
Analysis of the factors influencing on the choice of the surface layer of the material for the conjugated parts of friction pairs

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The article analyses general data on making choice of coatings and of surface hardening methods of friction pairs. On the basis of common recommendations on choosing material surface layers we analyzed loading modes and coating selection for the friction pair piston—holes of block of cylinders for axial piston hydraulic machine; the recommendations take into consideration operating conditions of the friction pairs. It is established that it is better to use Teflon coating for the friction pair considered.

Keywords: friction pair, Teflon coating, surface layer, loading mode.

REFERENCES

- [1] Luzhkov L.P. *Materialy v mashinostroyenii. T. 1. Tsvetnyye metally i splavy* [Materials in mechanical engineering. Vol. 1. Non-ferrous metals and alloys]. Moscow, Mashinostroenie Publ., 1997, 304 p.
 - [2] Sidorov A.V. *Vosstanovleniye detaley mashin napyleniyem i naplavyem* [Restoration of machine parts by spraying and welding]. Moscow, Mashinostroenie, 1987, 192 p.
 - [3] Belenkiy M.A., Ivanov A.F. *Elektroosazhdeniye metallicheskih pokrytiy* [Electrodeposition of metallic coatings]. Moscow, Metallurgiya Publ., 1985, 288 p.
 - [4] Garbar M.I. *Plastmassy v mashinostroyenii. Sbornik statei* [Plastic materials in mechanical engineering. Coll. Articles]. Moscow, Mashinostroenie Publ., 1964, 344 p.
 - [5] Zilberg Yu.A., Bigidzhanova A.P., Khrischov M.M. Uskorennyye ispytaniya na ustalostnost' bimetallicheskih obraztsov s antifriktsionnymi splavami [Accelerated fatigue tests of bimetallic samples with anti-friction alloys]. In: *Ustalost' metallov. Sbornik statei* [Metal fatigue. Coll. Articles]. Moscow, Publishing House of the USSR AS, 1960, 213 p.
 - [6] Shluger M.A. *Gal'vanicheskiye pokrytiya v mashinostroyenii* [Electroplating in mechanical engineering]. Moscow, Mashinostroenie Publ., 1988, vol. 1, 278 p.
 - [7] Satel E.A. *Problemy razvitiya tekhnologii mashinostroyeniya* [Problems of development of mechanical engineering]. Moscow, Mashinostroenie Publ., 1968, 592 p.
 - [8] Makarov A.V., Malygin I.Yu., Osintseva A.L. *Fizika i khimiya obrabotki materialov — Physics and Chemistry of Materials Treatment*, 2006, no. 4, pp. 46–55.
 - [9] Petrova L.G., Aleksandro V.A., Demin P.E., Drobkov V.P. *Vestnik Khar'kovskogo natsional'nogo avtomobil'no-dorozhnogo universiteta, X. — Bulletin of Kharkov National Automobile and Highway University*, 2010, issue 51, pp. 7–13.
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- [10] Lakhtin Yu.M., Leontyeva V.P. *Materialovedenie* [Materials Science]. Moscow, Mashinostroenie Publ., 1972, 528 p.
- [11] *Innovatsionnyy proyekt: Uchastok remonta aksial'no-porshnevyykh gidronasosov* [Innovative project: Land repairs axial piston pumps]. GOSNITI. Available at: <http://www.gosniti.ru> (accessed 26 June 2015).

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