

MYNews

A magazine from Mycronic

2025.01

MYCare™

Precision in maintenance

Jet printing

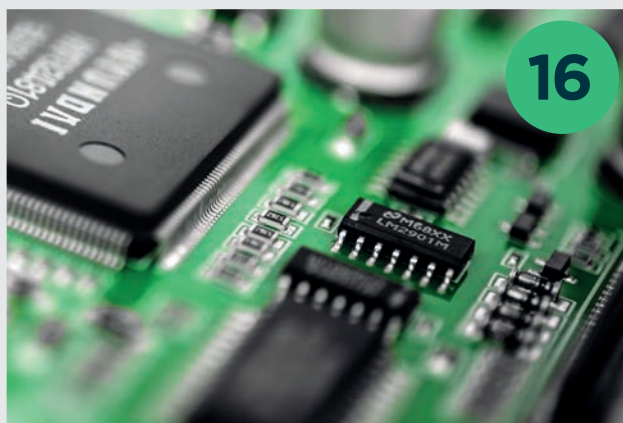
**OVERCOMING SOLDER PASTE PRINTING
CHALLENGES WITH JET PRINTING**

3D AOI

**HOW TO DETECT DEFECTS IN
PRESS-FIT COMPONENTS**



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MYCRONIC

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PUBLISHER: Simon Sandgren, responsible under Swedish law **EDITOR:** Jenny Ek Adrell **CONTRIBUTING WRITERS:** Grant Baldridge, Mark Flaskett, Holly Keating, Yan Manissadjian, Cyrille Bidet **GRAPHIC DESIGN & LAYOUT:** EXPEDITION 46™ **PRINT:** TMG Sthlm, Sweden, 2025 **ISSN:** 1651-4882 P-001-0252, October 2025. This magazine is produced with the intention of providing general information about Mycronic and our products.

Specifications are subject to change without notice. Mycronic, MYDATA, MYDATA automation and MY; Mycronic 4.0; MYNews; MYCare; MYSynergy; MYTrilogy; MYPro, MYPro Line; MY100, MY100e, MY200, MY300, MY300DX, MY300EX, MY300HX, MY300LX, MY300SX, MY500, MY600, MY700, MY700JD, MY700JP, MY700JX; MYPro A40, A40DX, A40SX, A40LX; MYPro S20, S30; MYPro I50, I51, I80, I81, I90, I91; MYSmart; MYC10, MYC50, MYC60, MYD10, MYD50, MYT10, MYT50; Mycronic SMD Tower; MYTower 5, 6, 6+, 7+, 5x, 6x; VI TECHNOLOGY; VIT; 5K, 5K3D, 8K, 8K3D, 9K, 9K3D; PI, PI Pico, PI Primo; SIGMA Link; MX7, HYDRA, Midas, ISIC; Agilis, Agilis Linear Magazine (ALM), Agilis Linear Magazine Flex (ALM FLEX), Agilis Stick Magazine (ASM), Agilis Tray Magazine (ATM); Mycronic Tray Exchanger (TEX), Mycronic Tray Wagon Magazine (TWM); Mycronic Dip Unit (DPU); Mycronic Linescan Vision System (LVS); Mycronic Assembly Process Management (APM) including: JPSys, STSys, TPSys, MYCam, MYCenter, MYCenter Analysis, MYLabel, MYPlan, MYPro Connect, MYPro Create, MYPro Link, MYTrace and FlowLine are registered trademarks or trademarks of Mycronic AB. Mycronic AB is ISO 9001:2015 and ISO 14001:2015 certified.

In a time of global uncertainty—where shifting trade policies and political developments challenge many industries—Mycronic continues to invest boldly in the future, together with our customers.

This past year, that forward momentum has taken clear shape. We've received a number of record-setting orders that reflect both the strength of our technology and the trust of our long-term customers. Just recently, one customer placed an order for ten MYPro A40 pick-and-place machines—one of our largest single orders to date. Another invested in 14 MYTower material handling solutions, affirming the value of integrated, automated workflows. These cases reflect the broader trend we see across the industry: a growing need for advanced, scalable systems that can keep pace with increasingly complex electronics production.

To meet this growing demand, we're expanding not only our portfolio, but our capabilities. The division formerly known as "High-Flex" is now "PCB Assembly Solutions"—a name that better reflects the breadth and ambition of this business area. Alongside this evolution, we're preparing to move into new headquarters and production facilities in Kista, the heart of Stockholm's leading high-tech cluster. With expanded floor space and improved production flows, our teams will be able to take advantage of new efficiencies as we scale up production of pick-and-place systems, material handling solutions and inspection technologies. This move represents a major step, and the result of many months of planning and investment. Production will transition in phases beginning this autumn, with full operations expected in early 2026.



Of course, expansion isn't just about scale—it's also about technical advancements. Our latest generation of solutions is pushing new boundaries in performance and precision. For example, the MYPro A series pick-and-place machines will soon be extended to offer enhanced large-board capabilities, thanks to a newly engineered gantry system with increased travel. Our inspection platforms are gaining powerful AI-based features, helping line operators make smarter, faster decisions. And on the jet printing side, work is under way to refine our ejector technology to enable even finer deposits—taking customers' precision to the next level.

The pressure to innovate in electronics assembly has never been greater—but it's also never been more rewarding. Every new feature and every new facility we launch is done with one purpose in mind: to support our customers in building the technologies of the future—faster, more reliably, and more sustainably.

Thank you for being part of this journey with us. We look forward to continuing our work together towards smarter solutions, stronger partnerships, and a more productive future.

// Clemens Jargons
Senior Vice President, PCB Assembly Solutions



Staying ahead of the curve

— inside Mycronic’s MYCare™ services

Discover how Mycronic’s tiered MYCare services are transforming SMT and PCB production via equipment uptime, proactive maintenance, and expert support.

Wherever you operate, MYCare offers a broad global support network of skilled and knowledgeable service personnel to meet your needs. And because we have built integrated hardware and software, we are well equipped to quickly and efficiently resolve any issues to keep you up and running.

TEXT: HOLLY KEATING PHOTO: MYCRONIC

FULL ACCESS TO ALL SERVICES

From day one, the full range of MYCare services is available to help keep your Mycronic equipment at peak performance. Whether you need support for scheduled preventive maintenance, repairs, or refurbishment, local MYCare service technicians are always at hand.

They make it a priority to help you with spare parts, accessories and software upgrades, ensuring every Mycronic machine is performing to specifications.

PROACTIVE PLANNING FOR BETTER PERFORMANCE

Beyond the full service access available to all Mycronic customers, MYCare makes it possible to achieve even better control of service availability and costs. This unique multilevel service program has been developed to offer the right levels of technical support, preventive maintenance and service to suit your business.

With the right MYCare service plan, you can confidently take on any job, plan your resources and achieve your Return On Investment (ROI) targets without unwelcome surprises.

FOUR LEVELS OF SUPPORT

With the purchase of a new Mycronic machine, a choice of four different levels of MYCare is available to provide the right levels of preventive maintenance, response time, support, software updates and service coverage that are most suitable for your operation—and your budget.

Depending on your manufacturing setup, each level includes the flexibility to add special requests for additional service and support.

MORE THAN PREVENTIVE MAINTENANCE

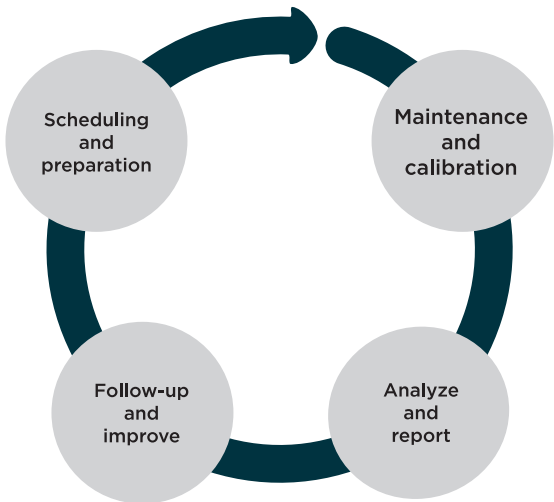
Maximizing the productivity and yield of your machines requires some care and attention. Our certified and highly experienced service engineers follow established protocols and schedules to ensure equipment reliability and uninterrupted production.

MYCare can be much more than just annual maintenance visits. With the right service program, you gain access to specialized support and expertise to identify proactive measures that help maintain peak performance over time.

Prior to any visit, your MYCare service professionals will review the notices and feedback from previous visits to ensure the most effective and efficient service possible.

SOFTWARE UPGRADES

With MYCare Premium+ and MYCare Max, we always install the latest software that is supported by your machine generation, including the offline software tools used for data preparation, programming,



A global team of maintenance and expert technicians close to customers with resources waiting to help.

planning and material handling. The benefits of a continually updated software portfolio are massive. Support is faster, and your machines and online computers always have the latest productivity-enhancing features.

And because the industry and its components are always changing, the Mycronic factory software suite continues to evolve. New centering methods, improved inspection algorithms, better performance databases and support for new CAD formats are all included. You can also rest assured that the latest security updates and operating system enhancements are installed to better protect your factory from malware, cyber-attacks and other disruptive external threats.

MYCare service levels also provide customers the flexibility to choose which plan works best—to maximize your productivity and return on investment. Mycronic machines stand for quality, flexibility, and productivity, and MYCare helps you make the most of it.

Are you curious what type of benefits to expect with software upgrades that are included in MYCare Premium+ and higher levels?

“There are so many reasons to keep your machines and offline stations updated with the latest software releases”, says Mattias Jonsson, Product Manager for PCB Assembly Solutions. “Mycronic’s developers are continually adding new functionality to our software suite, functionality that is requested by our customers, and helping them becoming more efficient. Staying on an old version means you are not as productive as you could be.”

And because the industry and its components are always changing, the Mycronic factory software suite continues to evolve.



