

**CZL Tilburg B.V.**

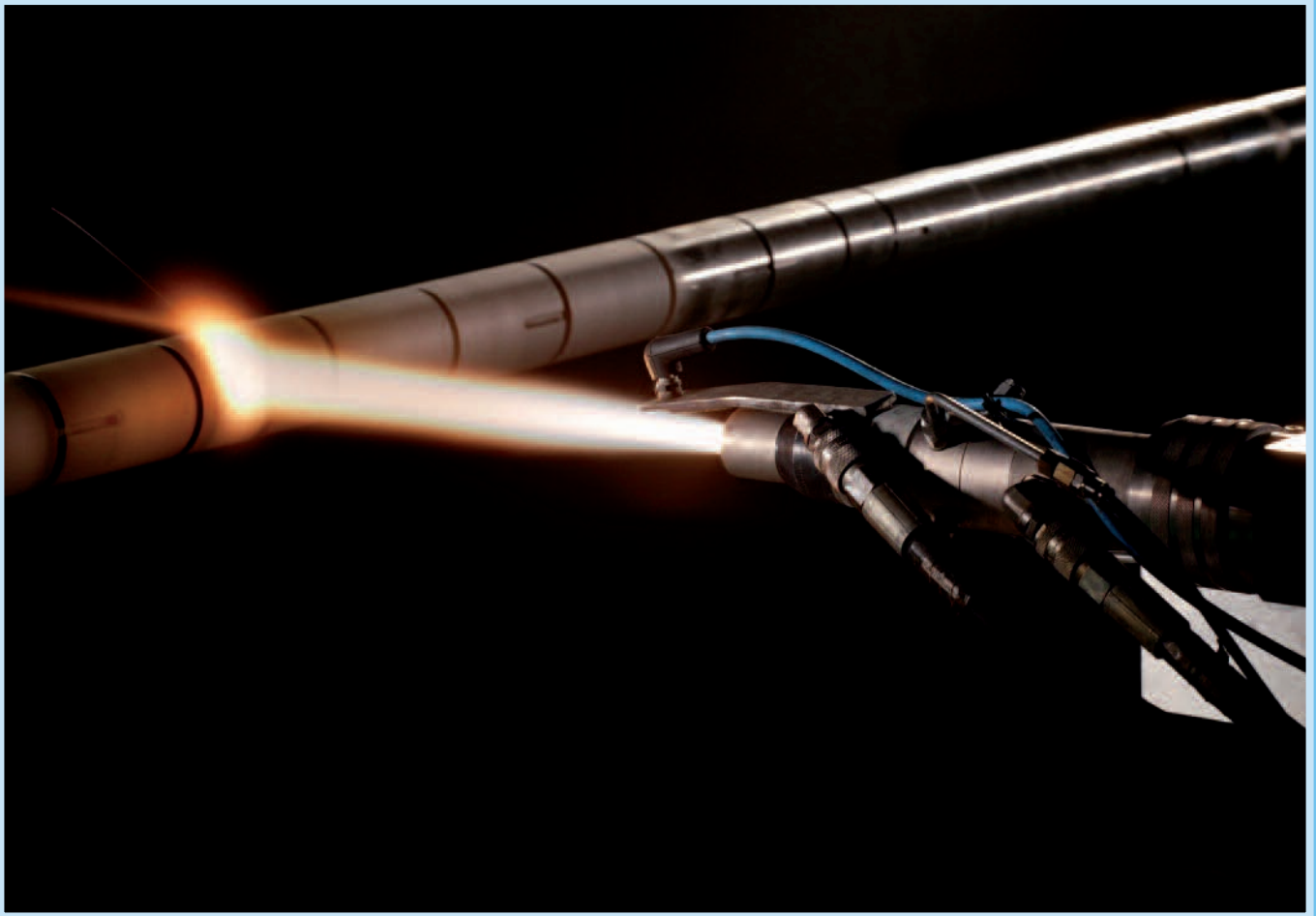
## *Surface treatments*

*High Velocity Oxy-Fuel (HVOF)*

*Precision grinding*



Specially developed for high quality  
process critical components



*Specially developed for high quality process critical components*

## ***HVOF: the ultimate preservation of surfaces***

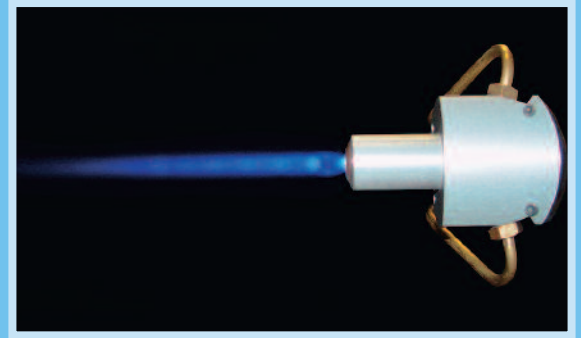
CZL Tilburg has been a global market leader in the preservation of process critical components for more than twenty five years. In 2005, a new and highly innovative process treatment has been added to known surface treatments such as electroless nickel plating, black oxidizing, Micro Chrome Plating (MCP®), hard chrome plating, Diamond Coating (DIARC®), Diconite® Dry Lube, grinding and polishing. This treatment was developed specially for applications which impose stringent requirements in terms of wear resistance and hardness. The High Velocity Oxy-Fuel (HVOF) coating process of CZL ensures an ultimate preservation of technical surfaces.

### ***Enhanced performance***

HVOF is a solution for applications which demand high quality. This applies to the high-tech industry in general and to the aeronautic, space, petrochemical and chemical, offshore, machining and graphics industries in particular. In other fields, where the limits of conventional surface treatments have been reached, HVOF improves wear resistance, hardness, durability, friction coefficient, thermal load and corrosion resistance properties. In other words: HVOF ensures the highest standards by considerably extending the technical or economic service life of a large variety of components. HVOF is especially used to go beyond the surface property limits of other surface treatments. It is obvious that HVOF provides a crucial contribution to a durable performance for varying production processes.

