

Mechanical seals & Bearings

Systematic Manufacture and Maintenance



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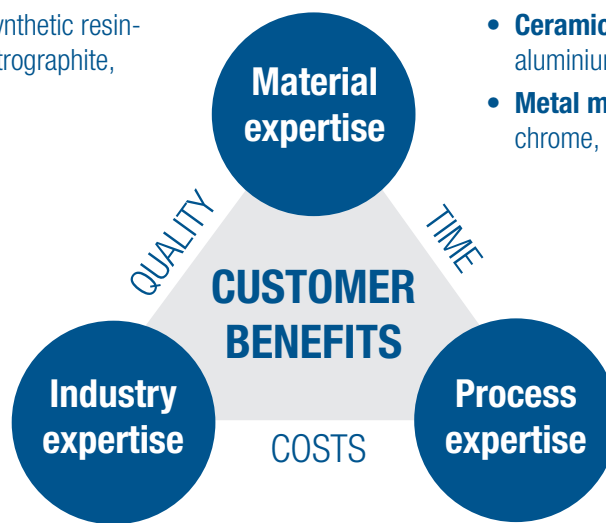
Systematic Manufacture and Maintenance

Our Passion - Simply Perfect Surfaces

- **Carbon** – carbon graphite – synthetic resin- or antimony-impregnated, electrographite, synthetic resin-bonded carbon
- **Plastic** – PTFE

- **Manufacturer and Service Centres**
- **Maintenance companies for chemical and power plants and systems engineering**

List of references on request.



- **Ceramic materials** – silicon carbide, aluminium oxide, tungsten carbide
- **Metal materials** – stainless steel, cast chrome, special materials
- **Manufacture of flat, concave or convex surfaces and to produce emergency operating features**

Custom and process-oriented system packages



Production in only **one** working step!

Application Centre

for Process Development, Training and Workshops

The Application Centre ensures your technological advantage

Our Application Centre specialists carry out support and development work to optimise existing processes and to push new products until they are ready for market. When doing this, we focus on implementing innovative ideas to guarantee sustainable development quality.

Benefits of the Centre

Pooling of expertise

Faster development times

Solution-oriented workshops

Process optimisation

User training courses

We share the expertise derived from process development with users. In training courses, we provide theoretical knowledge as well as solving user-oriented exercises.

Job lapping of pilot series and small batches

For customers with their own in-house lapping and polishing process, we offer our expertise as subcontracting.

Process development

As a system supplier, we don't just offer products to our customers; rather, we also offer the necessary process development based on the previous machining step up to the required surface condition.

STEP 1 Customer enquiry

Send us your request with the necessary information about the machining that you want to carry out: roughness, flatness, technical or visual surface, etc.

STEP 2 Consulting

We will talk through the overall project with you and advise you on how to achieve your objective as economically as possible.

STEP 3 Sample processing

Based on the manufacturing concept that we drew up, we carry out sample processing to allow you to see for yourself how convincing the results are. While carrying out sample processing, we develop the best possible machining process.

STEP 4 Machine design

The machine design is based on the best possible machining process, quality and costs and the machining time.

STEP 5 Customer Care and Service

To guarantee the best possible process flow, we train your staff and our competent team is available to them at any time if there are any queries or problems.

The 10 USP's of the Submikron system

- + **Vibration-free stainless steel welded structure**
for a long-lasting machine concept
- + **Reinforced support wheel bearing**
for the highest possible utilisation of the pneumatic press-on weights
- + **Driven yokes**
for enhanced reliability
- + **Siemens S7 system with stored program memory locations**
for machining different components and processes using only one machine
- + **Water-cooled lapping plate with centring screw**
for setting the wheel geometry
- + **Base plate made from stainless steel with a drainage channel for lapping medium in conjunction with an easy-clean system**
to provide optimum care and cleaning of the machine
- + **Plug & Run system**
to implement a modular system
- + **Modular system**
for customized machine solutions
- + **In-house manufacturing of composite, grinding wheels and lapping plates**
for customized process development and competent process support
- + **In-house manufacturing of operating materials**
for cost-effective production



ELAP Plug & Run-System



Benefits of composite plates

1. Reduced machining time due to increased abrasion
2. Less prone to scratching
3. Better surface precision
4. Easier dressing and re-grooving of plates
5. Clean machining process versus conventional lapping processes

ECO LAP Smart-series



Integrated dosing system for ECO LAP Smart

Particularly suitable for dosing diamond and fluid, but also for conventional lapping media such as silicon carbide suspension. The dosing is controlled via the integrated Siemens LOGO! control unit of the machine.

