Press release 4

**5th leading trade fair for deburring technologies and precision surfaces**

**10 to 12 October 2023 at the Karlsruhe Trade Fair Centre in Germany**

**Free of burrs, smooth as glass or with defined roughness – surface finishing for medical and pharmaceutical technology**

Neuffen, July 2023: **In hardly any industry are the requirements for the properties and quality of surfaces as high as in medical and pharmaceutical technology. Accordingly, increasingly higher demands are placed on deburring and surface treatment. It is exactly for these quality-critical manufacturing steps that DeburringEXPO will be presenting new and improved products and services from 10 to 12 October 2023 at the Karlsruhe Trade Fair Centre. The range of solutions presented at the 5th leading trade fair for deburring technologies and precision surfaces will be rounded off with the integrated, bilingual specialist forum and various theme parks.**

Medical technology is consistently working to make endoprosthetic products, instruments and components for diagnostic and therapeutic devices more patient-orientated, functional and durable by using new materials and manufacturing technologies, such as additive manufacturing. The properties and the nature of the surfaces play an essential role in this. In addition, the European MDR (Medical Device Regulation) makes it necessary to focus intensively on surface treatment as well as the validation and quality management of the corresponding processes.

Parts and components, such as containers, agitators, mixers or tabletting dies, produced for pharmaceutical technology must also meet the highest demands on surface quality. They must be highly precise, smooth as glass and free from defects so that they can be easily cleaned, cross-contamination by product residue or micro-organisms is avoided, and wear is minimised.

In both sectors, it is therefore important to give products a surface ensuring a permanently safe and reliable use. Requirements regarding factors such as traceability, the energy and resource efficiency of the processes and their integration into an interlinked production must also be met.

**Surfaces meeting the requirements for medical and pharmaceutical products**

“With its cross-industry and cross-material exhibition spectrum, **Deburring**EXPO supports companies from the medical technology and pharmaceutical industry in the search for suitable methods,” claims Hartmut Herdin, Managing Director of the private fair organiser fairXperts GmbH & Co. KG. This is confirmed by the fact that many of the participating companies have experience in these industries, and the entire spectrum of technologies, processes, tools and services for deburring, edge rounding, cleaning and surface finish will be presented. Among other things, this includes mechanical deburring with tools, vibratory grinding, brush deburring, blasting with solid and liquid media. For the latter, a new development will be featured, for example, for fully automated and production-integrated deburring and simultaneous cleaning. The processing medium is liquid recycled carbon dioxide, which is compressed inline to form fine granules which are accelerated and are blasted onto the surface to be processed at supersonic speed. The exhibition will also include various special technologies. For example, ultrasonic deburring allows the removal of burrs on a wide variety of materials to be carried out fully automatically, process-reliably and in a manner that can be validated in accordance with the regulatory requirements. Flow grinding (pressure flow lapping, abrasive flow machining - AFM) is used for deburring, edge rounding and polishing complex components. The strengths of the method lie, among others, in the machining of internal areas and surfaces which are difficult to access, for example also in the case of components produced by additive manufacturing. The ECM (electrochemical metalworking) method can be used to deburr parts made of virtually any metal, such as titanium alloys or hardened materials, and to precisely round their edges. A further development of the process is the PECM (precise electrochemical metal working). This technology enables the production of three-dimensional shapes, contours and structures with very high precision. With it,an imaging accuracy of < 20 μm and a surface quality of Ra < 0.1 μm can be achieved. Regarding the removal of fine burrs and flakes on outer contours of very delicate, thin-walled work pieces, laser deburring is the perfect answer. This method even allows edges of holes with a diameter of a few tenths of a millimetre to be machined. In contrast to classic electrochemical polishing, the electro-finish is dry and is performed using special polymer particles. One of the advantages of the method is that a very high level of glossiness is achieved without micro-scratches even in the case of geometrically complex components as well as components produced by additive manufacturing.

“The diversity of technologies provides ample opportunities to discuss the strengths and limitations of the various processes with experts directly on site specifically for the respective application case,” adds Hartmut Herdin adds.

**Added value knowledge transfer through the bilingual expert forum**

In addition to the exhibitor presentations, the framework programme of the **Deburring**EXPO offers a lot of knowledge and know-how. The theme parks “Automated deburring”, “Cleaning after deburring” and "Quality assurance in the deburring process” provide information on current developments for these tasks. The key aspects of the Expert Forum integrated into **Deburring**EXPO with presentations interpreted simultaneously (German <> English) are fundamentals, ways to optimise processes and costs, reports on best practice applications and trends as well as on the specific content of the theme parks. Participation is free of charge for visitors to the leading trade fair, as is an edition of the updated and expanded brochure "Basic knowledge in deburring technology" in German and English.

Further information, the complete range of exhibitions and the programme of the expert forum as well as the preliminary list of exhibitors can be found at [www.deburring-expo.de](http://www.deburring-expo.de).

Image captions

### Photo: fairXperts\_Medtech

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### Whether smooth as glass or with defined roughness – the surfaces of products for medical and pharmaceutical technology have a material influence on their quality and safety.

### Image source: fairXperts

### Photo: acp\_Process Cannula

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### The new process for fully automated and production-integrated deburring and simultaneous cleaning with CO2 granules, can be used for the processing of cannulas and surgical saws, among other things.

### Image source: acp systems

### Photo: EMAG ECM

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Among other things, the PECM method is used for the manufacturing of medical devices, in this case a stapler (staple gun) for closing wounds with staples. The micro-structuring is rendered in a multi-cavity mould.

Image source: EMAG ECM

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Many thanks in advance for sending the specimen copy and publishing links.

Your contact for editorials and to request photo material:

SCHULZ. PRESSE. TEXT., Doris Schulz, Journalist (DJV), Landhausstrasse 12

70825 Korntal, Germany, Phone +49 (0)711 854085, [ds@pressetextschulz.de](mailto:ds@pressetextschulz.de), www.schulzpressetext.de

fairXperts Ltd & Co. KG, Hartmut Herdin, Hauptstrasse 7, 72639 Neuffen,

Germany, Phone +49 (0)7025 8434-0, [info@fairxperts.de](mailto:info@fairxperts.de), [www.fairxperts.de](http://www.fairxperts.de)