



zenon's flexibility and usability impress Hyundai Rotem

A Pressing need for great control

South Korean company, Hyundai Rotem specializes in the production of Railway vehicles, Defense systems and Plant equipment from its two manufacturing plants in Changwon-City Kyungsangnam-do and Dngjin Chung-Nam. In January 2011, Hyundai Rotem began developing a new range of servo presses within its plant division.

The General Management at the new servo press operations knew that, in order to provide turnkey solutions, they needed to find an automation supplier that could match their own commitment to excellence in delivering high-quality, reliable, specialized and cost-effective systems.

SELECTING A CONTROL SYSTEM FOR THE SERVO PRESS

Hyundai Rotem's Servo Press team began the process of identifying a suitable automation software supplier by specifying a control system for a new 1,000-ton Servo Press due for delivery in March 2012. The system must:

- ▶ Enable highly accurate operation
- ▶ Support flexible use in a simple and intuitive way
- ▶ Deliver reliable and safe operation via touch screen control
- ▶ Support TCP/IP communication



With intuitively designed screens operators gain access to many valuable data such as the press machine status (e.g. cushion angle, location of each cylinder, press machine movements and much more).

- ▶ Communicate with PROFINET controller, S7 315F-2PN/DP and 315-2PN/DP PLCs and Simotion-D motion controller
- ▶ Offer reporting functionality, so operation and energy use can be optimized.

They decided to use the zenon software from Austrian automation experts, COPA-DATA, as Control System Engineer for Hyundai Rotem’s servo press team, Young Yoon Jung, explains: “We are impressed with COPA-DATA’s philosophy of ‘do it your way’, because this is exactly what we aim to offer our customers. Now, thanks to the flexibility and ergonomic strengths of zenon, we do.”

AN OPEN SYSTEM WITH EASY CONFIGURATION

The control system team at Hyundai Rotem found zenon very easy to configure and have been impressed with the “outstanding features” of each zenon module. The new 1,000-ton press utilizes zenon drivers for S7-300 and Simotion D, TCP/IP communication, zenon’s inbuilt redundancy and recipe management and reporting tools.

Together, these zenon functionalities have delivered a highly operable and intuitive system for Hyundai Rotem’s customers. Young Yoon Jung says:

“It is quick and simple to configure great-looking interfaces using zenon. Clear interfaces are essential on large, powerful machines like these. It is important the operator can clearly see information such as press force, tool condition or motor speed to ensure optimum operation. This information is then stored in zenon for use in later analysis to optimize both the process and energy use.”

DYNAMIC CONTROL AND RECIPEGROUP MANAGER OFFER GREAT FLEXIBILITY

It was important for Hyundai Rotem that the press would allow free and sophisticated slide action and dynamic control for the machine operator to ensure the best possible molding of each individual item. Using zenon, the operator can set points and commands at the 15” touch screen HMI and has the ability to read and execute commands, see current values and precisely define the sequence in which variables are written. Here, the operator can enter information about the slide motion and cushion operation and zenon will record the relevant data for each item in its own recipe.

The operator then can easily access this data whenever it is required to mold such an item again by selecting it from a list. It is then executed in Runtime with a single function call. Hyundai Rotem were very pleased with the flexibility zenon offers users: “Recipes can be configured in the Editor, or directly in Runtime. This means that our customers can make tweaks to their processes really easily during operation. If an operator changes a variable, the necessary values are automatically adjusted in the recipe. Blocked writing ensures that the data arrives at the PLC safely. So the system is simple to use and reliable”.

REPORTING CAPABILITIES ADD VALUE

zenon’s reporting functions were an added bonus for the Hyundai Rotem team. As well as providing access directly to communication data and the status of the controller, zenon also provides information about alarms on the equipment and enables the operator to acknowledge, delete or save the alarm message. Key status information such as location, loads, slide motion,

