

## Manz Announces Strategic Partnership with Japanese EIKO in the Field of PCB Production

- *Collaboration with leading supplier of mobile labs makes Manz to the only provider of fully integrated one-stop solution in PCB production*
- *Precise Inline Chemistry Analyzer ICA 001 saves total costs and improves safety during production*
- *The advanced technology makes a real-time analysis of up to 5 chemicals possible*
- *The most compact chemistry analyzer on the market: convenient to carry and easy to maintain*

Taipei, 25 October, 2016 – The Manz Group, a globally active high-tech equipment manufacturer today announces a strategic partnership with EIKO Electronic, the leading supplier of chemical analyzing tools in Japan as well as the most important partner of USHIO, the largest manufacturer of industrial lighting equipment and instruments in the world. Through the combined expertise of the German and Japanese companies Manz can offer the first integrated PCB production line including wet and dry processing tools, CIM (Computer-Integrated Manufacturing) and ICA (Precise Inline Chemical Analysis and dosing system). Manz thus is the only provider in the market that can provide a fully integrated one-stop solution.

The new 'Mobile Lab' ICA 001 is the most compact tool in the market. Its enhanced technological capability will provide industry with competitive edge by analyzing up to 5 chemicals in the PTH copper process in real-time and by automatically refilling the chemicals without manual operation and thus avoiding any process variability. Integrating the ICA 001 customers can cut costs with respect of time, BOM (Bill of Material) and manpower and will improve the safety during production.

With the strategic cooperation, Manz and EIKO extend customers' capability in intelligent manufacturing by offering a solution which can enhance efficiency of chemical parameter analysis to a great extent. Manufacturers will benefit from real-time analyzing at highest accuracy and will thus enhance their competitiveness in the market.

ICA 001 is the most compact / high-precision ICA in the market. The innovative product weighs only 5 kg and is no bigger than a shoe box (30Wx25Hx20D in cm). Its compact size makes the product easy to carry and maintain. Apart from copper process, ICA 001 is highly flexible and can also be used in the analysis of other chemicals in different wet processes. Same as Manz' global well-known CIM, the new ICA001 can be perfectly connected with not only Manz tools but also tools from other system providers to deliver comprehensive compatibility.

The comparison between new ICA 001 solution and traditional analysis:

Feature	New Mobile Lab, ICA 001	Traditional Analysis without ICA
Inline real-time chemicals' analysis and management	<ul style="list-style-type: none"> <li>• Online and real-time integrated solution which can analyze up to 5 chemicals in the copper process</li> <li>• Fully automatic analysis from sampling to pipeline cleaning</li> <li>• Automatic sampling and automatic analysis within 15 minutes, ensuring the chemical parameter stability up to 97 %</li> <li>• New function enables automatic refilling of chemicals based on the status to avoid manual variety</li> <li>• Smart testing and analysis without manual operation to save costs in lab equipment and manpower</li> </ul>	<ul style="list-style-type: none"> <li>• High expenditure of time as the manual lab testing takes 30 minutes to get the result that might be inaccurate</li> <li>• Fixed costs in lab equipment, manpower, and space</li> <li>• Cannot monitor the status of chemicals in real-time and needs manual operation, the deviation is much higher</li> </ul>
Big data collection and management	<ul style="list-style-type: none"> <li>• High compatibility with CIM; able to upload the production data right away to easily control, track and backup the big data during the process</li> </ul>	<ul style="list-style-type: none"> <li>• No connection to other systems which results in many sources of error</li> </ul>
High accuracy and safety	<ul style="list-style-type: none"> <li>• Without manual operation, the safety for operator in traditional way can be improved</li> <li>• Its chemical parameter concentration inaccuracy is less than 3 %</li> </ul>	<ul style="list-style-type: none"> <li>• High deviation to adjust the chemicals as the identification is based on the visible color</li> </ul>

The upgrade of Manz' one-stop production solutions eliminates the hassle caused by the missing system integration so far. With EIKO on board, both companies will jointly develop market shares in new industries and new markets in the future.

Dieter Manz, CEO and Founder of the Manz Group: "Today, we are very happy to announce the strategic partnership with EIKO Electronic to extend our existing one-stop production solutions. Through the collaboration, Manz and EIKO will lead the PCB industry to move further towards smart manufacturing and will help our customers cutting costs while increasing yield at the same time. The launch of the 'Mobile Lab' is only the beginning of our collaboration. In the mid-term we plan to develop further analyzers for different processes and industries together with EIKO."

Kitajima Hideo, CEO and Founder of EIKO Electronic: "EIKO Electronic is pleased about this strategic cooperation. Manz has already proven its unique technological capabilities several times for different industries.

Together with Manz we have the common goal to help the PCB-industry achieving the next step of evolution, and I am convinced we will succeed!"

The full range of Manz' enhanced one-stop production solution will be shown at the TPCA Show, Oct 26 to 28, 2016. Booth number: K1413.

### **About MANZ AG – passion for efficiency**

As a globally active high-tech equipment manufacturer, Manz AG, based in Reutlingen, Germany, is a pioneer for innovative products in fast-growing markets. Founded in 1987, the company has expertise in seven technology sectors: automation, laser processing, vacuum coating, screen printing, metrology, wet chemical and roll-to-roll processing. Manz deploys and continuously develops these technologies in three strategic business segments: Electronics, Solar and Energy Storage.

The company is led by founder Dieter Manz and has been listed on the stock exchange in Germany since 2006. It currently develops and produces in Germany, China, Taiwan, Slovakia, Hungary and Italy. It also has sales and service branches in the United States and India. Manz's claim "passion for efficiency" offers the promise of production systems of the highest efficiency and innovation to its customers in dynamic, future-oriented industries. With its comprehensive expertise in developing new production technologies and related machines, the company contributes substantially to reducing production costs for end products, making them accessible to large groups of buyers the world over.

### **About EIKO ELECTRIC CO., LTD.**

Eiko Electric CO., LTD. was founded in 1976 by Kitajima Hideo as a supplier to Ushio Inc., the largest manufacturer of industrial lighting equipment and instruments in the world. Eiko Electric developed automatic analysis and management devices suitable for acid, chemical treatment, alkaline degreasing, etching, copper and nickel baths in 2015. The automatic analysis technology was subsequently applied to the development of environmental monitoring equipment including the monitoring of wastewater from steel mills, or the measuring and recording of chemical oxygen demand (COD) along coastal areas, rivers, and lakes to determine if the wastewater conforms to discharging standards; an automated sampling feature also enabled the regular sampling and storage of wastewater samples.

Recognizing that real-time monitoring of production and process information is now an important customer requirement, Eiko Electric made improvements to the large automatic analysis and management devices that used to require installation by specialist technicians and developed small, portable automatic analysis and management devices; this not only greatly reduced the costs of initial installation and subsequent maintenance, but also delivered the same level of accuracy and performance as large, conventional automatic analysis devices. The breakthrough helped Eiko Electric establish a strong business foundation in wet process management involving chemicals and gained the trust from Ushio Inc., and many well-known chemical

suppliers from all over the world.

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