke: 53 mm Jaws: W 47 x H 32 mm		✓		60 CTM33 00
Steel adaptor rings by 5 units Ø 22 x 12,7 mm		✓		60 00608 90
PVC adaptor rings by 5 units Ø 22 x 12,7 mm		✓		60 00609 90
Steel adaptor rings by 5 units Ø 25,4 x 12,7 mm	✓	✓		60 00369 90
PVC adaptor rings by 5 units Ø 25,4 x 12,7 mm	✓	✓		60 00370 90
Set of flanges Ø 35 mm for cut-off wheels Ø 75 to 100 mm	✓	✓	✓	60 CTM01 10
Set of flanges Ø 50 mm for cut-off wheels Ø 125 à 150 mm	✓	✓	✓	60 CTM01 20
Set of flanges Ø 75 mm for cut-off wheels until Ø 230 mm	✓	✓		60 CTM01 30



Vices, clamping and accessories for CUTLAM® range

Designation	CUTLAM®				Ref.
	1.1	3.1	4.0	5.0	
Double vice with fast tightening system (left and right side of the wheel) 2 x 2 elements vice, without sole, to obtain maximal length clamping. Jaws: W 80 x H 45 mm T-slot 12 mm screw included. Left and right levers.	✓	✓	✓	✓	60 CT200 20
Double vice with fast tightening system (left and right side of the wheel) 2 x 2 element vice, without sole, to obtain maximal length clamping. Jaws: W 80 x H 70 mm T-slot 12 mm screw included. Left and right levers.		✓	✓		60 CT400 20
Double vice with screw tightening system (left and right side of the wheel) 2 x 2 element vice, without sole, to obtain maximal length clamping. Jaws: W 80 x H 45 mm T-slot 12 mm screw included. Left and right levers.	✓	✓	✓	✓	60 CT200 40
Universal clamping KOPAL 61	✓	✓	✓	✓	60 081282 20
Lift for KOPAL 61	✓	✓	✓	✓	60 081282 40
Long cam for KOPAL 61	✓	✓	✓	✓	60 00285 90

ACCESSORIES FOR CUTTING MACHINES

Designation	CUTLAM®				Ref.
	1.1	3.1	4.0	5.0	
Transversal table (X movement) to perform parallel cuts Manual movement with roller. Stroke: 100 mm Display accuracy: 0,01 mm Can receive the right vice reference 60 CT200 20 or 60 CT200 40.	✓				60 CT205 20
Specific single quick-clamping vices for table 60 CT205 20, right-hand lever. Jaws: W 80 x H 45 mm	✓				60 CT206 20
Transversal table (X movement) Manual movement with roller. Stroke: 150 mm Display accuracy: 0,01 mm Can receive right vice reference 60 CT200 20 or 60 CT200 40	✓				60 CT31A 20
Automatic transversal table (X movement) Stroke: 150 mm	✓				60 CT31A 30
Specific vice with fast tightening system for transversal table 60 CT31A 20 and 60 CT31A 30. Left lever.	✓				60 CT306 20
Steel adaptor rings by 5 units Ø 32 x 25,4 mm	✓	✓	✓	✓	60 00373 90
PVC adaptor rings by 5 units Ø 32 x 25,4 mm	✓	✓	✓	✓	60 00374 90





Oil mist extraction device A1

The LAM PLAN vacuuming system extracts the "polluted" air inside the cutting chamber of your cutting machine.

A special multilayer filter will stop the smallest polluting particles, thus preventing their dispersion into the atmosphere. The cutting fluid, in the liquid state, is returned to the cutting machine recirculation tank to be reused. (An evacuation is provided for this purpose on the vacuuming system).

A cartridge post-filter, located above the suction system, ensures a high filtration level, up to 99.97%.

An adapter part (LAM PLAN code 60CT20820) is provided to adapt the suction hose to the canopy of the LAM PLAN cutting machine.

The vacuuming system is mounted on a trolley with wheels, allowing an easy positioning.

A drain valve, located in the trolley, collects the condensate.

Technical features	Oil mist extraction device A1
Max flow air	245 m ³ /hour
Noise level	61 dBA
Rotation	2810 rpm
Height	1180 mm
Dimensions on floor	460 mm x 460 mm
Supplied with	2 meters of hose Ø 80 mm
Power supply	400V 3 phases - 50 Hz
Weight of the system	33 kg

Designation	Qty.	Ref.
A1	1	60 CT204 00



CUTLAM® 1.1



CUTLAM® 3.1

ACCESSORIES FOR CUTTING MACHINES

Cloth filters

Characteristic	Qty.	Ref.
100 µm fabric filter for decantation tank CUTLAM Micro®2.0	1	60 00574 90
100 µm fabric filter for decantation tank CUTLAM®1.1 - 2.0 - 3.0 - Micro 3.0	1	60 00141 90
100 µm fabric filter for decantation tank CUTLAM®4.0 and 5.0	1	60 00576 90



Refractometer

The refractometer is a measuring device used to monitor the concentration of cutting fluid in cutting machines in order to guarantee the quality of cuts.

The values measured are in BRIX degrees.

Designation	Qty.	Ref.
Refractometer	1	60 CT900 10



Cutting fluid

723

LAM PLAN 723 cutting fluid is a synthetic, mineral oil-free, water-soluble coolant. This fluid provides excellent lubrication and optimum cooling to prevent damage to material micro-structures during cutting.

Cutting materials and machine parts are protected from corrosion thanks to this fluid. Does not foam. For optimum use, we recommend diluting this fluid to 5% in water, i.e. 3.6° BRIX to be measured with a refractometer. To ensure that the performance of this fluid remains constant, we recommend that you regularly check its concentration using a refractometer.

Properties	Type	Qty.	Ref.
Specialized cutting fluid : recommended for cutting titanium alloys and inconels.	723	5 litres	07 50723 50
		1 litre	07 50723 30



CUT-OFF WHEELS

Cut-off wheels Serie H EXCELLENCE

The Excellence cut-off wheels offer faster cuttings without heating.

These wheels can be used at high speed and assure an excellent quality without causing any damages on the material structure.

The quality of their function guarantees a greater life expectancy and limit the vibrations while cutting.

Available in three versions, the cut-off wheels H1, H2 and H4 will enable you to cut any metallic materials. In order to know what wheel is adequate to your need.

EXCELLENCE H1 (Al_2O_3)

Type	Dim. (mm)	Qty.	Ref.
Soft and medium hard ferrous alloys, case hardened steel alloys and chrome nickel based alloys (up to 550HV)	250 x 32 x 1,5	10	05 83011 40
	300 x 32 x 2	10	05 83011 50
	350 x 32 x 2,5	10	05 83011 60
	400 x 32 x 3	10	05 83011 70

EXCELLENCE H2 (Al_2O_3)

Type	Dim. (mm)	Qty.	Ref.
Tool steels and through hardened steels (up to 750HV)	250 x 32 x 1,5	10	05 83021 40
Stainless steel	300 x 32 x 2	10	05 83021 50
	350 x 32 x 2,5	10	05 83021 60
	400 x 32 x 3	10	05 83021 70

EXCELLENCE H3 (Al_2O_3)

Type	Dim. (mm)	Qty.	Ref.
Inconel	250 x 32 x 1,5	10	05 84041 40
	300 x 32 x 2	10	05 84041 50
	300 x 32 x 2,2	10	05 84041 60
	400 x 32 x 2,2	10	05 84041 70

CUT-OFF WHEELS

EXCELLENCE H4 (SIC)

Type	Dim. (mm)	Qty.	Ref.
Non-ferrous materials (aluminium alloys and titanium alloys)	250 x 32 x 1,5	10	05 85041 40
Cast iron	300 x 32 x 2	10	05 85041 50
	350 x 32 x 2,5	10	05 85041 60
	400 x 32 x 3	10	05 85041 70

-12% for a quantity of ≥ 50 wheels of the same reference

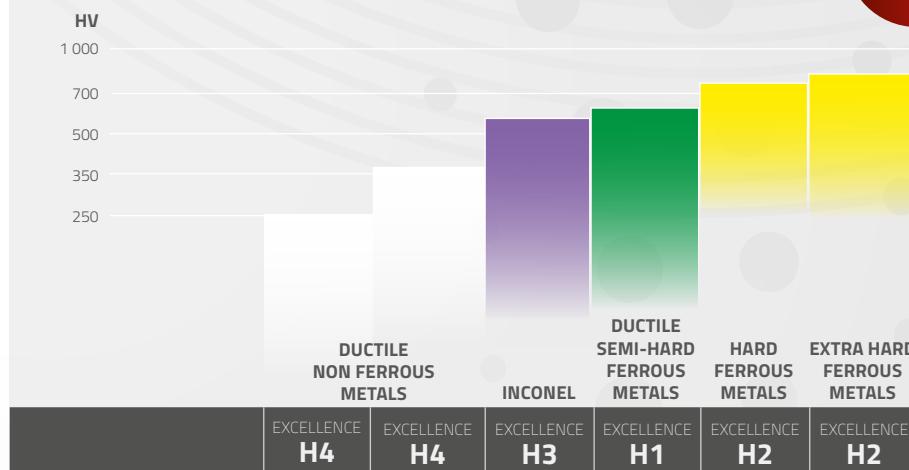
Please contact us for a diameter superior to 400 mm.



SERIE H EXCELLENCE

The chart below indicates the adequate wheels to choose according to the different materials to be cut.

GUIDANCE



Adaptor rings

Designation	\varnothing mm	Qty.	Ref.
Adaptor rings - PVC for cut-off wheels	25,4 / 22	5	60 00372 90
	32 / 25,4	5	60 00374 90
	22 / 12,7	5	60 00608 90
Adaptor rings - Steel for cut-off wheels	25,4 / 12,7	5	60 00369 90
	25,4 / 22	5	60 00371 90
	32 / 25,4	5	60 00373 90



Cut-off wheels PRECISION

Combine performance and versatility

Elaborated according to a very rigorous specification, these cut-off wheels offer the user a precision cutting thanks to the characteristics of its binder and the quality of its abrasives.

Usable on all cutting machines, these wheels give cut-off quality which allows reducing the duration of the downstream operations.

LAM PLAN precision cut-off wheels are available in 6 versions according to their hardness and the abrasive used in their composition. The visual colour code facilitates memory.



RED (AL_2O_3)

Type	Dim. (mm)	Qty.	Ref.
Soft – semi-hard steel	125 x 12,7 x 0,45	5	05 80016 90
Stainless steel	150 x 12,7 x 0,45	5	05 80016 10



T1 (AL_2O_3)

Type	Dim. (mm)	Qty.	Ref.
Soft – semi-hard steel	200 x 25,4 x 0,8	10	05 911P02000
Stainless steel < 50 HRC (505 HV)	250 x 32 x 1,2	10	05 911P42500
	300 x 32 x 1,5	10	05 911P43000



BLUE (AL_2O_3)

Type	Dim. (mm)	Qty.	Ref.
Treated metals- special steel	125 X 12,7 X 0,45	5	05 80013 90
Stainless steel	150 x 12,7 x 0,45	5	05 80013 10
	203 x 25,4 x 1	10	05 80013 20



T2 (AL_2O_3)

Type	Dim. (mm)	Qty.	Ref.
Treated metals- special steel	250 x 32 x 1,2	10	05 921P42500
< 65 HRC (860 HV)	300 x 32 x 1,5	10	05 921P43000



WHITE (SIC)

Type	Dim. (mm)	Qty.	Ref.
	125 x 12,7 x 0,45	5	05 80025 90
Non-ferrous materials (aluminium alloys and titanium alloys)	150 x 12,7 x 0,45	5	05 80025 10
	203 x 25,4 x 1	10	05 80025 20
Cast iron	250 x 32 x 1,5	10	05 80025 40
	305 x 32 x 1,5	10	05 80025 50

CUT-OFF WHEELS

Cut-off wheels PRECISION DIAMANT

Type	Dim. (mm)	Qty.	Ref.
All sintered materials	101,6 x 12,7 x 0,35	1	05 82129 10
Ceramic	125 x 12,7 x 0,38	1	05 82129 20
Cermet	152 x 12,7 x 0,5	1	05 82129 30
Carbide W and Sic	203 x 32 x 0,8	1	05 82130 30
Glass, silica, quartz	254 x 32 x 1	1	05 82335 40
High metal content materials	305 x 32 x 1,3	1	05 82335 50



Cut-off wheels PRECISION CBN

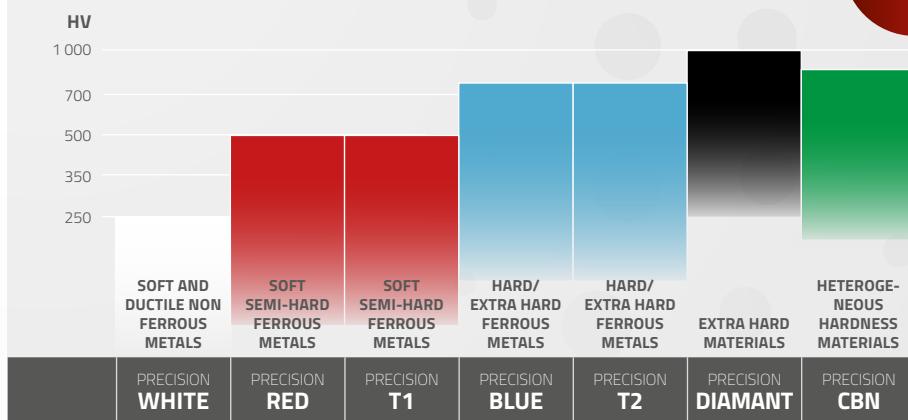
Type	Dim. (mm)	Qty.	Ref.
Heterogeneous hardness materials ex. : carbide coating on, steel substrate	152 x 12,7 x 0,50	1	05 82129130

-12% for a quantity of ≥ 50 wheels of the same reference

PRECISION

The table below will help you determine the right cut-off wheel choice for the material to be cut.

GUIDANCE



Adaptor rings

Type	Dim. (mm)	Qty.	Ref.
Adaptor ring - PVC for cut-off wheels	22 / 12,7	5	60 00609 90
	25,4 / 12,7	5	60 00370 90
	25,4 / 22	5	60 00372 90
	32 / 25,4	5	60 00374 90
Adaptor ring - Steel for cut-off wheels	22 / 12,7	5	60 00608 90
	25,4 / 12,7	5	60 00369 90
	25,4 / 22	5	60 00371 90
	32 / 25,4	5	60 00373 90



MOUNTING



PRESSLAM®

Easy-to-use, productive,
automatic hot mounting press

MOUNTING MACHINES

PRESSLAM® 1.1



The PRESSLAM® 1.1 is a multi-purpose, easy-to-use, automatic hot mounting press that will allow you to achieve high production levels. All parameters are accessible via a 5.7" colour touch screen. The graphic interface guides you intuitively through the different settings, which you can then store and reuse at will. It is also possible to transfer predefined hot mounting parameters via the machine's USB port. All phases are visible on the screen during the hot mounting cycle and can be modified at any time.

Each function can be adjusted separately and 4 pressurisation modes are available, along with a function reducing the amount of water used for cooling.



Continuous pressure



Progressive pressure



Pressure at max. temperature



Cooling pressure



Technical Data	PRESSLAM® 1.1
Capacity	Ø 25,4 to Ø 50 mm
Heating system	4 x 600 W around mould
Temperature range	20 to 200 °C
Heating cycle	0 to 30 min
Cooling cycle	0 to 30 min
Pressure	0 to 1,600 daN
Double mounting	yes – all diameters
Program back-up	256 with USB connexion
Pressurisation modes	4 different modes
Chamber closing	half turned cover with a safety chamber
Mould changing	Quick, without connectors- electric or hydraulic
Pre-heating mode	Yes (cleared after 6 min without manipulation)
Water saving	yes (up to 25%)
Voltage	230 V – 50 Hz single-phase
Pneumatic feed	6 to 10 bars
Dimensions W x H x D	250 x 680 x 470 mm
Weight	72 kg
Reference	60 PL110 00

Once put in service the PRESSLAM® 1.1 runs a pre-heating cycle that is cleared after 6 minutes without user intervention.

Access to mould is wide open for a sample positioning and filling facility. Quick and effortless, the locking/unlocking is realised by a cover and a ¼ turn locking lever.

Exclusive safety device

The expulsion of the sample after the mounting cycle is only possible when the safety cover is located in its intermediary position. This device creates a safety chamber in which the sample is protected in case of an eventual sticking situation.



Embedding allows limiting edge stresses during the polishing step.

This operation will also allow you:

- In manual polishing: to facilitate the holding of the sample
- In automatic polishing: to place several samples together in a sample holder under optimum tightening conditions

MOUNTING MACHINES

The PRESSLAM®1.1 is equipped with a main heating unit which contains the removable cylinder. The standard heating unit covers diameters from 25,4 to 40 mm and a specific element is available for a 50 mm diameter.

The mounting chamber can be changed without any tools, nor electric or hydraulic connections.

It only takes a few minutes to change the complete heating unit.

This is a compact, easy-to-use machine. It will enable you to increase your productivity while maintaining excellent coating quality.



Heating unit for mould assembly
Ø 25,4 mm (1"), 30 mm, 40 mm,
1"1/4 and 1"1/2, 50 mm and 2"

Spacer for double mounting

Accessories

Heating unit for Ø 25,4 mm (1"), 30, 40 mm, 1"1/4 and 1"1/2	60 PL2H1 00
Heating unit for Ø 50 mm and 2"	60 PL2H2 00
Assembly mould Ø 25,4 mm or 1"	60 PL1C1 00
Assembly mould Ø 30 mm	60 PL1C2 00
Assembly mould Ø 40 mm	60 PL1C4 00
Assembly mould Ø 50 mm	60 PL1C5 00
Assembly mould Ø 1"1/4	60 PL1C2 10
Assembly mould Ø 1"1/2	60 PL1C4 10
Assembly mould Ø 2"	60 PL1C5 10
Spacer Ø 25,4 mm or 1" for double mounting	60 PL2I1 10
Spacer Ø 30 mm for double mounting	60 PL2I2 00
Spacer Ø 40 mm for double mounting	60 PL2I4 00
Spacer Ø 50 mm for double mounting	60 PL2I5 00
Spacer Ø 1"1/4 for double mounting	60 PL2I2 10
Spacer Ø 1"1/2 for double mounting	60 PL2I4 10
Spacer Ø 2" for double mounting	60 PL2I5 10
Compressed air filtration kit	60 00375 90

Parameters recapitulation PRESSLAM®1.1 with LAM PLAN hot mounting resins.

