LAMPLAN®

GLOBAL

CONTACTS



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

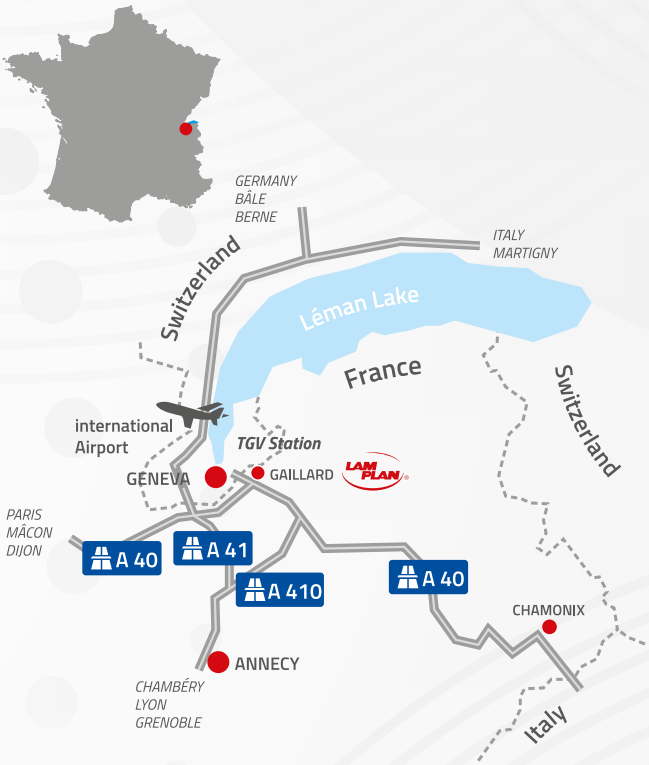


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VIDEOS

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

Contact our technical team

email: essai@lamplan.fr

For all questions

Tel. +33 (0)4 50 43 96 30

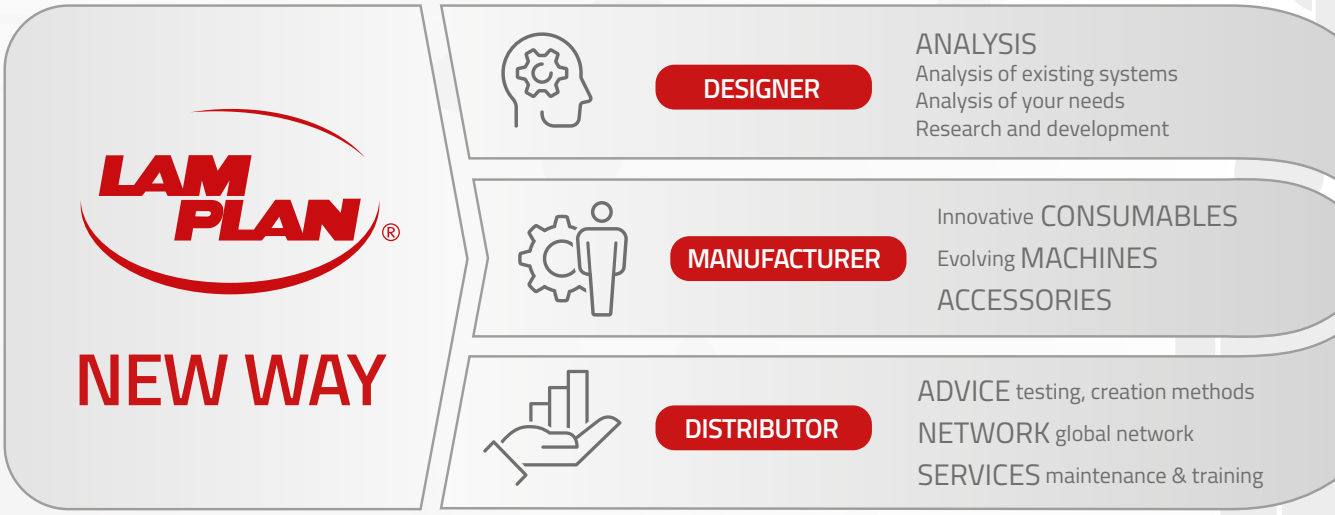
Social networks

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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.



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

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.

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

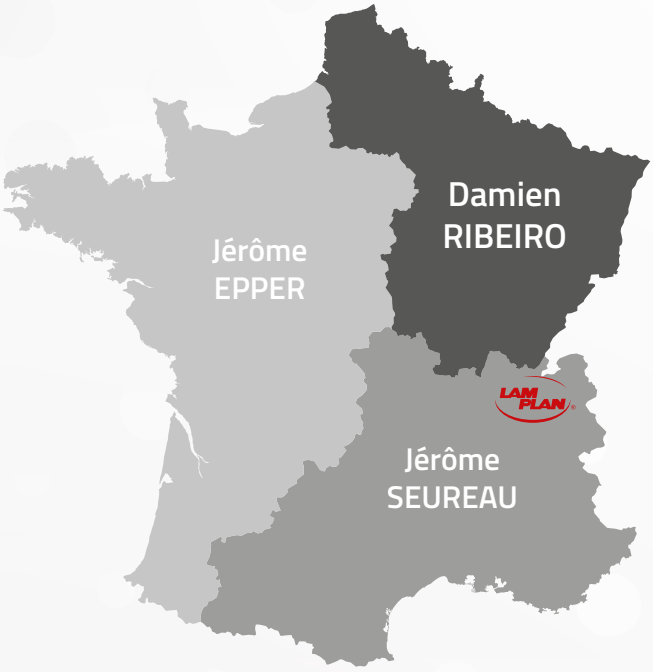
If you are looking for a LAM PLAN subsidiary or distributor LAM PLAN in the world, find the country of your choice from the list of our distributors on our website with this flash code.

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 Damien RIBEIRO		Paris and West Jérôme EPPER		South East Jérôme SEUREAU	
Departments		Departments		Departments	
02	59	14	49	01	38
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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.

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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ENVIRONMENT
ECO-COMMITMENT CHARTER



LAM PLAN is pursuing and maintaining its research and development efforts in favour of the technique and the environment.

Our innovations contribute to the improvement of our products and technologies by rendering them more effective, while reducing their impact on the environment and limiting the risks to user health. This responsible and intentional approach is an integral part of our continuous improvement policy.

This choice allows our customers today to anticipate international regulations in terms of occupational safety and ecology.

Thanks to our developments, we are committed to offering you innovative products which allow reconciling performance, quality, safety and respect of future generations.

By way of our values, we assert our commitment to responsible and sustainable business practices.s.

ECO-COMMITMENT CHARTER

The Eco-commitment approach aims to promote the preservation of the environment and the health of users through the integration of biotechnologies into our product ranges.

ENVIRONMENTAL APPROACH

The Eco Engagement approach aims to promote the preservation of the environment and the health of users through the integration of biotechnologies into our product ranges.

A real strategic industrial and societal issue, the environmental concern is a fact now present at all stages of the design and production of our solutions.

First in line with the Eco Commitment initiative, the BIO DIAMANT® and VOC Free labels sign off on the success of our research and development teams.

Biotechnology-derived, BIO DIAMANT® branded super-fine diamond abrasives meet demanding criteria for the protection of the environment and users:

// Biodegradable and safe for the environment

// Not dangerous, toxic, harmful or irritating to users

// More effective than traditional diamond products

// In accordance with the European directives in force.

Anxious to protect the environment, the label «VOC Free*» is the guarantee of a work done safely for the operators.

Pioneering in the implementation of formulations of this type, LAM PLAN intends to continue its efforts to make all of its preparations ever safer, without changing anything to their effectiveness. The commitment of the «VOC Free» label:

// Respect the user and the environment

// Promote the ISO 14000 approach at our customers

// Meet the legal requirements on VOC emissions.

** Volatile organic compounds*

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CUTTING

CUTTING MACHINES

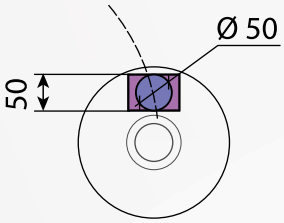




MADE IN FRANCE

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.

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 µm 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

Included Equipment

Recirculation system, 10 litres, 2 compartment decantation tank, 100 µ fabric filter, recirculation pumps 800 L/hour driven by the machine
Cylindrical sample holder with clamping screw: Ø 12 to 50 mm
Set of flanges: Ø 50 mm for cut-off wheel: Ø 125 to 150 mm

Options

Slow speed 50 to 1000 rpm	60 CTM 20 20
Vacuum system for holding thin sections	60 CTM 03 80

Accessories

Set of flanges Ø 35 mm for cut-off wheels Ø 75 to 100 mm	60 CTM01 10
Set of flanges Ø 75 mm cut-off wheels until Ø 200 mm	60 CTM01 30
Sample holder with multi screw clamping for irregular parts	60 CTM03 50
Sample holder double vice with clamping screw: Ø 12 mm max	60 CTM03 30
V sample holder with clamping screw: Ø 24 mm maxi	60 CTM03 20
Sample holder double vice with clamping screw: Ø 12 mm max	60 CTM03 40
Cylindrical sample holder with clamping screw: Ø 12 mm to 50 mm	60 CTM03 10
Small vice with clamping screw: Ø 12 mm	60 CTM02 10
Medium vice with clamping screw: Ø 24 mm	60 CTM021 10



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



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

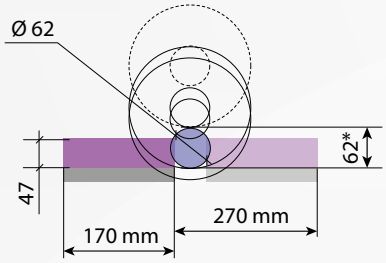
High-precision automatic 2 axes* cutting machine

**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



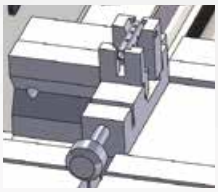
Efficiency: 5 key points for higher productivity

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 preset 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 multipoint nozzle, insures excellent cooling of the sample and the cutting wheel even during intensive use.

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



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



60 CTM35 00



60 CTM31 00



60 CTM34 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 µm 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, semi-automatic, 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



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®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.

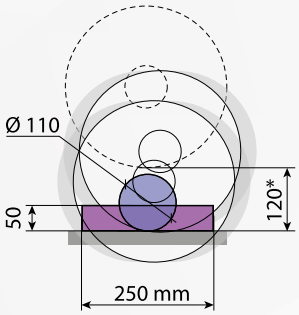
An external hand shower and inclined cutting chamber base make cleaning easy, while a strainer prevents samples from being swallowed up in the large-diameter flow.

CUTLAM®1.1

Manual cutting machine vertical motion

Theoretical cutting capacity - Ø 305 mm disc

**space under disc*





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

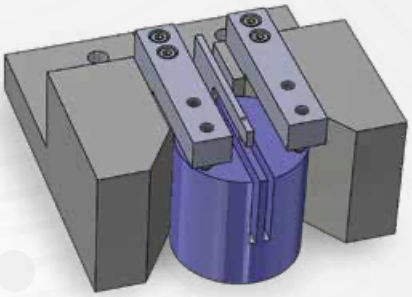
Example of application: cutting of a sphere

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 M0100 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 M0100 00

For CUTLAM® 3.1
Dimensions W x H x D: 700 x 800 x 1050 mm.
Reference: 60 M0310 00





CUTLAM®3.1

MADE IN FRANCE

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.

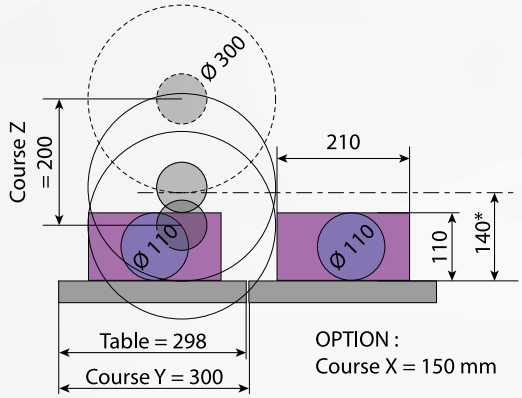
CUTLAM®3.1

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

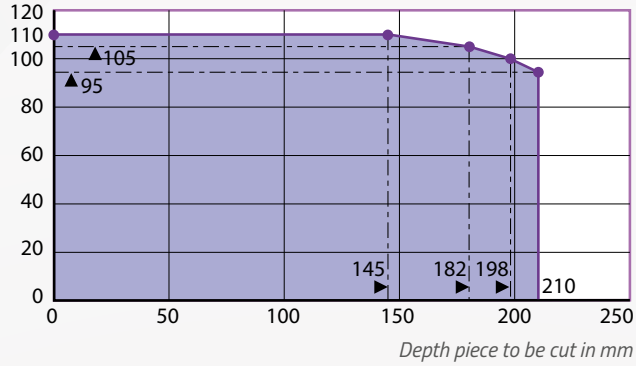
**Optional motorised 3rd Axis (X)*

Theoretical cutting capacity - Ø 300 mm disc

**space under disc*



Height cut piece to be cut in mm



Depth piece to be cut in mm



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



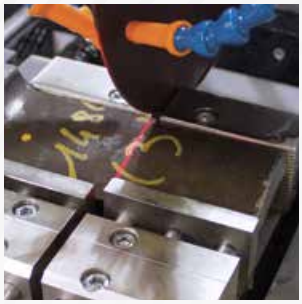
60 CT200 20



60 M0310 00



Quick positioning with joysticks. Touch screen with graphical interface.



Positioning laser.



CUTLAM®4.0

MADE IN FRANCE

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.

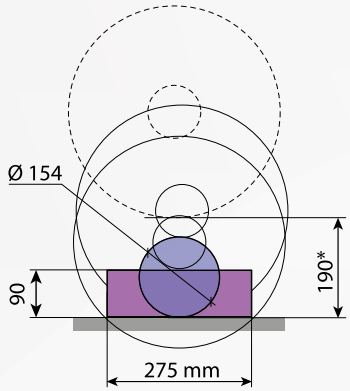
In order to optimise your equipment according to your needs, a variety of accessories and optional extras are available.

CUTLAM®4.0

Thigh-capacity automatic cutting machine

Theoretical cutting capacity - Ø 400 mm disc

**space under disc*





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



CUTLAM®5.0

MADE IN FRANCE

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

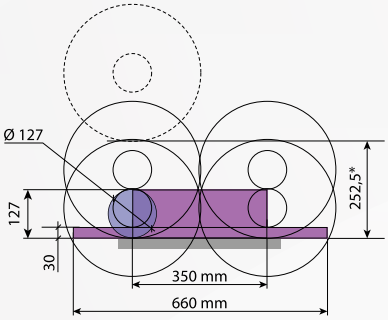
- Automatic or manual cutting.
- Continuous automatic cutting with ingenious feed speed control:

  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

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



60 CT506 00



60 CT503 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

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

		CUTLAM®micro			
	Designation	1.1	2.0	3.0	Ref.
	**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 1.1	2.0	3.0	Ref.
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













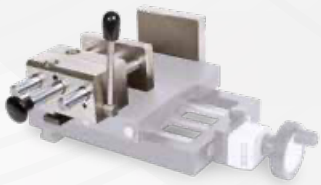
Vices, clamping and accessories for CUTLAM® range

	Designation	CUTLAM® 1.1	3.1	4.0	5.0	Ref.
	**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

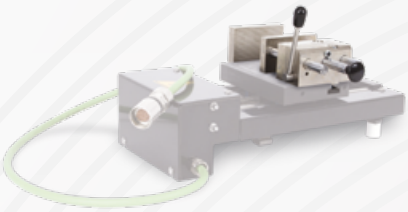
Designation	CUTLAM® 1.1	3.1	4.0	5.0	Ref.
Transversal table (X movement) to perform parallel cuts Manual movement with roller. Stroke: 100 mm Display accuracy: 0,01 mm Can receive the right vice reference 60 CT200 20 or 60 CT200 40.	✔				60 CT205 20
Specific single quick-clamping vices for table 60 CT205 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 vaccuming 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.

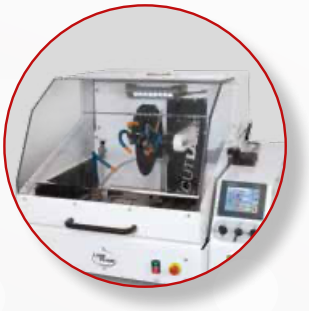
A drain valve, located in the trolley, collects the condensate.

Technical features	Oil mist extraction device A1
Max flow air	245 m³/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

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.

Propreties	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/ semi-hard metals Stainless steel	250 x 32 x1,5	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.
Treated metals Special metals Stainless steel	250 x 32 x1,5	10	05 83021 40
	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 x1,5	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

EXCELLENCE H4 (SIC)

Type	Dim. (mm)	Qty.	Ref.
Non-ferrous materials (aluminium alloys and titanium alloys) Cast iron	250 x 32 x1,5	10	05 85041 40
	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



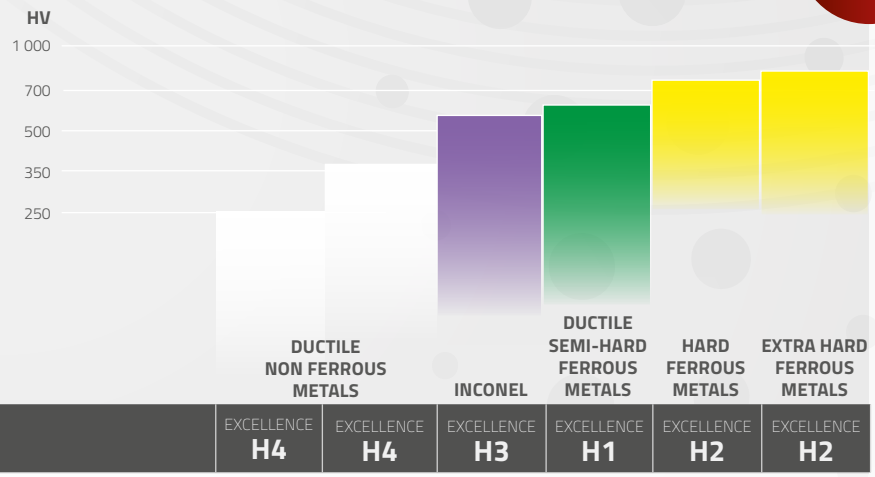
-12% for a quantity of ≥ 50 wheels of the same reference

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	Ø mm	Qty.	Ref.
Adaptor rings - PVC for cut-off wheels	25,4 / 22	5	60 00372 90
	32 / 25,4	5	60 00374 90
Adaptor rings - 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



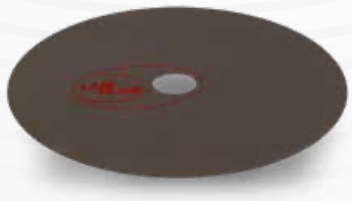
Cut-off wheels PRECISION

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.



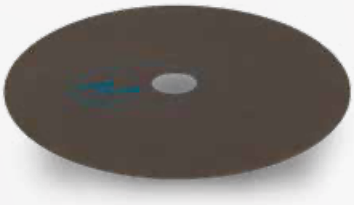
RED (AL_2O_3)

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



T1 (AL_2O_3)

Type	Dim. (mm)	Qty.	Ref.
Soft – semi-hard steel Stainless steel < 50 HRC (505 HV)	200 x 25,4 x 0,8	10	05 911P02000
	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 Stainless steel	125 X 12,7 X 0,45	5	05 80013 90
	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 < 65 HRC (860 HV)	250 x 32 x 1,2	10	05 921P42500
	300 x 32 x 1,5	10	05 921P43000



WHITE (SIC)

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

Cut-off wheels PRECISION DIAMANT

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

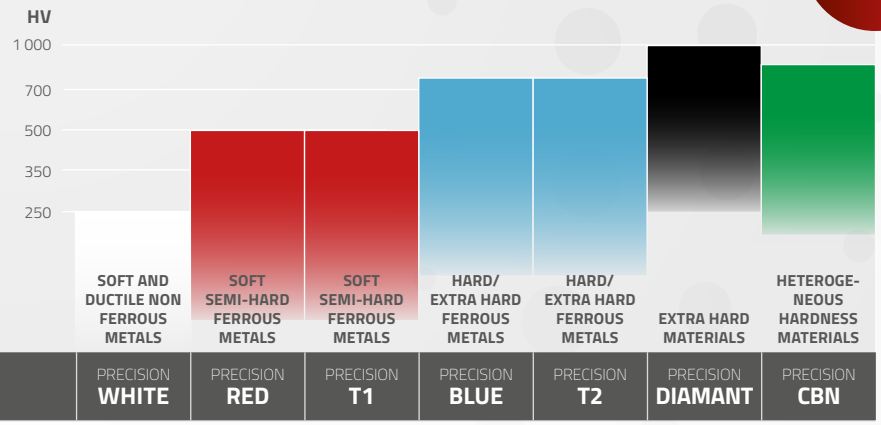


-12% for a quantity of ≥ 50 wheels of the same reference

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



MOUNTING MACHINES

PRESSLAM®1.1

MADE IN FRANCE

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

PRESSLAM®1.1

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

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.



Closed



Safe position for sample recovery



Open

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"¼ and 1"½, 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"1/2for 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 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 (616,2 et 616)	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* — *Cooling pressure*

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

25 feed tubes for M.M.818 appliance	08 00818 10

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 environmentally-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.



Dust-free
Outstanding Performance
Organic origin

Characteristics	Qty.	Ref.
ORGANIC 701		
Orange granules Low shrinkage, hard	2,0 kg	06 00701 20
	10 kg	06 00701 10

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 Polyvalent, hard	2,5	06 PF010 20
	10	06 PF010 10
	25	06 PF010 50
PHENOFREE 2		
Red composite powder Polyvalent, very hard	2,5	06 PF020 20
	10	06 PF020 10
	25	06 PF020 50
PHENOFREE 3		
White composite powder Polyvalent, extra hard	2,5	06 PF030 20
	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 Edges examinations Extra hardness - No shrinkage	2,5 kg	06 00633 20
	10 kg	06 00633 10
634		
Black epoxy powder Edge examinations on complex samples High hardness - No shrinkage	2,5 kg	06 00634 20



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. Visualising the sample during and after the polishing. All materials.	2,5 kg	06 00616 20
	10 kg	06 00616 10
616.2		
Transparent acrylic powder. Visualising the sample during and after the polishing. Alcohol resistant.	2,5 kg	06 06162 20
	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.
604.3		
Resinoid copper powder For electrolytic polishing.	2 kg	06 00604 30



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

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	-	5 to 10 min
Copper	604.3	High conductibility	Low	Coppered	-	10 min
Graphite	617	Conductable	Low	Black	-	5 to 10 min

** Depending of the machines' characteristics*

GUIDANCE

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.

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	Choose a resin offering less shrinkage
		Insufficient heating time	Increase the temperature during the heating time
		Inadequate pressure mode and insufficient pressure	- Use the machine mode ajusting the temperature curve - Increase the mounting pressure
Resins grains visible on the faces of the sample		Insufficient pressure	Increase the pressure during the mounting cycle
		Insufficient heating time	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) Maximum exothermic temperature: 112°	KIT Powder 1 kg + catalyst 500 ml	KIT06 00665 00
	Catalyst 500 ml	06 02665 00
	Powder 1 kg	06 01665 00



Coating after polishing

Dissolution with acetone

Recover your intact sample

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

MADE IN FRANCE

613 - Impregnation compatible

Characteristics	Qty.	Ref.
Transparent epoxy Bi-component (2 liquids) Maximum exothermic temperature: 50°	KIT Liquid resin 1000 ml + hardener 500 ml	06 00613 00
	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) Maximum exothermic temperature: 140°	KIT Liquid resin 1000 ml + hardener 500 ml	06 00613F 00
	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) Maximum exothermic temperature: 27°	KIT Liquid resin 1000 ml + hardener 500 ml	06 00613LT 00
	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°*	Hard-ness	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
	613LT	Without temperature	None	27°C	85 Shore D	Transparent and colourless	24 hours
Methyl methacrylate	**605**	Versatility	1 %	108°C	90	Green	< 10 min
	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

GUIDANCE

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 volums of powder for 1 volume of liquid
609	2 volums of powder for 1 volume of liquid
665	2 volums of powder for 1 volume of liquid
607	2 volumes of catalyst and 1 volume of hardener

GUIDANCE

ACCESSORIES

Polymerisation lamps

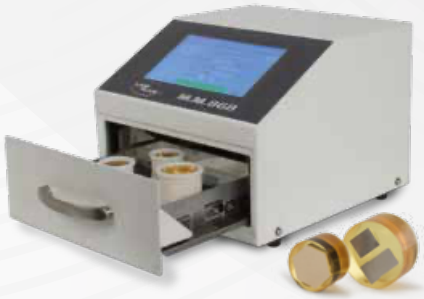
M.M.866



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 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 bottom



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	06 00670 00
	1	100 x 42 x 30	
	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

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 could 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

MADE IN FRANCE

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.

RECTILAM®2.0
Automatic flat prepolishing machine

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 to 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.

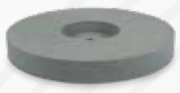
Technical data	RECTILAM®2.0
Grinding wheel diameter	Ø 356 mm
Control	By 5.7 inch touchscreen and joystick
Grinding wheel speed	1000 to 3000 tr/min.
Sample holder speed	20 to 150 tr/min.
Applied force	10 to 550 N
Sample holder size	Ø 210 mm max
Conditioning wheel specifications	Configurable pass depth 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

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



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.

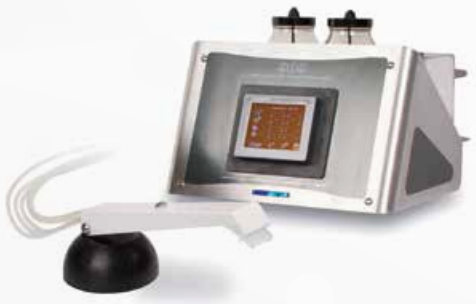
Evolutive

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 cm³ bottle	08 02816 00
High viscosity paddle shaker for 500 cm³ 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		59 10110 91

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.



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



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





Friendly interface with large 3,5 " touch screen



Motorised head with individual pressure. Capacity: 3 samples from Ø 25.4 to 50 mm.

SMARTLAM®3.0

Individual pressure semi-automatic polishing machine

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.**





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 knobe
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 C0
Transparent secured housing for MASTERLAM®	60 MLEP0 00
Filtering / sedimentation 60 L tank with recirculation pump	60 A0029 00
Filtering / sedimentation 60 L tank	60 A0029 90

Accessories (See next page)



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 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
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

MASTERLAM®3.0

MADE IN FRANCE

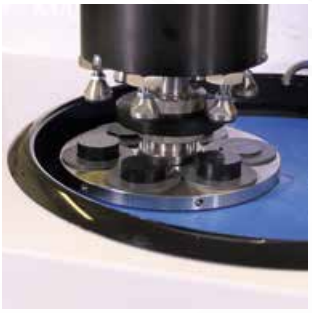
Automatic, single plate Ø 250 to 300 mm polishing machine, bidirectional rotation and variable speed.

This machine has all the functions that make the MASTERLAM® range outstand and on this model a specific new combo-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

Technical data	MASTERLAM®3.0
Plate Capacity	Ø 250 to 300 mm
Body	Steel coated with epoxy paint
Bowl	Removable resin bowl for easy 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 5 to 100 N individual pressure
Capacity	Sample size 6 X Ø 40 mm Sample size 1 - 6 X Ø 50 mm
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
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	85 kg
Reference	60 ML300 00

Options

Dosing unit DISTRILAM (4 circuits)	60 MLD00 00
MASTERLAM®3.0 with material-removal control	60 ML30S C0
MASTERLAM® 3.0 for PE 6 x Ø 60 mm	60 ML30M 00
Transparent secured housing for MASTERLAM®	60 MLEP0 00
Filtering / sedimentation 60 L tank with recirculation pump	60 A0029 00
Filtering / sedimentation 60 L tank	60 A0029 90



60 MLD00 00



60 MLEP0 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®1.1

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

MASTERLAM®1.1

MADE IN FRANCE

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

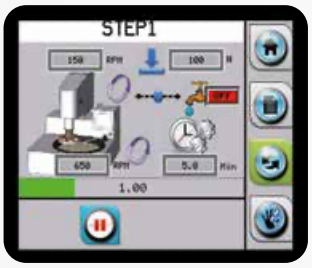
The MASTERLAM®1.1 is a central pressure machine. It is equipped with a 2,2 Kw main motor, a 250 W head motor and applicable pressure may reach 450 N.

Using the oscillating head allows you to make use 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 MLD00 00



60 MLEP1 00



60 A0029 00

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

MADE IN FRANCE

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.

DISTRILAM®



3 standard pumps and 1 high flow rate pump

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

Plates and supports



Designation	SMARTLAM® 2.0	SMARTLAM® 3.0	MASTERLAM® 1.0	MASTERLAM® 3.0	MASTERLAM® 1.1	Ref.
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

Sample holders

Designation	SMARTLAM® 2.0	SMARTLAM® 3.0	MASTERLAM® 1.0	MASTERLAM® 3.0	MASTERLAM® 1.1	Ref.
SAMPLE HOLDERS CENTRAL PRESSURE						
CP sample holder Ø 119 mm with 6 x Ø 20 to 32 mm water drop cells	✔*					06 SMC20 00
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 Platinium grinding tool NEW

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



Reducer rings

For individual pressure machines



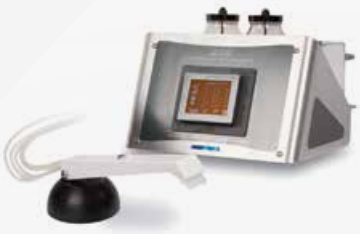
Designation	SMARTLAM® 2.0	SMARTLAM® 3.0	MASTERLAM® 1.0	MASTERLAM® 3.0	MASTERLAM® 1.1	Ref.
KIT 6 REDUCER RINGS FOR MASTERLAM®						
Kit 6 x Ø 40 mm reducer rings				✔		06 MLIK5 00
Kit 6 x Ø 30 mm reducer rings				✔		06 MLIK2 00
Kit 6 x Ø 25,4 mm reducer rings				✔		06 MLIK1 10
Kit 6 x 1-1/4" reducer rings				✔		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® 2.0	SMARTLAM® 3.0	MASTERLAM® 1.0	MASTERLAM® 3.0	MASTERLAM® 1.1	Ref.
DISTRILAM®						
Automatic dosing unit DISTRILAM®			✔	✔	✔	60 MLD00 00
M.M. 909 M						
Automatic dosing unit M.M. 909 M	✔	✔				08 00799 10

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



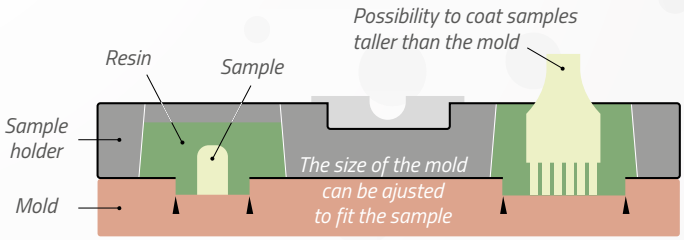
Universal sample-holder mould

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® 2.0	MASTERLAM® 1.0 and 3.0	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

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.



SPRINGLAM presure arm for SMARTLAM®2.0



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 sticking and unsticking of all self-adhesive supports (abrasive papers, grinding and polishing discs). It avoids the time consumming cleaning of plates dirtied by glue remains whenever a self-adhesive disc is removed.

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:** rigid self-adhesive, fixed to your machine's plate, available in all diameters, its low thickness (1 mm) guarantees the initial inherent flatness of the master plate.
- **FAS®2-M:** suitable for machines equipped with magnetic base plates or when the LAM PLAN FMS disc is used. The FAS®2-M has 2 usable sides, it is therefore reversible, when one side is damaged the other can be used.





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

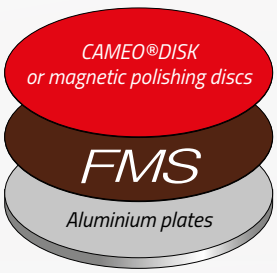
FMS® plates and discs

The fixing system by magnetic attachment.

The FMS® magnetic disc sticks to all type of support plates. It is also available in an FMS plate and adapts to all existing machines.



Magnetic disc on FMS support



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

FIX LAM® discs and plates

The repositionable adhesive system.
The FIX LAM® allows you to maintain non-adhesive abrasive papers thanks to a repositionable adhesive surface.
- 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 backside	5	200	05 4000M 20
	5	250	05 4000M 40
	5	300	05 4000M 60



XLAM 4

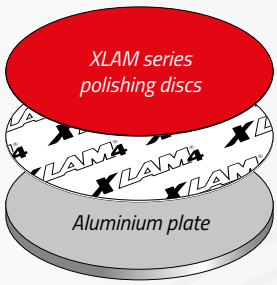
New fixing for polishing discs Serie XLAM.

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.

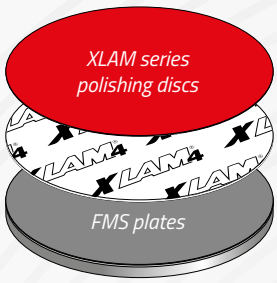
The XLAM 4 allows easy transition between different polishing steps, reducing the time needed for sample preparation. Compatible with non-self-adhesive diamond abrasive films.

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 backside	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

GUIDANCE

Your machine is equipped with		Compatible supports
Aluminium plate	Magnetic plate	
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® 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

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

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 Cloths Ø 80	2 x 24 cloths	08 LAM15 00
	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	
	Self-adhesive	Non-adhesive	Self-adhesive	Non-adhesive
FEPA grains	Ref.	Ref.	Ref.	Ref.
P80	05 60080 20	05 50080 20	05 60080 40	05 50080 40
P120	05 60120 20	05 50120 20	05 60120 40	05 50120 40
P180	05 60180 20	05 50180 20	05 60180 40	05 50180 40
P240	05 60240 20	05 50240 20	05 60240 40	05 50240 40
P320	05 60320 20	05 50320 20	05 60320 40	05 50320 40
P400	05 60400 20	05 50400 20	05 60400 40	05 50400 40
P600	05 60600 20	05 50600 20	05 60600 40	05 50600 40
P800	05 60800 20	05 50800 20	05 60800 40	05 50800 40
P1000	05 61000 20	05 51000 20	05 61000 40	05 51000 40
P1200	05 61200 20	05 51200 20	05 61200 40	05 51200 40
P2400	05 62400 20	05 52400 20	05 62400 40	05 52400 40
P4000	05 64000 20	05 54000 20	05 64000 40	05 54000 40

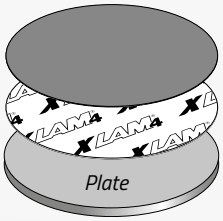
100 units box	Ø 300 mm		Ø 400 mm	
	Self-adhesive	Non-adhesive	Self-adhesive	Non-adhesive
FEPA grains	Ref.	Ref.	Ref.	Ref.
P80	05 60080 50	05 50080 50	05 60080 80	05 50080 80
P120	05 60120 50	05 50120 50	05 60120 80	05 50120 80
P180	05 60180 50	05 50180 50	05 60180 80	05 50180 80
P240	05 60240 50	05 50240 50	05 60240 80	05 50240 80
P320	05 60320 50	05 50320 50	05 60320 80	05 50320 80
P400	05 60400 50	05 50400 50	05 60400 80	05 50400 80
P600	05 60600 50	05 50600 50	05 60600 80	05 50600 80
P800	05 60800 50	05 50800 50	05 60800 80	05 50800 80
P1000	05 61000 50	05 51000 50	05 61000 80	05 51000 80
P1200	05 61200 50	05 51200 50	05 61200 80	05 51200 80
P2400	05 62400 50	05 52400 50		
P4000	05 64000 50	05 54000 50		

Abrasive paper SELF-ADHESIVE



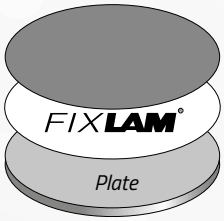
FAS®2 non-stick backing for paper and self-adhesive discs

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

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

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

100 units box	Ø 300 mm	
	Self-adhesive	Non-adhesive
FEPA grains	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

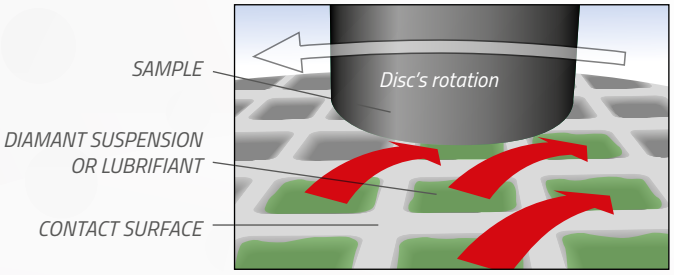
	SYSTEM CAMEO®DISK		
2 families:	FIXED ABRASIVES		FREE ABRASIVES
3 types:	CAMEO®DISK PLATINIUM	CAMEO®DISK DMD	CAMEO®DISK SILVER, GOLD & RHODIUM
9 references:	PLATINIUM 0, 1, 2, 3 and 4	DMD 1	SILVER, GOLD & RHODIUM

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.

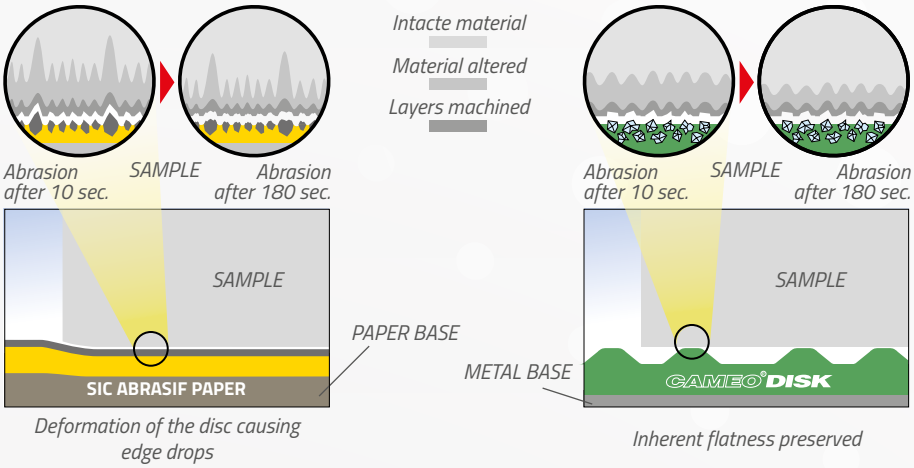
Reproducibility

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

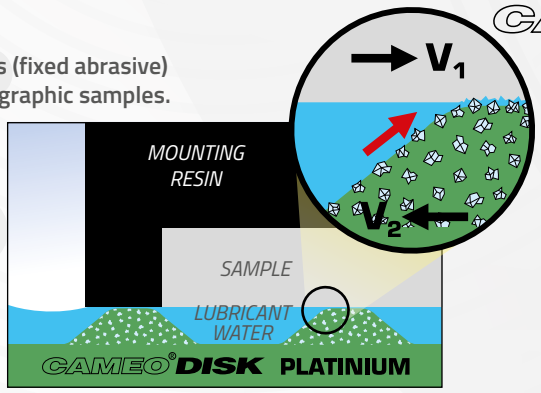
For a process usually performed with several SiC abrasive papers, LAM PLAN proposes you a single, reusable disc: the CAMEO®DISK. Contrary to SiC abrasive papers, CAMEO®DISK constant abrasion prevents the formation of deep disturbed layers during the first few seconds of grinding.



