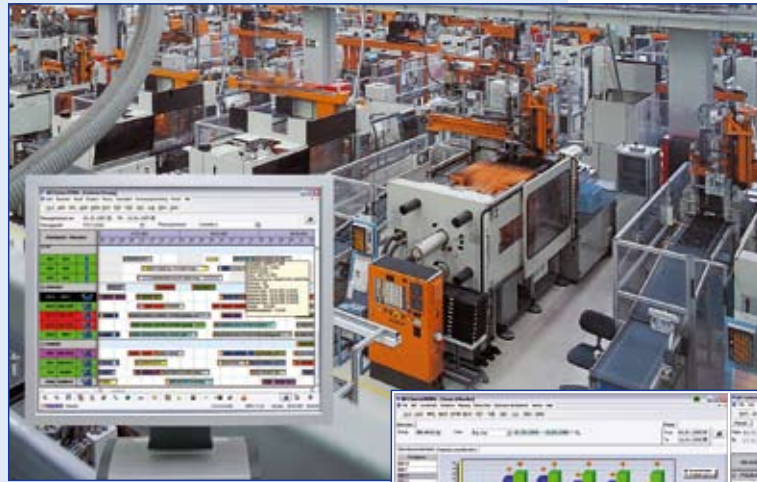


HYDRA- Shop Floor Scheduling



- Graphical planning board for shop floor control
- Detailed planning of simple and complex orders
- Consideration of resource availability
- Optimization of machine scheduling
- Extensive simulation options
- Determination of key figures to assess planning
- Notification of planning conflicts and schedule violations
- Current information on the production process

PRODUCTION

HYDRA-Shop Floor Scheduling

Closer to Production with HYDRA

Today, manufacturing companies must be able to plan effectively, use resources at full capacity and respond quickly to customer requirements. HYDRA shop floor scheduling offers the advantage of providing necessary information and the flexibility needed for your production process.

HYDRA is an integrated and modular solution for the areas of production, human resources and quality management. To control your production process, HYDRA offers numerous recording, planning and information functions that are either unavailable or only partially available from your ERP system. HYDRA meets all the requirements of a modern MES (Manufacturing Execution System) and thus closes the gap between the technically-oriented platform of machines and equipment and the more commercially-oriented world of ERP and management systems.

HYDRA shop floor scheduling is a tool which enables quick and effective reaction to modified planning data and deviations from the norm at machines and workplaces. Centrally organized PPS or ERP systems and manually operated planning boards cannot provide this ability. In doing so, all resources including machines, tools, equipment, material and personnel are checked for availability.

Transparency and Planning Reliability

A special characteristic defines HYDRA shop floor scheduling: it clearly displays planning results and the current status in the planning board. This increases transparency and is the basis for short-term, target-oriented planning activity.

Main benefits include:

- Shortened lead times
- Reduced stock and work in progress
- On-time deliveries at an optimum capacity load
- Reduced setup costs

HYDRA shop floor scheduling assigns orders, which are taken over from the ERP system in a roughly planned state, to machines, machine groups or workplaces. At the same time, it considers the actual capacities available in the form of individual shift calendars or capacity pools. Within the specified timeframe, the production scheduler can establish an ideal production sequence, either manually or automatically, using adjustable criteria. Simulations allow for comparison between planning variants and the selective release of the optimal planning scenario. After starting production, its progress can be monitored in real-time. As a result, conflict situations can be recognized at an early stage and effective countermeasures can be started immediately.

Effective Resource Management

In many companies, one of the main challenges of shop floor control and process planning is having the resources required for production available on time.

