

# Automated tool dispensers MATRIX

Comprehensive solution of every situation

Text: Lukáš LUKÁČ, Rastislav HULEJ, Vlasta RAFAJOVÁ, photo ISCAR, K&M Innovation, Regal Beloit Slovakia, DANEX Slovakia



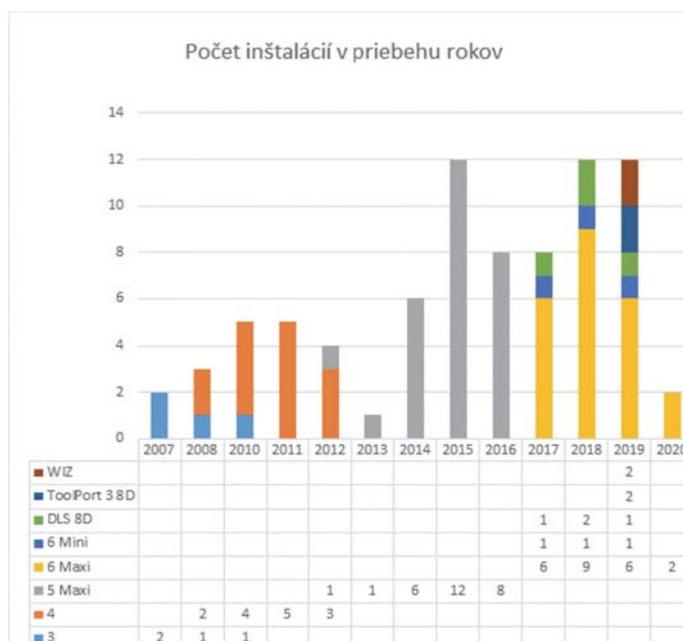
Inspired by the Fourth Industrial Revolution, but also taking into account the specifics and new challenges currently posed by the situation surrounding the Covid-19 pandemic, new, sometimes revolutionary, solutions are emerging in the field of „tool management“. Their common goal is to provide better, more efficient and safer ways of managing, logistics and managing cutting tools in production facilities.

ISCAR offers such a solution in the form of MATRIX dispensing cabinets. The technical qualities and type diversity of MATRIX machines guarantee effective tool management in various types of production facilities, including their specific or special requirements for the management of tools and accessories.

Worldwide, ISCAR has already installed approximately 10,000 MATRIX machines, and in Slovakia they are used by several dozen companies.

The MATRIX family of automated tool dispensers are powered by unique management software can help customers with:

- Drive down costs
- Guarantee production output
- Optimize stock levels
- Streamline purchasing
- Control cost per unit (CPU)
- Select the right tools for each job



### MATRIX Statistics in Slovakia

- First installation 10/2007.
- Currently 80 cabinets installed in Slovakia.
- The current number of registered withdrawals in Slovakia is more than 3,000,000.
- Average savings in the first year of implementation 10 - 15% of the total value of managed tools, in the following years about 8% per year.
- System lifespan? All of the oldest even MATRIX 3rd generation are still 100% functional.
- The usual return of investment is from half a year to 2 years, depending on the use - deployment of the system.

### MATRIX in Slovak industry

MATRIX dispensers have been used on the Slovak market for 14 years and are actively used by lot of companies. Some of them have really long-term experience with its operations. Specific examples - references from companies that use MATRIX machines in their production floors, can be a useful inspiration for other companies that are currently looking for a solution for the management of tools. We therefore bring some of them ...

## DANEX Slovakia, s.r.o.



The company DANEX Slovakia, s.r.o., which was established in 1992 as a custom production operating in the field of machining of metallic and non-metallic products and components, is today an established engineering company with high credit even in foreign markets. In addition to custom production of machine parts, its production portfolio consists mainly of special bearings and components for the automotive bearing industry. In the 28 years of its existence, the company's technology park has developed from simple

conventional machines to today's CNC technologies, represented by CNC lathes, CNC swiss turning lathes and CNC milling centers. Thanks to high-quality technological and personnel equipment (the company currently employs 85 highly qualified workers), DANEX achieves high quality and accuracy of manufactured products. This is also the reason why the company has competed not only at home but also in demanding markets in Germany, France, Switzerland, Austria and the USA. According to the CEO of DANEX Slovakia, Rudolf Danihel, the company's primary goal remains to achieve the highest quality of production, continuous improvement of internal production processes, teamwork and a growing number of customers.

