EROWA®
system solutions

JMS® 4.0

ProductionLine

The scalable process control system for production

Global presence

Well-known companies on every continent are among our customers. Machine manufacturers, fixture, tool and mold makers, as well as production companies in the electronics, automotive, watchmaking, medical technology, and aerospace industries, manufacturers of cutting tools, and many subcontractors.

EROWA JMS® 4.0 PRODUCTIONLINE

A step towards Industry 4.0

The EROWA JMS® 4.0 ProductionLine process control system has an important place within Industry 4.0 as a whole. It covers a large proportion of the functions that make up the Smart Factory. The benefits for users are significant, as it is always clear what workpiece is where in the process and when.

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The machines constantly report their status and in-process control with automatic feedback gives you production of the very highest quality. Of course, functions to import and export to/from upstream and downstream systems are provided as well. Workpiece pallets can be identified at all times from their RFID chips.
ProductionLine – the fast and simple process control system.
Available in 15 languages.

01 | **Avor**

02 | **CAD**

03 | **CAM**

04 | **ERP**

05 | **Preparation**

06 | **Milling**

07 | **Robot on rails**

08 | **Washing**

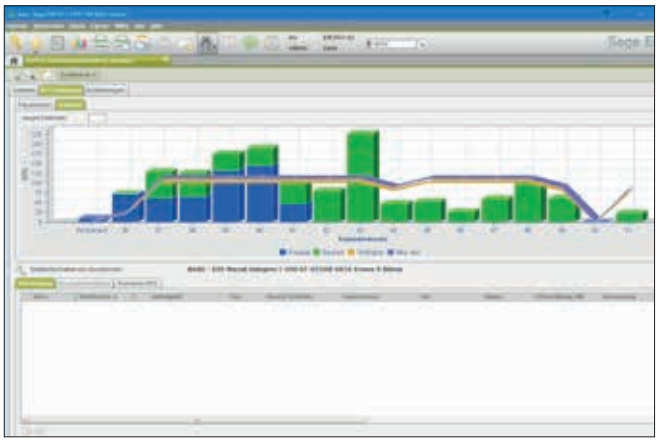
09 | **Measuring**

10 | **Cell computer**

Import rather than copy

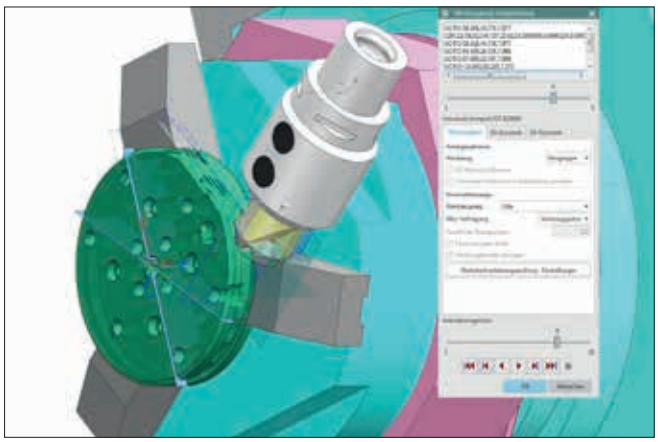
Getting a job through your own production is certainly manageable. However, you often have to expect copying and recapturing when it comes to detailed planning. These tasks are time-consuming and error-prone. The JMS® 4.0 ProductionLine process control system has a wide range of interfaces to applications in the environment. This makes direct imports, but also feedback, much faster and safer. And the current status in production is captured and displayed in real time.

ERP I An order is recorded in the ERP system. Various data is entered.



MES I The production planning system fetches the master data from the ERP, and adds planning details such as machine assignment and standard times.

CMM Qi I Datum points are identified easily at the measuring station. The data is associated with the workpieces via the integrated interface.



CAM I CAD data is imported via the interface to CAM. CNC programs are generated and provided ready for use.

From all these sources, the EROWA JMS® 4.0 ProductionLine collects the required information to create a complete work process. The data is imported largely automatically. Manual additions can be made depending on the characteristics of the various systems.