**NOT “JUST” MAINTENANCE
—A CONTINUOUS IMPROVEMENT CYCLE**
Before every service appointment, technicians examine past system performance and customer input to ensure maintenance is precise down to individual components. At the heart of this approach lies our fundamental promise to every customer.

“Signing a MYCare contract with Mycronic means entering a long-term partnership that spans the full product lifecycle. Our customers gain access to our complete portfolio of services, the latest technology developments, and our deep knowledge base,” shares Helena Berglund, Head of Aftermarket for PCB Assembly Solutions. “This isn’t just maintenance—it’s a continuous improvement cycle designed to maximize productivity and enhance the customer experience at every touchpoint.”

THE HUMAN ADVANTAGE
Behind every MYCare plan is Mycronic’s global service network—certified service engineers trained and re-certified at Mycronic centers worldwide, and logistic expertise to help with any part needs, etc.

Our second-line and backline engineers have access to extensive technical documentation, R&D developers, and detailed troubleshooting guides. These engineers work closely with R&D teams and bring a wealth of industry experience

to every interaction. The entire team plays a critical role in delivering expert-level service and ensuring an exceptional customer experience.

**HOW OUR TECHNICAL EXPERTS WORK
BEYOND WEAR AND TEAR**
Mattias shares, “MYCare is much more than just replacing wear and tear parts at prescribed intervals. Our technicians do a thorough check-up and inspection of all subsystems, carry out corrective actions according to applicable service bulletins, and starting at the MYCare Premium plan—install the latest software update—and complete the preventative maintenance at regular intervals. Our technical experts can even advise on productivity enhancements and better ways of working. The goal is to find and prevent issues before they happen.” ●

The MYCare™ advantage
Proactive maintenance = Maximum uptime

- Priority scheduling and preventive check-ups keep unscheduled downtime minimal
- Regular software updates ensure systems stay running with up-to-date software
- Remote diagnostics and assistance via TeamViewer™ ensure faster troubleshooting—getting customers back online swiftly



Never slow down

Stay ahead of the curve with MYCare™
The path to productivity isn’t always straightforward. But with the right care and support, you can always stay ahead of the curve. Whether it’s expert training, fast remote troubleshooting, preventing process drift or ensuring access to the most powerful software upgrades, MYCare has you covered. Consistently maximizing uptime. Boosting performance. And delivering the right expertise to keep your production running at full speed. Learn how MYCare can help you get the most from your machine at mycronic.com.

Behind-the-scenes with Supply Chain Specialist

— understanding Mycronic’s parts and logistics for SMT maintenance

Go behind-the-scenes and get insights from order to arrival as we spotlight the dedicated experts involved. The quiet engine behind our service success —keeping customer machines running with top performance. This exclusive series explores the people, passion, and precision behind world-class SMT maintenance. Discover how innovation meets hand-on expertise in every step of the process.

TEXT: HOLLY KEATING PHOTO: HOLLY KEATING



INTRODUCTION TO SMT INVENTORY MANAGEMENT
Meet Therese Spångvall. She has been with Mycronic for more than 18 years and is currently working as our Supply Chain Specialist for outbound processes and inventory management. Managing both the central warehouse and our multiple subsidiaries' warehouses, she ensures SMT parts are available in more than 50 countries.

WHY DOES SMT MAINTENANCE AND LOGISTICS MATTER?
Surface Mount Technology (SMT) machines are the heartbeat of efficient PCB assembly for Mycronic customers, ensuring precision, speed, and consistency. But keeping them in peak condition isn't just about routine check-ups—it's about how aftermarket processes and logistics are set up to meet customer needs.

Wondering how manufacturers can avoid downtime and ensure top-notch quality? If you're considering purchasing new PCB machines, keep in mind that it's just as important to partner with a company who has strong proactive maintenance and strategic logistics planning in place for customers, not just one and done. It's about long-term collaboration and partnership.



Therese Spångvall,
talking with Tara Kallio, Senior
Material Handler at Mycronic.



MINIMIZING DOWNTIME AND MAXIMIZING EFFICIENCY
Your role involves coordinating shipments, tracking material availability, and ensuring all moving parts come together efficiently. How do you balance working closely with Mycronic offices worldwide while also managing inbound logistics, sourcing, and procurement?
— *It's pretty much about looking at the big picture, collecting and connecting everything for it all to work. Then I'll analyze the levels at our different warehouses to see if we have the correct stock or figure out if there's any scrapping or recalls necessary. I need to consider both sides—inbound and inventories—for the correct levels. This allows us to avoid having too much capital tied up in the warehouses. It comes down to monitoring the big warehouse picture.*

OPTIMIZING INVENTORY AND CHANGE MANAGEMENT FOR SEAMLESS SMT OPERATIONS
Managing Engineering Change Orders (ECOs) seems to be a crucial part of ensuring aftermarket items remain available. How do you integrate new parts into the ERP system?
— *I handle ECOs for new parts, entering them into our ERP system and setting parameters like safety*

stock levels so the system automatically triggers demands.

When urgent spare parts are needed—like electronic boards for a MY300 machine—how does HQ co-ordinate with the U.S. warehouse to handle emergencies?
— *Emergencies are primarily managed through the order handling process, which I'm not heavily involved in for customer orders. However, when subsidiaries create a demand and don't have stock, it escalates an urgent request to HQ. At that point, one of our outbound order handlers at HQ takes over to process the emergency request.*

Does Mycronic have any customer service delivery targets for part logistics?
Yes, we always strive to deliver according to customer requests and the order should be delivered as soon as possible.

A cornerstone, not just for me, but for everyone within Mycronic, is to get to know our internal and external customers and suppliers. With that knowledge you can assist them better with the information they need, to make the delivery process flow more seamlessly.



With manufacturing facilities in Sweden and Japan, and strategic partnerships in China — first with Axxon and now with HCX — we have established a truly global supply chain.

THERESE SPÄNGVALL
SUPPLY CHAIN SPECIALIST
MYCRONIC

STRATEGIC INVENTORY MANAGEMENT: OPTIMIZING LOCAL STOCK LEVELS FOR SMT MAINTENANCE

How do you determine which articles should always be available in local stock? Is it based on consumption patterns, or do you have set targets for inventory levels in regions like France, the UK, and the US?

— Yes, the inventory strategy is based on how critical the part is, order frequency and cost, ensuring that the most frequently ordered parts are always available in our central supply warehouse but also locally, closer to the customer.

We have a stocking model that we recently updated, which will result in higher stock levels and more complete ranges of parts at the local offices. This is something we have reviewed in the US and Germany, and are expanding to the other local offices as well. Allowing these locations to have a bigger range of parts available locally.

SCALING GLOBAL LOGISTICS: MANAGING GROWTH IN SMT EQUIPMENT DISTRIBUTION

With Mycronic's portfolio having expanded significantly over the past decade as its manufacturing has shifted to multiple locations—including Sweden, Japan, and China—can you give us some insight into how Mycronic has found solutions to any challenges that have emerged in streamlining global logistics?

— With manufacturing in Sweden, Japan, as well as partnerships in China with Axxon and HCX, we've worked continuously to streamline our supply chain processes. Over the years, we've adapted to this growth by optimizing our workflows and ensuring our team remains agile. While our focus has primarily been on handling orders, we continue to improve background operations to support seamless logistics.

For full-line customers ordering multiple machines from different regions, how does Mycronic ensure a seamless delivery experience?

— These orders are managed efficiently by a dedicated team, ensuring a streamlined process from our side. While deliveries may arrive on different days due to global manufacturing locations—such as the jet printer from Japan, the pick-and-place from Sweden, and the HCX stencil printer from China—we work continuously to optimize coordination and improve the overall delivery experience for our customers.

Is sustainability something you have in mind when you are working on these processes? We talk a lot about sustainability, but how do we really integrate it?

— We combine shipments to our subsidiaries to minimize their number to have a positive impact on our sustainability. And, having the right quantities of goods in the warehouse, we don't have a lot of things collecting dust for months. Accurate inventory



and smart shipping are essential for us.

For example, for MY700, which is manufactured in Japan, our Fukuoka site is our warehouse for MY700 parts for Asian customers.

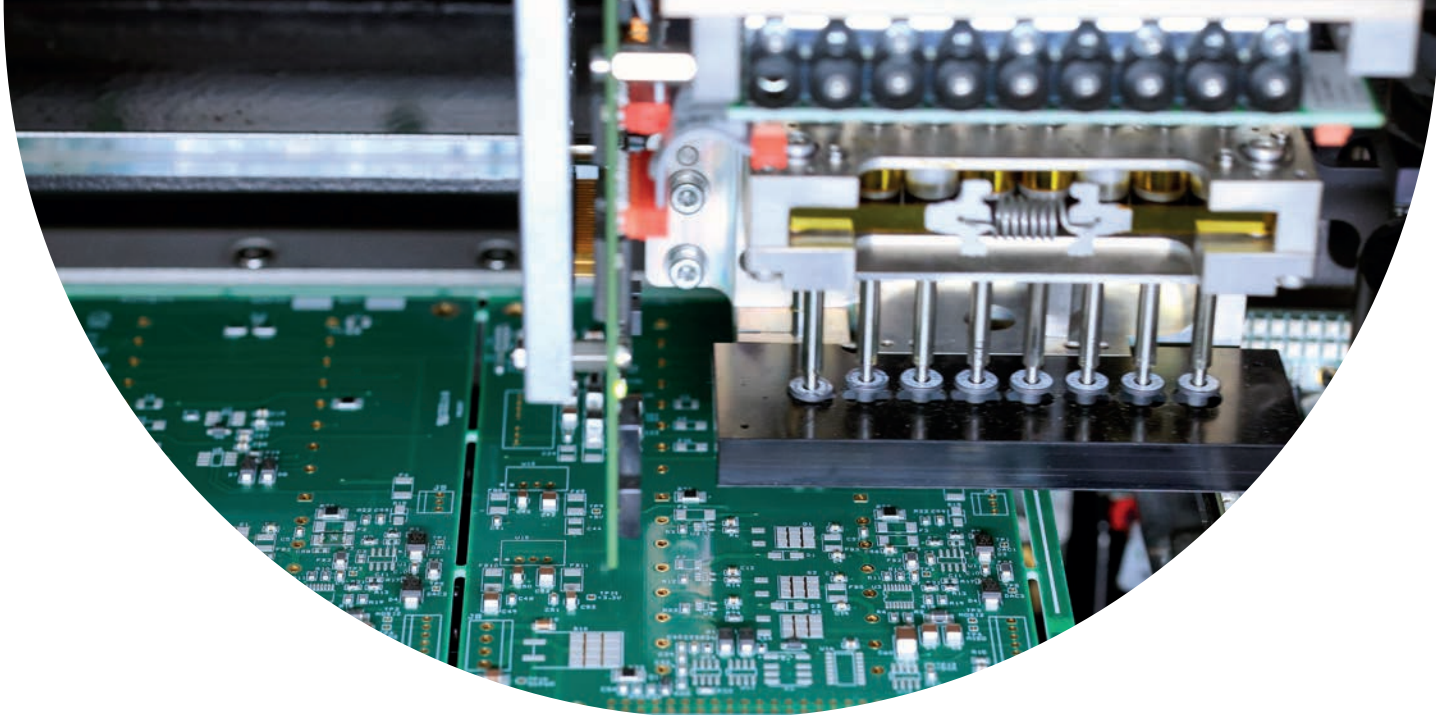
And we are trying to send goods more often by ship. For example, for our US subsidiary, we send several units together by ship, so the carbon emissions are lower. Then machines are stored locally which decreases delivery leadtime to US customers.

