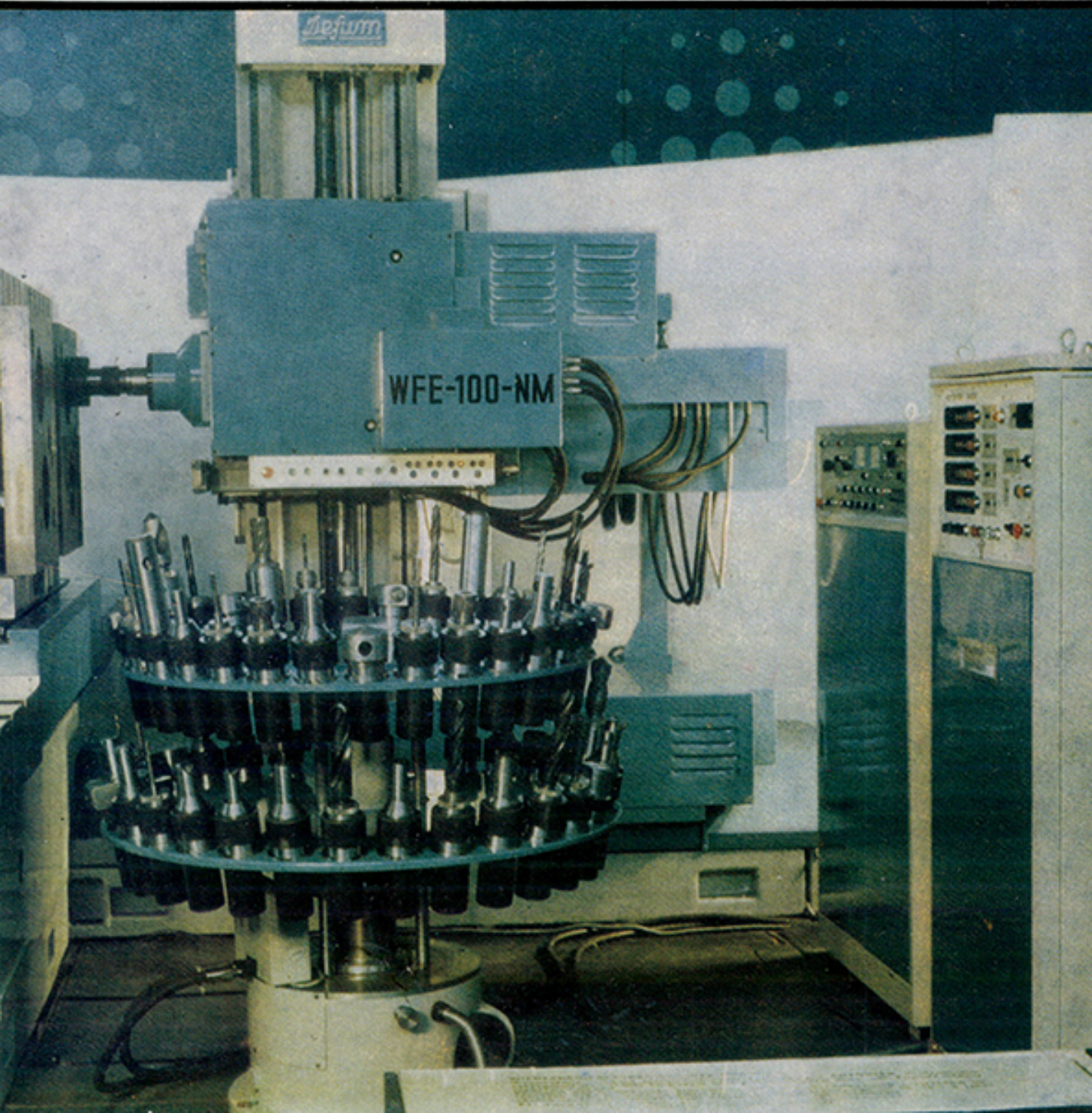




POLISH TECHNICAL REVIEW



4-5

92-93/1977



POLISH TECHNICAL REVIEW

PUBLISHERS OF TECHNICAL PERIODICALS FOR THE CENTRAL TECHNICAL ORGANIZATION (NOT)
00-950 Warsaw, ul. Czackiego 3/5, P.O.B. 1004 Tel.: 39-11-99, Issued in English, French, German and Russian.

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Machine tools

An optical and projection installation ensuring 10 and 25-times magnification (Polish patent) used for shape grinding of various tools, blanking dies, die elements, thread cutters, etc. has been installed in universal tool grinders type 4 AM and 4 M manufactured in the Engineering Works PONAR-JOTES in Łódź in cooperation with TACHELLA, Italy. An article by A. Witkowski on page 2 brings details of the machine tool and its optical equipment. The same section brings information concerning a numerically controlled double-column drilling machine type WRA 55N, DEFUM horizontal boring machines, knee-type milling machines, an automatic transfer press line and pneumatic controlling and driving sets for automation of machine tools (p. 2-9).

Shipbuilding industry

Along with a review article carrying information on the development of Polish shipbuilding in the years 1976-1977 and changes in the building structure in favour of specialized tonnage (p. 16), the current issue brings a description of the PANAMAX bulk carrier destined for frequent crossing of the Panama Canal. The construction of this vessel has been specially adapted to cruising on that waterway (p. 15). The section also brings information on mooring and anchor gear made by TOWIMOR, Poland the largest producer of this type of ship equipment among the CMEA countries.

Measurement apparatus

The digital quartz thermometer type 511B is the first Polish-made thermometer employing the principle of direct frequency based measurement of temperature with a quartz resonator being used as the temperature sensor. The mode of operation and the advantages of this apparatus are described by experts of the Institute of Tele- and Radio Engineering on p. 23. The section also brings an article on Translator TR-3 - for automatic data logging systems, an automatic torque meter and a radio-tv service van (p. 25-28).

Programmatic Council: B. Doweyko, L. Drecki, S. Grużewski (President), S. Katarzyński, F. Kubiczek, J. Kostera, Z. Kotarski, Z. Makomski, S. Werewka, A. Hanftwurcel

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Photos in the issue: CAF, HCP, KAW, K. Lipski, W. Stefanowicz

Subscription orders should be addressed to the ARS POLONA-RUCH, 00-950 Warsaw, P.O.B. 1001, Krakowskie Przedmieście 7 or to one of the representatives of this firm abroad. The annual subscription rate (12 issues) amounts to US \$ 12.- or the equivalent in other currencies. In the socialist countries, catalogue prices of the local distribution centres apply.

Cover photo: A numerically-controlled drilling and milling machine type WFE-100 NM manufactured by DEFUM

Printing office: LDA - Zakład 2 - Typo, zam. 478/77

INDEX No 37325/36915