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THE FACTS

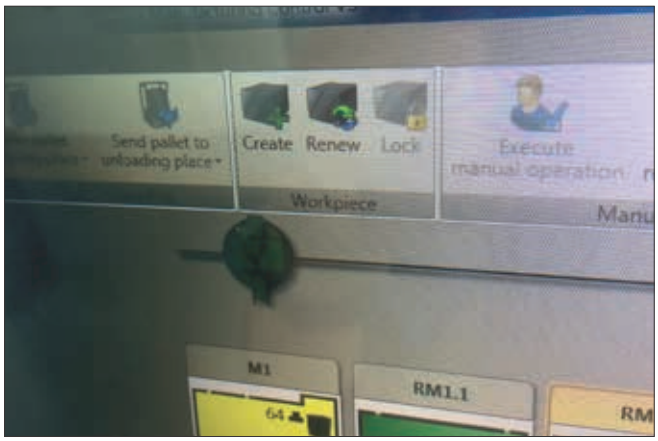
- Import interfaces
- Manually editable
- Export interfaces

Setup during main time

Upholding the autonomy of the system is the goal. This means sufficient workpieces must be prepared ready for pick-up.

Preparation is handled by the setup stations, where blanks are clamped to the fixtures. Processed workpieces are replaced with new blanks. Fixtures are set up for pending tasks.

More workpieces are prepared while the machine is in production.



Fast and simple duplication. In production mode, an existing job can be reactivated with a click of the mouse.

Setup and preparation while the production cell is producing. There is no waiting time. The EWIS™ chip ensures identification.

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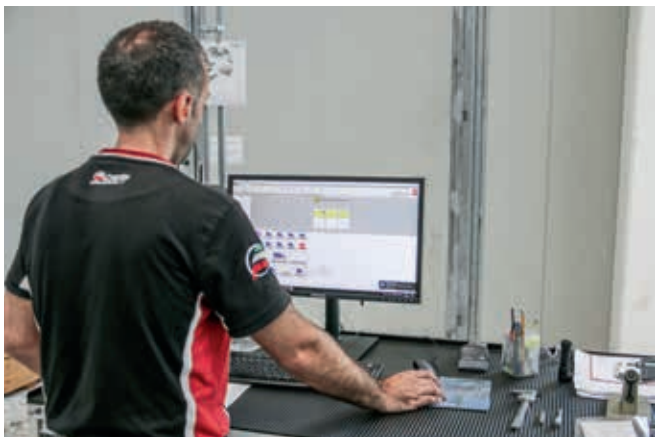
THE FACTS

- Quick start with production mode
- Maintains autonomy
- Unique identification
- Associates offset data
- Ergonomic working

Increasing autonomy

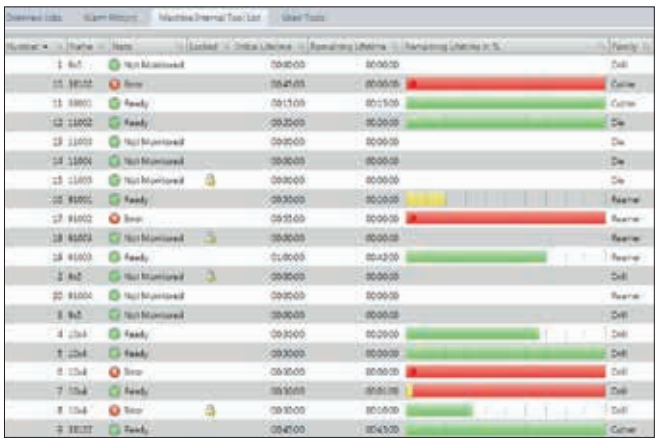
EROWA robots open up previously untapped production hours.
In the third shift and on weekends production runs autonomously.
This requires exact, but still flexible, planning.
The JMS® 4.0 ProductionLine gives you a clear overview. The order list, priorities, the CNC programs, tool management and the current status messages show you what is going on at a glance.

A production cell consists of the machine, the EROWA robot and the terminal for the process control system. So the operator has everything under control.



The JMS® 4.0 ProductionLine is responsible for control and monitoring of the cell. This task can be set up in different comfort levels.

Besides the workpieces and NC programs, you need the right tools as well. Whether this is the case, and what their remaining lives are, is read from the memory of the machine.



Clear presentation of the tools at the machine including status, tool life, tool breakage and a forecast of the available production time with the existing tools.

Staged pallets with workpieces are uniquely marked with a chip. At every station in the production process, each pallet is precisely identified by the EROWA EWIS™ system.

