



Line Management

Order and material management

 **KRONES**

Optimum planning and parameterisation of your filling line



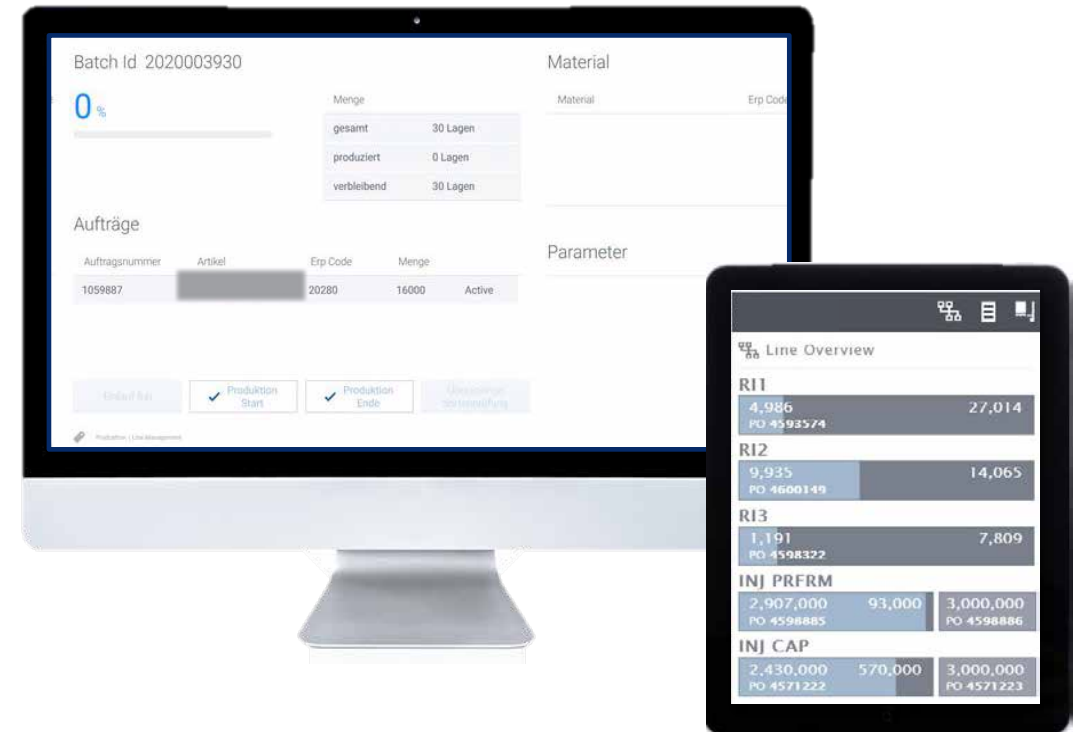
Line Management allows the entire filling and packaging process to be co-ordinated from a central position – from the definition of the order-specific production route to pallet labelling.

Line Management provides a continuous flow of information, from production planning right through to the order for the line and individual machine. To do so, the software considers your line to be a coherent system with production orders but not a row of isolated individual machines.

