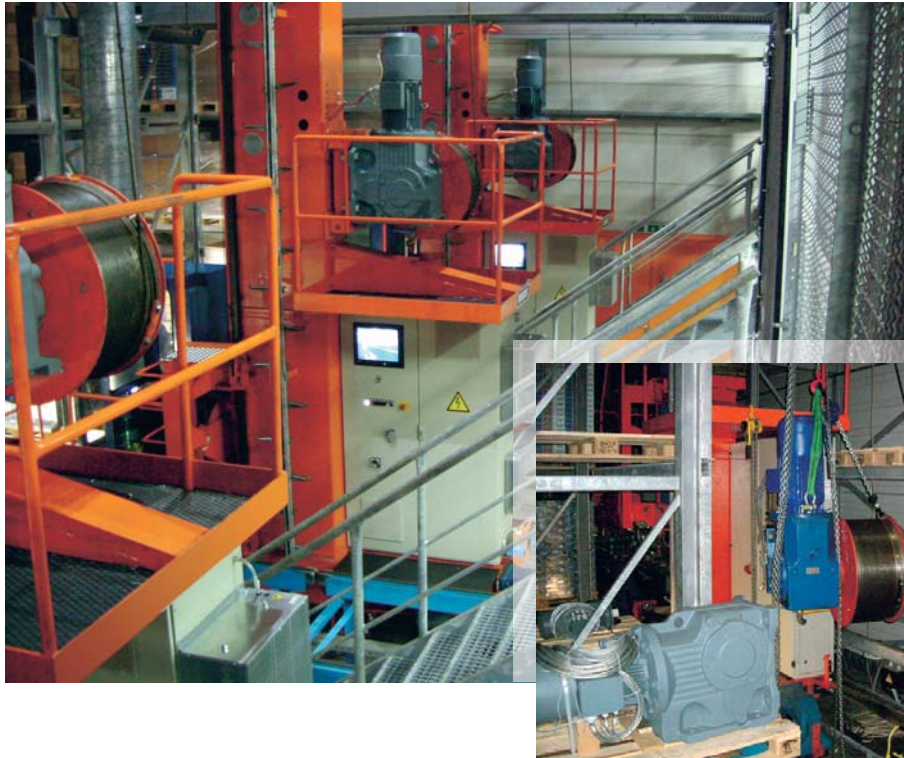


Ravensburger

Reconstruction of 8 HRL rack operator devices Ravensburger Spieleverlag GmbH · Ravensburg



old and new hoistering gear engine



new on board S/R machine control cabinet



new telescopic fork with camera and new inspection sensor technology

Task

Ravensburger is an internationally well known media enterprise with ideas, which impart entertainment, fun and knowledge to lots of people. In order to grant a reliable and fast supply of their customers further on, Ravensburger has decided to reconstruct and modernize the S/R machines of the high rack warehouse. The company Aberle Steuerungstechnik GmbH as general contractor was in charge of the logistic concept and it is implementation.

The requirements in detail:

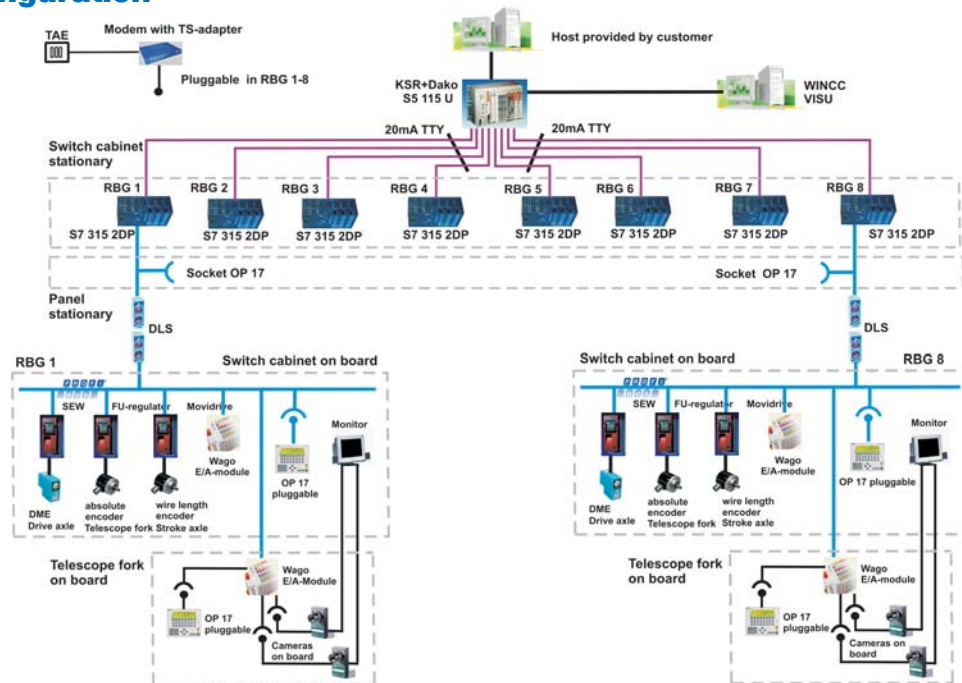
- exchange of the carriage engines without exchanging the gear unit, including frequency transverter
- exchange of the hoistering gear engines incl. gear unit and frequency transverter
- exchange of the speed monitoring in the hoistering gear
- exchange of the telescopic fork -> characteristic: laquering in fluorescent colour and anti slippery flooring

- position measuring systems for
Y-axis wire draw encoder
Y-axis wire draw encoder
- exchange of the old S5 controls
- new vertical ladder and safety belt for the ascent of the tower
- camera system for the monitoring and mounting of a new power chain
- delivery and installation of a new energy track chain

Integrated components

The automation of the S/R machines was realized with Simatic S7-controls of type series S7 315-2DP. The periphery of the sensors and actuators was connected by remote positioned Wago-Profibus modules. The connection to the customer's site coordination and control computer (KSR) was done by a 20mA /TTY-interface in this stage of extension. In the second construction stage the connection of the S/R machine to the KSR is done by Ethernet with TCP/IP.

System configuration



new data light barrier and laser distance measurement device



new RBG-panel with pluggable OP17

Solution

Realisation of a test weekend before the first reconstruction date. All critical areas especially within the mechanics have been checked. The rope drums as well as all components, which had to be loosened from the spindle were removed and re-located. Thereby the risk of not being able to process a component within the timely critical reconstruction phase was minimized.

Reconstruction of the 8 S/R machines on 3 consecutive weekends. With this tight schedule the down time of the warehouse was reduced to a minimum. Due to our reconstruction concept no rearrangements of the single aisles were necessary in advance. Thereby it was not necessary for Ravensburger to rent additional storing

area. The highest possible ability to supply was granted at all times.

Advantages for the customers

After a smooth start the customer again possesses a highly available warehouse. The choice of the components in terms of serial products in the area of sensor technology and actuators allows the customer to access spare parts easily and smoothly within measurable time. Due to the increased efficiency of the S/R machines of over 30 % Ravensburger is today in a position to manage the future increase in turnover by means of the existing high rack warehouse.



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