CAMEO®DISK Platinium

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

The use of diamond integrated in the CAMEO®DISK Platinium 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.



PLATINIUM 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



PLATINIUM 1 BLUE

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

PLATINIUM 2 GREEN

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



PLATINIUM 3 YELLOW

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

PLATINIUM 4 RED

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



ABRASIVE STONES FOR PLATINIUM

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



Application Table

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

GUIDANCE

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

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

	Self-adhesive	Magnetic
Ø (mm)	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.



Stone for manual grinding

NEW



Grinding tool for automatic machines



BOOSTER for CAMEO®DISK

GRINDING 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

GUIDANCE

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.

** Patent under examination.*

Range on ALUMINIUM AU4G

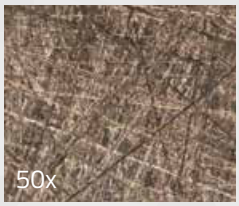
MATERIAL: Aluminium AU4G (2017A) - 110 HV
Rough cut sample. 3 x Ø 40 mm.

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
DMD DISQUE MATÉRIAUX DUCTILES
PATENT PENDING



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

NEODIA® 6P
TOUCHLAM 2TT2



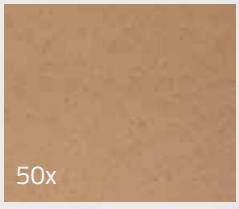
3 Duration: 3 min.
Speed rpm Head 125 / Platen 200 / Same direction
Pressure per sample: 25 N

NEODIA® 3P
TOUCHLAM 2TS3



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

ALPLAN PREMIUM 0,5 µ
TOUCHLAM 4MP2





Reagent attack
KELLER

Range on CUPRO NICKEL

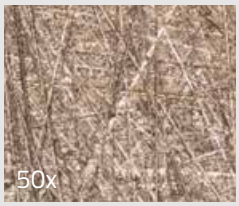
MATERIAL: Alliage CuNi14Al2 - 260 HV
Rough cut sample. 6 x Ø 40 mm.

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
DMD DISQUE MATÉRIAUX DUCTILES
PATENT PENDING



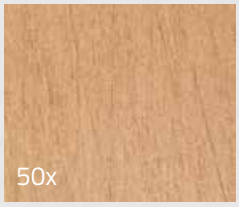
2 Duration: 3 min.
Speed rpm Head 125 / Plate 300 / Same direction
Pressure per sample: 20 N

NEODIA® 6P
CAMEO DISK GOLD



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

NEODIA® 3P
TOUCHLAM 2TS3

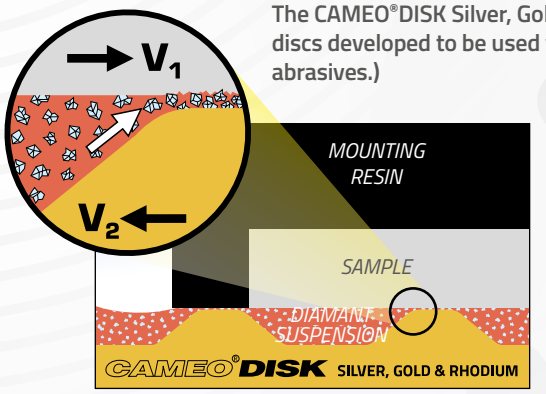


4 Duration: 2 min.
Speed rpm : Head 125 / Platen 200 / Same direction
Pressure per sample: 15 N

NEODIA® 1P
TOUCHLAM 3FV1



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 SILVER66

Box of 2 units + 1 grinding tool

	Self-adhesive	Magnetic
Ø (mm)	Ref.	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

	Self-adhesive	Magnetic
Ø (mm)	Ref.	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

	Self-adhesive	Magnetic
Ø (mm)	Ref.	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 constent results, the CAMEO®DISK have to be periodically dressed by appropriate abrasive grinding tool.

GUIDANCE

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



			Self-adhesive	Non adhesive
Ø (mm)	Color	µm	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

TOUCHLAM®

TOUCHLAM® polishing cloths & pads

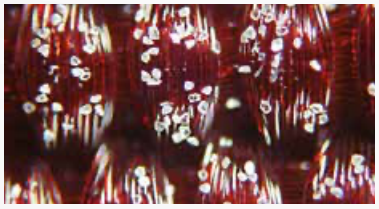
LAM PLAN proposes a range of exclusive TOUCHLAM® polishing cloths and pads.

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.

Example of a diamond abrasive, spread over different disc structures



Taffeta woven synthetic fibres



Satin woven natural fibres



Flocked viscose fibres

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

Application	TOUCHLAM® cloths	Characteristics			
		SR*	Flatness	Finishing	Super Finishing
Fine grinding of soft materials Polishing of hard to extra hard material	2FC1	✔	✔		
Rough polishing on ductile material	2TT1	✔	✔		
Rough polishing on ductile material	2TT2	✔	✔		
Fine polishing (intermediary)on all materials Final polishing on hard materials	2TS3		✔	✔	
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.



Disc identification marking

See all our fastening systems pages FIXING ACCESSORIES

Self-adhesive cloth on FAS® 2 support



Magnetic cloth FMS® support



TOUCHLAM® 2FC1

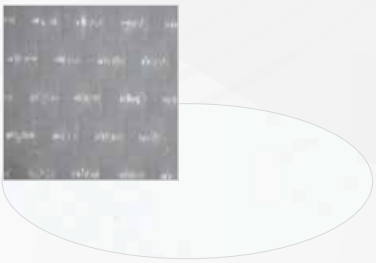
Impregnated non-woven fibres.
Stoke removal, finishing on extra hard materials.
Usable with diamond abrasives from 3 to 9 µm.



		Self-adhesive	Magnetic	X-LAM
Ø (mm)	Qty.	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

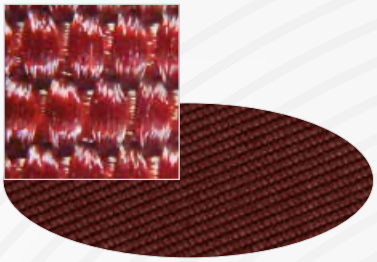
Taffeta woven synthetic fibres.
Stock removal and inherent flatness on difficult materials.
Usable with diamond abrasives from 3 to 15 µm.



		Self-adhesive	Magnetic	X-LAM
Ø (mm)	Qty.	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.



		Self-adhesive	Magnetic	X-LAM
Ø (mm)	Qty.	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

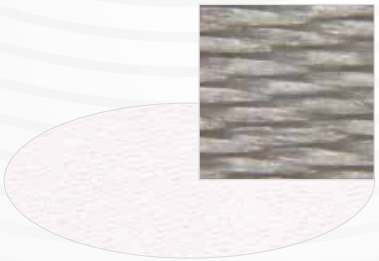
Extra-thin satin woven natural fibres.
Excellent inherent flatness and finishing, preservation of inclusions and edges, on all materials. Usable with diamond abrasives from 2 to 9 µm.



		Self-adhesive	Magnetic	X-LAM
Ø (mm)	Qty.	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

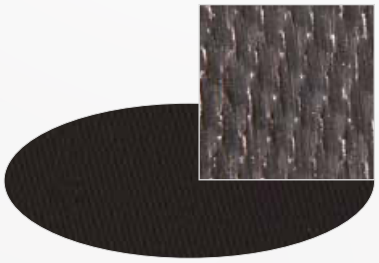
Satin woven natural fibres.
Excellent finishing and flatness, preservation of edges, especially on sample composed of materials of various hardness or with coating.
High durability.
Usable with diamond abrasives from 1 to 6 µm.



		Self-adhesive	Magnetic	X-LAM
Ø (mm)	Qty.	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		

TOUCHLAM® 3SE2

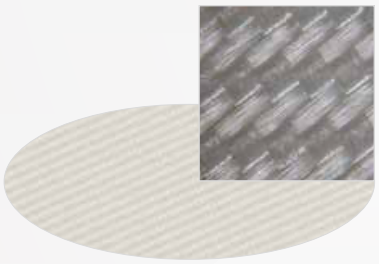
Woven synthetic silk fibres.
Finishing and flatness on soft materials.
Usable with diamond abrasives from 1 to 3 µm.



		Self-adhesive	Magnetic	X-LAM
Ø (mm)	Qty.	Ref.	Ref.	Ref.
200	5 units	3SE20A02005	3SE20M02005	3SE20X02005
250	5 units	3SE20A02505	3SE20M02505	3SE20X02505
300	5 units	3SE20A03005	3SE20M03005	3SE20X03005
400	5 units	3SE20A04005		

TOUCHLAM® 3SA4

Soft composite synthetic fibres
Finishing on soft materials.
Usable with diamond abrasives from 0,25 to 3 µm.



		Self-adhesive	Magnetic	X-LAM
Ø (mm)	Qty.	Ref.	Ref.	Ref.
200	5 units	3SA40A02005	3SA40M02005	3SA40X02005
250	5 units	3SA40A02505	3SA40M02505	3SA40X02505
300	5 units	3SA40A03005	3SA40M03005	3SA40X03005
400	5 units	3SA40A04005		

TOUCHLAM® 3TL1

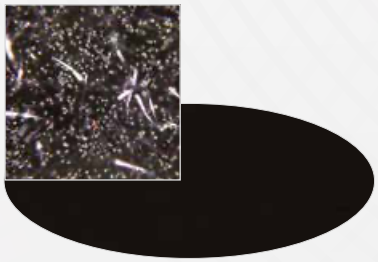
High resistant woven wool fibres.
Adapted for the finishing of non-mounted samples
High durability.
Usable with diamond abrasives from 3 to 6 µm.



		Self-adhesive	Magnetic	X-LAM
Ø (mm)	Qty.	Ref.	Ref.	Ref.
200	5 units	3TL10A02005	3TL10M02005	3TL10X02005
250	5 units	3TL10A02505	3TL10M02505	3TL10X02505
300	5 units	3TL10A03005	3TL10M03005	3TL10X03005
400	5 units	3SA40A04005		

TOUCHLAM® 3FV1

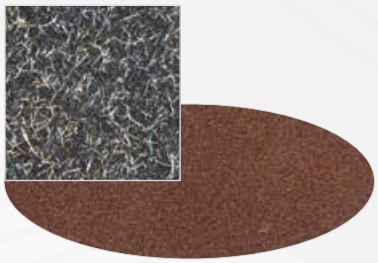
Semi-hard flocked short viscose fibres. Super finishing, preservation of the inherent flatness on mounted hard materials. Usable with diamond abrasives from 1 to 3 µm.



		Self-adhesive	Magnetic	X-LAM
Ø (mm)	Qty.	Ref.	Ref.	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

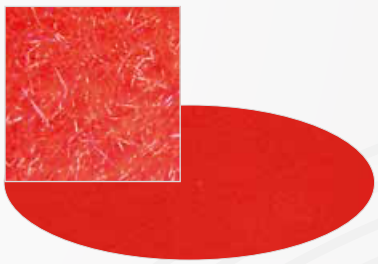
Flocked short viscose fibres. Super finish for all materials. Can be used with NEODIA® diamond liquids from 1 to 3µ as well as alumina suspension and colloidal silica.
More versatile and less aggressive than 3FV1.



		Self-adhesive	Magnetic	X-LAM
Ø (mm)	Qty.	Ref.	Ref.	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

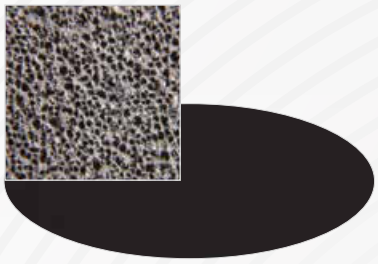
Soft flocked long viscose fibres. Super finishing on large variety of materials, including very soft materials. Principally used with diamond abrasives from 0,25 to 3 µm but also with alumina suspension and colloidal silica.



		Self-adhesive	Magnetic	X-LAM
Ø (mm)	Qty.	Ref.	Ref.	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

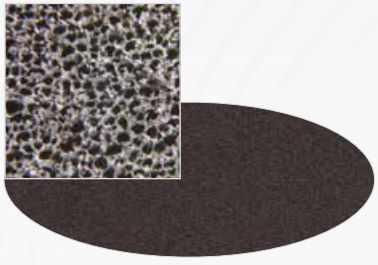
Microporous polyurethane foam. Adapted to sensitive samples requiring an extreme super finish with chemical abrasives. Usable with oxides or colloidal silica.



		Self-adhesive	Magnetic	X-LAM
Ø (mm)	Qty.	Ref.	Ref.	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.

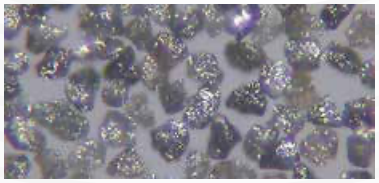


		Self-adhesive	Magnetic	X-LAM
Ø (mm)	Qty.	Ref.	Ref.	Ref.
200	5 units	4MP20A02005	4MP20M02005	4MP20X02005
250	5 units	4MP20A02505	4MP20M02505	4MP20X02505
300	5 units	4MP20A03005	4MP20M03005	4MP20X03005
400	5 units	4MP20A04005		

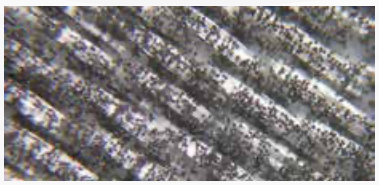
DIAMOND ABRASIVES



Monocrystalline diamond



Polycrystalline diamond



Polycrystalline diamond on cloth

BIO DIAMANT® abrasive suspensions

For many years, the LAM PLAN R&D department has been committed to develop advanced products which are more user oriented and aimed to preserve the environment without compromising effectiveness.

Secured supply and total traceability.

Conformity to the REACH regulation.

LAM PLAN sets up all the arrangements needed for its application in order to guarantee the quality and availability of all its products over the long term. All the substances contained in our preparations comply with the REACH regulation's specifications. To facilitate your administrative formalities, all the Safety Data Sheets (SDS) of our products conform to the legislation in force it can be downloaded on: www.fdsen.lamplan.com



BIO DIAMANT®
NEODIA®
LIQUIDE DIAMANT
DIAMOND LIQUID

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 performances.

Enhance roughness

The quality of the abrasive used, the tight criteria of calibration and concentration, as well as the use of a new generation of water-based binders allow better roughness results while preserving a high stock removal. The binder consistency allows the cutting action to start at the first seconds of usage.

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.

BIO DIAMANT® ABRASIVE SUSPENSIONS NEODIA®M

High performance suspension, high concentration of monocrystalline diamonds, biodegradable with no decantation.



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 decantation.



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.

		400 ml	1 l	2,5 l
Type	µm	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

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)	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	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.
75 g Polycrystalline diamond Optimum distribution of the abrasive on the polishing support Alcohol base (free of water)	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	05 NL008 00
		5 litres	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 NL0L1 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 NL0L2 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

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 centration.



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

GUIDANCE

Reading the type

Exemple:

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

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. Water base	1 litre	07 MM702 30
	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. Alcohol base diamond liquid.	1 litre	07 00704 30
	5 x 1 litre*	07 00704 40

**Packaging related to transport restrictions*

Booster for CAMEO®DISK Platinium



Booster fluid is a new lubricant especially developed to be applied on the CAMEO®DISK Platinium during the polishing step. Its specific formulation facilitates the use of the CAMEO®DISK Platinium 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

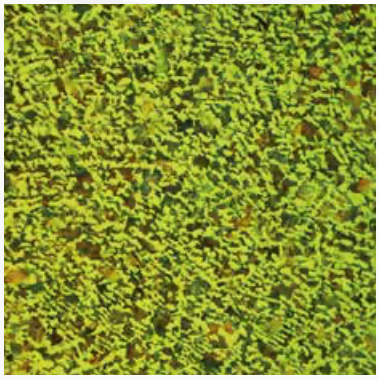


METALLOGRAPHIC REAGENTS

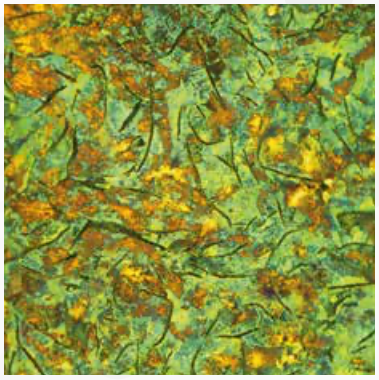
Metallographic reagents

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	Highlighting	Ref.
Packaging: 1 liter		
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 *(Change of packaging due to transport restrictions)*		
Room temperature - Aluminium and its alloys, - Titanium alloys	- Highlighting of the phases	08 RR061 00

Products subject to shipping restrictions.

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



Sample holder
3 x 45 x 60 mm



Sample holder
6 x 30 x 45 mm

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.

Developed with the collaboration of FRENCH LITHOPREPARATORS

- 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.

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

Speed rpm: 60



Paste
Bio DIAMANT® 6-LTP

+



NEODIA® 6P

TOUCHLAM® 2TS3

Speed rpm: 60



Paste
Bio DIAMANT® 6-LTP

+



NEODIA® 3P

TOUCHLAM® 2TS3

Speed rpm: 60



Paste
Bio DIAMANT® 1-LTM

+



NEODIA® 1M

TOUCHLAM® 3SE2

Speed rpm: 60



Paste
Bio DIAMANT® 1/4-LTM

+



NEODIA® 1/4P

TOUCHLAM® 3SA2

Speed rpm: 60



FINAL liquid

TOUCHLAM® 4MP2

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

1

Abrasive: BIOLAM PLUS SiC F500 (13µm) + 50% water
Distribution: 1 second every 2 seconds
Rotation speed: 40 rpm
Stock removal: 10 µ/min

2

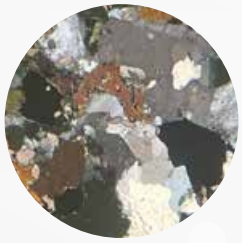
Abrasive: BIOLAM PLUS SiC F600 + 50% water
Distribution: 1 second every 2 seconds
Rotation speed: 40 rpm

3

Abrasive: BIOLAM PLUS SiC F1200 + 50% d'eau
Distribution: 1 second every 2 seconds
Rotation speed: 40 rpm







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
10 g syringe	3	01 031LTM 00
	6	01 061LTM 00
BIO DIAMANT® LTP POLYCRISTALLINE PASTE	1/4	01 971LTP 00
	1	01 011LTP 00
10 g syringe	3	01 031LTP 00
	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 5 kg bucket	1200	3	F0 03P10 5K
	600	9	F0 09P10 5K
	500	13	F0 13P10 5K

-5% from 3 products of the same reference



MASTERING LAPPING & POLISHING IN PRODUCTION AND MAINTENANCE

SINGLE AND DOUBLE PLATE LAPPING POLISHING

The guarantee of repeatable lapping and polishing operations requires the use of modular or customized machines.
The equipment, accessories and options can be selected upstream by the customer's R&D team or be subject to adjustments or recommendations by the LAM PLAN team.

Integrated modem
for remote maintenance



Maintaining the plate's geometry
and surfacing: //Autoplan //Diabloc //Flatness gauge



Wireless stock removal
measuring system



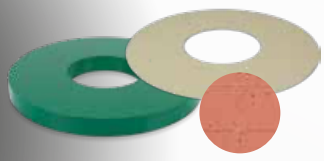
Production data acquisition
and integration into
the **INDUSTRY 4.0**
environment



Temperature
control system



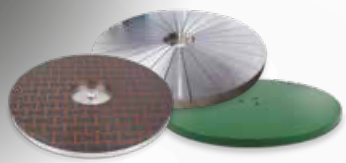
Special machines
custom development
multi-step set



Customized Pads
and FAS® coating



Dosing and dispensing units:
//Diamond //Conventional abrasive



Plates: //Cast iron and composite
//FAS and magnetic



Carriers



Conditioning rings:
//Cast iron //Ceramic //PVC



Pressure systems:
//Weight //Pneumatic
//Weight compensation



Safety devices

AN OFFER COVERING ALL MARKET NEEDS

LAPPING

The lapping process consists in obtaining a flatness and/or a specific roughness for the finishing of parts for production or maintenance work.

The surface finish obtained on a cast iron plate with conventional abrasives is in the range of 0.4 µm Ra with a matt aspect.

With a composite plate and a diamond abrasive, a Ra of 0.07 µm and a shiny aspect can be achieved.

Diamond plates DIALAM®



Cast iron plates



Patented New Lam M'M'® and EVOLAM® composites plates



Expandable rods



New Lam M'M'® composite rods



NEOLAP® diamond liquids and BioDIAMANT® pastes



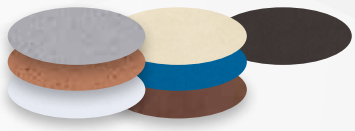
LAQUA LAM® abrasive liquids and pastes (SiC, Al_2O_3, B_4C, CeO_2)



POLISHING SUPER FINISHING

The polishing and surface finishing operations need to meet technical, dimensional and aesthetic requirements. The surface finish obtained is characterized by a low roughness 0.01 µm Ra, a brightness which is subjected to visual and/or microscopic control. Due to the diversity of the materials encountered, the surface finish of the raw parts and the result to be sought, the superfinishing requires extremely varied preparation techniques which make use of the full range of LAM PLAN know-how.

TOUCHLAM® polishing pads: polyurethane, woven, non-woven, flocked, compressed



Diamond abrasive films
Alumine abrasive films



Abrasive preparations ECOA® , NEODIA®, NEOLAP®, BioDIAMANT® M.M. Series



Colloidal silicas



Super finishing liquids ALPLAN, L1, L2 and FINAL



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EQUIPMENT

LAPPING & POLISHING MACHINES

Machine capacities

LAM PLAN lapping and polishing machines have been developed and perfected with LAM PLAN M'M' patented technology. They respond to all market requirements which require the obtention of high quality polished surfaces or flatnesses under one micron.

The wide range of the machine versions in this catalogue, will enable you to treat pieces from micro-mechanic up to a seal part measuring several decimetres. Linked to our consumables range, you will be assured of repeatable results on all industrial materials.

Simple face lapping machine capacities

Number of parts per ring.

Part Ø (mm)	Number of parts							
	M.M.9400 M.M.9380 E/S	**M.M.9480 E/S**	**M.M.9610**	**M.M.9700 E/S**	**M.M.9914 E/S**	**M.M.9100 E/S**	**M.M.9120 E/S**	**M.M.9150 E/S**
Ø 5	170	230	320	362				
Ø 10	67	95	150	160	190	225		
Ø 20	20	30	53	67	88	105	175	263
Ø 30	8	19	25	32	52	63	97	145
Ø 40	6	11	18	23	32	42	60	90
Ø 50	4	6	10	16	20	26	33	54
Ø 70	1	3	6	7	12	16	24	29
Ø 100	1	1	3	4	6	7	14	18
Ø 130	1	1	1	2	4	5	7	10
Ø 160		1	1	1	2	3	5	7
Ø 210			1	1	1	1	3	4
Ø 290					1	1	1	2
Ø 350						1	1	1
Ø 450							1	1
Ø 480								1
Ø 580								1

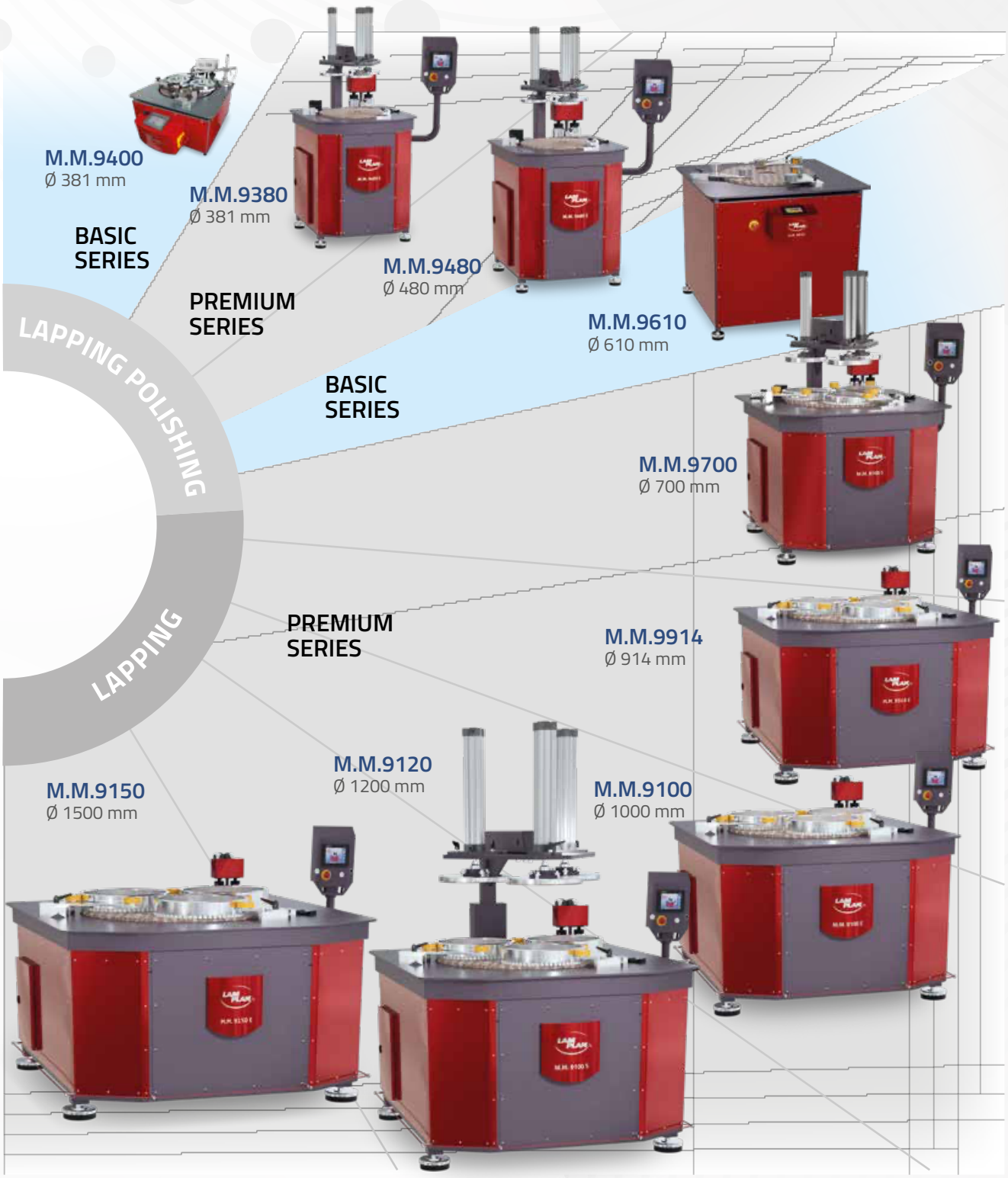
Double-side lapping machine capacities

Number of parts per satellite.

Part Ø (mm)	Number of parts	
	M.M.2380	**Masterlam EVOLUTION**
Ø 5	180	46
Ø 10	70	18
Ø 15	30	8
Ø 20	20	4

More than just lapping and polishing equipment, LAM PLAN machines are modular and versatile lapping and polishing solutions. The wide range of machines and accessories makes them extremely efficient and versatile production resources.

SINGLE SIDE LAPPING & POLISHING MACHINES



M.M. 9000 BASIC SERIES

A range of lightweight lapping machines, the M.M.9400 and M.M.9610 are highly versatile and accessible pieces of equipment that will enable you to achieve all types of surface finish.



M.M. 9400

Variable production of small parts: Ø 5 to 130 mm

Technical data	M.M.9400
Plate Ø	381 mm (Ø 400 mm optional)
Inner ring Ø	140 mm
Capacity per ring	1 piece Ø130 mm or 170 pieces Ø 5 mm
Number of rings	3
Electric power supply	230 V single-phase
Motor Power	0.75 kW
Control	4.3'' touch screen
Plate rotation speed	From 20 to 120 rpm
Dimensions (W x D x H)	625 x 720 x 365 mm
Weight (without plate)	75 kg
Abrasive distribution system	Optional - see table
Reference	10 09400 00



Support unit special M.M.9400

M.M.9400 NEW

For this new version of our best-selling M.M.8400, we've tried to retain the essence of this table-top trimmer/polisher by making a number of fundamental improvements.

The M.M.9400 is a solution for integrating a means of finishing flat surfaces into your workshop at a contained price. The machine's compact dimensions and ergonomic controls are still there, but it has become more rigid and even more versatile. It can be fitted with a wide range of accessories to adapt your equipment to your needs. Integrated control of LAM PLAN feeders, recipe memory and motorised drive are just some of the possibilities.

Versatility

The M.M.9400 can be fitted with cast iron, DIALAM®, NEW LAM® M'M' or FAS® platens, enabling you to achieve all types of surface finish defined in your specifications (e.g. honing, thickness adjustment, honing, polishing, etc.). It is also perfectly suited to your maintenance needs on all sealing parts (e.g. lapping of flaps, safety valves or small mechanical seals).

New configuration and improvements

- More rigid welded tubular steel chassis, stainless steel tank,
- Ergonomically improved controls (better visibility of screen in working position),
- 4.3' touch screen,
- Programme import/export on USB key,
- Multiple attachment points for accessories, such as dosing devices, jib, etc,
- Memory for 30 recipes,
- Mobile water inlet controlled by solenoid valve,
- Improved connectivity, ability to control 3 dispensers, remote maintenance facility.

Options and accessories

Dedicated, more rigid support cabinet with improved storage capacity (flat storage for trays or discs up to Ø 400 mm, storage for products up to 5-litre drums).

Characteristics	Ref.
E M.M.9400 stem accessory support	109 400PA 00
Table option Ø 400 mm for M.M.9400*	109 400T4 00
Support cabinet, height 73 cm, 1 door and 2 shelves	10 M8400 00

**For use with a 400 mm diameter table top, a special table is available as an option.*

SINGLE SIDE LAPPING & POLISHING MACHINES

M.M.9610 NEW

The M.M.9610 is a very competitive machine, suitable for maintenance work as well as occasional or moderate production.

The M.M.9610 incorporates the technical choices of the M.M.9400. It will enable you to achieve all your objectives in terms of geometry and surface finish with an interesting capacity thanks to its 610 mm diameter table.

The M.M.9610 is compatible with all lapping and polishing supports as well as with the LAM PLAN range of dispensing units.

Technical data	M.M.9610
Plate Ø	610 mm
Inner ring Ø	248 mm
Capacity per ring	1 part Ø210 mm or 320 parts Ø 5 mm
Number of rings	3
Electric power supply	230 V single-phase
Motor Power	1,5 kW
Control	Touch screen 4,3 inches
Plate rotation speed	From 20 to 90 rpm
Dimensions (W x D x H)	1020 x 1010 x 1000 mm
Weight (without plate)	280 kg
Abrasive distribution system	Optional - see table
Reference	10 9610E 00



M.M. 9610
Moderate production of parts : Ø 5 to 210 mm

Options and accessories

MOTORISED ARMS NEW

Compatible with the M.M.9400, 9380 and 9480 machines, the motorised arms are accessories that optimise ring rotation for parts or supports with high adhesion.

They are modular kits comprising 1 control unit and 1 to 3 motorised arms, servo-assisted start/stop, speed of rotation adjustable by potentiometer.

Characteristics	Qty	Ref.
Motorised arm control unit for M.M.9400*	1	10 9400UC 00
Motorised arm for M.M.9400	1	10 9400BM 00
Motorised arm control unit for M.M.9380 and M.M.9480*	1	10 9380UC 00
Motorised arm for M.M.9380/9480	1	10 9380BM 00

**Up to 3 arms can be controlled by one control unit*



MESUREO

Material removal control, compatible with the M.M.9400, 9380 and 9480 machines, enabling flat surfaces to be obtained to less than one micron, combined with parallelism of less than 5 microns between the lapped face and a reference.

The MESUREO consists of a perfectly flat ceramic-coated pressure disc that moves on a vertical axis.

This tool is equipped with a wireless probe, enabling the removal of material to be displayed in real time on a PC placed close to the lapping machine. The target dimension can be set. Using a highly intuitive set of colours, the operator can quickly see on his computer monitor whether the parts are within the defined thickness tolerance.

Characteristics	Qty	Ref.
MESUREO assembly with storage case	1	10 84003 00





M.M. 9000 PREMIUM SERIES

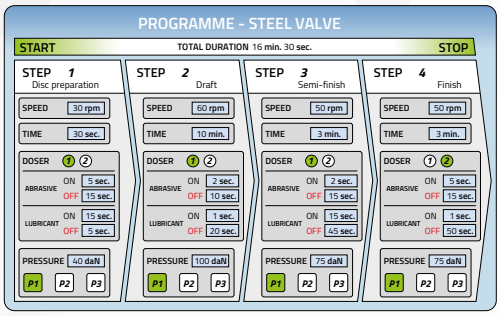
Range of heavy-duty lapping machines, covering diameters from 381 mm to 1500 mm. Designed to accommodate all LAM PLAN accessories and production support options.

PLUG & PLAY

Whether electrical or pneumatic, the connectivity of the machines has been designed to accommodate production support accessories in a simple way. When you plug in a piece of equipment, it is immediately recognised by the machine control system.

CONTROL AND PROGRAMMING

Take control of your honing and polishing operations by creating new recipes, and evolve them using the programming interface for the machine and peripherals.





DOSERS DISTRIBUTORS

PNEUMATIC PRESSURE SYSTEM

AUTOPLAN® AUTOMATIC PLATE RECONDITIONING SYSTEM



MOTORISED RING DRIVE



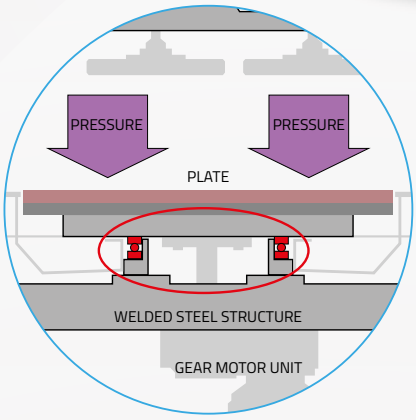


SMART LAPPING

Intuitive multi-step programming, with the option of storing up to 45 5-step programmes.

MECHANICAL DESIGN

Integrating a LAM PLAN lapping solution goes beyond what is offered by conventional equipment on the market. We design machines ready to withstand the highest stresses.



ANCHORING POINTS DOSING SYSTEMS

RIGID AND STABLE CHASSIS

MOUNTING PLATE FOR PNEUMATIC PRESSURE SYSTEM

HEIGHT ADJUSTABLE ARMS

ANCHORING POINTS FOR AUTOPLAN®

FALSE PLATE SUPPORTED BY A BALL BEARING

SIMPLE SIDE LAPPING & POLISHING MACHINES

M.M.9380 et M.M.9480

M.M.9000 PREMIUM series small-diameter flat lapping machines.

These lapping machines incorporate all the technical solutions used on higher-capacity models, making them particularly robust and stable. As a result, they are particularly robust and stable.

The S version can be fitted with an electronically-controlled jib with 3 pressure cylinders. The compact size of these machines makes it easy for the operator to handle all the accessories, such as changing the tray or loading and unloading the rings. The 7-inch touch screen lets you control all the dispensers in the LAM PLAN range and save 45 recipes, each containing 5 sub-steps.

Particularly well-suited to maintenance workshops, workshops producing small parts and finishing parts for fine watchmaking. These compact, first-rate machines can meet the most demanding finishing requirements, as well as intensive production.

The M.M.9380 and M.M.9480 lapping machines are compatible with the AUTOPLAN platen reconditioning system.



Options and accessories for M.M.9380 et M.M.9480

LED light option (for S versions)	10 9000S 10
Multi abrasive option	10 9000S 20
Micrometric ruler for checking the flatness of the honing plate	08 00899 10
Level sensors for diamond and lubricating fluids	08 90001 00
Torque spanner set	60 01485 90

NEW **M.M. 9380**

Intensive production of parts : Ø 5 to 130 mm

M.M. 9480

Intensive production of parts : Ø 5 to 160 mm

M.M.9380 AND M.M.9480 VERSION E AND S

Technical data	M.M.9380 version E	M.M.9380 version S	M.M.9480 version E	M.M.9480 version S
Plate Ø	381 mm	381 mm	480 mm	480 mm
Inner ring Ø	140 mm	140 mm	182 mm	182 mm
Capacity per ring	1 part Ø 130 mm or 170 parts Ø 5 mm	1 part Ø 130 mm or 170 parts Ø 5 mm	1 part Ø 160 mm or 95 parts Ø 10 mm	1 part Ø 160 mm or 95 parts Ø 10 mm
Number of rings	3	3	3	3
Electric power supply	230 V single-phase	230 V single-phase	230 V single-phase	230 V single-phase
Motor Power	1,5 kW	1,5 kW	1,5 kW	1,5 kW
Control	7-inch touch screen	7-inch touch screen	7-inch touch screen	7-inch touch screen
Plate rotation speed	From 30 to 90 rpm	From 30 to 90 rpm	From 30 to 90 rpm	From 30 to 90 rpm
Pressure application system	n.c.	3 adjustable double-acting pneumatic cylinders	n.c.	3 adjustable double-acting pneumatic cylinders
Applicable pressure	n.c.	100 to 800 N	n.c.	100 to 800 N
Type of stem	n.c.	Fixed	n.c.	Fixed
Dimensions (W x H x D)	1160 x 860 x 1000 mm	1160 x 860 x 1620 mm	1160 x 860 x 1000 mm	1160 x 860 x 1620 mm
Weight (without plate)	250 kg	290 kg	250 kg	290 kg
Abrasive distribution system	Optional - see table	Optional - see table	Optional - see table	Optional - see table
Reference	10 9380E 00	10 9380S 00	10 9480E 00	10 9480S 00



M.M. 9700

Intensive production for parts: Ø 5 to 210 mm

From a mechanical point of view, a large ball thrust bearing has been inserted under the machine's sub-platen. This ensures the stability of the plate, even under heavy loads. This new design also reduces the stress on the gearbox, ensuring a long service life for the equipment. Machine safety has also been improved with anti-pinch devices coupled to the castors of the self-encoding ring support arms.

