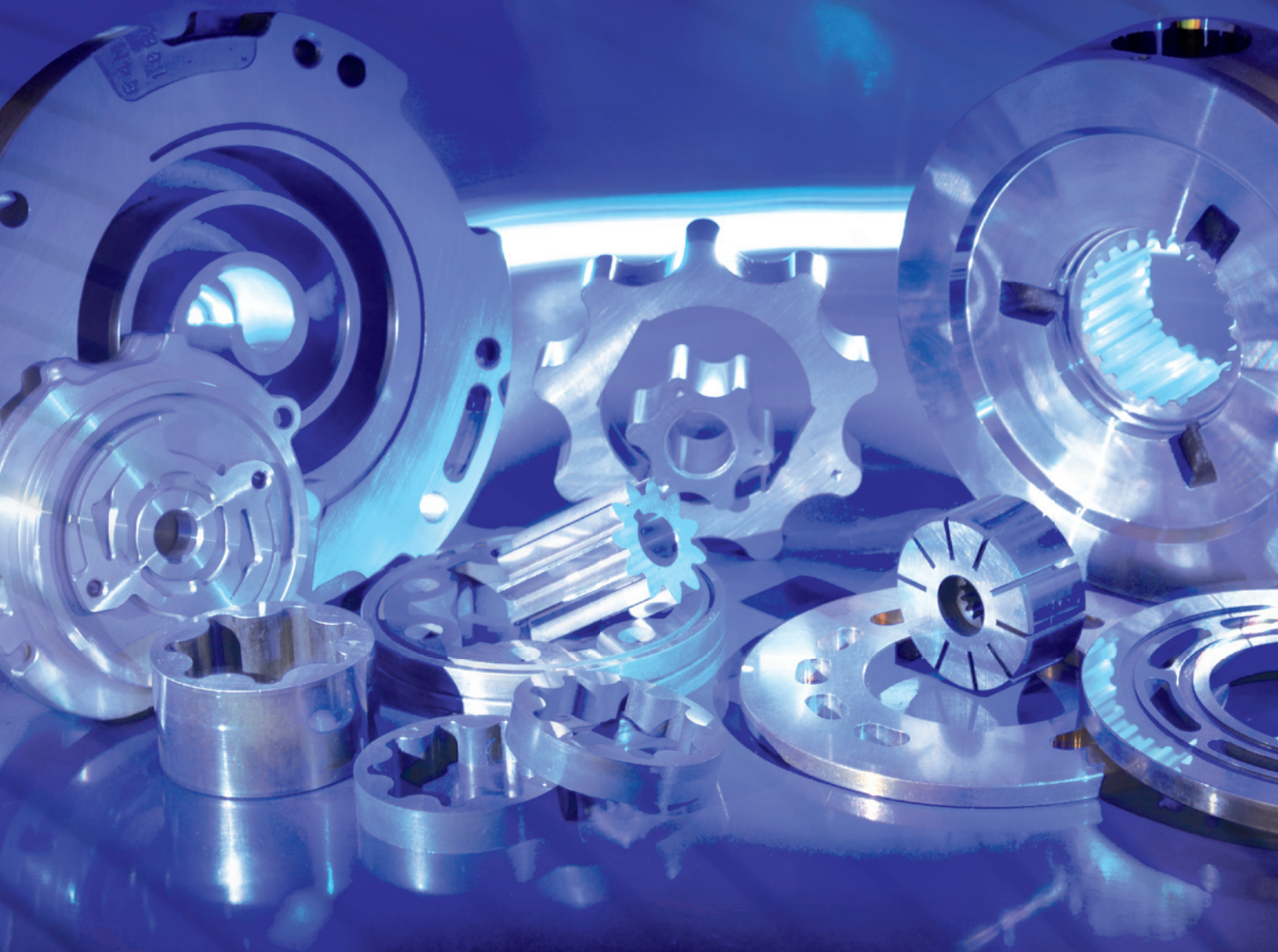


Hydraulics & compressor technology

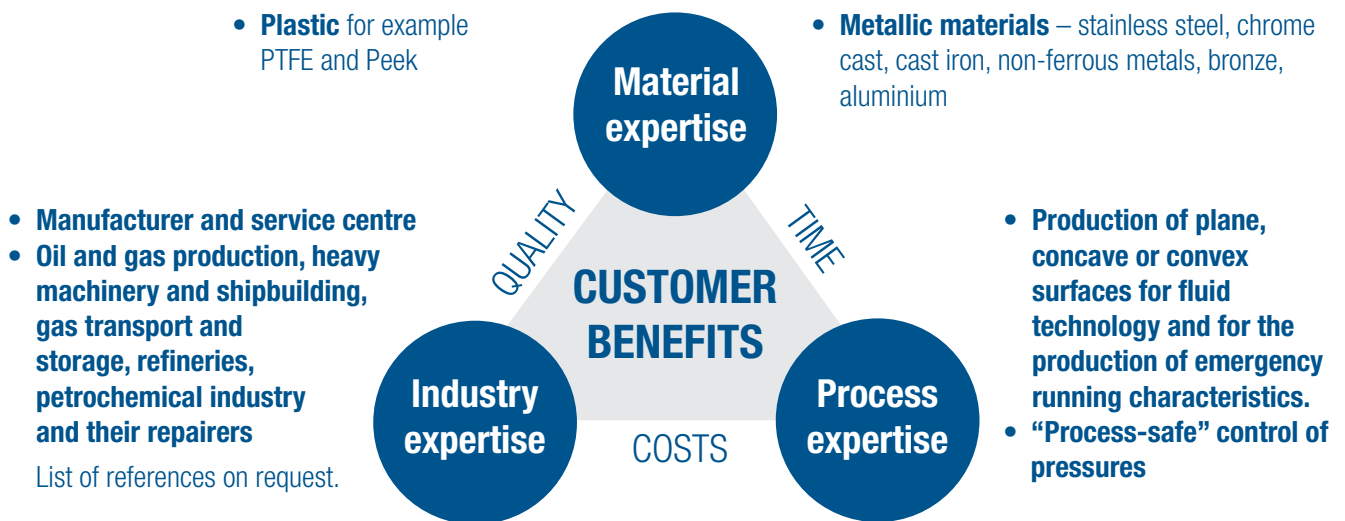
Systematic Manufacture and Maintenance



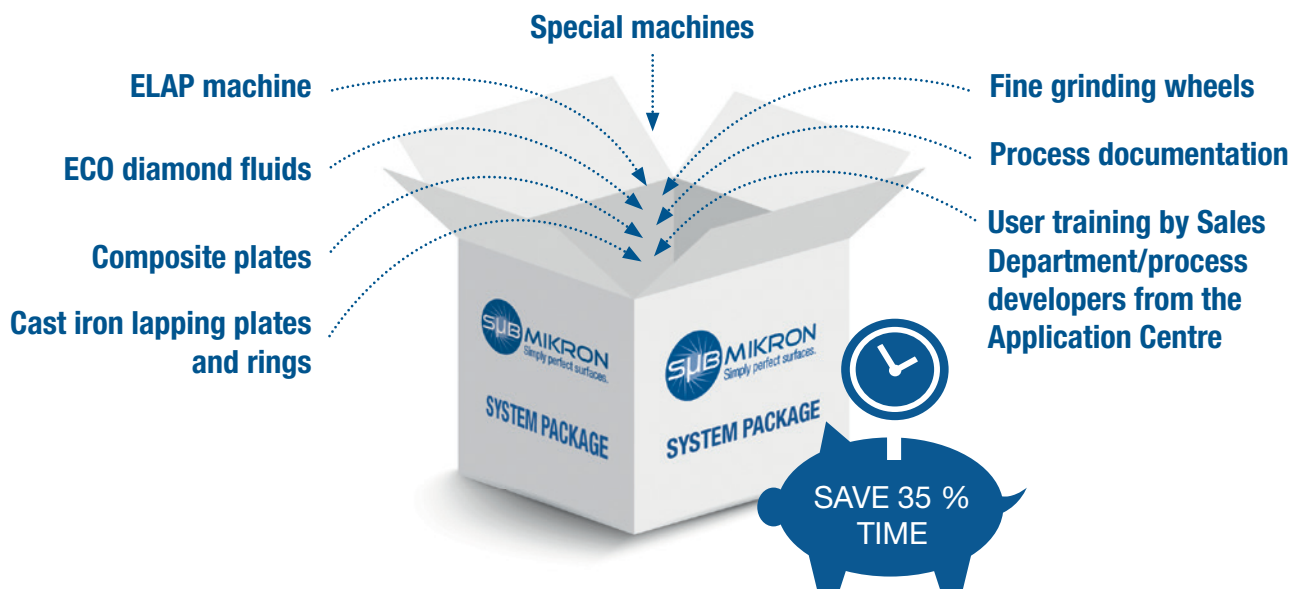
Hydraulics & compressor technology

Systematic Manufacture and Maintenance

Our Passion - Simply Perfect Surfaces



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

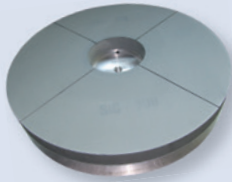
The machine design is based on the best possible machining process, quality and costs and the machining time.

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.

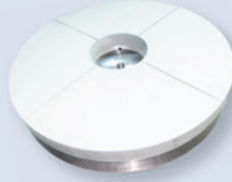
Composite Poli-Lapping plates

Silicon carbide wheels



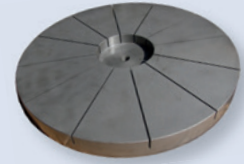
- Up to wheel Ø 1200 mm
- Grain sizes 80-1500 according to FEPA table
- Possible grooves: without grooves, radial groove
- Use with Al₂O₃ dressing ring

Aluminium oxide wheels



