

## Digital prototype of test station for gears and belts dynamic analysis

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*Abstract:* For the areas of technical mechanics and design, computer simulations are the first stage where information on the behavior of mechanical systems can be obtained. The paper presents a digital prototype of a test station designed for experimental dynamic tests of various types of gears. The test station is designed with a possibility to simulate different operating conditions and simultaneously test transmissions with different structural modifications under the same operating conditions. The digital prototype is a copy of a real test station that allows predicting the behavior of mechanical systems. Using the functional simulation of the dynamic test conditions in a virtual environment, it is possible to pre-verify, respectively to confirm and then optimize the course and results of experimental tests of gearing and belt transmissions performed at the real test station.

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