

The background of the entire page is a high-contrast, close-up photograph of a mechanical assembly, likely a transmission. It features several interlocking metal gears with finely finished teeth. The lighting is dramatic, with bright highlights on the metallic surfaces and deep shadows in the recesses, emphasizing the precision of the manufacturing process.

Precision Surface Finishing for Powertrain Components

PRECISION SURFACE FINISHING

Mirka's microfinishing solutions are used for cylindrical parts that require demanding tolerances in many engine applications. Today's manufacturers require extremely reliable and consistent processes from engine part producers. The long-term durability of crankshafts and camshafts must be reproducible and performance must be guaranteed in order to

pass the requirements of manufacturers and end users.

The right microfinishing technologies are critical in minimising wear and prolonging the service life of today's engine components. The optimised engine part finishing process ensures the desired performance of engines.

Stabilise the quality of precision components in the powertrain industry



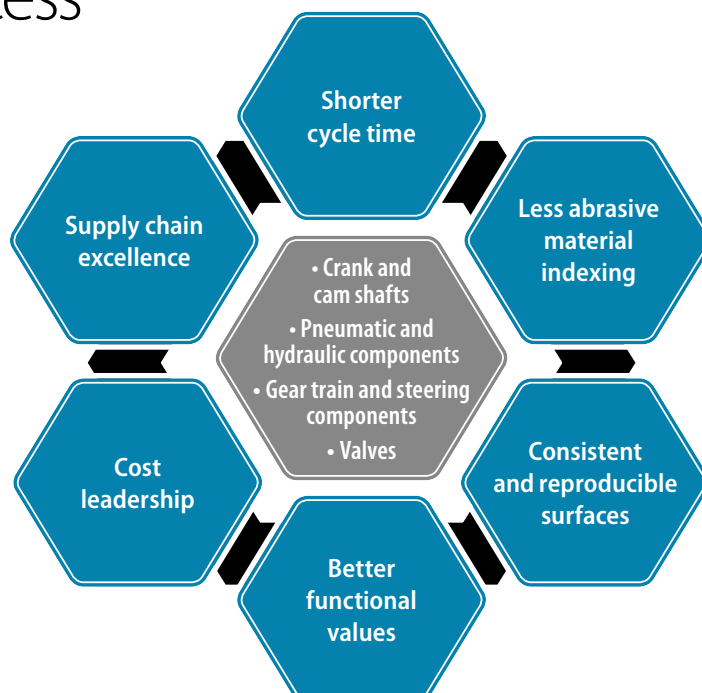
A consistent, high-quality finish provides a competitive advantage in the form of longer engine lifetime and more satisfied customers. Additional value is created through the improved process and increased productivity

- » Consistent engine part quality and performance
- » Cost-effective production process
- » Technology leadership
- » Uniform and reproducible surface structures



Microfinishing process with Mirka experts

- » Joint process development
- » Product customisation
- » Process optimisation
- » Total cost reduction
- » Better performing powertrain components
- » Improved tribological properties
- » Sustainability
- » Trouble shooting



PRODUCT RANGE

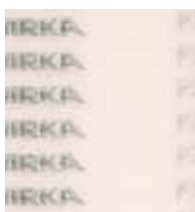
MI231C



Grain	Aluminium oxide with ceramic coating
Bonding	Low VOC resin system
Backing	5 MIL polyester film, DOT anti-slip treatment
Coating	Semi-open
Colour	Red
Grit range	15 µ (P1200), 20 µ (P800), 30 µ (P500), 40 µ (P360), 50 µ (P280), 60 µ (P220), 80 µ (P180)

» Microfinishing film product designed for rough and fine polishing of automotive powertrain components. The product is more aggressive than normal aluminium oxide films, but produces fine surface scratch pattern. Excellent and fast cut and resist to surface loading. Provides shorter cycle times.

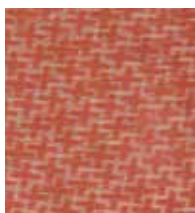
MI231A



Grain	Aluminium oxide
Bonding	Low VOC resin system
Backing	3 MIL / 5 MIL polyester film, DOT anti-slip treatment
Coating	Semi-open
Colour	White
Grit range	9 µ (P2500), 15 µ (P1200), 20 µ (P800), 30 µ (P500), 40 µ (P360)

» Microfinishing film product designed for fine polishing of automotive powertrain components. Good and fine cut and resist to surface loading. Produces consistently extra fine surface scratch pattern.

