

SEAMING WITH CLASS



 **hantelmann**



KNOWHOW FOR SAFE FOOD

MATERIALS FOR THE FOOD INDUSTRY

The Hantelmann Verschleißtechnik GmbH & Co. KG is your reliable partner for the assembly, commissioning and optimization of your can closing machines.

Our decades-long experience helped us to develop the ideal closing device to meet your demands. Regardless of the type or age of your closing machine we will optimize the set ups and materials used before.

According to your requirements, we specify suitable materials and surface qualities which we have developed and tested in practice. Our extensive programs with regard to further development of special materials and refinements thereof meet the tools' high standards in terms of wear and durability. We individually adapt the material type which is required for your needs.

These will usually be the following materials:

- **Stainless standard steel AISI 440**
Standard application with relatively acid- and vinegar-free filling media
e.g. meat pies, meat pastes, ready meals, soups, etc.
- **Powder-metallurgical stainless steel**
Suitable for the use with high-acid foods, through superior hardness / higher abrasion resistance and excellent corrosion resistance amongst others also with the mentioned uses. This furthermore applies to the use with fruit and vegetables, e.g. sauerkraut, peas, etc.
- **Stellite® material**
A chrome-cobalt alloy, manufactured by means of centrifugal casting, which is suitable for the most extreme conditions as a result of its superior resistance to wear and corrosion.
Due to its nature, Stellite® is nearly corrosion-free when used with acids, vinegar or higher concentrated pickles and therefore, it is suitable for the following applications:
vegetable industry (cucumbers, beans or mushrooms)
dairy industry (feta cheese with high salt concentration)
sausage industry (sausages in pickle)
- **Hard metall**
Sintered carbide metals which are finely milled and melt with an easy melting admixture under high temperatures and upon cooling down, provide superior hardness and wear resistance: Often used in the pet food processing industry or peanuts industry.

It is not only the well-known "form follows function" principle that provides for optimum tightness but also the specific selection of material.



CLEANING AND MAINTENANCE FOR OPTIMUM RESULTS

For the mentioned applications the closing machines' degree of cleanliness needs to be considered at all times. After treatment with chemical cleaning agents, the rolls' surfaces should be completely free from cleaning agents and ideally, they should be oiled. Otherwise the product surfaces could be damaged.



OPTIMUM PROTECTION FROM CORROSION

SURFACE FINISH USING THE PVD AND CVD COATING METHODS

We coat our seaming tools to make them more resistant to cleaning agents, vinegar and brines etc. depending on the respective type of application. This protects the surface from wear caused by corrosion or adhesion of smallest particles on the basic material.

PVD method (Physical Vapor Deposition) characterizes all processes of physical deposition of thin layers via a vapour phase, i.e. at temperatures around 450 °C. With this, metallic hard materials for the layers (e.g. titanium nitride) are transferred to the vapour phase using the physical processes of evaporation in high vacuum and after that, they deposit on a suitable hardened basic material – e.g. AISI 440 or PM steel. The thickness of the thereby created layers on the tools and components is between 1 µm and maximum 15 µm.

The following coatings made by means of the PVD method are available on our workpieces:

- **Titan-Nitrid (TiN) – color: gold**

The titan nitride coating has a thickness of 6 – 8 µm and has the following characteristics: high hardness and peel strength, good chemical resistance, low reactivity and therefore, less wear through cold welding. Deformation is nearly excluded due to its low coating temperature. Therefore, we recommend this method for seaming chucks.

- **Chrom-Nitrid (CrN) – color: silver-grey**

In case of a coat thickness of 6 – 8 µm, the surface hardness will go up to 68 HRC. The chrome nitride coating features the following characteristics: high hardness and peel strength, very good chemical resistance, low coefficient of friction against steel. Due to its low coefficient of friction, this kind of improvement is often used for seaming rolls to avoid abrasion of lacquer and the connected corrosion on the closed cans with lid.

