

# MMP<sup>®</sup>

TECHNOLOGY



Super Precision Surface Finishing  
From controlled roughness to mirror-like brilliance



# MMP TECHNOLOGY®

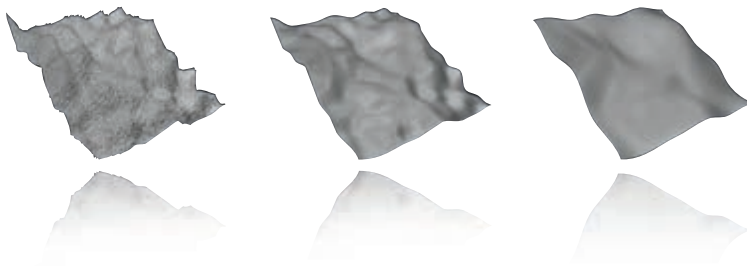
## Micro Machining Process



### A unique process worldwide

**MMP TECHNOLOGY®** (Micro Machining Process) invented by BinC Industries makes it possible to obtain super-finished surfaces by selectively removing specific ranges of roughness.

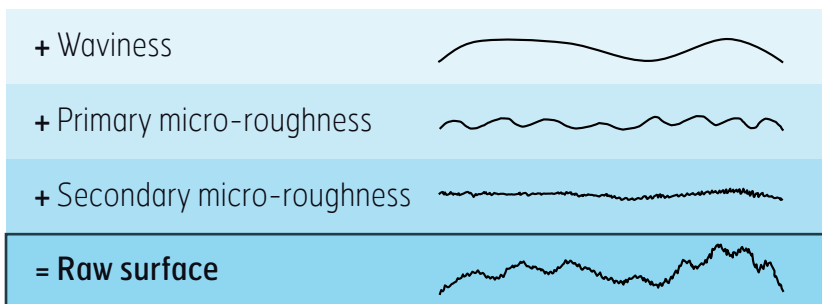
Unlike traditional polishing, **MMP TECHNOLOGY®** differentiates itself by its ability to finely control the material removal process. **MMP TECHNOLOGY®** can deliver finely controlled surfaces ranging from matte to brilliant mirror-like finishes. **MMP TECHNOLOGY®** 's advantages include reproducibility, homogeneity, precise preservation of the exact form of the part, and predictable costs.



**MMP TECHNOLOGY®** consists of a combination of a proprietary mechanical and physical process aided by a catalyst that activates the engineered microtool technology.

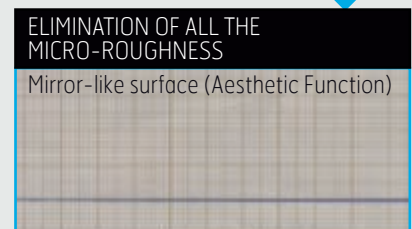
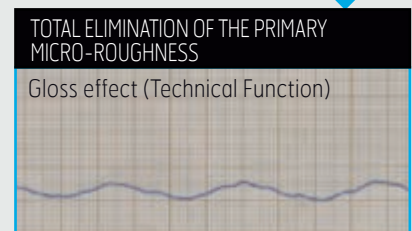
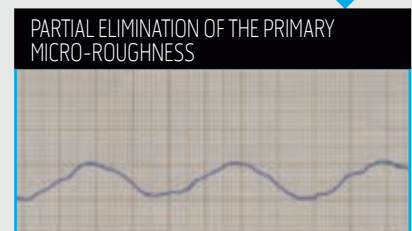
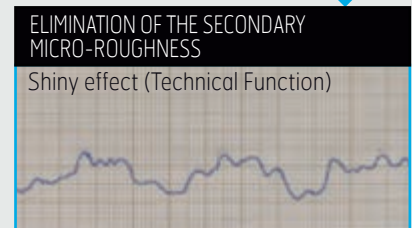
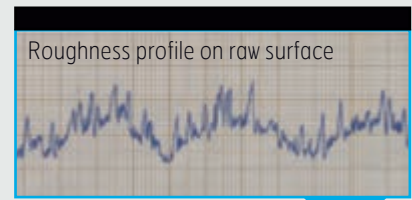
The mechanical part of the process is provided by a machine whose very high energy movement creates a flux. This flux is composed of aggregated particles of microtools created "in situ" by means of the catalyst. These aggregated microtools are specifically engineered to replicate the micro-roughness of the surface that is to be removed, thus forming a cutting tool that is "keyed" to the roughness being targeted. BinC Industries builds its own machines and microtools, and formulates its own catalysts.

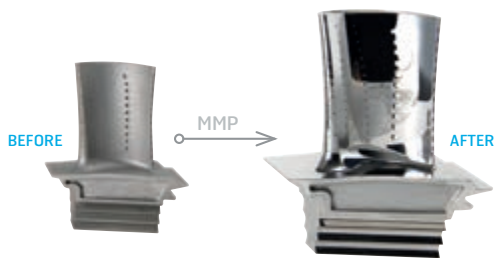
### The different components of roughness



### Examples of

### SELECTIVITY OF ROUGHNESS LEVEL





## Impact on treated surfaces

- Mechanical properties are not altered
- Hardness is not changed
- Material does not undergo creep during process
- No material contamination on medical parts : instrumentation or implants.