At a glance

With Line Management you can

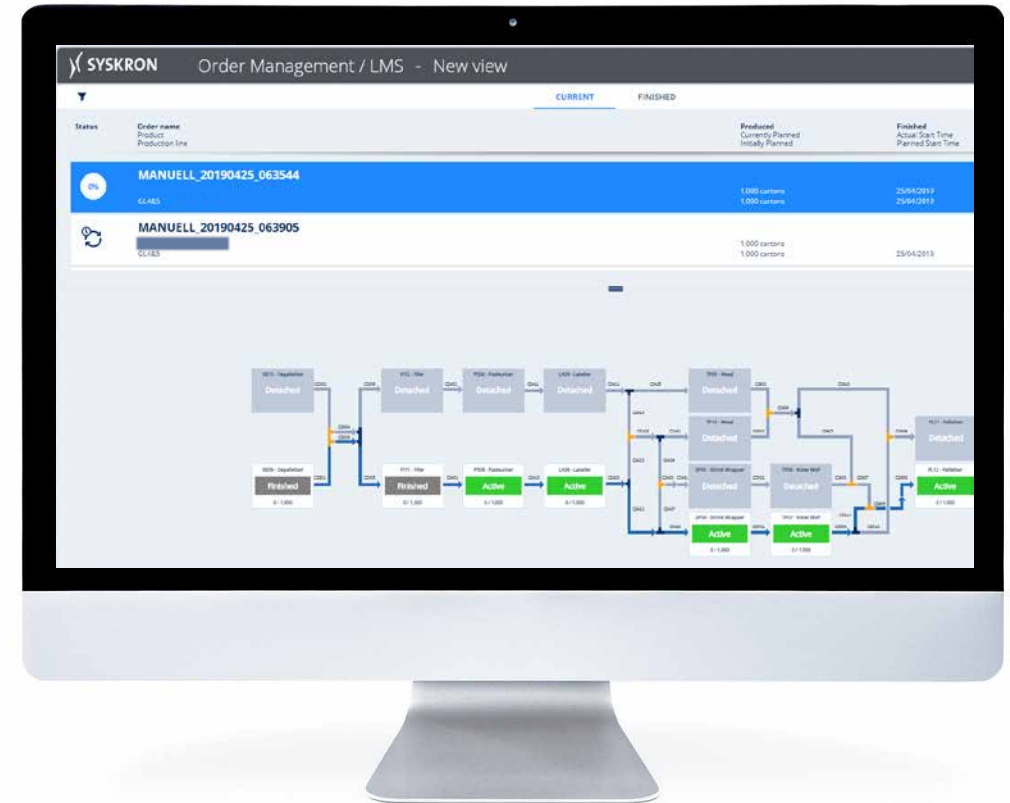
- optimally coordinate and process all orders in the filling and packaging area.
- reduce manual intervention, as the system takes over communicative and monitoring tasks.
- integrate label printers and coding devices into the line in order to automatically print important product information and best-by dates.



How Line Management works



- Processing of individual orders with different batch sizes and short reaction times
- Online routing: Changes the route of the product within the line while the order is already in progress
- Ends orders based on efficiency (right down to the specific tank/bottle or number of units)
- Validates the materials used for optimum trackability
- Supplies all lines and machines involved in the order (including printers and coding devices) with specific parameters
- Standardised interface for the connection of any third party machine
- Organises highly flexible production lines, even over multiple lines (for different products or routes)



Module overview

Line Management contains the following software modules*:

- Order Management
- Order Execution
- Material Management (incl. Material Management app [MM App] for scanners)
- Reporting

* Without licence for third-party machines



MM App runs on a scanner (illustration is an example).



KRONES

Details Active Order: 4600149

LINE	
PRODUCT NO.	
PRODUCT	
CURRENT [CASE]	10038
REMAINING [CASE]	13962
PLANNED [CASE]	24000

BILL OF MATERIAL

MAT-NO.	MAT-DESC.	
DCF101	Date Code Format W-STD	
PF715NB	Preform: 7.15g NB Mold	✓
CNE26N4	26mm Natural	✓

← OVERVIEW 1/2 →

Order Management



Central order specifications and planning for all machines

- Serves for central planning and creation of orders for production lines
- Defines the machines to be used based on routes, articles and parts lists
- Groups together orders to avoid downtimes (per machine if possible)
- Provides an automatic adjustment of the target quantity while taking rejections into account
- Continuously displays the order status and progress
- Records order-specific data and information and ensures continuous traceability of the produced items
- Order transfer and check-back signal from higher-level systems (ERP, PPS) via standardised interfaces
- Online routing: Makes it possible to change the route of the product in the line while the order is in progress

