

Title (en)
HYDRAULIC DRIVE SYSTEM

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EP 0335939 B1 19910116 (DE)

Application
EP 88908928 A 19881015

Priority
DE 3735123 A 19871016

Abstract (en)
[origin: WO8903484A1] A hydraulic drive system for a punching or an embossing tool comprises a double-acting hydraulic drive cylinder with piston surfaces of various sizes. The fast feed, working feed and fast retraction are controlled by the joint or alternating application of pressure by the piston surfaces. For this purpose, a surface-switching valve switches over from differential drive to unilateral application of pressure to the largest drive surfaces when the drive pressure exceeds, for example, 90 % of the maximum output pressure of the pressure supply aggregate. The surface-switching valve comprises a nonreturn valve which is acted on in the direction of opening by the working pressure prevailing in the smallest drive pressure chamber. The elastic closing force of the nonreturn valve is equivalent to an opening pressure equal to approximately 90 % of the supply pressure. The surface-switching valve comprises a hydraulic slide valve with a valve body in the form of a differential piston which is the body of the nonreturn valve. When the nonreturn valve is closed, the pressure acts on the smallest drive pressure chamber and the pressure prevailing in the largest drive pressure chamber acts on the largest step of the differential piston. The ratio of the surface area of the largest step of the piston to the area covered by the seat of the nonreturn valve seat is greater than the ratio of the largest to the smallest surface area of the piston of the hydraulic cylinder.

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