The Mycronic APM Software Suite

Smarter tools for Assembly Process Management

MYCRONIC

When passion meets innovation

Intelligent software for a complex environment

With the rising complexity of SMT production comes a greater need for quality data. High part number count, a wide variety of boards, and an ever-changing production schedule are constant challenges that only the most intelligent software can handle. This is why Mycronic's assembly process management software is tailored for the most complex manufacturing environment imaginable.

With the richest software suite in the industry, developed largely in-house, Mycronic provides fully integrated applications covering the entire chain of SMT assembly. Our software tools increase utilization, boost efficiency, improve service level to your customers, and impact your bottom-line. Whatever your role in the production process, our software suite puts you in complete control of your factory's information handling.

STABLE, SECURE AND SIMPLE TO USE

Mycronic software has a proven track record for unparalleled stability, data integrity and user friendliness. Our system is designed to support integration, multiple users and parallel processes, using open interfaces and state-of-the-art software technology. All of this makes our software suite easy to connect, easy to adapt and easy to use.

CONNECTIVITY IS KEY

In a fast-moving production environment, it's vital that data generated in one step of the process immediately becomes available to all other assembly functions. By providing an integrated system for planning, kitting, production and storage, Mycronic software provides the full perspective you need to make critical decisions and improvements.

Mycronic APM Software Suite

Smart tools for Assembly Process Management

Mycronics's APM software suite follows the steps you would normally take in the assembly process. This makes it both intuitive and simple to use for everyone involved.

DATA PREPARATION

Typically, various part-numbering systems, CAD and BOM formats lead to time-consuming conversions and revisions. Not anymore. Our software gives you the tools to make conversions automatic and error-free.

OPTIMIZATION AND SCHEDULING

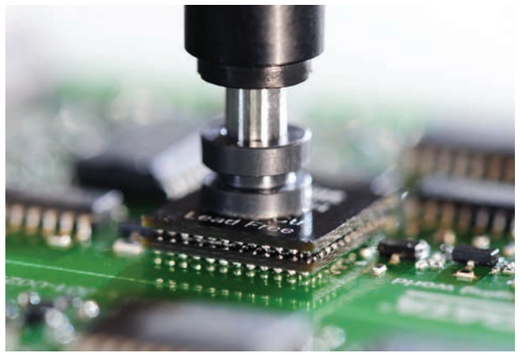
Before last-minute changes and delayed component deliveries bring production to halt, make sure you have the software you need to ensure maximum equipment utilization. With MYPlan's Job Sequence Optimizer, you'll have one of the industry's most powerful optimization algorithms at your disposal.

