Press release

Oerlikon Balzers hosts world-renowned experts from the automotive industry

Innovative solutions for metal forming

Schopfheim, Germany, 22 February 2017 – The 6th European Press-shop Meeting (EPM), held on 16 February 2017 with over 150 attendees from the automotive, supplier and research industries, showcased the latest developments and solutions in punching and forming technology. Presentations and discussions gave insights into new, advanced concepts for materials, tools and manufacturing processes, including those used at Honda and by specialists in fine-blanking and new matrix materials for cold forming. Effective surface treatments for tools were demonstrated by an institute for forming technology, and they were also the subject of a specialist forum on the wide range of solutions from the coating experts at Oerlikon Balzers, which hosted the EPM at its Skills Centre in Schopfheim.

How can bodywork be made more stable and lighter at the same time? Which tools and surface treatments help form high-strength metals that are getting harder and harder to treat? How can pressing plants and processes become more efficient and cost-effective despite these challenges? These are the questions facing forming technology in automotive production. And the EPM produced an abundance of answers. “I am delighted to welcome over 150 participants and experts from across Europe”, said Marc Desrayaud, Head of Oerlikon Balzers Industrial Solutions, at the official opening.

From Great Britain, Richard Aylmore from Jaguar Land Rover reported on experiences using aluminium. High-strength aluminium alloys are used in around half of vehicle product lines in the vehicle structure and for the body shell, such as side sections, bonnets and roofs. “New aluminium structures are helping us build light-weight vehicles with optimum performance and handling”, said Aylmore. Punching creates certain challenges, including an increase in the deformability of the sheet metal, which can be overcome with the help of specially adapted oil or wax-based lubricants. Electric cars will become even more important in future, and new vehicle structures will have to be developed for their batteries.

The fine-blanking experts at WEBO are deliberating whether these electric cars will still have gears. The tool manufacturer from southern Germany has patented a brand-new fine-blanking pad (FSP) to produce special transmission components (clutch plate carriers) which requires no external hydraulic mechanisms such as power units or fluid tanks, enables fine-blanking in almost all presses and can be integrated flexibly into existing designs. “There is already considerable worldwide interest in our technology, which offers large reductions in investment costs”, said Axel Wittig from WEBO.

Jun Yokoyama from Honda Engineering Europe reported on an innovative process improvement, whereby they have considerably reduced costs by developing an integrated deep-drawing tooling solution. Whereas until 2013 three separate steps were required for deep drawing, the new one-shot stamping die enables the drawing and blanking to be carried out in a single step. It is being used for the first time to produce the floor pan for the Honda S660 two-seater roadster. “We have been using it since 2014 in series production and it works flawlessly”, said Mr Yokoyama.

Zapp, the materials experts, focused on cold forming with new matrix materials. Amongst other things, the internationally renowned supplier produces powder-metallurgical high-performance steels, which

combine ultra-high toughness with high wear resistance. “The trend nowadays is back towards materials with high basic strength to prevent premature broken components and improve service life. To do this, a lower hardness of 62 to 64 HRC is tolerated, sometimes with an extra coating”, explained Dr Wolfgang Püttgen from Zapp Materials Engineering.

Surface treatments were also a key issue at the EPM. The University of Hannover’s Institute of Forming Technology and Machines (IFUM) demonstrated that thermal, mechanical, tribological and chemical wear can occur on different parts of the tools during the forging process. “We have therefore developed and tested local surface treatment techniques, including shallow and deep nitriding, various surface structurings and in combination with PVD coatings”, said IFUM engineer Lennard Lippold.

Last but not least, an Oerlikon Balzers specialist forum provided inspiration and solutions for surface technology. In addition to the specialist presentations, EPM participants had the chance to examine the illustrated display boards to gain insights into the wide range of coating and treatment solutions for forming AHS steels and aluminium, hot and cold forging and fine-blanking. The location for the event was Schopfheim, near the Swiss border, which has facilities for surface treatment of forming tools such as those used in car body manufacturing, which can be up to ten metres long and weigh 40 tonnes. As Marc Desrayaud explained, it was the perfect place for the EPM: “This is the nucleus for the global expansion of our forming technology in another 30 Skills Centres. We hope to see significant growth in our forming business in future.”

Image 1

At the Oerlikon Balzers centre in Schopfheim, near the Swiss border, the 6th European Press-shop Meeting (EPM) showcased the latest developments and solutions in punching and forming technology. The Skills Centre at Schopfheim has facilities for surface treatment of forming tools such as those used in car body manufacturing, which can be up to ten metres long and weigh 40 tonnes. / Image: Oerlikon Balzers

Image 2

At the 6th Oerlikon Balzers European Press-shop Meeting (EPM) presentations and discussions gave insights into new, advanced concepts for materials, tools and manufacturing processes used in punching and forming technology. / Image: Oerlikon Balzers

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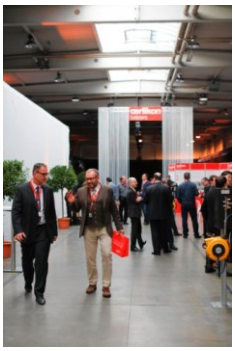

Over 150 experts and participants from the automotive, supplier and research industries attended the 6th Oerlikon Balzers European Press-shop Meeting (EPM) in Schopfheim, Germany. / Images: Oerlikon Balzers

Image 6

Jun Yokoyama from Honda Engineering Europe (left) reported on an integrated solution for one-step deep drawing. / Image: Oerlikon Balzers

Image 7

Marc Desrayaud, Head of Oerlikon Balzers Industrial Solutions, officially opens the 6th European Press-Shop Meeting. / Image: Oerlikon Balzers

Image 8

In addition to the specialist presentations, at the specialist forum EPM participants had the chance to examine the illustrated display boards to gain insights into the wide range of Oerlikon Balzers coating and treatment solutions for forming AHS steels and aluminium, hot and cold forging and fine-blanking. / Image: Oerlikon Balzers

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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 ePD, the company develops integrated services and 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' machines 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).

About the Surface Solutions Segment
The Surface Solutions Segment of the Oerlikon Group includes the two brands Oerlikon Balzers and Oerlikon Metco.
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Oerlikon Metco enhances surfaces with coating solutions and equipment. Customers benefit from a uniquely broad range of surface technologies, coating solutions, equipment, materials, services, and specialized machining services and components. The innovative solutions improve performance and increase efficiency and reliability. As innovation leader, Oerlikon Metco is forging new paths with materials for additive manufacturing (AM). Oerlikon Metco serves industries such as power generation, aviation, automotive, and other specialized markets. The **Surface Solutions Segment** operates a dynamically growing network of currently more than 145 facilities with over 140 coating centres in 37 countries in Europe, the Americas, Asia and Australia, employing more than 6 000 people. The Surface Solutions Segment is part of the Switzerland-based Oerlikon Group (SIX: OERL).