

SHOCK TESTING OF GEARS

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Keys: test stand, collision, vibration, gear.

DESCRIPTION FOR TEST STAND

To study shock, looked at the gear is placed on a stand-featured high quietness that allows uniform and systematic analysis of cinematic and dynamic errors operating conditions, preserving the measure.

Vibration due to defects in the gears can be detected practically any measurement direction (horizontal, vertical, or axial). Experimental study of collisions of gears has been on stand designed and built as shown in Figure 1.

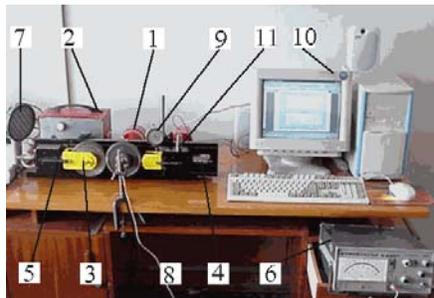


Fig.1 Stand for testing

By analyzing the frequency and amplitude signal captured at some point during operation and comparing it with a signal generated at the beginning of the tire gauge, you can draw conclusions on their status at the time of capture signal.

CONCLUSION

Result that the method of analysis allows the vibro-acoustic control in quickly and the overall precision of execution and assembly of gears, provide opportunities for identifying the causes and disturbances and indicate solutions for improvement.

Internal sources of data are deviations from the precision processing tooth gears, in particular the measured step error circle, which lead to periodic shocks of teeth which creates a dynamic task short and error profile, which produces a dynamic load acting permanent and periodic variation of the rigidity gears due periodic shift the burden of a tooth two teeth.

Vibrations generated by these sources and with these dynamic forces and noise becomes very large, particularly when the frequency of harmful source overlaps with a frequency of their own gear.

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