

# FPT Opendays 2022: the future is our goal

SEVERAL SESSIONS THROUGHOUT AN ENTIRE MONTH TO GREET CUSTOMER COMPANIES AND PARTNERS AS EFFICIENTLY AS POSSIBLE. FOCUS ON THE NEW INNOVATIONS: THE **TUDX** HEAD AND THE **DINOMEK** MACHINE RANGE. TWO SOLUTIONS THAT SET A NEW PACE FOR THE ENTIRE SECTOR.



Scan the QR code and go to the **TUDX** details



Scan the QR code and go to the **DINOMEK** details

*Below, meeting with partners during FPT's Opendays 2022*

by Paolo Beducci



There are unwritten rules that rate well how industries react when faced with problems that may occur during their work activities. In this particular case, we are referring to the past two years of pandemic stress and how at Santa Maria di Sala, FPT Industrie Management has turned a period with objective difficulties for the entire world into an opportunity to be seized in the best possible way. In order to be ready when returning to a situation oriented towards normality. For FPT, these have been years of study and perfecting technical and innovation policies. However, one must bear in mind that in this particular case, FPT's innovations are not the result of

improvised and not closely related paths. They are always harmonious movements that create a succession of improvements, innovations that are extremely well amalgamated in the evolution of the company's products. As a result of this important and certainly not trivial process, over the years, a series of innovations have been created at FPT that are aimed at making the user's work increasingly more productive and profitable. If one looks at this path as road along which FPT Industrie has travelled with consistency, you will notice that alongside the relentless refinement and renovation of the tool machine offer, the Venetian company has been able to create a series of opportunities

*Panoramic view of FPT Industrie's establishment.*

that make the offer truly unique. Therefore, the open days that were held at Santa Maria di Sala in May were on the one hand an occasion to take stock of the state of the art of the solutions made available to its users but, on the other hand, it was also an opportunity to demonstrate that the years of the pandemic - as mentioned above - have not passed in vane. During the open days, a day was also dedicated to the partners of the company, chaired by Gabriele Piccolo. A day strongly desired by corporate management and which has made it possible to share our technological development with actual and potential users, as well as with those working



**TUDX**  
5-AXIS HEAD WITH  
AUTOMATIC  
ACCESSORIES  
CHANGE

**KE TUDX**  
AUTOMATIC  
ACCESSORIES CHANGE  
PATENT PENDING

**PATENT PENDING**

**MAIN FEATURES**

- ✓ 5-AXIS CONTINUOUS MOVEMENT
- ✓ AUTOMATIC ACCESSORIES CHANGE SYSTEM
- ✓ HYDRAULIC BRAKING SYSTEMS
- ✓ POWERFUL ROUGHING SPINDLES TO HIGH-RPM ONES
- ✓ DESIGNED AND MANUFACTURED BY **FPT**
- ✓ TUDX VERSIONS: WITH 45° AND 50° BETWEEN THE BODIES.

**MOTORSPINDLE**  
8.000 rpm  
10.000 rpm  
up to 67 kW  
HSK-A100 / ISO50

**HIGH FREQ. SPINDLE**  
15.000 rpm  
22.000 rpm  
24.000 rpm  
up to 50 kW  
HSK-A100 / HSK-A63

**TURNING ACCESSORY**  
HSK T100-C8

**GRINDING ACCESSORY**  
G. TOOLS  
up to Ø 400mm

**WELDING ACCESSORY FOR FSW**  
management software incl.

**TUDX 45°**  
Moving column machines

**TUDX 50°**  
Portal machines

**FPT THE ITALIAN STYLE**

closely with FPT. In some cases, we are talking about partnerships backed by several years of mutual satisfaction and in others about collaborations that, albeit more recent, have been quick to show all the potential they can express. Since, as we have heard many times during this day from those who were present at the company, the opportunity to have a partner of the importance and technical and innovative expertise of FPT Industrie is undoubtedly an occasion not to be missed.

Open days, therefore, as a time for discussion and identification of the role and existing relationships, but also an opportunity, through operational tools, to show the progress of FPT technology in the world of tool machines. Hence, the focus of these meetings was certainly on the new TUDX and DINOMEK heads, portal machines that have some extremely innovative

aspects. In a nutshell, two changes; calling them unique is definitely an understatement. They are the result of very scrupulous and ingenious work in designing removal machining operations and indeed represent a leap forward with regard to costs and operating flexibility. It's impossible to talk about one without referring to the other since they are both the perfect synthesis of the spirit embodied by FPT Industrie's technicians and designers. A spirit that has the enormous quality of being perceived as soon as one crosses the company's threshold.

We take the first step by talking about TUDX. The new head that contains various changes, which are in some ways unique and pivotal in the world of machining. "The characteristic of TUDX – explains Gianprimo Squizzato, FPT's Director of Sales Engineering

To the left, TUDX features and data. To the right, TUDX demonstration on Dinox 350 LAT at FPT Industrie.

– is its uniqueness of the proposed solution. In fact, starting with two basic universal heads (45° or 50°, depending on whether it is to be fitted on a vertical or horizontal spindle machine), we have created a system, which is patent pending, which makes it possible not to change the entire head when switching from one machining operation to another, but to concentrate this stage on the machining accessory. In practical terms, it means that instead of having to purchase a head for each machining family, it will be sufficient to reduce the investment to one head and one set of machining accessories to cover the entire range of use. But that's not all: switching from one machining operation to another will definitely be much faster since only the machining accessory will

have to be changed. On the other hand – explains Squizzato – with over 25 years of experience under our belt in the production of heads like TUPC, which was the first 0.001° mechanical head with universal indexing, it goes without saying that we would also be in the forefront in this new phase that launched TUDX, a solution that encompasses in a single head a range of features that are difficult to combine in a single product."