Resine	Heating time (min)				Cooling time (min)				Pressure (daN)				Temperature (°C)				Pressure mode
	Ø 25	Ø 30	Ø 40	Ø 50	Ø 25	Ø 30	Ø 40	Ø 50	Ø 25	Ø 30	Ø 40	Ø 50	Ø 25	Ø 30	Ø 40	Ø 50	
Ø mould (mm)	Ø 25	Ø 30	Ø 40	Ø 50	Ø 25	Ø 30	Ø 40	Ø 50	Ø 25	Ø 30	Ø 40	Ø 50	Ø 25	Ø 30	Ø 40	Ø 50	
Phenolic (602, 622, 632, 642)	3.5	3.5	4	5,5	3	3	3	3.5	800	1000	1200	1400	170	170	170	170	
Epoxy (633, 634) Use the SOLILUB	4	5	5	6,5	4	4	4	4.5	800	1000	1200	1400	180	180	180	180	
Acrylic (616 & 616,2)	4,5	5	5,5	6,5	4	4	4	4,5	800	1000	1200	1400	170	170	170	170	
Copper (604,3)	3	3	3,5	5,5	3	3	3	3,5	800	1000	1200	1400	170	170	170	170	
Organic (701)	3,5	4	6,5	10,5	3	3	3	3	800	1000	1200	1400	180	180	180	180	
Phenofree Use the SOLILUB	3	3	4	5,5	3	3	3,5	3,5	1000	1000	1200	1400	175	175	175	175	
Graphite (617)	3	3	3,5	4,5	3	3	3	3,5	800	1000	1200	1400	170	170	170	170	

LEGEND



Continuous pressure



Progressive pressure



Pressure
at max. temperature



Pressure
at cooling time

GUIDANCE



M.M. 808

For cold mounting metallographic samples under pressure



M.M. 818

Vacuum impregnation device

M.M.808

MADE IN FRANCE

M.M.808 creates a pressurized environment for polymerization to avoid bubbles in the mount without affecting the physical characteristics of the resin.

Although M.M.808 can be used with all cold mounting resins, it is particularly recommended for use with the 613 range of EPOXY RESINS and 609 ACRYLIC RESIN.

Advantage

By avoiding entrapped bubbles in transparent mounts, the visibility of the sample can be improved.

In all cold mounting resins, avoiding bubbles improve edge retention while grinding and polishing metallographic samples.

By avoiding entrapment of abrasives in bubbles, M.M.808 helps improve the polishing quality after mounting.

Additionally, using the M.M.808 unit for cold mounting eliminates the odors typical of cold mounting resins.

Technical Data	M.M.808
Pressure connection	3 to 10 bar
Nominal pressure	2 bar
Max. operating pressure	2,8 bar
Dimensions W x H x D	300 x 305 x 400 mm
Weight	8,6 kg
Inner diameter of lid opening	210 mm
Inner diameter base	225 mm
Pressure pot height to cover edge	190 mm
Reference	08 00808 20

M.M.818

Compact vacuum mounting unit for impregnation of porous materials and bubble-free mounting with 613 range epoxy resins. The M.M.818 has a high-capacity vacuum chamber 160 mm in diameter and is equipped with a resin distribution system. A vacuum gauge on the front panel allows the vacuum level to be monitored and the various vacuum cycles to be controlled manually.

Technical Data	M.M.818
Vacuum level	- 650 mm-Hg
Inner diameter base	160 mm
Useful height of vacuum tank	160 mm
Dimensions W x H x D	480 x 400 x 400 mm
Vacuum pump dimensions (W x H x D)	140 x 210 x 240 mm
Resin feed tubes	25
Power supply	230 V - 50 Hz single phase
Weight	10,10 kg
Weight vacuum pump	7,25 kg
Reference	08 00818 00

HOT MOUNTING RESINS

To respond to all metallographic control and research situations, LAM PLAN developed and tested a range of hot mounting resins. Each resin is characterised by a very specific physical and chemical properties.

Organic resin

NEW

The new ORGANIC 701 hot mounting resin completes our list of consumables for the preparation of metallographic samples.

In the dynamic field of materials science and metallography, developing environmental-friendly solutions without compromising performance is a constant challenge. That's why we have added ORGANIC 701 to our range.

This resin offers a range of benefits, including dust-free pellet form, sustainable raw materials from responsible sources, optimum hardness of 85 Shore D and low shrinkage. ORGANIC 701 is an excellent alternative to conventional phenolic or epoxy resins.

Characteristics	Qty.	Ref.
ORGANIC 701		
Orange granules, polyester base with wood filler.	2,0 kg	06 00701 20
Low shrinkage, hard.	10 kg	06 00701 10



Dust-free

Outstanding Performance

Organic origin

PHENOFREE resins

Phenol-free and formaldehyde-free thermosetting mounting resin

In line with its ecological commitment, LAM PLAN proposes on the market the first effective alternative to phenol metallographic mounting resins which are liable to release phenol (and/or formaldehyde) during baking.

The PHENOFREE mounting is intended for the technical mounting of all types of materials for material examinations or edge examinations. It smartly replaces the traditional phenol mounting resins with the same hardness and less shrinkage than a phenol mounting resins.

The range of PHENOFREE resins includes 3 coloured resins (grey, white and red) to make the identification of your metallographic samples easier. They are particularly adapted for the polishing of hard materials. The white PHENOFREE resin may prove to be in some cases a good alternative to the use of epoxy resins.

Characteristics	Qty. in kg	Ref.
PHENOFREE 1		
Grey composite powder	2,5	06 PF010 20
Polyvalent, hard	10	06 PF010 10
	25	06 PF010 50
PHENOFREE 2		
Red composite powder	2,5	06 PF020 20
Polyvalent, very hard	10	06 PF020 10
	25	06 PF020 50
PHENOFREE 3		
White composite powder	2,5	06 PF030 20
Polyvalent, extra hard	10	06 PF030 10
	25	06 PF030 50

Require the unmoulding agent SOLILUB.



Phenol-free

Formaldehyde-free

Epoxy resins

The black epoxy mounting resin is filled with glass fibres with high mineral loads. It is ideal for mountings intended for edge examinations of hard to extra hard materials thanks to its resistance to abrasion, important hardness and absence of shrinkage. The 634 is a fine powder epoxy resin, used for examination of edged samples and complex parts.



Characteristics	Qty.	Ref.
633		
Black epoxy pellet, glass-fibre reinforced	2,5 kg	06 00633 20
Edges examinations	10 kg	06 00633 10
Extra hardness - No shrinkage		
634		
Black epoxy powder	2,5 kg	06 00634 20
Edge examinations on complex samples		
High hardness - No shrinkage		

Acrylic resins

The acrylic resin 616 is perfectly transparent and adapted to most materials. Mainly used to view the evolution of the grinding of the sample.

Perfectly transparent with no cotton effect, the acrylic resin 616.2 is resistant to alcohol, and therefore ideal for work with alcohol-based polishing products or requiring a cleaning phase with ethanol, isopropyl alcohol or other.



Characteristics	Qty.	Ref.
616		
Transparent acrylic powder.	2,5 kg	06 00616 20
Visualising the sample during and after the polishing. All materials.	10 kg	06 00616 10
616.2		
Transparent acrylic powder.	2,5 kg	06 06162 20
Visualising the sample during and after the polishing. Alcohol resistant.	10 kg	06 06162 10

Copper resin

Conductive resin suitable for electrolytic polishing and SEM examination. Based on pure copper of very homogeneous consistency, the conductivity of your mounts is optimised. The use of ultra-pure materials eliminates the risk of analysis errors.



Characteristics	Qty.	Ref.
604.4		
Resinoid copper powder For electrolytic polishing.	2 kg	06 00604 40

Graphite resin

Conductive phenolic mounting resin loaded with graphite (without copper and without metals or alloys) for SEM and TEM examinations.



Characteristics	Qty.	Ref.
617		
Conductive black phenolic powder (graphite) For SEM examination	1,5 kg	06 00617 00

HOT MOUNTING RESINS

Advice on the use of LAM PLAN hot mounting resins

Material	Resin	Characteristics	Volumetric shrinkage	Color	Hardness Shore D	Polymerisation time*
Organic	701	Organic origin	Low	Orange	85	3,5 to 10,5 min
Composite	PHENOFREE 1 PHENOFREE 2 PHENOFREE 3	Phenol & formaldehyde Free	Low	Grey Red White	90	10 to 15 min
Epoxy	633	Extra hard	Very low	Black	91	5 to 10 min
Epoxy	634	Extra hard (powder)	Very low	Black	92	5 to 10 min
Acrylic	616	Excellent transparency	Low	Transparent	93	5 to 10 min
Acrylic	616.2	Transparent and alcohol resist	Low	Transparent	87	5 to 10 min
Copper	604.4	High conductivity	Low	Coppered	88	10 min
Graphite	617	Conductable	Low	Black	93	5 to 10 min

* Depending of the machine's characteristics

Diagnosis and guidance for hot mounting resins

IMPORTANT: Before to begin any mounting process, the grease needs to be removed from the samples in order for the resin to adhere to the contours of the parts. Check if any burrs were committed in the cutting process. If necessary, deburr the sample's edges with an abrasive paper.

GUIDANCE

Noticed faults	Cause	Solution
Primer cracks on the sample's edges	Oversized Coated part according to the chosen mounting mould	Reduce the size of the sample or increase the size of the mounting mould
Shrinkage	Inadequate mounting resins Insufficient heating time Inadequate pressure mode and insufficient pressure	Choose a resin offering less shrinkage Increase the temperature during the heating time - Use the machine mode adjusting the temperature curve - Increase the mounting pressure
Resins grains visible on the faces of the sample	Insufficient pressure Insufficient heating time	Increase the pressure during the mounting cycle Increase the heating time
"Smoke" visible in a transparent mounting	Wrong pressure choice	Choose a pressurisation only during the cooling cycle
	Too much resin according to the size of the sample	Limit the quantity of resin inserted in the mould or reduce the size of the mould
	Insufficient heating time	Increase the heating time
Mounting stuck in the mould	Insufficient "solilub" powder	Drop a sufficient amount of "solilub" on the machine's superior and inferior pistons
	Insufficient heating time	Increase the heating time
Bulge on top of the mounting	Insufficient cooling time	Increase the cooling time

COLD MOUNTING RESINS

HEV acrylic resins

FLASH 611 NEW

The new FLASH 611 resin is a cold mounting resin designed to improve the efficiency of metallographic preparation. With an ultra-fast cure time of less than 2 minutes and controlled exothermic reactions activated by HEV light, it offers exceptional performance combined with unrivalled ease of use. Its impressive speed and reliability make FLASH 611 resin an essential choice for high-throughput laboratories and the most demanding workflows. Designed for versatility, it is suitable for a wide range of materials: metals, plastics, ceramics and composites. As well as speed, its strengths include ease of use, absence of mixing minimise waste and bubbles. Furthermore, this resin is odorless.



Cures in 90 seconds
Single component



Characteristics	Qty.	Ref.
Clear acrylic One component Fast setting 90 sec. Maximum exothermic temperature: 95°	Liquid resin 1000 g	06 01611 00

601.2

Characteristics	Qty.	Ref.
Transparent Acrylic Monocomponent Maximum exothermic temperature: 95°	KIT Liquid Resin 1000 ml + varnish 100 ml set	KIT06 00601 00
	Resin 1000 ml	06 01601 00
	Varnish 100 ml	06 01602 00

Methylmethacrylate resins

605

Versatile, it is adapted to the majority of common materials for the fast mounting standard sample. It is possible to change the viscosity by modifying the proportion of the mixture: liquid + powder. Resistant to the principal acids used in laboratories.

Solvent free and CMR-free



Characteristics	Qty.	Ref.
Green methylmethacrylate 2 components (powder and liquid) Maximum exothermic temperature: 108°	KIT Powder 1 kg + catalyst 500 ml	KIT06 00605 00
	KIT Powder 10 kg + catalyst 10 x 500 ml	KIT06 00605 10
	Catalyst 500 ml	06 00615 00
	Powder 1 kg	06 01605 00
	Powder 10 kg	06 00605 20

609

A perfectly transparent resin used for precision parts, notably those of the electrical or electronics industry. It renders the sample perfectly visible, which allows analysing precise points. It must be used with the pneumatic device M.M.808 to obtain an optimum transparency.

Solvent free and CMR-free



Characteristics	Qty.	Ref.
Methyl-methacrylate Transparent 2 components (powder + liquid) Maximum exothermic temperature: 99°	KIT Powder 1 kg + catalyst 500 ml	KIT06 00609 00
	KIT Powder 10 kg + catalyst 10 x 500 ml	KIT06 00609 10
	Catalyst 500 ml	06 00619 00
	Powder 1 kg	06 00609 20
	Powder 10 kg	06 01609 10

* Packaging related to transport restrictions

COLD MOUNTING RESINS

665

Cold setting resin for sample recovery. Mounting is a step in metallographic sample preparation which enables samples to be ground and polished more ergonomically. Embedding the sample in a resin is usually irreversible and recovering the sample (if necessary) after embedding proves almost impossible.

Resin 665 is a cold mounting resin that has the unique ability to dissolve in acetone. This ability is transformed into a sustainable functionality to recover metallographic specimens after mounting. After metallographic processing of costly materials such as noble metals, it is often important from an economic and technical perspective to recover the samples from the mounting resin.

Characteristics	Qty.	Ref.
Modified green polyester 2 components (Powder + Liquid)	KIT Powder 1 kg + catalyst 500 ml	KIT06 00665 00
Maximum exothermic temperature: 112°	Catalyst 500 ml	06 02665 00
	Powder 1 kg	06 01665 00

Epoxy resins NEW

613 resins are hard, transparent, two-component epoxy resins used to produce high-quality technical metallographic coatings at room temperature. 613 resins have very low to zero shrinkage, excellent adhesion to all kinds of materials and very good chemical resistance. With their low viscosity, 613 resins are used to coat metallographic samples with complex shapes, porosities or delicate technical coatings. They can be used for impregnation with the M.M.818 vacuum mounting unit. De-bubbling and shrinkage can also be improved by using the M.M.808 embedding device. Resins 613 may require the use of WAXLAM release agent code 060068400.

Solvent free and CMR-free

613 - Impregnation compatible

Characteristics	Qty.	Ref.
Transparent epoxy Bi-component (2 liquids)	KIT Liquid resin 1000 ml + hardener 500 ml	06 00613 00
Maximum exothermic temperature: 50°	Liquid resin 1000 ml	06 02613 00
	Resin hardener 500 ml	06 01613 00



613F - Rapid setting

Characteristics	Qty.	Ref.
Transparent epoxy Bi-component (2 liquids)	KIT Liquid resin 1000 ml + hardener 500 ml	06 00613F 00
Maximum exothermic temperature: 140°	Liquid resin 1000 ml	06 02613F 00
	Resin hardener 500 ml	06 01613F 00



613LT - Low temperature

Characteristics	Qty.	Ref.
Transparent epoxy Bi-component (2 liquids)	KIT Liquid resin 1000 ml + hardener 500 ml	06 00613LT 00
Maximum exothermic temperature: 27°	Liquid resin 1000 ml	06 02613LT 00
	Resin hardener 500 ml	06 01613LT 00



Low temperature

Polyester resin

607



The Resin 607 is a three-component resin based on modified polyester. This fast curing resin adheres perfectly to metal surfaces and its mechanical characteristics make it particularly effective on very hard materials. Its very low shrinkage allows edge examinations on metallographic samples. It is resistant to the main acids and bases used in laboratories.

Characteristics	Qty.	Ref.
Modified white polyester 3 components Maximum exothermic temperature: 122°	Resin kit: catalyst 500 ml + hardener 250 ml + powder 750 g	06 00607 00
	Catalyst 500 ml	06 00607 10
	Hardener 250 ml	06 00607 20
	Powder 750 g	06 00607 30

Technical characteristics of LAM PLAN cold mounting resins

Material	Resin	Characteristics	Volumetrical shrinkage	T°*	Hardness	Color	Polymerisation
UV acrylic	FLASH 611	Single-component, fluid, rapid setting	Very low	95°C	88 Shore D	Transparent amber	90 sec. in the M.M.868
	601.2	Liquid monocomponent Low heating	Very low	95°C	n.c.	Transparent	< 20 min in the M.M.866 + 10 min for the varnish
Epoxy	613	Smooth and without shrinkage	Very low to nil when used with M.M.808 pressure device	50°C	85 Shore D	Transparent and colourless	10 hours
	613F	Fast curing excellent adhesion	Very low to nil when used with M.M.808 pressure device	140°C	85 Shore D	Transparent with slight amber tone	2 to 3 hours
Methyl methacrylate	613LT	Without temperature	None	27°C	85 Shore D	Transparent and colourless	24 hours
	605	Versatility	1 %	108°C	90	Green	< 10 min
Polyester	609	Excellent transparency if used with pressure device M.M.808	1 %	99°C	88	Transparent = colourless + 5 colours (series Plastichrome)	< 10 min
	665	Soluble resin	Correct	112°C	n.c.	Green	< 15 min
Polyester	607	Hardness	Very Low (< 3 %)	122°C	89	Beige	< 15 min

* Peak exothermic temperatures during polymerisation for a 40 g sample of resin at 20°C

Procedure for cold mounting

Keep the thin samples on the slice. Mix the resin components in the indicated proportions. Mix gently to avoid creating air bubbles. Pour the resin into the mould to the desired level and allow to cure in the open air or in an M.M.808 pressure vessel to remove any bubbles or pores. To limit heating and shrinkage, fill the mould in successive layers.

Resin	Blending proportions
611	1 liquid 90 seconds of polymerisation in the MM.868 device
601.2	1 liquid + 1 varnish. Apply the varnish on top of the coating 20 minutes after polymerisation in the M.M.866 device
613	2 parts of resin to 1 part of hardener
605	2 volumes of powder for 1 volume of liquid
609	2 volumes of powder for 1 volume of liquid
665	2 volumes of powder for 1 volume of liquid
607	2 volumes of catalyst and 1 volume of hardener

GUIDANCE

GUIDANCE

ACCESSORIES

Polymerisation lamps

M.M.866

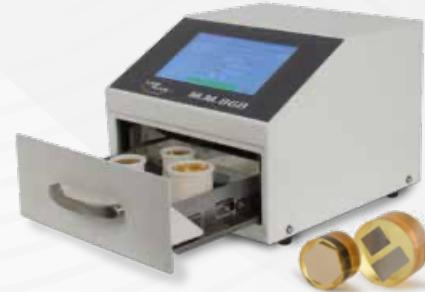
The blue light polymerisation device enables you to speed up the polymerisation process of the 601.2 resin. (20 minutes)

Designation	Characteristics	Ref.
Blue light mounting device	Solar energy collector for light-curing resins. Equipped with a timer (3 positions): 5 min. 10 min. and continual.	08 00866 10

M.M.868 NEW

Compact, robust HEV blue light curing unit. Combination of wavelengths from 395 to 450 nm, perfectly suited to all HEV acrylic resins, particularly FLASH 611.

- Drawer chamber with reflectors for even illumination,
- Capacity for 6 Ø 40 mm samples (= one sample holder),
- Ventilation cooling system,
- Intuitive touch screen, customisable settings.



Designation	Characteristics	Ref.
Rapid mounting device with blue light	Programmable insulator for rapid curing of resins using blue light.	08 00868 10

Moulds with removal base

Mainly used with the transparent mounting resins (601.2, 609, & 613).

