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## **EQUIPMENT FOR REDUCING CAVITATIONAL EFFECTS AND LEVELING FLOW AT TURBO PUMPS INLET**



The invention relates to an equipment for reducing cavitation effects and for leveling the flow at the inlet of turbo-pumps operating at flows different from the flow they were designed for, turbo-pumps which may be used for irrigations, water supply of towns and industrial objectives and for heating systems.

According to the invention, the equipment consists of a pipe (1) which takes over the water from a downstream lake or a well through a suction pipe elbow (3) to a rotor of turbo-pump (5) driven by an electric motor (6) using a shaft (9) and leads it to an accumulator (10) and a discharge pipe (11) for controlling the cavitation and levelling the flow.

It is used the controlled variable speed of an impeller (4) in relation to the constant speed of the shaft (9) of the rotor of the turbo-pump (5) by mounting the impeller (4) coaxial onto a shaft (8) and the shaft (9), the shaft (8) of the impeller (4) and the shaft (9) of the turbo-pump being driven by means of a control device (7) which comprises a magneto-rheological clutch which, by the control of an automation device or an operator, allows the differentiation between the speeds of the impeller (4) and the shaft (9) of the rotor of the turbo-pump (5), the control device (7) consisting of a cylindrical flange (13) fixed onto the output shaft of a driving motor (6), the flange (13) being connected through an elastic coupling (15) to

another semi-cylindrical flange (14), which is fixed onto an iron piece (17) integral with the shaft (9) of the turbo-pump, the shaft (8) of the impeller (4) being in rotary motion on ball bearings inside the borehole thereof, while, between the shafts (8 and 9) a mechanical coupling is provided by means of a magneto-rheological fluid (16) the viscosity of which may be controlled and adjusted by the size of the magnetic field directed by a mechanism or an operator, which is transmitted to an electromagnet (18) by means of a slip ring (19).