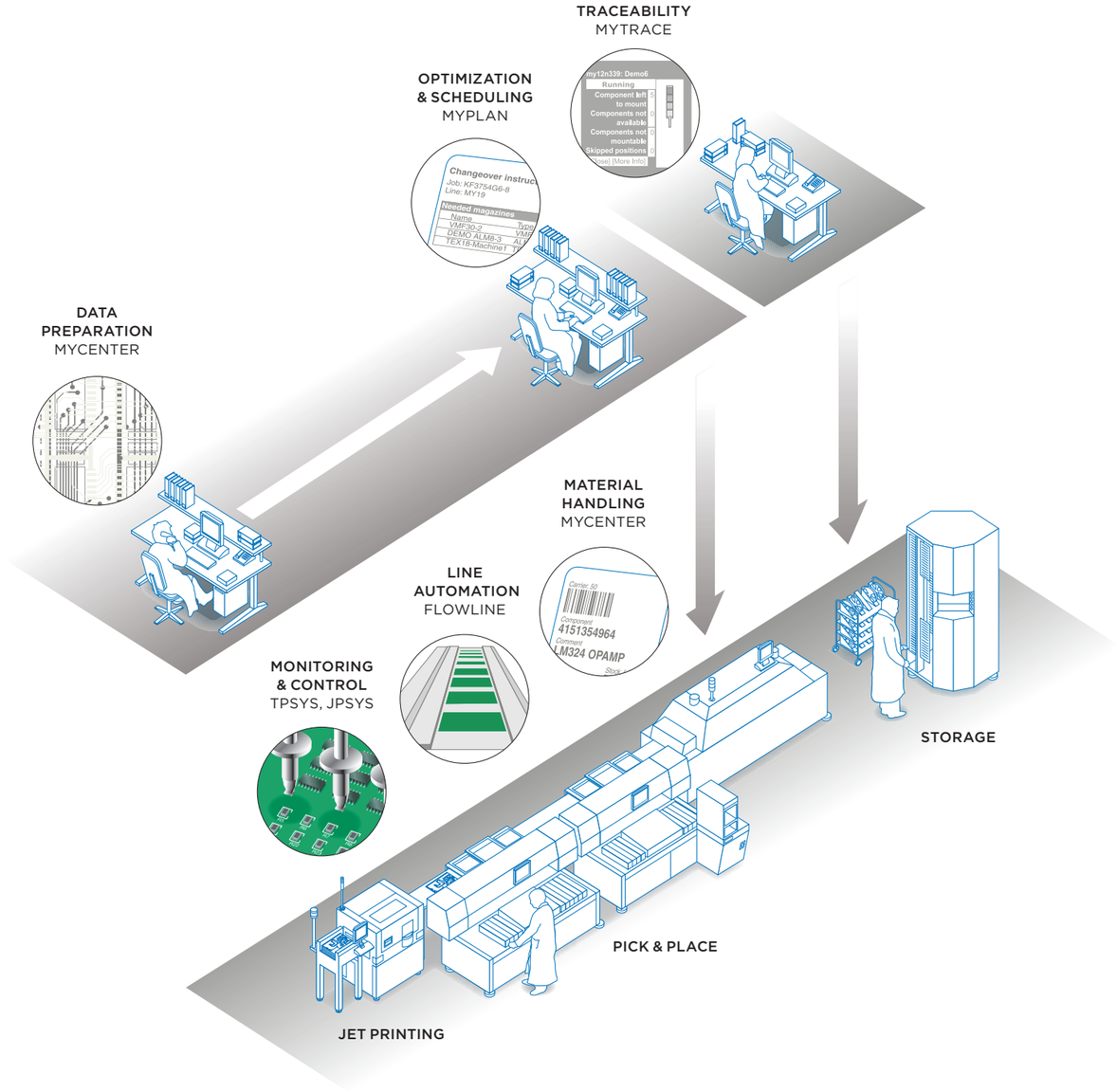
LINE CONTROL, MONITORING AND MATERIAL HANDLING

Continuous optimization requires accurate real-time data. This is why Mycronic software ensure that every feeder and individual component is scanned, registered and made searchable for all applications throughout your assembly line. You'll keep more accurate track of inventory and reduce the risk of human error.

TRACEABILITY

For capturing traceability data and making it searchable, MYTrace can be configured to best fit the way your process works. Whether you need it today, tomorrow, or 20 years from now, traceability data is collected from each machine in your production line, or multiple lines, and stored on a file server. The data is in a secure location and always easily accessible, so you also have the flexibility to migrate to new software or hardware platforms in the future.





Error-free data preparation

Within minutes, Mycronic's MYCenter software converts Gerber, ASCII centroid and Bill-of-Materials information into ready-to-run machine programs. Once imported, a graphic rendering of the PCB, overlaying a Gerber background, is checked for errors and can be edited as required. Any changes to the program will generate immediate visual feedback.

ALTERNATIVE COMPONENTS

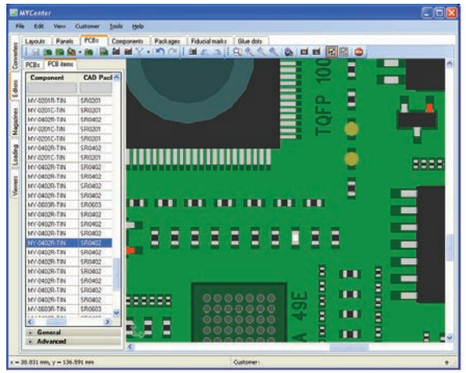
MYCenter's intuitive "what you see is what you get" interface makes it easy to add new shapes and component handling rules to the machine library. Furthermore, the software fully supports Bill-of Materials that include alternative components for a single mount position, and each alternative can be given a strict priority and expiration date. Once defined, the pick-and-place machine will automatically mount the correct alternative part, as specified and approved by the production engineer.

