

# MACHINING LARGE WORKPIECES

**IMPROVED MACHINING SPEEDS,  
HIGHER PRECISION, REDUCED  
MACHINING TIME, AND  
POSITIVE ECONOMIC IMPACT  
ON PRODUCTION COSTS ARE  
ONLY SOME OF THE BENEFITS  
ACHIEVED AT NOVAMECH  
AFTER INSTALLING  
A VERTIRAM 2000 GT FC.**

Whenever people anywhere on earth talk about machining, the talk turns to Italian companies and Italy, where a mechanical culture consolidated over the years, a technological and applicative imagination capable of solving even the most complex

problems with high machining quality and unique flexibility in meeting customer needs. One such company is Novamech. Located in Calcinate in the province of Bergamo, founded in the early 1990s on solid technological capabilities and

long experience in the world of machining, the company has continuously developed through constant investments in technology to perform machining to the highest quality standards. As a result, Novamech today offers the market a high-



# VERTIRAM: CHOOSE QUALITY!

<b>TS40 VR2</b>		40
VELOCITÀ MAX ROTAZIONE		3000
SUPPORTO (IN SCHEDE)		1:1
A=	B=	C=
S/N:		





level reference point for the machining of medium and large workpieces for use in natural stone processing machines, the construction of presses, machine tools, gearboxes, sheet metal processing machines, and hydraulic applications. All this is achieved thanks to a 10.000 square metre productive unit with a 5.000 square metre covered area equipped with innovative technologies manned by a highly-specialised staff. Specialised Novamech personnel ensures the complete supply of assemblies or machinery after assembly and testing to the customer's technical specifications and respond quickly to changing market demands, thanks also

to the partnerships made with supplier companies operating in the fields of small mechanical machining, heat treatment, and painting located nearby in the province of Bergamo.

#### **Speed and precision**

A company's competitiveness in general, and in the engineering sector in particular, requires regular investment in high-tech machine tools. Constantly aware of this, Novamech has always focused on incorporating high-performance machinery. One of Novamech's most successful machines is the Vertiram 2000 GT FC: a travelling gantry machine with a fixed crossrail.







The Vertiram 2000 is the most popular model in the Pama portal series because it combines high performance with excellent value for money which makes it one of the best machines on the market in its class.

The main features of the Pama machine installed at Novamech are as follows: The machine structure is built in stabilised fabricated steel calculated to size using finite element analysis (FEM) software. This solution ensures high static and dynamic rigidity while optimising the structure's weight to maximize acceleration.

X and Y axis movement is supported by linear roller guides, while the large-sized ram is in spheroidal

cast iron and guided inside the headstock by bronze hydrostatic pads with a feedback system that compensates for temperature variations. This solution ensures maximum rigidity combined with high vibration damping.

Developed on the strength of nearly 100 years of operation in the field, Pama is especially proud of the ram's 150 mm-diameter boring bar, a feature that ensures the highest workpiece access and operational versatility.

Thanks to the presence of the boring bar, the machine does not require straight extensions because it is the boring bar itself that allows it to reach difficult points and those recessed inside components. The boring bar is equipped with a patented additional thermal expansion

compensation system that by means of a carbon bar with zero expansion coefficient permits real-time elongation detection and correction. The spindle motor with Direct-Drive technology (no range change) offers high performance, up to 4.000 rpm, and 2.200 Nm torque. The kinematic lines feature dual-drive on all axes. Gantry translation over the floor plates is controlled by two pairs of servomotors with electronic NC backlash recovery. The ram's vertical travel is powered by a pair of precision recirculating ball screws with independent motorization and gantry servomechanism. The head's horizontal travel is controlled by two servomotor-gearbox units with NC backlash recovery. These solutions





guarantee a rapid traverse speed on all axes of up to 30.000 mm/min and accelerations of up to 1 m/s<sup>2</sup>. Extra attention has also been dedicated to the attachment heads. The machine is equipped with a lubricated TS 40 V angle head and is thermally stabilised by temperature-controlled fluid recirculation. In addition, the machine is equipped with a fixed attachment head changer and an 80-pocket chain-type tool changer. The work area consists of a large 14.000 x 3.000

mm table with two chip discharge conveyor belts at the sides. Lastly, the machine is equipped with a fixed cabin from which the operator controls machining in complete safety with an excellent view of the work area.

#### **Application benefits**

Our question about the benefits obtained by installing a Vertiram 2000 GT FC received the following answer: "There are many advantages, and all our needs have been met. In particular, Pama's



Vertiram 2000 ensures marked improvement, in terms of both machining speed and throughput, and lets us achieve decidedly higher quality that allows us to guarantee our customers higher and higher levels of machining precision. Last but not least comes Pama's after-sales support and servicing that allows us to be constantly

working and updated even in the context of Industry 4.0." The benefits are not only qualitative, but also economic. "Thanks to Vertiram's state-of-the-art performance, we've been able to cut processing time and remarkably improve managing and meeting customer requests. There's also been a positive economic impact on production costs."

Since implementing Pama's Vertiram 2000 GT FC gantry machine, we've been able to process more complex parts that we would never have even considered making with the previous generation's machinery.



# VERTIRAM 2000 GT FC

## MAIN TECHNICAL FEATURES

### MACHINE DIMENSIONS

Clearance between columns: 4.100 mm  
Vertical clearance: 2.450 mm  
Gantry travel (X axis): 15.000 Mm  
Head stroke on crossrail (Y axis): 5.100 mm  
Ram travel (Z axis): 1.600 mm  
Ram dimensions: 500x500 mm  
Linear axes speed: 30.000 mm/min

### MACHINE SPINDLE

Boring bar diameter: 150 mm  
Boring bar stroke (W axis): 800 mm  
Power (S1): 90 kW  
Torque (S1): 2.200 Nm  
Maximum speed: 4.000 rpm

### WORKTABLES

Worktable dimensions: 14.000x3.000 mm  
Load capacity kg/m<sup>2</sup>: 15.000 kg  
T-slots: 28 H12 mm

### TOOL MAGAZINE

Capacity: 80-slot

### TS 40 V ANGLE HEAD

Power: 40 kW  
Speed: 3.000 rpm  
Torque: 2.000 Nm

### SIEMENS 840D SL OPERATE NUMERICAL CONTROL



“Thanks to the flexibility of use this machine offers and the training provided by Pama technicians - which also professionally qualifies our operating staff - particularly complex dimensions and machining are no longer a problem for us at Novamech today. We’re a satisfied

customer. We think Novamech will gain significant benefits in terms of both technological innovation and performance from the purchase of this product.”