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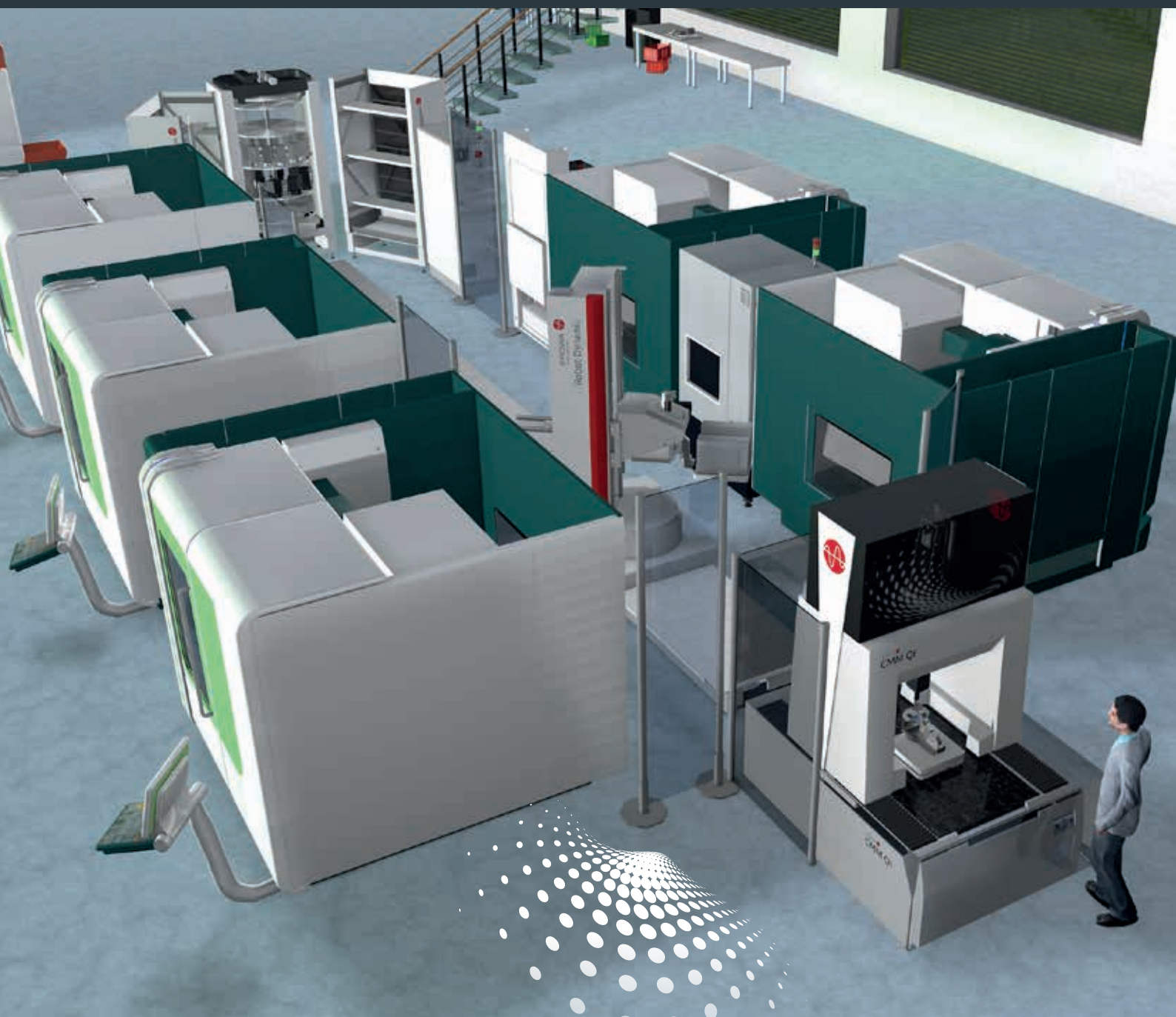
THE FACTS

- Utilize off-peak and night hours
- Manage manufacturing priorities
- Forecast machining times
- Status messages
- Tool life monitoring

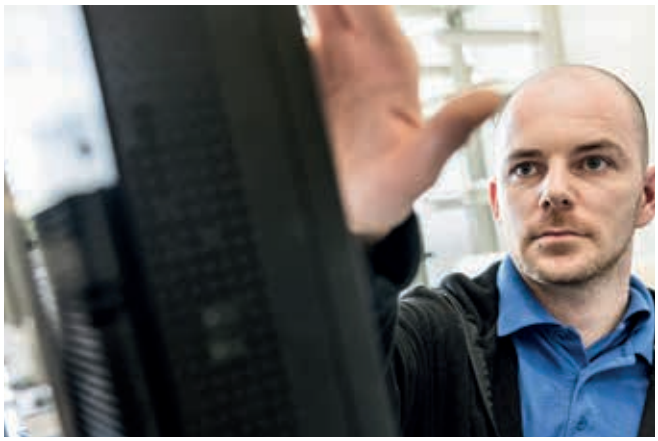
Everything under control

Automated single part production places high demands on the organizational flow. The JMS® 4.0 ProductionLine keeps to the process steps no matter what the circumstances. Interim control after milling with automatic cleaning, blocking or release of the next production steps - everything is under control with JMS® 4.0 ProductionLine.