- **Number of dosing media:** Two dosing media, two glass containers of one litre
- **Mixing:** A mixer for diamond liquid
- **Conveying:** A dosing arm for two lapping media conveys the media with two single-channel hose pumps via two articulated hoses onto the lapping plate.
- **Advantage:** No settling, no aerosols, high-precision dosing

Model	Ø of working wheels	Inner Ø of conditioning ring
ECO LAP Smart 15-S	380 (15")	140
ECO LAP Smart 20-S	500	200
ECO LAP Smart 24-S	610 (24")	248

ELAP Range

Basic machines for fine-grinding, lapping and polishing

ELAP 400



Model	Ø of working wheels	Inner Ø of conditioning ring
ELAP 400-38	380 (15")	140
ELAP 400-40	400	160
ELAP 400-50	500	200

ELAP 700



Model	Ø of working wheels	Inner Ø of conditioning ring
ELAP 700-61	610 (24")	248
ELAP 700-70	700	275

ELAP 1000



Model	Ø of working wheels	Inner Ø of conditioning ring
ELAP 1000-91	914 (36")	368
ELAP 1000-100	1000	406
ELAP 1000-120	1200	480

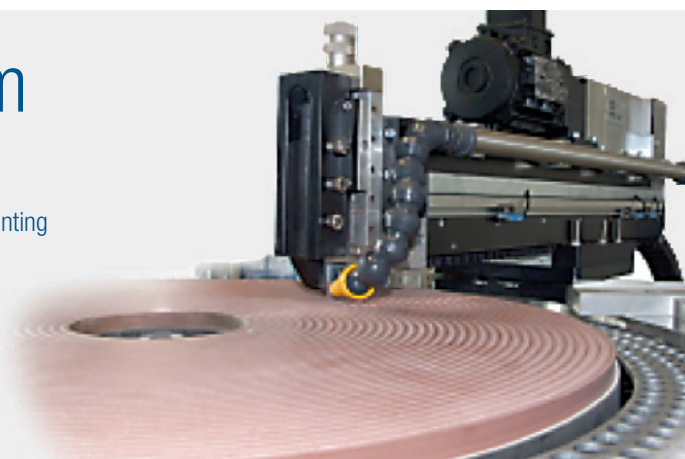
ELAP 1200



Model	Ø of working wheels	Inner Ø of conditioning ring
ELAP 1200-120	1200	480
ELAP 1200-150	1500	600

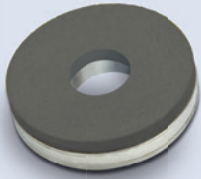
LPS Dressing System

- LPS – Lapping Plate Profiling System
- Grooving and re-grooving of lapping plates without dismounting
- Control of the flatness of lapping plates
- (Re-)establishing of flat, convex and concave plate geometries
- Controlled plate by the plc
- Precision of < 10 µm



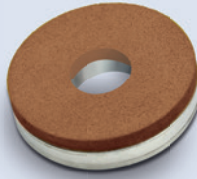
Composite plates for lapping and polishing plates

CP-2 High removal



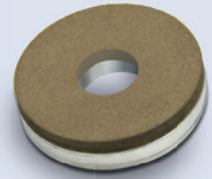
- Hard (86/87 Shore D)
- For rough machining
- Fast cutting with metal materials
- Very good flatness
- Very high tool life
- Alternative to cast iron plates
- For pre-processing severely warped workpieces

CP-3 High finishing



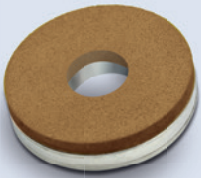
- Medium hard (85 Shore D)
- One-step roughing and finishing
- Recommended for metal, ceramic, etc.
- Medium to fine diamond grit

CP-4 Soft



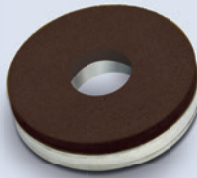
- Soft (79 Shore D)
- For machining carbon materials
- Achieves very good surface finishing results

CP-6 Super soft



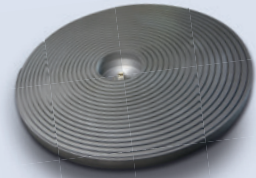
- Very soft (78 Shore D)
- For machining carbon materials
- Achieves very good surface finishing results with mechanical seals
- Recommended diamond grit 0-2 µm

CP-8 Allrounder



- Medium hard (85 Shore D)
- Recommended for machining any materials
- Ideal for a service centre with a wide variety of materials
- Very good surface finishing results for aluminium oxide and silicon carbide materials
- Recommended diamond grit 3-15 µm

