

Press release

New standard in cable marking

Tuttlingen (Germany) / December 12, 2023 – In a world where the cable industry faces an array of challenges, innovation emerges as the driving force of progress. As pioneers in the realm of coding and marking solutions, LEIBINGER launched a new CIJ system this year that, compared to conventional systems, delivers revolutionary innovations to cable manufacturers.

Cable manufacturers around the world face a wide variety of challenges. Customers expect to receive increasingly powerful and more reliable cables. Compliance is required with a great many specifications, in particular safety standards, in relation to the development and production of cables. In addition, the topic of sustainability is increasing in relevance continuously. This concerns the manufacture of environmentally compliant products that can be recycled, and the reduction of CO2 emissions right along the value-added chain. All of these challenges need to be addressed against a backdrop of unrelenting cost pressure. This pressure results from the increasing costs of raw materials and energy as well as unforeseeable plant downtime, rework and delays with cable extrusion that should be avoidable.

The role of coding and marking

Efficient marking plays a key role in the promotion of sustainability, reliability and cost reduction. CIJ (Continuous Inkjet Technology) is the most widespread kind of marking technology on the global cable extrusion market. In May 2023, the German marking specialist LEIBINGER launched its new IQJET printer on the market. During the development of this product, the company was committed to focusing on cost efficiency and sustainability. This printer necessitates no maintenance for its first 5 years in service because of the innovative, robust and wear-minimizing product design. The IQJET requires none of the cleaning routines typical in this sector. The availability of this printing system is therefore much higher than other products on the market.

What distinguishes the IQJET from previous CIJ printers?

CIJ technology is inexpensive, is universally applicable, it is flexible and it fully addresses all the challenges facing the cable industry. CIJ printers are suitable for almost all surfaces, shapes and materials. Coding is contactless. Integration in cable production is simple, operation is safe for people and the environment and no protective devices are needed. The inks are extremely fast-drying and can be applied to light as well as dark substrates, yielding a

good and clearly legible print image. A familiar disadvantage of conventional CIJ printers on the market is that they require regular cleaning, not infrequently every time they start up. During this time, the production line needs to be shut down. That is annoying and also very expensive. The IQJET eliminates this disadvantage altogether.

LEIBINGER's innovative nozzle sealing technology on the IQJET is unique on this market, and it renders cleaning unnecessary. In the breaks between print runs, the ink circuit is sealed automatically in a totally air-tight manner and ink simply continues to circulate. As a result, the ink is unable to dry out and the lines do not get clogged. The benefits to the user are that time-consuming cleaning routines are no longer required, and the printer starts up again immediately. Print quality is always high because the temperature and viscosity of ink in the IQJET is controlled continuously. This means that, even under the particularly demanding environmental conditions or temperatures of cable production, these have no impact on the printing outcome.

Another attractive benefit of automatic nozzle sealing technology is that no solvent is consumed during breaks between print runs. Vaporized solvents are recovered and returned to the system. That translates into fewer emissions and in some cases solvent consumption levels at just half the level of standard competing systems. For example: the IQJET uses 2.7 ml solvent per hour. Current rival systems without solvent recovery use between 6 and 10 ml per hour. Calculated on the basis of a 3-shift operation working a total of 6,000 hours a year, 43,800 ml of solvent are saved year on year.

How does the IQJET achieve lower operating costs?

Over the long term, operating costs have a major impact on the productivity of operations. Due account should be taken of this when making investment decisions. With CIJ technology, we are talking about ink and solvent consumption as well as energy requirements. The most compelling IQJET innovation in terms of energy consumption is its intelligent pump management system. Operating intermittently, the pumps use less power as a consequence and are also more durable. The IQJET is extremely energy efficient and on average makes do with a mere 36 watts. Attractive cost savings stem from the fact that the IQJET requires no maintenance during its first five years.

The new ink cartridge system also contributes towards sustainability. The IQJET cartridges drain right down to the last drop – which is not true of many of the conventional CIJ printers on the market. Rival systems frequently require new cartridges even when those installed are still 10% full. Once the cartridge of an IQJET is totally empty, it can be replaced during runtime. Another positive feature is that the empty cartridges can be disposed of and

recycled quite simply with other plastic waste. Since they only comprise a single grade of plastic (100% PE), they are very easy to recycle.