Options for M.M.9700

Torque spanner set	60 01485 90
Level sensors for diamond liquid and lubricating fluid	08 90001 00
Flatness gauge for checking the flatness of the lapping plate	08 00894 00
LED light option (for S versions)	10 9000S 10
P803 cooling and heating unit, for honing plate	10 80003 90
Multi-abrasive option	10 9000S 20

M.M.9700

In order to meet the most demanding specifications in terms of surface flatness and process repeatability, LAM PLAN has developed the M.M.9000 series of machines, of which the M.M.9700 is the mid-range model.

Equipped with a 700 mm Ø honing plate, this machine features a highly intuitive touchscreen interface, making it easy to get to grips with the equipment.

The new design of the electrical part makes it easy to upgrade the machine's functions to meet your changing needs, with, for example, the subsequent integration of the AUTOPLAN system or the different types of LAM PLAN dispensing feeders.

This machine is therefore designed for all production workshops where large quantities of parts need to be processed.

M.M.9700 VERSION S

The S version of the M.M.9700 incorporates a pneumatic pressure system controlled electronically from the general interface.

Comprising three double-acting cylinders and three aluminium discs mounted on ball joints, this system eliminates the need to handle weights, optimising loading and unloading times and reducing handling effort. This optimises loading and unloading times and reduces handling effort.

The applicable pressure can vary from 100 to 1000 N.



M.M.9700

Technical data	M.M.9700 version E	M.M.9700 version S
Plate Ø	700 mm	700 mm
Inner ring Ø	274 mm	274 mm
Capacity per ring	1 part Ø 210 mm or 160 parts Ø 10 mm	1 part Ø 210 mm or 160 parts Ø 10 mm
Number of rings	3	3
Electric power supply	400 V - 50 Hz - 3 phases + ground + neutral	400 V - 50 Hz -3 phases + ground + neutral
Motor Power	2.2 kW	2.2 kW
Control	7-inch touch screen	7-inch touch screen
Plate rotation speed	From 30 to 90 rpm	From 30 to 90 rpm
Pressure application system	n.c.	3 adjustable double-acting pneumatic cylinders
Applicable pressure	n.c.	100 to 1000 N
Dimensions (W x H x D)	1500 x 1300 x 1450 mm	1500 x 1300 x 1900 mm
Weight (without plate)	500 kg	600 kg
Abrasive distribution system	Optional - see table	Optional - see table
Reference	10 9700E 00	10 9700S 00

SIMPLE SIDE LAPPING & POLISHING MACHINES

M.M.9914 NEW

Offshoot of our M.M.9100 machine, the M.M.9914 is designed to meet the needs of workshops using standard 36' consumables.

It is available in 3 rings, without a pressure system for the E version and with a pneumatic pressure system on a fixed stem for the S version.

Options and accessories for M.M.9914

Torque spanner set	60 01485 90
Level sensors for diamond and lubricating fluids	08 90001 00
Micrometric ruler for checking the flatness of the honing plate	08 00893 00
LED light option (for S versions)	10 9000S 10
P803 cooling and heating unit, for honing plate	10 80003 90
Multi-abrasive option	10 9000S 20



M.M. 9914

Intensive production for parts: Ø 10 to 290 mm

Temperature control system

Flat lapping is based on the laws of mechanics and physics, where the importance and constancy of temperatures are essential.

Variations in the temperature of a lapping plate, whether inherent in the lapping operations or dependent on external conditions, can adversely affect the quality of the desired result. To avoid this, the use of our NEW LAM®M'M' high performance plates may require the use of a temperature control system.



Micrometric ruler for checking the flatness of the plate



Refrigeration and and heating unit P803



M.M.9914

Technical data	M.M.9914 version E	M.M.9914 version S
Plate Ø	914 mm	914 mm
Inner ring Ø	368 mm	368 mm
Capacity per ring	1 part Ø 290 mm or 190 parts Ø 10 mm	1 part Ø 290 mm or 190 parts Ø 10 mm
Number of rings	3	3
Electric power supply	400 V - 50 Hz - 3 phases + ground + neutral	400 V - 50 Hz - 3 phases + ground + neutral
Motor Power	5,5 kW	5,5 kW
Control	7-inch touch screen	7-inch touch screen
Plate rotation speed	From 30 to 90 rpm	From 30 to 90 rpm
Pressure application system	n.c.	3 adjustable double-acting pneumatic cylinders
Applicable pressure	n.c.	150 to 2500 N
Dimensions (W x H x D)	1900 x 1800 x 1500 mm	1900 x 1800 x 2300 mm
Weight (without plate)	875 kg	950 kg
Abrasive distribution system	Optional - see table	Optional - see table
Reference	10 9914E 00	10 9914S 00

SIMPLE SIDE LAPPING & POLISHING MACHINES



M.M. 9100

Intensive production for parts: Ø 10 to 350 mm

The rigidity of their structures and the torque of the gear units are specifically adapted to the high abrasion of LAM PLAN lapping supports.

The many peripherals available make these machines particularly versatile and efficient. Specific equipment can be fitted as required.

M.M.9100

When it comes to honing, heavy loads and intensive use call for specially adapted, hard-wearing equipment. This is what the LAM PLAN range of medium and large diameter machines offers.

M.M.9100 E

Ø 1000 mm lapping machine without pressure system.

M.M.9100 VERSION S

Version with pneumatic pressure, comprising three double-acting cylinders mounted on a fixed bracket.

M.M.9100 VERSION SR

The SR type polishing machine is fitted with a pneumatic pressure system installed on a mobile bracket. The bracket rotates around its axis through 180° thanks to a motorised crown controlled by the by the HMI ("Human Machine Interface"). This facilitates access to the work area, plate changes and the passage of a robotic loading/unloading arm.



M.M.9100

Technical data	M.M.9100 version E	M.M.9100 version S	M.M.9100 version SR
Plate Ø	1000 mm	1000 mm	1000 mm
Inner ring Ø	406 mm	406 mm	406 mm
Capacity per ring	1 part Ø 350 mm to 225 parts Ø 10 mm	1 part Ø 350 mm to 225 parts Ø 10 mm	1 part Ø 350 mm to 225 parts Ø 10 mm
Number of rings	3	3	3
Electric power supply	400 V - 50 Hz - 3 phases + ground + neutral	400 V - 50 Hz - 3 phases + ground + neutral	400 V - 50 Hz - 3 phases + ground + neutral
Motor Power	5,5 kW	5,5 kW	5,5 kW
Control	7-inch touch screen	7-inch touch screen	7-inch touch screen
Plate rotation speed	From 30 to 90 rpm	From 30 to 90 rpm	From 30 to 90 rpm
Pressure application system	n.c.	3 adjustable double-acting pneumatic cylinders	3 adjustable double-acting pneumatic cylinders
Applicable pressure	n.c.	150 to 2500 N	150 to 2500 N
Stem type	n.c.	Fixed	Motorised rotary
Dimensions (W x H x D)	1900 x 1800 x 1500 mm	1900 x 1800 x 2300 mm	1900 x 1800 x 2300 mm
Weight (without plate)	900 kg	1000 kg	1100 kg
Abrasive distribution system	Optional - see table	Optional - see table	Optional - see table
Reference	10 9100E 00	10 9100S 00	10 9100SR 00

SIMPLE SIDE LAPPING & POLISHING MACHINES

M.M.9120

Our Ø 1200 mm honing machine is based on 2 specific chassis.

The first is dedicated to the 3-ring versions, M.M.9120 E without pneumatic pressure and M.M.9120 S with a 3-cylinder pneumatic pressure system on a fixed stem.

The second chassis is dedicated to the M.M.9120 S4 4-ring intensive production version equipped with a reinforced fixed bracket.

Both versions can also be supplied with motorised rotating stem: models M.M.9120 SR and M.M.9120 SR4.



M.M.9120 VERSION S4 AND SR4

For intensive production applications, we offer a 4-ring version of our Ø 1200 mm machine.

The M.M.9120 S4 is equipped with a 4-cylinder pneumatic pressure system.

SR4 rotary stem available as an option.

M.M. 9120

Intensive production for parts: Ø 20 to 450 mm
Maintenance of large parts





M.M.9120

Technical data	M.M.9120 version E	M.M.9120 version S - SR	M.M.9120 version S4 - SR4
Plate Ø	1200 mm	1200 mm	1200 mm
Inner ring Ø	480 mm	480 mm	432 mm
Capacity per ring	1 part Ø 450 mm to 175 parts Ø 20 mm	1 part Ø 450 mm to 175 parts Ø 20 mm	1 part Ø 350 mm to 225 parts Ø 10 mm
Number of rings	3	3	4
Electric power supply	400 V - 50 Hz - 3 phases + ground + neutral	400 V - 50 Hz - 3 phases + ground + neutral	400 V - 50 Hz - 3 phases + ground + neutral
Motor Power	7,5 kW	7,5 kW	7,5 kW
Control	7 inches touch screen	7 inches touch screen	7 inches touch screen
Plate rotation speed	From 30 to 90 rpm	From 30 to 90 rpm	From 30 to 90 rpm
Pressure application system	n.a.	3 adjustable double-acting pneumatic cylinders	4 adjustable double-acting pneumatic cylinders
Applicable pressure	n.a.	150 to 2500 N	150 to 2500 N
Power-operated rotating stem	no	Optional (M.M.9120 SR)	Optional (M.M.9120 SR4)
Dimensions (W x H x D)	2100 x 1840 x 1500 mm	2100 x 1840 x 2300 mm	2100 x 1840 x 2300 mm
Weight (without plate)	1000 kg	1200 kg	1400 kg
Abrasive distribution system	Optional - see table	Optional - see table	Optional - see table
Reference	10 9120E 00	10 9120S 00	10 9120S 40



M.M. 9150

Intensive production of parts: Ø 20 to 580 mm
Maintenance of large parts



M.M.9150

As a result of our experience in the maintenance or production of large sealing parts, particularly for the petrochemical and nuclear sectors, we offer versions of our machines with plates of Ø 1500 mm, based on the M.M.9000 series.

The M.M.9150 is available in version E without pneumatic pressure and version S with pneumatic pressure.

Detailed specifications and a technical study are available on request.

INTEGRATED MODEM

All M.M.9000 PREMIUM series machines come with an integrated modem for remote maintenance of the PLC.

They are compatible with dedicated LAM PLAN dosing units and can be fitted with an optional abrasive and lubricant level sensor.

Production data can be collected via the USB interface. Recipes can be imported and exported in CSV format. Recipes can be modified via Excel before being imported back into the machine.

AUTOPLAN Plotting and grooving the plate.





The AUTOPLAN system provides effective control of the flatness and grooving of the plate, which can be positioned and dismantled in just a few minutes using the dedicated fixing points built into the machine.



M.M.9150

Technical data	M.M.9150 version E	M.M.9150 version S
Plate Ø	1500 mm	1500 mm
Inner ring Ø	605 mm	605 mm
Capacity per ring	1 part Ø 580 mm to 263 parts Ø 20 mm	1 part Ø 580 mm to 263 parts Ø 20 mm
Number of rings	3	3
Electric power supply	400 V - 50 Hz 3 phase + ground + neutral	400 V - 50 Hz 3 phase + ground + neutral
Motor Power	7,5 kW	7,5 kW
Control	7-inch touch screen	7-inch touch screen
Plate rotation speed	From 30 to 90 rpm	From 30 to 90 rpm
Pressure application system	n.a.	3 adjustable double-acting pneumatic cylinders
Applicable pressure	n.a.	150 to 3000 N
Stem type	n.a.	Fixed
Dimensions (W x H x D)	2450 x 2100 x 1500 mm	2450 x 2200 x 2400 mm
Weight (without plate)	1700 kg	2000 kg
Abrasive distribution system	Optional - see table	Optional - see table
Reference	10 9150E 00	10 9150S 00

OPTIONS & ACCESSORIES FOR M.M.9000 PREMIUM SERIES MACHINES

	M.M.9380 E M.M.9480 E	M.M.9380 S M.M.9480 S	M.M.9700 E	M.M.9700 S	M.M.9914 E	M.M.9914 S	M.M.9100 E	M.M.9100 S
Motorised arm kit (KIT1093800BM) **Control unit for motorised arms** (109380UV00) **Motorised arm** (109380BM00)	✔	✔						
Stem E	✔ 109380PA00		✔ 109700PA00				✔ 109100PA00	
Micrometric gauge for checking the flatness of the lapping plate	✔ 080089910	✔ 080089910	✔ 080089400	✔ 080089400	✔ 080089300	✔ 080089300	✔ 080089300	✔ 080089300
Level sensors for diamond and lubricating fluids (089000100)	✔	✔	✔	✔	✔	✔	✔	✔
LED lighting for S version (109000S10)		✔		✔		✔		✔
Torque spanner set (600148590)	✔	✔	✔	✔	✔	✔	✔	✔
Multi-abrasive option M.M.9000 (109000S20)	✔	✔	✔	✔	✔	✔	✔	✔
P803 cooling and heating unit (for honing plate) (108000390)	✔	✔	✔	✔	✔	✔	✔	✔
AUTOPLAN® System	✔ 109480AP00	✔ 109480AP00	✔ 109700AP00	✔ 109700AP00			✔ 109100AP00	✔ 109100AP00

	M.M.9100 SR	M.M.9120 E	M.M.9120 S	M.M.9120 SR	M.M.9120 S4	M.M.9120 SR4	M.M.9150 E	M.M.9150 S
Motorised arm kit (KIT1093800BM) **Control unit for motorised arms** (109380UV00) **Motorised arm** (109380BM00)								
Stem E								
Micrometric gauge for checking the flatness of the lapping plate	✔ 080089300	✔ 080089500	✔ 080089500	✔ 080089500	✔ 080089500	✔ 080089500	✔ 080089700	✔ 080089700
Level sensors for diamond and lubricating fluids (089000100)	✔	✔	✔	✔	✔	✔	✔	✔
LED lighting for S version (109000S10)	✔		✔	✔	✔			✔
Torque spanner set (600148590)	✔	✔	✔	✔	✔	✔	✔	✔
Multi-abrasive option M.M.9000 (109000S20)	✔	✔	✔	✔	✔	✔	✔	✔
P803 cooling and heating unit (for honing plate) (108000390)	✔	✔	✔	✔			✔	✔
AUTOPLAN® System		✔ 109120AP00	✔ 109120AP00				✔ 109150AP00	✔ 109150AP00

DOUBLE-SIDE POLISHING MACHINES



M.M. 2380

Double-sided production for parts : Ø 5 to 30 mm

The plates (top and bottom) and central pinion are driven by brushless motors. This means that speeds and directions of rotation can be varied. The plates have an external diameter of 380 mm and can accommodate 5 satellites (useful capacity Ø 125 mm).

Technical data	M.M.2380
Plate capacity	5-satellite track Ø 380 mm ext. / Ø153 mm int.
Useful capacity	5 satellites Ø 125 mm
Plate rotation speed	0 to 120 rpm; bidirectional rotation
Pinion speed	0 to 80 rpm; bidirectional rotation
Plate and pinion motor power	0.75 kW for each motor
Max. applicable pressure	120 kg
Energy required	400 V - 50 Hz 3 phases + ground + neutral Compressed air 6 bars filtered 10 µm
Dimensions W x H x D (mm)	960 x 2030 x 780 work table height 1040
Cumulative power	2.5 kW
Noise level	<80 db at 1 metre
Weight	750 kg
Reference	10 23800 00

M.M.2380 NEW VERSION

Reliable, optimised solution for double-sided honing and polishing.

Stable, reproducible results cycle after cycle

Developed on the basis of tried-and-tested technology, this optimised version is the perfect answer to your lapping or double-sided polishing requirements for production workpieces with diameters of between 5 and 30 mm.

The M.M.2380 can be fitted with LAM PLAN lapping plates, making it ideal for applications where precise geometry and dimensions are key criteria.

In addition, the possibility of combining the M.M.2380 with the TOUCHLAM® range of polishing surfaces will meet the demands of the watchmaking or optical sectors where a polished surface finish is the main criterion.

10.5' touch screen control interface

The architecture of the man-machine interface means that the equipment can be operated very quickly. This screen will display, among other things, the pressure applied to the parts and the motor torques in real time.

Stop quote

The M.M.2380 is equipped with a 'stop-cote' device. Irrespective of the cycle time, the machine automatically stops its cycle when the target workpiece thickness is reached.



Drive sprockets available with teeth or pins.

DOUBLE-SIDE POLISHING MACHINES

Production support accessories

The M.M.2380 can be fitted with a solution for the rapid positioning of workpiece-carrying satellites. A 'rack' system can be used to store several satellites loaded by the operator in hidden time. The machine's gear ring has a removable part. When the polishing phase is complete, the operator can move the satellites and retrieve them directly from a magnetic shelf provided for this purpose. Conversely, the satellites (pre-filled with parts) can be loaded into the machine (to restart a new cycle) in the same way.

The FIXPAD® system combined with the FAS® plate will make it much easier to change polishing supports and adjust the fluid injection holes.

Accessories for M.M.2380

M.M.2380 flatness control gauge	08 00898 10
Cast iron plate Ø 380 Ra15x15	V0 15RID BL
Cast iron plate Ø 380 Ra15x15	V0 15RSD BL
Cast iron plate inf Ø 380 40R rad	V0 15RID BM
Cast iron plate Ø 380 40R rad	V0 15RSD BM
Toothed stainless steel central sprocket	10 1008 35
Stainless steel external crown with sect. teeth	10 1008 30
External toothed stainless steel crown	10 1008 32
FAS inf plate Ø 380 mm H 152 mm	09 FASINDP 400
FAS sup plate Ø 380 mm H 152 mm	09 FASSUDP 400
Satellite cast iron 66 Dents Rainu	10 1008 65
Satellite download system	09 2380DE 10
Satellite unloading system	09 2380DE 20
Tablet S satellite download	09 2380DE 30
Stainless steel external crown with Sect pins	10 1008 40
Stainless steel central pinion	10 1008 45

M.M.2380 new version, what's new: NEW

- You can save 96 recipes, each containing 5 sub-steps,
- Cooling the sequenced plate,
- Cleaning shower,
- End of cycle detachment' programme,
- Password-protected access, import/export of recipes on USB stick in CSV format,
- Remote maintenance (connection required).

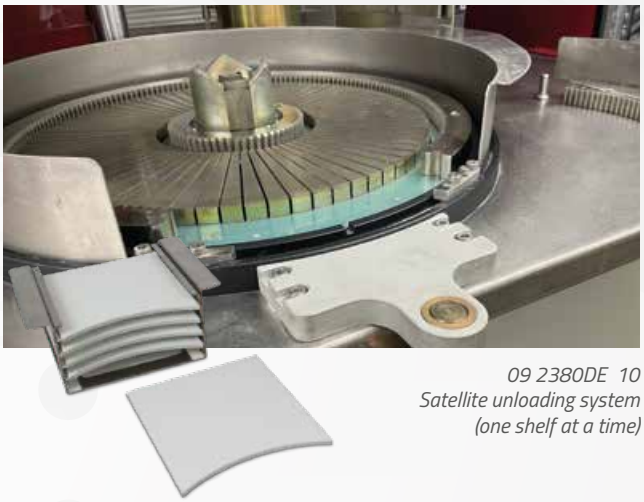
Consumables

TOUCHLAM® LAM PLAN offers its TOUCHLAM® range of discs, specially adapted to the dimensions of the machine's upper and lower plates with holes for distributing the abrasive product.

ECOA® Discover LAM PLAN's ECOA® range of abrasives specially designed for double-sided applications.



10.5' touchscreen



09 2380DE 10
Satellite unloading system
(one shelf at a time)



09 2380DE2 0
Satellite unloading system with preparation ramp



08 00898 10
Micrometric gauge

FIXPAD

See the ACCESSORIES section for details of the FIXPAD®.
This tool makes it quick and easy to position polishing discs on the top and bottom plates of double-sided machines.



MASTERLAM® Evolution

In order to answer to double-side polishing issues in small series or development phase, LAM PLAN proposes the MASTERLAM® Evolution, an original and innovating approach for double-side polishing.

The MASTERLAM® Evolution is a compact and economical solution for double-side polishing, to realise high quality polishing on any kind of small parts. This equipment is particularly well-adjusted for the finishing of watch components in small series, pre-series or prototyping.

Description

The MASTERLAM® Evolution is based on a simple kinematic proposing 2 movements: clock-wise or anti-clockwise rotation of the superior plate and the main cogwheel with speed programming. These 2 movements will allow you to respond to most of your needs in terms of polishing of small series of all types of materials.

Touch screen control panel

The 5.7 inches' touch screen in this machine will enable you to manage all the settings: cycle time, rotational speed, rotation movement, pressure during cycle and abrasives distribution sequences. This intuitive screen is also offering you the possibility to save more than 300 operating ranges. A water rinse phase is also possible at the end of the cycle.

A well-equipped and safe machine

The MASTERLAM® Evolution outer ring gear is made of 316 L stainless steel, assuring a durability of the moving parts. The machine is also equipped with two FAS® plates facilitating the setting up of the polishing cloths.

MASTERLAM®

Small series & double-side prototyping for parts: Ø 5 to 20 mm

Technical data	MASTERLAM® Evolution
Plate Capacity	7 carriers track Ø 250 mm ext. Ø 130 mm int.
Useful capacity	7 satellites Ø 65 mm
Superior plate rotational speed	20 to 150 rpm; Bidirectional rotation
Cogwheel rotational speed	20 to 150 rpm; Bidirectional rotation
Cogwheel motor power	0.75 kW
Superior plate motor power	0.2 kW
Pressure	5 to 400 N
Required energies	230 V-50 Hz single-phase Compressed air 6 bars filtered 10 µm
Dimensions (WxHxD)	550 x 670 x 670 mm
Total power	2.5 kW
Noise level	< 80 db at 1 metre away
Weight	95 kg
Reference	6 0ML1EVO 00



Lifting and lowering of the superior plate with pneumatic cylinder

DOSING UNIT

Automated dosing

Automated dosing ensures precise, even product distribution. This is the solution for controlling the abrasive film and lubrication. Material removal performance and temperature control depend directly on the quality and consistency of the abrasive film.

Different settings, distribution intervals, spraying times and nozzle positioning ensure consistent, reproducible polishing results and savings on consumables.

A dosing solution for every product and every application.

The venturi system is reserved for products with low viscosity and high settling rates, such as certain oil bases. The peristaltic system is more versatile and has the advantage of not generating mist.

The large-capacity dispensers in the 8000 series are based on vortex pump systems for models 8003 and 8007, and high-flow peristaltic pumps for model 8017. These different models are suitable for the large product distributions generally required by production applications. They are mainly reserved for abrasives from the SiC family, which have a strong tendency to settle.



DOSING UNITS LAM PLAN, CHARACTERISTICS

DOSING UNIT Designation	Pump type	Distribution	No. of pumps	Capabilities	Continuous flow rate per pump*	Products compatible	Stirring	Slave version LAM PLAN	Autonomous adaptable version
709	Peristaltic	Drip	2	2 x 500 cc	0,5 ml/sec.	Water base	Yes/1 bottle	08 01709 00	n.a.**
710	Peristaltic	Drip	2	2 x 500 cc	0,5 ml/sec.	Oil base	Yes/1 bottle	0801710 00	n.a.
719	Venturi	Spraying	2	2 x 500 cc	n.a.	Oil base + decantation	Yes/1 bottle	08 01719 00	n.a.
909	Peristaltic	Drip	3	3 x 500 cc	0,5 ml/sec.	Water base	Optional	n.a.	08 03799 00
909 HV	Peristaltic	Drip	2 standard 1 high-speed	3 x 500 cc	0,5 ml/sec. 3,5 ml/sec.	Water base + high viscosity	Optional	n.a.	08 007992 00
910	Peristaltic	Drip	2	2 x 500 cc	0,5 ml/sec.	Oil base	Yes/1 bottle	n.a.	08 00799 30
910.2	Peristaltic	Drip	4	4 x 500 cc	0,5 ml/sec.	Oil base	Yes/ 2 bottles	n.a.	08 00799 40
910.3	Peristaltic	Drip	6	6 x 500 cc	0,5 ml/sec.	Oil base	Yes/ 4 bottles	n.a.	08 00799 50
920	Venturi	Spraying	2	2 x 500 cc	n.a.	Oil and water base	Yes/1 bottle	n.a.	08 00799 30
920.2	Venturi	Spraying	4	4 x 500 cc	n.a.	Oil and water base	Yes/ 2 bottles	n.a.	08 00799 40
920.3	Venturi	Spraying	6	6 x 500 cc	n.a.	Oil and water base	Yes/ 3 bottles	n.a.	08 00799 50
8017	Peristaltic	By casting	1	7 L	3,5 ml/sec.	All	Yes	08 08017 00	08 18017 00
8003	Vortex	By casting	1	50 L	50 L/min.	All	Yes	W00008003	W001 08003
8007	Vortex	By casting	1	7 L	25 L/min.	All	No	W00008007	W001 08007

**depends on the viscosity of the liquid used. **not applicable*

Dedicated dosing units for LAM PLAN machines

This series of dispensers is fitted to LAM PLAN lapping machines. They are controlled from the machine interface and are fully integrated into the programming cycles.

The different models can be used to dispense all types of products.

The range of nozzles available covers all machine diameters LAM PLAN.



DOSING UNIT 709 - PERISTALTIC

Peristaltic model for WATER-BASED abrasives.

Technical data	709 - Peristaltic
Reference	08 01709 00
Capacity	2 x 500 cc
Pump	2
Pump flow rate	0,5 ml/sec.
Stirrer	1
Distribution system	Nozzles not included, see machine recommendation.
Electric power supply	220V single-phase + 24V control input



DOSING UNIT 710 - PERISTALTIC

Peristaltic model for OIL-BASED and EMULSION abrasives - High-capacity pumps.

Technical data	710 - Peristaltic
Reference	08 01710 00
Capacity	2 x 500 cc
Pump	2 - large-capacity type
Pump flow rate	3,5 ml/sec.
Stirrer	1
Distribution system	Nozzles not included, see machine recommendation.
Electric power supply	220V single-phase + 24V control input



DOSING UNIT 719 - VENTURI

Venturi model for OIL-BASED and EMULSION abrasives with settling tendency.

Technical data	719 - Venturi
Reference	08 01719 00
Capacity	2 x 500 cc
Venturi	2
Pump flow rate	n.a.
Stirrer	1
Distribution system	Nozzles not included, see machine recommendation.
Electric power supply	220V single-phase + 24V control input

OPTIONAL LEVEL SENSORS

Level sensor for diamond and lubricant fluids.

Designation	Qty	Ref.
Level Sensor of Diamond Liquid/Lub	1	08 90001 00

DOSING UNIT

Compact stand-alone dosing units

The 909 and 909HV compact stand-alone dosing units make it easy to equip small-capacity machines with a high-performance dosing system. Their compact size makes them ideal for retrofitting equipment. They are designed for dispensing water-based abrasives with low decantation.

The possibility of connecting one or 2 stirrers (optional) extends the range of uses for these devices.

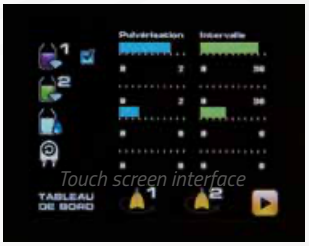
Recommended for machines from Ø 380 to 700 mm.



DOSING UNIT 909 - PERISTALTIC

WATER-BASED abrasive model.

Technical data	909 - Peristaltic
Reference	08 03799 00
Capacity	3 x 500 cc
Pump	3 standard peristaltic pumps
Pump flow rate	0,5 ml/sec.
Stirrer	2 in option
Drain function	yes - by flow inversion
Distribution system	Nozzles not included, see machine recommendation.
Electric power supply	220V single-phase - 50 Hz
Communication dosing unit and machine	1 24 V input for machine control



Touch interface

DOSING UNIT 909 HV- PERISTALTIC

Model equipped with 2 standard pumps and a high-flow pump recommended for high-viscosity abrasive liquids, can be used for small quantities of SiC abrasive.

Technical data	909 HV- Peristaltic
Reference	08 00799200
Capacity	3 x 500 cc
Pump	2 standard peristaltic pumps 1 high-flow peristaltic for high-viscosity liquids
Pump flow rate	0,5 ml/sec. / 3,5 ml/sec.
Stirrer	2 in option
Drain function	yes - by flow inversion
Distribution system	Nozzles not included, see machine recommendation.
Electric power supply	220V single-phase - 50 Hz
Communication dosing unit and machine	1 24 V input for machine control

STIRRER OPTION

Helps manage settling problems in the liquid bottle. Up to 2 stirrers can be added to each 909 dosing unit.

Designation	Qty		Ref.
Stirrer for 909 dosing units	1	for 500 cc glass bottle	08 02816 00



Stirrer for 909 dosing unit

Modular stand-alone automated dosing units

With TYPE 910 peristaltic dosing units for oil-based diamond abrasives with low decantation and TYPE 920 venturi dosing units for oil- and water-based diamond abrasives with high decantation, you can equip all types of machine with an autonomous, modular and programmable dosing system.

The separate control unit allows the positioning of the module(s) to be adapted to the machine configuration.



910 dosing unit



910.2 dosing unit



910.3 dosing unit

DOSING UNITS SERIES 910 - PERISTALTICS

Models for low-settling OIL-BASED abrasives.

Technical data	SERIES 910
Drain function	No
Distribution system	Nozzles not included, see machine recommendation.
Electric power supply	220V single-phase - 50 Hz
Communication dosing unit and machine	1 24 V input for machine control

Models	910	910.2	910.3
Applications	For machines from Ø 380 to 700 mm.	For machines from Ø 762 to 1000 mm.	For machines from Ø 1200 to 1500 mm.
References	08 MM910A 00	08 MM910A 20	08 MM910A 30
Capabilities	2 x 500 cc	4 x 500 cc	6 x 500 cc
Pumps	2 - large-capacity type	4 - large-capacity type	6 - large-capacity type
Stirrers	1	2	3



920 dosing unit



920.2 dosing unit



920.3 dosing unit

DOSING UNITS SERIES 920 - VENTURI

Models for high-settling OIL-BASED and WATER-BASED abrasives.

Technical data	SERIES 920
Drain function	yes
Distribution system	Nozzles not included, see machine recommendation.
Electric power supply	220V single-phase - 50 Hz
Communication dosing unit and machine	1 24 V input for machine control

Models	920	920.2	920.3
Applications	For machines from Ø 380 to 700 mm.	For machines from Ø 762 to 1000 mm.	For machines from Ø 1200 to 1500 mm.
References	08 MM920A 00	08 MM920A 20	08 MM920A 30
Capabilities	2 x 500 cc	4 x 500 cc	6 x 500 cc
Venturis	2	4	6
Stirrers	1	2	3

Dosing pumps

These dispensing systems are suitable for any type of abrasive immersed in a liquid. They solve the problem of settling and guarantee regular and guarantee regular, repeatable results. Contact us if you would like to link the dosing unit/pum to your honing machine.

DOSING PUMP TYPE 8003

Model for ALL TYPES OF ABRASIVES dispensed in large quantities, controlled by the machine interface or by an integrated sequencer for the autonomous version

Technical data	8003
References	W000 08003 - slave version for LAM PLAN machine W001 08003 - autonomousversion
Capacity	50 liters capacity with drain valve
Pump	1 vortex type
Pump flow rate	50 liters/minute
Stirrer	Yes - variable speed paddle mixer
Drain function	yes
Distribution system	3-way adjustable outlet. 3-way solenoid valve
Dimensions	H 870 mm X floor Ø 600 mm
Electric power supply	220V single-phase - 50 Hz
Communication dosing unit and machine	1 24 V input for machine control
Option	Low abrasive warning system for 9000 series machines - Ref. 08 90002 00



Autonomous version

DOSING PUMP 8007

Model for ALL TYPES OF ABRASIVES dispensed in large quantities, controlled by the machine interface or by an integrated sequencer for the autonomous version.

Technical data	8007
References	W000 08007 - slave version for LAM PLAN machine W001 08007 - autonomous version
Capacity	Useful tank volume 7 liters
Pump	1 vortex type
Pump flow rate	25 liters/minutes
Stirrer	no
Distribution system	3-way adjustable outlet. 3-way solenoid valve
Dimensions	H 420 mm X floor Ø 250 mm
Electric power supply	220V single-phase - 50 Hz
Communication dosing unit and machine	1 24 V input for machine control



DOSING PUMP 8017

Model for ALL TYPES OF ABRASIVE. Controlled by the machine interface or by an integrated sequencer for the stand-alone version.

Technical data	8017
References	08 08017 00 - slave version for LAM PLAN machine 08 18017 00 - autonomous version
Capacity	Useful tank volume 7 liters
Pump	1 peristaltic
Pump flow rate	3,5 ml/sec.
Stirrer	yes - paddle mixer
Distribution system	Nozzle 813 on mobile stand sold separately
Dimensions	H 430 mm X floor Ø 250 mm
Electric power supply	220V single-phase - 50 Hz
Communication dosing unit and machine	1 24 V input for machine control



DOSING UNIT LAM PLAN, CHARACTERISTICS

Designation DOSING UNITS	Pump type	Distribution	No. of pumps	Capabilities	Continuous flow rate per pump*	Products compatible	Stirring	Slave version LAM PLAN	Autonomous adaptable version
709	Péristaltique	Drip	2	2 x 500 cc	0,5 ml/sec.	Water base	Yes/1 bottle	0801709 00	n.a.**
710	Peristaltic	Drip	2	2 x 500 cc	0,5 ml/sec.	Oil base	Yes/1 bottle	0801710 00	n.a.
719	Venturi	Spraying	2	2 x 500 cc	n.a.	Oil base + decantation	Yes/1 bottle	0801719 00	n.a.
909	Peristaltic	Drip	3	3 x 500 cc	0,5 ml/sec.	Water base	Optional	n.a.	08 03799 00
909 HV	Peristaltic	Drip	2 standard 1 high-speed	3 x 500 cc	0,5 ml/sec. 3,5 ml/sec.	Water base + high viscosity	Optional	n.a.	08 00799200
910	Peristaltic	Drip	2	2 x 500 cc	0,5 ml/sec.	Oil base	Yes/1 bottle	n.a.	08 00799 30
910.2	Peristaltic	Drip	4	4 x 500 cc	0,5 ml/sec.	Oil base	Yes/ 2 bottles	n.a.	08 00799 40
910.3	Peristaltic	Drip	6	6 x 500 cc	0,5 ml/sec.	Oil base	Yes/ 4 bottles	n.a.	08 00799 50
920	Venturi	Spraying	2	2 x 500 cc	n.a.	Oil and water base	Yes/1 bottle	n.a.	08 00799 30
920.2	Venturi	Spraying	4	4 x 500 cc	n.a.	Oil and water base	Yes/ 2 bottles	n.a.	08 00799 40
920.3	Venturi	Spraying	6	6 x 500 cc	n.a.	Oil and water base	Yes/ 3 bottles	n.a.	08 00799 50
8017	Peristaltic	By casting	1	7 L	3,5 ml/sec.	All	Yes	08 08017 00	08 18017 00
8003	Vortex	By casting	1	50 L	50 L/min.	All	Yes	W00008003	W00108003
8007	Vortex	By casting	1	7 L	25 L/min.	All	Non	W00008007	W00108007

**depends on the viscosity of the liquid used. **not applicable*



Nozzles 813 and 813 LH



Nozzles 811 L and 811 HL



Nozzles 815, 815 L and 815 XL with anti-fog system



Distribution system for dosing unit type 8003 and 8007

Consumables for dosing units

CONSUMABLES FOR 709

Designation	Ref.
Versitec silicone hose Ø 5-3 per meter - Water base	60 00271 90
Peristaltic pump body standard model	60 00667 90
Stirring paddle for dosing unit	08 00124 90

CONSUMABLES FOR 710

Designation	Ref.
Hose Ø 7-3,2 Yellow for - Oil base - Emulsion base - Sold by the metre	08 1050 10
Peristaltic Pump for M.M.710	60 01291 90
Stirring paddle for dosing unit	08 00124 90

CONSUMABLES FOR 719 AND 920

Designation	Ref.
Flexible Crystal Hose Ø 6-3 (venturi) per meter - Oil and water base	60 00270 90
Stirring paddle for dosing unit	08 00124 90

CONSUMABLES FOR 909

Designation	Ref.
Versitec silicone hose Ø 5-3 per meter - Water base	60 00271 90
Peristaltic pump body standard model	60 00667 90
HV peristaltic pump body	60 00893 90
Versitec silicone hose Ø 7-4 per metre	60 00272 90
Stirring paddle for dosing unit	08 00124 90

CONSUMABLES FOR 8017

Designation	Ref.
HV peristaltic pump body - Water base	60 00893 90
Versitec silicone hose Ø 7-4 per meter	60 00272 90

NOZZLES

Designation	Lapping machine	Product	Dosing unit type	Ref.
813	Ø 381 to 700 mm	Water base	Peristaltic	08 00813 00
813 L	Ø 910 to 1500 mm			08 00813 10
813 H	Ø 381 to 700 mm	Oil and emulsion bases		08 00813 20
813 LH	Ø 910 to 1500 mm			08 00813 40
811	Ø 381 to 700 mm	Water base		08 00811 00
811 L	Ø 910 to 1500 mm			08 00811 10
811 H	Ø 381 to 700 mm	Oil and emulsion bases		08 00811 40
811 LH	Ø 910 to 1500 mm			08 00811 20
815	Ø 381 to 700 mm	All bases	Venturi	08 00815 20
815 L	Ø 910 to 1000 mm			08 00815 40
815 XL	Ø 1200 to 1500 mm			08 00815 60

GLASS BOTTLES

Designation	Qty.		Ref.
Glass bottle	2	500 cc	08 02804 00
Glass bottle / stopper / tube	3	For 909 and 909 HV	08 01804 00

ACCESSORIES

Cast iron conditioning rings



We carefully select special high quality cast iron for optimum, durable results.
Suitable for all lapping machines, whatever the brand or size.
Available from stock or produced to order.

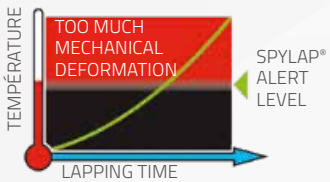
Compatible machines	Ø plates	Ø (mm)		Height	Weight	Ref.
		Ext.	Int.	mm	kg	1 piece
	14"	166	130	45,5	2,28	U166 A0355
M.M. 9400 (Ø 381 mm)	15"	178	140	45,5	2,97	U178 A0381
M.M. 9480 (Ø 480 mm)	19"	218	182	45,5	4,20	U218 A0480
M.M. 9610 (Ø 610 mm)	24"	286	248	70	7,84	U286 A0610
M.M. 9700 (Ø 700 mm)	27"	315	275	70	9,24	U315 A0711
M.M. 9914 (Ø 914 mm)	36"	419	368	100	20,80	U419 A0914
M.M. 9100 (Ø 1000 mm)	40"	457	406	100	24	U457 A1000
M.M. 9120 (Ø 1200 mm)	48"	545	480	100	36,60	U545 A1219
M.M. 9120 (Ø 1200 mm)	(4x) 48"	510	432	125	41	U510 A1219
M.M. 9150 (Ø 1500 mm)	59"	685	605	125	55	U685 A1500

ECORING ceramic self-self-lapping rings NEW



Prevent mechanical deformation problems. Ceramic rings enable you to keep your plates flat and control their heating, while limiting pollution thanks to the absence of graphite. The new ECORING ring system has the economic advantage of being able to be reloaded when worn. The studs can be removed and REFILL PACKS are available.