## Material compatibility

- Carbon, stainless, and high speed steels
- Copper, nickel, and titanium alloys
- Carbides
- Ceramics
- Precious metals (Gold, Platinum, etc)
- CVD, PVD, etc. coatings
- Parts made with CIM, MIM, DMLS additive technologies.
- Many, many more

## Material removal

- Technical finishes: 1 to 10 µm
- Mirror polish: 5 to 20 µm
- MIM, CIM, Casting, DMLS: >50 µm.

## The solution to controlling your surface roughness in 3 steps

### Technical Validation

- Analysis of the part's surface state through the measurement of its roughness
- The specific characteristics of the material are considered
- The customer's objectives and constraints are defined
- Three different **MMP TECHNOLOGY®** treatments are applied. The customer chooses the most appropriate one.

### Industrial Validation

- Customer's desired daily/weekly production volume is used to optimize the process batch size
- Custom fixtures are designed and built to support this optimal batch size
- The selected **MMP TECHNOLOGY®** is applied to a production batch sized group of parts.

### Industrial Production

- The results from the Industrial Validation are confirmed by the customer
- A production schedule is established with the customer
- Ongoing customer satisfaction evaluations drive a Continuous Improvement process.

## A global expansion strategy

The **MMP TECHNOLOGY®** process is available exclusively through 7 companies located in Europe, the United States, India, China and Japan, as follows:

### BinC Industries SA 1

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CH-1272 GENOLIER  
☎ : +41 (0) 22 740 00 49  
E-mail : info@bincindustries.com  
www.MMPTechnology.com

### MicroTek Finishing 2

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### BinC Industries France SAS 3

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Fax : +33 (0) 478 90 24 88  
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### First Surface Oberflächentechnik GmbH 4

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## MMP TECHNOLOGY®: a revolutionary deburring and polishing process bringing value to these 7 key markets:

	APPLICATIONS	BENEFITS
AEROSPACE	<ul style="list-style-type: none"> <li>• Blades</li> <li>• Blisks/IBRs</li> <li>• Stators</li> <li>• Guide Vanes</li> <li>• Bearings and gear boxes</li> </ul>	<ul style="list-style-type: none"> <li>• Traceable Industrial process</li> <li>• Homogeneity and reproducibility</li> <li>• Short lead-times and cost control</li> <li>• Better technical performance</li> </ul>
FORGE, STAMPING AND DIE	<ul style="list-style-type: none"> <li>• Screw Head punches</li> <li>• Carbide punches</li> <li>• Cutting and stamping dies</li> </ul>	<ul style="list-style-type: none"> <li>• Superior reproducibility</li> <li>• Improved tool life</li> <li>• Increased homogeneity</li> </ul>
ADDITIVE MANUFACTURING	<ul style="list-style-type: none"> <li>• Aerospace</li> <li>• Medical</li> </ul>	<ul style="list-style-type: none"> <li>• Increased resistance to corrosion</li> <li>• Reduced friction</li> <li>• Increased resistance to wear</li> <li>• Improved aerodynamics</li> </ul>
MEDICAL	<ul style="list-style-type: none"> <li>• Implants (knee, hip, spine, etc.)</li> <li>• Instrumentation</li> <li>• Prosthetic components</li> <li>• Pump components</li> </ul>	<ul style="list-style-type: none"> <li>• Controlled costs and predictable lead times</li> <li>• Homogeneity and consistency across batches of parts</li> <li>• No contamination of processed surfaces</li> <li>• Minimal material removal</li> </ul>
PLASTIC INJECTION MOLDS	<ul style="list-style-type: none"> <li>• Threaded caps</li> <li>• Pre-forms</li> <li>• Consumer goods packaging (bottles, applicators, etc.)</li> <li>• Automotive lighting systems</li> <li>• Medical components</li> </ul>	<ul style="list-style-type: none"> <li>• Well suited for use on complex geometries</li> <li>• Reduced lead-times for mold finishing</li> <li>• Scalable to large cavity count molds</li> </ul>
CUTTING TOOLS	<ul style="list-style-type: none"> <li>• Deep hole drills</li> <li>• Forming taps</li> <li>• High performance inserts</li> <li>• Milling cutters for nickel and titanium alloys</li> </ul>	<ul style="list-style-type: none"> <li>• Increased tool life</li> <li>• Increased cutting speed</li> <li>• Increased feed rates</li> <li>• Superior consistency</li> </ul>
TRANSMISSIONS	<ul style="list-style-type: none"> <li>• Gear boxes (Formula 1, helicopters...)</li> <li>• High performance bearings</li> </ul>	<ul style="list-style-type: none"> <li>• Extremely low material removal</li> <li>• Respect of tolerances</li> <li>• Homogeneity of treatment across entire surface</li> <li>• Superior accessibility to critical surfaces</li> </ul>



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