

عنوان مقاله:

Development of a Flow-Measuring Hydropneumatic Bench for Testing Pipeline Valves

محل انتشار:

ژورنال مهندسی عمران، دوره 9، شماره 1 (سال: 1402)

تعداد صفحات اصل مقاله: 17

نویسندگان:

Mukhamed K. Nogmov

Ibragim M. Lianov

Viktor R. Lysenko

Natalia V. Dmitrichenko

خلاصه مقاله:

Pipe fittings are an important element of any pipeline network, ensuring stable and safe operation by regulating the flow of the working medium. To control the performance of pipeline valves, it is necessary to conduct various tests, the main ones of which are hydraulic and pneumatic. It is important to expand testing capabilities and reduce time costs. The purpose of this work is to combine hydraulic and pneumatic tests into one test complex, which will reduce the time of the test complex due to the absence of the need for reinstallation and reconfiguration. The subject of the study is the determination of the design, technical, and operational characteristics of such a stand, as well as the simulation of operating conditions to confirm its operability. During the development, methods of solid and surface modeling, the finite element method, and analytical calculation methods were used. The results of the stand design are presented, and the features of the process of its development are described, including the analysis of the stress-strain state and the analysis of reliability and durability indicators. The obtained values of the distribution of equivalent stresses, deformations, and displacements of the structure elements do not exceed the maximum allowable values and do not lead to destruction. The analysis shows that the developed stand has improved capabilities compared to those previously used. Doi: 10.28991/CEJ-2023-09-01-013 Full Text: PDF

کلمات کلیدی:

Pipeline Valves; Pipeline System; Hydraulic Testing; Pneumatic Testing; Flow-Measuring Hydropneumatic Bench

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1962894>