The SPYLAP® detector enables the user to visually prevent excessive mechanical deformation of the honing (or polishing) surface and the workpieces being honed. The SPYLAP® continuously senses the temperature of the substrate and switches from black to red at a predefined temperature.





Standby



Alert

ECORING CERAMIC RINGS SPYLAP®

1 piece

Designation	Ø int. (mm)	Compatible machines	Ref.
Ring ECORING Dint 140	140	15" - Ø 381 mm	08 94006 30
Ring ECORING Dint 182	182	19" - Ø 480 mm	08 94806 30
Ring ECORING Dint 248	248	24" - Ø 610 mm	08 96106 30
Ring ECORING Dint 275	275	27" - Ø 700 mm	08 97006 30
Ring ECORING Dint 368	368	36'' - Ø 914 mm	08 99106 30
Ring ECORING Dint 406	406	40" - Ø 1000 mm	08 91006 30
Ring ECORING Dint 480	480	48" - Ø 1200 mm	08 91206 30
Ring ECORING Dint 605	605	58" - Ø 1500 mm	08 91506 30

REFILL PACKS OF ECORING CERAMIC STUDS SPYLAP®

Designation	Specifications	Ref.
Studs recharge pack 140	25 studs for ring Ø int.140	09 10119 80
Studs recharge pack 182	30 s tuds for ring Ø int.182	09 10119 81
Studs recharge pack 248	33 studs for ring Ø int. 248	09 10119 82
Studs recharge pack 275	36 studs for ring Ø int. 275	09 10119 83
Studs recharge pack368	46 studs for ring Ø int. 368	09 10119 89
Studs recharge pack 406	50 studs for ring Ø int. 406	09 10119 84
Studs recharge pack 480	45 studs for ring Ø int. 480	09 10119 85
Studs recharge pack 605	50 studs for ring Ø int. 605	09 10119 86

PVC rings NEW

Plastic rings are recommended for holding workpieces to be polished on cloth supports. The new system of ECORING rings offers the economic advantage of being able to be recharged when worn. The PVC studs can be removed and REFILL PACKS are available.

ECORING PVC RINGS

1 piece

Designation	Ø int. (mm)	Height	Compatible machines	Ref.
Ring ECORING PVC Dint 140	140	41	15" - Ø 381 mm	08 94001 30
Ring ECORING PVC Dint 182	182	43,5	19" - Ø 480 mm	08 94801 30
Ring ECORING PVC Dint 248	248	46	24" - Ø 610 mm	08 96101 30
Ring ECORING PVC Dint 275	275	51	27" - Ø 700 mm	08 97001 30
Ring ECORING PVC Dint 386	386	51	36" - Ø 914 mm	08 99141 30
Ring ECORING PVC Dint 406	406	81	40" - Ø 1000 mm	08 91001 30



REFILL PACKS OF ECORING PVC STUDS

Designation	Specifications	Ref.
Studs PVC recharge pack 140	25 studs for ring Ø int. 140	09 10129 80
Studs PVC recharge pack 182	25 studs for ring Ø int. 182	09 10129 81
Studs PVC recharge pack 248	25 studs for ring Ø int. 248	09 10129 82
Studs PVC recharge pack 275	25 studs for ring Ø int. 275	09 10129 83
Studs PVC recharge pack 386	25 studs for ring Ø int. 386	09 10129 87
Studs PVC recharge pack 406	25 studs for ring Ø int. 406	09 10129 84

Interleaving discs

PROTECTION DISCS 881 SERIES

Designation	Qty.	Dim. (mm)	Ref.
Protection disc Thickness : 1,4 mm	10	138	08 83501 00
	10	180	08 94801 00
	10	245	08 86001 00
	10	275	08 87501 00
	10	368	08 89101 00
	10	406	08 81001 00
	10	480	08 81201 00



881 series

COMPENSATING DISCS 883 SERIES

Designation	Qty.	Dim. (mm)	Ref.
Compensation disc	3	138	08 83503 00
	3	180	08 94803 10
	3	245	08 86003 00
	3	275	08 87503 00
	3	368	08 89103 00
	3	406	08 81003 00
	3	480	08 81203 00



883 series

Holder discs

HOLDER DISC 885 SERIES

Designation	Qty.	Dim. (mm)	Ref.
Non-slip holder disc for thin thickness. Thickness 4 mm.	3	138	08 83505 00
	3	180	08 94805 00
	3	245	08 86005 00
	3	275	08 87505 00
	3	368	08 89105 00
	3	406	08 81005 00
	3	480	08 81205 00

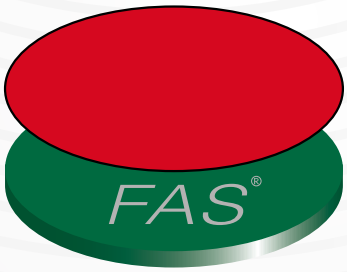


885 Series

FAS® system

PLATES WITH ANTI-ADHESION COATING FOR SELF-ADHESIVE SUPPORT

Self-adhesive support



FAS® Plate

Designation	Qty.	Ø in mm	Ref.
FAS® plate	1	381	09 FAS00 40
	1	400	09 FAS00 80
	1	480	09 FAS00 30
	1	610	09 FAS00 60
	1	700	09 FAS00 70

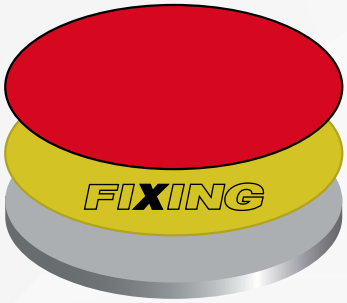
TREATMENT OF YOUR PLATES WITH THE FAS® COATING

Designation	Qty.	Ø in mm	Ref.
FAS® plate coating	1	80	09 FAS0R 02
	1	220	09 FAS0R 05
	1	250	09 FAS0R 10
	1	300	09 FAS0R 50
	1	381	09 FAS0R 40
	1	400	09 FAS0R 80
	1	480	09 FAS0R 30
	1	500	09 FAS0R 51
	1	520	09 FAS0R 52
	1	610	09 FAS0R 60
	1	700	09 FAS0R 70
	1	910	09 FAS0R 90
	1	1000	09 FAS0R 100

Other diameters on request

FIXING® discs

Self-adhesive support



Metal plate

Semi-flexible support disc: 1 self-adhesive side. Allow easy sticking and unsticking of large self-adhesive polishing supports.

Designation	Qty.	Ø in mm	Ref.
FIXING® discs	5	381	TFIX 603 80
	5	400	TFIX 604 00
	1	480	TFIX 604 80
	1	550	TFIX 605 50
	1	610	TFIX 606 10
	1	700	TFIX 607 00
	1	914	TFIX 609 14

ACCESSORIES

Specific carriers

CARRIERS SERIES 884 FOR SINGLE SIDE MACHINES

Easily usinable plastic disc holding your parts during the lapping process. 3mm thick.
On demand, PMMA carriers are delivered with honeycomb cells according to the dimension of your parts.

Designation	Qty.	Dim. (mm)	Ref.
PVC carriers for the production of holding grids	3	138	08 83504 00
	3	180	08 94804 00
	3	245	08 86004 00
	3	275	08 87504 00
	3	368	08 89104 00
	3	406	08 81004 00
	3	480	08 81204 00
Self-adhesive thermoplastic skids	600	Ø 12	UPAT 012AC
	100	Ø 12	UPAT 012ACU100
	600	Ø 20	UPAT 020AC



Self-adhesive thermoplastic skids

CARRIERS FOR DOUBLE-SIDE MACHINES

The carriers are used to maintain the parts on the double-side machine. Their conception is realised according to the geometry of your parts or according to your drawings. Our carriers are available in a wide range of thickness, from a few millimetres to 200 µm.

Depending on your application and the nature of your parts, we propose our carriers in a large range of materials, such as stainless steel, blue steel (hardened until 600 Hv), glass fibre, aramid, PVC, epoxy,... For any double-side machine brand.



Designation
Epoxy carrier
PVC carrier
Metallic carrier

Avantages

- Excellent flatness and parallelism
- Quality of cuts
- Very low thickness dispersal
- Cuts atypical forms.

Exemples of application domain

- Optical
- Watchmaking
- Mechanic industry
- LED and semi-conductors.



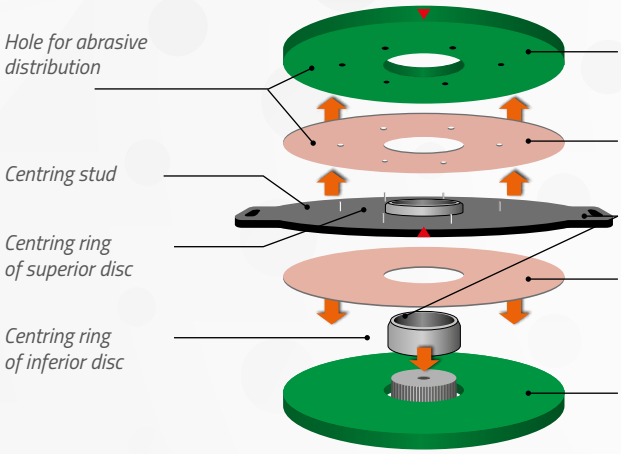
FIXPAD® system

FIXPAD® is a tool that allows simple and fast positioning of polishing discs on the plates of double-side machines.

Developed by LAM PLAN, FIXPAD® allows you to stick the discs to the plate without trapping air bubbles and without folds. Due to its design and thanks to the pre-cut TOUCHLAM® discs, the installation of discs on the upper plates is carried out in just seconds. The FIXPAD® pins guide the positioning of the pad when inserted in the distribution holes of the upper plate. This tool will simplify the installation of polishing pads and will limit machine stoppage time.

Designation	Ref.
FIXPAD® system for double-side machine	97 02033 00
FIXPAD® system for SOMOS DP400 machine	97 02034 00

FIXPAD



Micrometric gauges



Micrometric gauge for Ø 200 to 600 mm machines



For a fast and precise check of your lapping plates, with a direct reading of the measurements. Precision: 1 µm. Each set includes:

- 1 marble, accuracy : 0,8 µm.
- 1 gauge made of stabilised aluminium or stainless steel for machines Ø 200 to 600 mm.
- 1 micron comparator.
- 1 transport and storage case.
- 1 user guide with charts and mapping formulas.

Designation	Qty.	Ref.
For machine Ø 200 to 400 mm	1	08 00898 00
For machine Ø 400 to 600 mm	1	08 00899 10
For machine Ø 610 mm	1	08 00892 00
For machine Ø 700 mm	1	08 00894 00
For our machine Ø 1000 mm	1	08 00893 00
For machine Ø 1200 mm	1	08 00895 00
For machine Ø 1500 mm	1	08 00897 00

Monochromatic lamps

The use of a monochromatic lamp and an optical flatness gauge allow a simple reading of the geometry of your parts for their flatness check. The light from the low pressure sodium vapour bulb has a specific wavelength compatible with LAM PLAN's optical gauge.



Monochromatic lamp and optical gauges

REMOVABLE MONOCHROMATIC LAMP

Designation	Qty.	Ref.
Removable monochromatic lamp with Ø 200 mm mirror	1	08 00801 00
Spare bulb 18 w	1	08 00801 90

Control capacity	Gauge Ø 150 mm maximum
W x D x H	280 x 330 x 390 mm



Removable, usable without its stand

MONOCHROMATIC LAMP MAX NEW

Designation	Qty.	Ref.
Monochromatic lamp MAX	1	08 00803 00
Spare bulb 36 w	1	08 00803 10

Control capacity	Optical gauge Ø300 mm maximum
W x D x H	380 x 330 x 390 mm

Optical gauges

Our new range of quartz optical gauge is also available on demand with boring or in a rectangular shape..

Ø (mm)	Thickness (mm)	Number of faces	Accuracy	Ref.
50	10	1	Lambda/10	08 01805 00
75	15	1	Lambda/10	08 01807 00
100	17	1	Lambda/10	08 01810 00
125	20	1	Lambda/10	08 01812 00
150	25	1	Lambda/10	08 01814 00
200	30	1	Lambda/10	08 01820 00
250	35	1	Lambda/10	08 01825 00
300	40	1	Lambda/10	08 01830 00
50	10	2	Lambda/10	08 00805 00
75	15	2	Lambda/10	08 00807 00
100	17	2	Lambda/10	08 00810 00
125	20	2	Lambda/10	08 00812 00
150	25	2	Lambda/10	08 00814 00
200	30	2	Lambda/10	08 00820 00
250	35	2	Lambda/10	08 00825 00
300	40	2	Lambda/10	08 02830 00



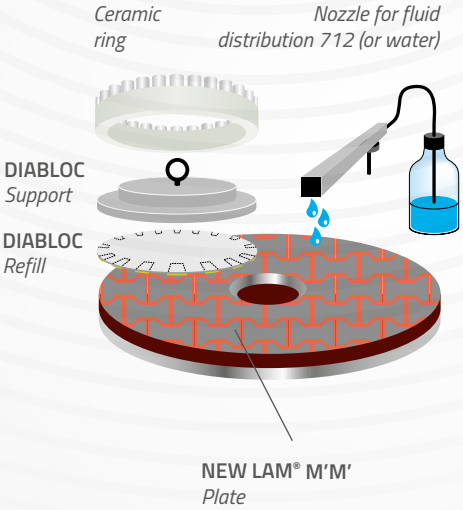


Plate maintenance and integrated reconditioning and grooving system

DIABLOC SYSTEM

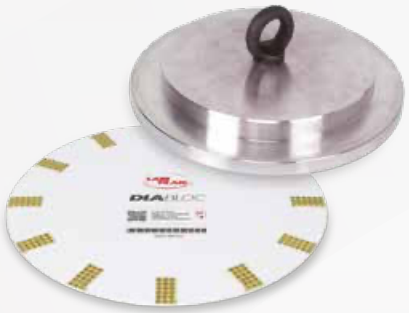
The reconditioning of composite plates can be carried out in different ways.

The DIABLOC is a self-adhesive disc which has a series of diamond pellets. It is stuck onto a stable and lapped aluminium support. It allows the reconditioning of NEW LAM®M'M', EVOLAM ULTIMATE and 2000 series plates. It corrects distortion and surface faults (glazing, scratching) of your plates. The new VIOLET and BLACK DIABLOCS are more aggressive, enabling you to accelerate the reconditioning phase notably on large diameter plates.

DIABLOCS

1 holder + 1 disc

Designation	For plate Ø	Ø in mm	Ref.
DIABLOC BLACK Super aggressive. **For COMPOSITE rough lapping plates in great diametre.**	Ø 381 mm	178	08 00907 60
	Ø 480 mm	224	08 00907 64
	Ø 610 mm	286	08 00907 70
	Ø 700 mm	315	08 00907 90
	Ø 914 mm	419	08 00907 80
	Ø 1000 mm	451	08 009071 80
	Ø 1200 mm 4 rings	500	08 009075 00
	Ø 1200 mm	545	08 00907 00
DIABLOC PURPLE Aggressive. **For COMPOSITE rough lapping plates.**	Ø 381 mm	178	08 00906 60
	Ø 480 mm	224	08 00906 64
	Ø 610 mm	286	08 00906 70
	Ø 700 mm	315	08 00906 90
	Ø 914 mm	419	08 00906 80
	Ø 1000 mm	451	08 00906180
	Ø 1200 mm 4 rings	500	08 009065 00
	Ø 1200 mm	545	08 00906 00
	Ø 1500 mm	available on request	
DIABLOC BLUE **For fine and super finish COMPOSITE lapping plates lapping plates in great diametre.**	Ø 381 mm	178	08 00900 60
	Ø 480 mm	224	08 00900 64
	Ø 610 mm	286	08 00900 70
	Ø 700 mm	315	08 00900 90
	Ø 914 mm	419	08 00900 80
	Ø 1000 mm	451	08 00900180
	Ø 1200 mm 4 rings	500	08 009005 00
	Ø 1200 mm	545	08 00900 00
DIABLOC GREEN **For fine and super finish COMPOSITE lapping plates.**	Ø 381 mm	178	08 00901 60
	Ø 480 mm	224	08 00901 64
	Ø 610 mm	286	08 00901 70
	Ø 700 mm	315	08 00901 90
	Ø 914 mm	419	08 00901 80
	Ø 1000 mm	451	08 009011 80
	Ø 1200 mm 4 rings	500	08 009015 00
	Ø 1200 mm	545	08 00901 00
	Ø 1500 mm	available on request	



ACCESSORIES

Mains plate Ø	EVOLAM	NEW LAM M'M'		
	Ultimate	Blue	Green	Yellow
381 mm (15")	■	■	■	■
480 mm	■	■	■	■
610 mm (24")	■	■	■	■ ■ ■
700 mm	■	■	■	■ ■ ■
914 mm (36")	■	■	■	■ ■
1000 mm	■	■	■	■ ■
1200 mm (48")	■	■	■	■ ■

GUIDANCE

Depending on the plate to be reconditioned, the right DIABLOC can be chosen

There are four variants designed with different degrees of aggressiveness:

- Black - super agressive
- Purple - agressive
- Blue DIABLOC - for finishing plate great diametre
- Green DIABLOC - for finishing plate

REFILLS FOR DIABLOCS

1 piece

Designation	For plate Ø	Ø in mm	Ref.
REFILLS DIABLOC BLACK Super aggressive. **For COMPOSITE rough lapping plates in great diametre.**	Ø 381 mm	178	08 01907 60
	Ø 480 mm	224	08 01907 64
	Ø 610 mm	286	08 01907 70
	Ø 700 mm	315	08 01907 90
	Ø 914 mm	419	08 01907 80
	Ø 1000 mm	451	08 019071 80
	Ø 1200 mm 4 rings	500	08 019075 00
	Ø 1200 mm	545	08 01907 00
REFILLS DIABLOC PURPLE Aggressive. **For COMPOSITE rough lapping plates.**	Ø 381 mm	178	08 01906 60
	Ø 480 mm	224	08 01906 64
	Ø 610 mm	286	08 01906 70
	Ø 700 mm	315	08 01906 90
	Ø 914 mm	419	08 01906 80
	Ø 1000 mm	451	08 019061 80
	Ø 1200 mm 4 rings	500	08 019065 00
	Ø 1200 mm	545	08 01906 00
	Ø 1500 mm	available on request	
REFILLS DIABLOC BLUE **For fine and super finish COMPOSITE lapping plates lapping plates in great diametre.**	Ø 381 mm	178	08 01900 60
	Ø 480 mm	224	08 01900 64
	Ø 610 mm	286	08 01900 70
	Ø 700 mm	315	08 01900 90
	Ø 914 mm	419	08 01900 80
	Ø 1000 mm	451	08 01900180
	Ø 1200 mm 4 rings	500	08 01901500
	Ø 1200 mm	545	08 01900 00
REFILLS DIABLOC GREEN **For fine and super finish COMPOSITE lapping plates.**	Ø 381 mm	178	08 01901 60
	Ø 480 mm	224	08 01901 64
	Ø 610 mm	286	08 01901 70
	Ø 700 mm	315	08 01901 90
	Ø 914 mm	419	08 01901 80
	Ø 1000 mm	451	08 019011 80
	Ø 1200 mm 4 rings	500	08 019015 00
	Ø 1200 mm	545	08 01901 00
	Ø 1500 mm	available on request	



AUTOPLAN system

The AUTOPLAN system enables efficient plate flatness and grooving in order to create structures which modifier it's properties. The principle lies in plate machining with a moving cutting tool. The AUTOPLAN is positioned and mounted in a few minutes thanks to the dedicated fixation points integrated in our machines.



Dedicated to series 9000 machines

At present, the automatic AUTOPLAN system can be integrated in LAM PLAN machines up to model M.M.9100. It is installed on dedicated points on the machine structure. Driven directly by the control interface, you can manage forward speed in order to carry out flattening or grooving operations. The AUTOPLAN produces spiral grooving. This system is faster and more precise than the DIABLOC. It is also easier to manage and to reproduce the required support geometry (flat, concave or convex).

Production stoppage for plate reconditioning is reduced and productivity is increased.







AUTOPLAN FOR LAPPING MACHINES M.M.9000 SERIES

Designation	Ref.
AUTOPLAN for M.M.9480 version S with SUPPORT TROLLEY.	10 9480AP 00
AUTOPLAN for M.M.9700 version E, S and S HP with SUPPORT TROLLEY.	10 9700AP 00
AUTOPLAN for M.M.9100 version E, S, SR and EC with SUPPORT TROLLEY.	10 9100AP 00
AUTOPLAN for M.M.9120	10 9120AP 00
AUTOPLAN for M.M.9150	10 9150AP 00

Cleaning products

STANOL BARREL

Solvent for washing stand.

Designation	Qty.	Ref.
Stanol barrel	60 litres	08 00614 00

DETERGENT 742



Concentrated detergent in aqueous phase used to degrease and clean parts after lapping or polishing cycles. This detergent with a high anticorrosion power is an excellent alternative to conventional cleaning solvents. Non inflammable, it is ideal for cleaning all types of materials (steels, cast irons, aluminium, etc.). Dilute 2 to 5% with water for use in ultrasonic cleaning tanks (40 to 55 °C) or 7 to 20% with water for fountain based cleanings.

Designation	Qty.	Ref.
Detergent 742	5 litres	08 01742 10
	30 litres	08 01742 30

DETERGENT 743

Aqueous detergent specifically adapted for the cleaning of ceramics, refractory materials and glasses. Dilute 1 volume of detergent in 9 volumes of water.

Designation	Qty.	Ref.
Detergent 743	5 litres	08 01743 10

Protective products

PROTECLAM FLUID NEW

Liquid corrosion inhibitor used to protect the surface of metal parts after lapping and polishing operations. The product is effective in protecting ferrous metals ferrous metals, copper, aluminium and their respective alloys. Ready-to-use product.

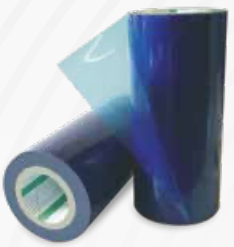
Designation	Qty.	Ref.
PROTECLAM Pulmatic fluid	100 ml + 250 ml refill	080161000



PROTECTIVE FILM

Technical film adhesive on one side.
Protects surfaces after polishing or treatment.

Designation	Dimensions	Qty.	Ref.
Film de protection	30 cm x 100 m	1	Z000 G7BL1



SUPPORTS

LAPPING SUPPORTS

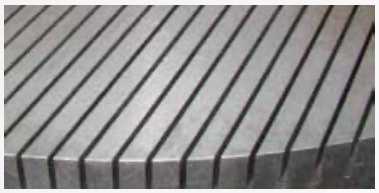


Cast iron plates

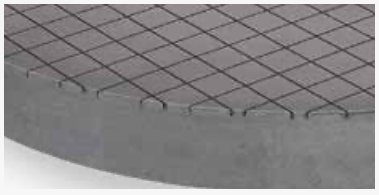
As a manufacturer and designer of cast iron plates and rings, we select specific high quality cast iron for optimum and long lasting results. AQUA LAM® plates and rings are suitable for all lapping machines of any brand or size. Available from stock or made to order within the shortest deadlines, AQUA LAM® cast iron plates and rings offer exceptional value for money.

Radial grooved cast iron plate with LAM PLAN adaptation system, other machine adaptations on request.

Dimension Ø	Thickness (according to lapping machine types)	Ref.
14" 355 mm	25 - 40 mm	V014RASTD
15" 381 mm	25 - 40 mm	V015RASTD
19" 480 mm	25 - 40 mm	V019RASTD
24" 610 mm	35 - 40 mm	V024RASTD
28" 700 mm	55 mm	V028RASTD
36" 914 mm	57 - 58 mm	V036RASTD
39" 1000 mm	57 - 60 mm	V040RASTD
1200 mm	70 mm	V047RASTD
48" 1219 mm	70 mm	V048RASTD
59" 1500 mm	80 - 100 mm	V059RASTD







AQUA LAM®

Lapping cast iron plates with radial grooving by default, available on request in full or with all types of grooves, Concentric, Helical and Linear.

LAM PLAN, designer and manufacturer of a full range of lapping and polishing supports to cover all your requirements in terms of material removal, surface finish and flatness.

LAPPING SUPPORTS

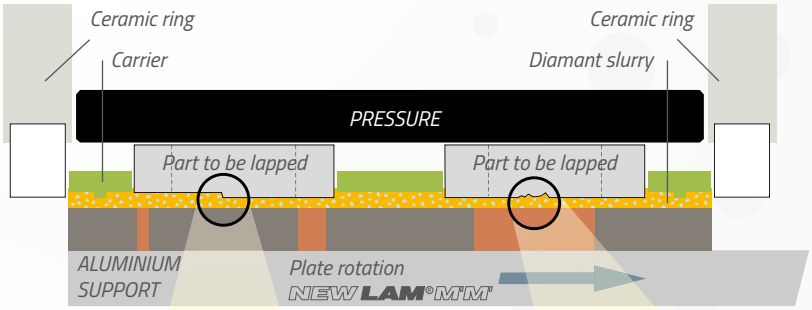
NEW LAM® M'M' plates

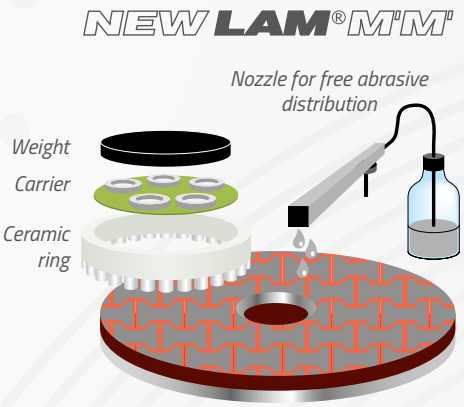
25 years ago, LAM PLAN designed the patented NEW LAM® M'M' poli-lapping system. Since then LAM PLAN has constantly made its process evolve to respond to the technical requirements of its customers. The system patented and established in production plants throughout the world is today a must in the lapping polishing process.

The NEW LAM® M'M'plate, uses free diamond abrasives for its operation. As soon as the plate starts rotating, under the effect of the initial weight of the parts and the load applied by the machine's jacks, the diamond grains move and fix on the surface of the plate producing a unique abrasive action on the side of the parts to be lapped.

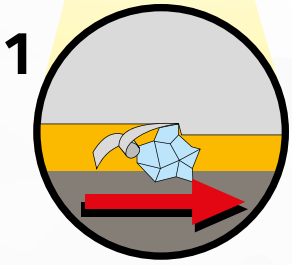
The patent

The disposition and the shape of the two components of the plate permit an optimum alternation between the hard areas and the soft areas. The cut angle of the diamond grainsis permanently changed, which ensures a large stock removal and a perfect inherent flatness.

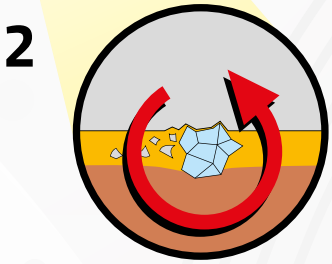




NEW LAM® M'M' *plate*



The free diamond contained in the abrasive film is momentarily fixed in the plate's hard material; when they are solid with each other, they produce a cut off effect which favours the stock removal.



In contact with the plate's soft material, the free diamond is driven in, while remaining mobile, and removes the material by impact; it is the stock effect which contributes to the quality of the surface condition.

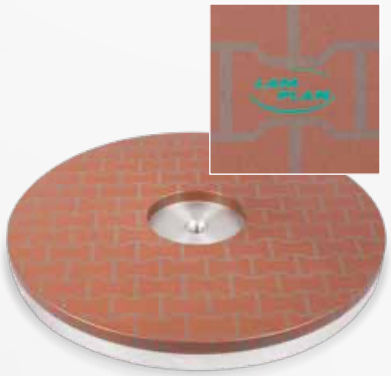
NEW LAM® M'M' patented plates

BLUE - ROUGH LAPPING



			Standard	Incorporated cooling circuit
Ø	Thickness	Ø central bore	Ref.	Ref.
14" 355 mm	13 mm		09 NL103 20	
15" 381 mm	13 mm	100 mm	09 NL103 30	09 NL203 30
16" 406 mm	13 mm	100 mm	09 NL103 40	
19" 480 mm	13 mm	100 mm	09 NL103 55	
24" 610 mm	15 mm	115 mm	09 NL103 60	09 NL203 60
27" 700 mm	15 mm	150 mm	09 NL103 70	09 NL203 70
30" 762 mm	15 mm	152 mm	09 NL103 80	
36" 914 mm	15 mm	175 mm	09 NL103 90	
1000 mm	15 mm	188 mm	09 NL103 00	09 NL203 00
1200 mm	15 mm	240 mm	09 NL103 50	09 NL203 50
1500 mm	15 mm	300 mm	09 NL103 10	09 NL203 10

GREEN - FINE LAPPING/POLISHING



			Standard	Incorporated cooling circuit
Ø	Thickness	Ø central bore	Ref.	Ref.
14" 355 mm	13 mm		09 NL106 20	
15" 381 mm	13 mm	100 mm	09 NL106 30	09 NL206 30
16" 406 mm	13 mm	100 mm	09 NL106 40	
19" 480 mm	13 mm	100 mm	09 NL106 55	
24" 610 mm	15 mm	115 mm	09 NL106 60	09 NL206 60
27" 700 mm	15 mm	150 mm	09 NL106 70	09 NL206 70
30" 762 mm	15 mm	152 mm	09 NL106 80	
36" 914 mm	15 mm	175 mm	09 NL106 90	
1000 mm	15 mm	188 mm	09 NL106 00	09 NL206 00
1200 mm	15 mm	240 mm	09 NL106 50	09 NL206 50
1500 mm	15 mm	300 mm	09 NL106 10	09 NL206 10

YELLOW - SUPER FINISHING POLISHING



			Standard	Incorporated cooling circuit
Ø	Thickness	Ø central bore	Ref.	Ref.
14" 355 mm	13 mm		09 NL105 20	
15" 381 mm	13 mm	100 mm	09 NL105 30	09 NL205 30
16" 406 mm	13 mm	100 mm	09 NL105 40	
19" 480 mm	13 mm	100 mm	09 NL105 55	
24" 610 mm	15 mm	115 mm	09 NL105 60	09 NL205 60
27" 700 mm	15 mm	150 mm	09 NL105 70	09 NL205 70
30" 762 mm	15 mm	152 mm	09 NL105 80	
36" 914 mm	15 mm	175 mm	09 NL105 90	
1000 mm	15 mm	188 mm	09 NL105 00	09 NL205 00
1200 mm	15 mm	240 mm	09 NL105 50	09 NL205 50
1500 mm	15 mm	300 mm	09 NL105 10	09 NL205 10

LAPPING SUPPORTS

EVOLAM® composite plates

A plate for 3 steps

The new EVOLAM® ULTIMATE and EVOLAM® lapping plates have been specially developed for hard materials such as sapphire and technical ceramics. The specific composition of these plates gives them an excellent stock removal combined with a low roughness. A poly-lapping operation with our EVOLAM® plates allows to obtain the superfinishing stage in only one step.

A C or H groove is generally made on EVOLAM® plates to increase their performance.

EVOLAM®

Ø	Type	Thickness	Ref.
15" 381 mm	ULTIMATE	8 mm	09 EL154 30
19" 480 mm	ULTIMATE		09 EL154 55
24" 610 mm	ULTIMATE		09 EL154 60
700 mm	ULTIMATE		09 EL154 70
30" 762 mm	CLASSIC	13 mm	09 EL104 80
36" 914 mm	CLASSIC		09 EL104 90
1000 mm	CLASSIC		09 EL104 00
1200 mm	CLASSIC		09 EL104 50
1500 mm	CLASSIC		09 EL104 10



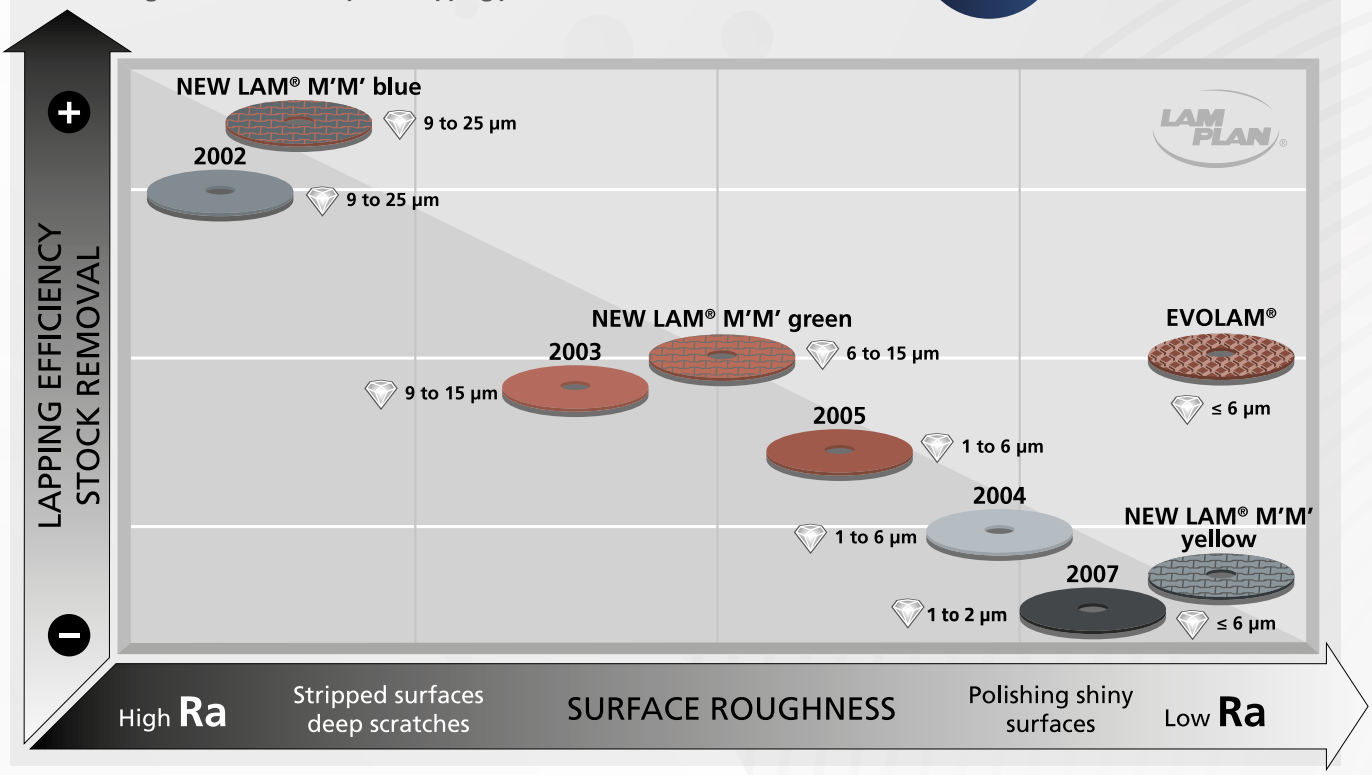
EVOLAM® ULTIMATE



EVOLAM® classic

GUIDANCE

Positioning of LAM PLAN composite lapping plates

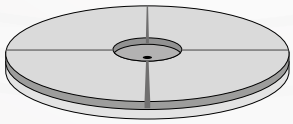




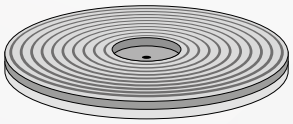
Series 2000 mono-component plates

Primarily used during pre-polishing phases these plates allow a surface condition which facilitates the finishing step on polishing cloths to be optained.
Available in solid version or to order with radial, concentric, spiral or linear grooving.

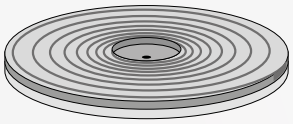
Different kinds of grooves



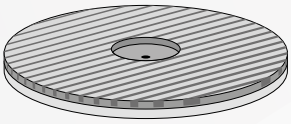
Radial (R)



Concentric (C)



Spiral (S)



Linear (L)

2001 - FINE LAPPING - HARD MATERIAL

For abrasive 1 µm to 15 µm		
Ø	Thickness	Ref.
15" 381 mm	6 mm	09 P2001 30
19'' 480 mm		09 P2001 55
24" 610 mm		09 P2001 60
700 mm		09 P2001 70
1000 mm		09 P2001 00

2002 - ROUGH LAPPING - ALL MATERIALS

For abrasive 15 µm to 30 µm		
15" 381 mm	13 mm	09 P2002 30
19'' 480 mm		09 P2002 55
24" 610 mm		09 P2002 60
700 mm		09 P2002 70
1000 mm		09 P2002 00

2003 - FINE LAPPING - ALL MATERIALS

For abrasive 3 µm to 9 µm		
15" 381 mm	13 mm	09 P2003 30
19'' 480 mm		09 P2003 55
24" 610 mm		09 P2003 60
700 mm		09 P2003 70
1000 mm		09 P2003 00

2004 - FINE LAPPING - ALL MATERIALS

For abrasive 3 µm to 9 µm		
15" 381 mm	13 mm	09 P2004 30
19'' 480 mm		09 P2004 55
24" 610 mm		09 P2004 60
700 mm		09 P2004 70
1000 mm		09 P2004 00

2005 - SUPER FINISHING POLISHING - ALL MATERIALS

For abrasive 1 µm to 3 µm		
15" 381 mm	13 mm	09 P2005 30
19'' 480 mm		09 P2005 55
24" 610 mm		09 P2005 60
700 mm		09 P2005 70
1000 mm		09 P2005 00

2007 - SUPER FINISH POLISHING - ALL MATERIALS

For abrasive 1 µm to 2 µm		
15" 381 mm	13 mm	09 P2007 30
19'' 480 mm		09 P2007 55
24" 610 mm		09 P2007 60
700 mm		09 P2007 70
1000 mm		09 P2007 00

LAPPING SUPPORTS

Manual lapping & polishing plates

Extend the usage of your sealing parts.

LAMBLOCK are simple, inexpensive and easy to use tools that will allow preventive maintenance of sealing parts on industrial sites at a lower cost. Your maintenance department carries out manual lapping/polishing operations to recondition worn sealing parts.

BI-LAMBLOCK

2 operations: Lapping and Polishing for the servicing of sealing part up to Ø 40 mm.

Designation	Ø in mm	Ref.
- 1 ergonomic double plate - Grey lapping / Copper polishing - 2 diadosers Bio DIAMANT® 400 series of 30 g	300	09 04LB9 00



LAMBLOCK NEW LAM®M'M' PLATE

Lapping with the guarantee of a perfect flatness for parts with a Ø 40 mm max and rings with a Ø 70 mm max.

