

Total Solutions for SMT



In this newsletter:

Page 2

- Foreword by Maurits van der Laken

Page 3

- Nordson Dage: Matrix Autonomous X-ray Inspection
- Gen3: What manufacturers need to do to prove product reliability

Page 4

- Interay: Ready for further growth with new SMD lineproduction

Page 5

- ASM Works: The quick and reliable path to the integrated smart factory

Page 6

- ASM: Introduction DFM HealthCheck

Page 7

- Indium: Indium 8.9HF Pb-Free Series Solder Paste

Page 8

- Partnertec acquires stencil manufacturer ASM Benelux!

Page 9

- Nordson Dage: Automatic Component Counting:
- MBtech: NC25, closed loop environmentally friendly cleaning of PCBA's with new Stainless Steel DI-water Vessels

Page 10

- NEW: ASM Flex PCB Support

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Foreword

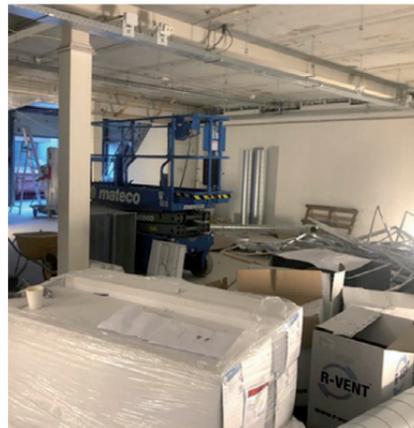
Dear reader,

I hope you are all still safe and healthy since this pandemic started last year. Businesses and the entire industry had to adapt to the new global situation in almost 'a split second'. Many struggled to stay afloat. Partnertec also had to navigate these challenging circumstances.

Not only did our talented Team Partnertec adapt to the new normal, but they also continued to deliver since. Thanks to the dedication of our employees, and the support from all our partners, suppliers and customers we exceeded our expectations and achieved another successful year.

During the most difficult year ever due to COVID-19, Partnertec acquired the stencil production from ASM Assembly Systems in the Benelux on the 1st of August last year. This long-cherished ambition to manufacture in-house screens and stencils for the Benelux became reality, which at the same time completed Partnertec's unique product portfolio. The acquisition of ASM Benelux means that we can offer our customers even more added value. Partnertec has now become the exclusive total solution provider, which is unique in our industry in the Benelux.

Just before the end of the year, Partnertec also invested in new business premises. With a warehouse double the size of what we currently have at our location in Oirschot, we are ready to continue our strong growth. The building is currently undergoing a complete renovation and will be ready in May. With our team of 16 people we are able to offer our valuable customers more dedicated service as a total solution provider. Our new office is located at business park ESP, which is next to Science Park Eindhoven.



Despite Covid-19, Partnertec has signed up for the upcoming Electronics & Applications show in September. However, all will depend on what the Dutch government will allow in general at that time. Expectations are that the majority of people will be vaccinated by then, and that the world may start looking better. Let's wait and see. More to come.

Partly thanks to yet another very successful year during the pandemic, Partnertec has invested heavily in further growth. Working together with our valuable chain, we are accelerating our ambitions. But what is most important is securing and accelerating our strong support at a higher level for our valuable customers.

Enjoy reading our Newsletter and I sincerely hope to see everyone safe and in good health again after a long time at our booth during the upcoming Electronics & Applications show in September!

Maurits van der Laken
Managing Director Partnertec



New in our portfolio:

Matrix Autonomous X-ray Inspection



We are proud to announce that Nordson Matrix is now distributed by Partnertec in the Benelux. In addition to the well-known manual and semi-automated X-ray equipment (MXI) from Nordson Dage, we can now also offer a full range of Autonomous X-ray machines (AXI) from Nordson Matrix.

Where MXI equipment is loaded manual and inspection results are mostly judged by the operator with aid of some clever software routines, AXI equipment is available both stand-alone and inline and offer fully automated inspection routines, similar to modern AOI equipment.

In today's world there is an increasing number of smart devices in our everyday lives, the complexity of vehicles (in both road and air traffic) reached a level, which was never seen before and electromobility is on the rise, presenting new components and new challenges in mass production. These factors are resulting in an ever-increasing demand for different electronic products and parts, which are becoming more and more complicated.

Due to the increasing demand and price/cost pressure it is now more important than ever to ensure the highest quality of products and that no defective parts are leaving the factory. Often these parts contain features that cannot be inspected with optical methods as they are hidden. Autonomous X-ray inspection provides a non-destructive solution to analyze these hidden features without human interaction to make sure that every defect is caught.

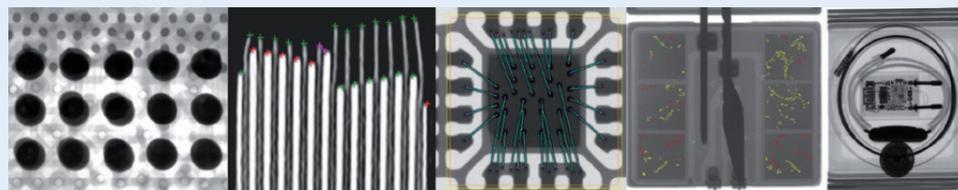
How Nordson Matrix can help

Using cutting-edge imaging components developed by Nordson, MATRIX provides best in class inline, semi-inline and offline automatic transmissional, angular and 3D-capable X-ray inspection systems for five core markets, which are as follows:

- Solder joint inspection (SMT and selective solder)
- Semiconductor
- Final assembly test and packaged goods
- Power electronics (IGBT)
- Battery

Leveraging in house developed image processing algorithms, Nordson MATRIX offers solutions to automatically detect defects and generate report files with measurement values. Due to the highest possible level of automation in the inspection, there is no need for operator interaction, resulting in the elimination of the chance of human errors from the process.

