



# A NEW ERA FOR IONBOND



Having the strength of IHI behind Ionbond allows us to invest in our technology and our customers' needs as never before.

Joe Haggerty,  
Chief Executive Officer



IHI is proud to have Ionbond as a new member in its group. We are looking forward to a challenging and prosperous future.

Yoshinori Kawasaki,  
Chairman of the Board

# BROADEST PORTFOLIO OF PVD, CVD & PACVD COATINGS

Ionbond is one of the largest providers of hard, wear resistant and low friction coatings. We are the only company to offer PVD, CVD and PACVD services and equipment worldwide. This technology portfolio enables Ionbond to select the coating process or equipment platform best suited for the individual customer's application.

Our coatings are used for the performance and lifetime improvement of tools for cutting and forming. Mechanical engineering and the automotive industry use DLC coatings for their low friction properties. The metallic look and the improved wear resistance are used on many consumer, sporting and luxury goods for decorative purposes.



2012 Olympic Torch coated by Ionbond

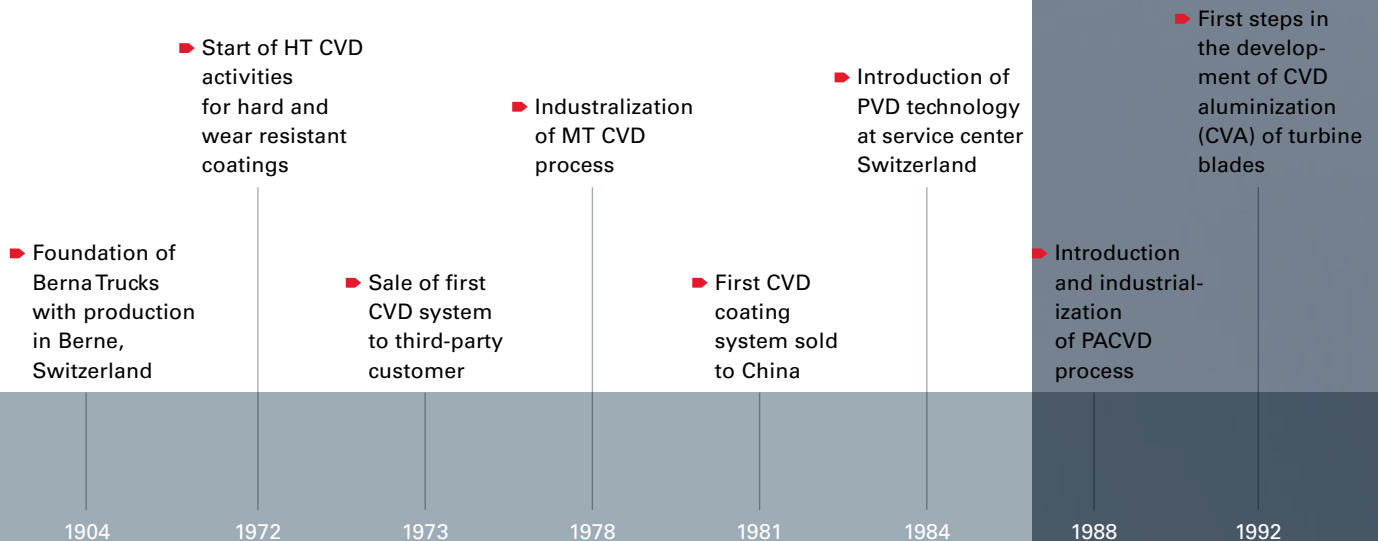
# 40 YEARS OF EXPERIENCE IN COATINGS

For over four decades lonbond has enjoyed an excellent reputation around the globe for its customer focus and exceptional awareness of reliability and quality. Its constant strive for perfection makes lonbond a highly valued and sought-after business partner.

We constantly improve our management system, our staff's technical and managerial intelligence and competence, as well as their personal strength and potential in order to offer innovative coatings and equipment.

Each of our coating service centers is ISO 9001 certified. Sites serving the automotive, medical or aerospace industry are additionally certified according to specific requirements.