Designation		Ø in mm	Ref.
- 1 NEW LAM M'M' plate - 1 Dosing-stick Bio DIAMANT® 10 g - 1 fluid bottle lubricant M.M.712	LAMBLOCK Blue - Lapping	300	09 04LB0 00
	LAMBLOCK Green - finishing	300	09 04LB1 00
	LAMBLOCK Yellow - Super finishing	300	09 04LB2 00



LAMBLOCK FAS®

Portable plate with non-stick LAM PLAN FAS® coating for use with the range of self-adhesive TOUCHLAM® discs. Combined with LAM PLAN abrasives, it is an economical solution for finishing and super-finishing steps on all materials.

Designation	Ø in mm	Ref.
- 1 plate with FAS® coating - 2 diadosers Bio DIAMANT® 400 series 30 g 3 and 6µ	300	09 04LB3 00



TRI-BLOCS NEW LAM®M'M' CASE

3 operations: lapping, polishing and superfinishing, for the servicing of your sealing rings up to Ø 40 mm.

Designation	Ø in mm	Ref.
- 3 NEW LAM® M'M'plates - 3 dosing sticks Bio DIAMANT® 10 g - 1 bottle of fluid lubricant M.M.712 - 1 Diabloc for reconditionning	140	09 03NL0 00
Blue Diabloc for TRI-BLOCS		08 00900 10
Blue Diabloc refill		08 01900 10



Temperature control system

Flat lapping is based on the laws of mechanics and physics where a constant temperature is essential.

Temperature variations of a lapping plate, whether inherent in the lapping process or dependent on external conditions, can be detrimental to the quality of the desired result. To avoid such damage, the use of our plates at high yield NEW LAM M'M' requires the use of a temperature control system.

COMPOSITE LAM PLAN plates with an integrated cooling system ensure temperature fluctuation control during series production. This option enables avoidance of plate distortion and consequently, distortion of your pieces.

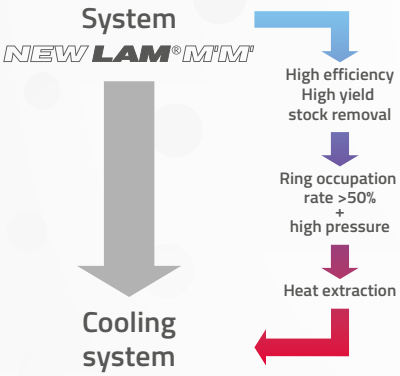
To control the flatness of the trays, the temperature must be controlled

P803 Regulator

To control plate flatness, temperature must be regulated. The LAM PLAN P803 temperature regulation unit is reversable. It can also raise the plate temperature before use. This enables lapping to start in optimum geometric conditions in any work environment.

The P803 regulator is designed to maintain the temperature between 2 set values. It is an autonomous machine which has its own command interface.

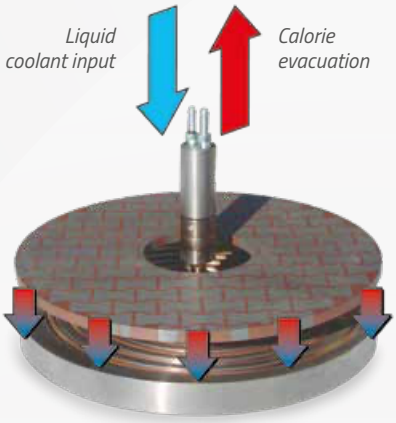


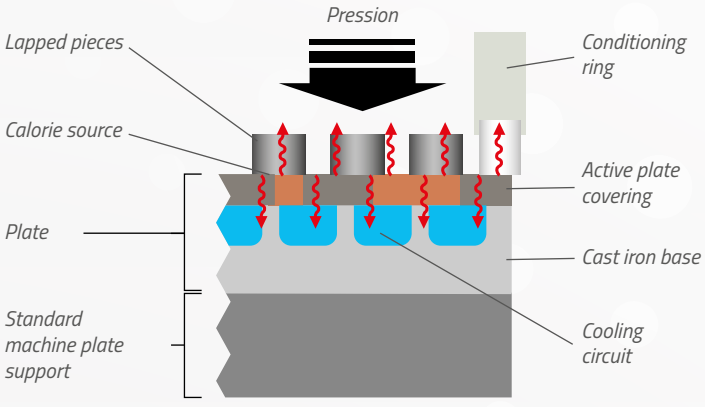


Designation	Ref.
Refrigeration/Heating Unit P803-AW-BASIC series 50 Hz	10 80003 90

NEW LAM M'M' plate with temperature control system

The LAM PLAN cooling system captures calories directly under the active plate surface. It is adaptable for all machines.





LAPPING SUPPORTS

Lapping rods M.M.®

Immediately shape your rods in all form, from patented M.M.® preliminary shape containing no abrasive.



Applications

For internal and external lapping, and super finishing of spherical, conical and cylindrical parts and many other shapes.

The solution

LAM PLAN offers an original, functional and adapted solution; it responds to the requirements of surface conditions difficult to attain with tools or grinding wheels. LAM PLAN delivers its rods in preliminary shape condition. The user finalises the form of his choice. A fast machining using common tools (never a grinding wheel) allows adapting the rods to the shape of the parts to be lapped. This technique is possible thanks to the LAM PLAN M.M.® system which combines rods and free diamond abrasives.

The technique

The LAM PLAN M.M.® rods consists of two different materials in terms of mechanical, physical and resistance characteristics. The composition and arrangement of the two components associated with the usage of specific diamond abrasive is the base of the patented LAM PLAN M.M® system and its effectiveness.

The advantages of the LAM PLAN M.M.® system associated with Bio DIAMANT®

The LAM PLAN M.M.® system uses special abrasives. A chemical binder allows homogeneous, stable distribution of calibrated diamond grains, while preventing any settling phenomenon. As soon as the rod starts rotating under the effect of the applied pressure and the passage on the two different materials, the diamond grains move and fix alternatively. This causes a phenomenon of significant acceleration of these particles ensuring a high stock removal. Penetrating very low and for a very short time in the rod's metal mass, each diamond particle always presents an edge opposite to the part to be machined.

All the cutting edges work under an over speed. The abrasive's efficiency is therefore better and more sustainable.

In addition, thanks to the use of diamond, the rod coating does practically not wear out (good behaviour in terms of shape or inherent flatness).

The LAM PLAN type M.M.® lubricant vaporised in a very small quantity allows cleaning the diamond's cutting edges loaded with metal waste and operates cooling action.

The small quantity of lubricant significantly reduces the "machining sludge" volume. The work is cleaner and produces less waste.

Qualities

In order to obtain surface conditions varying from 0.2 to 0.01 micron/Ra, LAM PLAN proposes various types of rods. The distribution of the 2 materials which make up the patented bi-component rods type M.M.® remains constant, regardless of the shape given to them. The rods type 2000 are mono-components. They benefit from the quality of bi-component materials, but their efficiency is lower and their wear more rapid.

GUIDANCE

Shapes	**Preliminary shapes**	A cylindrical
		B flat
		C rectangular
Types	**Patented M.M. Rods Bi-components**	M.M.® 980 lapping
		M.M.® 991 finishing
		M.M.® 992 superfinishing
	Economic range Mono-component	2002 lapping
		2003 polishing



RODS M.M.® SHAPE A

Cylindrical preliminary shape intended to be machined by turning with a dry carbide tool in order to adapt to the parts to be treated.

Implementation example				
Lapped part	**Material**	**Rod**	**Abrasive**	**Result**
Cupule for thigh prosthesis	Chromium cobalt	Shape A Type 992	Stick M.M.143	Sphericity 3 µm

LAPPING SUPPORTS

RODS M.M.® SHAPE B

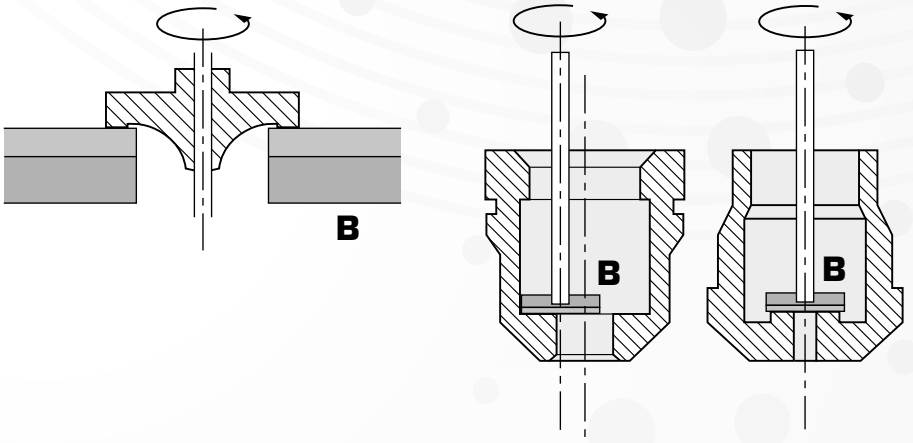
Our Shape B rods are composed of a 5mm active part fixed to a steel* ensuring great rigidity. Please contact us for dimensions above 200 mm. To machine the rods and use them, the shapes A or B must be tightened in a mandrel one turn mounted on a metal rod (by tapping or gluing).

NOT: The tapping must always remain below the steel* thickness in the case of shapes B. In any case (shapes A or B), the centre of the coating has to be cleared to avoid the dead point. During shaping, it is recommended to recover the chips and dusts to reduce the cleaning time.

**aluminium base on demand*



Implementation example				
Lapped part	**Material**	**Rod**	**Abrasive**	**Result**
Safety valve	Satellite	Shape B Type 991	Stick M.M.141	Tightness

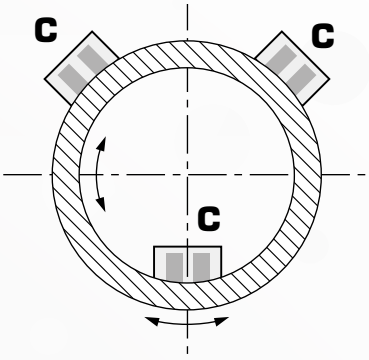


LAPIDARY M.M.® SHAPE C

Intended to prepare the rods for the machine of special shaped parts.



Implementation example				
Lapped part	**Material**	**Rod**	**Abrasive**	**Result**
Rolling machine cylinder	Cast iron	Shape C Type 980	Stick M.M.133	Roughness Ra 0,08



RODS SHAPE A

Type	Ø in mm	Ref.
980	25 x 100	09 09980 28
991	25 x 100	09 09991 28
992	25 x 100	09 09992 28
2002	25 x 100	09 20022 20
2003	25 x 100	09 20032 20
980	50 x 50	09 09980 10
991	50 x 50	09 09991 10
992	50 x 50	09 09992 10
2002	50 x 50	09 20021 10
2003	50 x 50	09 20031 10
2002	50 x 100	09 20022 10
2003	50 x 100	09 20032 10
2002	50 x 150	09 20023 10
2003	50 x 150	09 20033 10
980	75 x 50	09 09980 80
991	75 x 50	09 09991 80
992	75 x 50	09 09992 80
2002	75 x 50	09 20021 80
2003	75 x 50	09 20031 80
2002	75 x 100	09 20022 80
2003	75 x 100	09 20032 80
2002	75 x 150	09 20023 80
2003	75 x 150	09 20033 80
2002	100 x 50	09 20021 90
2003	100 x 50	09 20031 90
2002	100 x 100	09 20022 90
2003	100 x 100	09 20032 90
2002	100 x 150	09 20023 90
2003	100 x 150	09 20033 90

RODS SHAPE B

Type	Ø in mm	Ref.
980	50 x 15	09 09980 30
991	50 x 15	09 09991 30
992	50 x 15	09 09992 30
2002	50 x 15	09 02002 30
2003	50 x 15	09 02003 30
980	100 x 15	09 09980 40
991	100 x 15	09 09991 40
992	100 x 15	09 09992 40
2002	100 x 15	09 02002 40
2003	100 x 15	09 02003 40
980	150 x 15	09 09980 50
991	150 x 15	09 09991 50
992	150 x 15	09 09992 50
2002	150 x 15	09 02002 50
2003	150 x 15	09 02003 50
980	200 x 15	09 09980 60
991	200 x 15	09 09991 60
992	200 x 15	09 09992 60
2002	200 x 15	09 02002 60
2003	200 x 15	09 02003 60

RODS SHAPE C

Type	Ø in mm	Ref.
980	10 x 20 x 560	09 08445 30
991	10 x 20 x 560	09 08446 30
992	10 x 20 x 560	09 08449 30

CUSTOM MACHINING PACKAGE

Designation	Qty.	Ref.
Custom machining package	1	99 SAV0F 00

GUIDANCE

Example of implementation

Type	Rods	Sticks	Gels	Treated steel		Tungsten carbide		Stellite	
				Surface condition µm Ra	Stock removal	Surface condition µm Ra	Stock removal	Surface condition µm Ra	Stock removal
Rough	M.M.980 M.M.980	**M.M.131** M.M.132	**M.M.31** M.M.32	0,3 0,2	6 µm/min 3 µm/min	0,1 0,07	2,4 µm/min 1,5 µm/min	0,15 0,09	4 µm/min 2 µm/min
Finishing	M.M.991 M.M.991	M.M.133 **M.M.141**	M.M.33 **M.M.41**	0,09 0,06	1,6 µm/min 1,3 µm/min	0,03 0,02	0,7 µm/min 0,5 µm/min	0,05 0,03	1,2 µm/min 0,6 µm/min
Super finishing	M.M.992 M.M.992	**M.M.142** M.M.143	**M.M.42** M.M.43	0,05 0,03	1 µm/min 0,6 µm/min	0,01 0,005	0,4 µm/min 0,3 µm/min	0,02 0,01	0,5 µm/min 0,4 µm/min

The Sticks and gels used for an everyday usage are put in bold letters.

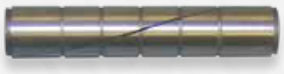
Expandable cylindric rods

The formula for the accuracy of borings. The set is composed of:

- A conical shaft to be mounted on the mandrel.
- A cast iron rod with pinched structure. A helical slot allows the expansion while maintaining its geometric shape. The rod's interior is conical in order to receive the shaft.
- A tube-shaped pushrod is here allows driving the rod on the shaft.



Conical shaft



Rod



Tappet



Extractor

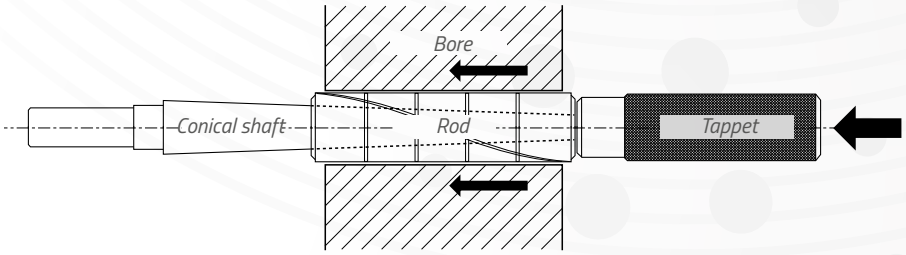
Procedure

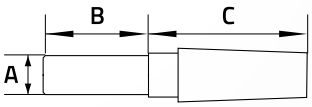
The abrasive to be used with the rods is selected according to their tasks:

- Important stock removal: diamond dosing stick M.M.132
- Super-finishing: diamond dosing stick M.M.142 or 144.

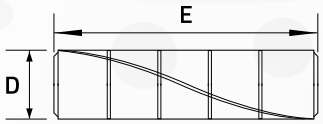
Lubrication thanks to the M.M.712 fluid.

Use

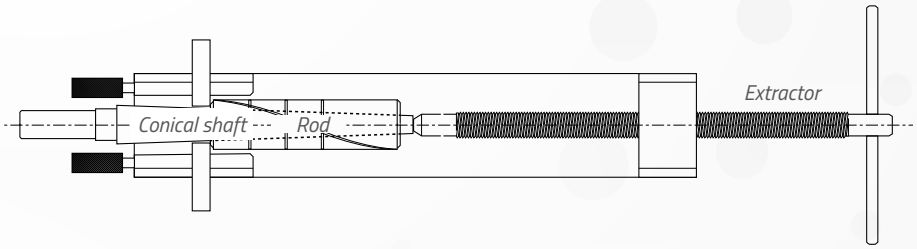




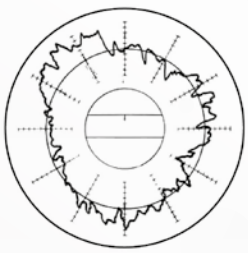
Conical shaft



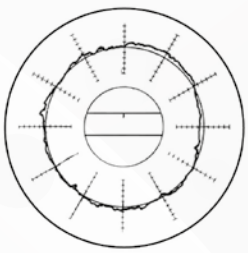
Rod



Results



A 15,9 mm diameter has been drilled on a 38 mm length. After checking, an ovalisation of 4/100th mm has been revelled and a surface condition of 0.5-micron Ra.



First operation
With rod and diamond dosing stick M.M.132: ovalisation reduced to 4/10th micron. surface condition of 0.12-micron Ra.



Second operation
With rod and diamond dosing stick M.M.144: limited ovalisation to 1/10th micron. Surface condition to 0.03-micron Ra.

RODS / CONICAL SHAFTS / TAPPETS

Ø (mm)	Lenght E (mm)	Expansion D (mm)	Ref.	N°	Ø A (mm)	Lenght. B (mm)	Lenght C (mm)	Ref.	N°	Ref.
1,19	12,70	1,168 to 1,397	99 91011 90	4/0	3,17	19,05	38,10	99 92004 00	4/0	99 93004 00
1,59	15,85	1,574 to 1,930	99 91015 90	3/0	3,17	19,05	39,10	99 92003 00	3/0	99 93003 00
1,98	15,85	1,956 to 2,311	99 91019 80	3/0	3,17	19,05	39,10	99 92003 00	3/0	99 93003 00
2,38	19,05	2,362 to 2,743	99 91023 80	2/0	3,17	19,05	41,25	99 92002 00	2/0	99 93002 00
2,78	19,05	2,743 to 3,099	99 91027 80	2/0	3,17	19,05	41,25	99 92002 00	2/0	99 93002 00
3,17	22,19	3,149 to 3,479	99 91031 70	0	3,17	19,05	44,45	99 92000 00	0	99 93000 00
3,57	22,19	3,530 to 3,886	99 91035 70	0	3,17	19,05	44,45	99 92000 00	0	99 93000 00
3,97	22,19	3,937 to 4,318	99 91039 70	0	3,17	19,05	44,45	99 92000 00	0	99 93000 00
4,37	22,19	4,318 to 4,673	99 91043 70	0	3,17	19,05	44,45	99 92000 00	0	99 93000 00
4,76	34,91	4,724 to 5,105	99 91047 60	1	4,74	25,40	69,85	99 92000 10	1	99 93000 10
5,16	34,91	5,130 to 5,461	99 91051 60	1	4,74	25,40	69,85	99 92000 10	1	99 93000 10
5,56	44,45	5,537 to 5,918	99 91055 60	2	4,76	25,40	76,20	99 92000 20	2	99 93000 20
5,95	44,45	5,918 to 6,248	99 91059 50	2	4,76	25,40	76,20	99 92000 20	2	99 93000 20
6,35	50,80	6,324 to 6,705	99 91063 50	3	4,76	25,40	101,60	99 92000 30	3	99 93000 30
6,75	50,80	6,731 to 7,010	99 91067 50	3	4,76	25,40	101,60	99 92000 30	3	99 93000 30
7,14	50,80	7,112 to 7,340	99 91071 40	3	4,76	25,40	101,60	99 92000 30	3	99 93000 30
7,54	50,80	7,518 to 7,670	99 91075 40	3	4,76	25,40	101,60	99 92000 30	3	99 93000 30
7,94	50,80	7,924 to 8,305	99 91079 40	4	5,53	25,40	101,60	99 92000 40	4	99 93000 40
8,33	50,80	8,305 to 8,610	99 91083 30	4	5,53	25,40	101,60	99 92000 40	4	99 93000 40
8,73	50,80	8,712 to 8,915	99 91087 30	4	5,53	25,40	101,60	99 92000 40	4	99 93000 40
9,13	50,80	9,093 to 9,245	99 91091 30	4	5,53	25,40	101,60	99 92000 40	4	99 93000 40
9,53	63,50	9,499 to 9,855	99 91095 30	5	9,79	38,10	101,60	99 92000 50	5	99 93000 50
9,92	63,50	9,906 to 10,185	99 91099 20	5	9,79	38,10	127,00	99 92000 50	5	99 93000 50
10,32	63,50	10,287 to 10,515	99 91103 20	5	9,79	38,10	127,00	99 92000 50	5	99 93000 50
10,72	63,50	10,693 to 10,845	99 91107 20	5	9,79	38,10	127,00	99 92000 50	5	99 93000 50
11,11	63,50	11,074 to 11,430	99 91111 10	6	7,90	38,10	127,00	99 92000 60	6	99 93000 60
11,51	63,50	11,480 to 11,785	99 91115 10	6	7,90	38,10	127,00	99 92000 60	6	99 93000 60
11,91	63,50	11,861 to 12,090	99 91119 10	6	7,90	38,10	127,00	99 92000 60	6	99 93000 60
12,30	63,50	12,268 to 12,420	99 91123 00	6	7,90	38,10	127,00	99 92000 60	6	99 93000 60
12,70	82,55	12,674 to 13,081	99 91127 00	7	9,51	38,10	152,40	99 92000 70	7	99 93000 70
13,49	82,55	13,462 to 13,868	99 91134 90	7	9,51	38,10	152,40	99 92000 70	7	99 93000 70
14,29	82,55	14,249 to 14,579	99 91142 90	7	9,51	38,10	152,40	99 92000 70	7	99 93000 70
15,08	82,55	15,062 to 15,290	99 91150 80	7	9,51	38,10	152,40	99 92000 70	7	99 93000 70
15,88	82,55	15,849 to 16,256	99 91158 80	8	10,27	38,10	152,40	99 92000 80	8	99 93000 80
16,67	82,55	16,637 to 16,941	99 91166 70	8	10,27	38,10	152,40	99 92000 80	8	99 93000 80
17,46	82,55	17,424 to 17,627	99 91174 60	8	10,27	38,10	152,40	99 92000 80	8	99 93000 80
18,26	82,55	18,237 to 18,415	99 91182 60	8	10,27	38,10	152,40	99 92000 80	8	99 93000 80
19,05	88,90	19,024 to 19,380	99 91190 50	9	12,70	50,80	177,80	99 92000 90	9	99 93000 90
19,84	88,90	19,812 to 20,116	99 91198 40	9	12,70	50,80	177,80	99 92000 90	9	99 93000 90
20,64	88,90	20,599 to 20,853	99 91206 40	9	12,70	50,80	177,80	99 92000 90	9	99 93000 90
21,43	88,90	21,412 to 21,615	99 91214 30	9	12,70	50,80	177,80	99 92000 90	9	99 93000 90
22,23	88,90	22,199 to 22,580	99 91222 30	10	12,70	50,80	177,80	99 92001 00	10	99 93001 00
23,02	88,90	22,987 to 23,342	99 91230 20	10	12,70	50,80	177,80	99 92001 00	10	99 93001 00
23,81	88,90	23,774 to 24,079	99 91238 10	10	12,70	50,80	177,80	99 92001 00	10	99 93001 00
24,61	88,90	24,587 to 24,790	99 91246 10	10	12,70	50,80	177,80	99 92001 00	10	99 93001 00

EXTRACTORS

Characteristics	Ref.	Characteristics	Ref.
For rods Ø 1,19 to 4,37 mm	99 94000 10	For rods Ø 4,76 to 415,48 mm	99 94000 2
For rods Ø 4,76 to 15,48 mm	99 94000 20	For rods Ø 15,88 to 31,75 mm	99 94000 3
For rods Ø 15,88 to 31,75 mm	99 94000 30	**Any other dimension, on demand**	

POLISHING SUPPORTS

RODS

Ø (mm)	Lenght E (mm)	Expansion D (mm)	Ref.
13,10	82,55	13,081 to 13,487	99 91131 0
13,89	82,55	13,868 to 14,224	99 91138 9
14,68	82,55	14,655 to 14,935	99 91146 8
15,48	82,55	15,443 to 15,595	99 91154 8
16,27	82,55	16,256 to 16,661	99 91162 7
17,07	82,55	17,043 to 17,297	99 91170 7
17,86	82,55	17,830 to 18,008	99 91178 6
18,65	82,55	18,618 to 18,770	99 91186 5
19,45	88,90	19,405 to 19,735	99 91194 5
20,24	88,90	20,218 to 20,497	99 91202 4
21,03	88,90	21,005 to 21,234	99 91210 3
21,83	88,90	21,793 to 21,971	99 91218 3
22,62	88,90	22,580 to 22,936	99 91226 2
23,42	88,90	23,393 to 23,723	99 91234 2
24,21	88,90	24,180 to 24,434	99 91242 1
25,00	88,90	24,968 to 25,146	99 91250 0

CONICAL SHAFTS

N°	Ø A (mm)	Lenght. B (mm)	Lenght C (mm)	Ref.
7	9,51	38,10	152,40	99 92004 00
7	9,51	38,10	152,40	99 92003 00
7	9,51	38,10	152,40	99 92003 00
7	9,51	38,10	152,40	99 92002 00
8	10,27	38,10	152,40	99 92002 00
8	10,27	38,10	152,40	99 92000 00
8	10,27	38,10	152,40	99 92000 00
8	10,27	38,10	152,40	99 92000 00
9	12,70	50,80	177,80	99 92000 00
9	12,70	50,80	177,80	99 92000 10
9	12,70	50,80	177,80	99 92000 10
9	12,70	50,80	177,80	99 92000 20
9	12,70	50,80	177,80	99 92000 20
9	12,70	50,80	177,80	99 92000 30
9	12,70	50,80	177,80	99 92000 30
9	12,70	50,80	177,80	99 92000 30

TAPPETS

N°	Ref.
7	99 93000 7
7	99 93000 7
7	99 93000 7
7	99 93000 7
8	99 93000 8
8	99 93000 8
8	99 93000 8
8	99 93000 8
9	99 93000 9
9	99 93000 9
9	99 93000 9
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9	99 93000 9
9	99 93000 9
9	99 93000 9
9	99 93000 9

High concentration abrasive films

Available in different grains from 0.3 µm to 40 µm, they generate excellent flatness and finishing results.
The uniformity of the abrasive layer ensures exceptional regularity of the polishing process and prolonged durability of the disc.

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

ALUMINA

100 pieces

Self-adhesive					
Ø mm	µm	Ref.	Ø mm	µm	Ref.
200	0,3	05A98A0200C	300	0,3	05A98A0300C
200	0,5	05A95A0200C	300	0,5	05A95A0300C
200	1	05A01A0200C	300	1	05A01A0300C
200	2	05A02A0200C	300	2	05A02A0300C
200	3	05A03A0200C	300	3	05A03A0300C
200	5	05A05A0200C	300	5	05A05A0300C
200	9	05A09A0200C	300	9	05A09A0300C
200	12	05A12A0200C	300	12	05A12A0300C
200	15	05A15A0200C	300	15	05A15A0300C
200	30	05A30A0200C	300	30	05A30A0300C
200	40	05A40A0200C	300	40	05A40A0300C
250	0,3	05A98A0250C	400	0,3	05A98A0400C
250	0,5	05A95A0250C	400	0,5	05A95A0400C
250	1	05A01A0250C	400	1	05A01A0400C
250	2	05A02A0250C	400	2	05A02A0400C
250	3	05A03A0250C	400	3	05A03A0400C
250	5	05A05A0250C	400	5	05A05A0400C
250	9	05A09A0250C	400	9	05A09A0400C
250	12	05A12A0250C	400	12	05A12A0400C
250	15	05A15A0250C	400	15	05A15A0400C
250	30	05A30A0250C	400	30	05A30A0400C
250	40	05A40A0250C	400	40	05A40A0400C



Easy to use, high stock removal and polishing quality enables you to significantly reduce your sample polishing time.
They can be used with all material types.

ABRASIVE FILMS IN ROLLS

Films of all types available in rolls with choice of mandrel diameter, width from 1.2 to 100 mm, max length 200 meters.



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

DIAMOND HC

5 pieces

Self-adhesive				Non adhesive
Ø mm	Color	µm	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

DIALAM plates and coverings

DIALAM is a rough honing plate designed for demanding applications requiring efficient material removal and consistent precision. DIALAM incorporates diamond abrasives, guaranteeing long-lasting, high-performance cutting action. It is available in two versions:
- DIALAM Blue - Contains coarser diamonds (D151), ideal for operations requiring a high rate of material removal.
- DIALAM Green - Incorporates finer diamonds (D39), offering a compromise between material removal and finish quality.
DIALAM is used with BOOSTER lubricant. This innovative system maintains cutting efficiency and improves process control.

DIALAM PLATES

Type	Characteristics	Ø (mm)	Qty.	Ref.
DIALAM Blue - D151	For plate Ø 381	178	1	09 DL140 30
	For plate Ø 480	224	1	09 DL140 55
DIALAM Green - D39	For plate Ø 381	178	1	09 DL150 30
	For plate Ø 480	224	1	09 DL150 55



DIALAM COVERINGS

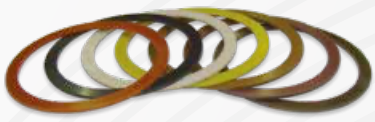
Type	Characteristics	Ø (mm)	Qty.	Ref.
DIALAM Blue - D151	For plate Ø 381	178.	2	09 DL141 30
	For plate Ø 480	224	2	09 DL141 55
DIALAM Green - D39	For plate Ø 381	178	2	09 DL151 30
	For plate Ø 480	224	2	09 DL151 55

ABRABLOC Dressing ring

ABRABLOC straightening rings are designed for straightening and sharpening DIALAM supports. ABRABLOCs correct the geometry of the plate and enhance the cutting effect of DIALAMs.

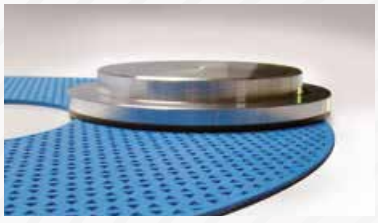
ABRABLOC

	Characteristics	Ø (mm)	Qty.	Ref.
ABRABLOC Brown	For DIALAM Bleu	178	1	08 00200 60
	For plate Ø 480	224	1	08 00200 64
ABRABLOC Ivory	For DIALAM Vert	178	1	08 00201 60
	For plate Ø 480	224	1	08 00201 64



ABRABLOC RECHARGES (to be glued to a ground aluminium base)

Type	Characteristics	Ø (mm)	Qty.	Ref.
ABRABLOC Brown recharge	For DIALAM Bleu	178.	2	08 01200 50
	For plate Ø 480	224	2	08 01200 64
ABRABLOC Ivory recharge	For DIALAM Vert	178	2	08 01201 50
	For plate Ø 480	224	2	08 01201 64



BOOSTER Lubricant

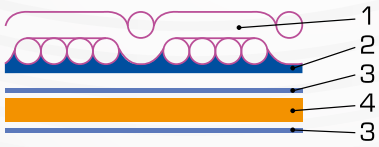
BOOSTER lubricant has been specially developed to optimise the performance of DIALAM supports. It is used as a drip lubricant during grinding cycles, regenerating the DIALAM and guaranteeing consistent material removal, cycle after cycle.

Type	Packaging	Qty.	Ref.
BOOSTER fluid	5 litres	1	07 BP030 40



TOUCHLAM® polishing cloths

LAM PLAN proposes a new generation of TOUCHLAM® polishing cloths. High technological products realised from exclusive materials, these cloths are intended to satisfy high precision demand concerning surfaces and geometry. The TOUCHLAM® range is dedicated to aspect polishing and for all other kinds of accurate high quality polishing. Oriented towards industrial applications and research, these cloths integrate new materials and treatments in their manufacturing to facilitate their use and guarantee high quality results. Self-adhesive, their implementation is fast and easy. Available in all diameters.



Composition of TOUCHLAM® polishing cloths

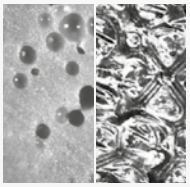
A polishing cloth is a complex gathering of various coats of materials, each one having their specific function:

- The active and visible part (1) of a cloth is the primary criteria. It gathers 4 classes, all with different characteristics.
- A coating (2) which defines the cloth's impermeability
- An adhesive film (3) having varying thickness and power of adhesion
- A support (4) defining the rigidity or the softness of the cloth.

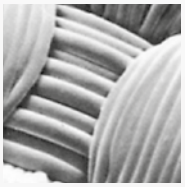
For each application, the polishing cloth needs to be associated with the correct abrasive. LAM PLAN proposes 3 families of product: the diamond abrasives NEOLAP®, the composite abrasives ECOA® and the standard abrasive of the AQUA LAM® range.

The combination of these elements will allow to answer the 3 criteria composing the user's specification: stock removal (SR), flatness, finishing or roughness.

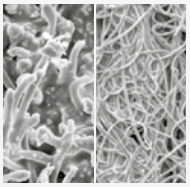
TOUCHLAM® polishing cloths gathers 4 major classes:



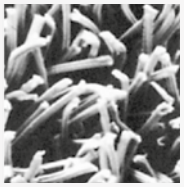
Polyurethanes and Foams



Woven



Non-woven and compressed



Flocked

GUIDANCE

Summary table

TOUCHLAM® polishing cloth	Characteristics			
	SR*	Flatness	Finishing	Super finishing
1PU1	X	X		
1PU2	X	X		
1PU3	X	X		
1PU4	X	X	X	
1PC2		X	X	
2NT1	X		X	
2PC1		X	X	X
2PC2		X	X	X
2TT2	X	X		
2TS1		X	X	
2TS2			X	
2FL1			X	
2FL2			X	
2MS1			X	
3FP1				X
3SE2		X	X	X
3SA2		X	X	X
3SA4		X	X	X
3FV1				X
3FV2				X
4FV3				X
4MP2				X

**Stock removal*

POLISHING SUPPORTS

1PU1 SELF-ADHESIVE

Box of 5 pieces

Characteristics	Ø in mm	Ref.
Polyurethane loaded with cerium oxide - Extra hard. From rough polishing to polishing of all materials. Inherent flatness and long life service. Commonly used with ECOA® abrasive slurries.	381	1PU1 0A0 3815
	400	1PU1 0A0 4005
	480	1PU1 0A0 4805
	610	1PU1 0A0 6105
	700	1PU1 0A0 7005



1PU2 SELF-ADHESIVE

Characteristics	Ø in mm	Ref.
Polyurethane loaded with zirconium oxide - Hard. From rough polishing to polishing of all materials. Inherent flatness and long life service. Commonly used with ECOA® abrasive slurries.	381	1PU2 0A0 3815
	400	1PU2 0A0 4005
	480	1PU2 0A0 4805



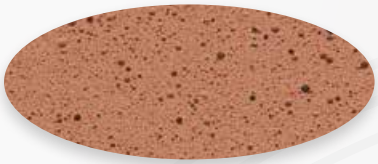
1PU3 SELF-ADHESIVE

Characteristics	Ø in mm	Ref.
Polyurethane not loaded - Hard. From rough polishing to polishing of all materials. Inherent flatness and long life service. Commonly used with ECOA® abrasive slurries. **Available with grooves.**	381	1PU3 0A03 815
	400	1PU3 0A0 4005
	480	1PU3 0A0 4805
	610	1PU3 0A0 6105
	700	1PU3 0A0 7005



1PU4 SELF-ADHESIVE

Characteristics	Ø in mm	Ref.
Polyurethane loaded with cerium oxide - Medium-hard. From rough polishing to polishing of all materials. Inherent flatness and long life service. Commonly used with ECOA® abrasive slurries. **Available with grooves.**	381	1PU4 0A0 3815
	400	1PU4 0A0 4005
	480	1PU4 0A0 4805
	610	1PU4 0A0 6105
	700	1PU4 0A0 7005



1PC2 SELF-ADHESIVE

Characteristics	Ø in mm	Ref.
Polyurethane compressed impregnated fibres. Very hard. Excellent flatness, high durability. Can be used with all types of abrasives.	381	1PC2 0A0 3815
	400	1PC2 0A0 4005
	480	1PC2 0A0 4805
	610	1PC2 0A0 6105
	700	1PC2 0A0 7005
	914	1PC2 0A0 9145
	1000	1PC2 0A1 0005

2NT1 SELF-ADHESIVE



Box of 5 pieces

Characteristics	Ø in mm	Ref.
Non-woven polyester/polypropylene composite. High durability. Multi-purpose disc, can be used for rough or finish polishing. Commonly used with BioDIAMANT® NEOLAP® and ECOA abrasive slurries.	381	2NT1 0A0 3815
	400	2NT1 0A0 4005
	480	2NT1 0A0 4805
	610	2NT1 0A0 6105
	700	2NT1 0A0 7005
	914	2NT1 0A0 9145
	1000	2NT1 0A1 0005

2PC1 SELF-ADHESIVE

Characteristics	Ø in mm	Ref.
Polyurethane compressed impregnated polyester fibres - Hard. Excellent flatness and high durability. Can be used with diamond slurries or colloidal silicas. **Available in various patterns.**	381	2PC1 0A0 3815
	400	2PC1 0A0 4005
	480	2PC1 0A0 4805
	610	2PC1 0A0 6105
	700	2PC1 0A0 7005

2PC2 SELF-ADHESIVE

Characteristics	Ø in mm	Ref.
Polyurethane compressed impregnated with polyester fibres - Medium-dur. Excellent flatness and high durability. Commonly used with diamond slurries or colloidal silicon. **Available in various patterns.**	381	2PC2 0A0 3815
	400	2PC2 0A0 4005
	480	2PC2 0A0 4805
	610	2PC2 0A0 6105
	700	2PC2 0A0 7005

2TT2 SELF-ADHESIVE



Characteristics	Ø in mm	Ref.
Taffeta woven synthetic fibres. High stock removal and inherent flatness on all materials. High durability. Commonly used with NEOLAP® diamond slurries .	381	2TT2 0A0 3815
	400	2TT2 0A0 4005
	480	2TT2 0A0 4805
	610	2TT2 0A0 6105
	700	2TT2 0A0 7005
	914	2TT2 0A0 9145
	1000	2TT2 0A1 0005

2TS1 SELF-ADHESIVE

Characteristics	Ø in mm	Ref.
Satin woven natural fibres. Excellent finishing of all materials. Good inherent flatness. Commonly used with NEOLAP® diamond slurries.	381	2TS1 0A0 3815
	400	2TS1 0A0 4005
	480	2TS1 0A0 4805
	610	2TS1 0A0 6105
	700	2TS1 0A0 7005
	914	2TS1 0A0 9145
	1000	2TS1 0A1 0005

POLISHING SUPPORTS

2TS2 SELF-ADHESIVE

Box of 5 pieces

Characteristics	Ø in mm	Ref.
Satin woven natural fibres on flexible support . Excellent finishing of all materials. Good durability. Commonly used with NEOLAP® diamond slurries.	381	2TS2 0A0 3815
	400	2TS2 0A0 4005
	480	2TS2 0A0 4805
	610	2TS2 0A0 6105
	700	2TS2 0A0 7005
	914	2TS2 0A0 9145
	1000	2TS2 0A1 0005



2FL1 SELF-ADHESIVE

Characteristics	Ø in mm	Ref.
Compressed wool felt. Finishing of plastics and glasses. High durability. Commonly used with AQUA LAM® cerium oxide.	381	2FL1 0A0 3815
	400	2FL1 0A0 4005
	480	2FL1 0A0 4805
	610	2FL1 0A0 6105
	700	2FL1 0A0 7005
	914	2FL1 0A0 9145
	1000	2FL1 0A0 1005

2FL2 SELF-ADHESIVE

Characteristics	Ø in mm	Ref.
Wool felt, extra flexible. Finishing of plastics and glasses. High durability. Commonly used with AQUA LAM® cerium oxide.	381	2FL2 0A0 3815
	400	2FL2 0A0 4005
	480	2FL2 0A0 4805
	610	2FL2 0A0 6105
	700	2FL2 0A0 7005
	914	2FL2 0A0 9145
	1000	2FL2 0A1 0005



2MS1 SELF-ADHESIVE

Characteristics	Ø in mm	Ref.
Foam. Finishing, on soft and medium-hard materials. Moulds to the shape of the part to be polished. Commonly used with ECOA® abrasive slurries.	381	2MS1 0A0 3815
	400	2MS1 0A0 4005
	480	2MS1 0A0 4805
	610	2MS1 0A0 6105
	700	2MS1 0A0 7005
	914	2MS1 0A0 9145
	1000	2MS1 0A1 0005



3FP1 SELF-ADHESIVE

Characteristics	Ø in mm	Ref.
Flocked polyester fibres. Finishing of organic and mineral glasses. Very resistant. Commonly used with AQUA LAM® oxides.	381	3FP1 0A0 3815
	400	3FP1 0A0 4005
	480	3FP1 0A0 4805
	610	3FP1 0A0 6105
	700	3FP1 0A0 7005
	914	3FP1 0A0 9145
	1000	3FP1 0A1 0005

3SE2 SELF-ADHESIVE

Characteristics	Ø in mm	Ref.
High-resistance synthetic silk fibres. Superfinishing of medium hard and soft materials. Excellent inherent flatness. Commonly used with NEOLAP® diamond slurries.	381	3SE2 0A0 3815
	400	3SE2 0A0 4005
	480	3SE2 0A0 4805
	610	3SE2 0A0 6105
	700	3SE2 0A0 7005
	914	3SE2 0A0 9145
	1000	3SE2 0A1 0005



3SA2 SELF-ADHESIVE



Box of 5 pieces

Characteristics	Ø in mm	Ref.
Synthetic silk fibres. Superfinishing of all types of materials. Excellent inherent flatness. Commonly used with NEOLAP® diamond slurries.	381	3SA2 0A0 3815
	400	3SA2 0A0 4005
	480	3SA2 0A0 4805
	610	3SA2 0A0 6105
	700	3SA2 0A0 7005
	914	3SA2 0A0 9145
	1000	3SA2 0A1 0005

3SA4 SELF-ADHESIVE

Characteristics	Ø in mm	Ref.
Composite synthetic fibres. Super finishing of soft materials . Good inherent flatness. Commonly used with NEOLAP® diamond slurries.	381	3SA4 0A0 3815
	400	3SA4 0A0 4005
	480	3SA4 0A0 4805
	610	3SA4 0A0 6105
	700	3SA4 0A0 7005
	914	3SA4 0A0 9145
	1000	3SA4 0A1 0005

3FV1 SELF-ADHESIVE



Characteristics	Ø in mm	Ref.
Semi-hard flocked short viscose fibres. Super finishing of hard materials. Commonly used with NEOLAP® diamond slurries.	381	3FV1 0A0 3815
	400	3FV1 0A0 4005
	480	3FV1 0A0 4805
	610	3FV1 0A0 6105
	700	3FV1 0A0 7005
	914	3FV1 0A0 9145
	1000	3FV1 0A1 0005

3FV2 SELF-ADHESIVE



Characteristics	Ø in mm	Ref.
Flocked short viscose fibres. Super finishing of all materials. Resistant to agressive abrasive . Commonly used with NEOLAP® diamond slurries and AQUA LAM® oxides.	381	3FV2 0A0 3815
	400	3FV2 0A0 4005
	480	3FV2 0A0 4805
	610	3FV2 0A0 6105
	700	3FV2 0A0 7005
	914	3FV2 0A0 9145
	1000	3FV2 0A1 0005

4FV3 SELF-ADHESIVE



Characteristics	Ø in mm	Ref.
Soft flocked long viscose fibres. Super finishing of all materials, even very soft. Used with NEOLAP® diamond slurries and AQUA LAM® oxides.	381	4FV3 0A0 3815
	400	4FV3 0A0 4005
	480	4FV3 0A0 4805
	610	4FV3 0A0 6105
	700	4FV3 0A0 7005
	914	4FV3 0A0 9145
	1000	4FV3 0A1 0005

4MP2 SELF-ADHESIVE



Characteristics	Ø in mm	Ref.
Microporous polyurethane foam. Extreme super finishing of all materials (chemical polishing). High durability. Commonly used with colloidal silica AQUA LAM® oxides, and ECOA® abrasive slurries.	381	4MP2 0A0 3815
	400	4MP2 0A0 4005
	480	4MP2 0A0 4805
	610	4MP2 0A0 6105
	700	4MP2 0A0 7005
	914	4MP2 0A0 9145
	1000	4MP2 0A1 0005

POLISHING SUPPORTS

Structured cloths

The polishing cloths **TOUCHLAM® 1PU3 and 1PU4** are available with grooves on their surface in order to improve their performances. Dimensions: 10 x 10 mm and 30 x 30 mm, depth of the grooves: 1 mm.

