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GRAPHIC-ANALYTICAL METHOD OF DEFINING PRESSURE CHARACTERISTICS OF CENTRIFUGAL-VORTEX PUMPS

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Centrifugal-vortex pumps are usually adopted for a small boiler feeding of a hot-water heating system and also in the water-supply system, in the food and oil industry.

Centrifugal-vortex pumps have rather good operating showings in the results of successful using of the positive qualities if the centrifugal working wheel and vortex one. They are fixed on the common shaft.

Centrifugal working wheel provides the absorption up to 7 meters of water pole. At the same time vortex wheel has a high pressure of 100-200 meters and self-absorption. The efficiency of the centrifugal-vortex pumps reaches 45-48 per cent and a supply order is 35-40 cube meters/hour

Centrifugal-vortex pumps have been investigating since the 50^{th} up nowadays.

Optimum correlation of geometric size were found in the results of some experiments. They allow to make able-bodied cantilever structures of pumps like CVC.

Unfortunately it isn't enough the scientific works that are devoted to the experimental and theoretical problems. It brakes the improvement of this kind of pumps. It's rather little patents for new structures of centrifugal-vortex pumps.

The improving of the centrifugal-vortex pumps brakes the absence of analytic dependences. They describe the characteristics of these pumps.

A great number of experiments were done to solve this assigned task. Due to it we've got the results for building pressure characteristics in the frequency rotation 1000, 2000, 3000 turns/min..

In these experiments the structure of the centrifugal-vortex pump is used. This structure is described in the USA licence №3936240A.

To analyse the results we used the method that is used in [1].

In accordance with the recommendations [1] it is proposed a kind of analytic dependence. It describes the connection of pressure and supply of a centrifugal-vortex pump. The values of the constants that are the part of the given formula are defined.

The normalization of pressure and supply has been done. It is suggested the formula for constructing of dimensionless characteristics in different frequency rotation.

Literature

1 Tkachuk Yu.Ya. The improving calculation methods of the industry robots./ Tkachuk Yu.Ya - K.: Knowledge.- 24p.