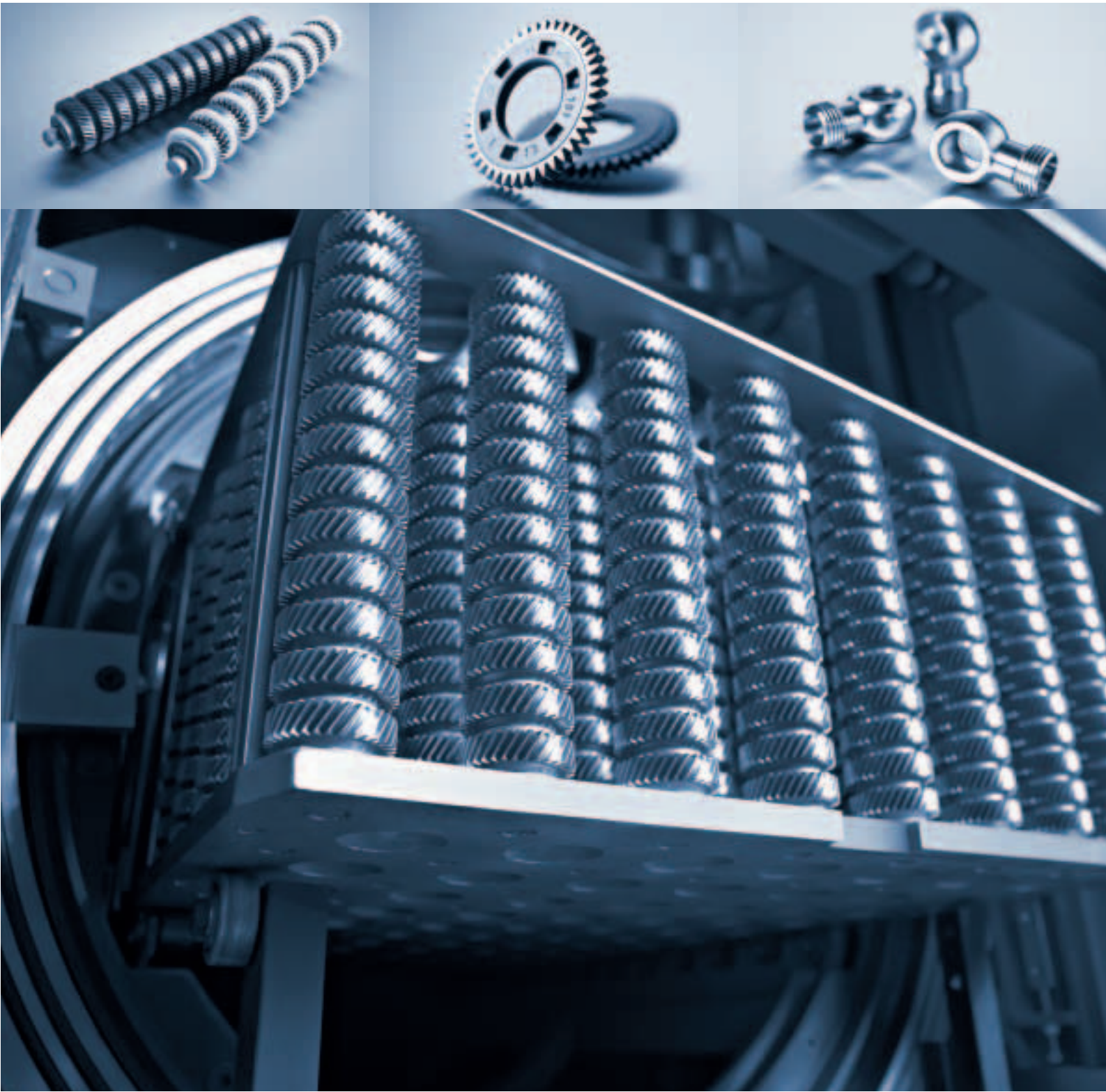


*Innovation in Motion*



## High Tech Coatings



# Innovation Is Our Passion

High Tech Coatings GmbH is the specialist for innovative coating solutions.

We are a 100% subsidiary of Miba AG. Our company was founded in 2005 as a response to the increasing demand for individual coating technologies, and incorporates decades of collected and combined experience and technological advances in coating technology from all areas of Miba.

We develop individual coating solutions. Our core technologies are polymer coatings, electroplated overlays and PVD coatings. Our committed, highly qualified team is entirely oriented towards our customers' requirements and tailors each coating to the appropriate application. Supported by a comprehensive network of internal and external partners we continually broaden our expertise and actively promote the development of new coatings.

## **The Very Latest Manufacturing Methods – Secure Processes**

Our high-tech manufacturing plant guarantees optimally prepared components right from the initial cleaning stage.