The polishing cloths **TOUCHLAM® 2PC1 and 2PC2** are available with various structures: embossed and quartered (dimensions of the grooves 4,3 x 4,3 mm and 18,4 x 18,4 mm). The action of the abrasive slurry is optimised on the entire surface of the parts.

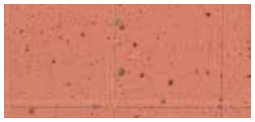
The principal benefits are:

- Higher stock removal
- Excellent flatness control
- Limitation of the suction effect
- Modulation of the stock removal and surface condition.

Available structures for 1PU3 and 1PU4 with grooved matrix.



1PU4 grooved 10 x 10 mm



1PU4 grooved 30 x 30 mm

Available structure for 2PC1 and 2PC2 with grooved, and embossed matrix.

Grooved 4,3 x 4,3 mm

Grooved18,4 x 18,4 mm

Embossed

Tailor-made cutting

LAM PLAN masters the production of its polishing cloths. In order to facilitate the use and the application of polishing cloths on your supports, we are capable of providing our discs, already cut to your needs. The geometry of the polishing cloth or pad will correspond perfectly to your fixation support. The cutting quality will be perfect which will guarantee a high durability of your polishing cloth.

We can provide all geometric shapes as the petals illustrated just below. For double-side machines, we make the bore and the holes for the distribution of the abrasive on the superior plate.



TOUCHLAM® QUICK FIX NEW

New attachment technology for TOUCHLAM® polishing discs

The QUICK FIX system allows you to move on to the finishing stage without having to change plates. Position the polishing discs directly on the NEW LAM M'M' lapping plates, without using adhesive.

Thanks to this innovative coating, the installation and removal of TOUCHLAM® discs is ultra-fast and simple, while guaranteeing optimum fixation. What's more, no residue is left on the surface of the plate, ensuring impeccable cleanliness and ease of use.

TOUCHLAM® QUICK FIX discs are available in diameters from 610 to 1000 mm (larger diameters on request).



CONSUMABLES

DIAMOND ABRASIVES

BIO DIAMANT® NEOLAP® abrasive slurries

All the experience of LAM PLAN in a diamond abrasive with incomparable performance. In direct line with our famous Bio DIAMANT® range, NEOLAP® diamond abrasive liquids go even further in terms of efficiency and ease of use.

High efficiency - Low consumption

The quality of the abrasive used, the strict calibration and concentration criteria and the use of new-generation water-based binders mean that we can achieve better roughness results while maintaining a high level of material removal.

The wettability of these diamond suspensions is specially designed and optimised for NEW LAM® M'M' plates. The consistency of the binder allows the diamond liquid to spread quickly over the entire surface of the plate, producing an excellent abrasive film very quickly, for immediate cutting results.

Flatness

Contains specific additives to make it easier to mix the diamond liquid with the NEOFLUID lubricating fluid and improve heat dissipation from the plates during honing work.

Free of VOCs and CMRs

NEOLAP® 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

NEOLAP® 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.



NEOLAP®

BIODIAMANT®

DIAMOND ABRASIVES

Improved roughness

This new generation of diamond abrasives delivers improved roughness results while maintaining high stock removal rates.

Easy to clean

Clean with water for NEOLAP® 300 and 400 series or with a washing fountain for the 100 series.

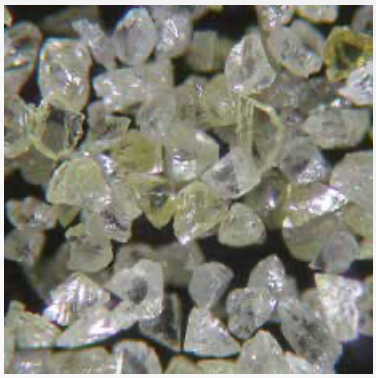
Quality, guaranteed supply and total traceability

Compliance with REACH regulation

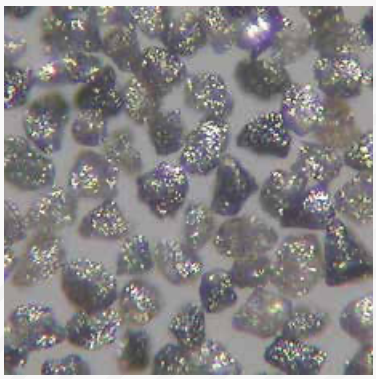
LAM PLAN has put in place all the necessary measures to guarantee the quality and availability of all its products over the long term. All the substances contained in our preparations comply with the specifications of the REACH regulation. To facilitate your administrative procedures, all the Safety Data Sheets (SDS) for our products comply with current legislation and can be downloaded from: fds.lamplan.com

Available in monocrystalline and polycrystalline

100 series emulsion - monocrystalline.
300 series water-based - monocrystalline.
400 series water-based - polycrystalline.



Monocrystalline diamond



Polycrystalline diamond

BIO DIAMANT® NEOLAP® slurries, key points

Use	Top-of-the-range diamond abrasive specific for lapping polishing applications	
Positioning	Ready-to-use, decantation-free, to be sprayed or dosed drop by drop. It is indicated for all your lapping work on NEW LAM® M'M' plates and polishing work on our range of polishing cloths	
Range	Monocrystalline, polycrystalline - grains from 1/4 to 45 µm	
Bases	Water and emulsion	
Packagings	400 ml - 2 L	
Lubricants	water base	712 or NEOFLUID
	emulsion base	990-140 or NEOFLUID

Reference reading:

106 Grain in µm

Bases

1 = emulsion - monocrystalline
3 = water - monocrystalline
4 = water - polycrystalline

GUIDANCE

NEOLAP®

Diamond slurries BIO DIAMANT® NEOLAP®



Diamond slurry

Single face lapping polishing

VOC free, biodegradable

Aqueous detergent

SERIES 100 - MONOCRYSTALLINE EMULSION

		400 ml	2 litres
Type	µm	Ref.	Ref.
197	0,25	02 NO197 60	02 NO197 70
195	0,75	02 NO195 60	02 NO195 70
101	1	02 NO101 60	02 NO101 70
102	2	02 NO102 60	02 NO102 70
103	3	02 NO103 60	02 NO103 70
106	6	02 NO106 60	02 NO106 70
109	9	02 NO109 60	02 NO109 70
112	12	02 NO112 60	02 NO112 70
115	15	02 NO115 60	02 NO115 70
125	25	02 NO125 60	02 NO125 70
145	45	02 NO145 60	02 NO145 70



SERIES 300 - MONOCRYSTALLINE WATER BASE

		400 ml	2 litres
Type	µm	Ref.	Ref.
397	0,25	02 NO397 60	02 NO397 70
395	0,75	02 NO395 60	02 NO395 70
301	1	02 NO301 60	02 NO301 70
302	2	02 NO302 60	02 NO302 70
303	3	02 NO303 60	02 NO303 70
306	6	02 NO306 60	02 NO306 70
309	9	02 NO309 60	02 NO309 70
312	12	02 NO312 60	02 NO312 70
315	15	02 NO315 60	02 NO315 70
325	25	02 NO325 60	02 NO325 70
345	45	02 NO345 60	02 NO345 70



SERIES 400 - POLYCRYSTALLINE WATER BASE

		400 ml	2 litres
Type	µm	Ref.	Ref.
497	0,25	02 NO497 60	02 NO497 70
495	0,75	02 NO495 60	02 NO495 70
401	1	02 NO401 60	02 NO401 70
402	2	02 NO402 60	02 NO402 70
403	3	02 NO403 60	02 NO403 70
406	6	02 NO406 60	02 NO406 70
409	9	02 NO409 60	02 NO409 70
412	12	02 NO412 60	02 NO412 70
415	15	02 NO415 60	02 NO415 70
425	25	02 NO425 60	02 NO425 70

BIO DIAMANT® finishing fluids

M.M.140

High-performance emulsion for superfinishing all materials.
Strong concentration. Clean with solvent or detergent 742. **New packaging.**

Characteristics	Type	Packaging	Ref.
Diamond emulsion	M.M.140	250 ml	02 MM140 00
Diamond emulsion	M.M.140	1 000 ml	02 MM140 20



M.M.180 NEW

Polishing suspension for crystals and natural composite materials (mother-of-pearl).
Liquid specially formulated to provide superfinish chemical-mechanical polishing and high gloss on the surface of parts, without altering the structure. Oil-free composition, cleans with water or 742 detergent, guaranteeing clean, residue-free use.

Characteristics	Type	Packaging	Ref.
Water-based diamond liquid	M.M.180	250 ml	02 MM180 00
Water-based diamond liquid	M.M.180	1 000 ml	02 MM180 20

Diamond fluids

High-performance oil-based single-crystal and polycrystalline diamond liquids containing additives to limit diamond settling. Produce excellent results in terms of gloss and roughness on very hard materials such as ceramics and silicon carbides. As they contain no water, these products are particularly suitable for lapping/polishing water-sensitive materials.
Ready to use, they can be used with MM990-140 or MM950-140 fluid.
Clean with Stanol or 742 detergent, leaving no greasy residue on parts.

SERIES 241 - MONOCRYSTALLINE

		500 ml	5 litres
Type	µm	Ref.	Ref.
99 241	0,1	02 99241 00	02 99241 40
97 241	0,25	02 97241 00	02 97241 40
01 241	1	02 01241 00	02 01241 40
02 241	2	02 02241 00	02 02241 40
03 241	3	02 03241 00	02 03241 40
06 241	6	02 06241 00	02 06241 40
09 241	9	02 09241 00	02 09241 40
14 241	14	02 14241 00	02 14241 40
25 241	25	02 25241 00	02 25241 40

SERIES 241P - POLYCRYSTALLINE

		500 ml	5 litres
Type	µm	Ref.	Ref.
99 241P	0,1	02 99241P 00	02 99241P 40
97 241P	0,25	02 97241P 00	02 97241P 40
01 241P	1	02 01241P 00	02 01241P 40
02 241P	2	02 02241P 00	02 02241P 40
03 241P	3	02 03241P 00	02 03241P 40
06 241P	6	02 06241P 00	02 06241P 40
09 241P	9	02 09241P 00	02 09241P 40
14 241P	14	02 14241P 00	02 14241P 40
25 241P	25	02 25241P 00	02 25241P 40



Diamond slurry

Single face lapping polishing

0% of water

No decantation

ECOA® abrasive slurries

Double side polishing



Multi abrasives

Custom-made formulas

Packaging 5 L

Liquid slurries for double plate machines

The ECOA® range is carrying all LAM PLAN's knowledge in terms of classic and diamond slurries applied for polishing and super-finishing on double plate machines. It is the guarantee of an efficient response to various materials.

Ready-to-use high quality industrial products

The manufacturing and the packaging are adapted to the constraints and consummation encountered in industrial production polishing.

Control your VOC emission

For many years, the LAM PLAN R&D department has been committed to develop new products respecting the user's health but also the environment without compromising the efficiency. Composed with a specific new generation binder, this slurry is VOC free (Volatile Organic Compounds).

Improved technical performances

The abrasive film, specially elaborated for double side lapping polishing assures a good distribution of the slurry on the polishing supports. The new generation formulations reduce heating during the polishing process and keep the abrasive film wet.

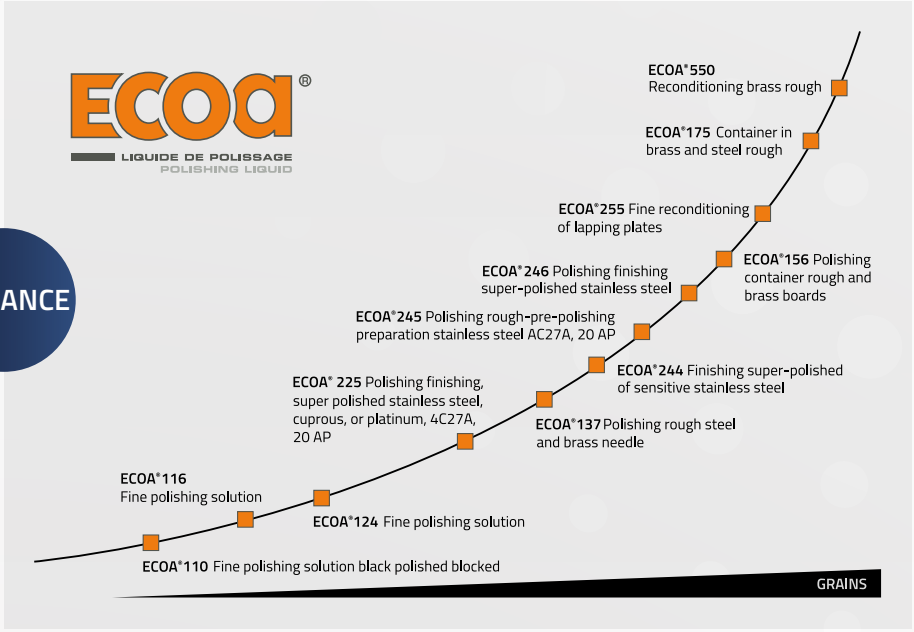
Easy cleaning

Specially conceived to limit and distribute the polishing residues, the ECOA® liquids can be washed easily with water or with aqueous detergents.

Respect the users and the environment

The products of the ECOA® range are biodegradable by more than 70%. Nontoxic and harmless, the users' working condition are thus respected. Also anticipating the new regulations concerning greenhouse gas emission. Consolidation of your ISO 14001 and ISO 26000 approach.

Supply guarantee and total traceability
Wide range available, custom development.



DIAMOND ABRASIVES

Stick BIO DIAMANT® M.M.140 A

Diamond pastes dosing stick for the finishing of watch parts.

Characteristics

The BIO DIAMANT® M.M.140 A stick is constituted of a solid chemical binder, soluble in water and oil. The BIO DIAMANT® M.M.140 A stick can be used with the M.M.712 fluid (water base) or with the M.M.705 fluid (oil base).

Applications

Particularly recommended for the watch parts. Easy to use, its yield and its abrasive quality allows obtaining exceptional results well known in this branch of industry. Its pairing with TOUCHLAM® polishing cloths authorises the final polishing of various materials and principally the ones used in the watchmaking field (brass, silver, stainless steel, stavax, coating, etc.). It is often used in restoring terminated parts, to remove micro-scratches, it can also be integrated in a complete production polishing process.

Use and presentation

This stick is intended for manual use. The accurate dosing of the paste distribution is insured by a graduated drum. Each division represents 0.2 gram.

This system allows loading any new polishing cloth with a perfectly repetitive material without direct contact with the product.

BIODIAMANT®



Diamond paste

Manual polishing proven results

High efficiency

High abrasive capacity

Characteristics	Packaging	Type	µm	Ref.
Monocrystalline diamond High concentration	10 g	M.M.140 A	<1	01 MM149 00

These are the necessary quantities to load a new polishing cloth:

Nature of cloth	Ø 150 mm	Ø 200 mm	Ø 250 mm	Ø 300 mm	Ø 400 mm
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

Please adjust each operation according to the surface of the samples.

GUIDANCE

BIO DIAMANT®



BIO DIAMANT® Sticks

The sticks allow controlling the dosage in manual usage on lapping plates.

The diamond paste is distributed according to an accurate dosage, thanks to a drum, graduated every 0.2 g. The loading of the paste on the plate is insured to be repetitive and without finger contact.

SERIES M.M.130-140

Extra concentrated in monocrystalline diamond, these high performance sticks allow a high and fast stock removal on all types of materials. Their high concentration facilitates also the rapid acquisition of flat and shiny surfaces. The cleaning is done with water or detergent 742.

The M.M.130 series sticks are used for ROUGH operations.

The M.M.140 series sticks are used for FINISHNG operations.

Manual use on lapping and polishing plates and blocks

High efficiency

High abrasive capacity

Characteristics	Type	µm	Ref.
10 g Finishing	MM 140 A	0,75	01 MM149 00
	MM 145	1	01 MM145 00
	MM 144	2	01 MM144 00
	MM 143	3	01 MM143 00
	MM 142	6	01 MM142 00
	MM 141	9	01 MM141 00
10 g Rough	MM 133	12	01 MM133 00
	MM 132	14	01 MM132 00
	MM 131	25	01 MM131 00

8% discount from 3 products of the same reference

SERIE 122

High concentration monocrystalline diamond sticks, for all rough and finishing operations. The identification of grains of these sticks are colour coded in order to limit the risks of committing mistakes during the use. The cleaning can be done with water, alcohol or detergent 742.

Diamond abrasive

Manual lapping

For composite rods

Characteristics	Type	µm	Ref.
10 g Finishing on polishing support	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

8% discount from 3 products of the same reference

BIO DIAMANT® pastes

Oil soluble pastes, with high diamond concentration, insuring an important productivity on hard and extra hard materials.

Use with lubricant type M.M.705. These pastes are available in 1 to 90 µm grains. The cleaning of your parts can be done with water or alcohol.



SERIE 210

Characteristics	Type	µm	Ref.
10 g High yield abrasive Hard and extra-hard materials	1 213	1	01 01213 00
	3 213	3	01 03213 00
	6 213	6	01 06213 00
	8 213	8	01 08213 00
	14 213	14	01 14213 00
	25 213	25	01 25213 00
	40 213	40	01 40213 00
	60 213	60	01 60213 00
	90 213	90	01 90213 00

5% discount from 3 products of the same reference

Diamond abrasive

Lapping bore

0% of water

Lubrification anti-heating

Diadoseurs BIO DIAMANT®

BIO DIAMANT® GELS SERIES 400

Characteristics	Type	µm	Ref.
30 g Diadoseur precision Finishing on rods	01 400	1	010140030
	03 400	3	010340030
	06 400	6	010640030
	08 400	8	010840030
	14 400	14	011440030
	25 400	25	012540030



Concentrated diamond abrasive

Ultra precise distribution

Repeatability of the distribution

GUIDANCE

These are the necessary quantities to load a new polishing cloth:

Nature of cloth	Ø 150 mm	Ø 200 mm	Ø 250 mm	Ø 300 mm	Ø 400 mm
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

Please adjust each operation according to the surface of the samples.

LUBRICATING FLUIDS



Lubricant

Dedicated to materials sensitive to corrosion

Fluids

NEOFLUID

Lubricating fluid recommended for Bio DIAMANT® NEOLAP® slurries. Formulation without volatile organic compounds (VOCs) and without dangerous substances, this biodegradable fluid is adapted for the lapping and polishing of most materials. It allows controlling perfectly the heating of the lapping plates during production cycles, thereby guaranteeing excellent flatness. Its association with the Bio DIAMANT® NEOLAP® slurries guarantees a stable, uniform abrasive film during the various work processes. Its active principles protect materials sensitive to corrosion.

Packaging	Ref.
1 litre	07 NEF10 30
5 litres	07 NEF10 40

M.M.712



Lubricant

Lapping in high production

Use with a dosing distributor

Aqueous lubricating fluid recommended with the Bio DIAMANT® series 122 and M.M.130-140, and liquid series M.M.330-340. It is compatible with the new Bio DIAMANT® NEOLAP® slurries series 300 and 400. Ready to use, its specific formula prevents the support from heating and facilitates the cleaning of parts with water or by adding the detergent 742.

Packaging	Ref.
1 litre	07 MM712 30
5 litres	07 MM712 40
Pulmatic 350 cc	07 MM712 50

M.M.705

Lubricating fluid to be used with the diamond compounds series 210. Ready-to-use, it ensures an excellent dispersion of the compound and optimises its lapping power. Cleans easily with the detergent 742 or Stanol.

Packaging	Ref.
1 litre	07 MM705 30
Pulmatic 350 cc	07 MM705 50

M.M.990-140

This lubricant fluid is recommended for usages with the diamond slurries series 241P. Ready-to-use, its low viscosity creates a very fine abrasive film during the work process, which ensures a high lapping efficiency. It is compatible with the new Bio DIAMANT® NEOLAP® series 100 and M.M. 130-140. Use the detergent 742, Stanol or apply solvents to clean the parts.

Packaging	Ref.
1 litre	07 MM711 30
5 litres	07 MM711 40

Lubricant

0 % of water

Use with a dosing distributor

M.M.950-140

Oil-based lubricating fluid. Due to its low evaporation rate, it is recommended for large lapping or polishing support. This fluid is not subjected to the regulation on the transport of dangerous materials (ADR, IMDG, IATA).

Packaging	Ref.
1 litre	07 MM950 30
5 litres	07 MM950 40

MANUAL DISTRIBUTOR

Characteristics	Packaging	Ref.
Bottle to be filled	Pulmatic 350 cc - 2 units	08 00802 00

COMPOSITE ABRASIVES

W**A high-performance product which has proven its adaptability to all usage, especially for large tanks and intensive usage. According to the concentration intended, 1 litre of abrasive solution allows obtaining between 5 and 10 litres of abrasive.**

Advantages

- Increasing working speed.
- Easy resuspension of the mixture.
- Soft abrasive film, efficient and balanced.
- Very low smell.
- Low running costs.
- Easy cleaning. Detergent 711-103.
- Ingenious packaging: packs 2 x 2 litres stackable and 4 x 2 litres (reduced handling).
- Concentrated abrasive slurry, easy-to-use and easy cleaning.

1 pack of 2 x 2 litres = 20 to 30 litres of solution. These products allow working with abrasive concentration adjustable to usage. Requiring a brewing while using it. Easy resuspension. Compatible with the additive 716.



Conventional abrasives

Lapping on cast iron plates

ALUMINIUM OXYDE (Al_2O_3)

		2 x 2 litres pack	4 x 2 litres pack
FEPA	µm	Ref.	Ref.
180	74	A074 S12L2	A074 S12L4
220	62	A062 S12L2	A062 S12L4
240	45	A045 S12L2	A045 S12L4
280	37	A037 S12L2	A037 S12L4
320	29	A029 S12L2	A029 S12L4
360	23	A023 S12L2	A023 S12L4
400	17	A017 S12L2	A017 S12L4
500	13	A013 S12L2	A013 S12L4
600	9	A009 S12L2	A009 S12L4
800	7	A007 S12L2	A007 S12L4
1000	5	A005 S12L2	A005 S12L4
1200	3	A003 S12L2	A003 S12L4
1500	1	A001 S12L2	A001 S12L4

SILICON CARBIDE (SIC)

		2 x 2 litres pack	4 x 2 litres pack
FEPA	µm	Ref.	Ref.
180	74	E074 S12L2	E074 S12L4
220	62	E062 S12L2	E062 S12L4
240	45	E045 S12L2	E045 S12L4
280	37	E037 S12L2	E037 S12L4
320	29	E029 S12L2	E029 S12L4
360	23	E023 S12L2	E023 S12L4
400	17	E017 S12L2	E017 S12L4
500	13	E013 S12L2	E013 S12L4
600	9	E009 S12L2	E009 S12L4
800	7	E007 S12L2	E007 S12L4
1000	5	E005 S12L2	E005 S12L4
1200	3	E003 S12L2	E003 S12L4

The CLASSICAL composite abrasive is also available in Boron carbide (B_4C) and cerium oxide (CeO_2). Other grains on demand..



Conventional abrasive

Lapping on cast iron plate

Biodegradable

BIOLAM® composite abrasive fluids

New generation of biodegradable abrasive liquids developed by our Research and Development department. Very practical for honing machines with small and medium capacity tanks.

Advantages

- Easy to use and to put in work.
- Low decantation of the abrasive, regularity of results.
- Consistent and ready abrasive film.
- No dangerous substances.
- Low running costs.
- Very low smell.
- Simple and easy cleaning (ex: water or water + ordinary detergent).
- Compact packaging: 2 and 20 litres jerrycans other packaging on demand.

BIOLAM® PLUS to dilute and BIOLAM S ready-to-use

Plus: Smooth abrasive slurry, no smell, biodegradable, easy to clean. Limited decantation, no additive needed. dilute 1 to 5 times in water.

S: Biodegradable and no smell liquid slurry, non-toxic. Easy to clean. Simple usage: to put directly in the abrasive tank of the machine, limited decantation. Depending of the use can be used pure or can be diluted up to 2 times in water.

OXYDE D'ALUMINIUM ($A_{l2}O_3$)

		BIOLAM®PLUS to dilute		BIOLAM®S ready-to-use	
		2 litres	20 litres	2 litres	20 litres
FEPA	µm	Ref.	Ref.	Ref.	Ref.
100	125	A125 V92L1	A125 V9020		
120	105	A105 V92L1	A105 V9020		
150	88	A088 V92L1	A088 V9020	A088 V62L1	A088 V6020
180	74	A074 V92L1	A074 V9020	A074 V62L1	A074 V6020
220	62	A062 V92L1	A062 V9020	A062 V62L1	A062 V6020
240	45	A045 V92L1	A045 V9020	A045 V62L1	A045 V6020
280	37	A037 V92L1	A037 V9020	A037 V62L1	A037 V6020
320	29	A029 V92L1	A029 V9020	A029 V62L1	A029 V6020
360	23	A023 V92L1	A023 V9020	A023 V62L1	A023 V6020
400	17	A017 V92L1	A017 V9020	A017 V62L1	A017 V6020
500	13	A013 V92L1	A013 V9020	A013 V62L1	A013 V6020
600	9	A009 V92L1	A009 V9020	A009 V62L1	A009 V6020
800	7	A007 V92L1	A007 V9020	A007 V62L1	A007 V6020
1000	5	A005 V92L1	A005 V9020	A005 V62L1	A005 V6020
1200	3	A003 V92L1	A003 V9020	A003 V62L1	A003 V6020
1400	2	A002 V92L1	A002 V9020		
1500	1	A001 V92L1	A001 V9020	A001 V62L1	A001 V6020
2000	0,4	CP40 V92L1		CP40 V62L1	CP40 V6020
2200	0,2	CP20 V92L1		CP20 V62L1	CP20 V6020
4500	0,05	CP05 V92L1		CP05 V62L1	CP05 V6020

COMPOSITE ABRASIVES

SILICON CARBIDE (SIC)

BIOLAM®PLUS to dilute

BIOLAM®S ready-to-use

		2 litres	20 litres	2 litres	20 litres
FEPA	µm	Ref.	Ref.	Ref.	Ref.
80	177	E177 V92L1	E177 V9020	E177 V62L1	E177 V6020
100	125	E125 V92L1	E125 V9020	E125 V62L1	E125 V6020
120	105	E105 V92L1	E105 V9020	E105 V62L1	E105 V6020
150	88			E088 V62L1	E088 V6020
180	74	E074 V92L1	E074 V9020	E074 V62L1	E074 V6020
220	62	E062 V92L1	E062 V9020	E062 V62L1	E062 V6020
240	45	E045 V92L1	E045 V9020	E045 V62L1	E045 V6020
280	37	E037 V92L1	E037 V9020	E037 V62L1	E037 V6020
320	29	E029 V92L1	E029 V9020	E029 V62L1	E029 V6020
360	23	E023 V92L1	E023 V9020	E023 V62L1	E023 V6020
400	17	E017 V92L1	E017 V9020	E017 V62L1	E017 V6020
500	13	E013 V92L1	E013 V9020	E013 V62L1	E013 V6020
600	9	E009 V92L1	E009 V9020	E009 V62L1	E009 V6020
800	7	E007 V92L1	E007 V9020	E007 V62L1	E007 V6020
1000	5	E005 V92L1	E005 V9020	E005 V62L1	E005 V6020
1200	3	E003 V92L1	E003 V9020	E003 V62L1	E003 V6020

CERIUM OXYDE (CEO_2) LIQUID

Finishing Liquid for the finishing on glass, sapphire and plastic. Dilute 2 to 5 times in water.
2 litres tin.

BIOLAM®PLUS to dilute

Container of 2 litres		
FEPA	µm	Ref.
1200	3	I003 V92L1
1300	2	I002 V92L1
1400	1	I001 V92L1



The composite abrasives BIOLAM® are also available in boron carbide (B_4C).

Other grains on demand.

Dilution of AQUALAM® CLASSIC and BIOLAM®PLUS solutions

1 part concentrated abrasive product

2 parts ADDITIVE 716

4 parts tap water

GUIDANCE

ADDITIVE 716 optimises the abrasive film and protects the parts and the cast iron plate from corrosion.



Super-finishing
Polishing on cloth discs
Simplified cleaning

AQUA LAM® colloidal silicas

The colloidal silicas are stabilised suspensions with fine non-agglomerated spherical particles. This aqueous solution contains a high concentration of nanoscale silica.

During usage, colloidal silicas are generally diluted in water to proportions between 10 and 50%. We advise a 20% dilution in water for an optimum use.

These products are always used for super-finishing.

S.W. 30

Chemical-mechanical abrasive for compatible material
Super-finishing standard liquid to use pure or diluted up to 50%

	5 litres tin	10 litres tin
Characteristics	Ref.	Ref.
Silica concentration: 30% Size of particles: 30 nm pH = 10	Z000 A25L1	Z000 A2010

S.W. 36

	5 litres tin	10 litres tin
Characteristics	Ref.	Ref.
Silica concentration : 50% Size of particles : 50 nm pH = 9	Z000 C55L1	Z000 C5610

NOVAL S FINITION

Super-finishing liquid. Obtaining ultra-low roughness
Contains an additive “anti-crystallisation” which facilitate the cleaning of the parts and the machines.

	5 litres tin	10 litres tin	20 litres tin
Characteristics	Ref.	Ref.	Ref.
Silica concentration : 30% Size of particles: 30 nm pH = 10	Z000 F75L1	Z000 F7010	Z000 F7020

NOVAL CONCENTRÉ

Formulated to be added to pure colloidal silica
Additive that cancels crystallisation and decantation of the pure colloidal silica pure
Increases the stock removal, powers the roughness.

	10 litres tin	20 litres tin
Characteristics	Ref.	Ref.
Silica concentration: 35% Size of particles: 30 nm pH = 9	Z000 F8010	Z000 F8020

COMPOSITE ABRASIVES

Abrasive compounds BIOLAP®

Concentrated fluid abrasive pastes. Oil base, auto-lubricants, intended for the lapping of parts between them and/or cylindrical lapping.
Biodegradables, no smell, no dangerous substances.



Advantages

- VOC free
- No water spots
- Alumina base, silicon carbide or boron carbide
- Grains from 0,05 to 125 microns
- Biodegradable products
- Low viscosity
- Packaging: in 50 and 250 cm³ pots



Conventional abrasives
Complex parts Lapping polishing
Fluid texture



Conventional abrasives and chromium oxide
Lapping polishing
Operations under high constraints
Resistant to friction and heating

ALUMINIUM OXIDE (Al_2O_3)

BIOLAP® L SERIES

BIOLAP® Cr L SERIES

		Pot of 50 cm³	Pot of 250 cm³	Pot of 50 cm³	Pot of 250 cm³
FEPA	µm	Ref.	Ref.	Ref.	Ref.
100	125	A125 O3P05	A125 O3P25	A125 O5P05	A125 O5P25
120	105	A105 O3P05	A105 O3P25	A105 O5P05	A105 O5P25
150	88	A088 O3P05	A088 O3P25	A088 O5P05	A088 O5P25
180	74	A074 O3P05	A074 O3P25	A074 O5P05	A074 O5P25
220	62	A062 O3P05	A062 O3P25	A062 O5P05	A062 O5P25
240	45	A045 O3P05	A045 O3P25	A045 O5P05	A045 O5P25
280	37	A037 O3P05	A037 O3P25	A037 O5P05	A037 O5P25
320	29	A029 O3P05	A029 O3P25	A029 O5P05	A029 O5P25
360	23	A023 O3P05	A023 O3P25	A023 O5P05	A023 O5P25
400	17	A017 O3P05	A017 O3P25	A017 O5P05	A017 O5P25
500	13	A013 O3P05	A013 O3P25	A013 O5P05	A013 O5P25
600	9	A009 O3P05	A009 O3P25	A009 O5P05	A009 O5P25
800	7	A007 O3P05	A007 O3P25	A007 O5P05	A007 O5P25
1000	5	A005 O3P05	A005 O3P25	A005 O5P05	A005 O5P25
1200	3	A003 O3P05	A003 O3P25	A003 O5P05	A003 O5P25
1500	1	A001 O3P05	A001 O3P25	A001 O5P05	A001 O5P25
1800	0,7	CP70 O3P05	CP70 O3P25	CP70 O5P05	CP70 O5P25
2000	0,4	CP40 O3P05	CP40 O3P25	CP40 O5P05	CP40 O5P25
2200	0,2	CP20 O3P05	CP20 O3P25	CP20 O5P05	CP20 O5P25
4500	0,05	CP05 O3P05	CP05 O3P25	CP05 O5P05	CP05 O5P25

SILICON CARBIDE (SIC)

BIOLAP® L SERIES

BIOLAP® Cr L SERIES

		Pot of 50 cm³	Pot of 250 cm³	Pot of 50 cm³	Pot of 250 cm³
FEPA	µm	Ref.	Ref.	Ref.	Ref.
80	177	E177 03P05	E177 03P25	E177 05P05	E177 05P25
100	125	E125 03P05	E125 03P25	E125 05P05	E125 05P25
120	105	E105 03P05	E105 03P25	E105 05P05	E105 05P25
150	88	E088 03P05	E088 03P25	E088 05P05	E088 05P25
180	74	E074 03P05	E074 03P25	E074 05P05	E074 05P25
220	62	E062 03P05	E062 03P25	E062 05P05	E062 05P25
240	45	E045 03P05	E045 03P25	E045 05P05	E045 05P25
280	37	E037 03P05	E037 03P25	E037 05P05	E037 05P25
320	29	E029 03P05	E029 03P25	E029 05P05	E029 05P25
360	23	E023 03P05	E023 03P25	E023 05P05	E023 05P25
400	17	E017 03P05	E017 03P25	E017 05P05	E017 05P25
500	13	E013 03P05	E013 03P25	E013 05P05	E013 05P25
600	9	E009 03P05	E009 03P25	E009 05P05	E009 05P25
800	7	E007 03P05	E007 03P25	E007 05P05	E007 05P25
1000	5	E005 03P05	E005 03P25	E005 05P05	E005 05P25
1200	3	E003 03P05	E003 03P25	E003 05P05	E003 05P25

For personalised formulation please contact us (free estimate).