MI232C



Grain	Aluminium oxide with ceramic coating
Bonding	Low VOC resin system
Backing	5 MIL polyester film, DOT anti-slip treatment
Coating	Semi-open on a cross shaped coating pattern
Colour	Red
Grit range	20 µ (P800), 30 µ (P500), 40 µ (P360)

» Cross pattern (patented) microfinishing film product designed for rough polishing of automotive powertrain components. Due to its patented surface construction (tessellated) it is more aggressive and extra resist to surface loading.

Customised product dimensions:

- width: from 8 mm
- length: up to 300 meters
- rolls and endless belts
- various core types available

Also precision laser cut scalloped edge rolls for radius type crank journals.

- sharp & exact edge cut
- any pattern possible
- flexible deliveries
- less errors
- provides smooth cut and run



New state-of-the-art anti-slip backing



- Excellent friction in wet conditions against all shoe coatings (e.g. steel, diamond, PU)
- Less machine stops
- Less roll changes
- Optimised thickness
- Less material needed in stock



» Mirka's unique dot technology guarantees continuous and trouble free 24/7 production.

Mirka's unique and patented production technology gives valuable benefits to our industry partners



Mirka co-operates closely with leading machine producers and suppliers.

Mirka is a trusted industry partner that develops and delivers unique and innovative solutions to meet future needs in engine part finishing.

This patented technology provides opportunities to develop suitable materials for special industry needs and customer specific solutions.



Our unique, environmentally friendly hardening and flexo techniques give our products many valuable properties:

- » Grain distribution is very even and accurate, which guarantees the promised finishing results
- » Thanks to our technology you do not need to worry about grain build-up or unevenness of the material.

Our technology delivers more flexibility and enables us to tailor our products and respond quickly to changing customer and market needs.

- » Anti-loading properties
- » Cleaner polishing process
- » Improved functional values and tribological properties
- » Grit size optimisation

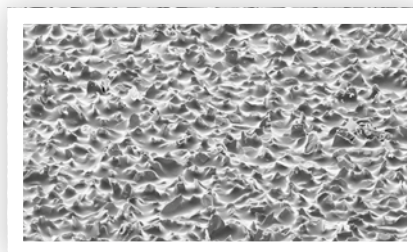
End customer benefits

- » Shorter lead time
- » Increased production capacity
- » Cost reduction
- » Higher quality / better performance of engine parts

Mirka MI231A 5 MIL 30 μ



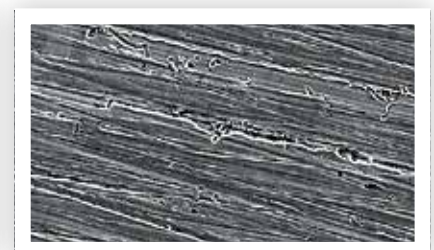
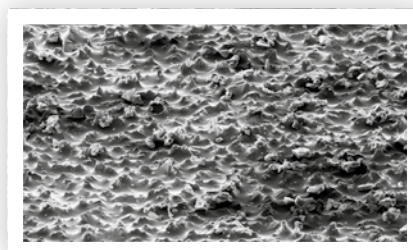
- More exact grain distribution
- Less grains used (optimised)
- Leaves a smoother surface
- Lower and constant R-values
- Reproducible surface



Competitor 30 μ



- More sand used
- Grain build-up is more expected
- Leaves deeper scratches
- More steps / time needed
- Inconstant surface



New and unique development possibilities with Mirka technology



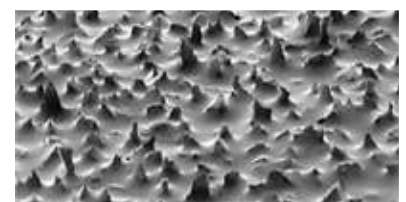
Totally new way of thinking how to optimise journal polishing processes. Finishing is not about removing material. It is about creating a new surface and characteristics.

» Thanks to our precise new technology we are able to create basically any abrasive pattern.

- Exact placement of single grit
- High tech features are applied even to our standard products
- Microstructuring, shaping and patterning of journal surfaces, e.g. crosshatch

» Inkjet backside printing

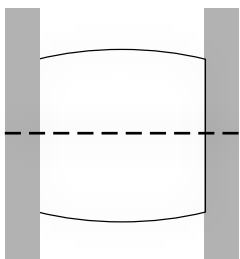
- More detailed information can be printed on the backside
- More flexibility for private labelling
- Online QR code printing



Structured film with customised patterned surface

To guarantee convexity (or other profiles) of journals even after tape polishing.

