

# CASE STUDY

# KOCH WERKZEUGBAU GMBH



## ABOUT KOCH WERKZEUGBAU GMBH

Koch Werkzeugbau GmbH is a medium-sized, family-run tool manufacturer for stamping and forming technology based in Wuppertal, Germany. In addition to the production of tools for presses, the company manufactures molded parts for processing in the automotive industry, among others. In this context, the Koch company is a Tier 2 supplier in the production chain, and the molded parts are further processed and finished externally.



## CUSTOMER

Koch Werkzeugbau GmbH

## LOCATION

Germany, Wuppertal

## BASELINE

- ▲ Manual data acquisition of decorative elements in series production.
- ▲ Lack of current manufacturing data on quality, production output and downtime.

## OBJECTIVES

- ▲ Increase of productivity by 5-7% through automated production data acquisition, evaluation, and visualization.

## RESULTS

- ▲ Automated operational data acquisition and storage.
- ▲ Calculation of relevant key figures (OEE/KPI) at runtime of the machines.
- ▲ Visualization of key figures in real time from manufacturing for production planning and management.
- ▲ Derivation of measures on the basis of the KPI/OEE for production increase.
- ▲ Immediate increase in productivity of 10-12%, resulting in a positive "return on investment" after only one quarter.

## THE PROJECT

The company was looking for a solution for digitizing and visualizing production data for manufacturing of decorative elements in series production. The goal was an immediate increase in productivity by visualizing production delays, analyzing the reasons for them and feeding the findings back into the production process. Up to this point, the operating data had been recorded manually and in some cases evaluated days later.

## THE CHALLENGE

In this project, the press strokes of all presses were to be recorded in real time and evaluated over the time axis of a shift. All key figures - such as number of strokes, cycle time and downtimes - were to be displayed centrally on a monitor in the production hall. Recording of the production data and display of the data via a web server was also desired. The documentation of duration, reason and frequency of downtimes were further components of the requirements.

The four presses in the manufacturing of decorative elements are operated by two SIEMENS S7 controllers and two PILZ controllers.

## THE RED LION SOLUTION

At the heart of Red Lion's solution is Crimson® automation software, which offers straightforward data collection, data processing, visualization and much more with just a few clicks.

Crimson®, an innovative and intuitive software for the development of automation environments; in use with Red Lion's automation hardware - ProducTVity Station (PTV) and the HMI series CR1000.

# SETUP OF THE KOCH WERKZEUGBAU AUTOMATION ENVIRONMENT

To digitize and visualize production times, Red Lion's team installed the ProducTVity Station (PTV) with an additional Ethernet module and digital input card.

The ProducTVity Station is a ready-to-use visual data management system that displays KPI (Key Performance Indicator) data and Andon messages in real time via commercial TV. This data visualization system is ideal for productions where performance is tracked and monitored.

In addition, a Red Lion CR1000 series control unit was installed on each individual press. Here, the machine operator manually enters the downtimes and faulty parts via an intuitive 4" touchscreen.

The biggest challenge was the interfaces of the different controls (PLC). The presses with the Siemens S7 control system could be connected directly and the production counters read out. The production clocks of the presses with controls from the manufacturer PILZ were decoupled via coupling relays and received via an input module of PTV and further processed into KPIs.

The implementation took place in three working days, with production continuing during commissioning.

## THE SOLUTION



Automation Software Crimson®



PTV0000  
ProducTVity Station visual management system



HMI CR1000-0400 Human Machine Interface CR1000 Series

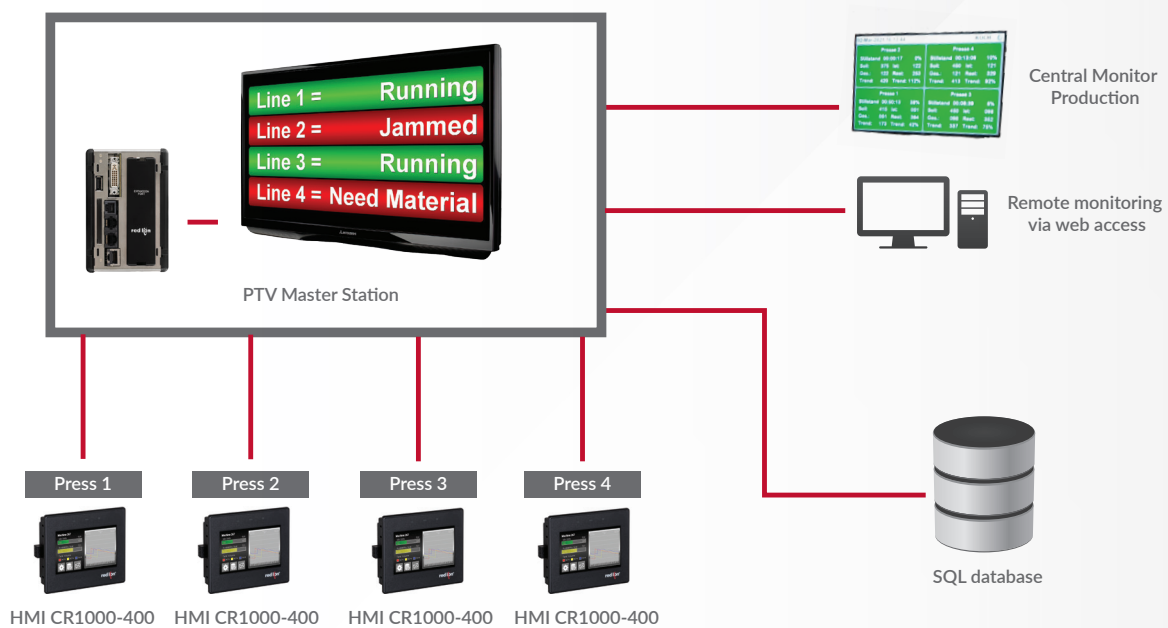
## THE RESULT

The visualization of the collected data was realized with the CRIMSON® automation platform via ProducTVity Station and HMI CR1000 from Red Lion Controls and paid off after only one quarter. The collection of PDA data led to a 10-12% increase of productivity for the company.

## COMMENT BENJAMIN KOCH OPERATIONAL MANAGEMENT KOCH WERKZEUGBAU GMBH

“The automation solution from Red Lion Controls has led to an immediate productivity increase of 10-12% in the manufacturing of decorative elements. Potential for improvement has been clearly identified and leveraged. The PDA data are visually visible for all employees, and direct countermeasures are taken if necessary.

A plus point was the fast and uncomplicated installation and commissioning, there were no production downtimes as a result. Especially the flexibility of the Crimson software is a big advantage, it allows a dynamic adaptation of our production to future extensions or upgrades in our ERP system.“



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