

Top die-cutting quality in lightweight construction using aluminium

Dayton Progress relies on BALINIT TRITON STAR in automotive production applications for high component quality and tool protection.



The automotive industry is undoubtedly facing its greatest challenge. The range of electric cars needs to be extended while for internal combustion engines, CO₂ emissions in gasoline-powered vehicles and nitrogen oxides in diesels must be reduced. To achieve these objectives, automobile manufacturers today are counting not only on more efficient engines, but also on lightweight construction in the manufacture of car bodies. Aluminium as a material is providing solutions for these challenges.

Dayton Progress is an expert in the processing of aluminium. Dayton provides automotive sector customers with consulting concerning general and industry standards, materials and requirements and offers the right product range for die cutting sheet materials of all types. With over 80 years of experience in the production of punch mould standards, the company has specialised in the manufacture of cutting tools such as punching dies, cut-off dies, punch plates and stripping solutions for die cutting and forming technologies. This broad range includes catalogue parts as well as special-purpose versions, including accessories.

“Our strength lies in our ability to satisfy the individualised requirements of our customers. We manufacture with precision according to their configurations and coat the products according to their expectations”, explains Peter Schneider, Head of Product Management & Development at Dayton Progress.

Schneider understands the challenges involved in processing aluminium, as punching in this material is challenging for both the punches and the dies. The material tends to flake when cut while at the same time causing build-up on the cutting edges. The flaking fouls the tools and their components. The result is costly and time-consuming maintenance and cleaning tasks on the cutting elements and often the entire tool.

Factbox



DAYTON PROGRESS

a MISUMI Group Company

DAYTON PROGRESS

80 years of experience in the manufacture and marketing of punch mould standards

www.daytonprogress.de (EN)

Challenge

- Aluminium causes flaking and build up edges during die-cutting
- Flaking fouls tools and components
- Built-up edges reduce service life of punches

Objectives

- Shorter lead times
- Highest product quality
- Higher productivity

Solution

BALINIT® TRITON STAR

Features and benefits

- No flaking when die-cutting aluminium
- High product quality
- Low maintenance costs
- Less build-up on edges
- Shorter lead times
- Better service for customers through close cooperation with Oerlikon Balzers in the in-house centre



Punch pair

Moreover, the aluminium flake influences the surface quality of the components, which is of crucial importance to automobile manufacturers. Built-up edges also reduce the service life of the punches and have a negative effect on the quality of the punched hole.

“We can reduce both of these problems to the point of being essentially negligible or even elimination with the DLC coating BALINIT TRITON STAR (diamond-like carbon) from Oerlikon Balzers”, says Schneider with obvious satisfaction.

BALINIT TRITON STAR is a carbon coating which is being used more and more extensively in the manufacture of automobiles. It provides excellent protection against abrasion and build-up while also being able to withstand high surface pressures. This is why it is outstanding for use with high punching speeds or in heavy wear conditions.

Dayton Progress began the collaboration with Oerlikon Balzers already in 2003 with the installation of the first in-house centre in Portugal. Since then, the coating centre has been expanded from a single unit to three. With the new DLC coating system, customers are now offered a total of 13 coatings ex-factory from the in-house centre – with very pleasing results. “It has been possible to significantly reduce lead times at the production facility in Portugal. Time is often a decisive factor for our customers. Apart from this, however, we are also able to offer them better service because we work closely with the Oerlikon Balzers team on site, and our customers have come to value this a great deal”, says Schneider.



Punch coated with
BALINIT TRITON STAR

About Oerlikon Balzers

Oerlikon Balzers is one of the world's leading suppliers of surface technologies that significantly improve the performance and durability of precision components as well as tools for the metal and plastics processing industries. Extremely thin and exceptionally hard coatings, marketed under the BALINIT and BALIQ brand names, reduce friction and wear. The BALITHERM brand opens up a broad range of heat treatment services, whereas BALTONE comprises coatings that are available in a full range of elegant colours, perfectly suited for decorative applications. Under the technology brand BALIFOR, the company develops the technologies for tailor-made solutions for the automotive market, and ePD delivers solutions for the metallization of plastic parts with chrome effects.

Worldwide, more than 1,100 coating systems are in operation at Oerlikon Balzers facilities and its customers. Equipment engineering and assembly of Balzers' systems are processed in Liechtenstein and in Bergisch Gladbach (Germany). Oerlikon Balzers operates a dynamically growing network of more than 100 coating centres in 35 countries in Europe, the Americas and Asia. Oerlikon Balzers is – together with Oerlikon Metco - part of the Surface Solutions Segment of the Switzerland-based Oerlikon Group (SIX: OERL).

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