РЕЗЮМЕ/ABSTRACTS

УДК 621.762

Bobarykin Y. L., Shishkov S. V. The Method of Producing Strip Antifriction Metal-Fluoroplastic Material

The data on forming bronze-fluoroplastic antifriction material is presented in the paper which differs from analogues by controlled porosity of bronze layer and a wider range of operational characteristics.

УДК 621.225.7+621.653

Mikhnevich A. V., Stasenko D. L. Some Problems of Pressure Forcing of Axial-Piston Hydraulic Machines

The results of the study of the dynamics of distribution centers of axial-piston hydraulic machines during their pressure forcing are presented. It is shown that at high pressures of operating fluid in distributor disk considerable elastic deformation of crescent ports occurs which can result in troubles in hydrodynamic friction condition in the distribution center. Design and experimental-measured values of elastic deformation of crescent ports of the distributor disk are given. Different influence of elastic deformation on operating conditions of distribution centers with spherical and flat distributor disks is shown. Based on the studies conducted a conclusion is made that spherical configuration of the distributor disk imposes principal limitations on considerable pressure forcing of axial-piston hydraulic machine.

УДК 621.9.011:517.962.1

Turomsha V. I., Dounar S. S., Truskowskij A. S.,Tumi El-Mabruk Abu Jaafer Ali The Analysis of Stiffness of Gantry Portal of Bed Milling Machine of Gantry Type

CAE simulation revealed that the traverse and the column are responsible for 2/3 of flexibility of the gantry portal of gantry-type bed milling machine. In a less degree flexibility depends on slider design (9 %). The traverse of the machine requires more torsion rigidity. The column and the slider need the increase of bending rigidity in longitudinal vertical plane.

Portal stiffness can be increased by polymer concrete filling of inner cavities of the portal supporting parts. Filled inserts increase stiffness of any basic part minimum by 2 times. It is important to apply polymer concrete inserts simultaneously in three basic parts i.e. in the traverse, in the column and in the slider. Simultaneous filling of adjacent portal parts results in synergetic effect. This leads to greater stiffening effect when stiffness of the portal is increased by 2.2 on the average in all directions.

УДК 538.3

Vasilevich Y. V., Ostrikov O. M. Method of Computation of Localized Plastic Deformation Tensor Components and Dislocation Density Tensor near Non-Coherent Twin Boundary

The method is developed for computation of distribution of plastic deformation tensor components, plastic distortion tensor and dislocation density tensor in case of twinning. The method of presetting dislocation distribution at twin boundaries is presented. It is established that in case of twinning plastic deformation is localized at twin boundaries.

УДК 621.9.0116517.962.1

Mikhailov M. I., Romachkov A. N. The Analysis of Static Accuracy and Strength of Coordinate Table of the Multipurpose Vertical Type Machine Tool

The methods of the analysis of static accuracy and strength of coordinate table of multipurpose vertical type machine tool are developed enabling to allow for design parameters of the table together with specific features of the material applied and conditions of contact between the elements. Computations and experimental studies of the influence of material

of guide element liners of cross motion table on its static accuracy are conducted. The degree of the influence of compliance of each element of the cross motion table is established.

УДК 621.311

Zaliznii D. I., Medvedev K. M., Potapenko N. V. A Stand for Studying Dispatch Control in Electric Networks

The design and specific features of functioning of the laboratory stand are described. The stand is designed for studying by the students the work of operational-dispatch personnel of electric supply network. The methods of automatic accounting of the positions of high voltage switches during computation of steady-state condition of electric network are proposed.

УДК 621.311.003.11

Krotenok V. V., Rabskaya Y. V. Technical and Economic Assessment of Choosing a Position of Substation

The problem of the existing methods of choosing the position of a step-down transformer substation is considered. Algorithms and program segments for the computation of the position of the step-down transformer station with the existing methods and also with conjugate gradient method are designed. The results of the study in numerical and graphic forms are presented. The assessment of the efficiency of conjugate gradient method is given.