Last but not least, what do you like most about your role at Mycronic?

— I have a very broad role, which I like very much. Because I've been with Mycronic for so long, I have built up extensive experience and understanding of processes, and I'm passionate about seeing what can be improved and keeping what's working. It's great finding those little tweaks we can make to achieve much bigger value results—for our team and for

our customers. That's what motivates me: to help us improve and serve our customers as quickly as possible.

My mindset is being interested in not just my own tasks but also those of others, especially for those who are my internal and external customers and suppliers. Because I'm curious to learn what their challenges and requirements are, I can improve the areas I work with closely and, if necessary, challenge their output in their processes. This is something Mycronic encourages and that I'm proud of. ●



We decided to turn
this challenge into
an opportunity.

KHUSHAL PANCHAL
KHUSHAL PANCHAL
PCB POWER



The power of partnership

— how a decade of dedicated service
supports the growth of PCB Power



India's electronics manufacturing industry is booming, and PCB Power is one of the companies leading the way. Supported by one of Mycronic's distributors Accurex, PCB Power, a Gujarat-based company, has been able to expand beyond PCB manufacturing to become a flexible full-service PCB assembly partner to a wide range of growing industries.

TEXT: GRANT BALDRIDGE PHOTO: PCB POWER

India is quickly becoming a major player in the global electronics industry, with the government aiming for the country to become one of the top three global electronics exporters by 2026. As the industry has grown, PCB Power has emerged as one of the country's leading PCB manufacturers.

A STRATEGIC EXPANSION

Originally known as Circuit Systems, PCB Power was founded in 1995 with a focus solely on PCB manufacturing. Over the past decade, the strategy has expanded to include PCB assembly, where the company has built a niche serving some of the most demanding customers in the aerospace, railway,

automotive, and medtech industries. The company's business model is centered around taking orders online, offering a high-quality manufacturing service with fast deliveries. Flexibility is key for PCB Power, as they need to process extremely diversified jobs with the same efficiency and quality level.

"We decided to specialize in high-mix, low-volume," explains Khushal Panchal, COO. "At the time, most EMS were focused on larger volumes. Ours were a series of less than one hundred, and very few were doing this type of work on automatic machines. We decided to turn this challenge into an opportunity."

THE HUNT FOR FLEXIBILITY

PCB Power understood their customers required small-to mid-volume batches, short delivery times, and flexible assembly, Khushal set out to evaluate his equipment options. "On top of the flexibility, we were looking for high precision. Because PCB Power is known for quality first and service second, we knew that any quality issues, for example with smaller components, would damage our brand."

At Productronica India 2016, he was introduced to the MY200 pick-and-place solution by the team from Accurex, supplier and service provider for Mycronic pick-and-place and jet printing equipment in India. "We saw the demo machine there and could almost immediately decide this was the right way to go," says Khushal of the MY200. "We had component strips, not minimum reels, so we appreciated the feeder system and could see that other machines didn't have the same kind of flexibility for smaller volumes."

The ability to handle a wide range of technologies and board designs was also key to Khushal's decision. "The Accurex team asked me: 'Which kinds of PCBs will

you be building? And which segment?' I said: 'I don't know—I need to handle all varieties!' Sure, we knew that quality and accuracy were important, but I didn't know at the time how complex our products would get."

GROWING THROUGHPUT

Today, nearly ten years later, Accurex continues to service and support PCB Power's assembly equipment as it evolves to meet changing customer needs.

First came an upgrade to a HYDRA mounthead in 2021 to handle growing customer volumes. Then, more recently, the company scaled up its output in 2024 by installing a MY300SX.

”

Any company can sell,
but service isn't easy.



PCB Power's production engineers
have direct contact with Accurex
for any small questions.



"It's really user-friendly for our team," says Khushal, "which is one reason we went for a second Mycronic machine—we liked the ease and speed of change-overs."

CLOSE SUPPORT

Throughout the period since 2017, PCB Power has increased its overall revenue from its business activities by 40 percent while significantly expanding its customer base. Part of this success, says Khushal, is the close support he has received from Accurex during the company's expansion.

"From day one, the support from Accurex has been excellent," he says. "Any company can sell, but service isn't easy."

GOING THE EXTRA MILE

As an example, Khushal points to a time during the pandemic when the Accurex team responded in a way no one thought possible. "We had an issue, and they drove 45 kilometers to another state to bring spare parts that no one else could get access to. And this was at a time where it was impossible to travel without special documentation!

48 hours later the machine was up and running again. I'm still not sure how they did it."

"It's a relationship that goes both ways," adds Ram Mohan, Chairman, Accurex. "From the beginning we saw a company that was building a brand, which we take seriously. So we've kept a small team near PCB Power to ensure zero downtime and to always have replacement parts in stock."

The local presence of a knowledgeable service partner is key to the ongoing relationship, says Khushal. "Our production engineers have direct contact with Accurex around any small questions, and we really appreciate it. Because service engineering isn't easy. It's really difficult to keep hold of talented service engineers in any industry here."

Additionally, as an equipment manufacturer Mycronic intends to enhance its local presence to provide better support to its existing customers and distributors. To meet this goal, Mr. Vinu Muthayyan has been appointed as the Country Sales Manager for India. Furthermore, Mycronic's regional headquarters are located in Singapore to offer prompt assistance

to national distributors in both India and South-East Asia, through an expert second-line support team.

HIGH-QUALITY PRODUCTS FOR HIGH-RELIABILITY INDUSTRIES

As PCB Power continues to grow, producing around ten different orders per day, some which are Original Equipment Manufacturer (OEM) providing components for another company's product, Khushal looks forward to continuing to expand the company's customer base. "Now we have aerospace, railway, industry, automotive—quite a few of which are OEMs. We're becoming the partner of choice for medtech, which is always mid-volume. And a lot of EV customers are also still in intensive development, mostly IPC Class 2 and Class 3."

To support these producers of high-reliability electronics into the future as volumes increase to 5,000 or more boards per batch, Khushal has ensured that space is prepared on the shop floor for a possible third production line.

No matter how many customers are served or how large the production volumes grow, Khushal is

convinced that the company will always maintain its single-minded focus on quality and service. This commitment, he says, has always been with them from the start.

"Our managing director is the one always talking about the customer, quality and accuracy. He's the reason we are where we are. That's always been our philosophy: whatever you do, be the best." ●

”

That's always been
our philosophy:
whatever you do,
be the best.

High-density boards

— overcoming solder paste printing challenges with jet printing

What are the solutions for solder paste printing on high-density PCBs?
There are a few challenges for printing on high-density boards with solder paste, but there are solutions.

TEXT: YAN MANISSADJIAN PHOTO: MYCRONIC

How have the applications of high-density PCB assemblies evolved over time across different industries? While high-density PCB assemblies were once more common in consumer electronics or aerospace applications, they can now be found in many other industries, such as automotive, medical, and industrial electronics.

With the electrification and digitization of everything, electronic assemblies are required to provide more features and functions but now on smaller and more compact surfaces.

As a result, the manufacture of PCBs can go through a challenging phase with the introduction of miniature components such as 01005 passives or surface array devices such as micro BGAs or CSPs.

Consequently, the application of solder paste, a critical step in surface mount technology (SMT) production, becomes increasingly challenging as board density rises and component diversity expands. Jet printing technology, as exemplified by the MYPro MY700 Jet Printer and Dispenser, offers a compelling solution to these modern manufacturing hurdles.

CHALLENGES IN SOLDER PASTE PRINTING FOR HIGH-DENSITY ELECTRONIC BOARDS
As electronic devices evolve to accommodate more features within smaller footprints, manufacturers are faced with densely packed layouts that leave little room for error in the soldering process.

One major challenge is achieving precise solder paste deposition on miniature pads. Components such as 01005 passives, micro BGAs, and CSPs require solder paste to be applied with exceptional accuracy. Any misalignment or excess paste can result in solder bridging, insufficient joints, or tombstoning, which compromise both reliability, performance and yield.

The tight spacing between pads further complicates the process. With high-density boards, adjacent pads may be separated by a fraction of a millimeter, making it difficult to control paste volume.



The risk of paste bleed or paste squeezing into unintended areas increases as pad pitch decreases.