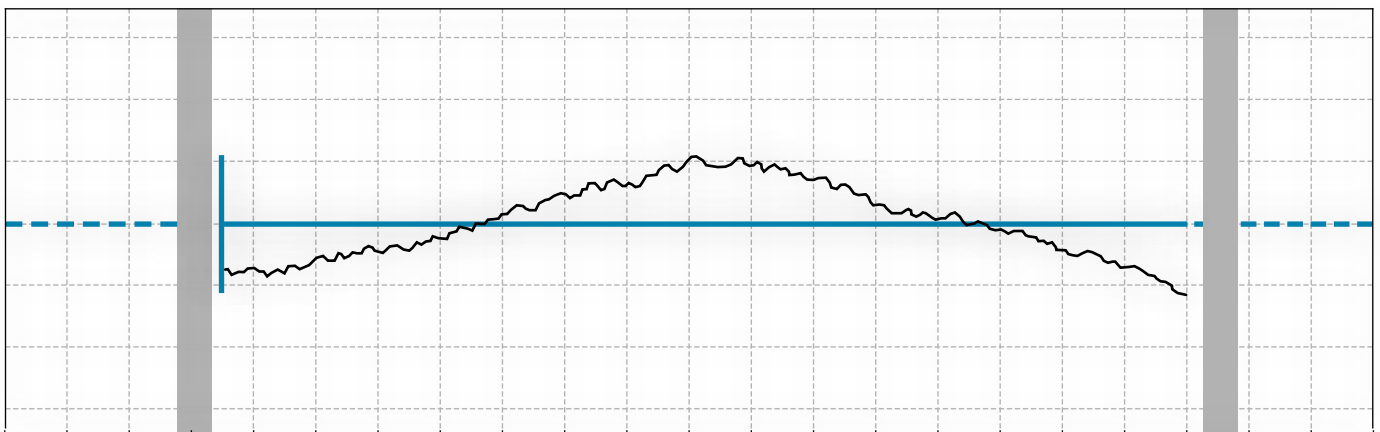
Our technology allows to create convex (barrel shape) or concave surface profile in a single polishing step. Unique possibility for our customers to improve quality of the product, lead times and capacity.



Convex barrel

- » Create convex surface / profile in polishing process > one single step needed
- » Also concave profiles
- » Improve the interaction of surfaces in relative motion (as in bearings or gears)
- » Dressing of concave CBN wheel not needed

Keep convexity after polishing



Tailored surface texturing with optimal functional values and tribological features



➤ Mirka researchers are carefully analysing and following the market trends and needs in automobile and engine industry. Tolerances in engine manufacturing are extremely tight, and crankshafts and camshaft surface properties are no exceptions.

Today's customer expectations require engines to create less noise, vibration and friction, and should be long-lasting and maintenance-free. Governmental and regulatory agencies require engines to use less fuel and oil, and produce lower emissions. This in turn places higher demands on surface finish.

Mirka's unique production technology allows our customers to create all manner of surface texturing to improve oil lubrication and friction properties.

Optimisation needs in powertrain components:

- Downsizing of engine components
- Use of high-performance materials
- Weight reductions
- Higher speed and cylinder pressures

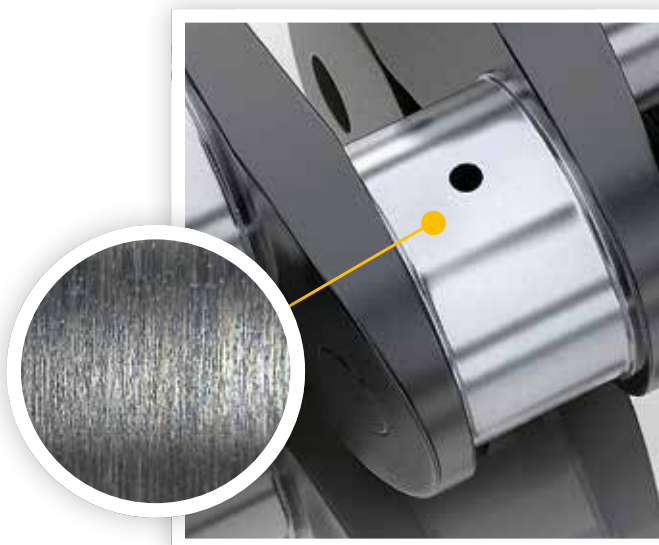
All these put even more requirements on polishing process.



➤ Let the Mirka experts help you to optimise your process and bearing surface profiles.