We employ the very latest activation methods to facilitate the adhesion of layers to almost any combinations of materials. Our fully automated plant guarantees the reproducible quality of our coatings. We are certified according to ISO TS 16949:2002.

## **The Environment Means a Lot to Us**

We take ecological aspects into account right from the product and process design stage. Maximum service life and maximum functionality with optimized design means economical use of raw materials and protection of resources. Our environment-friendly cleaning methods and internal recycling guarantee environment friendly products.

## **Our Mission**

We are the product leader for coating technology. Progress and innovation are our driving forces in our capacity as active development partners for our customers. We see complex tasks as a challenge. Our customers benefit from our tailored, innovative solutions.

# Spacecoat®



## **Adaptive Coating System for Precisely Adjusted Clearances**

Spacecoat® is a specially additivized polymer layer that is applied to machine components to adjust the desired clearance to maximum precision. The thickness of the applied layers can be varied from 2 to 500 µm. The properties of the coating permit extremely small clearances, coupling increased efficiency with system protection. We manufacture tailored coating systems for various areas of application and – if desired – also determine how much clearance is appropriate.

The principal applications for Spacecoat® are adjusting

- the circumferential backlash of gearwheel drives
- the axial/radial play in compressors.

An increasing number of engine manufacturers are changing to Spacecoat® for adjusting the circumferential backlash of gearwheel drives when assembling balance shaft systems and/or oil pump drives. Spacecoat® makes a decisive contribution to markedly simpler and more cost-effective assembly of gearwheels. In addition, the precise circumferential backlash settings achieved using Spacecoat® significantly improve the engine's acoustics.

In the assembly process, the gearwheel coated with Spacecoat® is mounted with zero clearance against one or more mating gears and fixed in position. When the engine is allowed to idle, the excess coating disintegrates into superfine particles, automatically adjusting the backlash to the appropriate value.

We also increase the efficiency of compressors by coating rotors, which minimizes radial play. At the same time the coating on the axial surfaces (housing or rotor) guarantees high-precision adjustment of the axial play.

# Physical Vapor Deposition (PVD) and Electroplated Coatings



## PVD – High-Tech Coating Solutions Using Plasma Technology

Specially developed high-performance coating sources also facilitate applying coatings to borings.

### Sliding Layers for Hydrodynamic Applications

Applied directly to machine parts, PVD coatings on the basis of aluminum-tin, copper-tin, tin-copper or aluminum-bronze offer outstanding tribological properties. As a replacement for slide bearings or bushes these direct coatings offer numerous advantages, including reduced weight, cost benefits, quicker assembly, reduced assembly space, extremely high resilience and fewer components.

### Heavy-Duty Wear-Protection Layers

Applied directly to the component these layers prevent unacceptable wear at critical points. We utilize a variety of materials to optimize their structure and hardness.

## Electroplated Overlays – The Optimal Coating for Every Requirement

**Zinc phosphatizing overlays** improve the sliding properties of tribologically stressed surfaces, protect steel parts from corrosion, serve as sliding layer for non-cutting forming processes or as primer for polymer coatings and lacquers.

**Manganese phosphatizing layers** possess outstanding sliding properties for reducing wear in machine components, engine and gear components and threaded joints.

**Electroless Nickel** can be applied to the tightest tolerances to prevent corrosion and wear and adheres to the precise contours of metallic materials. Special bonding agents enable us to coat even high-alloy and hardened steels with electroless nickel.

**Electroless Nickel dispersion layers** fulfill a variety of special requirements for sliding properties and wear-resistance.

**Superplate® E** is a specially developed nickel coating which provides sensational high ductility and corrosion-proofing. It is particularly effective for engine components, machine parts and injection pumps.

**Tribo silverplate** is an environment-friendly deposited silver layer for tribological or decorative applications.

# Synthec®



## Tailored Running Layer System for Functional Surfaces

The Synthec® running layer system exhibits outstanding properties for tribological applications. Over a number of years our development program has rigorously extended the advantages of the Synthec® system:

- high temperature resistance
- above average wear resistance
- highly adaptable and unaffected by dirt
- low friction
- extreme chemical stability
- high corrosion resistance

Synthec® has proven itself in numerous applications:

- radial and axial slide bearings
- slide bushes
- direct coatings to replace friction bearings or bushes
- connecting rods
- guides
- piston skirts
- piston pin bores
- rotary valve pumps, and many more.

## Manifold Advantages ...

Synthec® coatings on tribologically stressed surfaces offer a number of advantages, such as low weight, corrosion proofing, reduced dimensional tolerance, life-time lubrication, reduced stick-slip effect, avoidance of fretting, reduced assembly space, fewer components, lower friction, energy savings and cost benefits.

And in addition, Synthec® is environment friendly. It fulfills all statutory requirements relating to vehicle recycling and is free of Cr(VI), Pb and Cd.

[www.miba.com](http://www.miba.com)



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