

Press Release

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The Combination Makes the Difference – New Voith CSH Die Cushion Drive and PSH Press Drive Save Up To 80 % Energy

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With its new CSH die cushion drive consisting of servo pump and double-acting die cushion, Voith has launched an innovative drive concept for demanding forming processes. The CSH die cushion drive needs no valves and reduces energy consumption of the press significantly. In combination with the efficient PSH press drive, press operators can even save up to 80 % energy in the future.

With conventional die cushion drives consisting of a die cushion and pressure-relief valve, the work of the die cushion is irretrievably lost. In contrast, the Voith system feeds the mechanical power of the servo pump back to the process through the motor in the form of electric power. This reduces energy consumption and makes previously unattainable overall energy efficiency levels achievable. Furthermore, the servo-hybrid CSH die cushion drive uses a smaller oil reservoir, less oil and no costly cooling.

The die cushion drive with double-acting die cushion is ideal for forming processes involving complex geometries. The advantages are obvious: The CSH provides exceptional repeatability. In addition, the CSH is freely programmable in terms of speed, force and position control, and acceleration. The result is not only increased process variability, operators also benefit also from increased productivity while simultaneously improving the quality of the parts produced. How is that possible? The accelerated die cushion adjusts to the position-time curve of the ram and, in contrast to a single-acting die cushion, reduces tool impact on the workpiece. This improves surface quality, protects the machine and tool, and prevents damage such as cracks and creases on the workpieces.

The Combination Sets New Standards

The PSH press drive from Voith is known for its very high energy savings. The intelligent control system permits a very flexible use of the press. The PSH therefore guarantees the best possible matching of power and speed to the pressing process. Thus, the press only uses as much energy as required by the relevant process phase.

With the combination of a PSH press drive and the new CSH die cushion drive, Voith has now developed a system that sets new standards in the world of servo presses: Press operators can save up to 80 % energy in the future and improve total cost of ownership (TCO) while simultaneously increasing productivity. The unlimited programmability of the drive concept gives operators new capabilities when it comes to demanding forming processes. Both the PSH and the CSH can be scaled up easily into the megawatt range.

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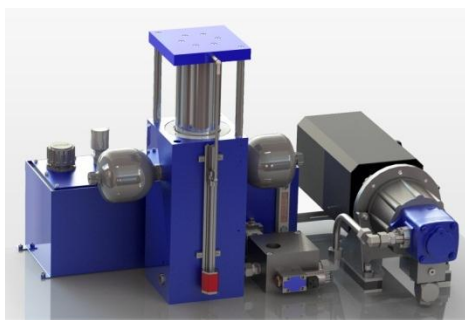


Figure 1: The CSH die cushion drive from Voith reduces energy consumption and makes previously unattainable overall efficiency levels achievable.

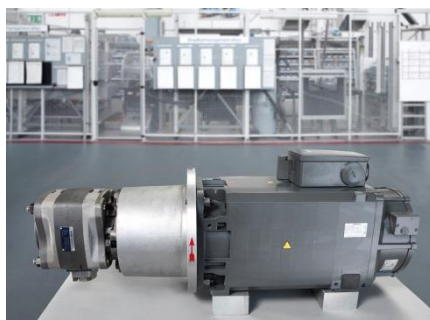


Figure 2: The heart of the CSH die cushion drive is the Voith servo pump. The high volumetric efficiency of the internal gear pump permits very accurate control of the drive.

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Figure 3: The PSH servo hybrid press drive from Voith ensures optimal adjustment of force and speed.

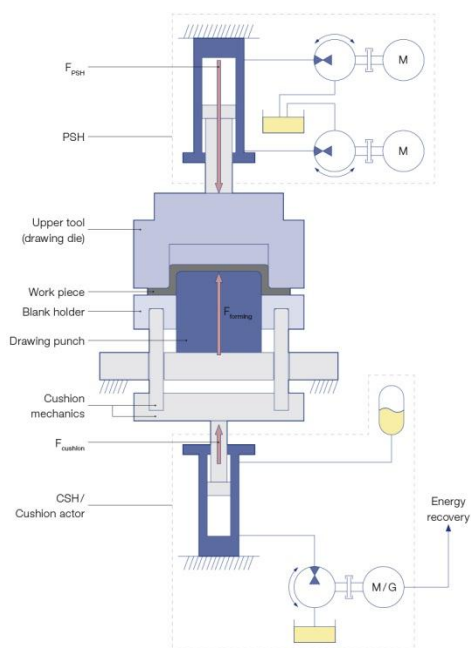


Figure 4: With the combination of a PSH press drive and the new CSH die cushion drive, operators save up to 80 % energy.

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. Customers from highly diverse industries such as oil and gas, energy, mining, mechanical engineering, ship technology, rail and commercial vehicles rely on advanced technologies from Voith Turbo.

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