Mrs Jeftić Jovan, ME

Faculty of Mechanical Engineering
36 000 Kraljevo, Yugoslavia

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NEW FORMS OF THE HELICAL SPRINGS

In this study, the biggest attention is paid to the problems and research of the helical, torsion, pressure springs of the speCial shape, formed in the hot state and used for the passangers cars.

The research is actual because of the fact that there is justified tendency to eliminate leaf springs from the usage and, instead the same, to install helical torsion springs. This is done from the several reasons and the most important one is safety of the helical springs althought the other characteristics of the same, like smaller installation space and simplier, faster and cheaper manufacturer, aren't irrelevant.

During the research work, on the base of tehnical - technological, theoretical and experimental analysis, as well as the base of the former experience with classical types of the springs, we came to the knowledge and new geometric shape of the springs with better mechanical characteristics.

These springs have been subjected to the various research methods, used for reliable establishing different deffects and errors caused by technologic, and thermic processes.

These springs have been tested to the dynamic persistance during long term investigations to the fatigue, with prescribed number of load cycles in order to establish the decreasse of the elastic characteristics.

Tangential stress is determinned during the tensimetric investigation, at the various load conditions, at the outside as well as at the inner generatrix of the springs and, also, road tests of the new springs shapes, installed on the domestic passangers car are carried out.

Key words: vehicle suspension, helical springs, new forms of springs.

NOVI OBLICI ZAVOJNIH OPRUGA

U ovom radu se tretira problematika i istraživanje zavojnih torzionih pritisnih opruga, specijalnog oblika, oblikovanih u toplom stanju, koje se koriste za putnička motorna vozila.

Istraživanje je aktuelno jer postoji opravdana tendencija da se iz upotrebe izbace lisnate opruge, a ugrade zavojne, torzione opruge. Ovo se čini iz više razloga, a najviše zato što su zavojne opruge sigurnije, zato što je za njihovu ugradnju potreban manji prostor i zato što je njihova izrada brža, jedostavnija i jeftinija.

U radu se na osnovu tehničko-tehnološke, teorijske i eksperimentalne analize i na osnovu dosadašnjeg iskustva sa klasičnim vrstama opruga, došlo do novih saznanja i novih geometrijskih oblika zavojnih opruga, koje imaju i povoljnije mehaničke karakteristike.

Ove opruge su bile podvrgnute raznim metodama ispitivanja, kojima se utvrđuju razni defekti i greške zbog tehnoloških termičkih procesa.

Opruge su ispitivane na zamor sa propisanim brojem ciklusa opterećenja da bi se utvrdio gubitak elastičnih osobina.

Tenzometrijskim ispitivanjem izvršena je detekcija tangencijalnih napona pri raznim uslovima opterećenja i to kako na spoljašnjoj tako i na unutršnjoj izvodnici opruga, a vršena su i putna ispitivanja novih oblika opruga ugrađenih na domaćem putničkom vozilu.

Ključne reči: oslanjanje vozila, zavojna opruga, novi oblici opruga.