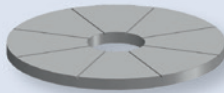
- Up to wheel Ø 1200 mm
- Grain sizes 80-1500 according to FEPA table
- Possible grooves: without grooves, radial groove
- Use with SIC dressing ring

Cast iron lapping plates



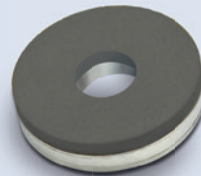
- Void-free, homogenous basic structure
- Uniform graphite formation in shape and size and small differences in hardness over the entire cross-section
- Various degrees of cast hardness with lamellar and modular graphite
- Wheel Ø up to 2200 mm
- Possible grooves: without grooves, radial groove, wafer groove, spiral groove

Radial groove



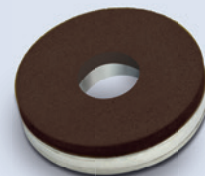
- Radial (star-shaped) groove
- Groove depth max. 40 mm
- Application: standard products
- Cost-effective, higher stock removal than with wheels without grooves, better flatness

CP-2 High removal



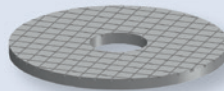
- Hard (86/87 Shore D)
- For rough machining
- Fast cutting with metal materials
- Very good flatness
- Very high tool life
- Alternative to cast iron plates
- For pre-processing severely warped workpieces

CP-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

Waffle groove



- Waffle groove
- Groove depth max. 40 mm
- Application: Double-sided lapping machine, high flatness requirements, difficult to machine materials
- Cost-effective, higher stock removal than with wheels without grooves, better flatness

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



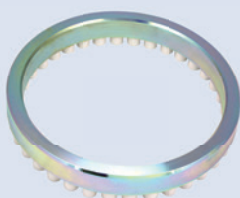
APPLICATION

- 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



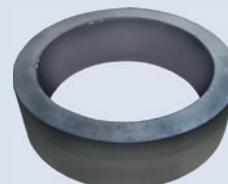
APPLICATION

- 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

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
- + Control Siemens S7 with stored programme 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 Range

