

Drives Give Presses a Quick Lift New servo-controlled QuickLift doubles output

A new design of press from German company Gräbener Pressen systeme GmbH of Netphen, features a unique double-knuckle-joint to give a 'Quick-Lift' function that provides up to 500-mm of slide stroke. This can dramatically increase the productivity, versatility and up-time of a blanking or forming press. It is achieved with the assistance of servo-drives supplied by Control Techniques' Drive Centre in Germany.

Control Techniques has supplied Gräbener, a member company of the Schuler Weingarten Group, with variable-speed AC drives for feeding and ejector functions for their coin and blanking presses over many years and worked closely with the company during the development of the unique Quick-Lift, that currently features on the 2,000 – 8,000 kN TMK range.

“We are very aware of changing market needs and increased global competition that affects our customers,” says Gräbener’s sales director, Herr Stahl, “so we are constantly looking for ways to increase the productivity of our presses. Servo technology, for example, brings enormous benefits of speed and synchronicity that allow our designers to go in new directions. Gräbener presses are using the knuckle-joint principle, to provide embossing, coining, bending, piercing and deep drawing and allow the finishing of a component in one press run. Now, with Quick-Lift, the usage of the machine has been further increased to take in higher parts such as exhaust systems, motor housings and complex components, that require a higher lift.”



KEY BENEFITS

- INCREASED PRODUCTIVITY, VERSATILITY & UP-TIME OF PRESS
- OPPORTUNITY FOR WIDER RANGE OF APPLICATIONS
- REDUCED IMPACT SHOCK
- HIGH REPEATING ACCURACY
- REDUCED NOISE LEVELS

0115-0111

The development of Quick-Lift, with its double-knuckle-joint, is achieved using two 24 kW Unidrive SP AC drives in servo mode, each controlling a servo-motor with high resolution encoder feedback. The result is that the press stroke can be increased from 200-mm up to a maximum of 500-mm, with the quick lift allowing, additionally, for easy tool-changing and -adjustment. The drives incorporate plug-in application modules, with Control Techniques 'digital lock' and Cam-drive software, giving positional accuracy.

With the addition of Quick-Lift, the slide movement remains the same as in the traditional knuckle-joint presses, with their high system rigidity, reduced impact shock, high repeating accuracy and reduced noise levels, but gives a wider range of applications, with excellent part quality for taller, precise, near-net-shape products and allowing drawing, embossing, cutting, bending and calibrating all in one press.



The Unidrive SP AC variable speed drive range spans 0.75kW right up to 1.9 MW. Unidrive SP is the world's most advanced 'solutions platform' AC drive, configurable into five operating modes – open and closed loop, vector, servo and regenerating modes - connectivity to most industry standard networks, configurable for all types of AC motors, including linear motors, and accepting 14 position feedback protocols. With a range of plug-in module options, its on-board PLC can be supplemented, as in this case, with programmable modules.

“Control Techniques has been the ideal technology partner in the venture,” concludes Herr Stahl. “We like the flexibility and programmability of their drives and we appreciate the support given by the team here at the Cologne drive centre. It's also very important that we can be certain of support for our presses, wherever they may be across the globe and Control Techniques' worldwide support network provides us with this reassurance.”



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