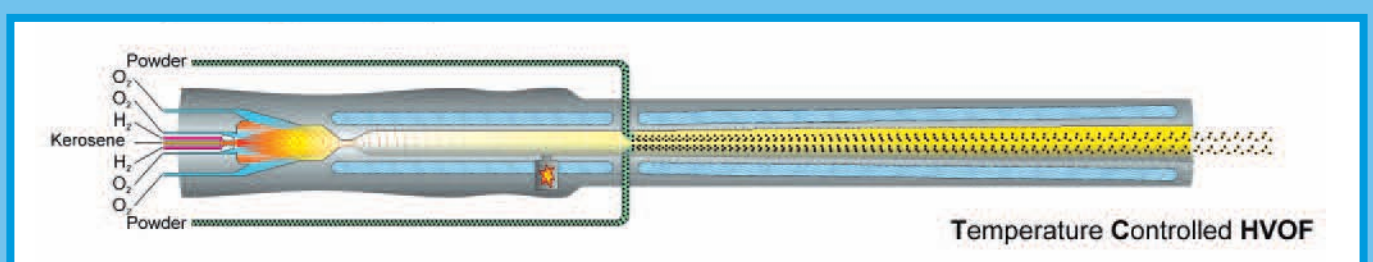
### ***Improved machinability***

The how and why of HVOF is evident. The stumbling block of high quality technical production processes is in the design limits and machinability of carbide surfaces. HVOF allows CZL to apply a carbide coating to standard substrates which can be shaped well and presents less restrictions during machining or finishing. CZL has coined this the 'improved machinability' of HVOF. The crux is the thermal spray process. Even an 'inferior' material can receive a superior surface. The low product temperature during the HVOF process allows tailor-made coatings to be applied on a large variety of substrates. HVOF ensures an enhanced improvement of the crucial mechanical properties of existing components. In addition, HVOF offers the possibility to considerably increase the intrinsic value of process critical components. Today, porosity sets the trend in surface treatments and with HVOF a coating with a porosity of less than one percent can be applied.



### ***Future developments***

Environmental concerns about the application of a number of traditional surface treatments have played an important role in the development of HVOF. The national and international laws and regulations aim for a sensible use of materials which have an impact on the environment and stimulate environmentally sound alternatives. The HVOF coating process offers an environmentally acceptable alternative with a much lower environmental impact than traditional treatments. CZL has been involved in the development of the new treatment from the very beginning.