Type	Qty.	Dim. (mm)	Ref.
681	5	25	06 00681 10
	5	30	06 00681 20
	5	32	06 00681 30
	5	40	06 00681 40



Flexible rectangular cold mounting moulds

Specifically, for cold mounting resin, adapted to complex and nonstandard shapes, many dimensions available, made of a flexible material to facilitate mould removal (Not compatible for EPOXY resins).

Type	Qty.	Dim. (mm)	Ref.
FLEXIBLE 670	5	70 x 30 x 40	06 00670 10
	5	100 x 42 x 30	06 00670 20
	5	120 x 50 x 30	06 00670 30
	5	100 x 70 x 30	06 00670 40
Flexible 670 4 pieces set	1	70 x 30 x 40	
	1	100 x 42 x 30	06 00670 00
	1	120 x 50 x 30	
	1	100 x 70 x 30	
Flexible moulds	1	150 x 120 x 30	06 00670 60
	1	120 x 100 x 30	06 00670 70
	1	90 x 40 x 40	06 00670 21
	1	D100	06 00670 25



Any other dimensions on request.

Flexible cylindrical cold mounting moulds

600 SERIES



Available in all standard diameters for central and individual pressure sample holders, made of a flexible material to facilitate mould removal.
(Not compatible with EPOXY resins, prefer moulds with removable bottoms).

Type	Qty.	Dim. (mm)	Ref.
Flexible 625	5	Ø 25	06 00625 00
Flexible 630	5	Ø 30	06 00630 00
Flexible 632	5	Ø 32	06 00632 00
Flexible 640	5	Ø 40	06 00640 00
Flexible 650	5	Ø 50	06 00650 00
Flexible 660	5	Ø 60	06 00660 00



Universal sample-holders mould

SERIE 610

The LAM PLAN universal sample-holder is a smart and economical system which combines the functions of both mould and sample-holder for cold mounting processes using any kind of cold liquid resin.

See details page **ACCESSORIES FOR POLISHING MACHINES**.



Cups and spatulas

Paper cups and wooden spatulas to mix cold mounting resins.

Characteristics	Qty.	Capacity	Ref.
Paper cups	200	200 ml	06 00696 00
Set: cups and spatulas	400 cups 400 spatulas		06 00698 00

Micro engraver

To mark and identify samples.
Motor + generator, very light and easy to handle.



M.M.886

Characteristics	Ref.
Speed 0-20 000 rpm Clamping jaw: Ø 1,58 mm - Ø 2,35 mm - Ø 3,175 mm	10 88630 00

ACCESSORIES

Charge element for resin

The Voluma spheres are ceramic balls used as sole or base. They allow increasing the hardness of the mounting resins and decrease their shrinkage in order to reduce fallen edge effects. They are adapted to all types of hot and cold mounting resins; available in various colours to personalize samples..

VOLUMA SPHERE

Characteristics	Qty.	Ref.
White	250 cc	06 007SV 30



Dye

EPOCHROME POWDER

Fluorescent contrast dye to be mixed with clear mounting resins, highlights porosity and micro-cracks. Requires the use of filters on the microscope for optimal results. The wavelength at maximum absorbance is 438-440 nm. Mainly used with LAM PLAN 613 epoxy resins.

Characteristics	Qty.	Ref.
EPOCHROME powder dye	20 g pot	06 0EPCH 00



Unmoulding agents

SOLILUB

Recommended for PHENOFREE, 633 and 634 resins.

Characteristics	Qty.	Ref.
Anti-stick powder for hot mounting process	50 g pot	06 00683 00



WAXLAM NEW

Demolding wax for cold mounting process.

Recommended for 613 epoxy resins and moulds with removable bottoms.

Type	Qty.	Ref.
WAXLAM wax	20 g pot	06 00684 00



Blade-holders

For the vertical positioning of thin sections, to use of cold mounting resin.

Type	Qty.	Thickness (mm)	Ref.
Blade-holder series 690	100	1	06 00690 10
Blade-holder series 691	100	2	06 00690 20
Blade-holder series 692	100	3	06 00690 30

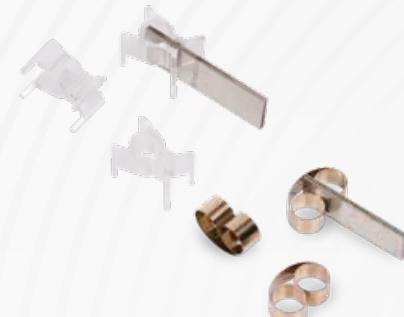


Holding clips

Characteristics	Qty.	Ref.
CLIPS TYPE 3		

Holding plastic, raised clips to use with cold mounting resin.

100 06 00694 00



CLIPS TYPE 5

Holding clips type 5 metal clips to use with hot mounting resin.

100 06 00693 00

PREPOLISHING & POLISHING



PREPOLISHING MACHINE

RECTILAM® 2.0



When the prepolishing phase demands a high level of effectiveness and precision the RECTILAM®2.0 is the answer. This machine is particularly productive in the preparation of coated or raw samples by high speed prepolishing. Several parts can be installed on the central pressure sample holder. Large parts can also be treated individually.

The principle of high speed prepolishing on stone enables significant material removal and unrivalled flatness without rounding the edges.

The single block design and rigidity of the RECTILAM®2.0 avoids vibration which is detrimental to the surface condition. In order to ensure significant and even removal of material, a reconditioning system automatically follows each stage of polishing.

The prepolishing system and the sample holder are connected to the same mechanical arm which guarantees precision.

The RECTILAM®2.0 is supplied with an integral security hood. The assembly includes a closed-circuit lubricating filtration system integrated into the machine as well as a spray-tap for cleaning.



Prepolishing of large raw samples.



Prepolishing of coated samples, mounted on a central pressure sample holder.



Grinding and prepolishing are crucial steps in the preparation of a metallographic sample. It is the quality of these steps which will condition and optimise the rest of the process.

At the end of the prepolishing step, the sample's aspect must be uniform and regular without any alteration of the inherent flatness or the material.

PREPOLISHING MACHINE

The RECTILAM®2.0's unique feature is its 2 axis principle.

The Z axis deals with the motorised rise and fall of the reconditioning tool and the pressurisation of the sample carrier.

The R axis enables precise positioning of the sample holder in relation to the grinding wheel in order to make the most of the available abrasion surface.

During the start cycle the starting point of the sample/grinding wheel is automatic. The stock removal is continuously managed. The real-time display shows the operator if the rectification settings entered are appropriate.

All parameters are managed and clearly shown on the 5.7" touchscreen with graphic display.



Accessories

Grinding wheel Al_2O_3 - GRAIN 60 - Ø 355 mm

05 M0060 80

Grinding wheel SiC - GRAIN 150 - Ø 355 mm

05 M0150 80



05 M0060 80



05 M0150 80

The 5.7 inch touch screen



Technical data	RECTILAM®2.0
Grinding wheel diameter	Ø 356 mm
Control	By 5.7 inch touchscreen and joystick
Grinding wheel speed	1000 to 3000 tr/min.
Sample holder speed	20 to 150 tr/min.
Applied force	10 to 550 N
Sample holder size	Ø 210 mm max
Conditioning wheel specifications	Configurable pass depth and diamond feed rate
In cycle reconditioning mode	Automatic - customisable frequencies
Stock removal range	0,1 mm to 1 mm
Measurement precision	0,02 mm
Work zone lighting	Enclosed LED
Body	Powder-coated steel
Grinding wheel motor power	3,8 kW
Sample holder motor power	0,25 kW
Noise level	70 dB
Tension	400 V-50 Hz three-phase + neutral
Dimensions W x H x D	900 x 1620 x 1000 mm (H. cover open : 1850 mm)
Weight	450 kg
Reference	60 RL200 00



POLISHING MACHINES

MADE IN FRANCE

Intuitive control interface
on a 3.5' colour touch screen



SMARTLAM® 2.0

The most versatile manual
polishing machine

SMARTLAM® 2.0

SMARTLAM® 2.0 is a polisher that offers you a wide range of possibilities for both manual and semi-automatic polishing, controlled entirely by a colour touch screen with an intuitive interface. The internal memory can store 9 programmes, which can be exported via the USB port.

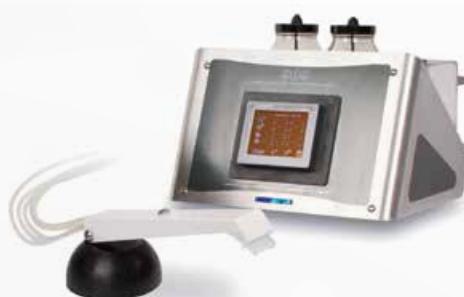
The power of the bidirectional rotation, variable-speed, constant-torque motor and the possibility to use plates with a diameter from 200 to 300 mm are exclusive assets that will allow you to face up to all situations encountered in metallographic research polishing.

Evolutive

Thanks to the mechanical pressure head option SPRINGLAM® and the central-pressure holders but also use of the M.M. 909 M programmable dosing unit slaved to the machine, you will have a very efficient, semi-automatic polishing system.



Easy cleaning: spin function, removable water inlet.



Technical data	SMARTLAM® 2.0
Plate Capacity	Ø 200 to 300 mm
Body	Steel, coated with epoxy paint
Bowl	Removable resin basin for easy cleaning
Controls	3,5" touch screen to control the machine: start/stop, timer, speed and direction of plate, water solenoid valve
Plate rotation speed	Variable from 20 to 650 rpm
Rotation	Clockwise / counter-clockwise
Programming	Loads 9 programs
Connection	Slave connector for dosing unit
Water inlet	Removable pipe with flow-rate adjustment and safety solenoid valve
Power max	0,75 kW
Voltage	230 V - 50 Hz single-phase
Dimensions W x H x D	450 x 300 x 650 mm
Weight	30 kg
Reference	60 SL200 00

909 M DOSING UNIT

M.M. 909 M dosing unit technical data

Distribution system	Distribution of 3 different liquids
Controls	Touch screen
Pumps	3 standard peristaltic pumps
Electrical power supply	230 v single-phase 50 Hz
Dosing / machine communication	1 x 24 V input for machine servoing
Reference	08 00799 10

Accessories

Paddle shaker for 500 cm ³ bottle	08 02816 00
High viscosity paddle shaker for 500 cm ³ bottle	08 02818 00

POLISHING MACHINES

SPRINGLAM®



Options: SPRINGLAM® pressure head to use the SMARTLAM® as a semi-automatic polisher.

Two models are available, classic and low pressure.

SPRINGLAM classic: 0 > 250 N	60 SL222 00
SPRINGLAM low pressure: 0 > 50 N	NEW 60 SL222 10
Attachment system for central pressure sample-holder	06 K0011 00

PC SAMPLE HOLDER AND LOADING STAGE

CP sample holder Ø 119 mm with 6 x Ø 20 to 32 mm water drop cells	06SMC2000
CP sample holder Ø 160 mm with 6 x Ø 20 to 40 mm water drop cells	06MLC1000
CP sample holder Ø 160 mm with 6 x Ø 30 mm water drop cells	06MLC3000
CP sample holder Ø 160 mm with 6 x Ø 40 mm water drop cells	06MLC4000
CP sample holder Ø 160 mm with 5 x Ø 50 mm water drop cells	06MLC5000
CP sample holder Ø 160 mm with 3 x rectangular cells 40 x 70 mm	06MLC1200
CP sample holder Ø 160 mm with 6 x rectangular cells 25 x 34 mm	06MLC1400
Loading plate for PC sample holders Ø 119 mm - depth 3 mm	06MLP0200



UNIVERSAL SAMPLE-HOLDER MOULD 610

Universal sample-holder mould for SPRINGLAM®

The LAM PLAN universal sample-holder mould is a smart and economical system which combines the functions of both mounting mould and sample-holder for cold mounting processes using any kind of liquid resin.

The 610 sample holder can be used on both automatic and semi-automatic machines. It is directly compatible with the SMARTLAM® 2.0 fitted with the SPRINGLAM® pressure arm.



LAPPING ARM FOR SMARTLAM® 2.0

Option: the lapping arm for SMARTLAM® 2.0 is an adaptable accessory for holding a lapping ring to prepare the surface of complex-shaped parts.

The system is compatible with rings with an internal diameter of 106 mm.

Lapping arm kit for SMARTLAM® 2.0	NEW	60 BM223 00
PVC lapping ring		08 83012 00





POLISHING MACHINES

MADE IN FRANCE



*Friendly interface
with large 3,5 " touch screen*



SMARTLAM® 3.0

**Individual pressure semi-automatic
polishing machine**

SMARTLAM® 3.0

With the SMARTLAM®3.0, LAM PLAN proposes an economic solution in terms of automatic pre-polishing and polishing of metallographic samples.

The SMARTLAM®3.0 is equipped with a new specific motorised head, composed with a 3 cells sample-holder and an individual pneumatic pressure system.

The moto reducer group has a high torque, the speed and the rotation can be set. The individual pneumatic pressure system handled by the electronic proportional valve, assures a great polishing regularity. The pressure applied per sample goes from 5 to 60 N.

The SMARTLAM®3.0 uses the reliable and proven base of the SMARTLAM®2.0 from which it conserves all the assets for a manual use (activation/deactivation of the sample holder head with the touch screen). The plate's speed and rotation can be set from 20 to 650 rpm.

For more efficiency, you can connect the M.M. 909 M automatic dosing unit to your SMARTLAM® 3.0 and benefit of a very economic and competitive set.

The automatic motorised head compactness is due to its strategically placed power supply on the side of the machine. The head rotates to free the workspace and allows the easy change of the polishing support and the cleaning of the plate and bowl.

All the functions accomplished by the machine or the head are controlled by the screen. The programs can be stored in the intern memory.

NEW To avoid the risk of jamming, SMARTLAM®3.0 is now fitted as standard with a passive sample holder protection system. This consists of a transparent polycarbonate cover over the moving parts.



POLISHING MACHINES

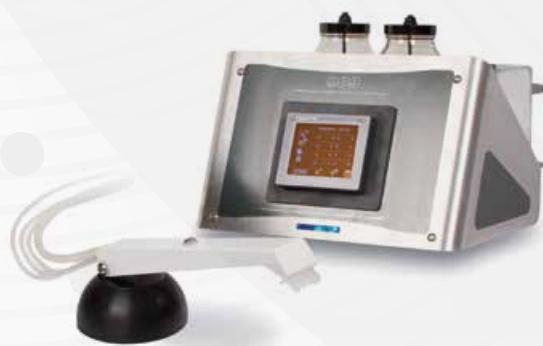
Technical data	SMARTLAM®3.0
Plate Capacity	Ø 200 to 300 mm
Body	Steel coated with epoxy paint
Bowl	Removable resin basin for easy cleaning
Controls	3,5" touch screen to control the machine: start/stop, timer, speed and direction of plate, water solenoid valve
Plate rotation speed	Variable from 20 to 650 rpm
Rotation	Clockwise / counter-clockwise
Programming	Loads 9 programs
Connection	Slave connector for dosing unit
Water inlet	Removable pipe with flow-rate adjustment and safety solenoid valve
Power max	0,75 kW
Voltage	230 V - 50 Hz single-phase
Pneumatic feed	6 bars, filtered 50 µm
Dimensions W x H x D	580 x 570 x 670 mm
Weight	65 kg
Reference	60 SL220 00

Technical data of the head

Capacity	3 samples Ø 25,4 to 50 mm (on Ø 200 mm plate 3 samples Ø 30 mm max.)
Body	Steel coated with epoxy paint
Controls	Colour touch screen (3"): controls the machine and the head
Sample holder rotation speed	Variable from 10 to 150 rpm
Rotation	Clockwise / counter-clockwise
Pressure	Individual, pneumatic, variable from 5 to 60 N
Programming	Loads 9 programs
Power max	Moto reducer with high torque
Positioning	Manual, with indexable handle
Positioning and locking in height	Manual, raising/lowering of the head with a lever, locking with knob
Security	Sample holder protection system

909 M DOSING UNIT

For even greater efficiency, you can combine the SMARTLAM®3.0 with the M.M.909 M automatic dosing unit, creating an ultra-versatile and highly competitive automatic polishing system.



M.M. 909 M dosing unit technical data

Distribution system	Distribution of 3 different liquids
Controls	Touch screen
Pumps	3 peristaltic pumps, plus a control output for external pump
Electrical power supply	230 v single-phase 50 Hz
Dosing / machine communication	1 x 24 V input for machine servoing
Option	Replacement of a standard peristaltic pump with a high-flow pump for high-viscosity products
Reference	08 00799 10



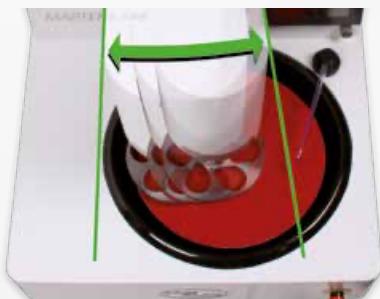
3 peristaltic pumps, plus a control output for external pump.



MASTERLAM® 1.0

Automatic polishing machine with central pressure, oscillating head* and stock removal control*

* Optional equipment available



Options

Dosing unit DISTRILAM (4 circuits)	60 MLD00 00
MASTERLAM® 1.0 with oscillation function	60 ML10B 00
MASTERLAM® 1.0 Stock removal control system	60 ML10S CO
Transparent secured housing for MASTERLAM®	60 MLEPO 00
Filtering / sedimentation 60 L tank with recirculation pump	60 A0029 00
Filtering / sedimentation 60 L tank	60 A0029 90

Accessories (See next page)



POLISHING MACHINES

MASTERLAM® 1.0

MADE IN FRANCE

Automatic, single-plate Ø 250 to 300 mm polishing machine with bidirectional rotation and variable speed. Touch screen controls, intuitive and user friendly interface, MASTERLAM® machines are equipped with the best programming, parameter storage and export technologies. Control of the 4-circuit DISTRILAM® dosing unit directly integrated.

The MASTERLAM® 1.0 is equipped with a powerful central-pressure head, bidirectional rotation, variable speed and pressure. The distinctive feature of this polishing head is the oscillation function with oscillation configurable both for amplitude and frequency.

The use of the oscillating head will allow you to achieve unrivalled levels of performance and versatility: it improves the quality of flatness, increases the stock removable and the service life of polishing supports (uniform wear due to the use of the entire surface of the plate.)

The MASTERLAM® 1.0 is a high-performance machine intended for intensive use such as in-production inspections.

Options

The MASTERLAM® 1.0 with the oscillation option, is particularly efficient for polishing large-sized samples and for superfinishing of mechanical components, prototypes or micro-series.

A stock removal control system with an automatic "stop at measurement" function is also available (accurate to 0,02 mm).

