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增压器全液压自动换向装置及其计算方法

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摘 要：为了研究更为新颖可靠的增压器全液压自动换向装置和与增压器换向频率有关的参数计算方法,对超高压水射流发生器及增压器的工作原理进行了分析,研制了1种对现行增压器自动换向装置的分类方法及具有结构独特、系统简单、机械噪音小、故障率低等优点的全液压自动换向装置.实验结果表明:该分类方法概念明确,有利于规范此类装置的设计;将计算方法和新装置应用于水射流切割机产品的设计中,简化了水射流发生器结构,提高了其工作的可靠性,对提高超高压水射流切割机产品质量和促进水射流切割技术的发展起到了积极的推动作用.

关键字：频率;增压器;超高压水射流发生器;自动换向装置

The full-hydraulic automatic reversing device for booster and its calculation methods

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Abstract: In order to research into more novel and reliable full-hydraulic automatic reversing device for booster and the methods of parameters calculation related to the reversal frequency of booster, on the basis of discussing super high pressure water jet generators, including the working principle of booster, and making an all-round analysis of the automatic reversing devices for all types of boosters at home and abroad, a classification method of existent automatic reversing de-
vice for boosters is put forward. This classification method is definite in concept and helpful to specify the design of this type devices. A full-hydraulic automatic revesing device, which has many advantages such as specific structure, simplified system, lower noise level, less faults, and so on, is proposed. The experiment has shown that the calculation and the new device used in the design of water jet cutting machines have simplified the structure of water jet generators and improved their reliability. It plays a positive and impellent role in improving the quality of super high pressure water jet cutting machines and in the development of water jet cutting technology.

Key words:frequency; booster; super high pressure water jet generator; automatic reversing device

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