Main features which we can help you to improve:

- Profile; overall shape of the surface – Profile issues has a great impact on the bearing oil film thickness, operating temperature, stability and response to dynamic forces inservice.
- Waviness – can result in much higher component wear rate.
- Roughness – compromises oil lubrication properties and characteristics.
- Environmental – carbon dioxide regulations continue to tighten.

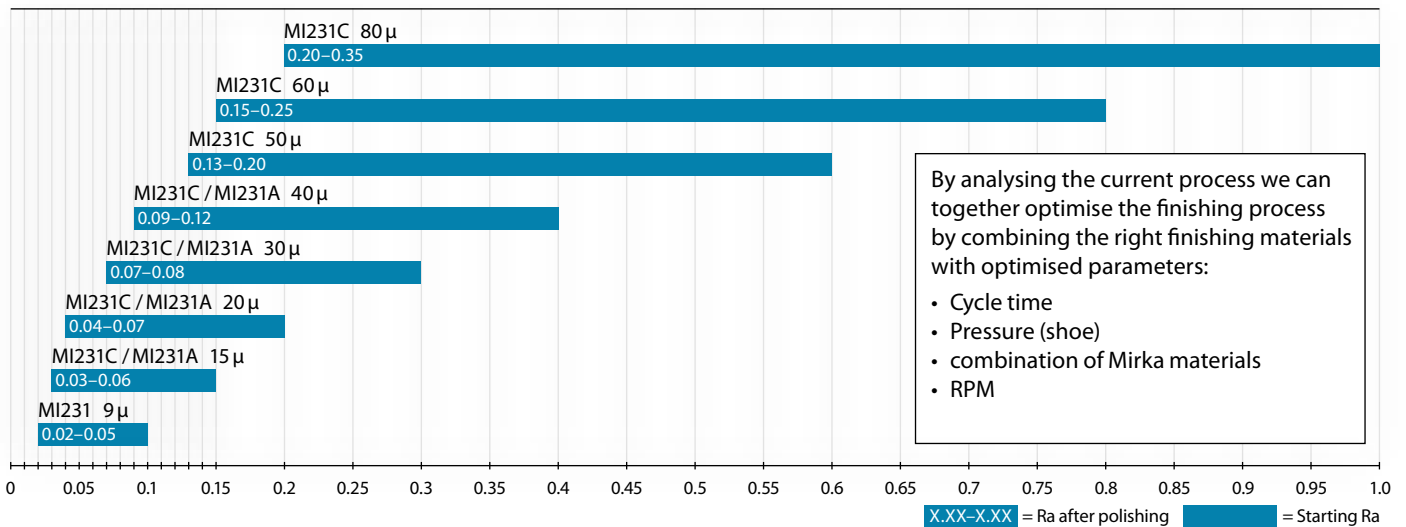


Customised surface texturing of crankshaft journals with Mirka microfinishing

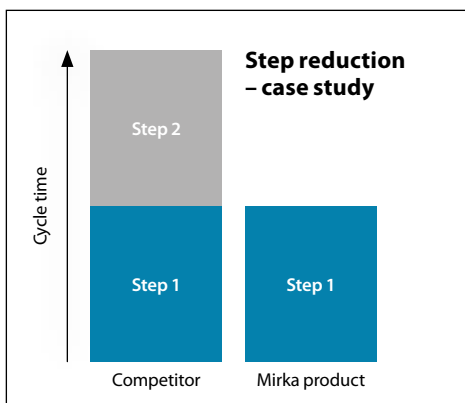
➤ Surface texturing can have serious impact on engine performance. We can together identify and create the optimal surface pattern which gives benefits in the fight to meet stricter environmental regulations and lower fuel consumption.

➤ Energy losses mainly occur in engines, largely as a result of friction. To avoid high frictional losses it is crucial to continuously improve surface texturing.