A workpiece is released for machining if all requirements are met. This means, when the priority is right and the CNC programs and tools are available. The result is a high level of process reliability.

The "washing/cleaning" production step is necessary if several processes run in succession automatically. E.g. mill > wash > measure workpiece.



One glance at the screen shows whether everything is in the green range. The machine shows only the current status, but the JMS® 4.0 ProductionLine also looks into the future.

The larger the number of produced workpieces, the more important efficient quality control becomes.

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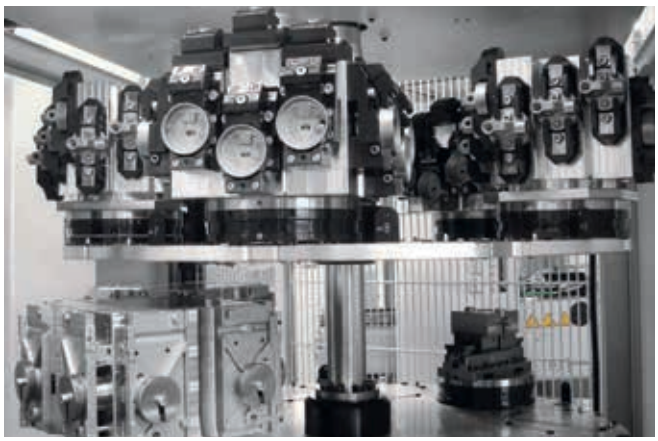
THE FACTS

- Automatic quality control
- Prioritizing
- Integrated cleaning
- High process reliability
- Overview

Fully productive

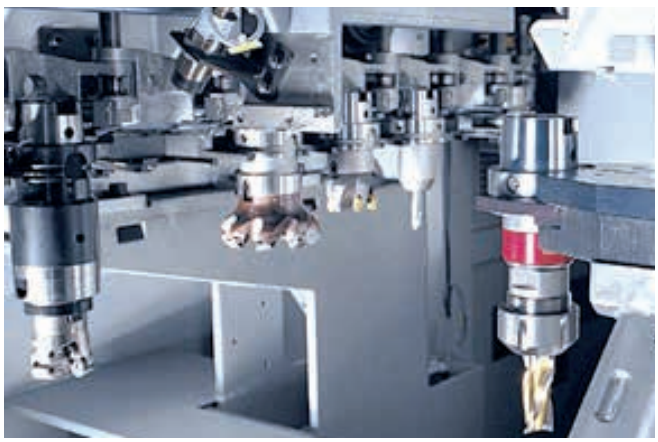
The most important task of the process control system is to maintain productivity. The JMS® 4.0 ProductionLine has been developed to do just that. It is easy and intuitive to use. An overview is provided on a just a few screens.

Finished parts are automatically routed to the tooling station. Clamping new blanks is supported graphically.



Fixture Manager manages multiple fixtures on a pallet, automatically storing the position of a clamped workpiece. The identification system ensures the correct matching of the data.

The ToolManagement module checks which tools are required based on the NC program right after a job has been created. A comparison with the tool list of the machine shows whether the job can be released or not.



If a tool is missing or if its life has expired, its sibling tool is used instead. If none is available, the current job is stopped, and the next job on the priority list is processed.

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THE FACTS

- Detailed information
- Fixture management
- Changing pallet places
- Graphical tool table

Documented quality

Traceability of production processes is an integral part of all certifications. The JMS® 4.0 ProductionLine takes this into account right when the data is created. Specifications and evaluations are consistently associated with the workpieces and stored.

The "quality measurement" process step can also be completely automated. A potential bottleneck is eliminated by automatic measurements in the second and third shifts.