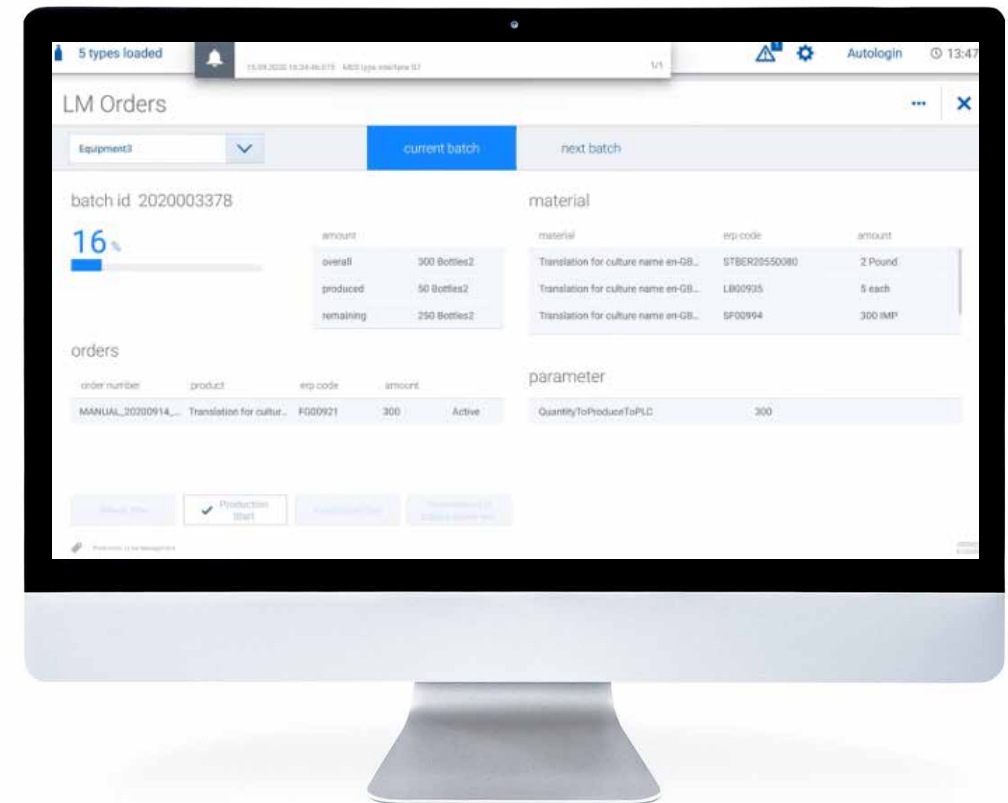
Status	Order name Product Production line	Produced		Finished	
		Currently Planned	Initially Planned	Actual Start Time	Planned Start Time
33%	33.4.1.19 3000 Gold 375 B24 PS GL445	8,208 cartons 23,100 cartons 23,100 cartons		11/06/2019 05/07/2019	20:51:00 10:25:00
8%	33.5.1.19 Hahn Sup 4.0 330 B24 CP GL445	3,020 cartons 37,600 cartons 37,600 cartons		11/06/2019 05/07/2019	20:51:20 10:28:00
100%	33.4.2.19 Toothys Old 375 B24 PS GL445	10,000 cartons 10,000 cartons		05/07/2019	10:27:00
100%	33.5.2.19 3000 Summer 330 B24 CP GL445	12,394 cartons 12,394 cartons		05/07/2019	10:28:00
100%	33.4.3.19 Toothys New 375 B24 PS GL445	14,700 cartons 14,700 cartons		05/07/2019	10:29:00
100%	33.4.4.19 Tooth Ultra Dry 345 B24 PS GL445	37,613 cartons 37,613 cartons		05/07/2019	10:30:00

Order Execution



Order co-ordination and control of the peripheral devices

- Distributes, controls and co-ordinates the line orders on the individually involved machines and line components
- Prevents the operator entering incorrect information by reducing interaction with the machine
- Ensures efficient order changes by producing precisely related to tanks and containers
- Accelerates handling parts change-over by means of intelligent reduction of gap modes between two orders
- Provides the printers with order-related information for coding pallets, packs and containers
- Reads, validates and records scanner results

