

Press Release

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Sheet-Metal Processing with Voith hydraulic systems – Energy-Efficient and Powerful

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"Saving Energy while Increasing Productivity" – from November 3 to 6, Voith will present innovative hydraulic systems for sheet-metal processing machines at Blechexpo 2015, which is to take place for the 12th time in Stuttgart. At booth 8312 in hall 8, the roughly 30,000 expected visitors can learn about, most notably, the HDE High-Performance Punch System, the PSH Press Drive, the CSH Die Cushion Drive, the servo pump and the CLDP Servo Drive.

HDE High-Performance Punch System – High Dynamic Behavior and Precision

The Voith product portfolio includes punch systems ranging from entry level to high-end machines. With the HDE, a special system for punching, nibbling and forming applications was developed for the high-end segment. Its high dynamic behavior is based on newly developed valves as well as intelligent hydraulic and electronic control circuits. With a punch stroke of 4 mm, the new punch system achieves a cycle time of just around 18 ms.

Thanks to the new DECV valves (Direct Electronic Copy Valve), control of the HDE is extremely accurate. Direct actuation by servo motor ensures the valve has a very fast and highly precise impulse response. The HDE achieves repeatability of up to 0.01 mm. The valve is designed to be rugged, compact and very flexible in terms of interfaces – integration into the machine or system could not be simpler.

Servo Pump – Great Flexibility and Tremendous Efficiency

The future of hydraulics began with Voith servo pumps. In contrast to conventional hydraulic systems using constant volume flows, servo pumps vary the volume flows. With this capability, hydraulic systems achieve a so far unseen functionality as the servo pumps convert exactly the amount of electrical energy into hydraulic energy that is currently needed by the

system. Some or all of the conventional valves are not needed for control purposes. This reduces complexity while increasing reliability and availability.

The energy consumption of the hydraulic system can be reduced by up to 70%. The Total Cost of Ownership (TCO) of the hydraulic system can be reduced by up to 35%. As a result, systems with variable speed servo pumps are amortized in a short time.

The CLDP Servo Drive – High Power, Extended Lifetime

The CLDP (Closed Loop Differential Pump) servo drive is both compact and highly dynamic. The self-contained linear drive combines all the advantages of the hydraulic solution with those of the servo electric solution. Such advantages include overload protection, high power density, virtually wear-free operation, great energy savings and unlimited programmability.

Thanks to the integrated servo pump, energy efficiency is also far greater than with conventional solutions. Other attractive features for system operators are the increase of productivity, precisely variable force and position control as well as extended lifetime. The CLDP Servo Drive can be used for all direct linear motions – primarily when dynamic response, reproducibility and reliability are needed.

Powering Presses Innovatively – PSH Press Drive

The PSH Press Drive Servo Hybrid is a drive that replaces conventional valve and control technology. The intelligent control, developed jointly by Voith and Siemens, enable highly flexible use of the press. The PSH drive thus guarantees the best possible matching of force and speed to the press process. Consequently, the press consumes only as much energy as is needed in each process phase. The benefit for the operator: savings of up to 60% in energy; improving the Total Cost of Ownership (TCO).

Energy-Saving and Programmable – CSH Die Cushion Drive

For demanding forming processes, Voith has developed a combination of press drive and die cushion drive that can give operators energy savings of up to 80%. By using a servo hybrid die cushion drive consisting of a servo pump and double-acting die cushion, previously unattainable efficiency levels become within reach. Compared to conventional systems consisting of a die cushion and pressure-relief valve, the Voith system feeds the mechanical power of the servo pump back to the process through the motor in the form of electric power. The CSH Die Cushion

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Drive is freely programmable in terms of speed, force, position, and acceleration. It simultaneously increases output and the quality of the workpieces produced while ensuring process variability.

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Caption 1: Speed and precision: The HDE High-Performance Punch System with newly developed valves.



Caption 2: The energy consumption of the hydraulic system can be reduced by up to 70% using the servo pump.



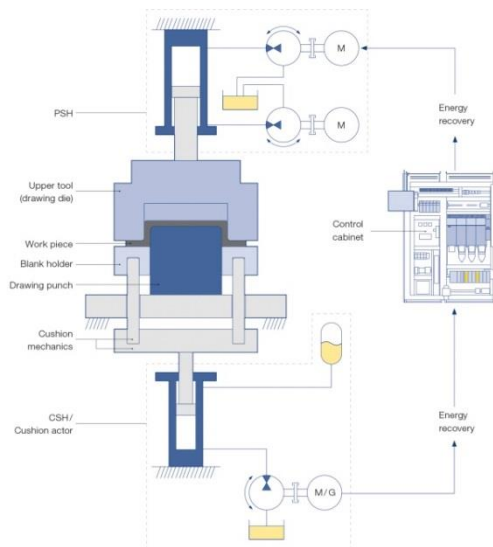
Caption 3: Self-contained CLDP Servo Drive offers overload protection, high power density and virtually wear-free operation.



Caption 4: The PSH Press Drive Servo Hybrid from Voith permits optimal matching of force and speed.



Caption 5: The servo hybrid die cushion drive is freely programmable.



Caption 6: Combining the PSH Press Drive with the CSH Die Cushion Drive results in energy savings of up to 80% through energy recovery.

Voith Turbo H + L Hydraulic is a subsidiary of Voith Turbo.

Voith Turbo, a Group Division of Voith GmbH, is a specialist for intelligent drive solutions and systems. Customers from highly diverse industries such as oil and gas, energy, mining and metal processing, mechanical engineering, ship technology, rail and commercial vehicles rely on advanced technologies from Voith Turbo.

Voith sets standards in the markets energy, oil & gas, paper, raw materials and transportation & automotive. Founded in 1867, Voith employs almost 39 000 people, generates EUR 5.3 billion in sales, operates in about 50 countries around the world and is today one of the largest family-owned companies in Europe.

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