УДК 621.313.333

Denisiuk Y. Y. Electric Machine Vibration Diagnostics in the Conditions of Interference and Uncertainty

Typical errors and interference in the process of diagnostics are considered which are conditioned by the following reasons of uncertainty in the process of diagnosing: non-availability of the information about rolling bearings; non-availability of statistic data on wear dynamics, complicated character of determining limit values of vibration parameters for each mechanism.

УДК 62-83-52

Zakharenko V. S., Doroschenko I. V. Specific Features of Simulation Modeling of Asynchronous Motor for Making a Model Allowing for Switching with Asymmetrical Closed Circuits Also

The procedure of making a mathematical model of asynchronous electric motor for the cases of asymmetrical closed circuits and (or) for the cases of allowing for the processes of switching in power source is considered. Specific features of the work with such models revealed during testing are given.

УДК 621.311

Guminski A. N. Improving the Efficiency of Operating Modes for Two-Transformer Substation Operation

Efficient operating modes of two-transformer substation with a view to power loss minimization in transformers are considered. Based on conventional principles of choosing power values for power transformers and on the basis of priority lines of governmental program “Energy Saving” specific features of choosing transformer power values for step-down substations are determined. Analytical and graphical definitions of limiting values of load power are given which are suitable for changing substation operating mode of step-down substations performing with transformers of the same rated power as well as with transformers of different rated power. Engineering aspect of change-over from one operating mode to the other from two positions by using manual and automatic switching is considered. The conditions for applying manual and automatic change-over between the modes of power supply to the load by single or two transformers are defined.

УДК 338.532.4.025.24:674.5

Ivanovskaya I. V., Dragun N. P. The Factors of Occurrence and Stability of Price Agreements on the Market

The article presents (i) theoretical models of the influence of structural factors, characteristics of internal organization of the industry, exogenous macroeconomic conditions of the occurrence and stability of price agreements on the market based on modeling a relationship of the profit values obtained by interaction of Bertrand producers in the conditions of collusion and without collusion; (ii) methods of forecasting the occurrence of a collusion on the market and its stability in time consisting in quantitative assessment and applying a single scale to actual and critical threshold values of discount factor for the market under study during the period analyzed; (iii) results of testing the above methods on the plywood market of the Republic of Belarus taken as an example. Application of these methods enables to separately consider reciprocal influence of different factors of collusion on the probability of its occurrence and stability in time and enables governmental antitrust authorities to reveal propensity of commodity markets for the occurrence of price collusions and work out measures aimed at preventing anti-competition behavior of manufacturers.

УДК 338.436.33

Parkhomenko N. V., Yermalinskaya N. V. Theoretical and Methodological Aspects of Efficient Functioning of Integration Structures in Agro-Industrial Complex

Major economic and social advantages of creating integration structures in agro-industrial complex are revealed, theoretical substantiation of the conditions of their efficient functioning is provided. Scientific approaches to the evaluation of complex production and economic system efficiency are systematized, key characteristics of integration efficiency with regard to effectiveness and optimality are defined. The system of integration efficiency factors and indicators for the evaluation of integration level is validated. Evaluation of integration structure performance efficiency is provided and perspective lines of development of integration relations in agro-industrial complex are proposed. The data obtained provides the basis for developing methods of evaluating integration efficiency and can be used for further research in this area.

УДК 339.138:332.02

Berdin A. Y. Specific Character of the Strategy of Distribution Policy of Constructional Materials Industry Enterprises

Shrinkage of major market regions of domestic constructional material producing enterprises caused the necessity of developing and applying goal-oriented marketing strategies maximally taking into account the specificity of market sectors and concentrating financial and labour efforts in a priority adaptive vector. All this necessitates intensification of marketing specialist work on the study of the specificity of industrial marketing complex with the following determination of the priorities of the complex components during strategic planning. Applying the author's methods of determining priority components of the industrial marketing complex by factor, discriminant and cluster analysis revealed definite priority of distribution policy as the major factor of the formation of strategic competitiveness of an enterprise. This preconditions the fact that for domestic manufacturers it is necessary to more actively advocate their position in implementing the strategy of seasonal market. Accordingly it is necessary to develop an appropriate infrastructure ensuring product safekeeping and at the same time conclude long-term year-long contracts and also search for the forms of optimum mutually beneficial sharing risks with the contractors.