Technical data	MASTERLAM® 1.0
Plate Capacity	Ø 250 to 300 mm
Body	Steel coated with epoxy paint
Bowl	Removable, in resin, to ease cleaning
Controls	Touch screen (5,7")
Plate rotation speed	Variable from 20 to 650 rpm Bidirectional rotation
Head's speed	Variable from 10 to 150 rpm bidirectional rotation
Applicable load	5 to 400 N central pressure
Capacity	Sample size in central pressure 6 x Ø 40 mm
Head oscillation function	Adjustable speed and amplitude (optional)
Stock removal control function	Stock removal measuring system with automatic stop, accurate to 0.02 mm (optional)
Workspace lighting	LED
Water inlet	Removable pipe, with flow rate adjustment and safety solenoid valve
Programming	60 storable programs, USB connector to backup programs and Ethernet port for networking
Cumulative machine power	1.1 kW
Voltage	230 V - 50 Hz single phase
Pneumatic feed	6 bars
Dimensions W x H x D	550 x 670 x 670 mm
Weight	80 kg
Reference	60 ML100 00

POLISHING MACHINES

MASTERLAM®3.0

MADE IN FRANCE

Automatic, single plate Ø 250 to 300 mm polishing machine, bidirectional rotation and variable speed.

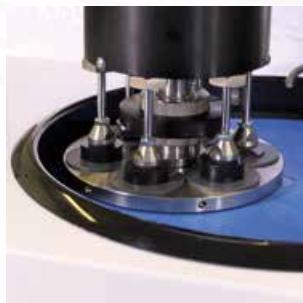
This machine has all the functions that make the MASTERLAM® range outstanding and on this model a specific new combination-head. The MASTERLAM®3.0 is the metallographic polishing machine without concession. Polishing can be carried out with central pressure or individual pressure and can be equipped with a stock removal measuring system.

The MASTERLAM®3.0 is based on the same technology as the MASTERLAM®1.0 with, in this configuration, a powerful central and individual pressure head equipped with 6 pistons.

Changing sample holders is quick and the pressure mode is controlled directly on the screen without having to touch the head, thus, you can switch from one pressure mode to another in a few seconds.



Central pressure mode



Individual pressure mode

**MASTERLAM®3.0**

Automatic polishing machine
with central and individual pressure

**Options**

Dosing unit DISTRILAM (4 circuits)	60 MLD00 00
MASTERLAM®3.0 with material-removal control	60 ML305 CO
MASTERLAM® 3.0 for PE 6 x Ø 60 mm	60 ML30M 00
Transparent secured housing for MASTERLAM®	60 MLE00 00
Filtering / sedimentation 60 L tank with recirculation pump	60 A0029 00
Filtering / sedimentation 60 L tank	60 A0029 90



60 MLD00 00



60 MLE00 00



60 A0029 00

Accessories for MASTERLAM®1.0 and 3.0

Aluminium removable plate Ø 250 mm
Aluminium removable plate Ø 300 mm
Sample-holder: CP (central pressure) and IP (Individual pressure)



Aluminium plate



IP sample-holder



CP sample-holder

Ø 160 mm central pressure sample holder
for eccentric restriction of non-embedded
complex geometric parts.

06 MLC60 00





MASTERLAM®

Large diameter, automatic polishing machine with central pressure and motorised oscillating head

POLISHING MACHINES

MADE IN FRANCE

MASTERLAM® 1.1

Automatic single-plate Ø 350 to 400 mm polishing machine, bidirectional rotation and variable speed.

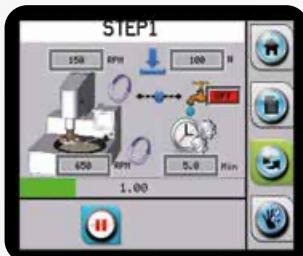
The MASTERLAM® 1.1 is a central pressure machine. It is equipped with a 2,2 Kw main motor, a 250 W head motor and applicable pressure may reach 450 N.

Using the oscillating head allows you to make use of the entire surface of the 350 or 400 mm diameter plate: the quality of flatness is improved, stock removal is increased and the service life of polishing supports is increased (uniform wear due to use of the entire surface of the plate.)

The specific capacities of the MASTERLAM® 1.1 allow it to cope with most difficult applications, particularly in terms of large polishing surfaces where the torque and required pressure exceed the capabilities of standard equipment.



DISTRILAM dosing unit programming integrated to the machine's commands in the full range of MASTERLAM® machines.



Possibility of changing parameters while the machine is working: pressure, speed, time and dosage (except the rotation.)

Options

Dosing unit DISTRILAM®	60 MLD00 00
Filtering / sedimentation 60 L tank, recirculation pump	60 A0029 00
Filtering / decantation 60 L tank	60 A0029 90
Transparent secured housing for the MASTERLAM® 1.1	60 MLEP1 00



60 MLEP1 00



60 A0029 00



60 A0029 90

Technical data	MASTERLAM® 1.1
Plates Capacity	Ø 400 mm
Body	Steel coated with epoxy paint
Controls	Touch screen (5,7")
Plate rotation speed	Variable from 20 to 650 rpm Bidirectional rotation
Head's speed	Variable from 10 to 150 rpm bidirectional rotation
Applicable load	5 to 450 N central pressure
Capacity	Sample size 6 X Ø 60 mm
Oscillating head	Adjustable speed and amplitude
Workspace lightening	LED
Water inlet	Removable pipe, with flow rate adjustment and safety solenoid valve
Programming	60 storable programs, USB connector to backup programs and Ethernet port for networking
Plate motor power	2.2 kW
Head motor power	250 W
Voltage	230 V - 50 Hz single phase (25A)
Pneumatic feed	6 bars
Dimensions W x H x D	800 x 597 x 712 mm
Weight	110 kg
Reference	60 ML110 00

ACCESSORIES FOR POLISHING MACHINES

DISTRILAM® dosing unit

The DISTRILAM® automatic dispenser is controlled directly from the machine screen via a connector. It is instantly recognised by all MASTERLAM® polishing machines. The dispenser is equipped with 4 independent circuits consisting of 3 standard peristaltic pumps for precise dosing of diamond liquids and 1 higher flow peristaltic pump for dosing lubricant or colloidal abrasive. It operates without compressed air or electrical connection. The DISTRILAM® automatic dispenser is an essential accessory for automated use of MASTERLAM®.

This device guarantees reproducible work and economical use of consumables.

Includes: dispenser, machine connection, 4-voice dispensing nozzle on magnetic base and 4 plastic bottles.

Technical data DISTRILAM®

Dimensions W x H x D 170 x 205 x 200 mm

Reference 60 MLD00 00

Transparent protective housing

The secured housing is a totally transparent protection compatible with the full range of MASTERLAM®.

Its opening stops all movements of the machine*, it offers an integral protection complying with the 2006/42/ CE and 2004/108/CE standards. The housing's design preserves the accessibility of the plate and does not clutter the workspace.

The touch screen is located outside of the secured zone; therefore, the commands are permanently accessible.

For the MASTERLAM® 1.0 and 3.0 the touch screen control panel is located on the right, a 195 mm space needs to be foreseen in addition to the machine width.

**However, the transparent secured housing authorises the plate rotation in the manual mode.*



Technical data Housing for MASTERLAM® 1.0 et 3.0

Required space Width 770 mm - Height 910 mm

Reference 60 MLEP0 00

Technical data Housing for MASTERLAM® 1.1

Required space Width 880 mm - Height 910 mm

Reference 60 MLEP1 00

DISTRILAM®



3 standard pumps and 1 high flow rate pump



Plates and supports



Designation	SMARTLAM®		MASTERLAM®			Ref.
	2.0	3.0	1.0	3.0	1.1	
ALUMINIUM PLATES						
Aluminium plate Ø 200 mm	✓	✓				08 82701 00
Aluminium plate Ø 230 mm	✓	✓				08 82702 00
Aluminium plate Ø 250 mm	✓	✓	✓	✓	✓	08 82703 00
Aluminium plate Ø 300 mm	✓	✓	✓	✓	✓	08 82704 00
Aluminium plate Ø 400 mm					✓	08 82706 00



METAL CLAMPING RINGS

Metal clamping ring for Ø 200 mm plate	✓	✓				60 SL002 90
Metal clamping ring for Ø 230 mm plate	✓	✓				60 SL001 90
Metal clamping ring for Ø 250 mm plate	✓	✓	✓	✓		60 SL004 90
Metal clamping ring for Ø 300 mm plate	✓	✓	✓	✓		60 SL006 90
Metal clamping ring for Ø 305 mm plate	✓	✓	✓	✓		60 SL007 90



TANK REDUCERS

Tank reducer SMARTLAM® for Ø 200 mm plate	✓	✓				60 ML080 90
Tank reducer SMARTLAM® for Ø 230 mm plate	✓	✓				60 ML082 90
Tank reducer SMARTLAM® and MASTERLAM® for Ø 250 mm plate	✓	✓	✓	✓		60 ML081 90



ANTI-SPLASH RING

Anti-splash ring pour for MASTERLAM® and SMARTLAM® 2.0	✓	✓	✓			60 ML080 91
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ACCESSORIES FOR POLISHING MACHINES

Sample holders

Designation	SMARTLAM®		MASTERLAM®			Ref.	
	2.0	3.0	1.0	3.0	1.1		
SAMPLE HOLDERS CENTRAL PRESSURE							
CP sample holder Ø 119 mm with 6 x Ø 20 to 32 mm water drop cells							
CP sample holder Ø 160 mm with 6 x Ø 20 to 40 mm water drop cells	✓*		✓	✓	✓	06 MLC10 00	
CP sample holder Ø 160 mm with 9 x Ø 30 mm water drop cells	✓*		✓	✓		06 MLC30 00	
CP sample holder Ø 160 mm with 6 x Ø 40 mm water drop cells	✓*		✓	✓		06 MLC40 00	
CP sample holder Ø 160 mm with 5 x Ø 50 mm water drop cells	✓*		✓	✓		06 MLC50 00	
CP sample holder Ø 160 mm with 3 x rectangular cells 40 x 70 mm	✓*		✓	✓		06 MLC12 00	
CP sample holder Ø 160 mm with 6 x rectangular cells 25 x 34 mm	✓*		✓	✓		06 MLC14 00	
CP sample holder Ø 210 mm without cavity					✓	06 MLC01 00	
LEVELLING PLATES FOR CENTRAL PRESSURE SAMPLE HOLDER							
Levelling plate for CP sample holder Ø 160 mm - 3 mm depth	✓*		✓	✓	✓	06 MLP01 00	
Levelling plate for CP sample holder Ø 119 mm - 3 mm depth	✓*					06 MLP02 00	
SAMPLE HOLDERS INDIVIDUAL PRESSURE							
IP sample holder Ø 160 mm with 6 x Ø 50 mm water drop cells				✓		06 MLI10 00	
IP sample holder Ø 160 mm with 6 x Ø 40 mm water drop cells				✓		06 MLI102 10	
SAMPLE HOLDER FOR IRREGULAR PARTS							
Sample holder Ø 160 mm for irregular parts			✓	✓	✓	06 MLC60 00	

✓* SMARTLAM® 2.0 équipée du SPRINGLAM®

CAMEO® DISK Platinum grinding tool NEW

Designation	SMARTLAM®		MASTERLAM®			Ref.
	2.0	3.0	1.0	3.0	1.1	
CAMEO® DISK Platinum grinding tool for automatic polishing machines.			✓	✓	✓	06 MLCA1 60



Reducer rings

For individual pressure machines



Designation	SMARTLAM®		MASTERLAM®			Ref.
	2.0	3.0	1.0	3.0	1.1	
KIT 6 REDUCER RINGS FOR MASTERLAM®						
Kit 6 x Ø 40 mm reducer rings				✓		06 MLIK5 00
Kit 6 x Ø 30 mm reducer rings				✓		06 MLIK2 00
Kit 6 x Ø 25,4 mm reducer rings				✓		06 MLIK1 10
Kit 6 x 1-1/4" reducer rings				✓		06 MLIK3 10
Kit 6 x 1-1/2" reducer rings				✓		06 MLIK4 10
KIT 6 REDUCER RINGS FOR SMARTLAM®						
Kit 3 x Ø 40 mm reducer rings	✓					06 SLIK5 00
Kit 3 x Ø 30 mm reducer rings	✓					06 SLIK2 00
Kit 3 x Ø 25,4 mm reducer rings	✓					06 SLIK1 10
Kit 3 x 1-1/4" reducer rings	✓					06 SLIK3 10
Kit 3 x 1-1/2" reducer rings	✓					06 SLIK4 10



Dosing units

Designation	SMARTLAM®		MASTERLAM®			Ref.
	2.0	3.0	1.0	3.0	1.1	
DISTRILAM®						
Automatic dosing unit DISTRILAM®			✓	✓	✓	60 MLD00 00
M.M. 909 M						
Automatic dosing unit M.M. 909 M	✓	✓				08 00799 10

ACCESSORIES FOR POLISHING MACHINES

Diaphragm compressor

Diaphragm compressor for laboratories that are not equipped with a compressed air network. Silent operating (40 dB).

Flow	Pressure	Dim. W x H x P	Ref.
40 l/min	8 bar	330 x 500 x 330 mm	60 COM00 00



Pressure regulator filter kit for compressed air

Essential for protecting machines from impurities in the circuit. The cut-off valve safely isolates the machine from the air circuit.

Compatible with	Ref.
CUTLAM® 4.0/5.0, PRESSLAM® 1.1, SMARTLAM® 3.0, MASTERLAM® 1.0/1.1/3.0	60 00375 90

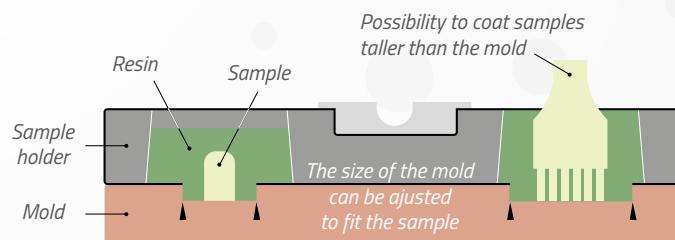


Universal sample-holder mould

The LAM PLAN universal sample-holder mould is a smart and economical system which combines the functions of both mounting mould and sample-holder for cold mounting processes using any kind of liquid resin. This system has been developed as two removable parts: the metallic universal sample-holder with non-stick coating and a special silicon based flexible mould to embed your cold mounting samples.

Use

The 610 sample holder can be used on both automatic and semi-automatic machines. It is directly compatible with the SMARTLAM® 2.0 fitted with the SPRINGLAM® pressure arm. An adaptor kit is available for use with an automatic machine with motorised head. Do not use with epoxy resins.



610 SERIE

Designation	SMARTLAM® option SPRINGLAM®	MASTERLAM®	Ref.
Ø 110 mm with 6 x Ø 28 mm cells	Ø 200 mm		06 00612 20
Ø 145 mm 3 moulds 6 included cells 6 x Ø 40, 6 x Ø 35 and 6 x Ø 32 mm	Ø 250 - 300 mm		06 00614 10
Ø 145 mm with 3 moulds 6 included cells 6 x Ø 30, 6 x Ø 25 and 6 x Ø 20 mm	Ø 250 - 300 mm		06 00614 20
Ø 145 mm with moulds 3 x Ø 50 mm cells	Ø 250 - 300 mm		06 00614 30
Ø 145 mm with 2 moulds 3 included rectangular cells 3 x 30 x 55 mm and 3 x 18 x 55 mm	Ø 250 - 300 mm		06 00614 40
Ø 159 mm with mould 6 x Ø 36 mm cells	Ø 250 - 300 mm	Ø 250 - 300 mm	06 00612 40
Ø 159 mm with mould 10 x Ø 28 mm cells	Ø 300 mm	Ø 300 mm	06 00612 50
Universal sample holder ADAPTOR KIT for MASTERLAM® 1.0 and 3.0		✓	06 K0010 00
Universal sample holder ADAPTOR KIT for SPRINGLAM	✓		06 K0011 00



SPRINGLAM pressure arm for SMARTLAM® 2.0



In order to use the universal sample-holders with the SMARTLAM® 2.0, the machine must be fitted with a SPRINGLAM® pressure arm. The universal sample-holders are not compatible with the individual pressure.

FIXING ACCESSORIES



Adhesive disc on FAS®2 support



The discs and plates FAS®2, FMS®, X LAM®, FIX LAM® and XLAM 4 allow you to easily fix all your discs whether self-adhesive or not, for simplified manipulation.

FAS®2 discs

The solution for adhesive fixing

The FAS®2 facilitates the application and removal of PSA grinding papers and polishing cloths from the FAS®2 plate leaving a residue free surface every time it is used with only a very low force required to remove any adhered surface due to the proprietary coating.

The patented material comprising the FAS®2 system allows combining the softness and regularity of the abrasion of a flexible coating with the inherent flatness obtained with a metal support.

Available in 2 versions:

- **FAS®2:** option 1 is a PSA backed FAS disc which can be positioned on the machine platen. Available in 4 common diameter options.
- **FAS®2-M:** option 2 is a non adhesive steel coated disc which is held to the platen by means of a magnetic substrate. Available in 4 common diameter options.

Characteristics	Qty.	Ø (mm)	Ref.
FAS®2			
Self-adhesive backside	1	200	05 FAS20 20
	1	250	05 FAS20 40
	1	300	05 FAS20 50
	1	400	05 FAS20 80
FAS®2-M			
Magnetic, 2 reversible sides	1	200	05 FAS2M 20
	1	250	05 FAS2M 40
	1	300	05 FAS2M 50
	1	400	05 FAS2M 80

FMS® plates and discs

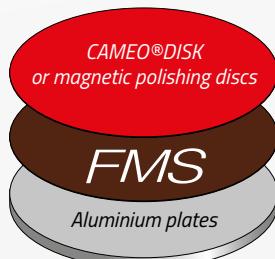
The fixing system by magnetic attachment.

The standard FMS® plate is an adhesive backed magnetic substrate designed to be attached to any standard polisher platen. This allows for all steel backed discs or support plates to be held securely during any grinding and polishing procedures.

Characteristics	Qty.	Ø (mm)	Ref.
FMS® DISCS			
Self-adhesive backside	1	200	08 82801 10
	1	250	08 82803 10
	1	300	08 82804 10
	1	400	08 82807 10
FMS® PLATES			
Aluminium plate equipped with a FMS® adaptable disc on polishing machine	1	200	08 82801 00
	1	250	08 82803 00
	1	300	08 82804 00
	1	400	08 82807 00



Magnetic disc on FMS support



FIXING ACCESSORIES

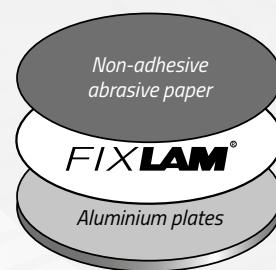
FIX LAM® discs and plates

The repositionable adhesive system.

The FIX LAM® allows plain backed SiC discs to be held securely on the platen by means of a re-usable adhesive coating. Comes in both PSA backing and a magnetic compatible for fixation to the platen.

- **FIX LAM®:** adhesive backside.
- **FIX LAM®-M:** magnetic backside.

Characteristics	Qty.	Ø (mm)	Ref.
FIX LAM® DISCS			
Adhesive backside	5	200	05 40000 20
	5	250	05 40000 40
	5	300	05 40000 60
FIX LAM®-M DISCS			
Magnetic backing	5	200	05 4000M 20
	5	250	05 4000M 40
	5	300	05 4000M 60



XLAM 4

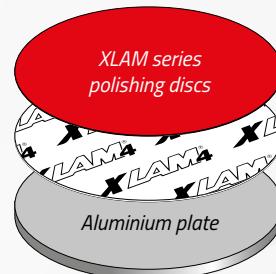
New fixing for polishing discs Serie XLAM.

