

Multidirectional Presses in Massive Forming

Alexander R. Burkhardt, LASCO Umformtechnik, Sales Director India

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Abstract

Multi-directional presses are used if forgings with branched geometries are produced in massive forming which cannot be realized by conventional single-axle forging. In many fields of applications the target is to minimize the use of material by flashless forging. When designing such presses the hydraulic press drive with up to 6 press axes is exclusively used because of its high flexibility.

Introduced are examples of multi-directional hydraulic presses in the field of transversal extrusion and die forging. Processes for forging of turbine blade- pre-forms are explained on the example of two newly developed presses, the hydraulic upsetter HWS as well as a flexible hydraulic pre-forming unit "Fleximat". Furthermore, the report is on the technology as well as specific features and challenges for a multidirectional press- center for the production of big crankshafts, which is put into operation in the United States at present.