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AUTHOR: ⑧ Vasilets, F. P.

TITLE: ⑥ Investigating the effect of some strengthening methods upon the relaxation resistance of helical cylindrical springs

PERIODICAL: ⑤ Referativnyy zhurnal, Mashinostroyeniye, no. 20, 1962, 29 - 30, abstract 20B182 ("Sb. tr. In-t mashinoved. i avtomatiz. AN BSSR", 1961, no. 2, 81 - 92)

TEXT: Investigations were made with Д 81-1 (D81-1) springs of 6 x 32 x 220 size, manufactured of 65 Г (65G) steel containing in %: C 0.63; Mg 0.7; Si 0.3; Ni 0.2; Cr 0.05. After heat treatment (oil quenching at 790 - 810°C with subsequent tempering at 360 - 400°C for 30 min) the springs had a troostite-sorbite microstructure and RC 46. Two test series were performed. In the first series the springs were placed on bolts and compressed by nuts (to heights corresponding to 150 kg load) during 1,000 hours. Preliminary strengthening treatment consisted in 3- and 30-fold compression until contact of the turns; constraint for 6, 24 and 48 hours, shot treatment with subsequent tempering at 250°C

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for 30 min; shot treatment and constraint for 24 hours. A graph is plotted showing the relaxation strength of the spring versus the mode of additional strengthening treatment. In the second test series, the setting of the springs was measured after 1,000-hour loading until the contact of the turns without intermediate unloading. This series consisted also of four spring groups, 3 springs each, without additional strengthening; 30-fold compression until contact of the turns, constraint for 24 hours; shot-blast treatment and constraint for 24 hours. The investigation shows that 24-hour constraint is the most effective means for raising the relaxation strength of springs. There are 7 figures.

T. Kislyakova

[Abstracter's note: Complete translation]

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