Integrated high-speed motion systems, enhanced software features assisting the user in inspection program creation and a well structured package library ensure quick new product introduction at the optimal cycle time with best defect coverage and high first pass yield. MATRIX inspection systems can be equipped with automatic barcode readers, enabling unit level tracing: The X-ray machines are fully integrated into the shopfloor network using various MES interfaces, through which the inspection report files corresponding to each part are uploaded to the customer's servers. Live and offline yield monitoring using SPC software allows to immediately identify problems in the production lines making MATRIX's systems a helpful tool in process control.



GLOBAL BACKGROUND

MATRIX was founded in 2004 in Germany and joined the Nordson family in 2015, integrating into Nordson's Test & Inspection group.

Thanks to combining in-house developed imaging components, software, handling systems and MES interfaces with a worldwide support base, Nordson MATRIX offers a value that is differentiated from any other AXI company. This makes MATRIX today a market leading global supplier of AXI systems. Since its foundation MATRIX provides the highest quality of customer service with worldwide support network and as of today remains the only supplier with a history of more than 1000 AXI systems sold.



www.nordson.com

New tools for 'Objective Evidence' What manufacturers need to do to prove product reliability

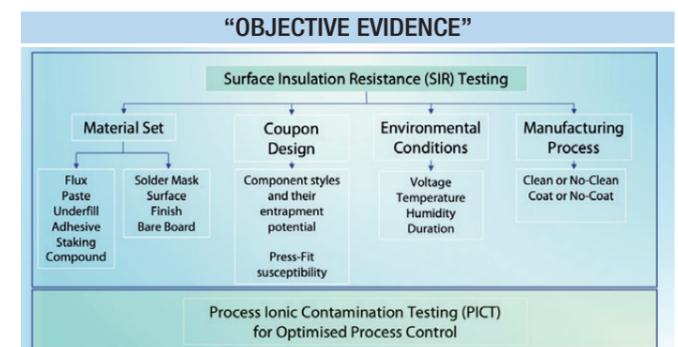
Gen3 discusses the setting of New IEC Standards 501 & 502

Gen3 is heavily involved in the development of two new revised test methods that we as an industry will hold ourselves accountable to, in order to reduce electro-chemical failure risk and increase reliability.

These new revised International Standards are part of the IEC 61189-5 Series: Test methods for electrical materials, printed boards and other interconnection structures and assemblies:

- IEC 61189-5-501: Surface insulation resistance (SIR) testing of solder fluxes
- IEC 61189-5-502: Surface insulation resistance (SIR) testing of assemblies

Our focus here is on SIR testing of Assemblies to provide the necessary Objective Evidence required by the recently published IPC-J-STD-001 Revision H and the accompanying white paper, WP019B.



This revision has removed the sole requirement of <math><1.56\mu\text{g}/\text{cm}^2</math> of NaCl equivalent of the old ROSE test and is a fundamental change in approach. This SIR test is augmented by a modified ROSE test, which is better known as Process Ionic Contamination testing (PICT), and detailed in IEC 61189-5-504. This test method provides the fastest and most effective method of process control, taking less than 15 minutes.

Gen3 President Graham Naisbitt, was the IEC TC91 Maintenance Leader for these new test standards. Graham stated:

"Both of these documents reflect the latest developments of measurement technology that we in Gen3 have been evolving with our peers over the past 25 years. With industry experts, we have developed a new standard "Process Ionic Contamination Testing (PICT), IEC 61189-5-504, published in 2020. This test method provides the user with control evidence in less than 15 minutes. This is the culmination of more than six years of research, bringing the very latest in test and measurement methodology."

Gen3 is the leading supplier of equipment for contamination measurement.

Latest AutoSir and AutoCAF measurement system continue to lead the way in measurement capability.



www.gen3systems.com



Interay is ready for further growth with new SMD line

Interay Solutions located in Burgum in Friesland (Netherlands) is profiting greatly from the rise of industrial IoT. Not only concerning contracts for the development and production of high-tech electronics products for partners who increasingly demand systems equipped for Industry 4.0. But also through more efficient production of these products with a completely new SMD line, the extensive software of which provides numerous IoT and integration options.

Interay Solutions, which is part of the NiVoGe Group with sister companies ETI and Apparatenfabriek ARA, has been developing and producing high-tech industrial electronics products for more than 25 years. These are, for example, control, communication and sensor modules or systems that are used in machines and equipment. "We have developed everything we produce in-house, on behalf of partners. We provide development, series production, warehousing and life cycle management for them and aim for a long-term and sustainable relationship. With a long-term perspective on serial production, we are also prepared to invest a little in development during the initial phase. With us, partners often go for the entire process but we also see companies that have already made a design and want to have it produced. In that case, we see that we have to make improvements and optimization steps in the design to be able to produce and test it in series. That works out so well that the entire process is chosen in follow-up assignments so that we can include aspects such as 'design for manufacturing' and 'design for testing' in development from the start," says Interay director Wessel Koning, when he explains the strategy of entering into long-term and sustainable partnerships.