Variability in component sizes adds another layer of complexity. Boards often combine fine-pitch components with larger power devices or connectors. Each type of pad demands a specific volume of solder paste for optimal results, and applying the appropriate amount to each without overlap or waste requires meticulous control.

Additionally, high-density layouts often mean more layers and intricate routing, which can make access to certain areas for paste application challenging—especially in regions where rework is difficult or impossible. Ensuring consistent solder joints in these confined spaces is critical for long-term reliability.

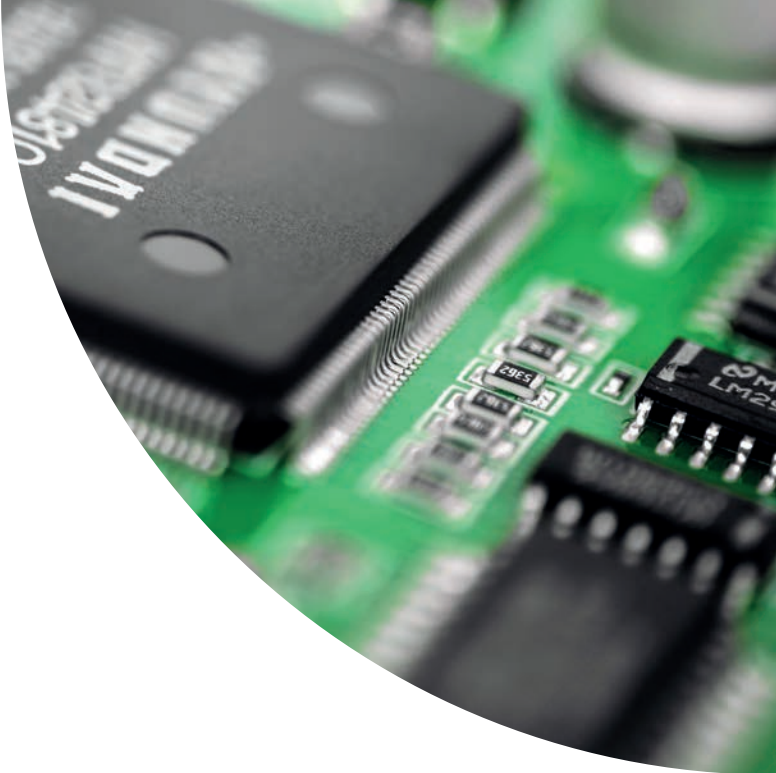
Finally, as high-density boards become more prevalent in industries such as automotive, medical, and industrial electronics, manufacturers must adapt to stringent quality standards. This requires robust process monitoring and inspection to catch defects early and maintain the high yields expected in modern production environments.

In summary, the printing and application of solder paste on high-density electronic boards demands advanced precision, process control, and quality assurance. Overcoming these challenges is essential for building reliable PCB assemblies in today's compact, feature-rich electronic devices.

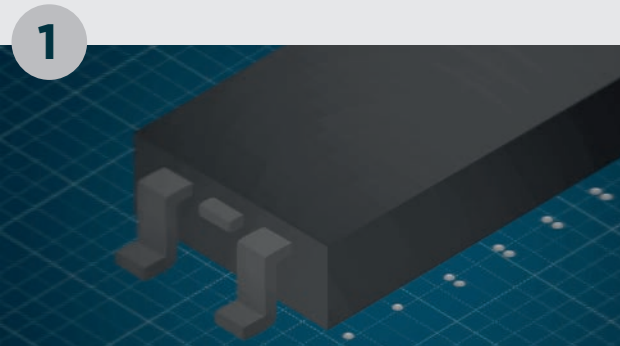
JET PRINTING ADVANTAGES FOR HIGH-DENSITY BOARDS
Jet printing is a sophisticated, non-contact method of depositing solder paste and other assembly fluids directly onto PCBs with micrometer accuracy. Instead of physical contact, the process employs state-of-the-art jetting heads that eject controlled volumes of material onto specified locations on the board. Guided by advanced software and high-resolution optical encoders, these jetting heads can reach acceleration forces of 3g and operate at speeds surpassing one million dots per hour. The technology enables precise, repeatable application on even the most intricate board layouts.

- Key benefits of jet printing**
- Design freedom—100 percent software-driven process allows for complete control over dot size, volume, position, consistency of print quality and rapid design changes without downtime.
 - Precision and repeatability—automatic compensation for board stretch and warpage ensure that solder paste and assembly fluids are precisely deposited, even when the PCB experiences dimensional changes.
 - Versatility in component mix—whether assembling fine-pitch BGAs or large connectors, jet printers can seamlessly deposit optimal volumes for varied pad sizes and layouts, supporting mixed production environments and new product introductions with ease.

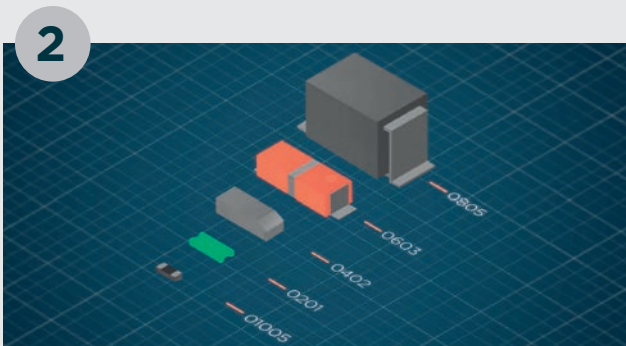
RESISTANT TO PCB WARPAGE AND STRETCHING
In high-density PCB manufacturing, even slight warpage or stretching of the board can lead to misalignment between solder paste deposits and component pads, risking poor connections or assembly defects. This challenge becomes more pronounced when dealing with tightly packed layouts and components of varying sizes. Jet printing technology excels in this context because it uses a non-contact, digitally controlled nozzle that can dynamically adjust the height and position of each deposit in real time. This adaptability allows it to compensate for surface irregularities across the PCB, ensuring precise paste placement regardless of board deformation. As a result, jet printing enhances yield and reliability in high-density PCB assemblies where mechanical tolerances are critical.



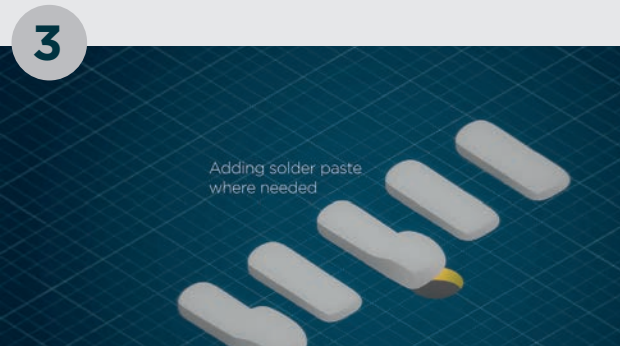
Advantages of solder paste jet printing for high-density PCBs



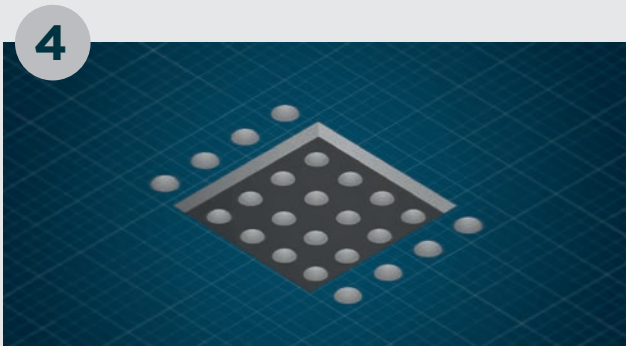
Print any PCB layout. Jet printing technology enables precise, contactless material deposition for any PCB layout, regardless of complexity or density, supporting highly customized and space-efficient designs.



Print any paste volume. Jet printing technology allows precise control over solder paste volume, enabling deposition of both ultra-small and large amounts to suit any component requirement.



Overcome solder drainage. Jet printing technology helps with solder drainage by accurately applying extra solder paste on VIA edges to make up for volume lost during reflow.



Print at several levels. Jet printing technology enables the deposition of solder paste at different heights on a PCB, enabling printing inside cavities or on elevated surfaces such as package-on-package components, thereby supporting complex and multi-height board designs.

ENABLING ULTRA-DENSE COMPONENT PLACEMENT

Jet printing technology enables the precise, non-contact deposition of solder paste directly onto designated areas of a circuit board. This high-resolution capability allows components of vastly different sizes to be placed extremely close to one another, overcoming traditional spacing constraints. Because jet printing can target specific pads without affecting adjacent areas, designers gain greater flexibility in component placement, enabling more compact and densely populated layouts that challenge conventional keep-out distance rules.

MULTI-LEVEL SOLDER PASTE DEPOSITION

High-density PCBs often incorporate advanced packaging techniques such as cavities and package-on-package (PoP) configurations, which require solder paste to be deposited at varying heights across the board. Jet printing technology excels by using a non-contact, digitally controlled nozzle that can precisely deposit solder paste at different levels. This capability allows it to print directly into recessed areas or onto stacked components without compromising accuracy or paste quality, in one pass. By adapting to the board's topography in real time, jet printing ensures consistent solder deposition across all layers, making it an ideal solution for complex, space-constrained PCB designs. ●

How to program the Jet Printer for high-density boards

The Mycronic MY700 Jet Printer is specifically designed for high-precision, non-contact solder paste application, making it well-suited for complex, high-density PCB designs. Here is a step-by-step overview of how the process works:

1. PROGRAMMING THE PRINTER

PCB data import: Import PCB data with MYPro Create, Mycronic's multi-machine programming software. This can be in many formats such as Gerber or ODB++.

Jet printing program creation: Data import automatically defines the locations of each pad to be printed. The MYPro Create software automatically generates the solder paste volume required for each pad, based by default on a 125µm stencil as a starting point. Its ability to utilize custom templates, linked to land patterns or part numbers, ensures accurate and instant volume calculations for paste deposits.