XLAM 4 is an innovative product for the contact attachment of non-self-adhesive polishing discs to metallographic polishing machines. The XLAM 4 is a thin disc for fixing to the machine table. Its special surface enables the XLAM series of non-adhesive polishing discs to be held in place. This means that polishing pads can be changed quickly and effortlessly. Polishing discs can be easily stored and reused.

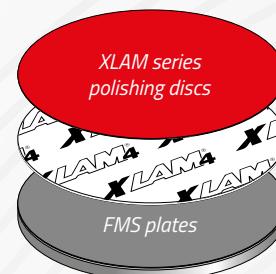
The XLAM 4 allows easy transition between different polishing steps, reducing the time needed for sample preparation. Compatible with non-self-adhesive diamond abrasive films.

Characteristics	Qty.	Ø (mm)	Ref.
XLAM 4			
Adhesive backside	1	200	04 XLAM4 20
	1	250	04 XLAM4 40
	1	300	04 XLAM4 50
	1	400	04 XLAM4 80
XLAM 4-M			
Magnetic backing	1	200	04 XLAM4M20
	1	250	04 XLAM4M40
	1	300	04 XLAM4M50
	1	400	04 XLAM4M80

Examples of implementation adhesive version



Examples of implementation magnetic version



Applications table

Your machine is equipped with		Compatible supports	GUIDANCE
Aluminium plate	Magnetic plate		GUIDANCE
FIX LAM®	FIX LAM®-M	Non-adhesive abrasive paper	
FAS®2	FAS®2-M	Self-adhesive CAMEO DISK® - Self-adhesive abrasive paper - Self-adhesive polishing cloth	
FMS®	-	Magnetic CAMEO DISK® - Magnetic polishing cloth	
XLAM 4	-	Magnetic CAMEO DISK®	
XLAM 4	XLAM 4-M	Polishing disc XLAM series	

STORAGE & CLEANING ACCESSORIES

BOX LAM® storage systems

Extend the service life of your discs thanks to the discs and plates storage system.

BOX LAM® 

BOX LAM® M NEW

New furniture for storing discs and plates up to 300 mm in diameter.
Supplied with 8 sliding shelves.

BOXLAM® M is a reliable, compact and robust protection solution for your polishing supports. It consists of an epoxy-coated aluminium frame and varnished brushed aluminium sides.



The wide, fully retractable transparent door and the tiered arrangement of shelves provide optimum access to the products stored. BOXLAM®M units can be stacked to take up as little bench space as possible.

Technical data	BOX LAM® M
Construction	Aluminium sheet, transparent PMMA pane
Finition	Epoxy paint RAL 9003, varnished aluminium
Capacity	8 discs, 310 x 310 mm
Dimensions W x H x D	360 x 370 x 420 mm
Weight	15,4 Kg
Reference	08 BLM00 00

BOX LAM®

BOX LAM® is a cost-effective unit for the dust-free storage of 6 grinding and polishing discs, in particular removable self-adhesive discs up to Ø 300 mm.
BOX LAM® has a transparent closing flap, 6 shelves and a storage drawer.



Technical data	BOX LAM®
Construction	Extruded PVC
Capacity	6 discs up to Ø 300 mm
Dimensions W x H x D	340 x 450 x 340 mm
Weight	4,5 Kg
Reference	08 BL100 00

STORAGE & CLEANING ACCESSORIES

COVER LAM®

The COVER LAM® is a self-adhesive protection disc which is applied on clean and polished samples to efficiently preserve their surface condition and protect it from ambient environment attacks. The COVER LAM® does not require any cleaning of the polished sample after its has been removed.

Characteristics	Qty.	Ø (mm)	Ref.
Disc for the protection of metallographic samples after polishing	100	50	08 COV00 00



CUTTING

MOUNTING

POLISHING

Detergent**742**

Characteristics	Qty.	Ref.
Detergent for ultrasonic cleaning tank (dilution < 10 % in water)	5 litres	08 01742 10
	1 litre	08 01742 00

**Technical wiping**

Technical wiping of samples without micro-scratches

LAM®15

LAM®15 cloth allows you to clean and dry your samples after polishing.

Characteristics	Qty.	Ref.
Cloths 320 x 400 mm	2 x 24 cloths	08 LAM15 00
Cloths Ø 80	400 cloths	08 LAM15 20



GRINDING & PREPOLISHING DISCS



SiC STANDARD abrasive papers

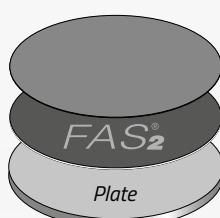
Available from P80 to P4000 from Ø 200 to 400 mm.

The LAM PLAN® abrasive papers respond to very strict quality standards. The calibration of the silicon carbide grains is guaranteed for the European standards FEPA regardless of their size (P80 to P4000).

The resistance of the resins used to maintain the abrasive grains gives to the LAM PLAN® abrasive papers a high resistance to heat and moisture. The orientation of the grains is obtained by an electrostatic process. The choice of the support paper (thickness and basis weight) is adapted to the grain's thickness in order to reduce the wear of the abrasive papers. The paper is made impermeable in its mass and on the surface.

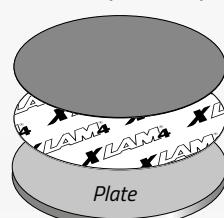
Grain sizes												
FEPA standard	80	120	180	240	320	400	600	800	1000	1200	2400	4000
Grains Ø (microns)	201	125	82	59	46	35	26	22	18	15	10	5
100 units box				Ø 200 mm						Ø 250 mm		
FEPA grains		Self-adhesive			Non-adhesive			Self-adhesive		Non-adhesive		
P80		Ref.			Ref.			Ref.		Ref.		
P120		05 60080 20			05 50080 20			05 60080 40		05 50080 40		
P180		05 60120 20			05 50120 20			05 60120 40		05 50120 40		
P240		05 60180 20			05 50180 20			05 60180 40		05 50180 40		
P320		05 60240 20			05 50240 20			05 60240 40		05 50240 40		
P400		05 60320 20			05 50320 20			05 60320 40		05 50320 40		
P600		05 60400 20			05 50400 20			05 60400 40		05 50400 40		
P800		05 60600 20			05 50600 20			05 60600 40		05 50600 40		
P1000		05 60800 20			05 50800 20			05 60800 40		05 50800 40		
P1200		05 61000 20			05 51000 20			05 61000 40		05 51000 40		
P2400		05 61200 20			05 51200 20			05 61200 40		05 51200 40		
P4000		05 62400 20			05 52400 20			05 62400 40		05 52400 40		
		05 64000 20			05 54000 20			05 64000 40		05 54000 40		
100 units box				Ø 300 mm						Ø 400 mm		
FEPA grains		Self-adhesive			Non-adhesive			Self-adhesive		Non-adhesive		
P80		Ref.			Ref.			Ref.		Ref.		
P120		05 60080 50			05 50080 50			05 60080 80		05 50080 80		
P180		05 60120 50			05 50120 50			05 60120 80		05 50120 80		
P240		05 60180 50			05 50180 50			05 60180 80		05 50180 80		
P320		05 60240 50			05 50240 50			05 60240 80		05 50240 80		
P400		05 60320 50			05 50320 50			05 60320 80		05 50320 80		
P600		05 60400 50			05 50400 50			05 60400 80		05 50400 80		
P800		05 60600 50			05 50600 50			05 60600 80		05 50600 80		
P1000		05 60800 50			05 50800 50			05 60800 80		05 50800 80		
P1200		05 61000 50			05 51000 50			05 61000 80		05 51000 80		
P2400		05 61200 50			05 51200 50			05 61200 80		05 51200 80		
P4000		05 62400 50			05 52400 50			05 62400 80		05 52400 80		

Abrasive paper SELF-ADHESIVE



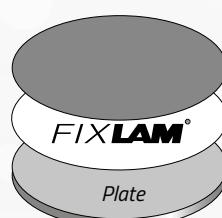
FAS®2 non-stick backing for paper and self-adhesive discs

Abrasive paper SELF-ADHESIVE used with its protective film



XLAM®4 adhesive backing for paper and discs non-adhesive

Abrasive paper NON-ADHESIVE



FIXLAM® adhesive backing for paper and discs non-adhesive

GRINDING & PREPOLISHING DISCS

SiC EXCELLENCE abrasive papers

Available from P80 to P1200 from Ø 200 to 300 mm

The standard checks of abrasive papers generally manufactured in large quantities are sometimes insufficient to avoid that complete series of discs are outside the standard required by our Metallography laboratory.

LAM PLAN creates the Excellence Range and its double guarantee, every single paper is individually checked before packing.



Grain sizes												
FEPA standard	80	120	180	240	320	400	600	800	1000	1200	2400	4000
Grains Ø (microns)	201	125	82	59	46	35	26	22	18	15	10	5

50 units box		Ø 200 mm		Ø 250 mm	
		Self-adhesive	Non-adhesive	Self-adhesive	Non-adhesive
FEPA grains	Ref.	Ref.	Ref.	Ref.	Ref.
P80	05 10080 20	05 00080 20	05 10080 40	05 00080 40	05 00080 40
P120	05 10120 20	05 00120 20	05 10120 40	05 00120 40	05 00120 40
P180	05 10180 20	05 00180 20	05 10180 40	05 00180 40	05 00180 40
P240	05 10240 20	05 00240 20	05 10240 40	05 00240 40	05 00240 40
P320	05 10320 20	05 00320 20	05 10320 40	05 00320 40	05 00320 40
P400	05 10400 20	05 00400 20	05 10400 40	05 00400 40	05 00400 40
P600	05 10600 20	05 00600 20	05 10600 40	05 00600 40	05 00600 40
P1200	05 11200 20	05 01200 20	05 11200 40	05 01200 40	05 01200 40

50 units box		Ø 300 mm	
		Self-adhesive	Non-adhesive
FEPA grains	Ref.	Ref.	Ref.
P80	05 10080 50	05 00080 50	
P120	05 10120 50	05 00120 50	
P180	05 10180 50	05 00180 50	
P240	05 10240 50	05 00240 50	
P320	05 10320 50	05 00320 50	
P400	05 10400 50	05 00400 50	
P600	05 10600 50	05 00600 50	
P1200	05 11200 50	05 01200 50	

The patented FAS®2 system is the indispensable accessory when using self-adhesive discs. The FAS®2 is a support disc which allows easy positioning and unsticking of self-adhesive abrasive papers on all machines.

See all our fastening systems pages FIXING ACCESSORIES

GUIDANCE

Grinding wheels

LAM PLAN grinding wheels are used to dress samples in high speed automatic prepolishing machines. Two types available: Al_2O_3 grain 60 and SiC grain 150.

 Al_2O_3 - GRAIN 60

Application	Lubricant	Ø (mm)	Ref.
For grinding of soft, ductile materials <HV200	Water	355	05 M0060 80

SIC - GRAIN 150

Application	Lubricant	Ø (mm)	Ref.
For grinding of all materials >HV200	Water	355	05 M0150 80



CAMEO®DISK system

Grinding and polishing are key steps in the preparation of a metallographic sample. It is the quality of these steps which will condition and optimise the rest of the process. At the end of the grinding step, the sample's aspect must be uniform and regular without altering the inherent flatness and the material. The CAMEO®DISK's performances in terms of stock removal reduce the work time on the part, thereby guaranteeing the sample's inherent flatness, an indispensable condition to succeed with your metallographic analyse.



A patented honeycomb cell structure

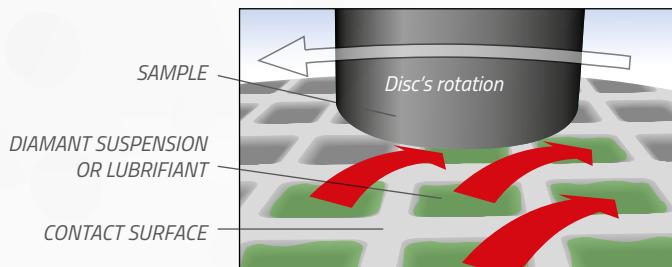
SYSTEM CAMEO®DISK		
2 families:	FIXED ABRASIVES	FREE ABRASIVES
3 types:	CAMEO®DISK PLATINUM	CAMEO®DISK DMD
9 references:	PLATINUM 0, 1, 2, 3 and 4	DMD 1
		SILVER, GOLD & RHODIUM

Stock removal

The honeycomb structure of CAMEO®DISK reduces the surface area in contact with the specimen to be polished. This reduces the pressure required to grind the specimen.

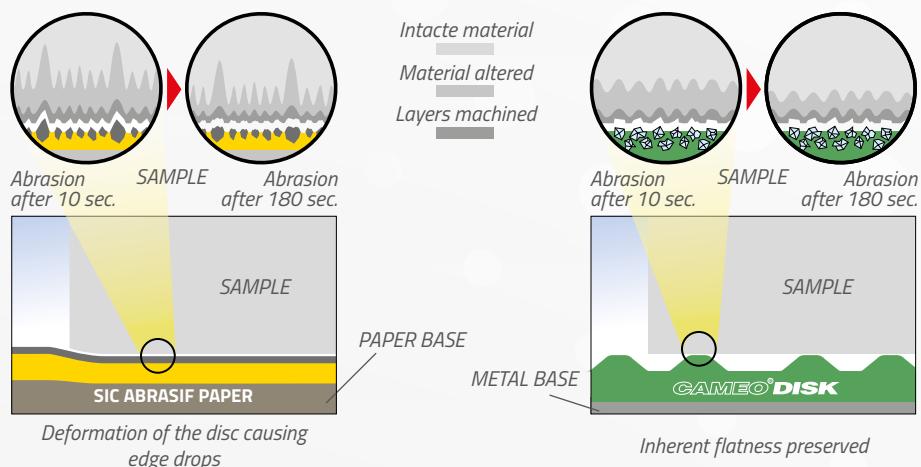
Reproducibility

The profile of the honeycomb cells was specially designed to optimise the circulation of the lubricant from one cavity to another. The abrasion residues are evacuated, guaranteeing a constant abrasive power and therefore a regularity of the result throughout the grinding and polishing steps.



Preparation quality

For a process usually performed with several SiC abrasive papers, LAM PLAN proposes you a single, reusable disc: the CAMEO®DISK. Contrary to SiC abrasive papers, CAMEO®DISK constant abrasion prevents the formation of deep disturbed layers during the first few seconds of grinding.

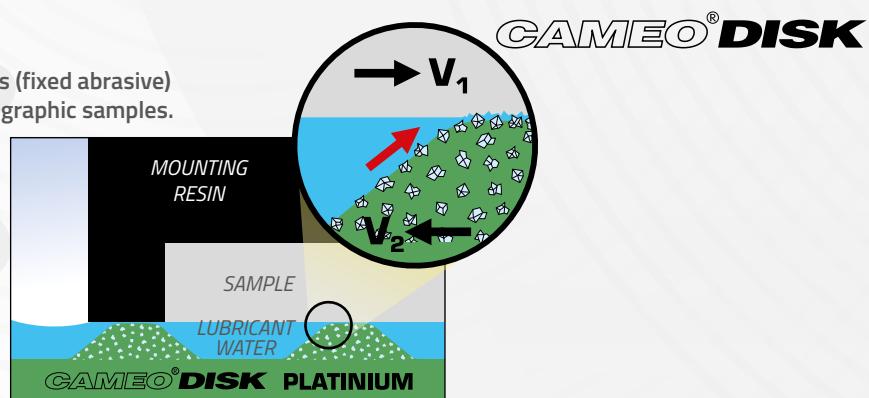


GRINDING & PREPOLISHING DISCS

CAMEO®DISK Platinum

The CAMEO®DISK Platinum are diamond discs (fixed abrasive) which are ideal for a rapid grinding of metallographic samples.

The use of diamond integrated in the CAMEO®DISK Platinum honeycomb cell structure allows preserving a constant stock removal throughout the operation, which prevents the appearance of edge drops, including on samples of heterogeneous hardnesses.

**PLATINUM 0 BROWN**

Box of 1 unit + 1 abrasive stone

	Self-adhesive	Magnetic
Ø (mm)	Ref.	Ref.
200	09 CA170 20	09 CA570 20
250	09 CA170 40	09 CA570 40
300	09 CA170 50	09 CA570 50

**PLATINUM 1 BLUE****PLATINUM 2 GREEN**

	Self-adhesive	Magnetic	Self-adhesive	Magnetic
Ø (mm)	Ref.	Ref.	Ref.	Ref.
200	09 CA140 20	09 CA540 20	09 CA150 20	09 CA550 20
250	09 CA140 40	09 CA540 40	09 CA150 40	09 CA550 40
300	09 CA140 50	09 CA540 50	09 CA150 50	09 CA550 50

**PLATINUM 3 YELLOW****PLATINUM 4 RED**

	Self-adhesive	Magnetic	Self-adhesive	Magnetic
Ø (mm)	Ref.	Ref.	Ref.	Ref.
200	09 CA160 20	09 CA560 20	09 CA180 20	09 CA580 20
250	09 CA160 40	09 CA560 40	09 CA180 40	09 CA580 40
300	09 CA160 50	09 CA560 50	09 CA180 50	09 CA580 50

**ABRASIVE STONES FOR PLATINUM**

Type	Characteristics	Qty.	Ref.
Grain 120 for platinum 0 & 1	6 x 13 x 100 mm	2	98 59121 00
Grain 400 for platinum 2	6 x 13 x 100 mm	2	98 59401 00
Grain 600 for platinum 3 & 4	6 x 13 x 100 mm	2	98 59601 00

**Application Table**

CAMEO®DISK	Equivalences	Application	Fluid/Liquid
Platinum 0 Brown	Sic Paper P80		
Platinum 1 Blue	Sic Paper P120		
Platinum 2 Green	Sic Paper P240	Grinding hard material (≥ 120 HV)	Water
Platinum 3 Yellow	Sic Paper P600		
Platinum 4 Red	Sic Paper P1200		



In order to guarantee constant results, the CAMEO®DISK have to be periodically dressed by adequate abrasive stones.

CAMEO® DISK

CAMEO® DISK DMD PATENT PENDING*

NEW

New prepolishing disc. The latest addition to the LAM PLAN range is a grinding disc designed for the preparation of ductile materials for metallography (aluminium and aluminium alloys, copper alloys, etc.).

LAM PLAN CAMEO®DISK DMD is the first diamond disc on the market that allows polishing ranges on ductile materials without abrasive paper.

The CAMEO®DISK DMD uses a new version* of our honeycomb structure combined with our expertise in abrasives. We have optimised the efficiency of the roughing stages for the most ductile metal alloys.

The performance of the new CAMEO®DISK DMD reduces disturbance at the grinding steps, enabling rapid transition to the polishing steps. It is a durable substrate that can be re-used many times with consistent efficiency.

Technology

- Innovative structured disc with fixed abrasive,
- Diamond-type abrasive with specific concentration,
- New honeycomb structure. CAMEO®DISK DMD requires little pressure to be effective.

