

MATRIX
mechatronics

COMPANY

Since its establishment in 1988 MATRIX rapidly became one of Europe's leading advanced components manufacturers in several branches with four main divisions: Pneumatic, Textile, Automotive and Printing. Thanks to the high degree of innovation and outstanding quality, its products are conquering wider and wider space for high-tech applications. Headquartered in one of the most important worldwide areas for advanced technology, MATRIX offers a distribution network that covers a large part of european and extraeuropean countries.



QUALITY



The company adopted for its own operating activities a Quality Management System which is well planned, documented and certified according to ISO 9001:2000 Standards. It means that MATRIX's prime objective is maximum customer satisfaction and reflects a well-organized company, whose employees are properly trained and highly motivated. In few words, MATRIX represent a synonym and an expression of the real quality.

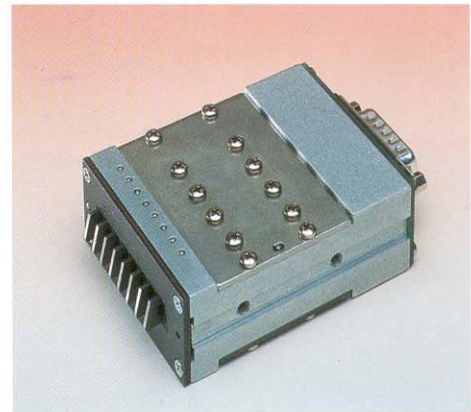
SERVICE



At the beginning of the new millennium, MATRIX proposes as the suitable partner for the supply of innovative solutions specially developed according to specific requirements of the customer. In all our geographic locations a team of professionals represent our company to pursue cusormer satisfaction by working close together. MATRIX offers dynamism, professional know-how and the highest quality in materials and workmanship, a complex array of products, all characterized by outstanding performances and a common technological "matrix".

TEXTILE DIVISION

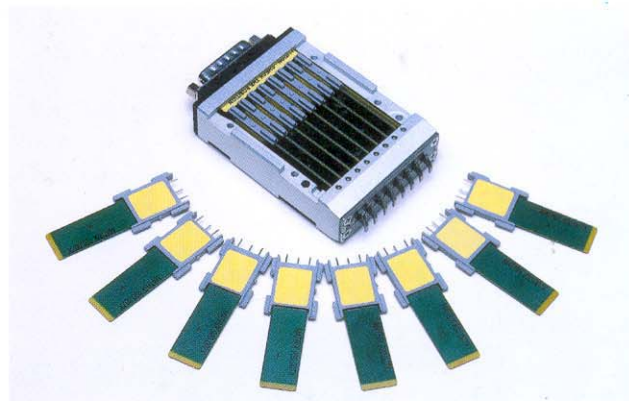
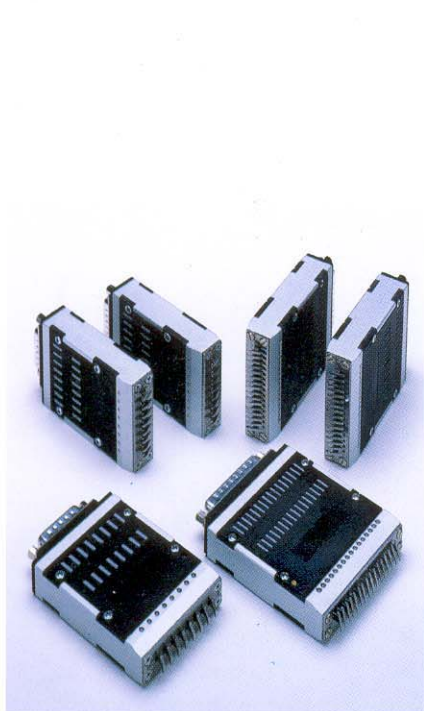
The Textile Division evenly blends technological resources with diverse product configurations, so offering the full potential of MATRIX technology to this large and important sector. Starting from the development of innovative pneumatic solutions for simplifying and rationalising industrial plants, leading thus to increased performance and further design evolution, MATRIX products have also quickly established themselves in the electronic selection field. MATRIX offers a vast and complete range of selection boxes, all of which are characterised by their extreme modularity and adaptability to all types of textiles.



With this kind of technology, MATRIX can guarantee unequalled precision and selection speed, combined with superior reliability. In order to properly satisfy the market's requirements, MATRIX has further extended its range of electromagnetic actuators for the jacquard selection on knitting and hosiery machines.

