



POLISH TECHNICAL REVIEW





POLISH TECHNICAL REVIEW

SIGMA

PUBLISHERS OF TECHNICAL PERIODICALS AND BOOKS SIGMA - AN ENTERPRISE OF THE CHIEF TECHNICAL ORGANISATION
ul. Biala 4, 00-950 Warsaw, P.O.B. 1004, Tel.: 39 11 99. Tlx 814877 WCT WA PL. Issued in English, French, German and Russian

CONTENTS

| | Page |
|---|------|
| ECONOMIC REFORM | |
| Second stage of economic reform | 2 |
| MACHINE TOOLS | |
| The CNC numerically-controlled automatic lathe | 3 |
| A horizontal machining centre | 4 |
| A tool-room manufacturing-type milling machine | 5 |
| A numerically controlled CNC tool-room milling machine | 6 |
| CONTROL AND MEASURING EQUIPMENT | |
| A sensor for measuring the chemical potential of oxygen in gaseous media | 7 |
| Chartmeter | 9 |
| Oscillation-type flowmeters | 10 |
| A microcomputer-aided diagnostic tester | 11 |
| ELECTRONICS | |
| Multiple-contact junctions - "Mister of Exports" 87" | 12 |
| A technique for masking the monocrystalline silicon plates (patent) | 13 |
| A spectrometric analyzer of secondary ions | 13 |
| A microprocessor dosimeter | 13 |
| WATER MANAGEMENT | |
| The AKWANA II multi-zone water supply system with an optimum energy consumption | 14 |
| ENVIRONMENTAL PROTECTION | |
| Equipment for clarification of liquids and sediment separation (patent) | 16 |
| Removal of mercury vapour from the air | 17 |
| CHEMISTRY | |
| New Polish drugs | 18 |
| Prizes for technological achievements in chemistry | 19 |
| MISCELLANEOUS | |
| Technical achievements of the University of Warsaw | 21 |
| Manufacture of lengthwise grooved wire (patent) | 23 |
| A method of data transfer in optical wave-guides (patent) | 23 |
| Coal wagon | 24 |
| PATENTS | |
| A turbulent burner for coal dust combustion | 25 |
| A shear-type broach for cuts | 25 |
| AT THE DESIGNER'S DRAWING BOARD | |
| Temperature as a fire hazard factor | 27 |
| ECONOMIC SURVEY 28,29 | |
| BOOKS 5 | |
| BRIEF NEWS 24, 25, 30, 31 | |
| PRESS SERVICE I-VIII | |
| Index for 1987 32 | |

Second stage of economic reform

The Polish parliament (Sejm) has adopted on the basis of governmental projects a number of laws aimed at a substantial speeding up and deepening of the process of reforms in the Polish economy through a release of people's initiatives, increasing labour productivity, equilibrating the domestic market and the payments balance via a growth of exports. Basing on these decisions the system of management of the national economy has been simplified through an increase of the autonomy of enterprises including those engaged in foreign trade. For details see page 1.

Machine tools

This section presents four machine tools: the FXM80 NM horizontal machining centre conceived as a basis for the setting up of autonomous and flexible machine protection systems and designed by the TARNÓW Mechanical Works; the AFT45 CNC numerically-controlled automatic lathe produced by H.CEGIELSKI, Poznań; the FNE50 N numerically controlled CNC tool-room milling machine produced by the AVIA High-precision Machine Tools Factory, Warsaw and the FPNL-80 N tool-room manufacturing-type milling machine manufactured by the WIEPOFAMA Machinery Factory, Poznań. All these four machine tools were awarded gold medals at the Poznań International Fair. See page 3 to 6.

Optimum energy consumption multi-zone water supply system

Experts from the Technical University of Cracow have developed an energy saving system of supplying water to buildings of different heights and to various projects that are supplied with electricity by their own electric power generating sets. In the system, the role of the turbine and pumping arrangement is played by a system of two or more suitably interconnected water and air tanks. Details on p. 14.

Temperature as a fire hazard factor

In our section: At the designer's drawing board, we are publishing an interview with Mr. Tadeusz Golisz M.Sc. (Eng) from the Central Mining Rescue Station, Bytom. The interview is devoted to the fighting of spontaneous fires in underground coal mines. Mr. Golisz speaks of the methods of early detection of fires especially in the places of self-heating of coal as well as of methods decreasing the self-ignition hazard. See article on p. 27.

Programmatic council: K. Badźmirowski, H. Boratyńska-Czupryna, R. Łysakowski, W. Matusiak (President), J. Myszkowski, A. Nowik, S. Okoń, L. Sender, J. Stefański, A. Taranczewski, J. L. Toeplitz

Editorial staff: J. L. Toeplitz (chief editor), I. Chmielewska, A. Witkowski, J. Wolf (assistant editors), S. Hilscher (managing editor), E. Karska

English editor: E. Karska

Graphic layout: F. Barącz

Production manager: A. Dziewulska-Kijas

Subscription orders should be addressed to the Ars Polona-Ruch, 00-950 Warsaw P.O.B. 1002, Krakowskie Przedmieście 7 or to one of the representatives of this company abroad

Printing office: SIGMA (Warsaw)

Index no 36915

Cover photo: FNE50 N tool-room milling machine produced by the AVIA High-precision Machine Tools Factory, Warsaw. See article on p. 6

Photos: T. Napadło

Back cover photo: The FXM 80 horizontal machining centre made at the TARNÓW Mechanical Works, Tarnów. See article on p. 4