PART NUMBER TRANSLATION

Converting each customers' part number system to internal part numbers couldn't be easier, thanks to MYCenter's translation database, that learns as you go along. The translation table also include rules for conversion between different angle conventions.

VERIFY DATA OFFLINE

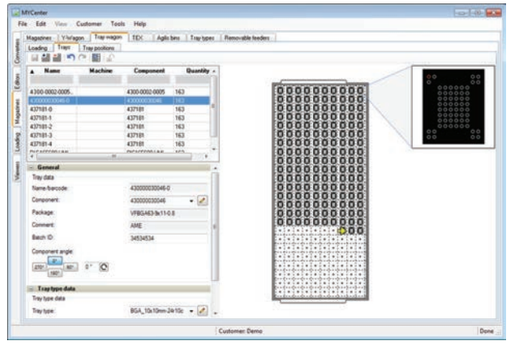
Library data and machine recipes can be created and verified entirely offline, for one or multiple Mycronic machines, using the all-graphical editors. And with the shared database option, up-to-date information is immediately made available to all machines on the factory network in time for production start.



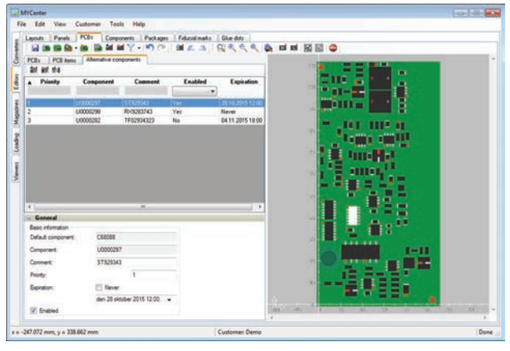
The Gerber background functionality makes it easy to verify component rotation and package definition.

KEY BENEFITS

- Converts all Gerber and ASCII-based CAD formats
- Imports Bill-of-Materials including alternative components
- True "what you see is what you get" graphical editors
- Verifies orientation and package definition with Gerber background



A true "what you see is what you get" interface makes it easy to prepare machine programs completely off-line.



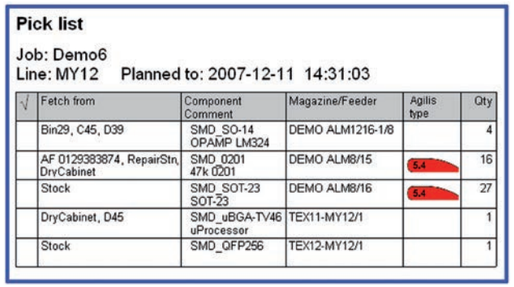
The Mycronic SW fully supports Bill-of-Materials that include alternative components for a single mount position.

Smooth production through smarter planning

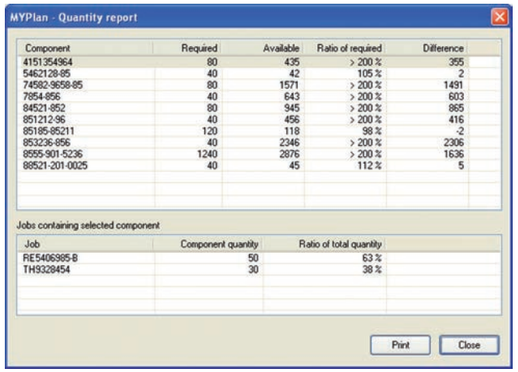
Whether your goal is to minimize changeover time, maximize throughput or achieve a better balance between the two, Mycronic's production planning software makes it easy to perform feeder and job sequence optimization throughout your assembly line. Whatever your priorities, MYPlan will automatically calculate and predict assembly time, kitting and changeover procedures to maintain optimal efficiency.

