

Automotive Industry:

Safe Production of Presses

Korean company KIA Motors is expanding its production capacities worldwide and at high speed. Rexroth drives with "Safety on board" ensure safe production with new presses for car body manufacture at KIA's production sites worldwide.



▲ Automation from a single source: KIA and Hyundai worldwide rely on components and solutions from Rexroth.

KIA is one of the fastest growing automotive manufacturers in the world and by the year 2008 will be expanding its annual production capacity once more by around 600,000 from a current 1.25 million vehicles. To this purpose the Korean company is investing in the existing 12 production sites and is currently building a new factory in the Slovakian Republic as well as one in the USA.

The presses for car body production at the KIA factories in Korea, India and China, as well as the two new sites, are being supplied by ROTEM, the Korean technology group which, in addition to machines, also produces predominantly engines and railway coaches.

Rexroth drive specialists worked closely together with ROTEM and KIA when automating the presses and the press transfer system in order to design a tailor-made press auto-

mation system that could be used universally.

The complete drive package, as well as numerous components and modules from all drive and control technologies in the KIA factories, all came from the extensive Rexroth product portfolio. As the main drive for the presses ROTEM uses up to 650 kW frequency converters with sinus front end. This technology, developed by Rexroth, ensures sinusoidal energy supply and negative feed of the drives and reduces feedback from the mains supply. It also guarantees swift and even operation of the press during the transition phase between supply and negative feed.

The transfer axes are energetically coupled to these main drives. The integrated complete solution permits buffering of the intermediate circuit to ensure that the system slows down properly in the event of a power failure.

This solution not only dispenses with the need for emergency power sources, it also reduces cost of ownership.

Emergency Power on Board

Servo drives assume all handling of the sheet metal and car body parts. The precision and dynamics of the motion sequences into the press, the exact positioning of the workpieces and the transport within the press are decisive for productivity and quality. The Rexroth drives communicate to this purpose with the master control via SERCOS interface, the world's first open, real-time interface, which carries out its tasks with high dynamic response and with its inherent intelligence.

Rexroth IndraDrive drives offer more than a hundred different technology functions, including the innovative integrated safety functions "Safety on board". Customers worldwide are already ordering every second Rexroth drive to include these safety functions, which are certified to European Standard EN 954-1, Category 3. In addition to the secure hold these comprise numerous secure movements, at the same time shortening unproductive tooling time for the operator and performing these tasks with a high level of safety – a good sign for KIA's ambitious production targets. ■



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