Basic machines for fine-grinding, lapping and polishing

ECO LAP 400



Model	Ø of working wheels	Inner Ø of conditioning ring
ECO LAP 400-38	380 (15")	140
ECO LAP 400-40	400	160

ECO LAP 700



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

Hydro LAP 400



Model	Ø of working wheels	Inner Ø of conditioning ring
Hydro LAP 400	380 (15")	140

ELAP Range

Basic machines for fine-grinding, lapping and polishing

ELAP 400



ELAP 700



ELAP 1000



ELAP 1200



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 700-61	610 (24")	248
ELAP 700-70	700	275

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 1200-120	1200	480
ELAP 1200-150	1500	600

BSM D Series

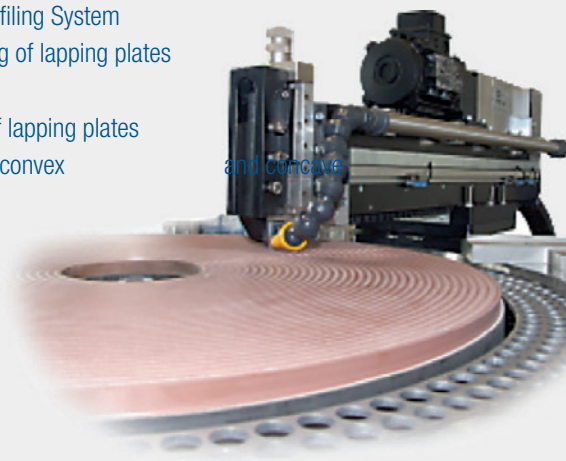
BSM D400



Model	Ø of working wheels	Rotor wheel Ø
BSM D400	380 (15")	165

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



Lapping and polishing fluids | monocrystalline & polycrystalline

ECO Diamant



- 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

Lapping oils

- **ECO Fluid O** for use with ECO Diamond O
- **BSM Oil 20** Application BOR/SIC universal
- **BSM Oil 20+** Application BOR/SIC universal (+ additive)

Water-based additives

- **BSM W60 – Low viscosity**
For the production of aqueous lapping liquids; good corrosion protection and lubricating effect
- **BSM WZ – Medium viscosity**
For the production of aqueous lapping liquids; good floating properties
- **BSM WAQT – High viscosity**
For the production of aqueous lapping liquids; good lubricating effect

Container sizes: 1 litre, 5 litres, 60 litres, 200 litres.

Silicon carbide powder

- For the lapping of various materials
- Green or dark/grey
- Available grain sizes: see FEPA table
- Container size: 5 kg, 25 kg

Aluminium oxide powder

- Suitable for lapping and polishing
- Sharp-edged, cubic
- Available grain sizes: see FEPA table
- Container size: 5 kg, 25 kg

FEPA standard

FEPA F grain size	µm	94%value min. [µm]	3% value max. [µm]
F2000	1,2 ± 0,3	-	-
F1500	2 ± 0,4	-	-
F1200	3 ± 0,5	1	7
F1000	4,5 ± 0,8	1	10
F800	6,5 ± 1	2	14
F600	9,3 ± 1	3	19
F500	12,8 ± 1	5	25
F400	17,3 ± 1	8	32
F360	22,8 ± 1,5	12	40
F320	29,2 ± 1,5	17	49
F280	36,5 ± 1,5	22	59
F240	44,5 ± 2	28	70
F180	69	53	88
F150	82	63	105
F120	109	88	125
F100	129	106	150

Measuring

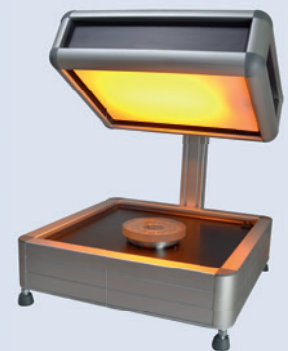
Monochromatic lamp (indirect)

- 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: Ø 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
- Ø 25-500 mm
- Precision: 1/4 or 1/10 lambda
- 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
 - Cast iron lapping plates and rings
 - 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
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