**CAMEO®DISK DMD 1**

Box 1 piece + 1 grinding stone

Ø (mm)	Self-adhesive	Magnetic
	Ref.	Ref.
200	09 CA190 20	09 CA590 20
250	09 CA190 40	09 CA590 40
300	09 CA190 50	09 CA590 50

To guarantee consistent results, the CAMEO®DISKS need to be adjusted periodically. Various solutions are available; please contact your advisor.

PERFORMANCES:

- Rapid sample levelling,
- High material removal rate,
- Low roughness,
- Reduced deformation,
- Simplified process.

**CONDITIONNING SOLUTIONS FOR CAMEO®DISK DMD**

Type	Characteristics	Qty.	Ref.
Stone grain 120	6 x 13 x 100 mm	2	98 59121 00
Grinding tool	For automatic machines	1	06 MLCA1 60
BOOSTER	Lubricating fluid	5 litres	07 BP030 40

Grinding ductile materials, technical issues.

Today, in most cases, the grinding of ductile materials is a time-consuming and expensive step, carried out using a series of SiC abrasive papers with different grains.

The disadvantages of this technique are as follows:

- The need for different grains to prepare the surface for polishing,
- Very short and inconsistent abrasive paper life,
- Extensive handling,
- High long-term cost,
- Large quantities of waste.

GUIDANCE

* Patent under examination.

GRINDING & PREPOLISHING DISCS

Range on ALUMINIUM AU4G

MATERIAL: Aluminium AU4G (2017A) - 110 HV
Rough cut sample. 3 x Ø 40 mm.

OBJECTIVE: polished surface with no visible scratches at 500x, no deformation and no pullouts.

MACHINE : MASTERLAM 3.0 - Ø 300 mm

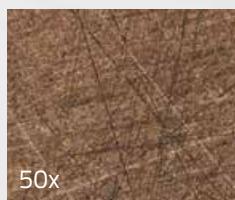
1 Duration: 3 min.
Speed rpm Head 125 / Plate 300 / Same direction
Pressure per sample: 30 N

WATER



2 Duration: 3 min.
Speed rpm Head 125 / Plate 300 / Same direction
Pressure per sample: 30 N

NEODIA® 6P



3 Duration: 3 min.
Speed rpm Head 125 / Platen 200 / Same direction
Pressure per sample: 25 N

NEODIA® 3P



4 Duration: 3 min.
Speed rpm Head 125 / Platen 175 / Reverse direction
Pressure per sample: 25 N

ALPLAN PREMIUM 0,5 µ



Reagent attack KELLER



Range on CUPRO NICKEL

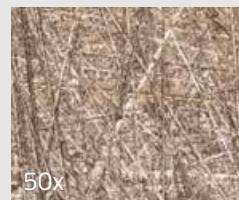
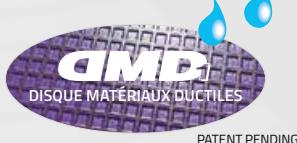
MATERIAL: Alliage CuNi14Al2 - 260 HV
Rough cut sample. 6 x Ø 40 mm.

OBJECTIVE: polished surface with no visible scratches at 200x, no distortion and no pullouts.

MACHINE : MASTERLAM 3.0 - Ø 300 mm

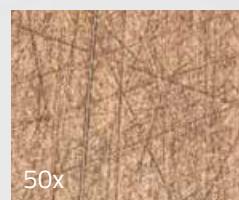
1 Duration: 3 min.
Speed rpm Head 125 / Plate 300 / Same direction
Pressure per sample: 20 N

WATER



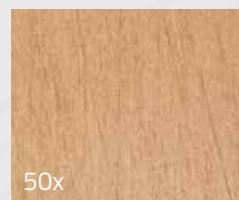
2 Duration: 3 min.
Speed rpm Head 125 / Plate 300 / Same direction
Pressure per sample: 20 N

NEODIA® 6P



3 Duration: 4 min.
Speed rpm Head 125 / Plate 200 / Same direction
Pressure per sample: 20 N

NEODIA® 3P



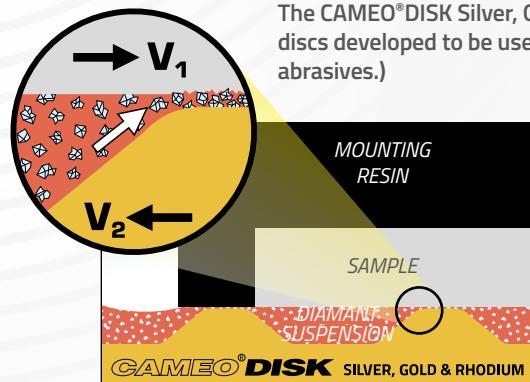
4 Duration: 2 min.
Speed rpm : Head 125 / Platen 200 / Same direction
Pressure per sample: 15 N

NEODIA® 1P





CAMEO® DISK Silver, Gold & Rhodium

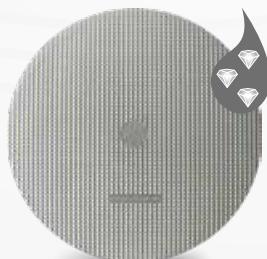


The CAMEO®DISK Silver, Gold & Rhodium discs are non-diamond grinding discs developed to be used with Bio DIAMANT® abrasive products (free abrasives.)

Combined with the latest products of the Bio DIAMANT® range, the NEODIA® diamond abrasives will allow treating all types of materials.

The patented CAMEO®DISK honeycomb structure allows the uniform distribution of the periodically pulverised diamond abrasive suspension. The use of the abrasive suspension is optimised, thereby reducing the diamond product's consumption.

There are three variants of CAMEO®DISK designed with differing hardness suited for different types of material prepolished.



CAMEO®DISK SILVER

Box of 2 units + 1 grinding tool

Ø (mm)	Self-adhesive Ref.	Magnetic Ref.
200	09 CA120 20	09 CA520 20
250	09 CA120 40	09 CA520 40
300	09 CA120 50	09 CA520 50



CAMEO®DISK GOLD

Box of 2 units + 1 grinding tool

Ø (mm)	Self-adhesive Ref.	Magnetic Ref.
200	09 CA130 20	09 CA530 20
250	09 CA130 40	09 CA530 40
300	09 CA130 50	09 CA530 50



CAMEO®DISK RHODIUM

Box of 2 units + 1 grinding tool

Ø (mm)	Self-adhesive Ref.	Magnetic Ref.
200	09 CA100 20	09 CA500 20
250	09 CA100 40	09 CA500 40
300	09 CA100 50	09 CA500 50



DIAMOND GRINDING TOOL FOR SILVER, GOLD & RHODIUM

Characteristics	Qty.	Ref.
100 x 15 x 5 mm	1	98 BD001 00



In order to guarantee constant results, the CAMEO®DISK have to be periodically dressed by appropriate abrasive grinding tool.

Application Table

CAMEO®DISK	Application	Fluid/Liquid
Silver	Medium to very hard ferrous alloys	6 to 15 µm diamond abrasives NEODIA® M, P or F
Gold	Soft non ferrous alloys	3 to 6 µm diamond abrasives NEODIA® M, P or F
Rhodium	Ceramics and Cermets	1 to 3 µm diamond abrasives NEODIA® M, P or F

Diamond abrasive films

High concentration abrasive films. Available in different grains from 0.5 µm to 45 µm, they generate excellent flatness and finishing results. The uniformity of the abrasive layer ensures great regularity of the polishing process and prolonged durability of the disc. Easy to use, the strong stock removal and polishing quality enables you to significantly reduce your sample polishing time. They can be used with all material types.

Recommended lubricants: FLUIDE 712 water-based or FLUIDE 705 oil-based.

DIAMOND HC

5 units

Ø (mm)	Color	µm	Self-adhesive	Non adhesive
			Ref.	Ref.
200		45	05D45A02005	05D45N02005
200		30	05D30A02005	05D30N02005
200		15	05D15A02005	05D15N02005
200		9	05D09A02005	05D09N02005
200		6	05D06A02005	05D06N02005
200		3	05D03A02005	05D03N02005
200		1	05D01A02005	05D01N02005
200		0,5	05D95A02005	05D95N02005
250		45	05D45A02505	05D45N02505
250		30	05D30A02505	05D30N02505
250		15	05D15A02505	05D15N02505
250		9	05D09A02505	05D09N02505
250		6	05D06A02505	05D06N02505
250		3	05D03A02505	05D03N02505
250		1	05D01A02505	05D01N02505
250		0,5	05D95A02505	05D95N02505
300		45	05D45A03005	05D45N03005
300		30	05D30A03005	05D30N03005
300		15	05D15A03005	05D15N03005
300		9	05D09A03005	05D09N03005
300		6	05D06A03005	05D06N03005
300		3	05D03A03005	05D03N03005
300		1	05D01A03005	05D01N03005
300		0,5	05D95A03005	05D95N03005
400		45	05D45A04005	05D45N04005
400		30	05D30A04005	05D30N04005
400		15	05D15A04005	05D15N04005
400		9	05D09A04005	05D09N04005
400		6	05D06A04005	05D06N04005
400		3	05D03A04005	05D03N04005
400		1	05D01A04005	05D01N04005
400		0,5	05D95A04005	05D95N04005



POLISHING SUPPORTS

TOUCHLAM®

TOUCHLAM® polishing cloths & pads

LAM PLAN proposes a range of exclusive TOUCHLAM® polishing cloths and pads.

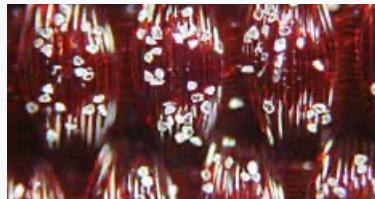
We conceive and produce all our TOUCHLAM® products, favouring quality of results through the selection of materials and treatments.

Quality of results

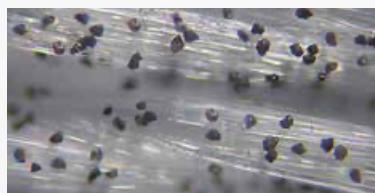
The structure and the composition of a polishing support have a direct impact on the properties of the associated free abrasive during a polishing process. LAM PLAN has designed a range of polishing cloths & pads according to their capacity of optimising the abrasive functions in order to obtain an optimum quality of results.

LAM PLAN guides you in your cloths and pads selection according to your results expectations

Example of a diamond abrasive, spread over different disc structures



Taffeta woven synthetic fibres



Satin woven natural fibres



Flocked viscose fibres

Application	TOUCHLAM® cloths	Characteristics			
		SR*	Flatness	Finishing	Super Finishing
Fine grinding of soft materials	2FC1	✓	✓		
Polishing of hard to extra hard material					
Rough polishing on ductile material	2TT1	✓	✓		
Rough polishing on ductile material	2TT2	✓	✓		
Fine polishing (intermediary) on all materials	2TS3		✓	✓	
Final polishing on hard materials					
Fine polishing (intermediary) on all materials	2TS4		✓	✓	
Fine polishing (intermediary) on soft materials	3SE2		✓	✓	
Fine polishing (intermediary) on soft materials	3SA4		✓	✓	
Medium to fine polishing on semi-hard to hard (uncoated)	3TL1			✓	
Final polishing on semi-hard materials	3FV1				✓
Final polishing on all materials	3FV2				✓
Final polishing on soft to semi-hard materials	4FV3				✓
Final polishing (chemical/mechanical) on varied materials	4MP1				✓
Final polishing (chemical/mechanical) on varied materials	4MP2				✓

*Stoke Removal

Simplified use

The TOUCHLAM® cloths & pads are available in all standard diameters in two fixation modes: self-adhesive and magnetic.

The marking allows an easy identification. A tab is now integrated on the discs to facilitate the removal of the protective foil of self-adhesive cloths.

See all our fastening systems pages FIXING ACCESSORIES

Self-adhesive cloth
on FAS®2 support

Magnetic cloth
FMS® support



Disc identification marking



POLISHING SUPPORTS

TOUCHLAM® 2FC1

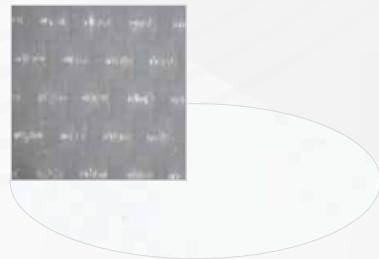
Impregnated non-woven fibres.
Stock removal, finishing on extra hard materials.
Usable with diamond abrasives from 3 to 9 µm.

Ø (mm)	Qty.	Self-adhesive		Magnetic		X-LAM	
		Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
200	5 units	2FC10A02005	2FC10M02005	2FC10X02005			
250	5 units	2FC10A02505	2FC10M02505	2FC10X02505			
300	5 units	2FC10A03005	2FC10M03005	2FC10X03005			
400	5 units	2FC10A04005					

**TOUCHLAM® 2TT1**

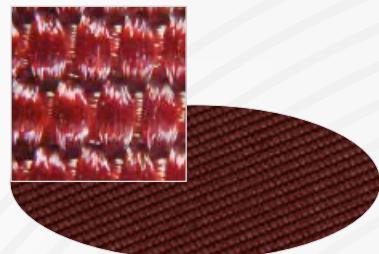
Taffeta woven synthetic fibres.
Stock removal and inherent flatness on difficult materials.
Usable with diamond abrasives from 3 to 15 µm.

Ø (mm)	Qty.	Self-adhesive		Magnetic		X-LAM	
		Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
200	5 units	2TT10A02005	2TT10M02005	2TT10X02005			
250	5 units	2TT10A02505	2TT10M02505	2TT10X02505			
300	5 units	2TT10A03005	2TT10M03005	2TT10X03005			
400	5 units	2TT10A04005					

**TOUCHLAM® 2TT2**

Taffeta woven synthetic fibres.
Stock removal and inherent flatness on difficult materials.
High durability.
Usable with diamond abrasives from 6 to 15 µm.

Ø (mm)	Qty.	Self-adhesive		Magnetic		X-LAM	
		Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
200	5 units	2TT20A02005	2TT20M02005	2TT20X02005			
250	5 units	2TT20A02505	2TT20M02505	2TT20X02505			
300	5 units	2TT20A03005	2TT20M03005	2TT20X03005			
400	5 units	2TT20A04005					

**TOUCHLAM® 2TS3**

Extra-thin satin woven natural fibres.
Excellent inherent flatness and finishing, preservation of inclusions and edges, on all materials. Usable with diamond abrasives from 2 to 9 µm.

Ø (mm)	Qty.	Self-adhesive		Magnetic		X-LAM	
		Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
200	5 units	2TS30A02005	2TS30M02005	2TS30X02005			
250	5 units	2TS30A02505	2TS30M02505	2TS30X02505			
300	5 units	2TS30A03005	2TS30M03005	2TS30X03005			
400	5 units	2TS30A04005					



TOUCHLAM® 2TS4

Satin woven natural fibres.

Excellent finishing and flatness, preservation of edges, especially on sample composed of materials of various hardness or with coating.

High durability.

Usable with diamond abrasives from 1 to 6 µm.

**TOUCHLAM® 3SE2**

Woven synthetic silk fibres.

Finishing and flatness on soft materials.

Usable with diamond abrasives from 1 to 3 µm.

**TOUCHLAM® 3SA4**

Soft composite synthetic fibres

Finishing on soft materials.

Usable with diamond abrasives from 0,25 to 3 µm.

**TOUCHLAM® 3TL1**

High resistant woven wool fibres.

Adapted for the finishing of non-mounted samples

High durability.

Usable with diamond abrasives from 3 to 6 µm.



Ø (mm)	Self-adhesive		Magnetic		X-LAM	
	Qty.	Ref.	Ref.	Ref.	Ref.	Ref.
200	5 units	2TS40A02005	2TS40M02005	2TS40X02005		
250	5 units	2TS40A02505	2TS40M02505	2TS40X02505		
300	5 units	2TS40A03005	2TS40M03005	2TS40X03005		
400	5 units	2TS40A04005				

POLISHING SUPPORTS

TOUCHLAM® 3FV1

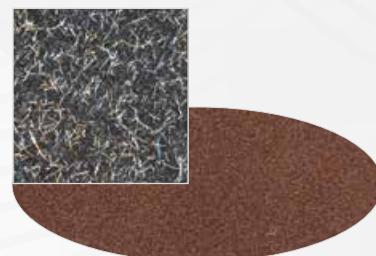
Semi-hard flocked short viscose fibres. Super finishing, preservation of the inherent flatness on mounted hard materials. Usable with diamond abrasives from 1 to 3 µm.

Ø (mm)	Qty.	Self-adhesive Ref.	Magnetic Ref.	X-LAM Ref.
200	5 units	3FV10A02005	3FV10M02005	3FV10X02005
250	5 units	3FV10A02505	3FV10M02505	3FV10X02505
300	5 units	3FV10A03005	3FV10M03005	3FV10X03005
400	5 units	3FV10A04005		

**TOUCHLAM® 3FV2** NEW

Flocked short viscose fibres. Super finish for all materials. Can be used with NEODIA® diamond liquids from 1 to 3 µ as well as alumina suspension and colloidal silica. More versatile and less aggressive than 3FV1.

Ø (mm)	Qty.	Self-adhesive Ref.	Magnetic Ref.	X-LAM Ref.
200	5 pièces	3FV20A02005	3FV20M02005	3FV20X02005
250	5 pièces	3FV20A02505	3FV20M02505	3FV20X02505
300	5 pièces	3FV20A03005	3FV20M03005	3FV20X03005
400	5 pièces	3FV20A04005		

**TOUCHLAM® 4FV3**

Soft flocked long viscose fibres. Super finishing on large variety of materials, including very soft materials. Principally used with diamond abrasives from 0,25 to 3 µm but also with alumina suspension and colloidal silica.

Ø (mm)	Qty.	Self-adhesive Ref.	Magnetic Ref.	X-LAM Ref.
200	5 units	4FV30A02005	4FV30M02005	4FV30X02005
250	5 units	4FV30A02505	4FV30M02505	4FV30X02505
300	5 units	4FV30A03005	4FV30M03005	4FV30X03005
400	5 units	4FV30A04005		

**TOUCHLAM® 4MP1**

Microporous polyurethane foam. Adapted to sensitive samples requiring an extreme super finish with chemical abrasives. Usable with oxides or colloidal silica.

Ø (mm)	Qty.	Self-adhesive Ref.	Magnetic Ref.	X-LAM Ref.
200	5 units	4MP10A02005	4MP10M02005	4MP10X02005
250	5 units	4MP10A02505	4MP10M02505	4MP10X02505
300	5 units	4MP10A03005	4MP10M03005	4MP10X03005
400	5 units	4MP10A04005		

**TOUCHLAM® 4MP2**

Microporous polyurethane foam. High thickness. High durability, usable in production process. Usable with oxides or colloidal silica.