Adjust dot size and volume: The software allows for precise control over the amount of paste deposited on each pad, which is particularly useful for high-density areas. Adjust the dot size and volume based on the pad dimensions and the desired solder paste amount. Define smaller dots for fine-pitch components.

2. OPTIMIZATION

Test prints and adjustments: Perform test prints on a sample PCB or test board to fine-tune the jet printing results. Adjust paste volumes if needed to achieve optimal paste deposits and improve product yield.

Inspection: Use the integrated 2D inspection feature or a separate MYPro PI 3D SPI system to check the quality of the solder paste deposits. Look for consistent paste volume, proper alignment, and absence of defects like bridging or insufficient paste.

3. PRODUCTION

Automated jet printing: Once fine-tuned and optimized, the jet printing program is run in production. The MY700 will precisely execute the printing and will deliver consistent results over time regardless of operators' experience or skills. The jet printing process enables high-quality solder joints, hence increasing product reliability and production yield.

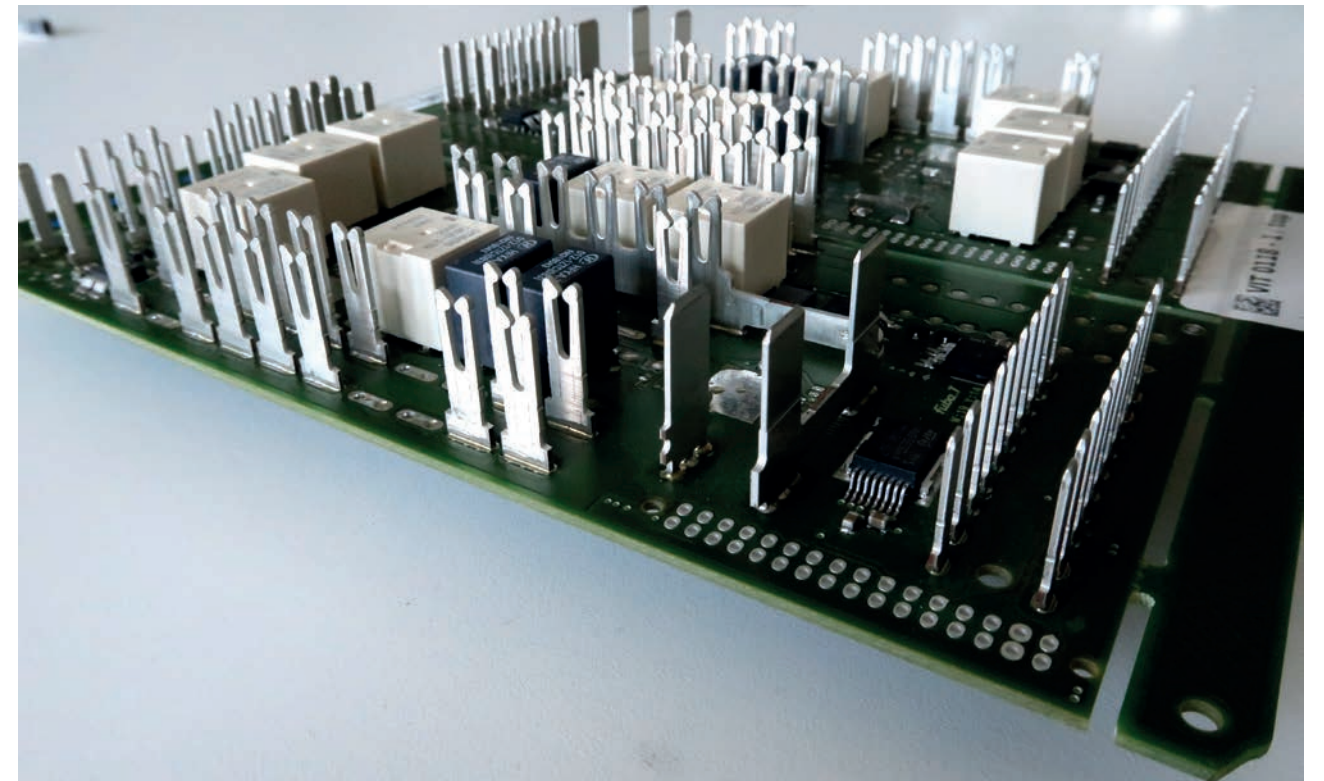
Discover the shortest path to a smarter future

Cut through complexity with the MYPro Line™

Wherever the future might take you, don't let change stand in your way. With the MYPro Line, you can jet print perfect solder joints at the highest speeds. Ensure non-stop production with intelligent storage and proactive replenishment. And eliminate defects with 3D inspection systems that monitor and improve your process over time. It's the best of Mycronic in a single integrated manufacturing solution for the most demanding build schedules, enabling maximum utilization for even the fastest-changing product mix. Whatever complexities tomorrow may bring, now there's a shorter path to a smarter future.



MYCRONIC



Mycronic's solution for press-fit component inspection

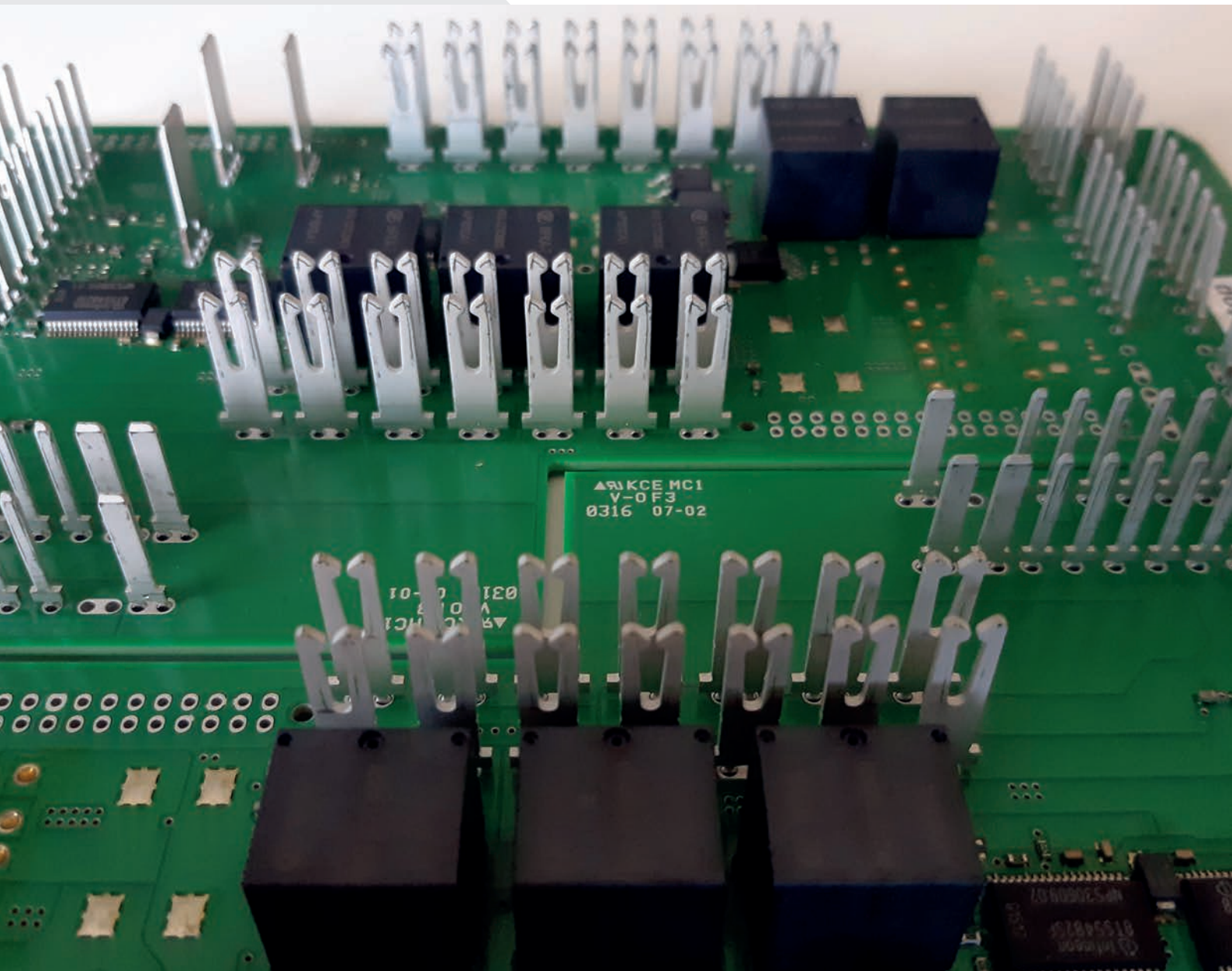
Mycronic excels in press-fit inspection—demonstrating our expertise in handling exotic components.

TEXT: YAN MANISSADJIAN PHOTO: MYCRONIC

HOW TO DETECT DEFECTS IN PRESS-FIT COMPONENT USING 3D AOI

Press-fit components offer a solder-free solution for PCB mounting by utilizing a snug mechanical fit. In electronics manufacturing, optical inspection of these components is crucial to ensure the quality, reliability, and performance of the final assembled product. Similar to SMT or THT components, 3D automated optical inspection (AOI) is necessary to detect defects related to press-fit component assembly. However, due to their unique assembly method and physical attributes, the inspection of press-fit components primarily focuses on their mechanical integrity to ensure their geometry remains unaltered during the placement process.

Mycronic's MYPro I series 3D AOI features the versatility and accuracy to inspect press-fit components with the same reliability as for any SMT or THT packages. The system can inspect parts up to 20mm in height, such as solid or compliant pins, or connector modules—just to name a few. "Our 3D AOI system checks for the presence, position, coplanarity, and polarity of the component or pin, ensuring a thorough inspection regardless of the component's or pin's physical height," highlights Alexia Vey, Product Manager Inspection, Mycronic. Under certain conditions, parts up to 25mm high can be inspected.