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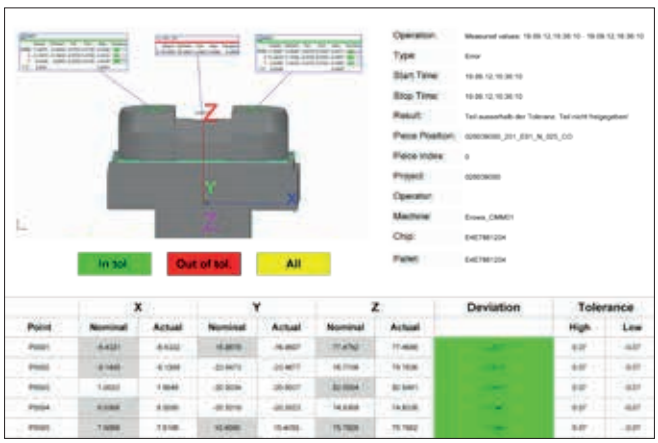
JMS® 4.0



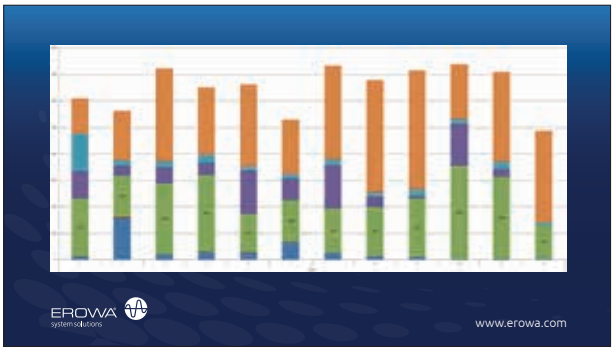
The measurement logs can also be stored as 3D PDF files, providing a graphical view of the verified measuring points.

THE FACTS

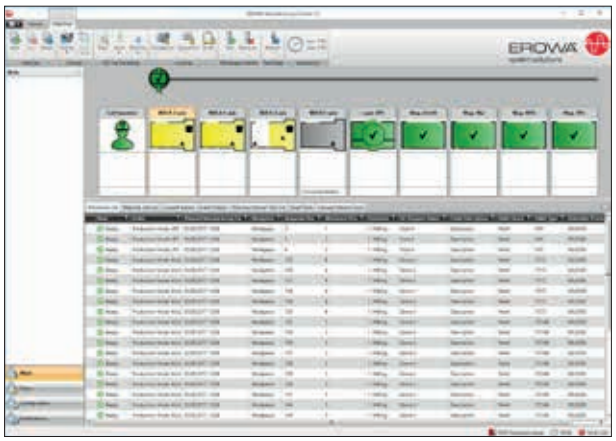
- Clear checkpoints
- Increased capacity
- Online logs
- Traceability

Knowledge is power

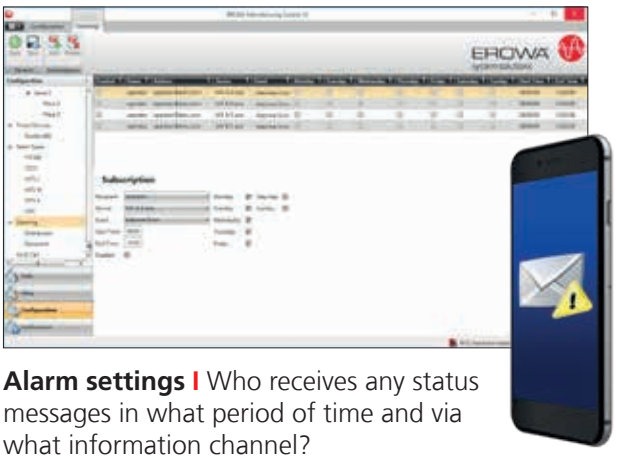
Is the work supply in the magazines sufficient for the whole night? Are the most important tools in good condition? What is the remaining life of each tool? Who is informed about the system state?



Checking I Target-actual comparison of the planned and actually achieved machine utilization over a selectable period of time – brilliant!



Job data I Information on the effective machining time for each workpiece or for the entire job.



Alarm settings I Who receives any status messages in what period of time and via what information channel?

Error messages I The more differentiated the error messages provided by the machine, the more meaningful they are when passed on to the operators.

The unforeseen is the enemy of automation. If a job is interrupted for any reason, the JMS® 4.0 ProductionLine continues with the cell with the next lower priority job. This ensures that productivity is kept high.

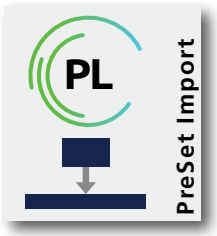
THE FACTS

- Clear presentation of current situation
- Visible at multiple workstations
- Time-based messages
- Presets per machine
- Reliable handling of changes

At a glance

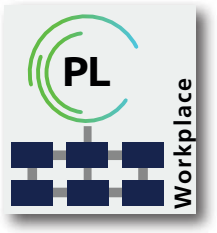
JMS® 4.0 PL Organisation
Includes products that are connected with data import, setup and presetting.