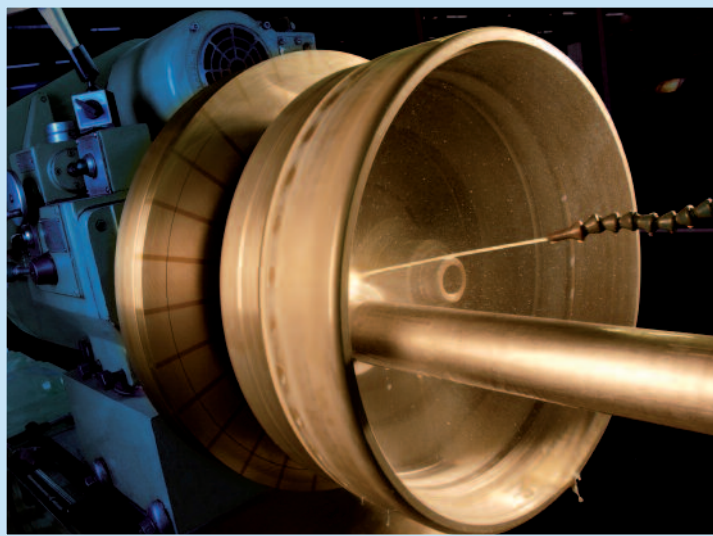




*Surface, dimensional characteristics and planning quality*

## ***Refined precision within $\mu\text{m}$ -range***

With the introduction of HVOF as the ultimate treatment for the preservation of many different technical surfaces, CZL Tilburg also provides the solution for the additional operations. Practically speaking, this is called refined precision. The surface finishing operations determine the degree in which the treated surface complies with the specific machining properties of HVOF. As a problem solving organisation, CZL combines more than 25 years experience in high quality application and finishing of surfaces under one roof. The added value of this type of service has been endorsed by national and international clients.





### ***Precision standard***

Precision is what grinding is all about. In order to guarantee the required precision, the machinery of CZL consists of advanced state-of-the-art grinding benches. Machining operations are carried out with both traditional grinding benches and CNC flat grinding benches, profile grinding benches and cylindrical grinding benches. The grinding benches, of Swiss and German top quality, are suitable for internal and external finishing operations. The use of climate control and highly accurate measuring equipment guarantees the quality required. In addition, all employees are highly qualified in extremely accurate grinding (and forming) within  $\mu\text{m}$  level. The underlying organisation has excellent expertise in all types of substrates, different types of coatings, mechanical finishing and total repairs. Moreover, CZL guarantees the quality of the surface, substrate, dimensional characteristics and planning. These distinguishing properties are prerequisites to continue to comply with the strictest guidelines and specifications.

### ***Time gain***

Other important advantages which CZL offers to demanding customers are flexibility and extremely short turnaround and delivery times. Anyone familiar with the world of high quality treatments knows that unscheduled costly production downtime immediately impacts revenues. Failing to meet deadlines very often results in claims. In that case it is good to know that CZL is used to working under extreme pressure. Moreover, time gain gives the customer a direct advantage. CZL service combines HVOF coating and grinding in one operation for high quality surface treatment of process critical components.





## CZL Tilburg B.V.

The optimisation of the production processes puts a heavy burden on entrepreneurs in the most widely varying high-tech sectors. Once there is no further prospect of new cost-saving possibilities, the smallest details are relevant. Based on a quarter of a century of experience in surface processing, CZL Tilburg manages to realise a higher production-process efficiency. The distinguishing added value can be found in the extension of the lifespan, the increase in capacity and valuable parts becoming more durable. As specialists in the field of overhauls, repairs, upgrades and maintenance of complex tools, special products and parts/machine parts, CZL is proud of the modifications it makes to machines and parts.

### CZL 25 years 'on top' in surface treatments;

- HVOF: High Velocity Oxy-Fuel
- MCP®
- Hard chrome plating
- Electroless nickel plating
- Black oxidizing
- Dicronite® dry film lubrication
- DIARC® Diamond Coating
- LASER- and microTIG-welding
- Precision grinding
- Lapping and polishing
- Total repair



## CZL Tilburg B.V.

### Surface treatments

Company Location 1056

PO Box 10048, 5000 JA Tilburg, the Netherlands

Boterberg 30, 5047 ST Tilburg, the Netherlands

Tel. +31 (0)13 570 33 70

Fax +31 (0)13 570 49 06

E-mail: [info@czltilburg.biz](mailto:info@czltilburg.biz)

Website: [www.czltilburg.biz](http://www.czltilburg.biz)