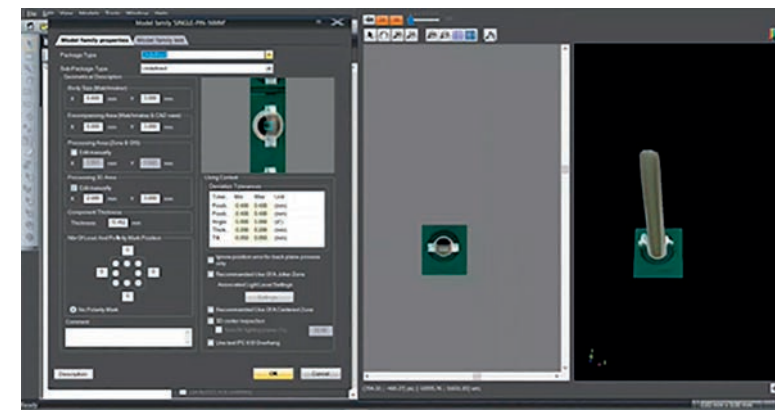


Fork connectors, IGBT modules, and power elements are common press-fit electronics components

”

Our 3D AOI system checks for the presence, position, coplanarity, and polarity of the component or pin, ensuring a thorough inspection regardless of the component's or pin's physical height.

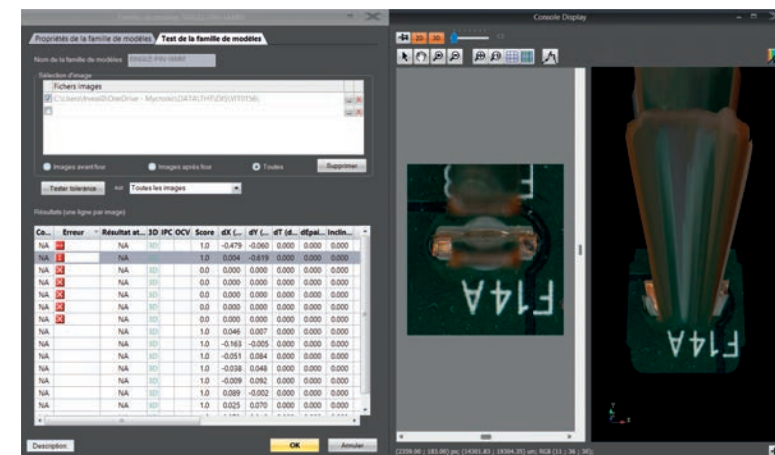
ALEXIA VEY
PRODUCT MANAGER INSPECTION
MYCRONIC



Configuration of inspection tests for a press-fit pin.

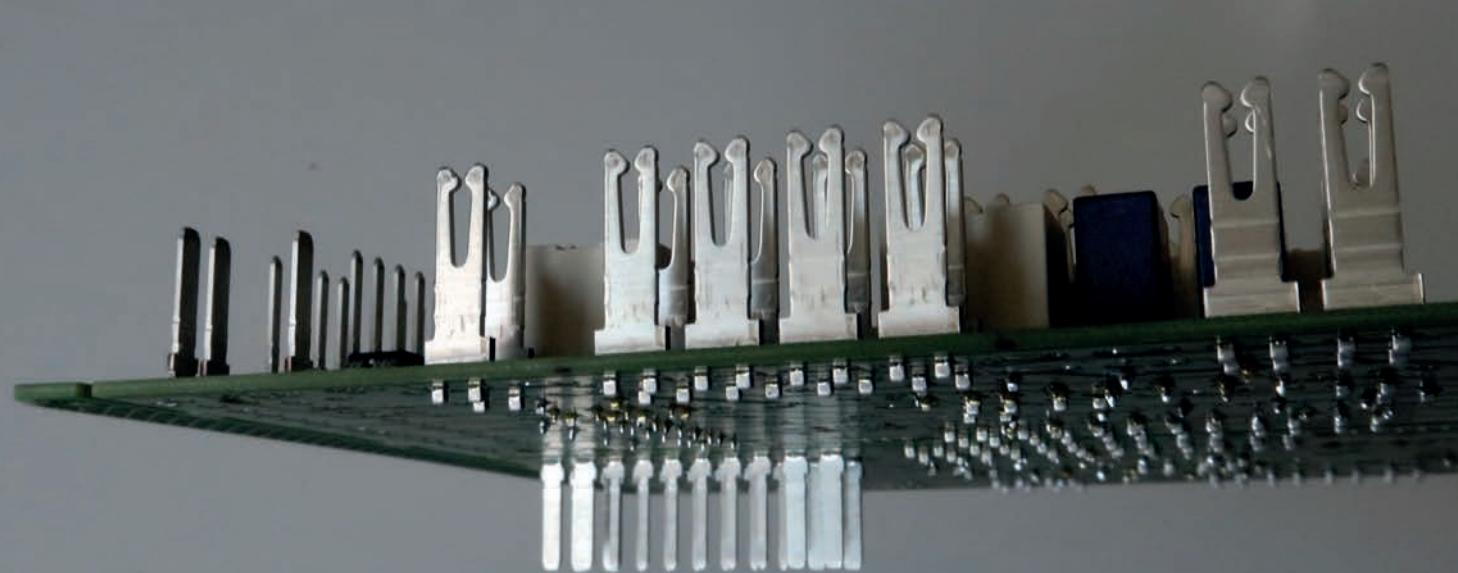
INSPECTING MECHANICAL INTEGRITY

The MYPro I series 3D AOI systems are adept at inspecting various press-fit components in their standard configuration. With their extensive test library, these systems can be used to inspect a broad range of packages, connectors, pins, and more. This enables comprehensive 3D test coverage for challenging press-fit components, allowing the detection of pin presence or height, bent pins, base position, and even the distance between pins on fork connectors.



A bent pin can also be detected.

Misaligned or improperly fitted press-fit components can cause excessive stress on both the component and the PCB, leading to long-term reliability issues. Your Mycronic 3D AOI system can be programmed to ensure that components are correctly seated by verifying that the press-fit pins are inserted to the appropriate depth without damage. It inspects the height of the pin tips in 3D and measures coplanarity to confirm proper insertion.



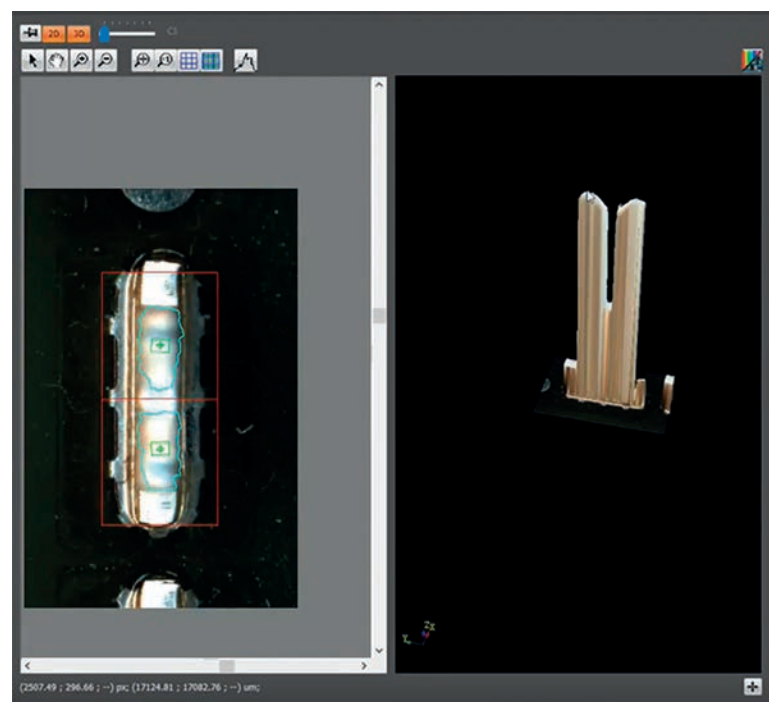
✓ Press-fit connectors need inspection on both top and bottom sides.

FORK CONNECTOR INSPECTION

To ensure the reliability of fork connectors, it's essential to verify the geometry, ensuring that the fork remains straight and undistorted. Positioning the "3D histogram" tool atop the connector allows the AOI system to automatically perform comprehensive inspections. This includes checking the height and coplanarity of the component, as well as measuring the distance between the fork tines.



Engineered to inspect any SMT, THT, or press-fit components or connectors.



The MYPro I series 3D AOI offers exceptional inspection capabilities for electronics manufacturers, ensuring higher levels of quality and reliability in electronic devices. Engineered to inspect any SMT, THT, or press-fit components or connectors, whether standard or custom, with remarkable accuracy and repeatability, the MYPro I series stands out with its extensive toolbox. This series provides PCB assembly manufacturers with enhanced inspection capabilities independent of operator skill, contributing to improved product quality and reliability while keeping production costs at a competitive level. ●

➤ The MYPro I series 3D AOI enables thorough geometric inspection of fork connectors.