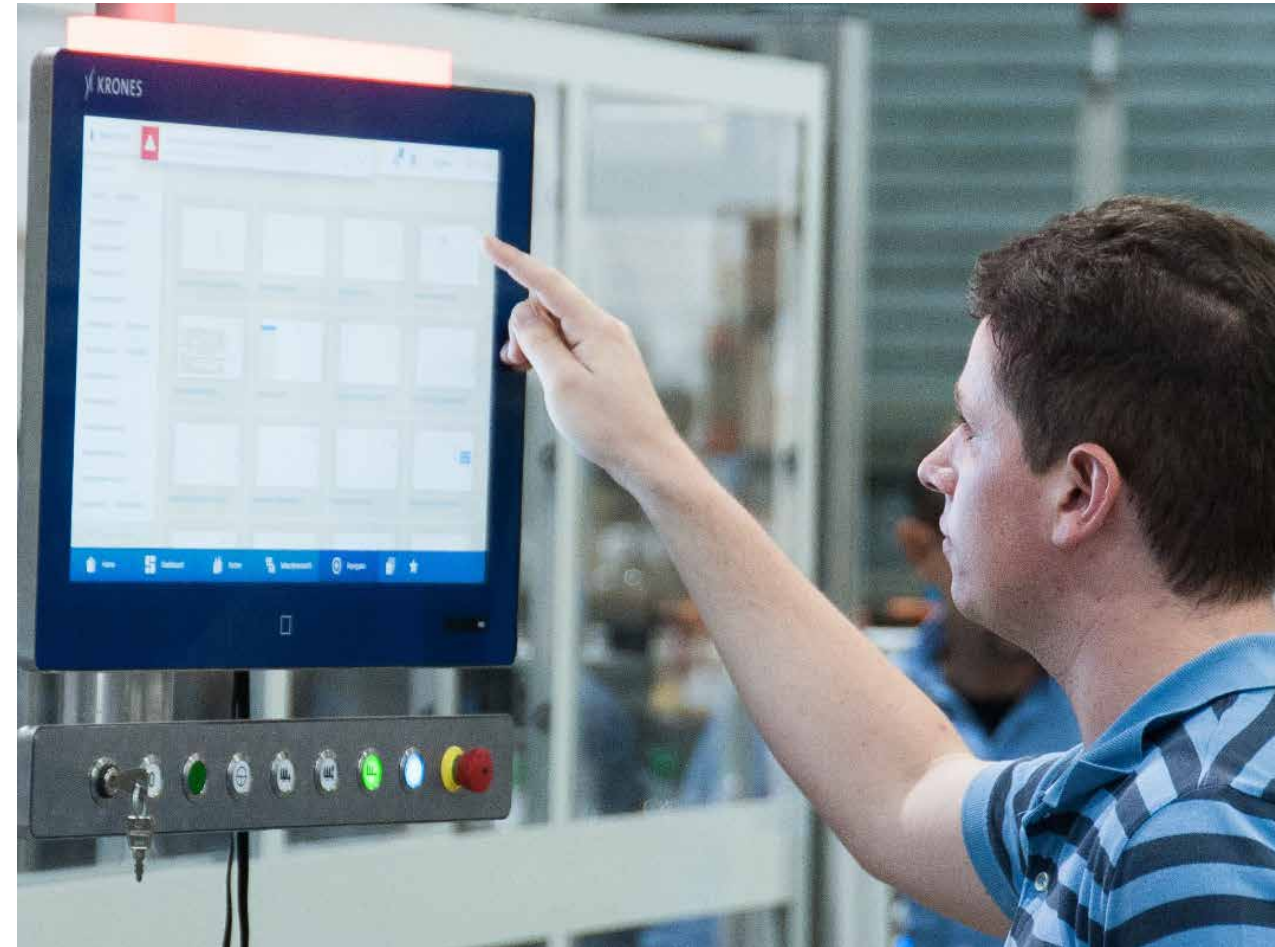


Material management



Order-specific supply and removal of materials including material validation

- Organises the material supply and disposal in production lines
- Orders raw, auxiliary and operating materials based on demand
- Calculates consumptions and suggests residual quantities for return transfers of processing, operating and raw materials
- Enables validation of the materials used
- Supports the operator when ordering materials by making order suggestions on the machine touch-screen, or placing automatic orders
- Records and documents order-specific material consumption and ensures traceability



Material Management App (MM App) for scanner



The functions in detail

- Line overview
 - Supplies the operators with detailed information on the products, progress indicators and bills of material for a line
 - The bill of material shows which materials have already been assigned to an order
- Material requirements/returns and goods receipt
 - Material orders from the production line
 - Quantity-related automatic ordering or time-related manual ordering



MM App runs on a scanner (illustration is an example).

