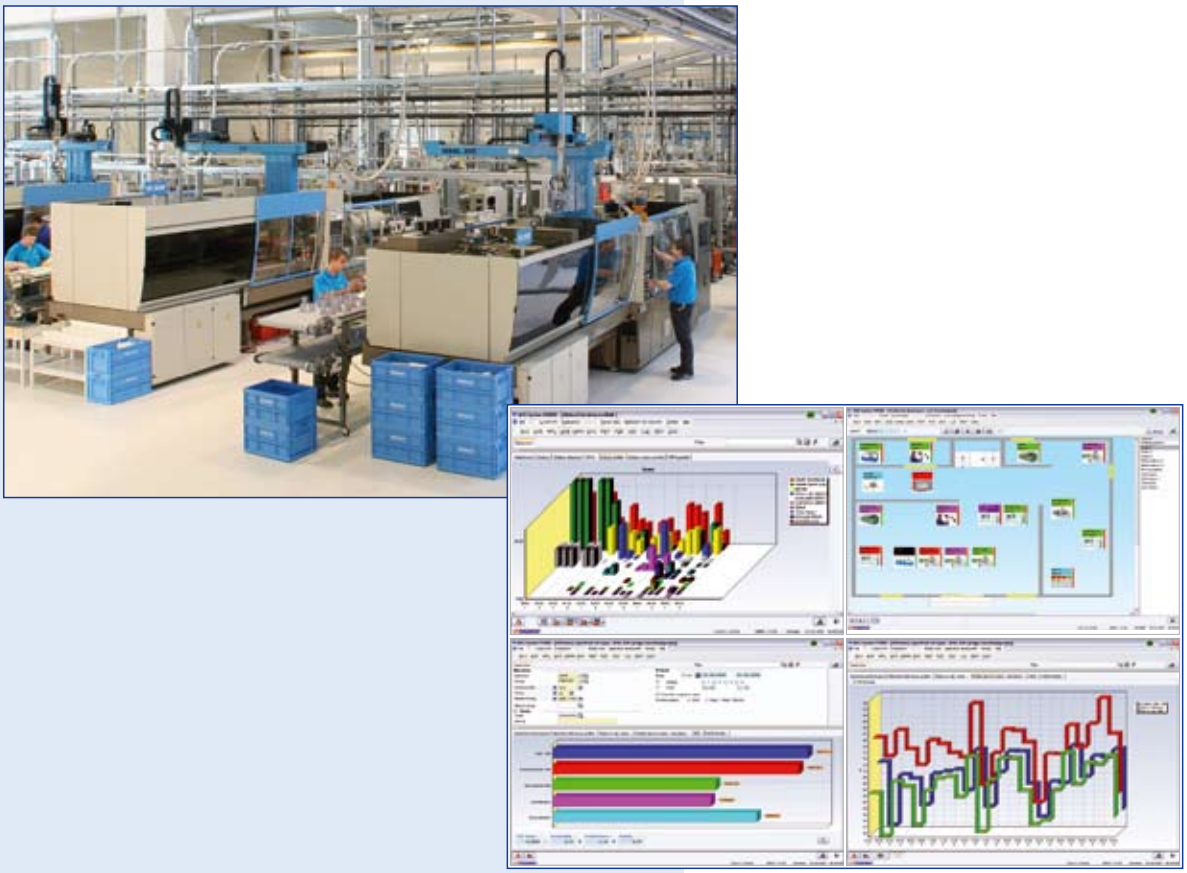
HYDRA-
Machine Data Collection



Manual recording of machine downtime

Direct data transfer from machine controls

Versatile interfaces to machines and equipment

Machine monitoring in real time

Extensive data evaluations

Individually configurable maintenance calendar

Interfaces to maintenance programs

PRODUCTION

HYDRA-Machine Data Collection

Uncover downtimes of machines

With increasing levels of automation, malfunctions of machines and equipment become decisive cost factors in production. It has been proven that unplanned downtime accounts for 10 to 15% of the most obvious waste potential and that the average load factor of machines is less than 60%. One reason for this is that there are no systematic records of machine behavior, since manual collection and evaluation of data is inaccurate and time-consuming.

However, HYDRA-MDE is a tool which collects machine data with relatively low effort and evaluates it according to individually definable rules. As a result, targeted analyses of disturbance reasons are possible, resulting in lasting improvement of the efficiency factor and machine availability.

Organization and planning

- Setting shift plans and factory calendars
- Definition of machine conditions, performance accounts and disturbance classes
- Rules for recording and posting data
- Measures for preventive maintenance and definition of maintenance rates

Manual data collection

- Conditions of machines and equipment such as set-up, start-up or production
- Organizational downtime (e.g. shortage of orders or material)
- Technical disturbances (defective tools, electrical or mechanical malfunctions)

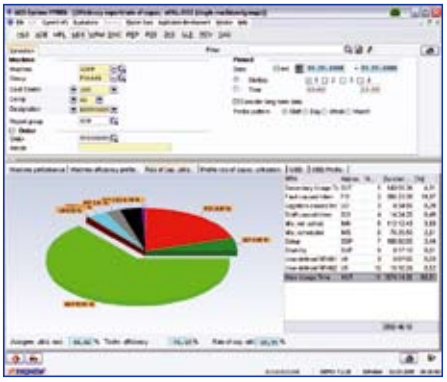
All data is available at the push of a button

Automatic data collection

By means of interfaces to machine sensors, quantities, running meters or disturbance signals can be transferred directly via digital inputs. As an alternative or supplement to this solution, HYDRA-MDE uses interfaces to communicate with machine and system controls (SPS) to directly upload the data saved there, e.g., quantities, conditions and malfunction periods. HYDRA supports a variety of common logs and communication technologies such as Euromap E63, OPC, interfaces of host computers or Profibus.

Machine monitoring

- Overviews of the current machine status (conditions, quantities, times)
- Graphical machine park that can be designed individually
- Cycle times and numbers of strokes in clocked production
- Online maintenance calendar with freely definable maintenance activities and signal light functions
- Browser-based machine monitor to monitor machines at remote locations via the internet



Controlling on the basis of objective key figures

Evaluations and statistics

- Evaluations of downtime and disturbance classes
- Detailed evaluations for each machine of recorded production and downtime and their corresponding proportions
- Special evaluations for production lines consisting of interlinked machines and aggregates
- Computations of the efficiency factor
- Long-term archives for machines, machine groups or cost centers
- Quantity and time-related efficiency reports
- Graphical evaluations of cycle times and stroke rates of machines
- Determination of different key figures such as OEE (Overall Equipment Effectiveness), TPI (Total Productivity Indicator) and MCE (Manufacturing Cycle Effectiveness)

Integration in HYDRA

As part of an integrated MES, machine data collection can be used along with all other HYDRA modules.
As a result, HYDRA users benefit from:

- Parallel assignment of downtime to orders, operations, tools, batches and production batches
- Simple determination of bonuses for machine operators and setters
- Shop floor control and detailed scheduling of orders on the basis of actual machine availabilities
- Automatic calculation and display of inspection intervals during quality control based on determined quantities and net runtimes
- Targeted deployment of maintenance staff

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