Successful

This strategy works so well that a few years ago it was established that the production of the former SMD line would eventually lead to insufficient production capacity. Besides, the old line began to become obsolete in terms of accuracy. "Components are getting smaller and you have to be able to place them more accurately, and preferably a lot faster. Another aspect is that we often produce small series and prototypes due to our design roots. Fast changeover times are a must for this. Something that you can realize with modern production machines not only in hardware but above all in software", says Wessel Koning.

Selection

In the search for the ideal SMD line, Interay did not decide without careful deliberation". There is more than a year between the first internal meetings about the package of requirements and the final investment. After an initial orientation, we made a longlist of six pick & place machines, which has been reduced to a shortlist of three machines. We not only meticulously assessed these three on the spec and features but also reviewed them on existing production lines." From that selection process,

ASM's E-by-Siplace pick & place machine convincingly emerged as the best. "The machine is relatively new, with state-of-the-art software, which is also very extensive and offers many additional functionalities that we have not encountered from other suppliers. This allows us to optimally respond to the trend of industrial IoT, which is also important to us, whereby you can manage your (logistics) processes much better and integrate all kinds of extra services by integrating data and systems. Extensive integration with our own ERP and MES systems is very important to keep us competitive in the future. That is, incidentally, quite challenging, but our software engineers and production people are perfectly capable of doing that," says Wessel Koning.

Configuration

The pick & place section consists of two E-by-Siplace pick & place machines connected in series, one for the small components, the other for the larger and heavier components, which you can handle less quickly. The line also includes an E-by-DEK printer, and NUTEK board handling is used. A wide variety of components can be processed with this configuration. "There are always special things. Depending on the workload in these cases we choose either an extra option of the machine or manual processing. There is always a solution."

Fast and accurate

The SMD line supplied by Partnertec is in operation at Interay from the end of 2019. They notice enormous differences with the old situation. "Because we have our development department, we produce many prototypes, which always involved a relatively large amount of production time. With the new machines and the accompanying software, we can work very flexibly and the changeover times are hardly an issue. Series production is also much faster; some products we can produce three to four times faster. Also, the dropout is a lot lower. This is now on average less than 1%, even if we process BGA components with very small pitches. Out of a hundred products, exceptionally two do not pass the tests. Because we can produce faster, we also have room for significant growth in turnover in production work!"

Corona

The flexibility and speed of production recently came in handy for Interay in a special project, in which researchers from Technical University Delft devised a ventilator for corona patients, which is entirely built up of parts that are for sale in the Netherlands. This device was realized within three weeks, including the control circuit board for the device, which was developed and produced by Interay.



www.interay.com

ASM Works

The quick and reliable path to the integrated smart factory

Technology leader ASM paves the way to the integrated smart factory for electronics manufacturers with its new ASM Works software suite. Even the ASM Works Core Package provides a comprehensive solution for shop floor management in a connected factory. It is supplemented by eight Upgrade Modules that improve individual processes and factory areas in accordance with the user's requirements. The great advantage of the software suite: electronics manufacturers don't need to worry about interfaces, compatibilities or data transfers between lines. All the suite's tools can be started and administered from a common launch pad. ASM Works minimizes the time and effort commonly required to make improvements towards the integrated smart factory. For the first time, a single modular solution suite provides a comprehensive software structure for smart SMT production.

The role of software in the planning, control and monitoring of systems, materials, processes, and personnel keeps growing steadily. To enable the machines in the increasingly complex production of electronics to talk to each other and integrate whole processes across machines and even lines, most users must still select, license, install and harmonize many different programs, protocols and tools in addition to the actual machine software. This drives up the cost of implementing and operating such systems.

With its modular ASM Works software infrastructure, ASM is finally providing a new solution that integrates all ASM line components into a single software suite. Even the ASM Works Core Package gives users everything they need to build a professional and efficient software infrastructure for managing the shop floor in a smart SMT factory.

All the suite's components are perfectly coordinated. This makes the equipment's installation, updating and administration much easier as well as significantly more efficient. And with the Upgrade Modules, which can be installed in any order, electronics manufacturers can expand the capabilities of ASM Works in stages in accordance with their specific needs. Besides being able to start out by focusing on processes that matter most to them, they can speed up projects and minimize their implementation risks. All ASM Works modules are managed from the same launch pad, and settings like shift calendars or role and rights management are configured centrally. When ASM Works Upgrade Modules are installed, they apply these settings automatically. The exchange of data between the modules is automatic, which further minimizes integration risks and costs.

Instant connectivity

"We have invested in building a comprehensive software portfolio from the start and always paid special attention to process integration and optimization. Thanks to new software technologies, we are now able to offer with ASM Works an integrated solution for all types and sizes of electronics production," explains Alexander Hagenfeldt, Head of ASM SMT Solutions Marketing. "The integrated smart factory demands a smoothly functioning and consistently compatible software infrastructure, and ASM Works delivers this. Our experts have not only made the proven ASM software solutions better, but given them a common foundation that's state-of-the-art. And with our ASM Works Upgrade Modules, electronics manufacturers can further improve the processes that are most important to them at any time by installing an additional software package that instantly integrates itself into the existing hardware and software infrastructure," adds Hagenfeldt.

ASM Works Core Package

The ASM Works Core Package supplies the basic software infrastructure for smart SMT production. The machines exchange data with each other instantly and seamlessly. The ASM Works Core Package includes the ASM OIB integration platform, SIPLACE Pro including Alternative Components and the Vision Teach Suite, ASM Setup Center including the MSD Option, ASM Order Manager Basic, ASM Line Monitor, ASM Printer Programming, and ASM Remote Smart Factory.