The CVD method (Chemical Vapor Deposition) is the deposit of titanium-based hard material coatings in a chemical gas phase process at temperatures of 1,000 °C. The possibility to apply several types of coating on top of each other protects the base material of the seaming rolls from corrosion while at the same time achieving an extremely good folding performance in terms of lacquer damaging / abrasion.

It is most frequently used in the beverage industry or with acidic filled media. PM steel, Stellite®, and hard metal are equally suitable as base material.

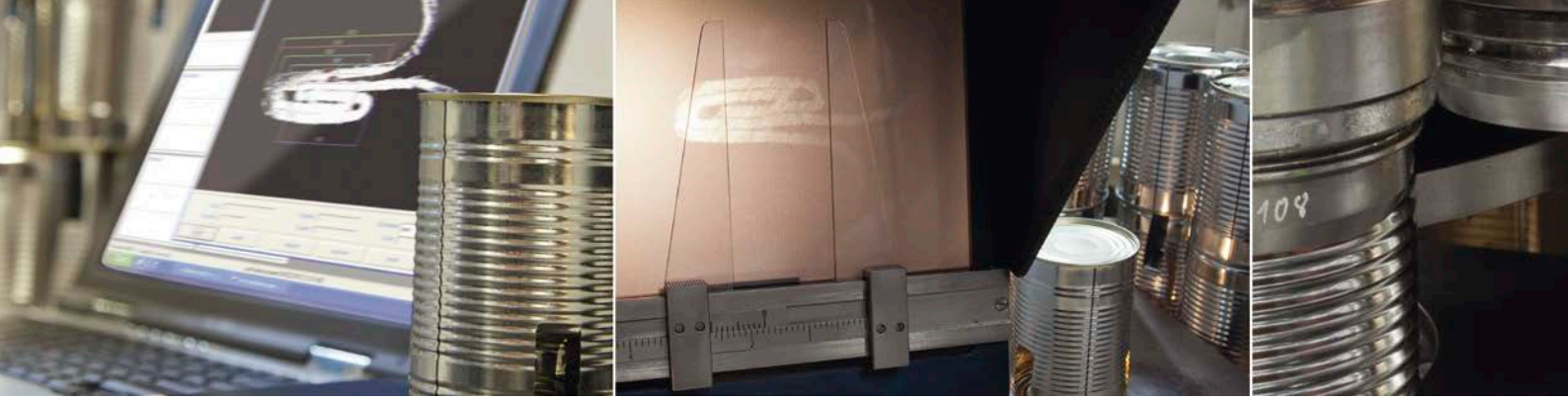
The following coatings made by means of the CVD method are available on our workpieces:

- **Titanium carbide / titanium nitride (TiC/TiN) – color: gold brown**

The three layer titanium carbide coating has the following characteristics: extremely high hardness, very high peel strength, optimum wear resistance with higher thickness of total coatings.

The ideal surface: improvement for better seaming performance





WELL-CONCEIVED RIGHT DOWN TO DETAIL

SEAM ANALYSES AND DOUBLE SEAM OPTIMIZATION

We are producing spare parts, format sets and seaming tools for nearly all common closing machines. Our data base includes more than 1,400 seaming contour data sets. On this basis, we are offering double seam optimization by means of seam analyses – especially for complex can closing requirements.

In addition to new productions, the reconstruction and repair of your already used format sets is an important part of our service portfolio.

Reworking of the contour of seaming rolls

Often, only the profiled contour of the rolls wears out. Since it usually wears out to a depth of only 0.03 – 0.05 mm, we are offering the service of reworking the contour. It means that we regrind the respective contour using our profiling machine to enable the tool to be used for a second whole cycle. This is more cost-effective than producing a new tool and nevertheless, it ensures a long life span of the components thanks to comprehensive in-house quality tests.