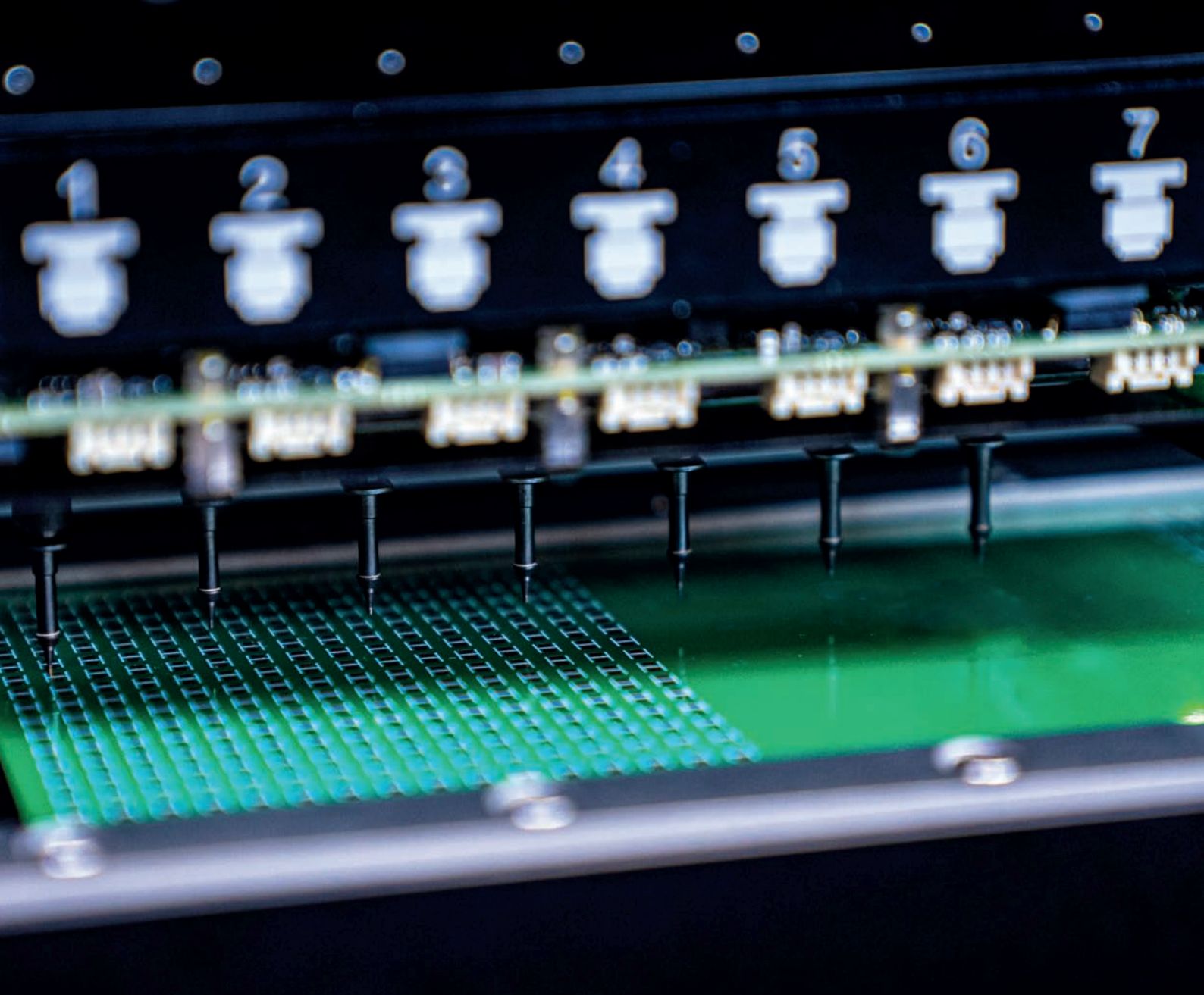
MYCRONIC

False defects are time killers. Now you can eliminate them.

DeepReview™—Automatic Defect Classification for the age of AI

Accelerate review times. Eliminate the majority of false calls. And improve your defect classification models over time. DeepReview, a new AI-based Automatic Defect Classification system for 3D AOI, makes it possible to apply full test coverage to any product mix without fear of false calls. Thanks to advanced neural networks, it eliminates the vast majority of false calls for eligible components, giving review operators more time and focus to stop the real defects that matter. Join the deep learning journey at pcba.mycronic.com.





Discover 7 new ways to thrive on change

Introducing the new MX7™ mounthead technology

7 independent mountheads, 14 high-precision motors. And an entirely new level of high-speed flexible assembly. With the all-new MX7™ mounthead technology, you can place a far wider range of components at up to 48% higher top speeds. The fast-beating heart of the new high-speed MYPro A40™ pick-and-place platform, the MX7™ opens up entirely new ways to expand your product mix and accelerate your throughput. Learn how the next-generation MX7™ can boost your productivity and help you thrive on change at pcba.mycronic.com

MYCRONIC

Crossway Technologies High-reliability medtech productions

Based in western France, Crossway Technologies has made a significant investment in a complete Mycronic line, marked by a major technological breakthrough with jet printing. This decision aims to create real industrial differentiation by bringing innovative and high-performance solutions to its manufacturing and integration processes.

TEXT: CYRILLE BIDET PHOTO: CROSSWAY TECHNOLOGIES

The company, with the aim of synergy and responsiveness, voluntarily shares the same premises with Creative Eurecom, a sister company and R&D lab specializing in the design, development, and industrialization of high-value-added electronic, mechanical, and fluid systems, particularly in the medtech sector. An example of this collaboration is the home dialysis device by Physidia, which is still partly produced by Crossway Technologies, allowing patients with kidney failure to maintain an active professional and social life.

INNOVATIVE SOLUTIONS TO MEET THE NEEDS OF THE MEDTECH SECTOR

“We have many new products in development and are actively collaborating with industrial and medtech sector professionals to provide innovative solutions in various fields, such as 3D mammo-graphy and more recently, liquid ventilation for hypothermia,” explains Mr. Houdou, President of Crossway Technologies. “After a thorough analysis of various suppliers, we opted for the comprehensive



Michel Houdou
presenting the
dialysis machine
production line.



MYCRONIC



MYTower 7+ storage tower positioned close to the assembly line for quick component supply.



Standing in front of the new Mycronic SMT line (MY700 Jet Printer, MYPro A40DX-17, 3D AOI MYPro I51, conveyors), from left to right: **Cyrille Bidet** (General Manager Mycronic France), **Yvon Monot** (Sales Engineer Mycronic France), **Solenne Grandsire** (General Manager Crossway Technologies), **Michel Houdou** (President Crossway Technologies).



At the end of production line: the new MYPro I51 3D AOI with AI-assisted programming and review.

solution provided by Mycronic. Their MY700 Jet Printer is the only technology offering a jet capacity of 1,000,000 dots per hour, while eliminating issues related to the solder paste process, commonly found in screen printing machines."

Additionally, the company has chosen the latest generation MYPro A40DX-17 pick-and-place machine, which achieves an impressive speed of 59,000 components per hour. Thanks to its new MX7 pick-and-place technology, this machine can place over 97 percent of components with its high-speed head. Connected to the MYTower 7+ intelligent storage system, this Mycronic solution further optimizes productivity by ensuring a continuous supply of components to the pick-and-place machine, significantly reducing production down-time due to hiccups in the component supply.

ARTIFICIAL INTELLIGENCE IN THE SERVICE OF QUALITY

To ensure consistent quality, Crossway Technologies has also integrated the MYPro I51 3D AOI inspection machine, equipped with artificial intelligence. This technology helps reduce false defects and optimize operator decisions, thus decreasing reliance on human intervention and ensuring more precise quality control. "We seek efficient and

reliable solutions where technology and human expertise combine to maintain a constant and impeccable level of quality for our clients," explains Solenne Grandsire, General Manager. "The medical field leaves no room for error, and we have the same high standards for our suppliers. In this context, Mycronic solutions meet our expectations."

With this strategic investment, Crossway Technologies affirms its commitment to staying at the forefront of innovation and contributing to the development of advanced medtech solutions, while also enhancing its industrial competitiveness. ●



After a thorough analysis of various suppliers, we opted for Mycronic's comprehensive solution. Their **MY700 Jet Printer** is the only technology offering a printing capacity of 1,000,000 dots per hour, while eliminating issues related to the solder paste process, commonly found in screen printing machines.

The top 5 things you need to know about **placement**

Today’s high-mix electronics manufacturers need to adapt to a rapidly changing environment. To meet customer expectations and maintain competitiveness and profitability, their component placement process must meet a number of conditions. Here are the top five things to consider:

1

Combine high placement productivity with consistent reliability for growing batch sizes

More complex products. Diversified production. Shorter delivery times. To handle these demands, high-mix producers need to significantly raise their placement productivity while maintaining the highest precision and quality.

Boosted by the new MX7 mounthead, the MYPro A40 placement machine delivers an outstanding 59,000 CPH throughput, giving high-mix manufacturers the productivity and peak speed they need to meet aggressive production schedules.

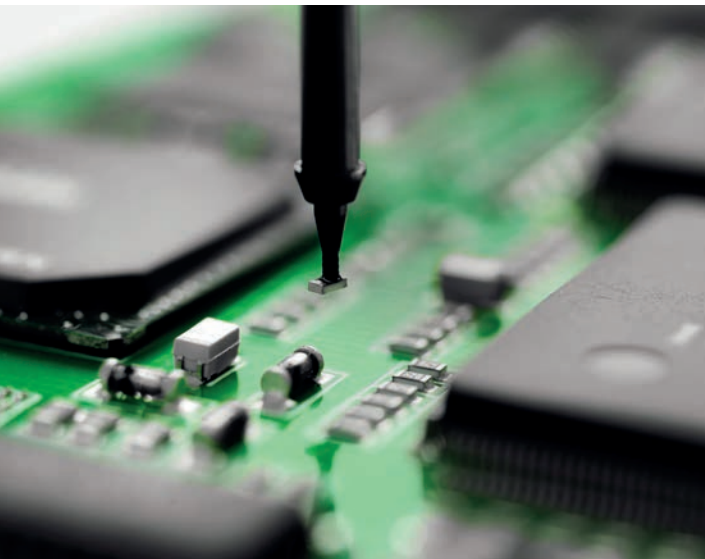


2

Versatility to cope with the expanding diversity of components

From placing components the size of sand grains to bulky connectors, high-mix manufacturers must be prepared to place the widest combination of packages.

From 03015” packages up to long 150x40mm connectors, the MYPro A40 series can handle it all. Handle components on reels, sticks and trays, all whilst maximizing your flexibility due to 224 feeder positions. The large feeder quantities enables a variety of optimization methods, whether multiloading, or setting up a family kit to run multiple jobs with minimal changeover times. Combine this flexibility with electrical verification to eliminate errors and add an extra level of security ensuring that the right component is being used at any moment.