Individual path to the integrated smart factory

With the right Upgrade Modules, electronics manufacturers have access to additional powerful tools that allow them to integrate and improve processes on the line level as well as on the factory or even corporate level. Each newly installed tool brings the customer one step closer to the integrated smart factory.

ASM Works Upgrade Modules

- **ASM Production Planner**
Plans using order due dates while taking into account current line status information as well as setup changeover and maintenance times.
- **ASM Material Manager**
The comprehensive software solutions for SMT-specific material management.
- **ASM Material Setup Assistant**
Smart, software-based setups and tear-downs with a wide range of setup strategies.
- **ASM Command Center**
Organizes operators flexibly in smart operator pools and enables remote assists via a central console.
- **ASM ProcessExpert**
Automates processes fully or partly via a self-learning expert system designed for the specific needs of electronics production.
- **ASM Performance Monitor**
Real-time transparency for the smart SMT factory.
- **ASM Traceability**
Seamless tracking and tracing for the most demanding requirements.
- **ASM Factory Integration Package**
MES interface with interlocking and predictive maintenance functions.



Introduction DFM HealthCheck

Currently, stencil manufacturers do not adequately test the designs they receive from their customers for manufacturability because most checks are purely visual. The printer platforms and process parameters, which will be used on the manufacturing line, are often not considered. As a result, design flaws only become apparent when the actual production starts. At that stage, correcting the design and making new stencils cost a lot of time and money. To overcome these challenges, ASM has introduced DFM HealthCheck, a completely new method of testing stencil designs. Before the stencil is manufactured, DFM HealthCheck runs virtual prints based on the stencil's Gerber data while also considering the planned process parameters. ASM's expert system identifies areas that could jeopardize a reliable printing process and recommends printing and process parameters that ensure a more stable printing process. Partnertec uses this ASM tool to not only check the stencil designs but also analyse interactions between stencil and process designs. As a result, designs that are unsuitable for a stable printing process no longer go into production. The result: "First time right" for stencil and process designs.

How can electronics manufacturers use DFM HealthCheck?

Electronics manufacturers can use DFM HealthCheck every time they order a stencil via Partnertec. Partnertec uses a database containing customer specific information as input for the DFM HealthCheck:

Process characteristics

- Setup changeover frequency
- PCB side (top or bottom)
- Throughput rate
- Solder paste standard
- Speed class of the solder paste

Stencil and PCB data

- Apertures and Fiducials
- Stepped stencil areas
- Stencil thickness
- Stencil material and coating
- PCB outline and thickness

Printer configuration

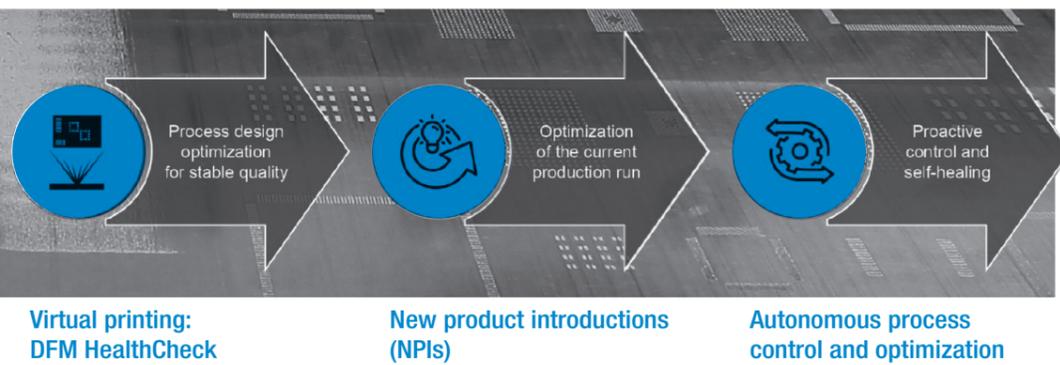
- Squeegee length
- Clamping system
- Tooling type
- Paste type

DFM HealthCheck output

After the above data and the stencil Gerber file has been transferred into the expert system software, it is used to run virtual prints. The system then "experiments" with various parameter settings. When they have been optimized to achieve the most stable printing process possible, the system outputs them. The DFM HealthCheck will:

- Check the stencil's apertures, material, thickness, steps, and coatings.
- Make recommendations for the best possible process configuration (squeegee, clamping and PCB support)
- Determine the best solder paste type (granularity)
- Determine best parameters (squeegee pressure, squeegee speed, separation speed, and cleaning interval)
- Calculate the success rate if the stencil is produced as planned.
- Prepare a report for the customer before the stencil is produced.

The customer receives reliable data on the printing process and success rate in advance. This enables him to revise the design, if necessary, before the stencil is manufactured – and do it without having to run any tests themselves. And even if the design is perfect from a DFM perspective, the customer still receives valuable tips for the best printing settings that save them the expense of having to run test prints when the production starts up (NPI)



