

# Content

Zelený, J. (CZ): Impact of HSC Technologies on Design of New Generation Machine Tools.....	11
Brecher, Ch., Metzele, M., Spachtholz, G. (D): Main Spindle Systems for High Speed Cutting.....	19
Bach, P. (CZ): Milling Spindle Optimization.....	25
Kolář, P. (CZ): Mathematical Modelling of Machine Tools Spindles.....	33
Smolík, J., Houša, J. et al. (CZ): High Dynamic the LM-2 Machine, Description and Possibilities .....	39
Zelený, J. (CZ): Floating Principle for Seismically Balanced Highly Dynamic Machine Tools .....	47
Novotný, L. (CZ): Horizontal Milling Center with Floating NC Axis.....	57
Bubák, A., Novotný, O., Ondráček, M. (CZ): The Axially Compliant Suspension for Secondary Part of Linear Motor .....	65
Kytka, P., Ehmann, Ch., Nordmann, R. (D): Comparison of Model Based Controller Synthesis vs. PID-Concept for Position Control of Flexible Structures .....	71
Domša, P. (CZ): Direct Drive Rotary Axis .....	79
Bubák, A., Šnajdr, K. (CZ): The simulation and optimization of the ball screw drives .....	85
Souček, P., Bubák, A. (CZ): Problems Around The Selection of Measurement Systems For Direct Drives .....	91
Skalla, J. (CZ): The Feed Drive Dynamics with respect to Servomechanism Precision .....	99

Witek, A. (PL): Modelling and Analysis of Transfer Function of Machine Tool Feed Drive .....	105
Novotný, L., Marek, J. (CZ): Correlation measure of analytical and FEM calculations at design of machine tools .....	111
Novotný, O., Přibyl, M., Sedláček, P., Smolík, J. (CZ): Topological Optimization of Machine Tool Frames.....	117
Abele, E., Munirathnam, M. (D), Přiklopil, A. (CZ): Lightweight Structures for HSC Machines .....	121
Kosmol, J., Lehrich, K., Niedbala, M. (PL): FEM Modelling of Vertical Milling Machine.....	127
Konowalski, K., Grudziński, K. (PL): Tests of Contact Deflections in Rolling Elements of Guideway Connections .....	135
Kosmol, J., Lehrich, K., Ratynski, M. (PL): Thermal FEM Simulation of High-Speed Motor Spindle.....	143
Soldát, J. (CZ): Compensation of Thermal Errors of Machine Tools .....	149
Valášek, M., Šika, Z., Bauma, V., Vampola, T. (CZ): Design and Development of Break-Through Parallel Kinematic Machines .....	157
Neugebauer, R., Weidlich, D., Kolbig, S. (D): Virtual Reality as an Inherent Part of the Development and Testing of Machine Tools with Parallel Kinematics .....	165
Fornůsek, T. (CZ): Determination of Working Accuracy in 5-axis Machining .....	173
Fornůsek, T., Janda, M., Rybín, J. (CZ): Application of 5 Axes Machining .....	179
Svoboda, O., Vyroubal, J. (CZ): 3D Positioning Accuracy of CNC Machining Centers.....	187
Janota, M. (CZ): Vold-Kalman Filtering used for Measurements of Machine Tools.....	193

## Poster Programme

Staniek, R., Ptaszynski, W. (PL): Computer Simulation and Experimental Investigations concerning Thermal Deformations in NC Machine Tool Bodies and their Compensation.....	201
Twardowski, P., Ptaszyński, W., Staniek, R. (PL): Rigidity, Dynamics and Vibrostability of the DMC70V Machining Centre Intended for High- Speed Machining .....	209
Ptaszynski, W., Staniek, R., Twardowski, P. (PL): Static and Dynamic Accuracy of NC Machine Tools Assigned to HSM.....	215
Lachman, M. (CZ): The Dynamic Errors at Circular Interpolation at High Velocity.....	221
Janda, M., Fornůsek, T. (CZ): The Test Workpieces for Working Accuracy Verification of Three Axes Machining Centres.....	225
Schubert, M., Blecha, P. (CZ): Risk Analysis of Production Machines and Production Equipment.....	229
Přibyl, M. (CZ): Analysis of Cone Center Slipping in the Tailstock Quill of a Giant Lathe .....	235
Burian, D., Smolík, J., Kukačka, M. (CZ): Diagnostic and Measuring System of the LM-2 Machine Tool.....	239
Mendřický, R. (CZ): Improved Friction Models for Feed Drives .....	245
Hudec, J., Smolík, J. (CZ): Pneumatic Systems and Accessories of Machine Tools .....	249
Hudec, J., Smolík, J. (CZ): Filtration of Cutting Fluids and Mist Separation .....	253
Kolář, P., Smolík, J. (CZ): Selection of Spindle for High Speed Cutting .....	257
Novotný, O., Janota, M. (CZ): Comparison of Modal Analysis Experiments and Calculations of Modified Support Structure of a Machine Tool .....	263
Kolář, P., Ondráček, M. (CZ): Surface Covering for High Dynamic Movable Axes.....	267

Sedláček, P., Janota, M. (CZ): Experimental verification of static and modal analysis of machine tool parts .....	271
Kukačka, M., Smolík, J., Chadima, L. (CZ): Electrical System of Recent Shaping Machine Tools.....	277
Šmaus, M. (CZ): Analysis of Properties of Milling Machine Headstock .....	283
Novotný, L. (CZ): Analysis of Transient Processes in Ball Screws .....	287
Domša, P., Kukačka, M. (CZ): Design of Tilting Table with Direct Drive Motors .....	293
Hořejš, O. (CZ): A Thermal Model for High Speed Motorized Spindle .....	299
Holkup, T. (CZ): A Thermo-mechanical Model to Characterize Preload of Spindle Bearing Systems .....	305
Vondrák, M., Šimek, Z., Růžek, V., Vavrapka, T. (CZ): Design and Development of High Torque Parallel Kinematics Axes and Application of Cams in Cam Follower Mechanism of a Vertical Milling Machine.....	321
Wenzel, R., Weidlich, D., Kolbig, S. (D): Virtual Reality as an Inherent Part of the Development Process and Measurement Accuracy of the FMS Machining Tool Parallel Kinematics.....	329
Žáček, T. (CZ): Implementation of Working Accuracy in CAM Systems.....	343
Žáček, T., Jenda, M., Rybík, J. (CZ): Application of 3 Axes Machining.....	349
Stachula, O., Vojtěchová, J. (CZ): 3D Positioning Accuracy of CNC Machining Centers.....	357
Jančák, M. (CZ): Vibration Filtering used for Measurement of Positioning Accuracy.....	363
Makový, O., Štefanec, M. (CZ): Combination of Model Analysis Techniques and Characteristics of Adaptive Support Structures of a Milling Tool.....	369
Röhl, P., Ognibene, W. (CZ): Surface Coverage for High Dynamic Movements.....	383