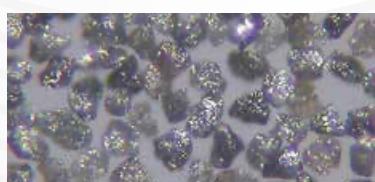
Ø (mm)	Qty.	Self-adhesive Ref.	Magnetic Ref.	X-LAM Ref.
200	5 units	4MP20A02005	4MP20M02005	4MP20X02005
250	5 units	4MP20A02505	4MP20M02505	4MP20X02505
300	5 units	4MP20A03005	4MP20M03005	4MP20X03005
400	5 units	4MP20A04005		



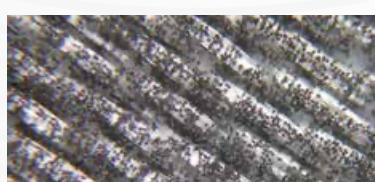
DIAMOND ABRASIVES



Monocrystalline diamond



Polycrystalline diamond



Polycrystalline diamond on cloth

BIO DIAMANT®
NEODIA®
 LIQUIDE DIAMANT
 DIAMOND LIQUID



BIO DIAMANT® abrasive suspensions NEODIA®

BIO DIAMANT® abrasive suspensions NEODIA® In direct line with our famous BIO DIAMANT® range, the NEODIA® diamond abrasive suspension goes even further in terms of performance, efficiency and user comfort. The NEODIA® diamond suspension is a top-of-the-range product featuring exceptional performance.

Enhanced polishing performance

The quality of the abrasive used and the tight criteria of calibration and concentration during our production process, as well as the use of a new generation of water-based binders allows a much higher level of performance of results while preserving a high stock removal. The binder consistency allows the cutting action to start within the first seconds of the polishing cycle.

Free from VOCs and CMRs

NEODIA® Diamond Liquids are composed of a specific new-generation binder. This liquid is VOC-free (Volatile Organic Compounds) and CMR-free (Carcinogenic, Mutagenic, Reprotoxic).

User health and environmental impact

NEODIA® diamond liquid is, of course, over 70% biodegradable in accordance with the criteria of our BIO DIAMANT® label. Non-toxic and non-harmful, they are neutral, so the user's working conditions are respected.



DIAMOND ABRASIVES

BIO DIAMANT® ABRASIVE SUSPENSIONS NEODIA®M

High performance suspension, high concentration of monocrystalline diamonds, biodegradable with no separation within the polishing solution.

NEODIA®M with vaporiser		200 ml		
Type	µm			Ref.
1/4 M	1/4			02 97460 80
1 M	1			02 01460 80
2 M	2			02 02460 80
3 M	3			02 03460 80
6 M	6			02 06460 80
9 M	9			02 09460 80
14 M	14			02 14460 80

Refill NEODIA®M without spray		400 ml	1 litre	2,5 litres
Type	µm	Ref.	Ref.	Ref.
1/4 M	1/4	02 97460 60	02 97460 20	02 97460 30
1 M	1	02 01460 60	02 01460 20	02 01460 30
2 M	2	02 02460 60	02 02460 20	02 02460 30
3 M	3	02 03460 60	02 03460 20	02 03460 30
6 M	6	02 06460 60	02 06460 20	02 06460 30
9 M	9	02 09460 60	02 09460 20	02 09460 30
14 M	14	02 14460 60	02 14460 20	02 14460 30



-3% off for the purchase of 3 products of the same reference

BIO DIAMANT® ABRASIVE SUSPENSIONS NEODIA®P

High performance suspension, high concentration of polycrystalline diamonds, biodegradable with no separation within the polishing solution.

NEODIA®P with vaporiser		200 ml		
Type	µm			Ref.
1/4 P	1/4			02 97469 80
1 P	1			02 01469 80
2 P	2			02 02469 80
3 P	3			02 03469 80
6 P	6			02 06469 80
9 P	9			02 09469 80
14 P	14			02 14469 80

Refill NEODIA®P without spray		400 ml	1 litre	2,5 litres
Type	µm	Ref.	Ref.	Ref.
1/4 P	1/4	02 97469 60	02 97469 20	02 97469 30
1 P	1	02 01469 60	02 01469 20	02 01469 30
2 P	2	02 02469 60	02 02469 20	02 02469 30
3 P	3	02 03469 60	02 03469 20	02 03469 30
6 P	6	02 06469 60	02 06469 20	02 06469 30
9 P	9	02 09469 60	02 09469 20	02 09469 30
14 P	14	02 14469 60	02 14469 20	02 14469 30



-3% off for the purchase of 3 products of the same reference



BIO DIAMANT® NEODIA® F LIQUIDS

New generation of ready-to-use abrasive suspensions containing polycrystalline diamonds. The NEODIA® F is optimised for automatic dosage by spray (Venturi system). Its formulation and its price make it useful for intensive usage.

Type	µm	400 ml	1 l	2,5 l
		Ref.	Ref.	Ref.
1 F	1	02 01470 60	02 01470 20	02 01470 30
3 F	3	02 03470 60	02 03470 20	02 03470 30
6 F	6	02 06470 60	02 06470 20	02 06470 30
9 F	9	02 09470 60	02 09470 20	02 09470 30
14 F	14	02 14470 60	02 14470 20	02 14470 30

-3% off for the purchase of 3 products of the same reference



Diamond emulsion

BIO DIAMANT® finishing liquid

M.M.140

High yield emulsion for the finishing of all materials.

High concentration. Cleaning with solvent or detergent 742.

New conditioning.

Characteristics	Type	Conditioning	Ref.
Diamond emulsion.	M.M.140	250 ml	02 MM140 00



200 ml 400 ml

Manual distributors to be filled

Designation	Qty.	Ref.
200 ml biodegradable bottle + White vaporiser	1	08 00514 00
400 ml biodegradable bottle + Green spray	1	08 00513 00
Green spray	1	08 00503 00

-5% off for the purchase of 3 products of the same reference

DIAMOND ABRASIVES

BIO DIAMANT® abrasive suspensions Pulmatic**For large surface polishing and material sensitive to corrosion.**

The Pulmatics are proposed in a practical packaging for a very good distribution of the product over the work surface. They are free of any propeller gas. Pulmatic 310 is a alcohol based monocrystalline diamond liquid of a medium concentration. The Pulmatic 320P is a alcohol based polycrystalline diamond liquid of a strong concentration.

SERIE 310

Characteristics	Concentration	Type	µm	Ref.
Conditioning : Pulmatic				
75 g Monocrystalline diamond. Optimum distribution of the abrasive on the polishing support. Alcohol base (free of water). Special hydrophobic materials.	Medium	025 313	1/4	03 97313 00
		1 313	1	03 01313 00
		2 313	2	03 02313 00
		3 313	3	03 03313 00
		6 313	6	03 06313 00
		8 313	8	03 08313 00
		10 313	10	03 10313 00
		14 313	14	03 14313 00
		25 313	25	03 25313 00
		40 313	40	03 40313 00
Conditioning : 1 Litre can				
1 litre Monocrystalline diamond. Alcohol base. Special hydrophobic materials.	Medium	025 313	1/4	03 97313 20
		1 313	1	03 01313 20
		2 313	2	03 02313 20
		3 313	3	03 03313 20
		6 313	6	03 06313 20
		8 313	8	03 08313 20
		10 313	10	03 10313 20
		14 313	14	03 14313 20
		25 313	25	03 25313 20
		40 313	40	03 40313 20

**SERIE 320P**

Characteristics	Concentration	Type	µm	Ref.
Strong				
75 g Polycrystalline diamond. Optimum distribution of the abrasive on the polishing support. Alcohol base (free of water). Special hydrophobic materials.	Strong	025 323P	1/4	03 97323 00
		1 323P	1	03 01323 00
		2 323P	2	03 02323 00
		3 323P	3	03 03323 00
		6 323P	6	03 06323 00
		8 323P	8	03 08323 00
		10 323P	10	03 10323 00
		14 323P	14	03 14323 00
		25 323P	25	03 25323 00

**-5% off for the purchase of 3 products of the same reference**

Products subject to shipping restrictions.



Does not crystallize



SUPERFINISH finishing liquids

FINAL FINISHING LIQUID

Aqueous suspension of non-agglomerated nanometric silica stabilised in an alkaline medium. Used to carry out super finishing, to obtain ultra-low roughness. Very easy-to-use and applicable on all types of materials. Does not crystallize.

Recommendations for use: dilute 20 to 50% in water.

Characteristics	Grain size	Conditioning	Ref.
Final polishing on polishing cloth. All materials.	50 nm	500g 5 litres	05 NL008 00 05 NL008 40

L1 FINISHING LIQUID

Final polishing suspension specially formulated for mechano-chemical polishing. During usage, the active substances of the solution embrittle the surface to be polished, thereby optimising the efficiency of the abrasive grains. Allows combining performance (stock removal) and polishing quality. Recommended for titanium and its alloys.

Recommendations for use: ready-to-use preparation.

Characteristics	Type	Conditioning	Ref.
Final polishing on polishing cloth. All materials.	L1 liquid Titanium	1 litre	05 NL011 00

L2 FINISHING LIQUID

A composite solution of aluminium oxides and colloidal silicas, ideal for preparing surfaces prior to superfinishing. Recommended for polishing aluminium and aluminium alloys.

Recommendations for use: ready-to-use preparation.

Characteristics	Type	Conditioning	Ref.
Final polishing on polishing cloth. All materials.	L2 liquid Aluminium	1 litre	05 NL012 00

ALPLAN LIQUIDS

Final polishing solutions composed of aluminium oxides of a very high purity. These alumina preparations are subjected to a pushed de-agglomeration treatment; which result excellent polishing quality. Easy-to-use, ALPLAN solutions are usable on all types of materials.

Recommendations for use: pure or diluted up to 50% with water.

Characteristics	Grain size	Conditioning	Ref.
ALPLAN CLASSIC	0,05 µm	1 litre	05 AP005 00
	0,25 µm	1 litre	05 AP025 00
	1 µm	1 litre	05 AP100 00

ALPLAN PREMIUM LIQUIDS

NEW

Achieve exceptional surface finishes with our advanced alumina suspensions, specifically designed for polishing softer materials.

Recommendations for use: pure or diluted up to 50% with water.

Characteristics	Grain size	Conditioning	Ref.
ALPLAN PREMIUM	0,5 µm	1 litre	05 AP050 00
	4 µm	1 litre	05 AP400 00
	6 µm	1 litre	05 AP600 00

DIAMOND ABRASIVES

BIO DIAMANT® Sticks**For manual use and control of consumption**

The diamond paste is distributed according to a precise dosage thanks to a drum graduated every 0.2 g. The diamond paste is repetitively loaded on the polishing cloth without any contact with fingers. The pastes and sticks are used with 702 and 704 type lubricants. The product's colour marking facilitates its identification.

The dosing sticks series 122:

are composed of a monocrystalline diamond paste of a strong concentration.

The dosing stick series 123P:

are composed of a polycrystalline diamond paste of a strong concentration.



Characteristics	Concentration	Type	µm	Ref.
-----------------	---------------	------	----	------

SERIE 122

10 g
Monocrystalline diamond Consumption
control
Easy distribution
Coloration by grain size
Water or alcohol cleaning

Strong

025 122	1/4	01 97122 00
1 122	1	01 01122 00
3 122	3	01 03122 00
6 122	6	01 06122 00
9 122	9	01 09122 00
15 122	15	01 15122 00

SERIE 123P

10 g
Polycrystalline diamond Consumption
control
Easy distribution
Water or alcohol cleaning

Strong

025 123P	1/4	01 97123 00
1 123P	1	01 01123 00
3 123P	3	01 03123 00
6 123P	6	01 06123 00
9 123P	9	01 09123 00
15 123P	15	01 15123 00



-5% off for the purchase of 3 products of the same reference

GUIDANCE**Indicative quantities necessary to load a new cloth**

Cloth Ø mm	150	200	250	300	400
Woven	0,2 g	0,2 g	0,4 g	0,4 g	0,6 g
Flocked	0,3 g	0,4 g	0,5 g	0,6 g	0,7 g

BIO DIAMANT® pastes

SERIE 100

Unique abrasive compounds

Designed for all grinding and polishing work, the Bio DIAMANT® Pastes contain a diamond powder free of any impurity, guaranteeing its cutting power. The perfectly calibrated grains are uniformly suspended in chemically pure ingredients. A formulation which provides a more uniform and more fluid abrasive film which allows an immediate abrasion of the part to be polished. The concentration of the pastes has a direct effect on the polishing's execution rate: a high concentration is the guarantee of a high yield.

Available in two ranges: strong and extra strong, monocrystalline products that can be cleaned with water or alcohol.

Easy to clean with water



Characteristics	Concentration	Type	µm	Ref.
10 g. Monocrystalline diamond For all materials Cleaning with water or alcohol Coloration by grain size	Strong	010 103	1/10	01 99103 00
		025 103	1/4	01 97103 00
		1 103	1	01 01103 00
		2 103	2	01 02103 00
		3 103	3	01 03103 00
		6 103	6	01 06103 00
		8 103	8	01 08103 00
		14 103	14	01 14103 00

-5% off for the purchase of 3 products of the same reference

Characteristics	Concentration	Type	µm	Ref.
10g. Monocrystalline diamond For all materials Cleaning with water or alcohol Coloration by grain size	Very strong	1 105	1	01 01105 00
		2 105	2	01 02105 00
		3 105	3	01 03105 00
		6 105	6	01 06105 00
		8 105	8	01 08105 00
		14 105	14	01 14105 00

-5% off for the purchase of 3 products of the same reference

Reading the type

GUIDANCE

Exemple:	Paste type: Grain size: Series: Concentration:	6 103 6 microns 100 3 (strong) 5 (very strong)
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FLUIDS & LUBRICANTS

Lubricants 700 series

M.M. 702

Lubricating fluid to be used to optimise polishing with 100 series diamond pastes and 122 and 123P series Bio DIAMANT® sticks. Ready to use, it ensures excellent dispersion of the abrasive and avoids the risk of material overheating during polishing. This fluid is easy to clean with water or alcohol.

Characteristics	Conditioning	Ref.
Recommended as an addition to LAM PLAN diamond pastes and stick.	1 litre	07 MM702 30
Water base	5 litres	07 MM702 40



M.M. 704

Alcohol-based lubricant perfectly suitable to polish samples which are sensitive to corrosion. Ready-to-use, it ensures a strong cooling during the work.

This lubricant is particularly recommended for the polishing of ductile materials and hydrophobic materials.

For cleaning, it is recommended to use the detergent 742 or alcohols like isopropyl alcohol.

Characteristics	Conditioning	Ref.
Recommended as an addition to LAM PLAN diamond pastes and Pulmatic.	1 litre	07 00704 30
Alcohol base diamond liquid.	5 x 1 litre*	07 00704 40



Booster for CAMEO®DISK Platinum

Booster fluid is a new lubricant especially developed to be applied on the CAMEO®DISK Platinum during the polishing step. Its specific formulation facilitates the use of the CAMEO®DISK Platinum 0, 1, 2, 3, 4 and DMD.

Ready-to-use, this new lubricant maintains the efficiency of the CAMEO®DISK constant in time and avoids the use of abrasive stone to regenerate the disc.

The main advantages are:

- Improves the efficiency of the CAMEO®DISK
- Keeps the efficiency constant in time
- Reduces water consumption
- Universal use, can be used on all kind of material
- Ready to use.



Characteristics	Conditioning	Ref.
Ready to use lubricant fluid	5 litres	07 BP030 40



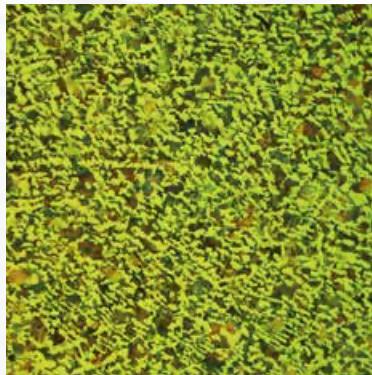


METALLOGRAPHIC REAGENTS

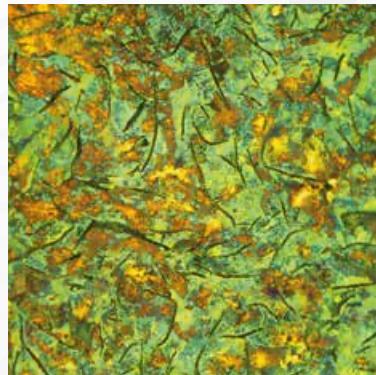
Metallographic reagents

Etching reagents are used to examine the structure of metallic materials. The objective of the micrographic analysis is to highlight the structure of the material (inclusions, grain boundaries, phases, ...) using an optical microscope.

These reagents act either by preferential chemical attack, or by coloration of certain constituents compared to others.



Steel etching nital 5 %



Lamellar cast iron nital attack 5 %



TA6V titanium etched by Kroll reagent

Packaging: 1 liter

Recommendations

Highlighting

Ref.

NITAL 5% REAGENT

Room temperature, a few seconds

- Iron and ferrous alloys (cast iron and steel)
- Magnesium and its alloys
- Tin and its alloys
- Pure titanium
- Cadmium and its alloys

- Welding of steels
- Ferrite grain boundaries and constituents
- Segregation and case hardening zones

08 RN050 20

NITRIC ACID 10% REAGENT

Room temperature

- Steels

- Phases on ferritic welds in steels

08 RR090 20

MURAKAMI REAGENT

Room temperature or hot, 60 seconds

- Iron and ferrous alloys (cast iron and steel)
- Tungsten alloys

- Carbide highlighting: to blacken carbides, Use at 80°C to boiling under fume hood.
- Weakly revealed Σ (sigma) phase after 3 min at room temperature.

08 RR030 20

KALLING N°1 REAGENT

Room temperature

- Martensitic stainless steels

- To color in black the martensite of stainless steels.
- To color the ferrite
- To highlight segregations and austenite grain boundaries.

08 RR040 20

KALLING N°2 REAGENT NEW

Room temperature

- stainless steels

- Ferrite rapidly etched; austenite slightly etched.