### MATRIX brought order to managing tools

In accordance with the effort to improve the internal processes in the company, ten years ago DANEX Slovakia decided to reflect on ISCAR's offer and install the first MATRIX cabinet into its operation floor. „We evaluated this as a possible benefit for the company in terms of gaining an overview and control over the consumption of tools. The decision for the tool box was enhanced in particular by the possibility of obtaining information on the consumption of tools and implements linked to a specific completed order or a specific employee,“ explains R. Danihel. Currently, DANEX uses two MATRIX cabinets - Series 4 and 5 MAXI - in which cutting and clamping tools (cutting inserts, drills, holders) are located. „Until time we had these cabinets, it was very difficult for us to manage the dispensing of cutting tools. Ten years ago, our cutting tools has been moving in between machines and production floor unaddressed, and when the workers were not tidy, it was always difficult to find. Although tool management systems were introduced, it was not effective until they had hardware and software support in the form of tool boxes,“ adds R. Danihel.

Every month, DANEX records 2,000 to 2,500 movements - withdrawals from MATRIX. Employees access MATRIX via their chips and item barcodes.

„Withdrawals from vending machines are very intense and if all the withdrawals operations were made via stock keeper, he would be quite overwhelmed and couldnt work on anything else. In addition, we have a three-shift operation, the machine works fully even in the afternoon and at night. Although it did not dismantle the stock keeper for us, because he has a cumulative function at us, it made it much easier for him to work as well. All movements, selections are recorded in MATRIX and the storekeeper receives information in the e-mail every morning about which items and how much to add to the tool boxes. The system does this automatically. „



According to R. Danihel, costs of cutting and clamping tools are about 5 to 7 percent of the total production costs, which is not negligible. „Every healthy company that protects its costs managing, has to focus on the costs of tools and tooling as well. We have tidy up the cutting and clamping tools with help of MATRIX cabinets, and today, thanks to this, we can obtain information from the system to optimize production. We can also call back to workers if they consume tools responsibly. “

After all those years, they consider the decision to install cabinets as right one. „I can't imagine working without MATRIXes anymore. It is definitely a system that I can only recommend to engineering companies,“ concludes the executive director of DANEX Slovakia.

## Regal Beloit Slovakia, s.r.o.



Regal Beloit Slovakia, s.r.o. is an engineering company focused on the production of high-performance couplings for the torque transmission, primarily for the industries of mining of minerals, as well as catalog couplings designed for various industries. The company based in Nové Mesto nad Váhom is part of the American Regal Beloit Corporation, which operates in more than 40 countries around the world in various industries and employs more than 25,000 people worldwide.

As the production manager of Regal Beloit Slovakia, Roman Haliienka says, the company employs a hundred people and its technological equipment - CNC lathes, CNC milling machines, grinders, machines for the gears production, ... - determines its production program. „We are a company with its own production program so all our products are intended for internal purposes. We also adapt the equipment of our machinery for this. Approximately 90% of the material we process is made of carbon steel, we also use titanium and stainless steel. Our couplings have a circular shape, so about 70% of the input material is in the form of rods, but we also use forgings and burnouts. ”

A number of different machining processes and tools used, led the company to the first vending machine from ISCAR, five years ago.

### MATRIX relieves us from manual orders

According to Mr. Haliienka, the first MATRIX dispenser was intended only for consumables (inserts, drills, taps, endmills etc.), which had been dispensed by a stock keeper before. „We gradually worked our way up to acquiring five MATRIX cabinets. It is no longer intended just for storing cutting tools. We have a special MATRIX for measuring gauges, a cabinet dispenser for special tools, another one for grooving holders, and a machine with tools used in gears production. ”

Employees access the cabinet via a chip card reader, which they also use for attendance or as food system. R. Haliienka considers the exemption from manual ordering of items to be one of the most significant advantages of dispensing cabinets. „Individual tools - items have minimum quantities set in MATRIX according to the kanban system. When the quantity drops to the specified limit, an item order is automatically generated and sent to proper supplier. They deliver tools within 24 or 48 hours and issue us an invoice once a month. ”

The savings were reflected in the company immediately after the installation of the first MATRIX. „We detected a tool-cost saving of 30 percent in the first year. This has been created by several effects, such as personalized selection, when operators are aware that every withdrawal is linked to their name. They only choose to withdraw if they really need something. Reducing the variety of items also contributed to the savings, and we also saved on the stock keeper, to whom we could give another job. The use of photographs also creates annual savings for us. MATRIX allows you to upload photos of individual stored products. We worked with university student who took photos of each of our items. This made it easier for people to select tools from the machine. They can find it faster by photo, they don't have to search it by name. The seconds saved in terms of the number of selections and employees multiplied by the hourly rate of work mean a saving of 3,300 euros per year, ”explains the production manager.



