

TechUpdate

New Transfer Press Enters Deep-Draw Service at Manz



Based on the Impress series introduced in 2003, Dieffenbacher has built a transfer forming line for the Manz company in Germany. The line is predominantly used for deep-drawn parts used in commercial-vehicle manufacture, made with transfer and progressive dies.

The transfer press, of monoblock construction, features a usable bed surface of 3600 by 1400 mm and offers 8000 kN of press force. The forming force is applied by three cylinders. The press control system selects the necessary cylinder setup depending on the force required in the forming process. This step switching allows Manz to form parts with a low force requirement at a load speed of 70 to 370 mm/sec. This has a direct effect on the available output performance of the overall line. When producing parts with a short overall and forming stroke, it also is possible to select a special operating mode that enables the press to reach even faster stroke rates in short-stroke mode.

The force levels of the individual stations are not the same and may be applied at different times throughout the ram stroke. This means that a parallel

holding system for the ram is essential. Here, an active system with four cylinders in the corners of the bed is used. To avoid loss of time when the press is running at high speed, the parallel holding cylinders pre-accelerate so that link-up with the overall system occurs smoothly. As the press closes, these cylinders act from below against the ram and can counteract a tilt position resulting from off-center forming forces. In addition, a damping function has been integrated for the cutting impact.

The drawing cushion must be adjustable within a force range of 10 to 1000 kN to accomplish the required forming processes. Here, too, this requirement is met by the ability to select different cylinder pairings.

The line includes new-generation three-axis transfer system, Synchron Quick from the Dieffenbacher subsidiary ASA GmbH Automation und Steuerungsanlagen. Through the use of steel in place of aluminum for weight-bearing components, ASA reduced the moved masses by as much as 40 percent compared to older designs. In addition, the main supporting component of the gripper

lifting unit was redesigned to improve rigidity while saving more than 60 kg in weight. The result is a significant improvement in acceleration values for the same drive power, leading to more rapid movement sequences.

For more information on the Impress transfer press from Dieffenbacher, write no. 350 on your reader response card.

Hybrid Servo Press

Beckwood Press Co., St. Louis, MO, has introduced its Accu-Flex servo-controlled hybrid press, designed for optimum force and position control. With tonnage capacity of 5 to 150 tons, the presses offer five basic motion profiles: blanking, coining/forging and embossing, knuckle, draw and draw with dwell. All cycle parameters—speed, stroke, shut height and force—are programmed and infinitely adjustable.

Accu-Flex presses, say Beckwood officials, minimize the use of hydraulic



components and replace hydraulic servo valves with less-expensive servo motion-control devices.

For more information on Accu-Flex presses from Beckwood Press, write no. 351 on your reader response card.

Camera Sensor for Press-Brake Safeguarding

The new V 4000 camera sensor available through Sick, Inc., Minneapolis, MN, reportedly is the first image-processing electrosensitive protective system available for point-of-operation safeguarding of press brakes. The Category 4 sensor offers maximum operating safety while still permitting optimization of bending and folding processes, according to company officials.

Unlike light curtains normally used in press-brake safeguarding, the V 4000 monitors the hazardous area with a camera image and constantly evaluates the safety fields. These fields can be programmed flexibly according to the folding operation. This safeguarding concept, according to Joachim Breuer, product manager for the Sick AG Safety Systems Division in Walldkirch, Germany, offers numerous advantages in machine efficiency and availability.

The system, which mounts on the upper beam of the press brake, provides safeguarding during the rapid downward movement of the punch, creating a safety area below the die that is monitored constantly for intrusion. The device will shut off the machine as soon as an intruding object is detected, courtesy of the V 4000 output signal switching device.

The sensor reportedly is simple to configure, using existing linear scales to calculate upper-beam position, velocity direction and stopping distance. It has a direct view of the hazardous area of the brake, unaffected by its surroundings and the particular tool geometry. Also, report officials from Sick, the sensor can be integrated simply into the press brake's human-machine interface.

The system provides multiple protection modes for different bending tasks. For example, Standard Mode is used for simple one-dimensional bending. Box Mode is ideal when bending multidimensional objects such as boxes, and Limit Stop Mode takes into account limit stops on the object to be bent. The different modes can be integrated with the bending program, allowing for the

appropriate mode for a given bending technique.

Another unique feature: The system does not require that the press bar be stopped just before trimming in the downward stroke. This results in reduced cycle time and increased machine

capacity while reducing stress on machine hydraulics, according to company officials.

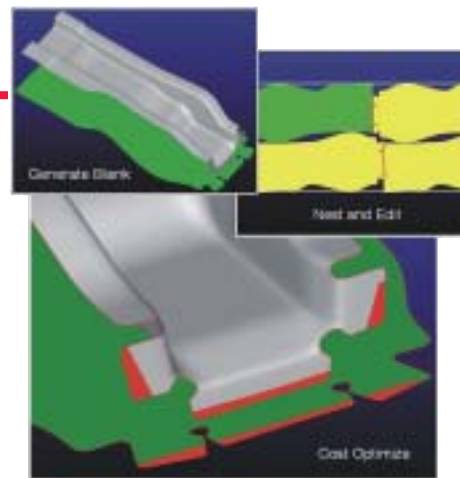
For more information on the camera-based press-brake safety sensor from Sick, Inc., write no. 352 on your reader response card.

Software Identifies Changes that Reduce Costs

Forming Technologies Inc. (FTI), Oakville, Ontario, Canada, has released Cost Optimizer software for blank development, nesting and material cost optimization. The software helps engineers understand where to modify designs to achieve target costs, and to anticipate and

evaluate manufacturing costs early in the design process.

Initial blank shapes for die design are generated utilizing Fastblank, FTI's blank-development technology. Then, Blanknest determines optimal material utilization using a variety of scenarios



including standard-shape cutoff dies and mirrored, one- and two-up blanking dies. Cost optimization then can be performed to identify design changes that would lead to material cost savings.

For more information from FTI, write no. 353 on your reader response card.

Newly Designed Hydraulic Cushion

Red Stag Engineering and Automation Inc, Waupaca, WI, announced the installation of its fourth-generation, full hydraulic Intelligent Cushion inside an existing mechanical press. The installation, at Hercules Machine Tool and Die, Warren, MI, is on a 4000-ton Danly press with a bolster area of 204 by 108 in. The cushion comprises three tables, each 500 tons with a 12-in. stroke, for a total cushion capacity of 1500 tons.

The cushion can be operated as a trial mold using any combination of cushion tables and duplicating the most complicated hydraulic cushions in a full hydraulic press. It also can duplicate production of a mechanical press using air cushions, or the production of a mechanical press using air-over-hydraulic cushions. Lastly, it can duplicate the performance of nitrogen cylinders.

Red Stag employs five cylinders per cushion table, which can be controlled at any time within the cushion stroke. Pressure and position sensors allow control over the blankholding pressures and positions of the table during production.

For more information from Red Stag, write no. 354 on your reader response card.