- Material labels:
 - Creation of required labels possible
 - Creation and change of material data
 - Triggering of print orders
 - Reduction of work to be performed by the operators on the line(s) or in the goods receiving area
- Material consumption:
 - Allows the operators to assign materials to an order or equipment (depending on the type of consumption)
 - Makes time-related or quantity-related consumption possible
 - Consideration of the consumption sequence

Reporting



Order and production reports based on the pre-manufactured analysis paths

- Provides reports for the documentation and analysis of orders
 - Based on fixed analysis paths and designs, to illustrate the information in a way that is practically not open to interpretation
 - Web-based, which means they can be called up from any end device within the production and company network via a web browser (also mobile)
- Makes material trackability possible (tracking and tracing)
 - Comprehensive tracking and tracing report by supplying all order and material information
 - Production and material consumption overview
 - Search and reverse search as well as drill-down mechanisms
 - Recall campaigns and measurement of the supplier quality possible



Providing support in all areas of production



Operators

Efficiency

- Guides and supports order processing
- Controls and automates the material requests
- Prevents material mix-ups
- Reduces manual intervention
- Automates the adjustment of label printers and coding devices



Shift supervisor

Flexibility

- Provides support to achieve optimum order co-ordination and processing, even in order changes
- Makes a flying changeover possible
- Simplifies route selection
- Optimises the cleaning effort required



Management

Reliability

- Supports different batch sizes and frequent order changes
- Makes short reaction times possible
- Reduces product and material losses
- Avoids mistakes during night and weekend shifts
- Allows batch-specific recording and tracking

Change-overs
accelerated by up to

 **30 %**

Line speed raised
by up to

 **10 %**

Benefits to you



Saving production costs



You optimise your consumption of resources by requesting all processing and operating materials always at the correct time.

Speed



The Line Management summarises several orders and you benefit from reduced product change-over, conversion and cleaning times.

Quality assurance



Line Management helps to reduce your fault potential to a minimum and raise your quality and efficiency to a maximum level.

Line availability



You benefit from maximum capacity utilisation of your line through parallel order processing, batch aggregation and order and batch changes on-the-fly.

User-friendliness



Line Management convinces due to its clear operator guidance and a reduced manual workload.

Product reliability



The software exactly records the production processes for each batch. You can exactly trace back each individual batch, even within quite complex product lines.

Added value for our customers



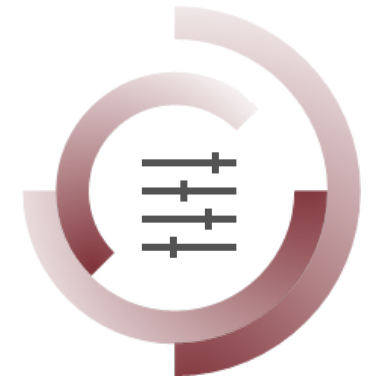
Downtimes



Waste



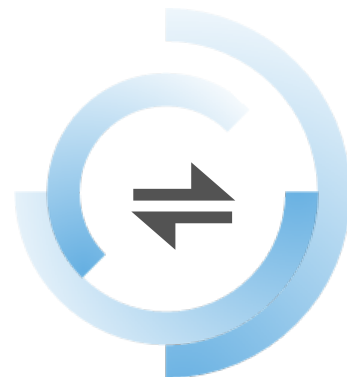
Maintenance planning



Production parameters



Employee training and knowledge



Change-overs



Consumption



Material management

Our solutions

To make complexity manageable, lower costs and maximise output through intelligent solutions



Shopfloor Guidance

Notification – prioritisation – instruction



Analytics

Advanced – Integrated – Energy and Media – Track and Trace Analytics



Line Control

Managing complex production – reducing manual interventions – scalability



MSA Performance

Krones Service supports customers – mutual transparency – causes – action plans



SAP-Based Solutions | SAP Integration

Standard solutions – development – engineering – implementation



Automated Parameter Optimisation

Services for intelligent machine generation – AI – machine learning



**SOLUTIONS
BEYOND
TOMORROW**