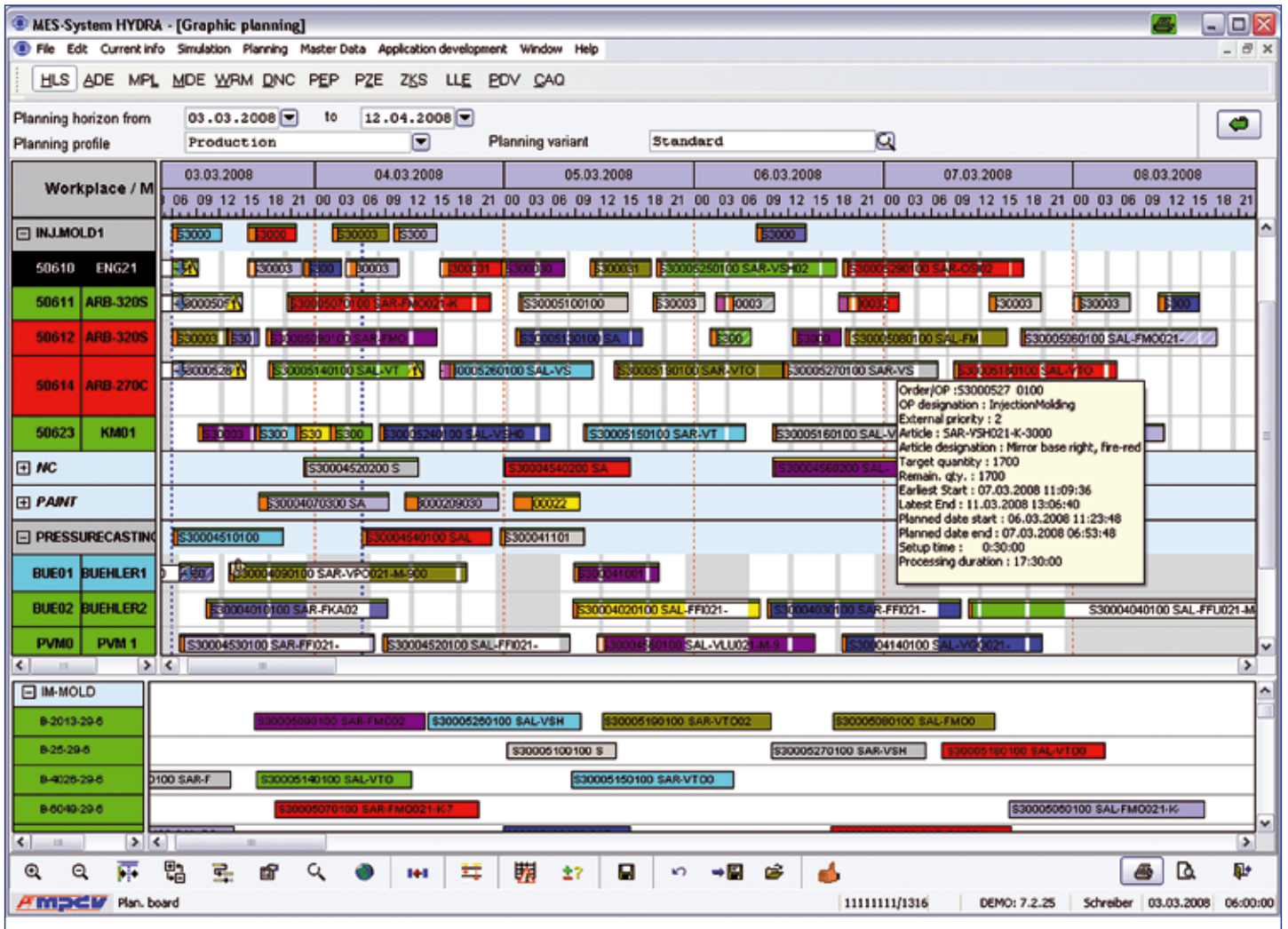


HYDRA shop floor scheduling supports planners in dispatching orders by accessing resource data and checking the availability of machines, material, tools, gages, NC programs and other resources online. In addition, workforce requirements are determined and integrated personnel scheduling assist the user in assigning employees with the right qualifications to specific machines and workplaces. HYDRA shop floor scheduling guarantees recognition of resource bottlenecks in the planning phase.

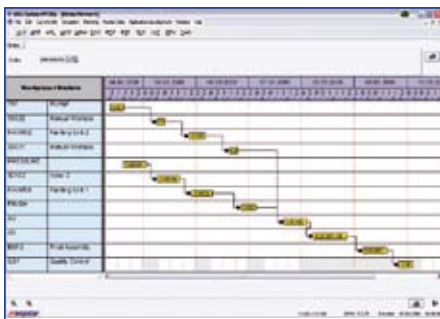


As a result, conflicts such as having tools assigned to several machines at the same time, waiting for the setter or missing material, can be avoided.

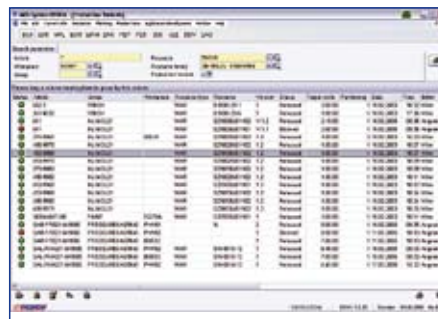




The Gantt chart is the central information and planning tool of the production scheduler. Operations are displayed in bar form. Processes such as setup, start-up, production and teardown as well as information such as availability of material, tools or personnel, can be highlighted by using different colors or symbols.



The order network displays the preceding / subsequent relationship between all operations of an order. As an option, a second level shows all orders and components that belong to a superior module or a sales order.



In dispatching orders, capacity problems may emerge. If this occurs, HYDRA shop floor scheduling can take alternative production variants into account, in addition to the preferred ones. For example, the use of an alternate tool can be suggested.