Quality testing at the highest level

We check the machining tolerances with the "INROLL 9000" system made by "Quality by Vision". This system visualizes the roll profiles, respectively the head lip contours in the range of microns and compares these with an original CAD drawing. On request, the test results can be recorded and handed over to the final customer together with the tools.

Delivery versions of the seaming rolls

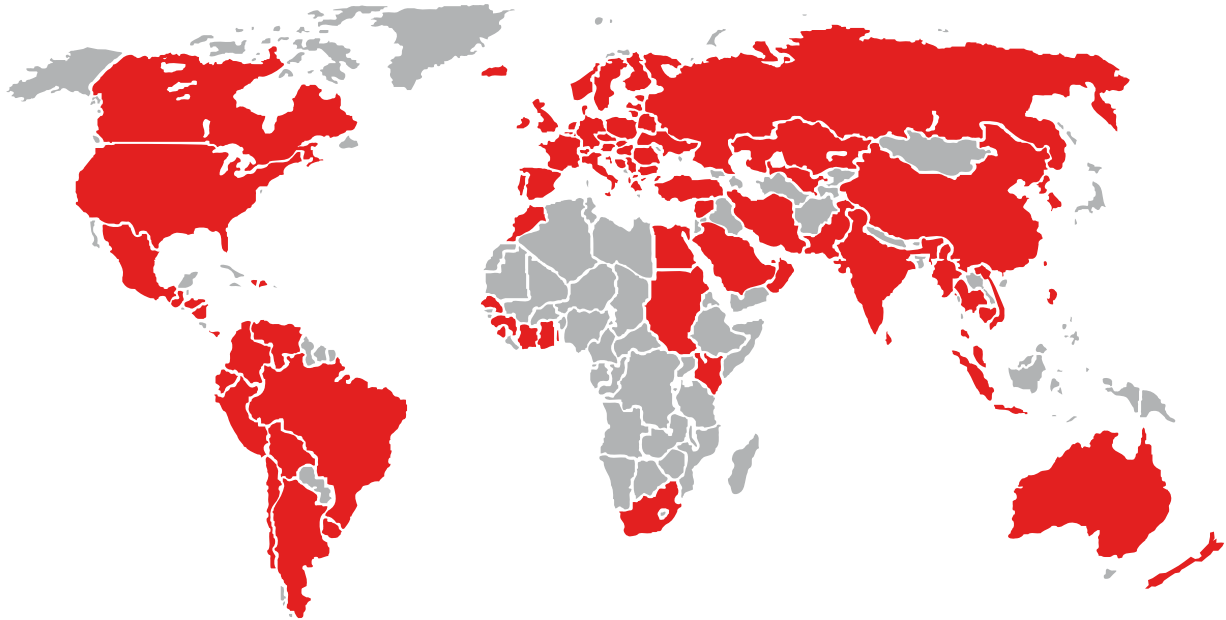
In addition to the delivery of rolls without any accessories, we deliver components that are optimally adapted to each other. Already in production, the higher the number of well-matched single components, the easier and more precise their assembly in the machine – best conditions for a trouble-free production process.

Comprehensive expert advice

Hantelmann Verschleißtechnik is offering more than the production and maintenance of your closing machines. As qualified experts upon request we train your employees do the repair, disassembly and reassembly of your machinery and provide support in all cases of process optimization within your production lines.



For more than 45 years, the name Hantelmann has been standing for quality world-wide.



OUR SERVICES AT A GLANCE

- Production of spare parts for common closing machines
- Planning and production of closing tools
- Optimization and assembly of can closing machines
- Revision, repair and overhauling of common systems
- Supply of spare parts/format sets for machines types Lubeca, C&V, Ferrum, Angelus, Lanico, Continental, SIMA and others
- Production and supply of adjustment and measuring tools especially for the double seam technology.
- Special machines and accessories for current production lines
- Training and expert advice for double seam technology and closing machines
- Double seam optimization by means of seam analysis on the basis of more than 1.400 seam profile data sets in our data base