POWERFUL OPTIMIZATION SOFTWARE

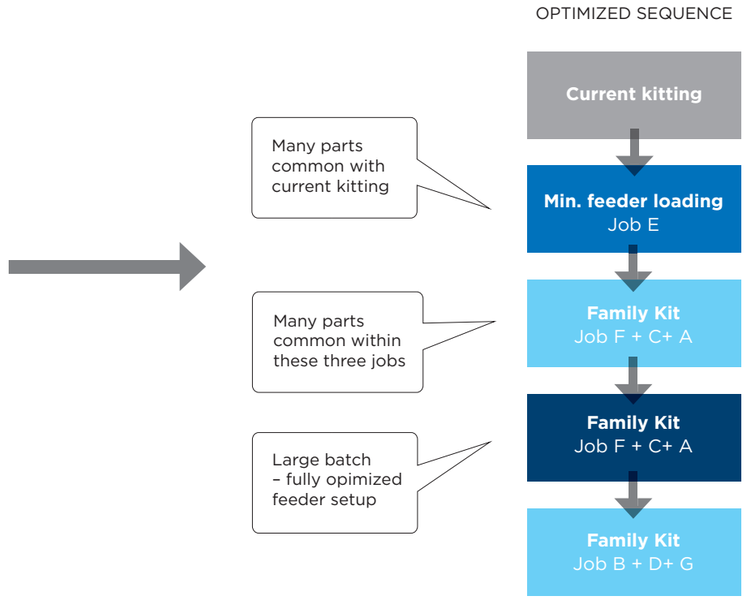
Unpredictable workloads, last-minute engineering changes and delayed component deliveries – all of these make SMT production scheduling a daily challenge. Fortunately, the Job Sequence Optimizer from Mycronic is designed to simplify this challenging environment. An optional feature within Mycronic's MYPlan software, this powerful optimization algorithm calculates the best production sequence and changeover strategy for any mix of products and batch sizes. Built to help SMT manufacturers respond quickly to changes while maintaining the highest possible uptime and throughput, MYPlan eliminates unnecessary feeder movements to help save both time and resources. This is achieved by combining traditional feeder optimization and line balancing with powerful software that minimizes changeover times and reduces operator time.



MYPlan's comprehensive pick list includes each component's last known location according to MYCenter's location tracking system.



Line stoppages due to material shortages can be avoided by using MYPlan's quantity verification tool.



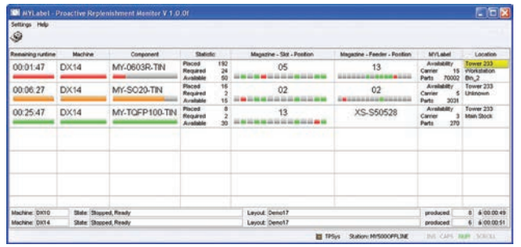
MYPlan calculates an optimized job sequence based on all released work orders.

Improved control for a fast-changing industry

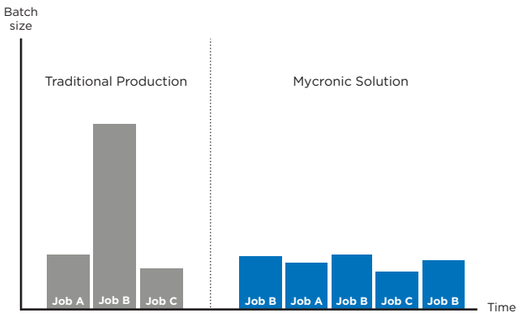
Continuous monitoring and control are essential to reducing human errors and maintaining a competitive edge. This is why Mycronic software is developed to provide real-time, factory-wide overviews of your entire production facility.

NON-STOP LINE CONTROL
Mycronic's fully automated high-mix production environment is possible thanks to highly advanced line control software. With TPSys, you can maintain high throughput and reduce the risk of mistakes with early low-feeder warnings, package autoteach, electrical verification and shared databases. Based on a highly reliable, multi-tasking Linux platform, the software makes it possible to download files and perform backups without ever stopping production. To preserve data integrity, TPSys is equipped with a user access system with password protection, single-point data storage and automatic network backup. Even if the central data server happens to fail, machines can continuously produce PCBs with the help of backup from a local database.