Design for manufacturability (DFM) – a complex, often disliked challenge

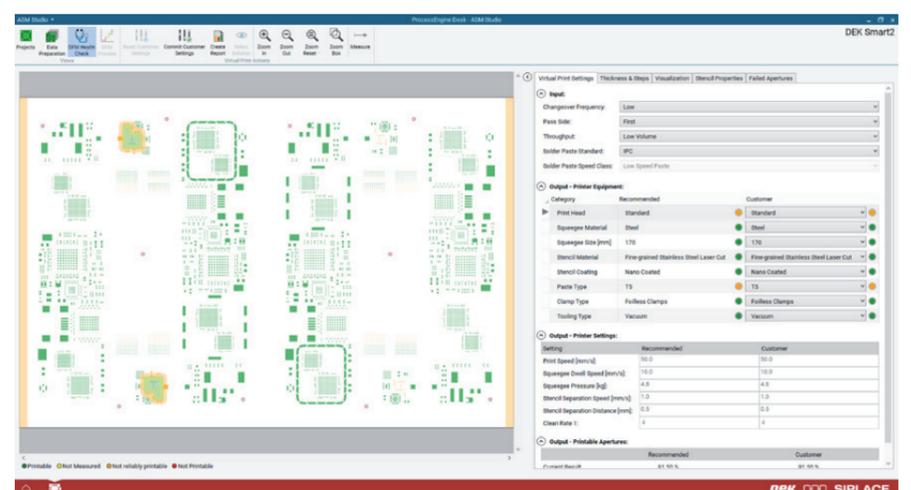
As electronic assemblies become more and more compact, the designs are becoming more demanding as well. It is no longer sufficient that a product design meets all functional requirements, developers must also ensure that the design can be manufactured reliably and cost-effectively. DFM therefore becomes an overarching objective.

The solder paste printing process is considered especially critical among practitioners. Although stencil manufacturers typically check each design for manufacturability, in some cases, a new design must be developed, which costs a lot of time and money. It is not just the stencil design that determines the stability of the printing process. There are many other parameters that affect the process stability and quality as well as each other, such as: Board support, Clamping, Solder paste, Squeegee pressure and speed, Separation distance and speed and Cleaning type and intervals.

The ideal solution would therefore be the ability to test the stencil design in combination with all other relevant parameters before the stencil is produced and to optimize the package, based on the results of such a test. This is exactly what the DFM HealthCheck does.

Expert system software provides the basis for ASM DFM HealthCheck

DFM HealthCheck is a function of the inline, self-learning ASM ProcessExpert system that ASM has developed for SMT electronic manufacturers. The software and its knowledge database can be used for virtual prints. To do this, the software is fed the stencil's Gerber data along with a series of customer-defined process parameters, i.e., the settings with which the boards will be printed on the SMT line. Based on this data, the software then simulates a printing process. By consulting rules and data in its knowledge database, it can highlight potential weaknesses in the stencil design and propose parameter changes that ensure a stable printing process. For example, DFM HealthCheck may suggest coating the stencil, adjusting the squeegee speed, or changing the clamping to make the printing process more stable with the selected stencil design. Thanks to DFM HealthCheck, changes can be implemented before the first stencil is made or tested during time-consuming printing trials directly at the production line. The bottom line: DFM HealthCheck delivers the kind of time and cost savings in the design process that can generate a competitive advantage.



More Information.

If you like to receive more practical information, ask us to send you the ASM Whitepaper DFM HealthCheck which contains examples of DFM HealthCheck performe on actual customer stencil designs. You can also contact us for a demonstration or ask us to do a DFM HealthCheck for your next stencil order. You will be convinced of the benefits.





Indium 8.9HF Pb-Free Series Solder Paste

The Indium 8.9HF series is a series of lead-free solder pastes with a choice of different fluxes, alloys and grain sizes. Indium 8.9HF is a very user-friendly all-round, no-clean, halogen-free paste with a large process window and excellent results during stencil printing and reflow or vapor phase soldering.

Properties

- Halogen free, according to EN14582 test method
- One of the most stable pastes
- Eliminates hot and cold slump
- Good wetting on oxidized BGA and solder pad surfaces
- Clear and probe testable flux residue
- Low voiding with BGAs, CSPs and QFNs
- High transfer efficiency with small stencil apertures (<0.66)
- Good resistance to oxidation
- Very good soldering performance at high soldering temperatures and long reflow times
- Compatible with SnPb alloys

The Indium 8.9HF is packaged in 500 gram jars or 600 gram cartridges. The paste has a shelf life of 12 months and can be stored for 30 days at <25 ° C after opening. It is recommended to keep the paste in the refrigerator and take it out of the refrigerator at least 2-3 hours before use. It is better not to put the used paste back in the refrigerator or put it back in a jar with fresh paste. The stencil life is 60 hours at 30-60% RH and 22-28 ° C. The paste is very stable during stencil printing and the transfer efficiency at low area ratios of <0.66 is very good. The response-to-pause properties are very good, i.e. when the production line has been temporarily stopped, the paste behaves almost immediately after start-up in the same way as before.

The available grain sizes are 3, 4, 4.5 and 5. The viscosity of the SAC305 T4 is 1,700 Poise. Paste that is newly applied to the stencil gives the perfect result almost immediately on the first print. The paste should be applied to the stencil with a roll diameter of about 20-25 mm, the optimal print speed is about 70-80 mm/s, the best squeegee pressure is about 1 kg per 5 cm squeegee length and the best separation speed 15 - 20 mm/s.