3

User-friendly graphical interface for efficient operation and faster training

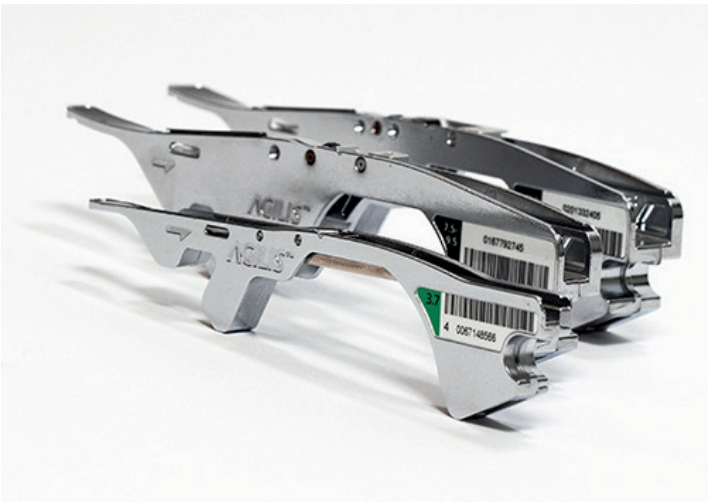
A high-mix platform is only as efficient as its operator. When human-machine interaction is clear and straight-forward, with uncomplicated, step-by-step touch-screen guidance, the most relevant process data becomes more visible and actionable.

The MYPro A40 is equipped with a new graphical user interface (GUI) for more natural, fluid interaction with the operator. This intuitive GUI makes both training operators and running the pick-and-place smoother—and more error-proof—than ever before.

5

Live process control for optimized performance

Pick-and-place production data is extremely valuable if used properly. Live KPIs enable production engineers to quickly spot any performance drift. And an advanced dashboard gives them the actionable information they need to increase utilization, reduce reject rates and improve line balancing in real time. With live component misspick and reject analysis, MYCenter Analysis makes it possible to diagnose root causes before the problems multiply.

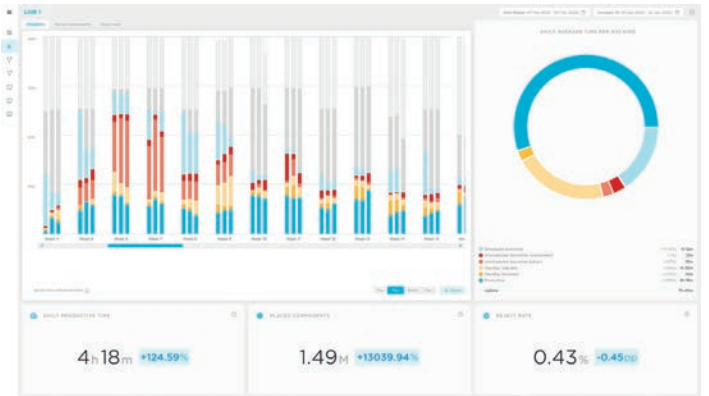


4

Optimize your bi-directional material flow

Bi-directional flows of materials to and from the assembly line(s) are common in high-mix production and can cause disruption to production if inadequately controlled.

Through unique carrier IDs, Mycronic’s offline material handling software knows each part location and quantity, and provides kitting assistance and change-over strategy according to production needs. When handled with MYTowers, Mycronic’s automated storage solution, components are always just a click away. And with Agilis feeder system, enjoy industry’s shortest changeover time when switching jobs.



MY700:

Upgraded HV-2000B Jet Valve for precision micro dispensing

The HV-2000B Jet Valve is certainly one of the most popular accessories for the MY700JX and MY700JD Jet Printers, as it extends the uses of the jet printing platform to micro dispensing applications involving a variety of materials. This state-of-the-art tool is designed to offer Mycronic Jet Printer owners high-process accuracy and flexibility in applications at ambient temperature.

HV-2000B Jet Valve is the result of a partnership with Graco, the leading supplier of fluid handling solutions, the HV-2000B Jet Valve is a non-contact, microdispensing solution engineered to deliver precise dots, lines, and complex shapes with exceptional repeatability. Its patented design simplifies the dispensing process: making it an ideal choice for a wide range of applications, including.

Electronics manufacturing: Ideal for applications such as semiconductor packaging, PCB assembly, and LED manufacturing, where precise dispensing of adhesives and sealants is crucial.

Automotive: Used in the production of components that require accurate application of adhesives and sealants, such as sensors and electronic control units.

Medical devices: Essential for the assembly of medical devices that require precise and repeatable dispensing of materials, such as catheters, hearing aids and diagnostic equipment.

Aerospace: Suitable for applications that demand high precision and reliability in the dispensing of materials for components like sensors and control systems.



KEY FEATURES AND BENEFITS OF JET MICRO DISPENSING

High process accuracy: The HV-2000B Jet Valve ensures consistent and precise dispensing, even on uneven or irregular surfaces. It can handle low to medium viscosity materials up to 400,000 centipoise, making it versatile for various application needs.

Outstanding performance: Capable of continuous jetting at up to 300 dots per second, the HV-2000B Jet Valve meets the demands of high-volume production while maintaining superior pattern capability.

Simplified, patented design: With only two internal moving parts, the HV-2000B Jet Valve boasts minimal wear and tear, reducing maintenance costs and downtime. The jet's simplified design minimizes the fluid path, which helps to explain HV-2000B's high reliability and ability to dispense fine lines material like silver epoxy without clogging. It's easy-to-clean concept allows for quick and efficient maintenance when required.

Low running cost: The simplicity of the diaphragm jet design results in one of the industry's lowest running costs per million cycles. This cost-effectiveness is further enhanced since the jet valve can be maintained and repaired inhouse.

WHAT HAS BEEN IMPROVED SINCE THE PREVIOUS VERSION?

More stable

The redesigned precision spacer now features a high-pitch adjustment screw with a ball tip, offering four times higher pitch than the previous version. This enhances stability and allows for finer adjustment of the hammer gap. Additionally, the upgraded material provides improved rigidity and better thermal stability, reducing jet-to-jet variation.

The upgraded heater block uses copper for better thermal stability and can maintain temperature while achieving higher flow rates. This enhancement contributes to the jet valve's superior performance and reliability by precisely controlling the materials viscosity.

Enhanced flexibility

The HV-2000B Jet Valve offers greater flexibility with varying syringe sizes thanks to bolt-on syringe brackets, and the ability to switch between metal and rubber material supply tube options, depending on the material requirements.

More robust

The new nozzle plates have been designed to eliminate the consumable rubber o-ring, replacing it with an integrated metal diaphragm.

The HV-2000B Jet Valve is now available for purchase through Mycronic's sales offices and distributors worldwide.

For more information, visit: pcba.mycronic.com

Put your inspection on autopilot

MYPro I™ series 3D AOI—High-performance inspection for any mix

Boost product quality. Improve first-pass yield. And give your operators the highest levels of automated assistance. With the I series 3D AOI, high-performance inspection has never been simpler. Equipped with the latest Iris™ 3D AOI vision technology, the I series captures every detail in unprecedented resolution—even at the most demanding takt times. And thanks to advanced deep learning systems, it continuously improves program settings, operator guidance and defect classification models to reduce programming and review times to a bare minimum. Learn how the I series can enable high-performance 3D AOI for any production mix or class at mycronic.com.



MYCRONIC

INSPECTION: Upgrade your Vision3D to MYWizard

We are thrilled to roll out MYWizard Convert service package now available for Vision3D users who would like to experience faster programming, enhanced reliability, and cutting-edge automation.

KEY NEW FEATURES WITH MYWIZARD CONVERT

Seamless conversion—preserve your Vision3D data. MYWizard Convert supports the conversion of the inspection library, .TST files, and 3D PCBI (panel scan) data.

MYWizard Convert preserves all your Vision3D library data—whether you’ve been using it for 6 months or 10 years—so your accumulated knowledge is never lost. After upgrading, AI assistance is available immediately to enhance your inspection process.

AI-assisted programming—smarter automation with MYWizard and Escape Tracker. MYWizard’s advanced AI automatically identifies component characteristics, reducing programming time by up to 30 percent compared to Vision3D. Escape Tracker continuously checks for false calls and escapes, ensuring high inspection accuracy while minimizing the need for operator action.

Access advanced AI technology. Customers will benefit from new deep learning algorithms integrated into MYWizard, such as the Polarity

Check neural network that automates polarity mark identification and inspection.

Sustainable, efficient, and future ready. When users upgrade to MYWizard, they extend the equipment’s lifespan, allowing Mycronic 3D AOI users to maximize their investment. By upgrading software rather than replacing hardware, users make an environmentally responsible choice while maintaining peak inspection performance.

GET EXPERT SUPPORT AT EVERY STEP

- MYWizard upgrade for your machine(s) and offline programming station(s), with all software, licenses, and dongles.
- On-site service by a qualified Mycronic Field Service Engineer. Staff training on programming with MYWizard.

The conversion process is supported onsite by a Mycronic Field Service Engineer, who will guide and train customers through the programming phases. On average, it takes about two weeks to convert a few hundred programs, but each case is unique, which is why it’s important to contact your local support team who will evaluate the time needed on site for each quote.





Build a factory **that goes with your flow**

In times of change, only the most agile are equipped to thrive. With scalable production capacity. Predictive planning. And comprehensive process data that gives full visibility into the resources that drive profitability.

MYPro Line Assembly Solutions are built to keep you in control of changing workflows. With end-to-end integrated process control. And the latest AI-assisted workflows that transform production data into real-time productivity gains. As markets evolve, supply chains shift and technologies change, there's no better way to build more boards with less effort—and zero defects. Welcome to a new era in agile assembly.

**Experience the Mycronic factory flow at
Productronica 2025, booth A3.249, November 18–21.**

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