ZERO CHANGEOVER TIME
Our unique FlowLine system eliminates changeover time. Machine programs are selected automatically for each work order and every piece of equipment in the line will adjust its settings without the need for operator intervention. With changeover time eliminated, batch sizes can be optimized for downstream operations such as box build and test.



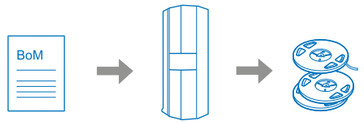
The PRM software module gives operators immediate overview of all replenishment needs across the SMT lines. Replenishment requests are displayed well in advance, preventing any material shortage from disturbing assembly.



The FlowLine concept avoids the need for operator intervention when changing over a line from one product to another. The result is higher utilization and reduced risk of human errors.

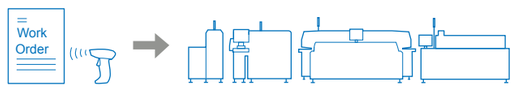
Smarter, more accurate material handling

MCenter PRM (Proactive Replenishment Monitor) both improves uptime and ensures correct material delivery to your SMT assembly line. Together with the SMD Tower storage solution, the replenishment process becomes completely automated.

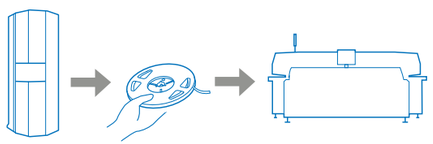


STEP 1 – PLANNING
Optimize your job sequence and changeover strategy for incoming orders. The resulting Bill of Materials is then sent directly to the SMD Tower for automatic delivery in correct kitting order.

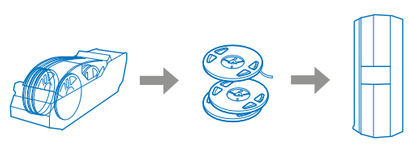
STEP 2 – KITTING
Load the feeders without the need for manual data entry – just two bar code scans are required. Material outside the SMD Tower is quickly located through a tracking system based on location labels.



STEP 3 – ASSEMBLY
With the FlowLine system, machine programs are selected automatically, as are conveyor width and loader/unloader settings. As soon as the line is up and running, you're free to start kitting for the next job.



STEP 4 – REPLENISHMENT
Components that are about to run out are displayed well in advance by the PRM software. Simply click the "provide" button, and the SMD Tower will immediately deliver a new reel.



STEP 5 – DEKITTING
Dekitting a Mycronic line couldn't be simpler. Just unload the feeders and place the reels back into any of your SMD Towers. Since each reel has its own unique identifier, mix-ups are virtually impossible.

Using barcodes to track components and carriers, MYCenter helps to reduce the risk of errors while significantly reducing setup and changeover times. It keeps track of quantity, batch code, current location and floor life - for each and every component. Together with the new Agilis Smart Bin system, MYCenter gives you intuitive paperless kitting guidance - right in front of you.

Gather traceability data in seconds. Store it for decades.

Mycronic's MYTrace software captures traceability data and makes it searchable so it can be configured to any operator process. PCB batch IDs or individual IDs are automatically scanned using the machine's fiducial camera, a conveyor-mounted scanner, or a hand-held barcode scanner. The choice is yours.

Operating on a modular system, MYTrace allows the harvester, viewer and database to be changed and adapted over time without losing data that was previously stored. Prior data not only remains accessible as updates are installed – it's also invulnerable to hard drive crashes and ever-changing data formats.

HOW IT WORKS

The process is simple: The harvester collects traceability data from each machine in your production facility and stores it on a file server for safe archiving. The server is protected using standard backup routines, and because the data is stored securely and easily accessible, you always remain flexible to migrate to new software or hardware platforms as the need arises.

Data extracted from the file server populates a database that can be used to access the exact information you need in a variety of available formats, including PDF, xml and html, depending on your requirements. Should your database crash, it's simply a matter of re-installation, at which point the harvester will automatically re-populate the database with data archived on the file server. Whether you need it today, tomorrow or 20 years from now, data such as faulty PCBs can be quickly retrieved using the MYTrace web-based viewer application.