Spiral groove



- Spiral-grooved
- Groove depth max. double the groove width
- Application: Strict evenness requirements, difficult to machine materials
- Benefits: Higher abrasion and improved flatness versus radial grooves

Dressing rings and tools

Cast iron conditioning ring



APPLICATION

- Cast iron lapping plate
- Composite lapping plate
- Bi-composite lapping plate

BENEFITS

- Good conditioning effect
- Cost-effective

Abrasive dressing ring



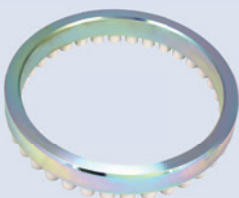
APPLICATION

- Fine grinding wheel
- Suitable for dressing all types of lapping plates

BENEFITS

- Various grit sizes to choose from (we will be glad to advise you on your particular application)

Ceramic conditioning ring



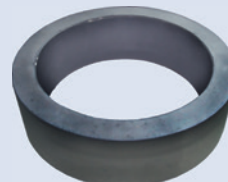
APPLICATION

- Steel lapping plate
- Composite lapping plate
- Bi-composite lapping plate

BENEFITS

- Lower lapping fluid consumption
- Less contamination due to abraded material

DAW1 dressing tool



- For all wheel diameters
- Abrasive ring for dressing all wheel types
- Coarse or fine

Lapping and polishing fluids | monocrystalline & polycrystalline



ECO Diamond

- Diamond suspension either water- or oil-based or as an emulsion
- Monocrystalline
- Used as a lapping and polishing fluid; can be used with ECO Fluid W/O
- High abrasion rates on hard to medium-hard materials
- Available as RB and MB
- Available grain size: 0-100 μm
- Trading unit: 1 litre and 5 litres
- Concentration: standard, medium, high, extra-high

BSM Premium Diamond

- Diamond suspension either water- or oil-based or as an emulsion
- Monocrystalline (precision classification)
- Used as a lapping and polishing fluid
- High abrasion rates while less prone to scratching
- Available grain size: 0-100 μm
- Trading unit: 1 litre and 5 litres

BSM Premium Diamond PC

- Diamond suspension either water- or oil-based or as an emulsion
- Polycrystalline
- Preferably used as a polishing fluid
- Less prone to scratching
- Available grain size: 0-30 μm
- Trading unit: 1 litre and 5 litres
- Concentration: standard, medium, high, extra-high

ECO Fluid

Reduces diamond fluid consumption

- Oil- or water-based
- Trading unit: 1 litre and 5 litres

Measuring technology

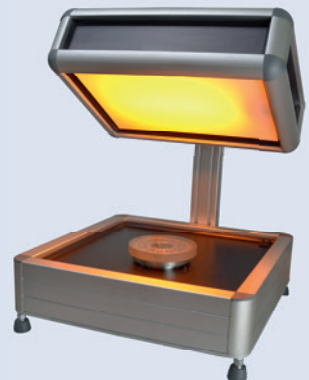
Monochromatic lamp (indirect)

- Monochromatic lamp for indirect testing of flatness
- Sodium vapour lamp
- 0.6-micrometre wavelength
- 1 x 35 W
- 230 V
- Max. size of workpieces that can be inspected: \varnothing 350 mm



Monochromatic lamp (direct)

- Monochromatic lamp for direct testing of flatness
- Sodium vapour lamp
- 0.6-micrometre wavelength
- 1 x 35 W
- 230 V
- Dimensions of measuring table: 360 x 360 mm



Optical flat

- Quartz glass
- \varnothing 25-500 mm
- Precision: 1/4 or 1/10 λ
- Flatness on one side or on two sides
- Special sizes on request



Flatness gauge

- Available for all plate sizes
- Digital gauge, measurement range 12.5 mm, resolution 0.001
- For testing the flatness of lapping plates



The product range

for proprietary and third-party products

- Automation and Industry 4.0 solutions
- Pull-out table
- Dressing rings
- Aluminium oxide, boron carbide and silicon carbide powder
- Bronze, copper and tin lapping plates
- Cerium oxide polishing fluids
- Composite and bi-composite lapping plates
- Diamond fluid and powder
- Diamond and CBN grinding wheels
- Dosing systems
- Fine grinding dressing rings
- Fine grinding wheels
- Ceramic pellets
- Customized lapping and polishing systems
- Lapping and polishing machines of up to Ø 4000 mm
- Lapping additives
- Lapping oils
- Polishing lapping plates
- Polishing paper and pads
- Cleaning liquids
- Ultrasonic cleaning equipment