- ISO 9001
- ISO/TS 16949 (automotive)
- ISO 13485 (medical)
- AS 9100 (aerospace)

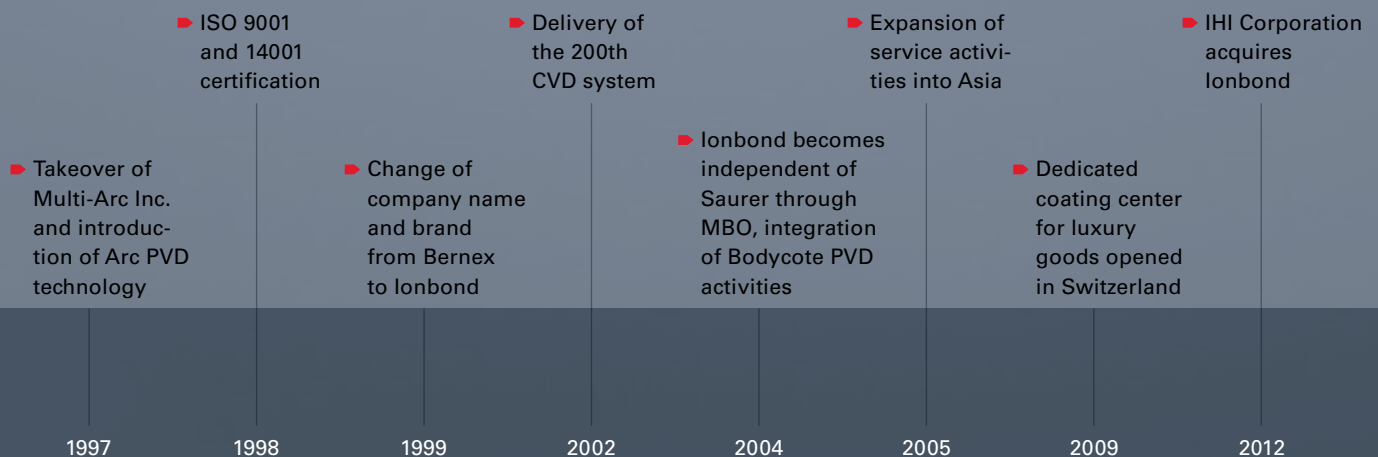




# EXTENSIVE WORLDWIDE NETWORK

Ionbond's experience in coating is available from each of our 38 service centers in 17 countries in Europe, North America and Asia, one of the largest coating center networks around the world with over 900 employees. Our global and regional competence centers support the local coating centers and customers with state-of-the-art know-how in order to locally deliver world-class products. Our network is targeted at serving large OEM customers with global operations.

Our Swiss engineered and manufactured equipment is delivered to top companies around the world. Ionbond's international service and spare parts organization assures the highest uptime and productivity.



# THE SURFACE ENGINEERS

Be it at the very beginning of product design or for product improvement, we offer engineering support to our customers' design and engineering teams. Our engineers select standard coatings or design customized coatings in order to achieve the best and most economical system solution.

Ionbond understands that it takes much more than just a great coating to provide a high quality part. All steps leading up to the coating process must be properly engineered to achieve the desired results. This includes supporting the customer in the selection of the best materials for his product, creating the proper surface finish on the part, properly cleaning the product prior to coating, and many other critical aspects. Likewise applying the proper treatments to the coated product is critical in many applications. We work closely with our customers in a collaborative fashion to design the best process through the complete production cycle. This is Surface Engineering.

Patients and surgeons benefit from longer lasting implants and instruments coated with the biocompatible Medthin™ coatings.



Millions of components for the automotive industry are coated with low friction DLC every year.





Coatings on forms and molds increase both the lifetime of the tool and the surface quality of the finished products.



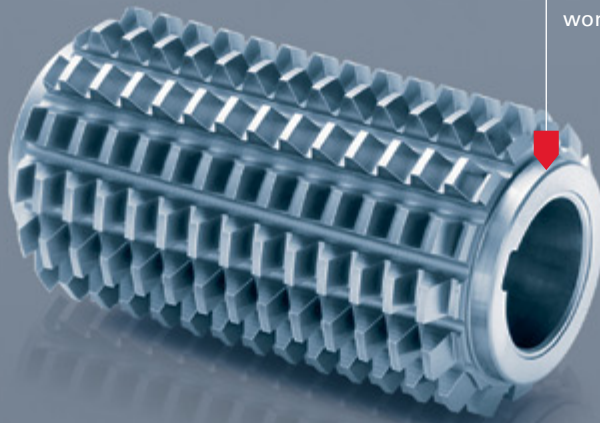
Decorative coatings enhance the look and robustness of many designer products.



Coatings on industrial components enhance their lifetime and increase the load carrying capacity.



Higher cutting speeds and longer lifetime of tools are the result of matching the tool coating to the workpiece materials.



# COATING EQUIPMENT



Bernex™ BPXpro CVD systems are world-class systems used by the majority of original manufacturers of cemented carbide inserts for machining. They are increasingly used for forming and molding dies and mechanical components.