JMS® 4.0 PL Cell Integration
includes the products for controlling manufacturing cells. Both the handling device and the machine tool are controlled.

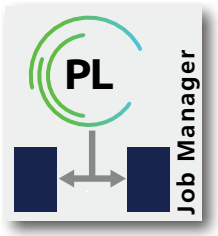


CMM PreSet Import
Import preset data (2D, 3D, Qi, etc.). EROWA, OEM or standard interface format.

ERP Data Exchange
Communication interface between JMS® 4.0 and ERP systems.

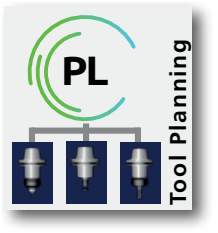


Client Workplace
Manual station for steps that are not automatically controlled, such as setup, checking, polishing, etc.

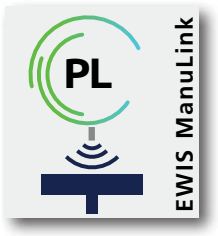


JobManager
Online control system for automatic management of machines and robots.

Machine Tool Management
Read and analyze machine and tool data with autonomy forecast.



Cell Tool Planning
Full information about existing and required tools for all pending orders.



EWIS ManuLink
Identify and assign workpiece carriers with a handheld reader.

EWIS AutoLink
Automatic identification of workpieces in a robot.

Manual Loading Station
Manual loading station integrated into a cell or line.

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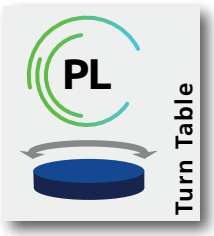
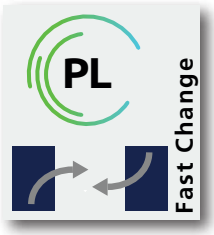
Setup and Loading Manager
Automatic loading station in a cell or line.



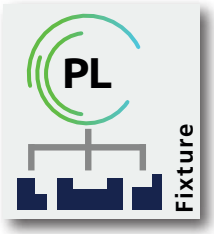
Turn Table
Integrated machine turn table for quick workpiece changes.



Fast Change
Supports double grippers and PreLoad chucks for short chip-to-chip times.

Machine Calibration
The machine is recalibrated on a predefined schedule (time or number of workpieces).

Oversize Management
Oversized workpiece blanks on pallets are automatically placed in the optimum magazine slots.



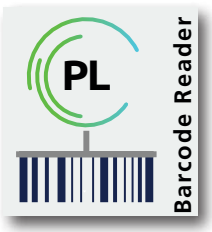
Fixture Management
Fixtures with one or more workpieces are controlled automatically.

Lift Magazine
Support for Kardex-type paternoster magazines.

JMS® 4.0 PL Connection includes products associated with data evaluation and information distribution.

ProductionLine Reporting
Outputs and analyzes production data.

ProductionLine Alarming
Outputs alarm messages in real time.



Barcode Reader
Fast and secure data acquisition.

THE FACTS

What is important in automated single-part production? Correct – to know what when where and how steps are planned and will be executed. That's exactly what the JMS® ProductionLine does for you. The various components of the JMS® 4.0 ProductionLine give you a clear view of the entire complex production process.

To learn how that might look in your specific production environment, call your local EROWA representative now.

The benchmark for process control systems

Productivity
Reduction of production costs and hourly rates through continuous production.

Short delivery times
Flexible prioritization for the best use of production hours without idle time

Process reliability
Production processes are under control – automatic supervision and monitoring by the process control system

Quality
Traceable and documented production steps for optimal quality assurance including change system.

Ease of use
Centralized data management, integrated data flow from PPS through CAD/CAM to manufacturing and quality measurement.
A wide variety of machines and production technologies are incorporated into the entire system.
Clear overview of manufacturing progress in real time, at any time and on multiple workstations.

JMS® 4.0
EROWA Productivity Suite

MoldLine
JMS® 4.0

ProductionLine
JMS® 4.0

The next step

Important things need to be planned. And your next step is certainly among the important things. It is your start into a new, efficient era. We are pleased to be with you on the way. As consultants, in practice. For you to know at all times what you're engaging in.
The next EROWA branch office is not far – **take the step.**

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