GUIDANCE

Dilution of AQUALAM® CLASSIC and BIOLAM®PLUS solutions

1 part concentrated abrasive product

2 parts ADDITIVE 716

4 parts tap water

ADDITIVE 716 optimises the abrasive film and protects the parts and the cast iron plate from corrosion.

COMPOSITE ABRASIVES

Abrasive compounds CLASSIC

High concentration abrasive compound. Optimises the texture of the abrasive film in order to obtain a rapid, maximal and extended abrasion. Non greasy, miscible to water and to the additive 716.



Abrasifs conventionnels

High purity

ALUMINIUM OXIDE (Al_2O_3)

		Pot of 1 kg	Bucket of 10 kg
FEPA	µm	Ref.	Ref.
100	125	A125 R101K	A125 R110K
120	105	A105 R101K	A105 R110K
150	88	A088 R101K	A088 R110K
180	74	A074 R101K	A074 R110K
220	62	A062 R101K	A062 R110K
240	45	A045 R101K	A045 R110K
280	37	A037 R101K	A037 R110K
320	29	A029 R101K	A029 R110K
360	23	A023 R101K	A023 R110K
400	17	A017 R101K	A017 R110K
500	13	A013 R101K	A013 R110K
600	9	A009 R101K	A009 R110K
800	7	A007 R101K	A007 R110K
1000	5	A005 R101K	A005 R110K
1200	3	A003 R101K	A003 R110K

SILICON CARBIDE (SIC)

		Pot of 1 kg	Bucket of 10 kg
FEPA	µm	Ref.	Ref.
120 ébauche	105	E105 R101K	E105 R110K
180 moyen	74	E074 R101K	E074 R110K
240 fine	45	E045 R101K	E045 R110K
320	29	E029 R101K	E029 R110K
400	17	E017 R101K	E017 R110K
500	13	E013 R101K	E013 R110K
600	9	E009 R101K	E009 R110K
1000	5	E005 R101K	E005 R110K
1200	3	E003 R101K	E003 R110K

For personalised formulations, please contact us (free estimate).





AQUA LAM® Al_2O_3 powder

ALUMINIUM OXIDE

Commonly called "polishing alumina", chemical symbol Al_2O_3. They are composed of various family: purified aluminas, melted aluminas, calcinated aluminas, submicron aluminas. Their choice is defined according to result criterias and economical expectancies. Grains included between 0,03 micron and 200 microns.

Standard abrasive

High purity

		Bucket of 5 kg	Bucket of 5 kg
FEPA	µm	Ref.	Ref.
100	125	A125 P105K	A125 P125K
120	105	A105 P105K	A105 P125K
150	88	A088 P105K	A088 P125K
180	74	A074 P105K	A074 P125K
220	62	A062 P105K	A062 P125K
240	45	A045 P105K	A045 P125K
280	37	A037 P105K	A037 P125K
320	29	A029 P105K	A029 P125K
360	23	A023 P105K	A023 P125K
400	17	A017 P105K	A017 P125K
500	13	A013 P105K	A013 P125K
600	9	A009 P105K	A009 P125K
800	7	A007 P105K	A007 P125K
1000	5	A005 P105K	A005 P125K
1200	3	A003 P105K	A003 P125K
1500	1	A001 P105K	A001 P125K





AQUA LAM® SiC powder

SILICON CARBIDE

The silicon carbide is a pure chemical corps, chemical symbol SiC. The grains are grey, green or black. The grain F1500 used for specific super-finishing is grey.

The silicon carbide AQUA LAM® endures a special treatment and a separation under a high magnetic intensity to insure a dusting and a maximal cleaning. AQUA LAM® proposes all the grains FEPA F useful in lapping, from F60 (250 microns) to F1200 (3 microns).

Standard abrasive

High purity

		Bucket of 5 kg	Bucket of 25 kg
FEPA	µm	Ref.	Ref.
60	250	E250 P105K	E250 P125K
80	177	E177 P105K	E177 P125K
100	125	E125 P105K	E125 P125K
120	105	E105 P105K	E105 P125K
150	88	E088 P105K	E088 P125K
180	74	E074 P105K	E074 P125K
220	62	E062 P105K	E062 P125K
240	45	E045 P105K	E045 P125K
280	37	E037 P105K	E037 P125K
320	29	E029 P105K	E029 P125K
360	23	E023 P105K	E023 P125K
400	17	E017 P105K	E017 P125K
500	13	E013 P105K	E013 P125K
600	9	E009 P105K	E009 P125K
800	7	E007 P105K	
1000	5	E005 P105K	
1200	3	E003 P105K	

COMPOSITE ABRASIVES

AQUA LAM® CeO_2 powder

CERIUM OXIDE

Chemical symbol CeO_2. Used in super finishing mostly for the polishing of glass (example BK7, 520 knoops) the cerium oxide reduces the roughness by a chemical and mechanical actions. Selected according to its maximum polishing action, the cerium oxide AQUA LAM® has grains from 3 to 0,5 microns (other grains dimensions on demand).

		Pot of 1 kg	Pot of 500 g
FEPA	µm	Ref.	Ref.
1200	3	I003 P101K	I003 P1P5K
1300	2	I002 P101K	I002 P1P5K
1400	1	I001 P101K	I001 P1P5K
1600	0,5	JP50 P101K	JP50 P1P5K



Additive

Additive for liquid preparations CLASSIQUES and BIOLAM®PLUS allowing an optimisation of the abrasive film (more resistant) without reducing the lapping power. Can be used in the preparation of the abrasive solution in addition to water.

Preserves the parts and the cast iron tray from corrosion.

ADDITIF 716

Packaging	Ref.
Can of 5 litres	Z000 F25L1
Can of 10 litres	Z000 F2010
Can of 20 litres	Z000 F2020
Keg of 200 litres	Z000 F2200



ADDITIFS, LUBRIFICANTS, OILS

Lapping oil

Classic lapping oil to use with the abrasive powder.

OIL 708

Packaging	Ref.
Can of 5 litres	Z000 A35L1
Can of 10 litres	Z000 A3010
Can of 20 litres	Z000 A3020
Keg of 60 litres	Z000 A3060



Lubricant for cylindrical lapping

AQUASUN OIL

Packaging	Ref.
Can of 10 litres	Z000 A4010

GUIDANCE

AQUA LAM®

Correspondences between different standards

MICRON µm	MESH	FEPA F Abrasif libre	W (grain)	GRIT ASTM
3	1200	F1200	W14	1200
5	1000	F1000	W10	-
7	800	F800	W9	-
9	600	F600	W7/8	800
13	500	F500	W5/6	600
18	400	F400	W4	500
23	360	F360	W2	400
29	320	F320	W0	360
37	280	F280	W350	280
45	240	F240	W340	240
58	220	F220	W240	220

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EQUIPMENT

MICROMOTORS



Controller for new-generation micromotors

M.M.882 CONTROLLER with speedometer NEW

Dedicated to the new V20 and V35 micromotors.FEATURES: Digital speed display, automatic torque control with overload alarm, 8-level load indicator, automatic detection of connected accessories and micromotor and controller self-diagnosis function. Variable speed controlled manually or by foot pedal (optional). Accepts older generation micromotors without speed feedback to the controller.

Accessories supplied: 2 handpiece holders.
Compatibility: all micromotors, except M.M.886, ultrasonic head and turboshaft engines.

M.M.882 CONTROLLER Data sheet			
Type	For rotary and alternative engines	**Voltage output**	DC3-30 V (2 outputs)
Dimmer switch	Manual on controller and pedal	**Dimensions W x H x D**	200 x100 x 180 mm
Direction of rotation	2	**Weight**	2,3 kg
Voltage supply	AC 230 V - 50/60 Hz - 30 VA	**Reference**	10 88230 00



V20 MOTOR - STRAIGHT ROTARY - HIGH TORQUE NEW

New head offers enhanced dust protection and greater precision for ultra-precise work. On/off control. Speed feedback on controller.
Accessories supplied: mors Ø 2,35 et 3,00 mm.
Compatibility: M.M.882 controller (M.M.880 and M.M.885 with adapter 10 88002 00).

Data sheet MICROMOTEUR V20			
Type	Rotary micromotor	**Voltage output**	DC 3-30 V - 0,2 to 0,4 A
Speed	1000 to 20 000 tr/min	**Dimensions**	Ø max. 28 mm L 157 mm
Torque	5,4 Ncm	**Weight (without cable)**	220 gr
Compatible jaws	Ø 2,35, 3,00 and 3,175 mm	**Reference**	10 V2000 00



V35 MICROMOTOR - STRAIGHT ROTARY - HIGH SPEED NEW

New head offers enhanced dust protection and greater precision for ultra-precise work. On/off control. Speed feedback on controller.
Accessories supplied: jaws Ø 2.35 and 3.00 mm.
Compatibility: M.M.882 controller (M.M.880 and M.M.885 with adapter 10 88002 00).

Data sheet MICROMOTOR V35			
Type	Rotary micromotor	**Voltage output**	DC 3-30 V - 0,2 à 0,4 A
Speed	1000 à 35 000 tr/min	**Dimensions**	Ø max. 28 mm L 157 mm
Torque	6,4 Ncm	**Poids (hors câble)**	220 gr
Compatible jaws	Ø 2,35, 3,00 et 3,175 mm	**Référence**	10 V3500 00



ADAPTER CABLE NEW

Used to connect V20 and V35 micromotors to M.M.880 and M.M.885 controllers.

Type	Qty.	Ref.
Adapter cable	1	10 88002 00

Our know-how in the design of diamond abrasives associated with a wide range of supports and toolings allows us to respond to all requests concerning the polishing of components with complex geometries.

MICROMOTORS

Upgradeable micromotor controllers

M.M.880 CONTROLLER for micromotors with foot pedal regulator



Powerful controller for micromotors, suitable for intensive use in all types of deburring and polishing tasks. The M.M.880 is equipped with 2 outputs, which can be used alternatively. Variable speed controlled manually or by the supplied foot pedal controller. Dual direction of rotation with automatic overload protection. A torque management function guarantees a constant speed of rotation of the polishing tool, regardless of the pressure applied by the operator. Quick stop of the rotation when switched off.

Supplied accessories: foot pedal regulator, 2 handpiece holders.
Compatibility: all micromotors, except M.M.886, ultrasonic head and turbo engines.

M.M.880 CONTROLLER Data sheet			
Type	For rotary and alternative engines	**Voltage output**	DC3-30 V (2 outputs)
Dimmer switch	Manual on controller and pedal	**Dimensions W x H x D**	170 x 110 x 195 mm
Direction of rotation	2	**Weight**	2,1 kg
Voltage supply	AC 230 V - 50/60 Hz - 30 VA	**Reference**	10 88030 00

M.M.885 CONTROLLER for micromotors and ultrasound



Powerful controller for ultrasonic micromotors and handpieces, suitable for heavy duty use in all types of deburring and polishing tasks. An automatic feed system is incorporated to adjust the frequency to suit the ultrasonic tool being used. Variable speed for the micromotors, controlled manually or by foot pedal controller (optional). Dual direction of rotation with automatic overload protection. A torque management function guarantees a constant rotation speed of the polishing tool, regardless of the pressure applied by the operator. Quick stop of the rotation when switched off.

Accessories supplied: 2 handpiece holders.
Compatibility: all micromotors and ultrasonics except M.M.886 and turbo engines.

M.M.885 CONTROLLER Data sheet			
Type	For rotary, alternative and ultrasonic engines	**Voltage output**	DC3-30 V 0,3 A Ultrasonic AC 6-60 V 22,6 KHz
Dimmer switch	Manual on controller and pedal (in option)	**Dimensions W x H x D**	170 x 110 x 195 mm
Direction of rotation	2	**Weight**	2,6 kg
Voltage supply	AC 230 V - 50 Hz - 30 VA	**Reference**	10 88530 00

FOOT PEDAL REGULATOR

Combined with the M.M.880, M.M.885 and M.M.882 controllers, the foot pedal regulator provides start/stop functions and foot speed control.



FOOT PEDAL REGULATOR Data sheet		
Compatible controllers	M.M.880 and M.M.885	M.M.882
Functions	On/off and dimmer	On/off and dimmer
Cable	L 1,85 m	L 1,85 m
Reference	10 88034 00	10 88234 00

Rotary micromotors

STRAIGHT RED ROTARY MICROMOTOR



Rotary motion handpiece with standard head. Lightweight and well balanced, its variable speed of rotation from 3000 to 30,000 rpm is suitable for deburring and polishing situations.
Accessories supplied: 1 support for micromotor, tools for changing jaws and maintenance, 1 set of replacement carbons and 2 interchangeable quick-clamping jaws compatible with all types of rotary tools Ø 2.35 - 3.00 mm.
Compatibility: M.M.880, M.M.885 and M.M.882 controllers.

STRAIGHT RED ROTARY MICROMOTOR Data sheet			
Type	Rotary micromotor	**Voltage output**	DC3-30 V - 0,2 to 0,4 A
Speed	3 000 to 30 000 tr/min.	**Dimensions**	Ø max. 31,6 mm, L 170 mm
Torque	6,5 Ncm	**Weight (without cable)**	295 gr
Compatible jaws Ø	3,175 mm	**Reference**	10 88040 00

STRAIGHT RED ROTARY MICROMOTOR WITH REINFORCED HEAD



Rotary handpiece with reinforced head, modular micromotor type. For difficult milling operations with high vibration and pressure loads.
Accessories supplied: 1 micromotor support, tools for changing jaws and maintenance, 1 set of replacement carbons and 2 interchangeable quick-change jaws Ø 6.00 - 3.00 mm.
Compatibility: M.M.880, M.M.885 and M.M.882 controllers.

STRAIGHT RED ROTARY MICROMOTOR WITH REINFORCED HEAD Data sheet			
Type	Rotary micromotor	**Voltage output**	DC3-30 V - 0,2 to 0,4 A
Speed	3 000 to 30 000 tr/min.	**Dimensions**	Ø max. 31,6 mm, L 175 mm
Torque	6,5 Ncm	**Weight (without cable)**	360 gr
Compatible jaws Ø	3,175 mm	**Reference**	10 88041 00

«SUPER LIGHT» ROTARY MICROMOTOR



Lightweight, one-piece micromotor type handpiece. For finishing operations, polishing, deburring, engraving, grinding, limiting operator fatigue.
Accessories supplied: 1 support for micromotor, tools for changing jaws and maintenance, 1 set of replacement carbons and 2 interchangeable quick-clamping jaws Ø 2.35 - 3.00 mm.
Compatibility: M.M.880, M.M.885 and M.M.882 controllers.

«SUPER LIGHT» ROTARY MICROMOTOR Data sheet			
Type	Rotary micromotor	**Voltage output**	DC3-30 V - 0,2 to 0,4 A
Speed	2 000 to 20 000 tr/min.	**Dimensions**	Ø max. 27,5 mm, L 145 mm
Torque	6,5 Ncm	**Weight (without cable)**	200 gr
Compatible jaws Ø	3,175 mm	**Reference**	10 88042 00

GREEN BENT 90° ROTARY MICROMOTOR



Handpiece, modular micromotor type with reinforced head with 90° angle transmission. For finishing operations, generally used with polishing discs.
Accessories supplied: 1 support for micromotor, tools for changing jaws and maintenance, 1 set of replacement carbons and 2 interchangeable quick-clamping jaws Ø 2.35 - 3.00 mm
Compatibility: M.M.880, M.M.885 and M.M.882 controllers.

GREEN BENT 90° ROTARY MICROMOTOR Data sheet			
Type	Rotary micromotor	**Voltage output**	DC3-30 V - 0,2 à 0,4 A
Speed	1 500 to 15 000 tr/min.	**Dimensions**	Ø max. 31,6 mm, 45 x 160,5 mm
Torque	8,8 Ncm	**Weight (without cable)**	380 gr
Compatible jaws Ø	3,175 mm	**Reference**	10 88046 00

GREEN BENT 120° ROTARY MICROMOTOR

Handpiece, micromotor type with reinforced head with 120° angle transmission, for finishing operations, generally used with polishing discs.
Accessories supplied: 1 micromotor holder, tool for changing jaws and maintenance, 1 set of replacement brushes, 2 interchangeable quick-release jaws Ø 2.35 - 3.00 mm.
Compatibility: M.M.880 and M.M.885 and M.M.882 controllers



GREEN BENT 120° ROTARY MICROMOTOR Data sheet			
Type	Rotary micromotor	**Voltage output**	DC3-30 V - 0,2 to 0,4 A
Speed	1 500 to 15 000 tr/min.	**Dimensions**	Ø max. 31,6 mm, 47 x 169 mm
Torque	8,8 Ncm	**Weight (without cable)**	385 gr
Compatible jaws Ø	3,175 mm	**Reference**	10 88047 00

M.M.886 CONTROLLER and micromotor package

M.M.886

Complete set including 1 M.M.886 CONTROLLER and its compatible rotary MICROMOTOR. Variable-speed controller with two directions of rotation and automatic overload protection. A torque management function guarantees constant polishing tool speed, regardless of the pressure applied by the operator. Quick-stop rotation on switch-off.

Accessories supplied: spare fuse (UF-1A), other accessories see M.M.886 micromotor description.
Compatibility: M.M.886 micromotor only. Controller not compatible with foot pedal controller.



M.M.886 CONTROLLER Data sheet			
Type	for M.M.886 rotary engine	**Voltage output**	DC3-30 V - 0,2 to 0,4 A
Dimmer switch	3 000 to 20 000 tr/min.	**Dimensions W x H x D**	130 x 85 x 162 mm
Direction of rotation	2	**Weight**	1,5 kg
Voltage supply	AC 230 V - 50/60 Hz - 23 VA	**Reference**	10 88630 00

MICROMOTOR (only) FOR M.M.886 CONTROLLER

Handpiece specific to the M.M.886 CONTROLLER, monobloc micromotor type with stainless steel body. Lightweight and well-balanced, its variable speed of rotation from 3000 to 20,000 rpm is suitable for all common deburring and polishing situations. Supplied with 3 interchangeable quick-clamping jaws compatible with all types of rotary tooling.

Accessories supplied: 1 support for micromotor, tools for changing jaws and maintenance, 1 set of replacement carbons, 3 jaws Ø 2.35 - 3.00 - 3.175 mm.
Compatibility: only with M.M.886 controller.



Fiche technique MICROMOTEUR M.M.886			
Type	Rotary micromotor for M.M.886	**Voltage output**	DC3-30 V - 0,2 to 0,4 A
Speed	3 000 to 20 000 tr/min.	**Dimensions**	Ø max. 24 mm, L 128 mm
Torque	n.c.	**Weight (without cable)**	180 gr
		Reference	10 88630 20

Alternating micromotors

BLACK MICROMOTOR - CROSS-FILER



Handpiece, modular micromotor type with straight head with angular movement (sweeping). For finishing operations, generally used with diamond stones and files.
Accessories supplied: 1 support for micromotor, tools for changing jaws and maintenance, 1 set of replacement carbons and 1 jaw Ø 2.00 to 4.7 mm.
Compatibility: M.M.880, M.M.885 and M.M882. controllers.

BLACK MICROMOTOR - CROSS-FILER Data sheet			
Type	Scanning alternating micromotor	**Voltage output**	DC3-30 V - 0,2 to 0,4 A
Speed	800 to 8 000 osc./min.	**Dimensions**	Ø max. 31,6 mm, 182 mm
Torque	6,5 Ncm	**Weight (without cable)**	316 gr
Compatible jaws Ø	1,6 mm	**Reference**	10 88045 00

BLACK MICROMOTOR - LONGITUDINAL FILE NEW



This polishing/liming micromotor is the natural choice for working in tight, confined spaces. Its compact dimensions and easy handling make it excellent for polishing and finishing applications on small, hard-to-reach surfaces.
Accessories supplied: jaws Ø 3.6 mm.
Compatibility : M.M.880, M.M.885 and M.M.882 controllers.
Weight of inserted tool: max. 10 g, recommended 1 to 10 g.

BLACK MICROMOTOR - LONGITUDINAL FILE Data sheet			
Type	Micromoteur linéaire	**Voltage output**	DC 3-30 V - 0,2 to 0,4 A
Speed	800 à 8 000 osc./min.	**Dimensions W x H x D**	Ø max. 31,6 mm L 200 mm
Torque	9,8 Ncm	**Weight (without cable)**	340 gr
Course	1,0 mm	**Reference**	10 88049 00

GREY FILING MICROMOTOR



One-piece motor type handpiece with longitudinal pistol grip for finishing operations, generally used with wood or felt lapidaries.
Accessories supplied: 1 support for micromotor, tools for changing jaws and maintenance, 1 set of replacement carbons and 1 jaw Ø 2.00 to 6.35 mm.
Compatibility: M.M.880, M.M.885 and M.M882. controllers.

GREY FILING MICROMOTOR Data sheet			
Type	Linear alternating micromotor	**Voltage output**	DC3-30 V - 0,2 to 0,4 A
Speed	700 to 7 000 osc./min	**Dimensions W x H x D**	40 x 128 x 140 mm
Torque	n.c.	**Weight (without cable)**	675 gr
Course	0 to 6 mm	**Reference**	10 88043 00

Tool clamp NEW

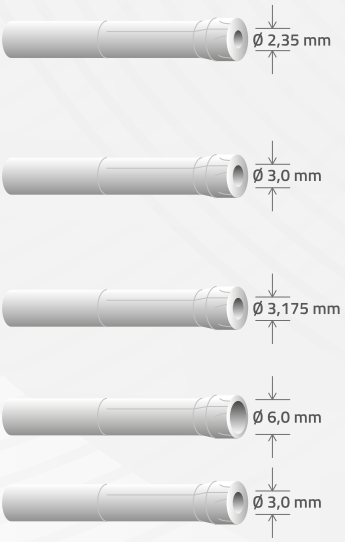


For retaining running-in rods on reciprocating engines.

Type	Axis	Tool clamping	Jaw width	Ref.
Clamp	Ø 3,5 x 30 mm	up to 8 mm thick	11 mm	40 LI000 10

Jaws for micromotors

Characteristics	Compatibility	Ref.
Ø 2,35 mm	- Straight red rotary device - Green bent 90° rotary device - Green bent 120° rotary device - "Super light" rotary device - M.M.886	10 1090 13
Ø 3,0 mm	- Straight red rotary device - Green bent 90° rotary device - Green bent 120° rotary device - "Super light" rotary device - M.M.886	10 1090 07
Ø 3,175 mm	- Straight red rotary device - Green bent 90° rotary device - Green bent 120° rotary device - "Super light" rotary device - M.M.886	10 1090 11
Ø 6,0 mm	- Straight red rotary device with reinforced head	10 1090 07
Ø 3,0 mm	- Straight red rotary device with reinforced head	10 1072 51



Ultrasonic micromotor

ULTRASONIC HEAD

Handpiece, one-piece ultrasonic micromotor type. Compact and lightweight, ergonomically designed to improve efficiency. Applications include finishing of plastic moulds, die castings, ceramics, non-ferrous and precious metals. Ideal for deburring, polishing and removing EDM burrs.

Accessories supplied: 1 micromotor support, tools for changing jaws and maintenance, 1 diamond file, 1 interchangeable Ø 3 mm quick-clamping jaws and 2 collets, thickness 0.5 and 1 mm.

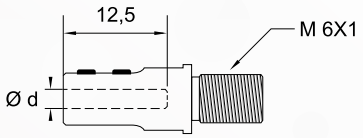
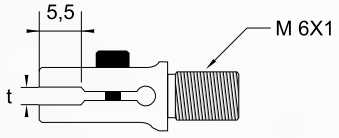
Compatibility: M.M.885 controller



ULTRASONIC HEAD Data sheet			
Type	Ultrasonic micromotor	**Voltage**	AC 6-60 V 22,6 KHz
Frequency	800 to 8 000 osc./min.	**Dimensions**	Ø max. 29 mm, 140 mm
Course	45 µm	**Weight (without cable)**	196 gr
		Reference	10 88540 00

Jaws for ultrasonic micromotor

JAWS

Type	mm	Grain	Ref.
	Ø 2 Ø 3	-	40 US005 00 40 US006 00
	t = 0,5 t = 0,8 t = 1 t = 2 t = 3	-	40 US015 00 40 US016 00 40 US018 00 40 US007 00 40 US008 00



Turbomotors



M.M.888.4 LINEAR TURBOMOTOR

Turbomotor providing high torque and speed. With a stroke of 0.7 mm and a movement frequency of 350 strokes/sec. Mainly made of lightweight composite materials, this turbo motor allows easy working for a long time without fatigue or overheating. Integrated on/off control ring.
Supplied accessories: 1 x 1.50 m hose with clamps, 1 x hose holder, 1 x key, 1 x ceramic stone and 1 x multi-purpose jaw for Ø 3 and 3 x 10 mm max.

M.M.888.4 Data sheet			
Type	Linear alternating micro-motor	**Air consumption**	46 NL/min.
Frequency	0 à 22 000 coups/min.	**Power supply**	Compressor 60 COM00 00 or compressed air network 6 Bar flow rate higher than 70 NL/min.
Pressure	6 bars	**Dimensions**	Ø max. 28 mm, 218 mm
Course	0,7 mm	**Weight**	180 gr
Connector	PT 1/4	**Reference**	10 88840 00



M.M.888.3 ROTARY TURBOMOTOR

Turbomotor is made of composite materials and is particularly thin and light, allowing easy working for a long time without fatigue or overheating.
Integrated on/off control ring.
Supplied accessories: 1 x 1.50 m hose with clamps, 1 x hose holder, tools, 1 x Ø 10 mm grinding wheel and 1 x Ø 3 mm jaw.

M.M.888.3 Data sheet			
Type	Rotary micromotor	**Air consumption**	120 NL/min.
Speed	65 000 tr/min.	**Power supply**	Compressed air network 6 Bar flow rate higher than 150 NL/min.
Pressure	6 bars	**Dimensions**	Ø max. 22,50mm, 218 mm
Course	0,7 mm	**Weight**	78 gr
Connection	PT 1/4	**Reference**	10 88830 00

ACCESSORIES AND MAINTENANCE

Diaphragm compressor

Diaphragm compressor for laboratories which are not equipped with a compressed air network. Silent operation.

Output	Pressure	Dim. W x H x D	Ref.
50 l/min	8 bar	330 x 500 x 330 mm	60 COM00 00



Swivel vice NEW

With hardened steel serrated jaws.

Swivel vice Data sheet			
Jaw width	80 mm jaws	**Height/work surface**	257 mm
Workbench plate	up to 75 mm thick	**Weight**	9,14 kg
Ball joint tilt	+/- 50°	**Reference**	06 00660 30
Dimensions	L x H x P 120 x 450 x 240 mm		



Replacement carbon brushes for micromotors

Type	Ref.
Straight red rotary device	10 1070 82
Straight red rotary device with reinforced head	10 1070 82
Grey filing device	10 1070 84
"Super light" rotary device	10 1070 83
Green bent 90° rotary device	10 1070 82
Green bent 120° rotary device	10 1070 82
M.M.886	10 1070 66



Maintenance and repairs

In order to always get the best and to prolong the life of your equipment, LAM PLAN offers you preventive and curative maintenance services on all its range of shape polishing equipment.

Do not hesitate to contact your usual contact person, after taking charge of your project in our workshops, we will draw up a personalised estimate.



TOOLS



Disc holders series 9904

Holders for self-adhesive discs, used in rotation.

Shaft: Ø 3 mm	
Ø in mm	**Ref.**
18	99 04018 00
30	99 04030 00



Rectangular holder

Active zone: 10 x 20 mm.

Shaft : Ø 3 L : 60 mm	
Type	**Ref.**
Articulated	99 09905 20

Self-adhesive abrasive discs

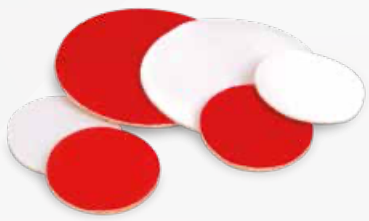
For small surface rough polishing, used in rotation.



SERIES 9950

50 pieces

	Ø 18 mm	Ø 30 mm
Grain	**Ref.**	**Ref.**
80	99 05080 10	99 05080 30
120	99 05120 10	99 05120 30
180	99 05180 10	99 05180 30
240	99 05240 10	99 05240 30
320	99 05320 10	99 05320 30
400	99 05400 10	99 05400 30
600	99 05600 10	99 05600 30
1200	99 51200 10	99 51200 30



Self-adhesive polishing discs

SERIES 9914

50 pieces

Type	Ø in mm	Ref.
1450 woven	18	99 01450 10
1431 felt	18	99 01431 10
1450 woven	30	99 01450 30
1431 felt	30	99 01431 30

Tools on sticks, diamond rasps, lapping rods, polishing supports and abrasive stones.

Self-adhesive polishing squares



SERIES 400

10 pieces

Polishing cloths for contour work		
Type	**mm**	**Ref.**
437 brown felt	150 x 150	04 C0437 10
	200 x 200	04 C0437 20
431 red felt	150 x 150	04 C0431 10
	200 x 200	04 C0431 20

SERIES 4400

10 pieces

Polishing cloths for contour work		
Type	**mm**	**Ref.**
4450 white woven	150 x 150	04 C4450 10
	200 x 200	04 C4450 20

Prepolishing discs



CAMEO® PLATINIUM

10 pieces

Self-adhesive discs for large surface pre-polishing, used in rotation		
Designation	**mm**	**Ref.**
Platinium 0	Ø 18	09 CA130200
Platinium 1	Ø 18	09 CA140200
Platinium 2	Ø 18	09 CA150200
Platinium 3	Ø 18	09 CA160200
Platinium 0	Ø 30	09 CA130300
Platinium 1	Ø 30	09 CA140300
Platinium 2	Ø 30	09 CA150300
Platinium 3	Ø 30	09 CA160300



Diamond grinding points

Accurate grinding, deburring, levelling, etching.
Advantages in comparison with corundum grinders: better surface finish and low wear and tear with small diameters or points. High durability.

SERIES 6800

1 piece

Shaft: Ø 3 mm - Length: 38 mm - Grain: 120					
Type	mm	Ref.	Type	mm	Ref.
	2,1 x 2,1	46 21210 00		3,1 x 9	46 30850 00
	3,5 x 3,5	46 35350 00		4,8 x 13	46 48130 00
	1,6 x 1,6	46 16160 00		8,0 x 13	46 80130 00
	1,8 x 1,6	46 18160 00		3,1 x 9	46 30900 00
	2,7 x 2,5	46 27250 00		5 x 13	46 48131 00
	3,7 x 3	46 37300 00		2,7 x 8,5	46 27850 00
	4,7 x 3	46 47300 00		3,1 x 9	46 31851 00
	2,9 x 6	46 30600 00		2,1 x 7	46 21701 00
	4,7 x 1,5	46 47150 00		3,1 x 8,5	46 31852 00
	8,0 x 2,5	46 80220 00		1,6 x 6,5	46 16651 00
	16 x 3	46 16270 00		3,1 x 8,5	46 31853 00
	22 x 3	46 22270 00		3,1 x 8,5	46 31854 00
	8,0 x 0,6	46 80050 00		5 x 10	46 48100 00
	4,7 x 1	46 47100 00		5 x 8	46 48800 00
	2,7 x 9	46 27800 00		4,8 x 13	46 48132 00
	3,1 x 8,5	46 31850 00		5 x 13	46 48133 00
	5,0 x 13	46 50130 00		8,0 x 13	46 80131 00
	1,6 x 6,5	46 16650 00		8,0 x 3,5	46 80300 00
	2,1 x 7	46 21700 00		22 x 0,3	46 22100 00
	2,7 x 8	46 27801 00		22 x 0,4	46 22200 00
				22 x 0,5	46 22300 00

SERIES 7400

1 piece



Shaft: Ø 3 mm - Length: 38 mm - Grain: 170					
Type	mm	Ref.	Type	mm	Ref.
	2,3 x 7,5	47 23700 00		3,1 x 9	47 31900 00
	2,7 x 9	47 27800 00		5 x 13	47 48134 00
	5,0 x 13	47 50130 00		2,7 x 8,5	47 27802 00
	1,6 x 6,5	47 16650 00		2,1 x 7	47 21701 00
	2,1 x 7	47 21700 00		3,1 x 9	47 31850 00
	2,7 x 8	47 27801 00		5,0 x 13	47 50132 00
	5,0 x 13	47 50131 00			

Abrasive caps

Abrasive caps are used to deburr metallic parts and also for medium polishing.
Their shape makes them suitable for parts with a rounded base.



GRAIN 80

1 support + 100 caps

	Stem	Cap	
Type	mm	mm	Ref.
	Ø 3	Ø 7 L 10	40 CA078 10
	Ø 3	Ø 12 L 15	40 CA128 20
	Ø 6	Ø 18 L 26	40 CA188 30
	Ø 3	Ø 7 L 11	40 CA078 40
	Ø 3	Ø 12 L 15	40 CA128 50
	Ø 6	Ø 18 L 26	40 CA188 60
	Ø 3	Ø 7 L 11	40 CA078 70
	Ø 3	Ø 12 L 15	40 CA128 80
	Ø 6	Ø 18 L 26	40 CA188 90

			GRAIN 150	GRAIN 320
	Stem	Cap		
Type	mm	mm	Ref.	Ref.
	Ø 3	Ø 7 L 10	40 CA071 10	40 CA073 10
	Ø 3	Ø 12 L 15	40 CA121 20	40 CA123 20
	Ø 6	Ø 18 L 26	40 CA181 30	40 CA183 30
	Ø 3	Ø 7 L 11	40 CA071 40	40 CA073 40
	Ø 3	Ø 12 L 15	40 CA121 50	40 CA123 50
	Ø 6	Ø 18 L 26	40 CA181 60	40 CA183 60
	Ø 3	Ø 7 L 11	40 CA071 70	40 CA073 70
	Ø 3	Ø 12 L 15	40 CA121 80	40 CA123 80
	Ø 6	Ø 18 L 26	40 CA181 90	40 CA183 90



Grinding points Pink corundum

Maximum speed: 45m/sec. Hardness: N.

GRAIN 80/120

10 pieces

Shaft: Ø 3 mm - Length: 35 mm					
Type	mm	Ref.	Type	mm	Ref.
	9 x 2,2	40 CR901 00		7 x 4	40 CR720 00
	9 x 3	40 CR902 00		8 x 4	40 CR821 00
	8,5 x 2,2	40 CR853 00		2,5 x 6	40 CR252 20
	4 x 1,2	40 CR404 00		5 x 6	40 CR523 00
	5,5 x 3	40 CR555 00		6 x 6	40 CR624 00
	7/3,5 x 6	40 CR706 00		5 x 2	40 CR525 00
	5/2 x 2,7	40 CR507 00		6 x 2,3	40 CR626 00
	6,5/2 x 3	40 CR658 00		3,5/2 x 10	40 CR352 70
	8/3,5 x 4	40 CR809 00		5,5/3,5 x 10	40 CR552 80
	3/2 x 4	40 CR310 00		3,3/2,2 x 6,2	40 CR332 90
	5/3 x 5	40 CR511 00		3/4,6 x 10	40 CR330 00
	7/5 x 6	40 CR712 00		5 x 3,2	40 CR531 00
	3 x 6	40 CR313 00		5 x 7	40 CR532 00
	4 x 6	40 CR414 00		6 x 8	40 CR633 00
	5 x 6	40 CR515 00		4,3 x 7	40 CR433 40
	3 x 6	40 CR316 00		6,2 x 10	40 CR623 50
	4 x 4	40 CR417 00		6,3 x 10	40 CR633 60
	6 x 8	40 CR618 00		Kit 36 pieces	40 CR363 70
	3 x 2	40 CR319 00			

Grinding points Ruby sapphire

Maximum speed: 45 m/sec. Hardness: N.



GRAIN 100

10 pieces

Shaft: Ø 3 mm - Length: 40 mm					
Type	mm	Ref.	Type	mm	Ref.
	2 x 6	40 RS020 10		6 x 12	40 RS061 20
	4 x 8	40 RS040 20		8 x 10	40 RS081 30
	5 x 10	40 RS050 30		Ø 5	40 RS051 40
	8 x 10	40 RS080 40		Ø 8	40 RS081 50
	5 x 2	40 RS050 50		Ø 10	40 RS101 60
	10 x 2	40 RS100 60		3 x 6	40 RS031 70
	10 x 5	40 RS100 70		4 x 8	40 RS041 80
	10 x 2	40 RS100 80		8 x 8	40 RS081 90
	5 x 10	40 RS050 90		10 x 10	40 RS102 00
	7 x 12	40 RS071 00			
				Kit 20 pieces	40 RS122 10
	6 x 10	40 RS061 10			

Grinding points Silicon carbide



GRAIN 120

10 pieces

Shaft: Ø 3 mm - Length: 40 mm	
Ø in mm	Ref.
2 x 5	40 CB205 00
3 x 6	40 CB306 00
4 x 8	40 CB408 00
5 x 10	40 CB510 00
8 x10	40 CB810 00
10 x10	40 CB8101 00



Carbide end mills

Type	*Kit	mm	Ref.
Shaft: Ø 3 mm - Length: 38 mm			
		3,0 x 14	40 FC301 00
	✔	2,5 x 11	40 FC252 00
	✔	1,5 x 6	40 FC153 00
		Ø 3	40 FC304 00
	✔	3 x 14	40 FC305 00
	✔	2,5 x 11	40 FC306 00
	✔	3 x 12	40 FC257 00
		3 x 6	40 FC308 00
		3 x 12	40 FC309 00
	✔	3 x 10	40 FC310 00
		3 x 6	40 FC311 00
	✔	3 x 6	40 FC312 00
	✔	Ø 3	40 FC313 00
		Ø 2,5	40 FC251 40
		3 x 16 x 7	40 FC315 00
	✔	3 x 11 x 14	40 FC316 00
		3 x 9 x 12	40 FC317 00
		3 x 12 x 8	40 FC318 00
		3 x 9 x 8	40 FC319 00
		3 x 9	40 FC320 00
		3 x 6	40 FC321 00
		3 x 6	40 FC322 00
		3 x 5 x 10	40 FC323 00
		2,5 x 3 x 10	40 FC252 40
* Kit included 9 pieces			40 FC120 00
Shaft: Ø 3 mm - Length: 45 mm			
		0,9 x 0,75	40 FC409 00
		1 x 0,8	40 FC410 00
		1,2 x 1	40 FC412 00
		1,4 x 1,2	40 FC414 00
		1,6 x 1,4	40 FC416 00

Rotary polishing felts

For use with BioDIAMANT® gels and pastes: finishing, geometric polishing.