Specialized formulations for enhanced performance focus:

Indium8.9	Indium8.9HF	Indium8.9HF-1	Indium8.9HFA	Indium10.1
8.9 Solder Paste Eliminates HIP <ul style="list-style-type: none"> • Strong oxidation barrier to promote coalescence after heat exposure • High tackiness to maintain contact with components • Clear probe-testable flux residue 	8.9HF Solder Paste Best All-round Halogen-free Paste <ul style="list-style-type: none"> • Strong oxidation barrier promotes complete coalescence • Resists premature flux spread to prevent surfaces from oxidizing • Probe testable • Halogen-free 	8.9HF-1 Solder Paste Enables In-circuit Probe Testing <ul style="list-style-type: none"> • Thermally stable residue designed to stay probe-testable • Fewer false testing failures mean quicker cycle times and less rework • Halogen-free 	8.9HFA Solder Paste Delivers Superior Printing for Miniaturization <ul style="list-style-type: none"> • Best-in-class high speed printing • Optimal print performance for the smallest components and apertures • Halogen-free 	10.1 Solder Paste Best All-around Halogen-containing Paste <ul style="list-style-type: none"> • Lowest levels of voiding for QFNs, BGAs and CSPs • Oxidation inhibition promotes complete coalescence after long reflow profiles • Excellent HIP, graping performance

The SAC305 paste is suitable for Reflow soldering with and without nitrogen, although nitrogen is recommended for small SMD components. For the reflow profile an optimal ramp-up of 0.5-1 °C/sec applies to prevent solder balling and hot slump, the recommendation for the soak zone is 30-90 sec. at 160-180 °C. The Time Above Liquidus (TAL) is 45-60 sec. at a peak temperature of 230-260 °C. Cooling should be done at 2-6 °C/sec.

The following alloys are available

- SAC387 95.5Sn / 3.8Ag / 0.7Cu
- SAC305 96.5Sn / 3.0Ag / 0.5Cu
- SAC105 98.5Sn / 1.0Ag / 0.5Cu
- SAC0307 99Sn / 0.3Ag / 0.7Cu
- SACm® 98.5Sn / 0.5Ag / 1.0Cu
- Indalloy®276 Patent Pending.

The Indium8.9HF series is available with different flux formulas. Each flux has specific properties and its own strengths in terms of print transfer efficiency, head-in-pillow resistance, QFN voiding, high speed printing BGA voiding, graping resistance and pin testing.

In addition to the Indium 8.9HF series, Indium also offers lead-based paste, low-temperature solder paste, dispensing paste and jetting paste. And besides solder paste, there is Indium flux, solderwire, solder ribbon, solder bars, solder preforms and thermal interface material.

If you have special soldering processes or challenges, a team of technical specialists at Partnertec is ready for you. Are you interested and would you like to test the Indium 8.9 HF? Let us know and we will contact you.

	Good	Better	Best
Print Transfer Efficiency	Indium8.9 Indium8.9HF Indium8.9HF-1 Indium8.9HFA Indium10.1		
HIP Resistance	Indium8.9 Indium8.9HF Indium8.9HF-1 Indium8.9HFA Indium10.1		
QFN Voiding	Indium8.9 Indium8.9HF Indium8.9HF-1 Indium8.9HFA Indium10.1		
High Speed Printing	Indium8.9 Indium8.9HF Indium8.9HF-1 Indium8.9HFA Indium10.1		
BGA Voiding	Indium8.9 Indium8.9HF Indium8.9HF-1 Indium8.9HFA Indium10.1		
Graping Resistance	Indium8.9 Indium8.9HF Indium8.9HF-1 Indium8.9HFA Indium10.1		
Pin Testing	Indium8.9 Indium8.9HF Indium8.9HF-1 Indium8.9HFA Indium10.1		



Partnertec acquires stencil manufacturer ASM Benelux!

Since Partnertec acquired all activities from ASM Assembly Systems Benelux since August last year, Partnertec became the only supplier in the Benelux that can offer complete production lines of machines and consumables for the SMT industry, including screens and stencils.

Ever since its incorporation in 2004, Partnertec has acquired the exclusive representation of top-class brands in SMT production machines, including all necessary tooling and consumables such as solder paste, coatings, and cleaning products. However, there was still one missing link in our programme: screens and stencils. To date, they were manufactured by our colleagues of ASM Assembly Systems in the Benelux. It has always been Partnertec's ambition to add the in-house manufacturing of stencils in the Benelux to our unique product portfolio of global market leaders. The exceptional growth of our company in the last four years has helped us to now realise this acquisition.

The acquisition of ASM Benelux means that we can offer our customers even more added value. Because we can now offer the complete package, including screens and stencils, we can provide a full-service solution in terms of setting up and servicing your total SMT production process. Partnertec has now become a total solution provider, which is unique in our industry in the Benelux.

In-house Stencil Manufacturing at Partnertec

More good news is that the stencil production is relocated back to our office in Oirschot, which offers more flexibility and speed, resulting in a seamless solution for urgent deliveries. The cooperation with ASM Assembly System as a second source for our stencils, offers us a very strong back up, and the possibility to deliver step stencils, coated stencils, electroform stencils and PumpPrint stencils.

A recent investment in a high-end Keyence microscope allows us to accurately measure the tolerances on the stencil apertures. This microscope is accurate to 1 or 2 microns and we use it to verify the quality of the laser machine every day. It is also fitted with a camera so we can take photos of the apertures and create quality reports.

Another cooperation, with a Germany company, allows us to offer emulsion screens to the Benelux market. These screens, for example, are used in the production of solar panels and printed electronics. Our German partner is a high-tech company with many years of experience. They delivers a wide range of frame sizes, polyester and stainless steel meshes, and different emulsion types. So if you have a special screen-printing application, outside printing solder paste on a PCB, and you believe a stencil will not work, contact us to find out if a mesh and emulsion screen can do the job for you.



