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Conceptual solutions for digital hydraulic pumps

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Abstract. One of the methods by which specialists in the field of hydraulic drives try to increase the efficiency of the systems is the use of digital hydraulics. Digital hydraulics is a system with one or more digital components that actively controls the output of the system. One of the basic elements of such a system is the digital hydraulic pump. The first proposed and recognized variant was the one with digital pumping element; from this solution, it was possible to produce digital hydraulic pumps on an industrial scale. In this article we present some solutions regarding the creation of digital hydraulic pumps starting from several fixed flow hydraulic pumps that can ensure the variation of the flow through a special selection of them. The displacement of each pump is different and chosen taking into account the binary criterion. The article gives an overview of several such systems developed within the institute.

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