- Time group utilization...
- Capacity group utilization
- Scheduled operations
- Mark scheduled operations
- Search for OP in group
- Close pop
- Automatic assignment...
- Set occupancy...
- Remove planning scenario...
- Check resource allocation
- Single-line display
- Modify shift schedule/performance level...
- Workforce information...
- Workforce requirements

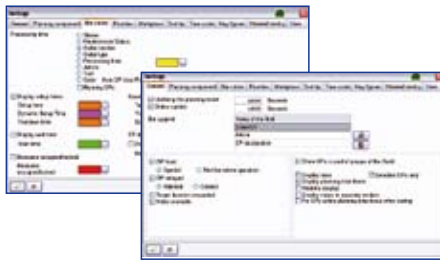
- Operation fixed
- Fix all marked OPs
- Unfix all marked OPs
- Order information...
- Order network...
- Order progress...
- Notes...
- Production Variants...
- Split OP...
- Cancel split OP
- Entry
- Quantity progress

HYDRA shop floor scheduling provides planners with direct access to all important information and functions via sub-menus so that they are supported to an optimum degree.

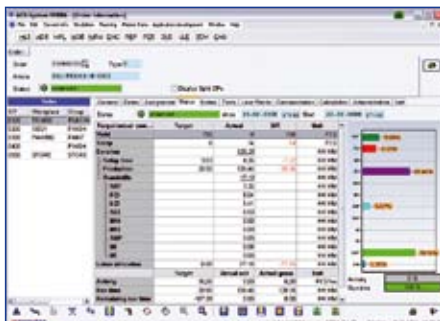
HYDRA-Shop Floor Scheduling

Configuration and Information

Clarity and ergonomics are important for working with shop floor scheduling. Various configuration options allow each employee to set his or her individual view and save it in the user profile.



The smooth integration of the HYDRA order and machine data collection modules provides direct insight on current production results (order progress, produced yield and scrap, machine downtime, etc.) which is an important precondition for planning to be synchronized with the current status.



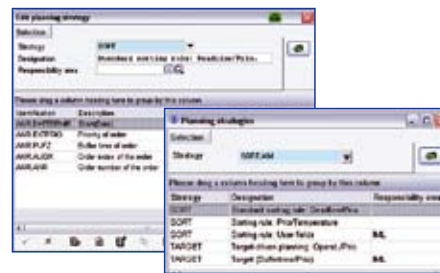
Further functions at a glance:

- Individual shift calendars for each machine as a precondition for real capacity leveling
- Consideration of tool or color changes (matrix of setup change) for optimization of setup times
- Lists containing the order pool for machines and machine groups
- Splitting, fixing and specific release of operations
- Capacity charts and graphics displaying the utilization ratio

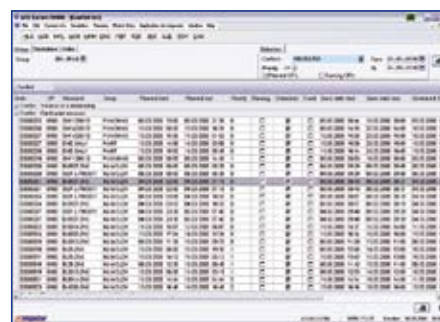
Planning and Machine Scheduling

When dispatching orders to machines and workplaces, the planner can decide whether to carry out an assignment manually or have it done automatically by HYDRA shop floor scheduling. Different methods are available for this purpose:

- Variable machine scheduling with adjustable sort keys
- Target-oriented assignment based on assessed objectives or
- Rule-based machine scheduling according to key figures (e.g. shortest operation time, least setup effort)



Moreover, HYDRA shop floor scheduling offers an optimization program based on an evolutionary strategy which carries out several planning procedures by varying influence parameters and then selecting the best for the final plan.



The conflict list provides the planner with all the information required for assessing production bottlenecks and conflict situations. At the push of a button, machines that are assigned to several different operations simultaneously or violations of basic dates from rough-cut planning, are displayed.

Simulation and Optimization

The task of shop floor control is to determine an ideal utilization plan in order to achieve all required objectives. For example, it can determine an optimal load factor with the shortest lead times, subject to delivery dates and with minimal setup costs – a task that cannot be fulfilled by ordinary means.

HYDRA shop floor scheduling offers a simulation tool allowing the planner to carry out, save and compare machine scheduling procedures using different methods and planning strategies or simply by varying the shift models and performance rates of machines. HYDRA shop floor scheduling provides comparisons based on key figures calculated automatically through planning objectives.



If planners have several simulation results, they can compare them. They simply select the simulation with the best planning result, vary it, if required (e.g., by manual corrections), set the optimal planning status and release it for production.



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