08 RR011 20

OBERHOFFER REAGENT

Room temperature, 20 seconds

- Non-alloyed steels
- Low-alloyed steels

- Primary structures (fiber layer)
- Make phosphorus accumulations visible

08 RR050 20

METALLOGRAPHIC REAGENTS

Recommendations	Packaging: 1 liter	Highlighting	Ref.
KROLL'S REAGENT			
Room temperature - Aluminium and its alloys - Titanium alloys (mainly Ti-Al-V(-Sn))	- Highlighting of the phases		08 RR070 20
MARBLE REAGENT			
Room temperature, 10 seconds - Austenitic steels - High temperature steels - Cobalt superalloys	- Highlighting of the austenitic phase nuances - Attack of the Σ phase (sigma) - Highlighting of the grain structures		08 RR080 20
PICRAL-2 REAGENT			
Room temperature, few seconds - Iron and ferrous alloys (cast iron and steel)	- Structures composed of ferrite - Reveal carbides. - Reveal fine microstructures. - Revealing the grain boundaries		08 RR020 20
KLEMM I REAGENT			
Room temperature - Non-alloy and low-alloy steels - Cast iron - Manganese and zinc steels - Brass and bronze - Low alloyed zinc	Staining Reagent: - On steels: 40 to 100 sec to color the ferrite, blue and brown depending on the orientation of the grain. Carbides, cementite and phosphides are not colored and remain white - On brass and bronze: 3 min to color β phase, 10 to 60min for α phase - On zinc alloys: 30 sec		08 RR010 10
KLEMM II REAGENT			
Room temperature - Manganese alloys - Copper and its alloys (brass and bronze) - Tin and its alloys	To reveal the austenitic phase of manganese alloys. Reagent for staining and analyzing soft solder: Brass: 6 min for α phase Tin and alloys : 60 to 90 sec		08 RR010 20
FRY A REAGENT		NEW	
Room temperature - Martensitic stainless steels - Precipitation-hardening stainless steels	- Highlighting grain boundaries		08 RR100 20
FRY B REAGENT		NEW	
Room temperature - Martensitic stainless steels - Precipitation-hardening stainless steels	- Highlighting grain boundaries		08 RR110 20
10% SODA SOLUTION			
Room temperature or 5 sec. at 70°C For all aluminum and its wrought alloys.	Aluminium welding Phase identification		08 RS100 20
KELLER REAGENT			
Packaging: 100 ml (<i>Change of packaging due to transport restrictions</i>)			
Room temperature - Aluminium and its alloys, - Titanium alloys	- Highlighting of the phases		08 RR061 00

LITHOPREPARATION



MACHINES & ACCESSORIES



M.M.818 vacuum impregnator device

Compact vacuum mounting unit for impregnation of porous materials and bubble-free mounting with epoxy resins type 613. The M.M.818 has a large capacity vacuum chamber of 160 mm diameter and is equipped with a resin distribution system. A vacuum gauge on the front panel allows the vacuum level to be monitored and the various vacuum cycles to be controlled manually.

Technical Data	M.M.818
Vacuum level	- 650 mm-Hg
Inner diameter base	160 mm
Useful height of vacuum tank	160 mm
Dimensions W x H x D	480 x 400 x 400 mm
Vacuum pump dimensions (W x H x D)	140 x 210 x 240 mm
Power supply	230 V - 50 Hz single phase
Weight	10,10 kg
Weight vacuum pump	7,25 kg
Reference	08 00818 00

MASTERLAM® 3.0 GEOLOGICAL with thin slide holders

Finishing polishing

The MASTERLAM® 3.0 automatic polisher, fitted with a special head adapted to the new special thin slide sample holders, will enable you to perform the final polishing of your samples.



MASTERLAM® 3.0 GEOLOGICAL
Reference 60 ML30M 00



LAM PLAN presents you its new developments resulting from the collaboration of our TEST CENTRE with reference LITHO-PREPARATORS. An offer composed of equipment and consumables dedicated to the preparation of geological substrates and in particular the realization of thin sections.

MACHINES & ACCESSORIES

M.M.9400 with PE128

NEW

Grinding and thickness adjustment

The LAM PLAN M.M.9400 grinding machine combined with the PE128 mounting is the ideal equipment for making reference faces or for precise thicknessing. Combined with the AQUA LAM® range of Sic abrasives from roughing to grinding it is a reliable and versatile solution for preparing your mineral samples.



Non-contractual pictures



PE128 precision sample holder for thin slides

The LAM PLAN PE128 specimen holder is used to hold several thin slides by vacuum suction during a lapping operation. This sample holder guarantees a high level of parallelism.

The precision and robustness of this device allow it to meet the specific demands of research laboratories as well as the constraints of production laboratories.

- Adjustable thickness of the thin blades and automatic parallelism.
- The set includes 1 micrometer ruler, 1 vacuum pump and 1 sample holder Ø 120 mm.
- Compatible thin blades : 6x 30x45 ou 6x 28x48 - 1x 120x45 + 2x 28x48 (or 2x 30x45) 1x 120x90 - 1x 60x80 + 2x 28x48 (or 2x30x45) - 2x 60x80 - 4x 24x27 - 4x Ø1 inch.

Developed
with the collaboration of
FRENCH
LITHOPREPARATORS



Technical Data	PE128
Accuracy of the adjustment ring	200 µm per rotation
Useful internal diameter	128 mm
Dimensions (H x Ø)	210 x 144 mm
Weight	6,27 kg
Reference	06 PE128 00



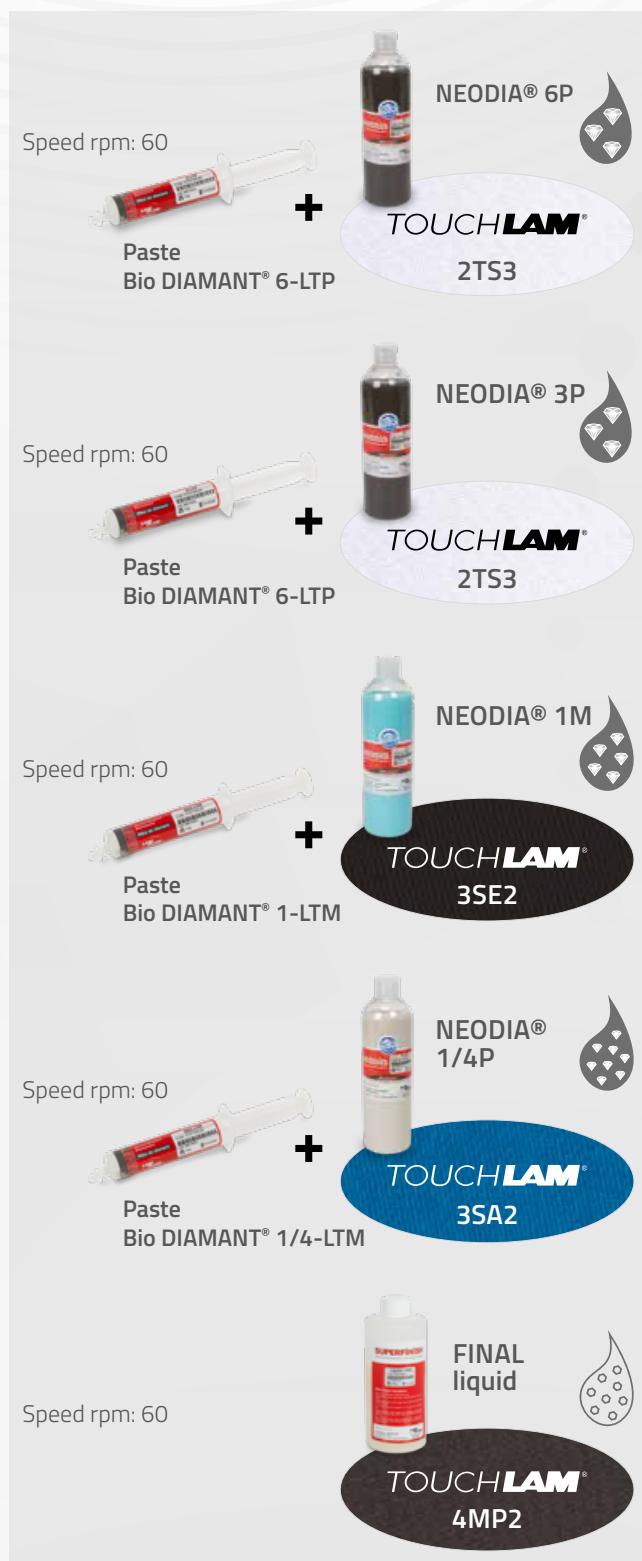
SUPPORTS & CONSUMABLES

POLISHING RANGE

Solution for finish polishing minerals after grinding with PE128.

OBJECTIVE: obtain a polished surface with no visible scratches at 500x and a thickness of between 15 and 10 μ .

MACHINE: MASTERLAM 3.0 GEOLOGICAL - Ø 300 mm



THICKNESS SETTING FOR THIN SHEETS

For the preparation of mineralogical samples, the first step is to calibrate the thin slides themselves, so that the reference thickness of each support is identical..

PREPARATION

OBJECTIVE: Thickness calibration of thin glass slides before use. Tolerance 3 to 6 μ .

EQUIPMENT USED:

MACHINE: **M.M.9400**
ABRASIVE DISTRIBUTION: **DOSING UNIT 710**
SUPPORT: **GROOVED CAST-IRON PLATE**
SAMPLE HOLDER: **PE128**

ABRASIVE: BIOLAM PLUS SiC

Abrasive: BIOLAM PLUS SiC F500 (13 μ)
+ 50% water

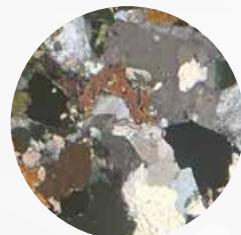
1 Distribution: 1 second every 2 seconds
Rotation speed: 40 rpm
Stock removal: 10 μ /min

Abrasive: BIOLAM PLUS SiC F600
+ 50% water

2 Distribution: 1 second every 2 seconds
Rotation speed: 40 rpm

Abrasive: BIOLAM PLUS SiC F1200
+ 50% d'eau

3 Distribution: 1 second every 2 seconds
Rotation speed: 40 rpm



SUPPORTS & CONSUMABLES

Cast-iron plates

PLAIN CAST-IRON PLATE

Characteristics	Ø (mm)	Ref.
For manual preparation of thin slides on SMARTLAM® 2.0	250	V0 250RS TD

GROOVED CAST-IRON PLATES

Characteristics	Ø (mm)	Ref.
For M.M.9400	381	V0 15RAS TD

BIO DIAMANT® LTM & LTP pastes NEW

Diamond pastes specially developed for lithopreparation.

Made from monocrystalline and polycrystalline diamonds, they produce high-quality surfaces for microscopic analysis. These pastes are available in a range of four particle sizes from 1/4 µm to 6 µm. Covering needs from rapid material removal to superfinishing. Soluble in water or alcohol, LT series pastes can be used with 704 fluid for water-sensitive materials or in combination with Bio DIAMANT® NEODIA® M and P liquids.

Characteristics	µm	Ref.
BIO DIAMANT® LTM MONOCRYSTALLINE PASTE	1/4	01 971LTM 00
	1	01 011LTM 00
	3	01 031LTM 00
10 g syringe	6	01 061LTM 00
BIO DIAMANT® LTP POLYCRYSTALLINE PASTE	1/4	01 971LTP 00
	1	01 011LTP 00
	3	01 031LTP 00
10 g syringe	6	01 061LTP 00

-5% from 3 products of the same reference

BIO DIAMANT® PRF liquid NEW

Ultra-fine paraffin-based diamond liquids for lithopreparation.

Products designed for high-precision polishing of thin sheets of materials a few microns thick, such as rocks, meteorites or fossils. They enable material to be removed in a controlled way, while guaranteeing a perfect finish with no scratches or cracks. Their paraffin base ensures optimum lubrication. Water-free, they offer a major advantage in preventing any oxidation or degradation of sensitive samples.

Characteristics	µm	Ref.
BIO DIAMANT® PRF-M MONOCRYSTALLINE LIQUID	1/4	02 97PRM 60
	1	02 01PRM 60
400 ml bottle	3	02 03PRM 60

-5% from 3 products of the same reference

AQUALAM SiC black abrasive NEW

Characteristics	F	µm	Ref.
Black silicon carbide powder	1200	3	F0 03P10 5K
5 kg bucket	600	9	F0 09P10 5K
	500	13	F0 13P10 5K

-5% from 3 products of the same reference



GENERAL TERMS AND CONDITIONS OF SALE

1. Application of the General Terms and Conditions of Sale

Any order placed with LAM PLAN SAS implies the customer's unreserved acceptance of the entirety of the General Terms and Conditions of Sale outlined below.

Customer orders are only recorded by LAM PLAN SAS in accordance with these General Terms and Conditions of Sale, regardless of any contrary provisions on the customer's purchase orders or general terms, unless explicitly accepted in writing by LAM PLAN SAS.

LAM PLAN SAS's waiver of one or more clauses of these General Terms does not imply a waiver of any other clauses, which remain fully enforceable.

These General Terms and Conditions may be amended at any time without prior notice by LAM PLAN SAS, with changes applying to all subsequent orders.

The customer acknowledges being fully informed that acceptance of these terms does not require signature of the document.

2. Orders

The sale is only considered final after LAM PLAN SAS accepts the customer's order.

Products are provided and invoiced at the price in effect at the time of the order or, where applicable, in accordance with a specific commercial proposal accepted by the customer.

Any subsequent modifications to the order requested by the customer may be considered at LAM PLAN SAS's discretion if notified in writing at least 15 days before the scheduled delivery date and accompanied by a new specific purchase order signed by the customer, possibly with a price adjustment.

3. Prices

Our quotations are valid for three months after they are issued.

Invoices are issued based on the price in effect on the order date.

Unless otherwise stated in writing, prices are in Euros, net, excluding tax, ex-works and excluding packaging.

Consequently, the customer shall bear the applicable VAT rate if any, transportation costs, any customs fees and duties, and insurance costs.

Special pricing terms may apply depending on specific requirements requested by the customer, particularly regarding delivery terms and deadlines, and payment terms and conditions.

A specific commercial offer will then be sent to the customer by LAM PLAN SAS.

4. Payment

Payment must be made in full, in a single installment, within 30 days end of month from the invoice date.

In the event of late payment, LAM PLAN SAS may suspend any ongoing orders, without prejudice to a late penalty due the day after the invoice due date, calculated on all amounts due, at a rate three times the legal interest rate in effect at the time of enforcement, as applied by the European Central Bank.

Furthermore, and in accordance with Article L 441-6 of the French Commercial Code, in addition to late penalties, the customer shall be liable for a fixed recovery fee of €40, with LAM PLAN SAS reserving the right to claim additional compensation upon proof of recovery costs exceeding the fixed fee.

5. Retention of Title

LAM PLAN SAS retains ownership of the delivered goods until full payment of the price, including principal, interest, and charges.

However, risk passes to the customer upon delivery and remains throughout the period of retention of title in favor of LAM PLAN SAS.

The customer therefore agrees to take out insurance covering risks of loss, theft, or destruction of goods, until full payment is made.

Without prejudice to any claim for damages, LAM PLAN SAS may cancel the sale and, without prior notice, recover all goods in question for any unpaid invoice at maturity.

The customer is prohibited from pledging or transferring ownership of the goods until full payment has been made.

If the customer becomes subject to insolvency proceedings or any event preventing payment for goods delivered, and the goods have been resold to a sub-buyer who has not paid yet, the customer agrees to promptly provide LAM PLAN SAS with all necessary information to assert its rights over the outstanding receivable from the sub-buyer.

6. Deliveries

Delivery dates and deadlines are for informational purposes only and are not guaranteed.

LAM PLAN SAS's obligation is one of means, not result. Therefore, any delay in delivery shall not result in cancellation of the order, rejection of the goods, or claims for penalties or damages.

LAM PLAN SAS shall not be held liable for delivery delays or suspensions due to its service providers and/or subcontractors, or due to force majeure or unforeseen circumstances as defined by French jurisprudence.

LAM PLAN SAS's warehouses are the designated place of delivery.

This rule shall not be altered by LAM PLAN SAS's partial or full assumption of transportation costs, in which case LAM PLAN SAS acts solely as an agent for the customer, who bears all transport risks.

Unless otherwise agreed, goods are shipped at the customer's sole expense, risk, and peril, via carrier, to the address specified on the order form.

The customer must inspect the goods upon receipt. In the event of missing or damaged goods, the customer must note all necessary reservations on the delivery slip at the time of receipt.

Such reservations must also be confirmed in writing to the carrier, in accordance with Article L 133-3 of the French Commercial Code, within three days of receipt, via registered letter with acknowledgment of receipt. It is the customer's responsibility to pursue any claims against the carrier(s).

7. Right of Withdrawal and Order Cancellation

For returns of standard, compliant products, the customer may exercise a right of withdrawal by:

1. Notifying their return request in writing within 10 calendar days from the product receipt date (Proof Of Delivery required);

2. Shipping the products at their own cost within 20 working days of written confirmation from LAM PLAN SAS accepting the return.

Products must be returned in their original packaging, complete, in perfect condition, and unused. Any incomplete, damaged, or soiled product will not be refunded or exchanged.

Return costs are borne by the Customer. After verifying the condition of returned products, LAM PLAN SAS will proceed with either a refund or issue a credit note, at its discretion.

Any request for order cancellation before product shipment or service execution must be made in writing to LAM PLAN SAS and is subject to its acceptance.

Cancellation or withdrawal fees may be charged, at LAM PLAN SAS's discretion, particularly to cover incurred costs and lost profit. These fees will be at least 20% of the total order amount.

Custom-made or tailored Products or Services are not subject to cancellation or withdrawal, except with LAM PLAN SAS's express consent. In case of accepted cancellation, fees up to 100% of the order value may apply.

8. Limited Warranty

New equipment and materials sold by LAM PLAN SAS are guaranteed against manufacturing defects for one year from the invoice date.

The buyer must inspect the goods upon receipt and notify LAM PLAN SAS within 10 days of any discovered defects.

LAM PLAN SAS will, at its discretion, remedy any defect during the warranty period by repairing, replacing, or refunding the product, provided it was used under normal conditions with LAM PLAN SAS brand products and maintained properly.

The warranty does not cover:

- Use of materials provided by the customer or designs imposed by the customer;
- Force majeure, normal wear and tear, customer negligence, lack of supervision or maintenance, or improper use;
- Inappropriate storage or packaging conditions;
- Assembly or implementation faults by the customer or a third party;
- Modifications or repairs made by the customer or a third party without LAM PLAN SAS's prior written authorization.

LAM PLAN SAS provides no warranty for:

- The actual performance of the Products, other than compliance with specifications defined by LAM PLAN SAS;
- Electronic components or associated accessories, including printed circuit boards and integrated circuits.

The customer must allow LAM PLAN SAS sufficient time and means to make necessary repairs or replacements, failing which the warranty shall be void.

LAM PLAN SAS's warranty is strictly limited as stated above.

All damages of any kind arising from defects in goods are expressly excluded from the warranty.

9. Assembly and Commissioning

Assembly and commissioning are not included in the delivery.

Exclusions include foundations, electrical, hydraulic, and compressed air connections, and associated supplies.

These services can be provided by LAM PLAN SAS upon the customer's express request and will be billed separately.

If performed by a third party, only the third party's terms shall apply.

10. Copyrights

LAM PLAN SAS retains copyright ownership over all documents of any kind. The Buyer receives a license to make a limited number of copies of these documents, provided that copyright and trademark notices are included as in the original.

Reproduction of any part of the texts, images, or graphics for promotional purposes is strictly prohibited without LAM PLAN SAS's authorization.

11. Governing Law

All provisions are governed and interpreted solely by French law.

12. Jurisdiction

Any dispute regarding the interpretation and/or execution of these General Terms and Conditions of Sale shall first be subject to an attempt at amicable resolution.

Failing such resolution within two months from the date of the dispute, the matter shall be submitted exclusively to the Commercial Court of Paris.

This clause applies to summary proceedings, fixed-date proceedings, incidental claims, multiple defendants, or third-party claims, notwithstanding any jurisdiction clause to the contrary in the customer's documents.



POLISHING TECHNOLOGY®

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