Operational integration has never before been so simple

For integration in production operations, LEIBINGER offers a plug & print solution with its IQJET. The printer features a great many ports including OPC UA and an integrated PLC, enabling it to be incorporated simply in any production line. Operation is also simple and intuitive, involving drag & drop operation (as on a smart device) on an ultra-modern 10-inch touchscreen display.







Decades of experience and satisfied customers in the cable-making industry

LEIBINGER views this industry as one of its main business sectors. That is also reinforced by many years of loyalty from satisfied customers. "We know the challenges facing this sector, we know the materials, we have a comprehensive range of specialist inks and the satisfaction of our cable customers around the world attests to our expertise", states Stefan Moser from Applications Engineering at LEIBINGER. Jürgen Eberle, ABB Schweiz AG, Area PMA Kabelschutzsysteme, Switzerland, confirms: "While looking for a new CIJ equipment, we came across the company LEIBINGER. I have to say, this has been our best move so far. Previously, we had a cleaning effort of 2 to 3 hours a day, this is completely eliminated. I highly recommend the LEIBINGER company." Thomas Haab, Project Manager at HUBER+SUHNER AG, Switzerland, is also convinced by LEIBINGER: "HUBER+SUHNER strives to improve its process continuously. On the search for a new inkjet system, we compared several manufacturers. During this exercise, we were able to establish that we can reach our speed targets comfortably with LEIBINGER. Also, other features could be provided, such as the printing of order numbers."

Conclusion

"Even before the IQJET we had powerful CIJ printers for the cable-making industry – including JET Rapid Wire with extreme speeds of up to 1000 m/min or the JET Rapid Wire PI for printing on dark as well as black cables, as well as the JET3up MI for micro-printing with superlative legibility on very small surfaces. These devices were, and still are, equipped with the unique LEIBINGER nozzle sealing system and they deliver the high standard of 'made in Germany' quality for which LEIBINGER is renowned worldwide. With the IQJET, we have now added a particularly efficient device to our product range, one that focuses on economic operational targets and sustainability. That constitutes a new standard for marking", explains Michael Wöhrmann, Business Development Director at LEIBINGER.

Image captions:

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|  | <p>The LEIBINGER IQJET marks cables during the extrusion process.</p> <p>Source: Paul Leibinger GmbH & Co. KG</p> |
|  | <p>"HUBER+SUHNER strives to improve its process continuously. On the search for a new inkjet system, we compared several manufacturers. During this exercise, we were able to establish that we can reach our speed targets comfortably with LEIBINGER. Also, other features could be provided, such as the printing of order numbers."</p> |
|  | <p>Thomas Haab Project Manager at HUBER+SUHNER AG, Switzerland</p> <p>Source: Paul Leibinger GmbH & Co. KG</p> |
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|  | <p>Jürgen Eberle ABB Schweiz AG, Area PMA Kabelschutzsysteme, Switzerland</p> <p>Source: Paul Leibinger GmbH & Co. KG</p> |
|  | <p>Examples of marking imprints on cables.</p> <p>Source: Paul Leibinger GmbH & Co. KG</p> |

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About Paul Leibinger GmbH & Co. KG (LEIBINGER)

LEIBINGER is a globally operating specialist in coding & marking systems with headquarters in Tuttlingen, Baden-Württemberg (Germany). The third-generation family-run company, founded in 1948, develops and produces industrial inkjet printers as well as inks for various applications – with a workforce of close to 300. Innovative technologies and an exceptionally high standard of quality are what distinguish LEIBINGER's advanced coding & marking solutions. As the inventor of a disruptive nozzle sealing technology LEIBINGER is transforming the industry's experience working with Continuous Ink Jet (CIJ), leading to greater productivity in the manufacturing of food and industrial products – with tens of thousands of successful installations worldwide. A global network with some 150 distribution partners and subsidiaries in the US and China ensures that LEIBINGER is ideally positioned to maintain close relationships with its many customers worldwide.