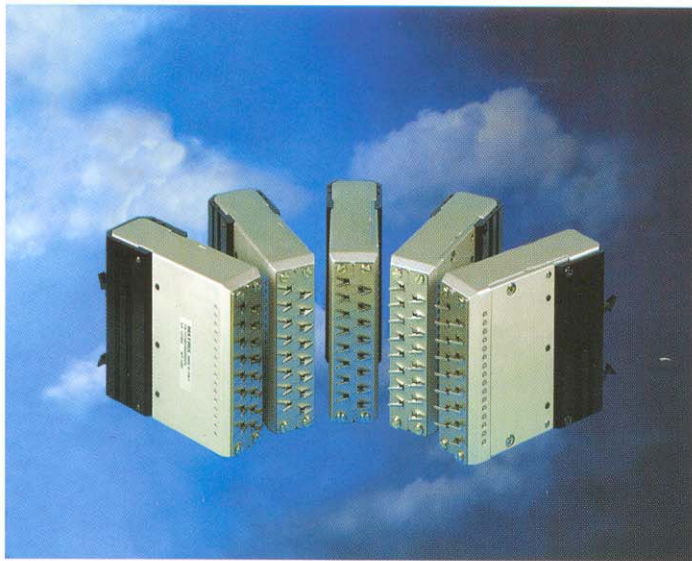
Also in this case, the high technology and quality level, supported by a strict cooperation with the textile-machine manufacturers and a constant research work, has allowed

the company to obtain outstanding results. Today MATRIX is in a position to offer the most wide range of specific selectors for hosiery, flatbed and large diameter circular machines.



The compactness of the product as well as the performances offered by MATRIX innovative ceramic technology grant a remarkable spare of electrical consumption and precision in actuation never achieved before in the textile branch. The PZ series grant very high speeds; the extremely reduced dimensions open new and innovative possibilities of project in the textile machinery branch.

PZ TEXTILE - CONTROL AND SELECTION FOR CIRCULAR KNITTING MACHINES

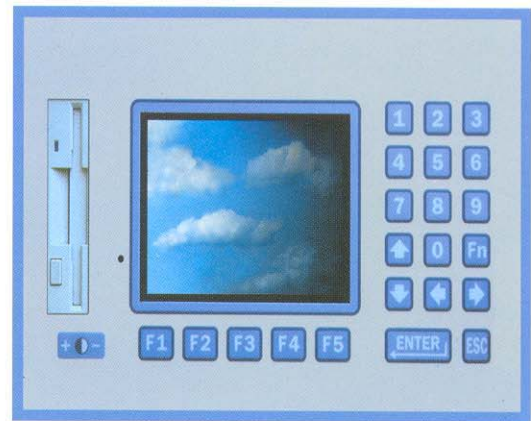


The control unit combines its compact dimensions with a series of innovative functions, finalized to improve the level of precision on the selection, to monitor continuously the selector's dynamics and to program automatically their machine configuration by software. The controller can operate both with *autopaint*© CK e MTC and standard configurations as Bitmap TIFF.™ (TIF) non compressed or LZW compressed. This particular software management allows the use of a unique encoder on any kind of machine, its physical configuration does not require a close precision as the controller can be set on real zero point.

PZ Textile system integrates the most advanced technologies developed in the field of selection and control on the circular knitting machines.

Modular and highly reliable, it permits the complete management of the design's cycles, from the creation on the PC to the fabric's manufacture.

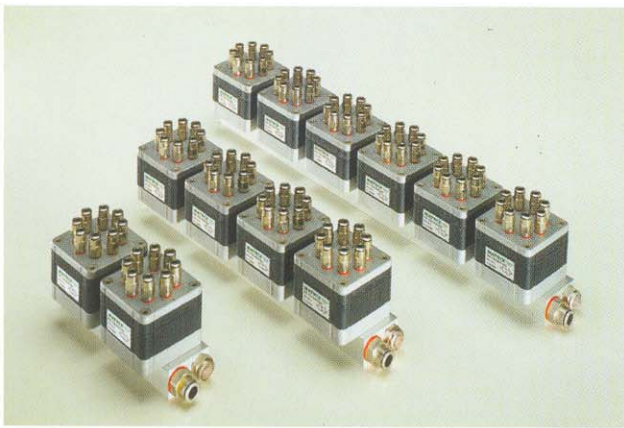
The exclusive piezo ceramic actuators of the PZ series, equipped with smart electronics and produced with excellent mechanical technologies, assure levels of precision and speed considerably higher than the actual standards.