He adds that MATRIX is very flexible and can also be used to monitor tool life. „In MATRIX we store also tools, which we withdraw once time but then return them after use, for example regrinding purpose. If we set the tool life in system, for example 10 cycles or 20 regrinds, we simply get information on how much the tool will last and when it is necessary to order a new one. The system can also be used to set the quantity of workpieces that can be produced with the regrinded tool. This means that if the tool is capable to produce 30 parts and only after this job goes for regrinding, and operator has to produce only 10 parts, it is not necessary to have the tool reground immediately. During return of used tool, MATRIX asks how many parts has been produced with tool and without this information, we could not correctly evaluate and use the maximum tool life after grinding. This is especially important for special tools with a delivery time of 10-12 weeks. ”

Five MATRIXes are currently the optimal number for the company and fully meet the expectations for effective tool management. „If our production expands, we will certainly invest in MATRIX cabinets again, ”concludes R. Haliienka.

## K&M Innovation, s.r.o.



K&M Innovation, s.r.o., is a Slovak engineering company specializing in precision machining of metals and plastics, as well as the subsequent assembly of various structural product subassemblies for measuring, pressure and filtration technology. The company operating in Stará Turá is a supplier to the gas, water and automotive industries and its major customers include, for example, Honeywell, Nissens, Boge, Wertheim, Manz, HDO, Sensus.

The company employs about 80 people and manufacture comprises three-shift system. The K&M Innovation machine park consists of CNC lathes and machining centers, technologies for splitting materials, 3D measurement devices, as well as classic milling machines and lathes. The product portfolio of K&M Innovation, s.r.o., is extremely diverse and it is right to say that the company works with a wide range and variety of input materials. „We machine practically all metal materials, from steel and stainless steel, through aluminum, aluminum alloys, brass, bronze, titanium, and we have also been machining plastic for about two years, all exactly according to the customer's specification. In addition, we provide comprehensive customer services in the areas of heat treatment and surface treatment of components manufactured by us. We place great emphasis on the high quality of our products and therefore we have a well-equipped metrology center. „” explains Peter Filan, the company's director.



### MATRIX helps to save us two stock operators at least...

The variety of material groups used of course means, a large number of diverse tools for machining it. Increased demands to ensure the right tools in the right quantity and delivery time, together with the effort to continuously improve and optimize all processes in the company, which is a natural part of K & M Innovation's own business strategy, led the company to decision to use a dispensing machine.



According to Peter Filan, the MATRIX Maxi from ISCAR has been used in the production hall since 2016, and after four years of operation, they can only state satisfaction. „We mainly use our MATRIX for storing of carbide inserts and smaller cutting tools such as drills and endmills. I see its positives primarily in the managed withdrawals of tools, respectively in the possibility of having a detailed and targeted overview of the consumption of tools by specific workers, or for individual production projects. To access the MATRIX, our employees use their chip cards, which are also used to record attendance. A detailed overview also allows us to react immediately to any increased consumption of the tools. „

Mr. Filan estimates the reached savings of total tool costs by 2 %. However, they also record savings in the area of personnel. „The MATRIX system saves us at least two necessary stock operators, and that is a true realistic estimation. If we didn't have such a device - which allows us to dispense tools during all three work shifts - we would have to secure a tool stock and a person in it, who would take care of all tool movements - for each shift of course. Over time, I consider our decision for a MATRIX to be the right one, and in case of necessity, we will go with the MATRIX system again, ” adds the director of K&M Innovation. More information about the production program, technological possibilities and references of K&M Innovation, s.r.o., can be found at: [www.km-innovation.sk](http://www.km-innovation.sk)



If you are interested in lending MATRIX cabinets or free of charge trial and testing of system directly at your place for three months or if you have any questions regarding MATRIX, the marketing and technical staff of ISCAR for MATRIX in the Slovak Republic are available to you:

Lukáš Lukáč, [lukac@iscar.sk](mailto:lukac@iscar.sk), 0911 637 495  
Rastislav Hulej, [hulej@iscar.sk](mailto:hulej@iscar.sk), 0903 452 042