Optimise the process with Mirka materials

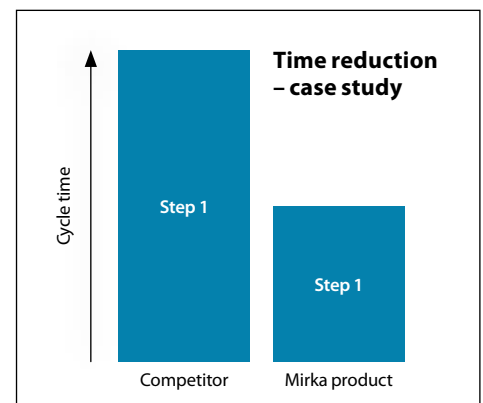


Cycle time reduction – Case studies

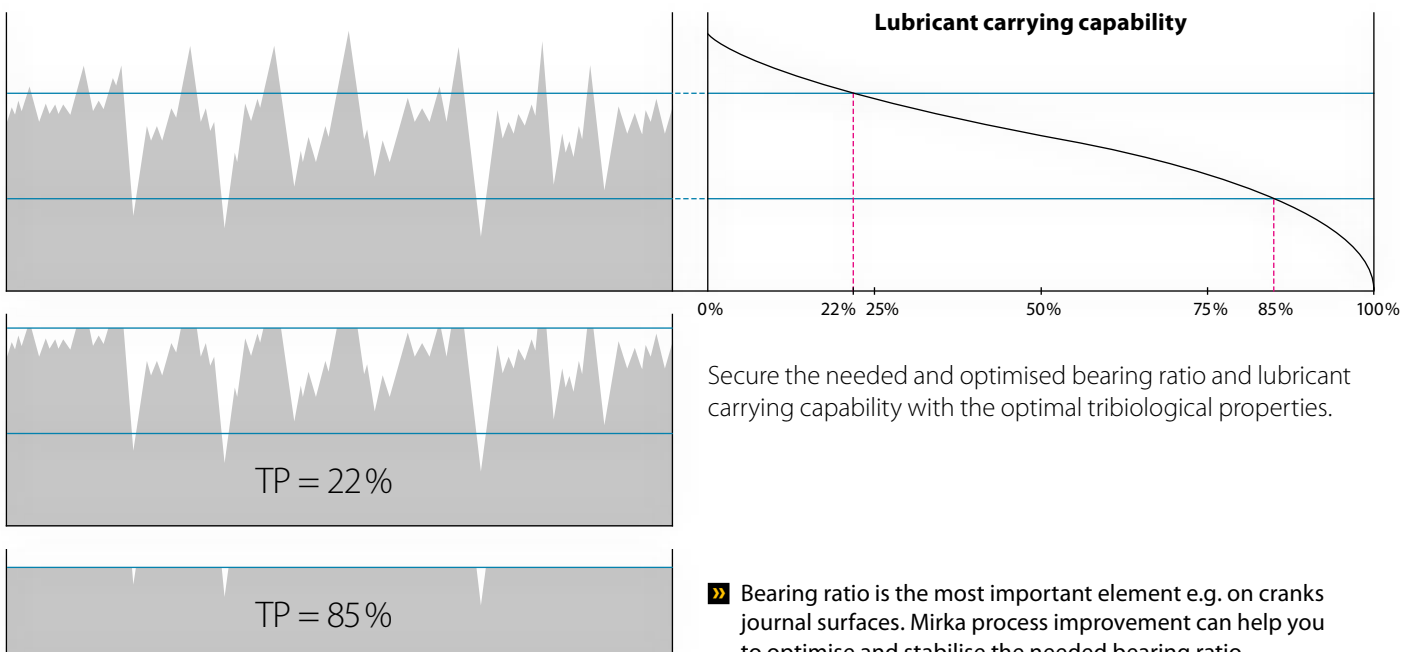


End user benefits

- » Reduces costs
- » Shorten lead times
- » Saves resources
- » Increases production capacity
- » Avoids possible bottlenecks



Bearing area / ratio



Supply chain excellence and technical support

Understanding the nature and challenges of powertrain industries provides a solid basis for comprehensive service and cooperation. We offer a global-scale partnership with local technical and sales support that you can rely on. Fast, flexible and reliable deliveries are important in industrial processes. Mirka's microfinishing products are produced against customers' orders and supplied through our own local warehouses located on each continent.

- Independent and solid company able to serve global players
- Global-scale partnership
- Local technical and sales support that you can rely on
- Fast and reliable deliveries which are important in industrial processes

Mirka Ltd
Finland

Brazil Mirka Brasil Ltda.

Belgium Mirka Belgium Logistics NV

Canada Mirka Canada Inc.

China Mirka Trading Shanghai Co., Ltd

Finland & Baltics Mirka Ltd

France Mirka France Sarl

Germany Mirka GmbH

India Mirka India Pvt Ltd

Italy Mirka Italia s.r.l., CAFRO S.p.A

Mexico Mirka Mexicana S.A. de C.V.

Russia Mirka Rus LLC

Singapore Mirka Asia Pacific Pte Ltd

Spain KWH Mirka Ibérica S.A.U.

Sweden Mirka Scandinavia AB

Turkey Mirka Turkey Zimpara Ltd Şirketi

United Kingdom Mirka (UK) Ltd

United Arab Emirates Mirka Middle East FZCO

USA Mirka USA Inc.

For contact information,
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