PNEUMATIC DIVISION

In the application and development of pneumatic techniques, MATRIX products represent the most advanced and the most innovative choice. MATRIX technology allows the use of the most modern techniques of pressure and flow rate control and may offer a wide range of solutions: from the traditional to the most sophisticated ones, such as PWM (Pulse Width Modulation) PFM (Pulse Frequency Modulation), PNM (Pulse Number Modulation) and PCM (Pulse Code Modulation).

The process of evolution is being determined by advanced technology, in which Matrix solenoid valves and pneumatic systems play a leading part.



SPR 1000 ELECTRONIC PRESSURE REGULATOR

Matrix SPR 1000 is the combining of the EPR 100 (an electronic pressure regulator equipped with the latest-generation 8 bit microcontroller- it can process signals and commands, carry out complex functions and communicate with other control systems via an RS-232 serial line) with a high flow mechanical regulator. The functional characteristics change into those of a proportional servo valve, with extremely fast response times and high precision even under near maximum flow rate conditions.

As the unit is compact, very hard wearing and insensible to shocks and accelerations, it is ideal for use in severe industrial environments.

The Functional design, ease of use, and integration in advanced systems are characteristics which qualify the SPR 1000 as an active component of pneumatic systems.

Pressure and flow rate regulators, digital logic proportional solenoid valves, and integrated system control modules best represent the high level of innovation offered by MATRIX technology in the pneumatic field. In short, the pneumatics of the future is available today.



AUTOMOTIVE DIVISION

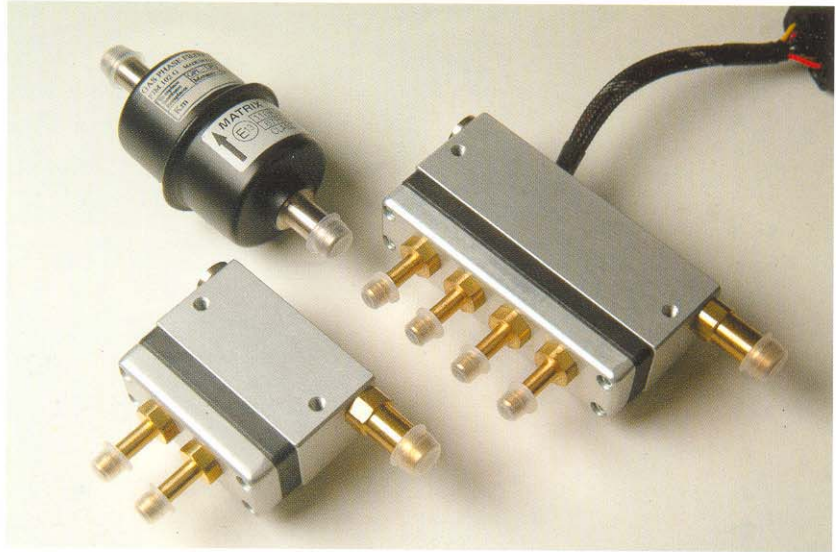
Matrix injectors are the most important innovation in the branch of the endothermic motors fed with alternative fuels like LPG and natural gas.

Available in different configurations, both single to be fitted in rail and integrated, they guarantee high performances in the field of direct injection, timed and sequential.

The dynamic characteristics and the high precision of the response times in all the operating conditions can be compared to the petrol injectors; it follows the remarkable simplification both of electronic control on the bi-power systems and the assembling phases.

The flow rate of the Matrix injectors, thanks to a high modularity that foresees the use of calibrated nozzles or as alternative a simply control via software, is able to feed any kind of motorization.

A more than 500 million cycles life, paired with the special FJ filter, completes a summary of high liability expressing at best the level of excellence and the capacity of Matrix technology.



860 SERIE - FLOWRATE CONTROL VALVE

Pneumatic solenoid valves belonging to 860 PCM variable flow series house in a single body nine shutters separately controlled. Said shutters have different fluid conductance and are conveyed to a single outlet port. The solenoid valves are flow proportional and characterized

by a linear link between the whole flow rate and the control binary code. Therefore, they represent the ideal solution for the conductance control in a digital way (PCM technique). Response times both in opening and in closing are lower than a millisecond and are independent from the flow value. Consequently, value changes of the conductance occur with a negligible phase lag (over 1 ms) as regards the electric control, even in the case of the instantaneous variation from the minimum to the maximum value, allowed by the solenoid valve.



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