STORE DATA SAFELY FOR DECADES

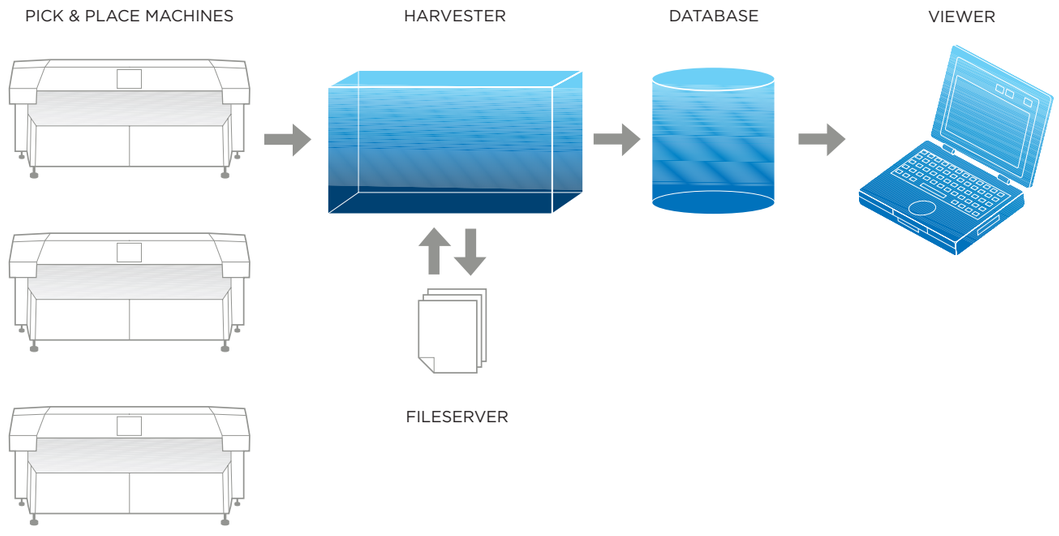
MYTrace is a Windows-based traceability software program developed for secure, long-term storage of traceability data. Information about component placement is safely stored for easy searching and reporting, making it possible to identify all PCBs that are affected by factors such as faulty component batches.

EXTRACT TRACEABILITY DATA IN SECONDS

This fully automated system allows electronics manufacturers to quickly and easily trace mounted components on printed circuit boards to help save both time and resources. MYTrace is future-proof, modular and application-independent. Because it doesn't rely on any particular database technology, it provides a unique and unparalleled level of data security.

CUT RESPONSE TIMES TO A MINIMUM

Just type in part numbers and batch codes, and MYTrace allows you to extract traceability data in seconds rather than hours. In most cases, it takes less than a minute to search through several years of production data and generate a report. If you produce hundreds of thousands of PCBs, the impossibility of manually archiving and tracing data makes this feature indispensible. And when it comes to customer reporting, best practice procedures and quality assurances are easy to generate on demand.



Harvester – The harvester is designed to continuously collect data from the pick & place machines and store the information on a file server.

Database – The harvester uses the traceability data stored on the file server and extracts relevant information to populate a SQL database.

Viewer – The viewer application allows the user to access recall data via an easy-to-use wizard interface. To simplify the interaction, most of the recall criteria fields include a type-a-head functionality.

Boost performance with fully integrated solutions

Mycronic offers the richest software suite in the industry, with integrated applications covering the entire range of SMT assembly. All software is designed to provide a single set of reliable, searchable data, allowing you to improve utilization, efficiency and customer responsiveness more easily than ever before.

Factory-wide connectivity is crucial to making information available anytime it's needed. To ensure accuracy and real-time access, Mycronic solutions make sure that component information and production data is registered just once, stored securely and made immediately available to all potential users in planning, kitting, production and testing, as well as within factory-wide ERP and management reporting systems. With this real-time data access, you can build local intelligence into your equipment, allowing continuous, automated process optimization.