10 pieces

Shaft: Ø 3 mm - Length: 38 mm			
Type	*Kit	Ø x L (mm)	Ref.
	✔	Ø 6 x L 10	40 FR060 10
	✔	Ø 8 x L 12	40 FR080 20
	✔	Ø 6 x L 10	40 FR060 30
	✔	Ø 8 x L 12	40 FR080 40
	✔	Ø 6 x L 10	40 FR060 50
	✔	Ø 8 x L 12	40 FR080 60
	✔	Ø 6 x L 10	40 FR060 70
	✔	Ø 8 x L 10	40 FR080 80
	✔	Ø 10 x L 10	40 FR100 90
	✔	Ø 6 x L 10	40 FR061 20
	✔	Ø 8 x L 12	40 FR081 30
	✔	Ø 10 x L 18	40 FR101 00
	✔	Ø 9/6 x 15	40 FR096 10
	✔	Ø 15/10 x L 15	40 FR151 10
	✔	*Kit 14 pieces	40 FR130 00

Shaft: Ø 6 mm - Length: 40 mm					
Type	mm	Ref.	Type	mm	Ref.
	10 x 12 15 x 20 20 x 20 25 x 30 30 x 35	40 FR102 00 40 FR152 10 40 FR202 20 40 FR252 30 40 FR303 70		15 x 20	40 FR152 50
	20 x 30	40 FR202 40		30 x 20	40 FR302 60
Shaft: Ø 2,35 mm - Length: 35 mm			Shaft: Ø 2,35 mm - Length: 40 mm		
Type	mm	Ref.	Type	mm	Ref.
	7 x 15	40 FR715 00		22 x 0,5	40 FR225 10
	12/8 x 12	40 FR120 10		22 x 5	40 FR225 00

Cylindrical rotary accessories



SERIES 9908

10 pieces

Shaft: Ø 3 mm					
mm	Type	Ref.	mm	Type	Ref.
Ø 20 L 30	Hard wood	99 08410 01	Ø 10 L 20	Hard wood	99 08416 01
	Soft wood	99 08411 01		Soft wood	99 08417 01
	Felt	99 08412 01		Felt	99 08418 01
Ø 15 L 25	Hard wood	99 08413 01	Ø 6 L 15	Hard wood	99 08419 01
	Soft wood	99 08414 01		Soft wood	99 08420 01
	Felt	99 08415 01		Felt	99 08421 01

Pointed rotary accessories



SERIES 9908

10 pieces

Shaft: Ø 3 mm					
mm	Type	Ref.	mm	Type	Ref.
Ø 20 L 30	Hard wood	99 08428 01	Ø 13 L 20	Hard wood	99 08434 01
	Soft wood	99 08429 01		Soft wood	99 08435 01
	Felt	99 08430 01		Felt	99 08436 01
Ø 10 L 30	Hard wood	99 08431 01	Ø 9 L 15	Hard wood	99 08437 01
	Soft wood	99 08432 01		Soft wood	99 08438 01
	Felt	99 08433 01		Felt	99 08439 01

Spherical rotary accessories

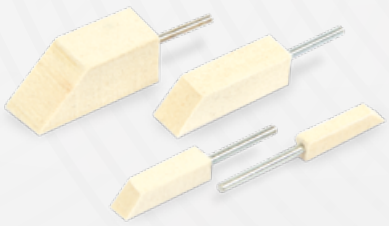


SERIES 9908

10 pieces

Shaft: Ø 3 mm					
mm	Type	Ref.	mm	Type	Ref.
Ø 15	Hard wood	99 08422 01	Ø 10	Hard wood	99 08425 01
	Soft wood	99 08423 01		Soft wood	99 08426 01
	Felt	99 08424 01		Felt	99 08427 01

Felt lapping rods



1 piece

Shaft: Ø 3 mm	
Dim. (mm)	**Ref.**
6 x 6 L 25/30	99 08478 10
8 x 8 L 25/30	99 08478 20
10 x 10 L 22/30	99 08478 30
12 x 12 L 35/45	99 08478 40
18 x 18 L 15/30	99 08478 50

Polishing grinding brushes

For use with BioDIAMANT® gels and pastes: geometric polishing and cavities.
Brass: pre-polishing. - **Black silk:** polishing. - **White silk:** super-finishing.



10 pieces

Shaft: Ø 2,35 mm - Length: 40 mm			
Type	**mm**	**Material**	**Ref.**
	Ø 21 x 2	Brass	40 BR210 00
	Ø 21 x 1	Black silk	40 BR211 00
	Ø 22 x 1	Natural fiber	40 BR212 00
	Ø 19 x 2	Brass	40 BR190 00
	Ø 19 x 1	Black silk	40 BR191 00
	Ø 19 x 1	Natural fiber	40 BR192 00
	Ø 12 x 6	Brass	40 BR123 00
	Ø 12 x 6	Black silk	40 BR121 00
	Ø 12 x 6	Natural fiber	40 BR122 00
	Ø 5,5 x 11 Ø 5,5 x 11	Brass White silk	40 BR052 00 40 BR051 00

Jet brushes



1 piece

Brass wire bottlebrush jet brushes	
Ø in mm	**Ref.**
4	40 BR504 00
5	40 BR505 00
6	40 BR506 00
8	40 BR508 00
10	40 BR510 00

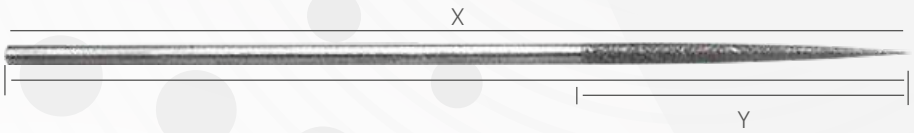


Diamond files

Diamond files are electroplated, the quality of the coated diamond guarantees even stock removal. The manufacturing process results in long durability. These tools are mainly used for manual work, pre-polishing or fine deburring. They can also be mounted in filing or ultrasonic devices. Their length can be reduced simply by cutting with a diamond disc.

1 piece

Shaft: Ø 3 mm				
Type	**mm**	**Grain**	**Unit**	**Ref.**
	1,5 5	60		44 LD211 00
	1,5 5	60		44 LD212 00
	3	60		44 LD213 00
	5	60		44 LD214 00
	1,5 5	60	Mesh	44 LD215 00
	1,5 5	140	Mesh	44 LD411 00
	5	60	Mesh	44 LD314 00
	3	60 140	Mesh Mesh	44 LD316 00 44 LD416 00
	Ø 3	140	Mesh	44 LD417 00
	4	60 140	Mesh Mesh	44 LD313 00 44 LD413 00
	0,4 12	D76	Fepa	44 LD418 00
	0,6 12	D76	Fepa	44 LD419 00
	0,8 12	D76	Fepa	44 LD420 00
	1 12	D76	Fepa	44 LD421 00
	5 20	D126	Fepa	44 LD422 00



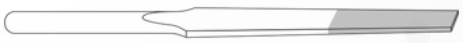
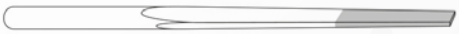
1 piece

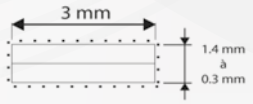
Grain	Dim. (mm)	Stem	Ø in mm	Ref.
320	X=175 - Y=40	Ø 3 mm	1	49 LD330 20
500	X=175 - Y=40	Ø 3 mm	1	49 LD330 30
220	X=175 - Y=50	Ø 3 mm	2,2	49 LD330 70
220	X=200 - Y=70	Ø 3 mm	4	49 LD332 20
220	X=175 - Y=50	Ø 3 mm	3	49 LD331 20

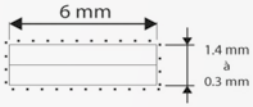
Diamond files kit

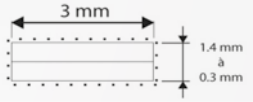
1 piece

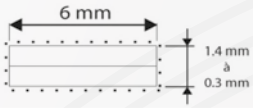
Composition	Stem	Ref.
12 pieces	Ø 3 mm	44 LD500 00

Kit composition	Detail	Grain µm	Qty.
	T 15	200	1
		400	1
	L 72	600	1
	T 15	200	1
		400	1
	L 72	600	1
	T 15	200	1
		400	1
	L 56	600	1
	T 15	200	1
		400	1
	L 56	600	1







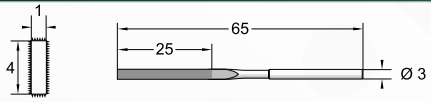
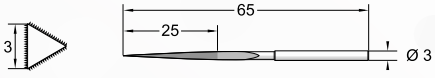
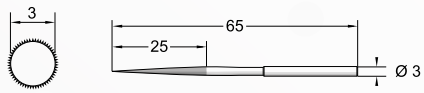


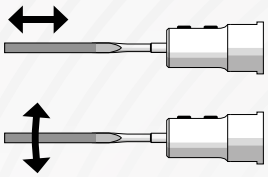
Diamond files for micromotors

DEPOSITED DIAMOND FILES

1 piece

Pre-polishing and fine deburring

Type	Stem	Grain µm	Ref.
	Ø 3 mm	140	40 LI001 00
	Ø 3 mm	140	40 LI002 00
	Ø 3 mm	140	40 LI003 00





Diamond razors

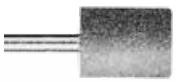
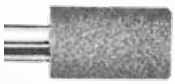
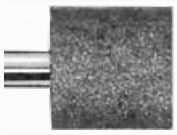
1 piece

Type	Form	Dim. (mm)	Lenght (mm)	Ref.
Grain 150 / Shaft Ø 3 mm				
	▭	6 x 1,5 x 30	110	49 LD422 00
	⌓	5 x 2 x 30	110	49 LD423 00
	○	Ø 3 x 30	110	49 LD424 00
	□	2,5 x 2,5 x 30	110	49 LD425 00
	△	3,5 x 30	110	49 LD426 00
	▭	6 x 1 x 20	120	49 LD427 00
	□	2 x 2 x 20	120	49 LD428 00
	▭	3 x 1,5 x 20	120	49 LD429 00
	△	3 x 20	120	49 LD430 00
	⌓	5 x 2 x 20	120	49 LD431 00
	▭	4 x 1,5 x 20	120	49 LD432 00
	⬭	4 x 2,5 x 20	120	49 LD433 00
	○	Ø 2 x 20	120	49 LD434 00
	△	5 x 5 x 1,5 x 20	120	49 LD435 00
	○	Ø 2,5 x 20	120	49 LD436 00
Grain 200 / Shaft Ø 3 mm				
	▭	5,8 x 1,2 x 20	40	49 LD437 00
	▭	3,2 x 1,4 x 20	40	49 LD438 00
	⌓	5 x 2 x 22	40	49 LD439 00
	▭	3,2 x 1,4 x 24	40	49 LD440 00
	○	Ø 3 x 20	40	49 LD441 00
	○	Ø 3 x 30	40	49 LD442 00
	△	2,5 x 25	40	49 LD443 00
	▭	3,2 x 1,4 x 25	40	49 LD444 00
	▭	3,2 x 1,4 x 25	40	49 LD445 00
	⬭	4 x 2 x 20	40	49 LD446 00
	▭	4 x 1,2 x 28	55	49 LD447 00
	⌓	5 x 2 x 28	55	49 LD448 00
	○	Ø 3 x 34	55	49 LD449 00
	□	2,5 x 2,5 x 34	55	49 LD450 00

Rubberised abrasive grinders



Prepolishing. Rubberised abrasive grinders easily adapt to the of the surface being worked and are used to polish complex shapes (for example: angles, thread, depths).
They are also used for fine deburring.

		RED Grain 120	BROWN Grain 220	GREEN Grain 280
				10 pieces
Shaft: Ø 3 mm - Length: 30 mm				
Type	mm	Ref.	Ref.	Ref.
	Ø 4 L 8	40 MC011 20	40 MC012 20	40 MC012 80
	Ø 6 L 10	40 MC021 20	40 MC022 20	40 MC022 80
	Ø 10 L 10	40 MC031 20	40 MC032 20	40 MC032 80
	Ø 12 L 16	40 MC041 20	40 MC042 20	40 MC042 80
Shaft: Ø 6 mm - Length: 40 mm				
	Ø 8 L 15	40 MC051 20	40 MC052 20	40 MC052 80
	Ø 12 L 20	40 MC061 20	40 MC062 20	40 MC062 80
	Ø 15 L 30	40 MC071 20	40 MC072 20	40 MC072 80
	Ø 20 L 20	40 MC081 20	40 MC082 20	40 MC082 80



Felt polishing rings

10 pieces

Thickness: 4,5 mm	
Dimension	**Ref.**
Ø 18	40 FR180 10
Ø 30	40 FR300 10
Ø 45	40 FR450 10

Felt polishing discs



SELF-ADHESIVE - SERIES 99014

10 pieces

Thickness: 5 mm					
Ø	**Type**	**Ref.**	**Ø**	**Type**	**Ref.**
12 mm	med-hard	99 01423 10	33 mm	hard	99 01424 40
	hard	99 01424 10	50 mm	med-hard	99 01423 60
20 mm	med-hard	99 01423 20		hard	99 01424 60
	hard	99 01424 20	65 mm	med-hard	99 01423 70
25 mm	med-hard	99 01423 30		hard	99 01424 70
	hard	99 01424 30	78 mm	med-hard	99 01423 80
33 mm	med-hard	99 01423 40		hard	99 01424 80

NON-ADHESIVE - SERIES 99114

Thickness: 5 mm					
Ø	**Type**	**Ref.**	**Ø**	**Type**	**Ref.**
12 mm	med-hard	99 11423 10	33 mm	hard	99 11424 40
	hard	99 11424 10	50 mm	med-hard	99 11423 60
20 mm	med-hard	99 11423 20		hard	99 11424 60
	hard	99 11424 20	65 mm	med-hard	99 11423 70
25 mm	med-hard	99 11423 30		hard	99 11424 70
	hard	99 11424 30	78 mm	med-hard	99 11423 80
33 mm	med-hard	99 11423 40		hard	99 11424 80

Felt polishing pads



SQUARE 150 mm

3 pieces

Self-adhesive			Non-adhesive		
Type	**Thickness**	**Ref.**	**Type**	**Thickness**	**Ref.**
med-hard	1 mm	99 15434 60	med-hard	1 mm	99 15434 10
med-hard	5 mm	99 15423 60	med-hard	5 mm	99 15423 10
hard	5 mm	99 15424 60	hard	5 mm	99 15424 10

SQUARE 200 mm

Self-adhesive			Non-adhesive		
Type	**Thickness**	**Ref.**	**Type**	**Thickness**	**Ref.**
med-hard	1 mm	99 20434 60	med-hard	1 mm	99 20434 10
med-hard	5 mm	99 20423 60	med-hard	5 mm	99 20423 10
hard	5 mm	99 20424 60	hard	5 mm	99 20424 10

Cylindrical abrasive finishing grinders

14 pieces

Shaft: Ø 3 mm - Length: 30 mm - Ø 13 L 14 mm		
Color	**Grain**	**Ref.**
Yellow	240	40 MF024 00
Green	320	40 MF032 00
Orange	400	40 MF040 00
Pink	600	40 MF060 00
Ochre	800	40 MF080 00
Brown	1000	40 MF100 00
Blue	1500	40 MF150 00



Spherical abrasive finishing grinders

10 pieces

Shaft: Ø 3 mm - Length: 40 mm - Ø 30 L 17 mm		
Color	**Grain**	**Ref.**
Brown	Extra Coarse	40 MF302 00
Brown	Coarse	40 MF303 00
Brown	Medium	40 MF305 00
Brown	Fine	40 MF307 00
Green	No grain	40 MF300 00



Wooden lapping rods hard/soft

SERIES 9908

10 pieces

	Hard	Soft
mm	**Ref.**	**Ref.**
3 x 3 x 150	99 08510 00	99 08610 00
4,5 x 4,5 x 150	99 08511 00	99 08611 00
6,5 x 6,5 x 150	99 08512 00	99 08612 00
3 x 7 x 150	99 08513 00	99 08613 00
8 x 12,5 x 150	99 08514 00	99 08614 00
8 x 19 x 150	99 08515 00	99 08615 00
Ø 3 x 150	99 08530 00	99 08630 00
Ø 4,5 x 150	99 08531 00	99 08631 00
Ø 6,5 x 150	99 08532 00	99 08632 00



Rectangular rubber rods 1 piece

Grain	Dim. (mm)	Ref.
40	25 x 9,5 x 150	98 61041 00
90	25 x 9,5 x 150	98 61091 00
120	25 x 9,5 x 150	98 61121 00
240	25 x 9,5 x 150	98 61241 00





Ceramic stones

1 piece

			Standard	High resistance
Dim. (mm)	Grain	Color	Ref.	Ref.
0,5 x 4 x 100	220	Dark brown	40 US361 00	
	300	Light brown	40 US362 00	
	400	Orange	40 US363 00	
	600	Black	40 US364 00	
	800	Blue	40 US365 00	
	1000	White	40 US366 00	
	1200	Red	40 US367 00	
1 x 4 x 100	220	Dark brown	40 US311 00	40 US411 00
	300	Light brown	40 US312 00	
	400	Orange	40 US313 00	
	600	Black	40 US314 00	
	800	Blue	40 US315 00	40 US415 00
	1000	White	40 US316 00	
	1200	Red	40 US317 00	40 US417 00
1 x 6 x 100	220	Dark brown	40 US321 00	40 US421 00
	300	Light brown	40 US322 00	
	400	Orange	40 US323 00	
	600	Black	40 US324 00	
	800	Blue	40 US325 00	40 US425 00
	1000	White	40 US326 00	
	1200	Red	40 US327 00	40 US427 00
1 x 10 x 100	220	Dark brown	40 US331 00	
	300	Light brown	40 US332 00	
	400	Orange	40 US333 00	
	600	Black	40 US334 00	
	800	Blue	40 US335 00	40 US435 00
	1 000	White	40 US336 00	
	1 200	Red	40 US337 00	40 US437 00
Ø 3 x 50	220	Grey	40 US341 00	
	300	Light brown	40 US342 00	
	400	Orange	40 US343 00	
	600	Black	40 US344 00	
	800	Blue	40 US345 00	
	1000	White	40 US346 00	
	1200	Red	40 US347 00	
Ø 3 x 100	220	Grey	40 US351 00	
	300	Light brown	40 US352 00	
	400	Orange	40 US353 00	
	600	Black	40 US354 00	
	800	Blue	40 US355 00	
	1000	White	40 US356 00	
	1200	Red	40 US357 00	

Ceramic brushes

Enable careful removal of errors without damage to reaming.



1 piece

Shaft: Ø 3 mm		
Type	**Dim. (mm)**	**Ref.**
Cross-Hole	Ø 3,5 x 50 x 120	40 BR030 00
Cross-Hole	Ø 5 x 50 x 120	40 BR057 00
White grain 1000	Ø 5 x 20	40 BR055 00
Red grain 1000	Ø 5 x 20	40 BR056 00

Sulphur stones

SERIES 570



12 pieces

Dim. (mm)	Grain	Ref.
6 x 6 x 150	120	98 57121 00
	150	98 57151 00
	180	98 57181 00
	220	98 57221 00
	320	98 57321 00
	400	98 57401 00
	600	98 57601 00
10 x 10 x 150	120	98 57122 00
	150	98 57152 00
	180	98 57182 00
	220	98 57222 00
	320	98 57322 00
	400	98 57402 00
	600	98 57602 00
13 x 13 x 150	180	98 57183 00
	220	98 57223 00
	320	98 57323 00
	400	98 57403 00

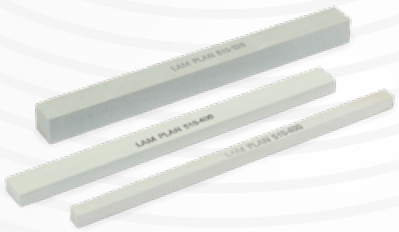
Graphite stones

SERIES 560



5 pieces

Dim. (mm)	Grain	Ref.
6 x 6 x 150	600	98 56601 00
	800	98 56801 00
	1 000	98 56001 00
10 x 10 x 150	600	98 56602 00
	800	98 56802 00
	1 000	98 56002 00
13 x 13 x 150	600	98 56603 00
	800	98 56803 00
	1 000	98 56003 00



Abrasive stones

SERIES 510 - SIC

Abrasive stones with silicon carbide based soft bonding material, for finishing treated steel tools.

12 pieces

Dim. (mm)	Grain	Ref.
6 x 6 x 150	240	98 51241 00
	320	98 51321 00
	400	98 51401 00
	600	98 51601 00
3 x 13 x 150	240	98 51243 00
	320	98 51323 00
	400	98 51403 00
	600	98 51603 00
6 x 13 x 150	240	98 51242 00
	320	98 51322 00
	400	98 51402 00
	600	98 51602 00
13 x 13 x 150	240	98 51244 00
	320	98 51324 00
	400	98 51404 00
	600	98 51604 00



SERIES 520 - AL_2O_3

Resin and aluminium oxide based abrasive stones, recommended for machining and finishing regular and irregular shaped tools following electro-erosion.

12 pieces

Dim. (mm)	Grain	Ref.
3 x 6 x 150	120	98 52121 00
	180	98 52181 00
	320	98 52321 00
	400	98 52401 00
	600	98 52601 00
3 x 13 x 150	120	98 52125 00
	180	98 52185 00
	320	98 52325 00
	400	98 52405 00
	600	98 52605 00
6 x 6 x 150	120	98 52122 00
	180	98 52182 00
	320	98 52322 00
	400	98 52402 00
	600	98 52602 00
6 x 13 x 150	120	98 52123 00
	180	98 52183 00
	320	98 52323 00
	400	98 52403 00
	600	98 52603 00
10 x 10 x 150	120	98 52124 00
	180	98 52184 00
	320	98 52324 00
	400	98 52404 00
	600	98 52604 00

Abrasive stones

SERIES 530 - AL_2O_3

Resin and aluminium oxide based abrasive stones, recommended for soft and medium-hard materials.



12 pieces

Dim. (mm)	Grain	Ref.
6 x 6 x 150	220	98 53221 00
	320	98 53321 00
	400	98 53401 00
	600	98 53601 00
10 x 10 x 150	220	98 53222 00
	320	98 53322 00
	400	98 53402 00
	600	98 53602 00
3 x 13 x 150	220	98 53223 00
	320	98 53323 00
	400	98 53403 00
	600	98 53603 00
6 x 13 x 150	220	98 53224 00
	320	98 53324 00
	400	98 53404 00
	600	98 53604 00
4 x 4 x 100	220	98 53225 00
	320	98 53325 00
	400	98 53405 00
	600	98 53605 00

DEGUSSIT® stones



1 piece

Dim. (mm)	Shape	Grain	Ref.
100 x 10	△	Medium	98 D1015 00
100 x 10	□	Medium	98 D1025 00
100 x 8 x 6	▭	Fine	98 D1032 00
100 x 10	⌓	Big	98 D1047 00
100 x 6	○	Medium	98 D1055 00
Kit 5 pieces (1 piece of each ref. above)			98 D1000 00
100 x 6 x 3	▭	Medium	98 D1032 10

Honing oil



1 piece

Qty.	Ref.
500 cc.	98 70000 00

Stone-holders



1 piece

Type	Dim. (mm)	Qty.	Ref.
Metal	1 x 4	1	40 US099 00
Metal	1 x 6	1	40 US098 00
Metal	1 x 10	1	40 US097 00
Metal	Ø 3 mm	1	40 US096 00
Metal - Set of 3	1 x 4, 1 x 6, 1 x 10	1	40 US090 00
Black nylon	6 x 6 à 3 x 13	1	40 US093 00
Black nylon	6 x 13	1	40 US094 00

NEW

Abrasive stone kit n°1

SERIES 510

Composition	Ref.
14 pieces	98 11000 00

KIT COMPONENTS

Dim. (mm)	Type	Grain	Qty.	Ref.
6 x 6 x 150	510	240	2	98 51241 00
	510	320	2	98 51321 00
	510	400	2	98 51401 00
6 x 13 x 150	510	240	2	98 51242 00
	510	320	2	98 51322 00
	510	400	2	98 51402 00
	510	600	1	98 51602 00
	540	800	1	98 54803 00

Abrasive stone kit n°2

SERIES 530

Composition	Ref.
14 pieces	98 21000 00

KIT COMPONENTS

Dim. (mm)	Type	Grain	Qty.	Ref.
6 x 6 x 150	530	220	2	98 53221 00
	530	320	2	98 53321 00
	530	400	2	98 53401 00
6 x 13 x 150	530	220	2	98 53224 00
	530	320	2	98 53324 00
	530	400	2	98 53404 00
	530	600	2	98 53604 00

Abrasive stone kit n°4

SERIES 520-550

Composition	Ref.
12 pieces	98 41000 00

KIT COMPONENTS

Dim. (mm)	Type	Grain	Qty.	Ref.
6 x 6 x 150	550	90	1	98 55091 00
	520	120	1	98 52122 00
	520	180	1	98 52182 00
	550	220	1	98 55221 00
	520	320	1	98 55321 00
	550	600	1	98 55601 00
3 x 6 x 150	550	90	1	98 55093 00
	520	120	1	98 52121 00
	520	180	1	98 52181 00
	550	220	1	98 55223 00
	520	320	1	98 52321 00
	550	600	1	98 55603 00

CONSUMABLES

Diamond abrasives, paste, liquid and gel abrasive preparations.
Lubricating fluids for oil or water base.

LUBRICATING FLUIDS

Bio DIAMANT® Pulmatic liquids

Used to obtain good distribution of diamond abrasive when polishing large surfaces.
Rechargeable pack, non-aerosol.

SERIES 310 - 75 g

1 piece

Alcohol based monocristaline		
Type	**µm**	**Ref.**
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



SERIES 320 P - 75 g

1 piece

Alcohol based polycristaline		
Type	**µm**	**Ref.**
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% discount from 3 products of the same reference





Bio DIAMANT® Gels

The Bio DIAMANT® formula ensures even distribution of abrasive film, as well as excellent adhesion to the item being polished.

Ready to use, this gel is ideal for maintenance polishing and produces an excellent shine. Very fast diamond action.

SERIES M.M.530/540 - 20 g

1 piece

Type	µm	Ref.
M.M.540	1/10	02 MM548 10
M.M.540	1/4	02 MM547 10
M.M.540	3/4	02 MM546 10
M.M.540	1	02 MM545 10
M.M.540	2	02 MM544 10
M.M.540	3	02 MM543 10
M.M.540	6	02 MM542 10
M.M.540	9	02 MM541 10
M.M.530	10	02 MM533 10
M.M.530	15	02 MM532 10
M.M.530	30	02 MM531 10
M.M.530	45	02 MM530 10

SERIES M.M.30/40 - 100 g

1 piece

Suitable for polishing large areas

Type	µm	Ref.
M.M.40	3/4	02 MM046 00
M.M.40	1	02 MM045 00
M.M.40	2	02 MM044 00
M.M.40	3	02 MM043 00
M.M.40	6	02 MM042 00
M.M.40	9	02 MM041 00
M.M.30	10	02 MM033 00
M.M.30	15	02 MM032 00
M.M.30	30	02 MM031 00
M.M.30	45	02 MM030 00

5% discount from 3 products of the same reference

Bio DIAMANT® Pastes

Bio DIAMANT® products present no risk of toxicity or noxiousness to the user's health.

During the development of Bio DIAMANT® products, chemical components are selected exclusively from substances classed as non-dangerous complying with REACH regulations (relating to the packaging and labelling of dangerous substances and preparations causing skin irritation).



Environmental compliance

Our Bio DIAMANT® products are biodegradable.
Safety data is available for all products complying with REACH regulations

Identification

You can identify the series and therefore the solubility, Grit texture and concentration of each Bio DIAMANT® paste according the the type (e.g. 6 103).

Series 100 water soluble.

Series 210 oil soluble.

Example of type identification

Paste type	Grit texture	Series	Concentration
6 103	6 microns	100	3

BIO DIAMANT® pastes SERIES 210 - 10 g

Very high performance diamond paste for polishing hard and extra hard materials.
Available in a wide range of grain sizes from 1 to 90 µm. Does not contain water, protects polished surfaces from corrosion. Cleaning is done with water + 742 detergent or with a solvent such as Stanol.

1 piece

**High yielding abrasives for polishing hard and extra-hard materials.
Fluidity enables use without lubricating fluid.**

Type	µm	Ref.
1 213	1	01 01213 00
3 213	3	01 03213 00
6 213	6	01 06213 00
8 213	8	01 08213 00
14 213	14	01 14213 00
25 213	25	01 25213 00
40 213	40	01 40213 00
60 213	60	01 60213 00
90 213	90	01 90213 00

5% discount from 3 products of the same reference



High performance

Oil soluble



Extreme polish

Easy to clean with water

Available in different concentrations

BIO DIAMANT® pastes SERIES 100 - 10 g

Diamond paste for finish polishing of all materials.
Suitable for polishing stages up to optical polishing on soft substrates.

Available in different concentrations: 101 and 102 low, 103 standard, 105 high.
BIO DIAMANT® SERIES 100 paste is available in a wide range of grit sizes down to very small ones and requires the use of M.M.712 - WS water based fluid. Cleaning is done with water + lye 742 or alcohol.

All stages up to optical polishing possible.		
Type	**µm**	**Ref.**
010 103	1/10	01 99103 00
025 102	1/4	01 97102 00
025 103	1/4	01 97103 00
1 103	1	01 01103 00
1 105	1	01 01105 00
2 103	2	01 02103 00
2 105	2	01 02105 00
3 102	3	01 03102 00
3 103	3	01 03103 00
3 105	3	01 03105 00
6 101	6	01 06101 00
6 102	6	01 06102 00
6 103	6	01 06103 00
6 105	6	01 06105 00
8 102	8	01 08102 00
8 103	8	01 08103 00
8 105	8	01 08105 00
14 101	14	01 14101 00
14 102	14	01 14102 00
14 103	14	01 14103 00
14 105	14	01 14105 00

5% discount from 3 products of the same reference



Can be used on hot surfaces up to 170°C

BIO DIAMANT® pastes 205S - 10 g

High performance diamond paste for mould polishing.
Excellent adhesion to material surfaces, very good temperature resistance, can be used on hot surfaces up to 170°C.
Due to its lubricating properties, no lubricant is required. Does not contain water, protects polished surfaces from corrosion. Cleaning is done with water + 742 detergent or with a solvent such as Stanol.

1 piece

Can be used at high temperature		
Type	**µm**	**Ref.**
1.205S	1	01 01205S 00
3.205S	3	01 03205S 00
6.205S	6	01 06205S 00
8.205S	8	01 08205S 00
14.205S	14	01 14205S 00

5% discount from 3 products of the same reference

BIO DIAMANT® pastes POLILAM MS - 10 g

Universal diamond paste for lapping and polishing of metal parts.
Bio DIAMANT® POLILAM MS abrasive paste is made from high purity, narrow-gauge single crystal diamond. The concentration of abrasive is of the standard type, and the thick, creamy consistency of the abrasive ensures good bonding to the work surface.

Its fatty bond allows it to be used pure or with M.M.705 - OS oil-based fluid. contains no water, protects polished surfaces from corrosion.
Cleaning is done with water + 742 detergent or with a solvent such as Stanol.



Economical and versatile

1 piece

Universal bonding paste.		
Type	µm	Ref.
1 MS	1	01 010MS 00
3 MS	3	01 030MS 00
6 MS	6	01 060MS 00
8 MS	8	01 080MS 00
14 MS	14	01 140MS 00
25 MS	25	01 250MS 00
45 MS	45	01 450MS 00
60 MS	60	01 600MS 00
90 MS	90	01 900MS 00

5% discount from 3 products of the same reference

BIO DIAMANT® pastes DIATOOL® BX

Diamond paste for roughing, polishing on hard steels and cermet.
Used for high pressure applications, prevents seizing, requires the use of M.M.705 - OS oil-based fluid, contains no water, protects polished surfaces from corrosion. Cleaning is done with water + detergent 742 or with a solvent like Stanol.



High pressure

Available in 10 and 20 g

1 piece

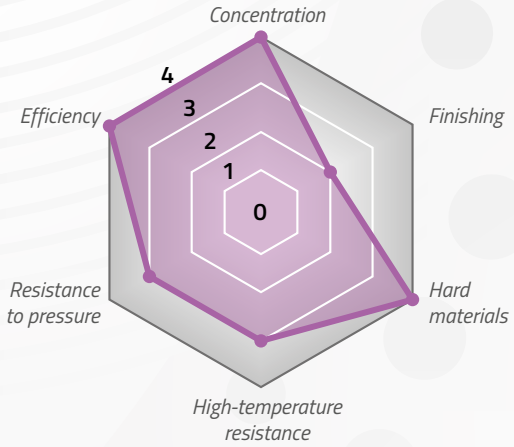
		10 g	20 g
Type	µm	Ref.	Ref.
DIATOOL® BX1	1	01 01DBX 00	01 01DBX 20
DIATOOL® BX3	3	01 03DBX 00	01 03DBX 20
DIATOOL® BX6	6	01 06DBX 00	01 06DBX 20
DIATOOL® BX8	8	01 08DBX 00	01 08DBX 20
DIATOOL® BX14	14	01 14DBX 00	01 14DBX 20
DIATOOL® BX25	25	01 25DBX 00	01 25DBX 20
DIATOOL® BX40	40	01 40DBX 00	01 40DBX 20
DIATOOL® BX60	60	01 60DBX 00	01 60DBX 20

5% discount from 3 products of the same reference

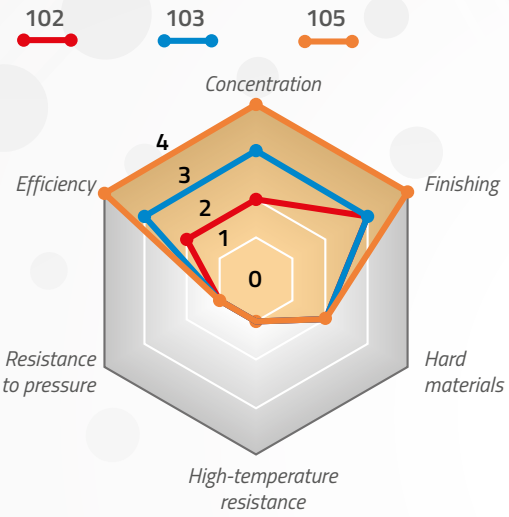
Selection of a BIO DIAMANT® abrasive paste

Depending on your criteria, the diagrams below will help you to choose the most suitable diamond paste.

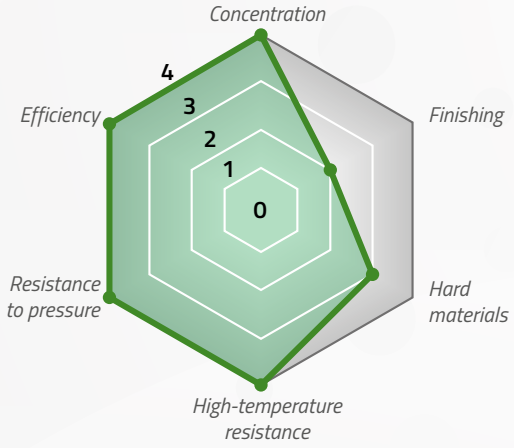
BIO DIAMANT® PASTES SERIE 210



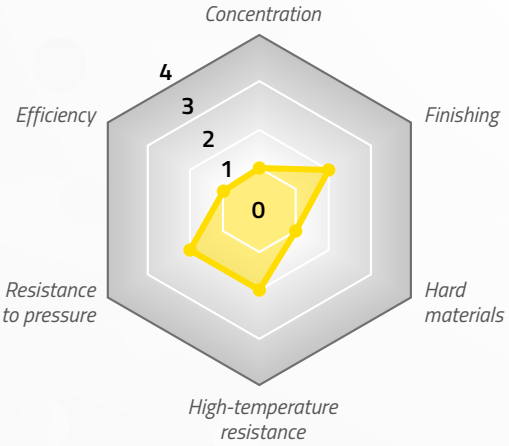
BIO DIAMANT® PASTES SERIE 100



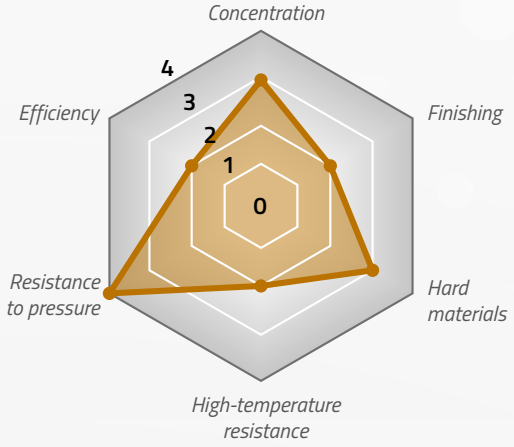
BIO DIAMANT® PASTES 205S



BIO DIAMANT® PASTES POLILAM MS



BIO DIAMANT® PASTES DIATOOL® BX



LUBRICATING FLUIDS

Lubricating fluids M.M.

SERIES M.M.705 - OS (Oil Soluble)

Lubricating fluid for use with series 210, MS and Diatool® diamond pastes. Ready to use it ensures excellent paste dispersion and optimises cutting power. Easily cleanable with 742 detergent or Stanol.

1 piece

Type	Packaging	Ref.
M.M.705	1 litre	07 MM705 30
M.M.705	Pulmatic 350 cc	07 MM705 50

SERIES M.M.712 - WS (Water Soluble)

Aqueous lubricating fluid for polishing applications. This fluid is recommended for use with Bio DIAMANT® 100 series pastes. Ready to use, its specific formula limits the heating of the supports and facilitates the cleaning of the parts after each cycle of work. Easily cleanable with 742 detergent.

1 piece

Type	Packaging	Ref.
M.M.712	1 litre	07 MM712 30
M.M.712	Pulmatic 350 cc	07 MM712 50



GENERAL TERMS AND CONDITIONS OF SALE

1. Application of the General Terms and Conditions of Sale

Any order placed with LAM PLAN 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 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.

LAM PLAN'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, 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 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'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.

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 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 reserving the right to claim additional compensation upon proof of recovery costs exceeding the fixed fee.

5. Retention of Title

LAM PLAN 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.

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 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 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'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 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's warehouses are the designated place of delivery.

This rule shall not be altered by LAM PLAN's partial or full assumption of transportation costs, in which case LAM PLAN 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 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 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 and is subject to its acceptance.

Cancellation or withdrawal fees may be charged, at LAM PLAN'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'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 are guaranteed against manufacturing defects for one year from the invoice date.

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

LAM PLAN 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 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's prior written authorization.

LAM PLAN provides no warranty for:

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

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

LAM PLAN'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 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 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'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.

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