- Several sizes available
- Modular concept
- Mid and high temperature processes



## The most comprehensive range

Ionbond's equipment division offers the largest portfolio of coating technologies available on the market. Dedicated CVD and CVA, as well as PVD and PACVD process systems are used in several industries to enhance the wear, friction and temperature properties of tools and components. The systems are engineered towards highest productivity standards and minimal maintenance efforts while offering the flexibility of fast material and process changes to accommodate mixed portfolios of coatings and substrates.

Our equipment, together with that of our sister company HauzerTechno Coatings, constitutes the most comprehensive and complete portfolio of equipment for the hard coating market in the industry. Together we provide unmatched performance in CVD, PVD and PACVD equipment.

### High volume PVD system

The RoadRunner is Ionbond's response to tool manufacturers' continuous demand for higher productivity and innovation. The RoadRunner design is based on years of experience and best practice in the operation of equipment in our own coating service centers.

- Arc and sputtering sources
- Single and multi layer coatings

### Diamond Like Carbon

The Ionbond PACVD 650 is a small system for the deposition of genuine DLC coatings for precision components, cutting tools and luxury goods.

- Low friction
- Decorative

### Corrosion protection

The Bernex™ CVA ALUVAP system is engineered for the deposition of aluminum diffusion coatings on super-alloy turbine blades, which are subject to hot corrosion.

- Uniform coating on inside and outside surfaces
- Environmentally friendly process
- No harmful residues



# MARKET SPECIFIC SOLUTIONS

## From Automotive to Aerospace – Ionbond coatings move the world.

At Ionbond we tailor our solutions to the needs of our customers and spend a great deal of time getting to know our customers' industry and specific requirements. We are willing to invest our time and resources to develop custom solutions for our customers, enabling them to provide unique products in their market.

### TOOLS

#### Cutting Tools

For every machining requirement and work-piece material, from low to extremely high cutting speeds.

- ▶ Hardcut™ AlTiN/TiSiN
- ▶ Crosscut™ AlCrN
- ▶ Maximizer AlTiN
- ▶ Tetrabond t-aC
- ▶ Bernex™ CVD

#### Forming and Molding

Increased service life of tools and parts with better quality.

- ▶ Ionbond™ PVD
- ▶ Bernex™ CVD
- ▶ Hot and cold forming
- ▶ Stamping
- ▶ Plastic injection molding



### COMPONENTS

#### Industrial

Extended load carrying capacity, reduced friction, improved wear behavior.

- ▶ General engineering
- ▶ Food and pharmaceutical processing
- ▶ Heavy duty machines and vehicles
- ▶ Ship and railway engines
- ▶ Power generation equipment

#### Racing

Pushing the limits for highest performance.

- ▶ Reduction of friction
- ▶ Engine efficiency
- ▶ Titanium components





## Aerospace

**For lower cost and reduced environmental impact of air travel and transport.**

- Improved performance
- Extended lifetime
- Diffusion coatings for turbine blades

## DECO & SPORT

### Decobond™

**Superior hardness and wear resistance for surfaces with a metallic look.**

- Kitchen and bath appliances
- Sports and leisure goods
- Firearms
- Luxury goods



## MEDICAL

### Medthin™

**Certified biocompatible coatings for implants and instruments.**

- Wear reduction
- Ion barrier
- Anti-reflection
- Color coding
- Cell attachment

## AUTOMOTIVE

### Tribobond™

**DLC coatings for increased engine efficiency and reduced environmental impact.**

- Piston assembly
- Valve train
- Injection system
- Body parts



## The IHI Corporation, Ionbond's Parent Company

In 2013, IHI celebrated its 160th anniversary. IHI's predecessor, the Ishikawajima Shipyard, was founded in 1853 upon the arrival of Admiral Perry's black ships in Uruga Bay and at the dawn of Japan's modern age. Thus began the 160-year journey of dedicated pursuit of the potential of next-generation technologies at the cutting edge of engineering. From shipbuilding, land-based machinery, large infrastructure projects and equipment to complete factories, aviation and aerospace, IHI has expanded into a \$15 billion company with over 40 major factories, a worldwide network of offices and 28 000 employees to support a wide range of engineering fields and pave the way for next-generation technology.

[www.ihico.jp](http://www.ihico.jp)

### Global and regional headquarters

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See our website for a full list of all coating centers and local equipment sales offices. [www.ionbond.com](http://www.ionbond.com)



THE SURFACE ENGINEERS™

**ionbond**