VectorGuard Frame System	Grid Lok	PBC Pallet Solutions	Pre-Saturated Wipes	Smart Stencil	Self Adjusting Paste Deflectors	Indium Solder Paste	Berbertec Emulsion Screens
Annual VG Frame Service	Lasercut Stencils	USC Fabrics	Stencil Design Expertise	Squeegees	Solder Paste Nozzles	Zestron High Precision Cleaning	Spatulas
On-site Tension Check	Electroformed Stencils	Stencil Coating	Special Cleaning Agents	Lasercut Squeegee Blades	High Purity Dry Cleaning Wipes	MB-Tech Stencil Cleaning	Precision Swabs
VG Toolkits	Mesh Mounted Stencils	USC Agents	DFM Health Check				
Dedicated Tooling	PumpPrint Adhesive Stencils	Multi Level Stencils	Gloves				



www.asm-smt.com



Automatic Component Counting:

A brief explanation of why X-ray component counters are becoming so popular.

Sometimes quantity matters, especially when you're short on something. If you run out of an SMD component when you don't expect it, it will lead to an unplanned line interruption. This can delay the delivery to your customers. However, stopping an entire SMD line in the absence of a very small SMD part is common practise. Last minute organising of missing parts can be very costly and time consuming for your logistic and procurement organisation.

Techniques to avoid machine downtime

Various techniques are used to prevent this. Most modern Pick & Place machines have software in which the user can enter the number of components as mentioned on the supplier's label. However, not all suppliers deliver the exact quantities as ordered or mentioned on the label. So this could be the start of the problem. Also, many machines can track the number of components picked from a reel and then send this information back to your ERP system. This software should also count the number of mis-picks. However, there are no machines that can detect losses caused by human intervention while loading the feeder, troubleshooting a feeder problem or replacing a broken tape. Most ERP systems are therefore set up in such a way that they increase the purchase order quantity by default with a predetermined loss percentage. However, when a reel is loaded multiple times onto and off a feeder, this safety stock often does not compensate for the losses. In those cases where losses are very low, over time you will have to deal with many obsolete safety stocks in your warehouse.

Stock counting, a time consuming activity isn't it?

An important reason for many companies to frequently count their stock. By counting the remaining parts in the reel when returning to the warehouse after production or during the annual stock counting. With traditional counting methods, this is a very time consuming job that cannot be performed with too much precision. Fortunately, modern X-ray counting systems now offer a much better alternative. Imagine the annual savings if you could reduce the time to count the components on one reel from 3 minutes to about 4 seconds! X-ray counting machines use X-ray technology and advanced software algorithms to recognize how many parts are in the package. Intelligent links with your logistics software ensure that your stock is updated automatically.

You can count on us!

Nordson Dage, the number one supplier of X-ray inspection machines to the electronics assembly industry, last year acquired Optical Control, a German manufacturer of advanced X-ray counters. Their products are now fully merged into the Dage portfolio and are sold under the Dage Assure brand. Partnertec is pleased to inform you that we are now also appointed as exclusive distributor for the Dage Assure brand.

Dage Assure offers X-ray counting systems that clearly distinguish from other brands. The software offers automatic self-learning component recognition, the machines can count extremely fast and accurate, are maintenance-free and can handle any type of packaging. The machines are available with manual loading systems or with fully conveyORIZED automatic loading to further reduce cost of operation.



www.nordson.com/en/divisions/dage



MBtech news:

NC25, closed loop environmentally friendly cleaning of PCBA's with new Stainless Steel DI-water Vessels



Cleaning PCBA's after soldering, prior to customer delivery or before applying conformal coating becomes more and more popular. It removes flux residues and visible- as well as invisible contamination that could cause harm over time. This cleaning process also improves conformal coating reliability (better surface tension = better adhesion).

MBtech is a market leader in high-end cleaning equipment. Environmentally friendly cleaning is one of the major drives in their development philosophy.

MBtech have developed a unique and patented Spray-Under-Immersion technique combined with a patented Closed Loop Double Filtration which help in saving energy and fluids consumption (cleaning agent and rinse water). This combination is the effective and efficient solution to process PCBAs while offering the lowest possible running cost.

Great benefits of NC25 Spray-under-Immersion vs Spray-in-Air:

- More fluid activity - boards are dipped into a reservoir filled with cleaning solution instead of just being sprayed intermittently. PCBAs are therefore 100% exposed to the chemistry action.
- No risk of board damaging - PCBAs are mounted on dedicated racks offering a safe handling. Spray action is applied from both sides of the boards simultaneously offering a perfectly balanced mechanical effect.
- No "shadowing effect" - all PCBA's are placed vertically in one flat surface, not in angles next to each other like in spray in air batch cleaners. The MBtech technique offers 100% exposure to spray action.
- Less fluids consumption – Rinsing steps with DI (Deionized) water are done into separate tanks after active blow-off above the cleaning tank. Less cross contamination (saving Carbon and Resin filters) and no rinsing of the machine interior needed like in spray in air machines,
- Faster and better drying - Integrated separate vacuum drying chamber. No need to dry the interior of the machine, only the PCBA's are dried. Water vaporizes faster in vacuum, less time and temperature needed, full drying in 10 minutes.
- Less energy consumption: Lower power pumps needed, lower energy required for drying
- Less cleaning agent consumption: No cross contamination between cleaning and rinsing. In conventional spray in air machines, the rinsing DI water also needs to remove the cleaning agent from the interior of the machine after each cleaning cycle.
- Semi-inline process, every 10 minutes boards come out of the machine. This is a really flexible solution compared to batch cleaners with processing time above 2 hrs (including drying).