The TUDX actually manages to concentrate the continuous five-axes movement, an exclusive automatic accessory changing system that was entirely invented, designed and manufactured by FPT, new hydraulic braking systems on each axis as well

as the possibility of switching very rapidly from high torque spindles and thereby suitable for roughing operations to spindles designed for high-speed machining. However, the actual cornerstone of the new TUDX lies in the truly innovative automatic accessory changing system. This guarantees the option of switching in total automation from one type of machining operation to another. In fact, all it takes is changing the machining accessory to switch from milling to turning or even grinding or Friction Stir Welding. Changeover from one accessory to another is very interesting: in fact, this operation is performed in a few seconds and directly on the machine. The head is fitted with four grippers

equipped with a force multiplier and irreversibility mechanism, which has a safety function and to ensure machining precision. A centring system is also provided between the head and the interchangeable accessories. This is to ensure perfect assembly repeatability, achieving RTPC (Rotation around Tool Centre Point) precision of the TUDX with any accessory that is fitted onto it. Let's delve a little deeper and try to understand the real advantages that a solution such as the one proposed by TUDX can guarantee. Firstly, fast changeover from one machining operation to another. Followed by precision and its repeatability. Therefore, a truly impressive range of accessories applicable to





TUDX and capable of meeting all machining demands. In addition, the choices are scalable and modifiable. In other words: When you purchase a machine equipped with TUDX or only a TUDX head (which is also compatible with almost all FPT machines), you can decide to equip it with what you need at the time, postponing the purchase of other accessories according to how your work evolves over time. Therefore, scalability, which these days (but also in richer times) definitely helps. Lastly, the accessory changeover time, which is only a small fraction of what would be required if the machine were to be set up for a different machining operation. The TUDX has as many as five machining accessories available. The

first is the motorspindle (strictly for milling) with 8,000 or 10,000 rpm and power of up to 67 kW and 500Nm of torque. In this case, the spindle can be selected between HSK-A100 and ISO50. A high-speed accessory is also provided (four versions that range between 15,000 and 22,000 rpm) with the option of choosing between HSK-A100 and HSK-A63. There is also a turning accessory (HSK T100 – C8) and grinding capable of fitting grinding wheels with a diameter of up to 400mm. It is an accessory that provides for the diamond dressing of the grinding wheel and thereby the option of using it for specific machining when necessary. We conclude this overview with the head for FSW (Friction Stir Welding), which is used in sectors

such as, for example, the aerospace industry where FPT Industrie has a very important presence on markets worldwide. Alongside the new TUDX head and its somewhat revolutionary aspects, the FPT Industrie world has in recent years developed a series of important innovations, ranging from digitalisation of the machine and its production process through a proprietary system of the Santa Maria di Sala-based company, to a new model that once again, which seems to be the essential rule of the Venetian technicians, raising the bar on quality and technology a little higher. Therefore, once again FPT Industrie is setting itself as a role model to be followed and not just a simple follower.



To the left, LBM explanation of DINOMEK. To the right, DINOMEK at FPT headquarters.

Focus is now shifted onto an item of TUDX that is equally engaging. We are referring to DINOMEK, the latest addition of the successful and prolific Dino family, which has been FPT Industrie's benchmark in portal machines for over twenty years. Dino, DINOMAX, DINOSTAR, DINOWIDE represent the history of a successful family that has been setting the pace and rules in the sector for twenty years. Clearly, there is little or nothing in common with the model presented twenty years ago and the current DINOMEK, but it is equally true that they were created with the same innovative spirit that can be felt in every corner at the Santa Maria di

Sala offices.

It should be noted that DINOMEK is a large portal milling machine on which a unique design work has been carried out. In fact, beyond its qualitative characteristics that are the basis on which every FPT is created, DINOMEK has been designed with a truly significant step forward in the morphological configuration of the machine.

“Our desire – explains Sebastiano Piccolo, FPT Industrie's Vice President – was to be able to offer the market a machine that would provide a tangible extra step in terms of usability and ergonomics, as well as reducing the machine's footprint. Therefore, – continues Piccolo – we decided to radically

modify the design of the uprights and pallets. Making it possible for the operator to use them directly as a walkable surface, thereby increasing safety in a decisive way and making the machine truly unique. If one looks closely, the telescopic guides typical of this type of machine are no longer there. Hence, the operator is free to move around the machine and work area without any constraints. This is a patent pending machine configuration that we have called LBM, Low Base Morphology.” This overall machine layout is thereby much more compact compared to a traditional solution, providing much higher structural rigidity than traditional solutions, which can ensure much higher





## **Opendays 2022** / The future is our goal

performance. In addition, the footprint is significantly reduced compared to a machine with telescopic covers. In fact, DINOMEK requires no end stroke space to house the said covers. What does this mean in practical terms? Since there are no longer end stroke guides of the covers, it is possible to have a couple of metres more of travel with the same external dimensions. Which, in a world where square metres cost more and more, can be the difference between being able to perform or not.

There are also other practical advantages: for example, the unique configuration of DINOMEK also significantly simplifies machine loading and unloading, which can also be easily loaded from the side. To be noted is also that DINOMEK has all the technical and

quality guarantees typical of FPT Industrie machines. To appreciate the technical level of the product in question, one only has to remember that on each machine there are no less than five patented solutions that FPT makes available to those who decide to have one in their workshop.

*Opendays FPT 2022 at FPT's conference room.*