INTEGRATED, AUTOMATED DATA PROCESSING

Easy connectivity and integration are the backbone of Mycronic's fully automated production solutions. With single-point data storage and automatic network backup, TPSys line control software is capable of ensuring non-stop production even if the central data server happens to fail. This is all possible thanks to open, local databases, from which data can easily be retrieved at any time – before, after or during batch production.With one integrated set of data stored and shared across the entire production process, production lines can achieve new levels of efficiency and flexibility. This, in turn, means better customer value and increased profitability.

RELIABLE, SIMPLE, SECURE

Software programs such as MYTrace are both modular and future-proof. By storing data in an application-independent format that doesn't rely on any particular database technology, the advantages in terms of data security and flexibility are entirely unique within the industry.

And MYTrace is just one example, since all Mycronic software is designed with the same principles in mind: reliability, security and easy access. Open databases, whether in TPSys, MYCenter or MYTrace, make integration simple and stable, regardless of the formats of your existing solutions.

The MYCenter material tracking software can help avoid the quantity divergence associated with traditional material planning systems. Left: Stock accuracy when counting nominal consumption + average waste. Right: Stock accuracy with MYCenter.

Software support straight from the source

The full Mycronic software suite has been developed by listening to our customers. All support applications, training and services are designed with a close ear to your needs. Have questions or issues to resolve? Why not ask the developers directly?

GLOBAL SUPPORT, 24/7

When it comes to constantly improving our software, your feedback is the most important input we receive. We offer advanced web support, on-site startup assistance and our global support lines are open 24/7. We're always on hand to help – wherever you are in the world.

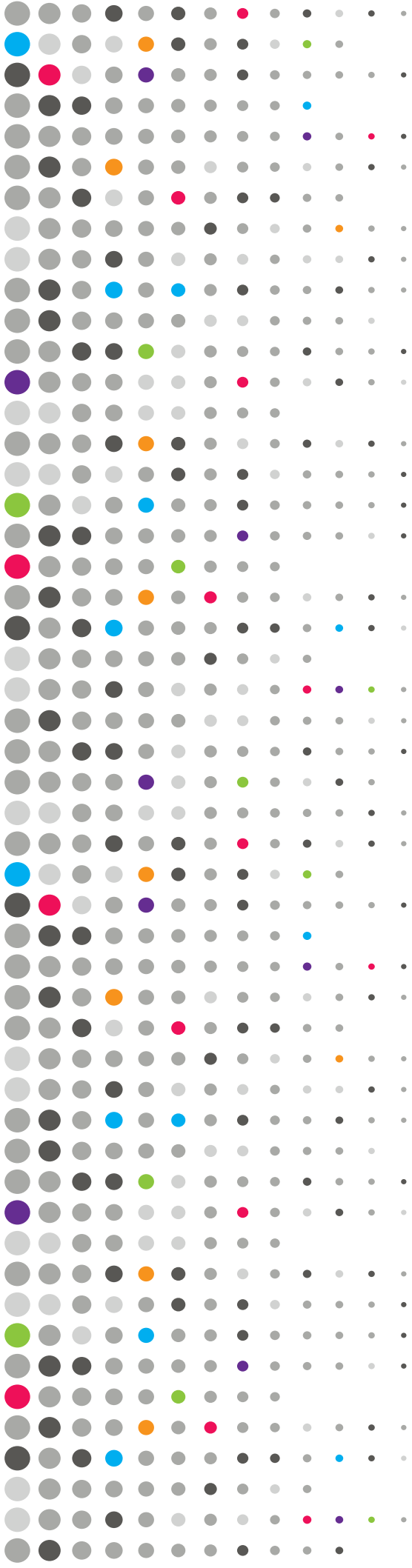
To get the most out of your investment, you'll have access to the best possible resources for your support inquiries: the software developers themselves. This means faster, more effective response so that your production line never has to wait.

Mycronic ensures:

- Fast installation and deployment of solutions within your facility
- Rapid learning through effective training
- Quick and accurate response from all our technical support staff

Our global services include:

- Installation and upgrade support
- Technical support, including diagnosis and assistance, via remote connection to your machine
- Training support
- Application support
- Interactive web support



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