100% close-loop

The NC25 multi-chamber design offers 1 cleaning tank, 1 to 2 DI water rinsing tanks and 1 vacuum drying chamber. The cleaning agent in the first tank is recirculated through an advance and patented microfiltration system. Flux residues are removed to avoid contamination of the PCB surfaces. Heavy sinking parts are pumped away from the bottom of the main tank. MBtech recommends Zestron Cleaning agents because these are able to temporary capture flux and particles to allow easy filtration. This way wash solution can be continuously reused.

Rinsing is done in 1 or 2 steps into separate DI water tanks. Water is recirculated through an Active Carbon Filter and then a Mixed Bed Resin Filter to keep water clean and deionized.

These DI water filters periodically need to be cleaned and reactivated usually by an external supplier. This logistic operation can be costly and time consuming.

Now MBtech offer new Stainless Steel Vessels as well as filtration medias. Due to its easy to use and to maintain construction, you can exchange the Resin and Carbon load from this robust stainless-steel filter in house and by yourself.

Please contact us if you wish to learn more about MBtech cleaners, New Stainless Steel filters and media or Zestron cleaning agents.



www.mb-tech.fr



NEW: ASM Flex PCB Support

In response to customers' demands for bigger flexibility in choosing the proper PCB support, ASM takes a great leap forward by introducing **ASM Flex PCB Support**, a dedicated tooling which enables the most accurate support for customers' PCBs and allows a very fast change-over. One could wonder why introducing a new product for customised PCB support when our dedicated plates serve the market very well since more than 20 years, and the response is mainly given by the new challenges of a modern SMT line. Yes, both **DEK Dedicated Support** and **ASM Flex Support** do basically the same job; yes, they both have two parts – the base tower and the dedicated plate – but there are several extra benefits the later product brings into the game.

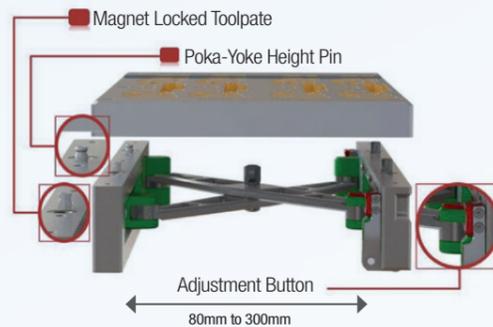
Product curve based on change over speed & safety



From minimum to maximum flexibility, change over time and traceability - always the best fitting support solution.

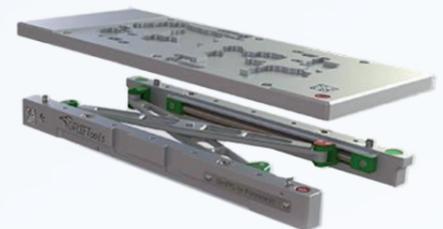
1. Easier change-over

The base part (Flex Tower) can be now considered part of the machine. Once placed onto the machine's table, there is no need to remove it during the change-over, only during maintenance (for cleaning, if necessary). There are no screws involved in changing the plate, fixing it to the tower is "click & play" and magnetic, while keeping the same accuracy every time. Therefore, no other process is involved, it is poke yoke and no human error can occur during the changeover.



4. Anodised finishing

Better protection of the surface of the plate from debris, paste and scratches.



2. Safety

The rear side of the dedicated plate is not anymore supported by two cylindrical pillars but by a controlled part which extends from the fix side by a scissors-like assembly. Say goodbye to lost pillars and improper mounting! Plus, a graded scale indicates the scissors opening according to the width of the plate. Adjusting the width is very easy. Finally, at a thickness of 22.3mm, the plate is much lighter than our current Dedicated Tooling top plates.



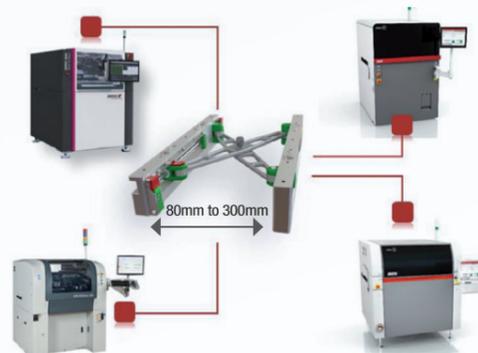
5. Simplicity

The vacuum connection is now fitted onto the plate, not the tower, which improves efficiency by ensuring all negative pressure is used to hold the PCB instead of leaking through the towers. Also, that means that the customers who need both type of customised plates will not replace the tower every time the replacement is necessary. One tower per machine, that is it, and the variation is given by the plates.



3. Interchangeability

The DEK Dedicated Support system was mainly dedicated to DEK printers. Customers having a mix of printers on the shopfloor would need a different assembly if the same product were to be printed onto different printing platforms. Now with ASM Flex Support, the plates are interchangeable, can be used on a wide range of printers (DEK, Ekra, MPM, Panasonic, Yamaha). The tower would be different, but the plates are the same!



Technical data

Material Spec	EN AW7075
Surface	Hard Anodised
Tower Height	58.7mm +0 / -0.02mm
Tool plate Thickness	22.3mm +0 / - 0.02mm
PCB Bottom Ref. Height	81mm
Applicable PCB Size min (L/W)	100mm / 100mm
Applicable PCB Size max (L/W)	550mm / 450mm
Applicable PCB thickness	0.8mm to 10mm
Vacuum Option	Yes
Weight tower	2.3 kg



www.asm-psp.com

