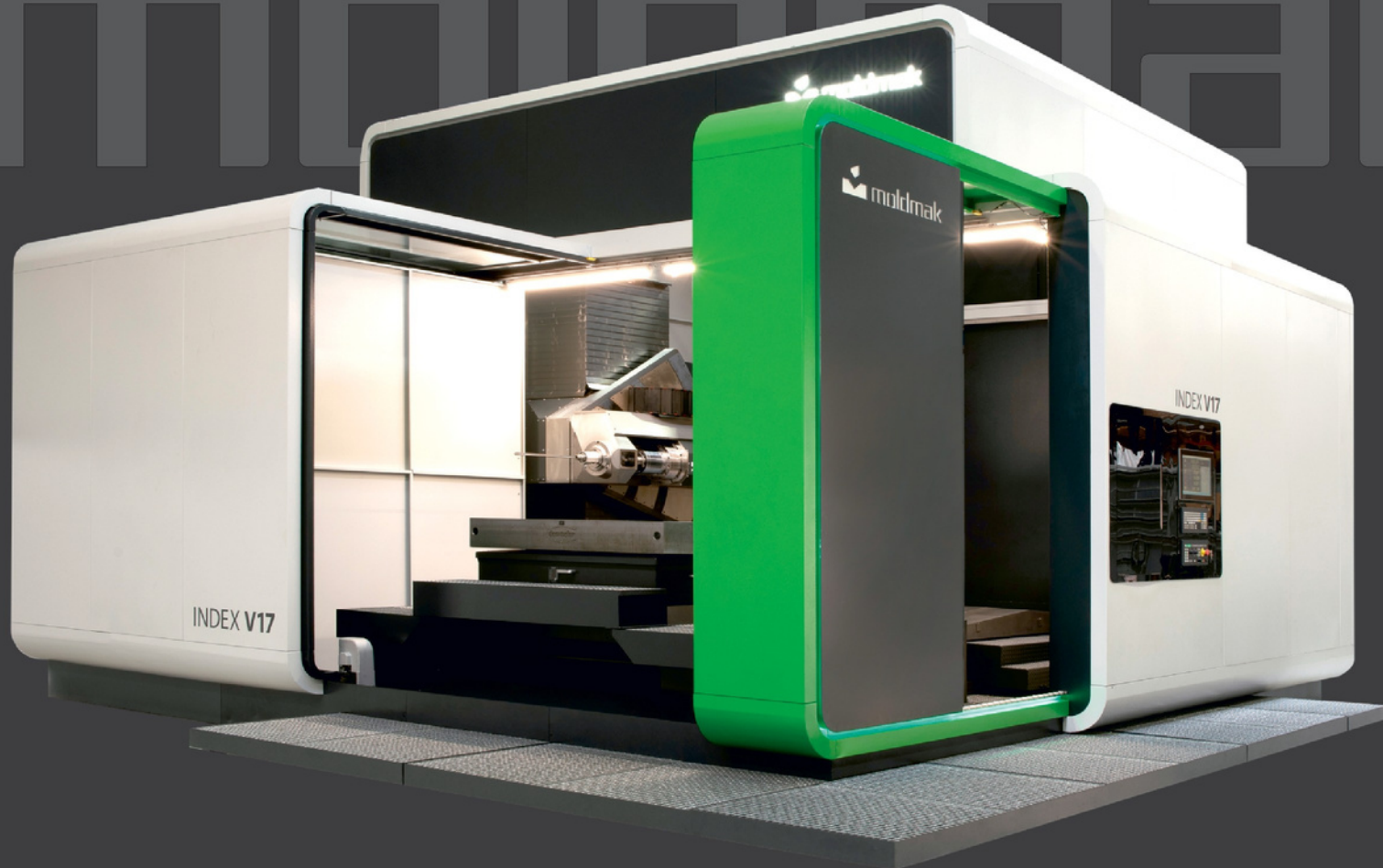**moldmak**

Process machine for mold making

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Horizontal Machining Centre with Deep Hole Drilling

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Company

Moldmak focuses its activity on the design / development, production and commercialization of CNC (Computer Numeric Control) machines to optimize the production process in the mold manufacturing sector.

Aware of the strong competitiveness of the worldwide market for machine tool production and bearing in mind the requirement for quality and commitment to efficiency and sustainability, Moldmak is the result of more than 35 years of experience, research and development in the manufacture of molds. In order to distinguish itself from the competition by creating even more efficient production solutions, at the technical and economic level, Moldmak comes to fill an absence of solutions in the market of mold's intelligent production systems.

Since its start, the company integrates a team with extensive national and international experience and with demonstrated results in the sector. In fact, it was the dissatisfaction with the functional limitations of the machines used in the mold industry, which created the opportunity to develop a new business project. Only with the accumulated experience of the team, the deep knowledge of the molds' production process and the domain in the development of high precision CNC machines, it is possible to raise the bar of the current state of the art, establishing a new product of great impact in the sector.

Horizontal Machining Centre with Angular capacity and Deep Hole Drilling

moldmak
Process machine for mold making

Commitment to mold machining process

The experience gained in the mold industry and the detailed understanding of the needs of the industry have given birth to MOLDMAK which today boils down to more than 35 years of mold making experience, research and development and aims to distinguish itself from the competition by creating productive solutions increasingly efficient at the technical and economic level.

MOLDMAK is 30% faster than conventional solutions because:

- It reduces hand overs and setup times, leaving more available time to perform the multiple machining processes required for part execution.

- It shortens execution times due to the advantages of being a horizontal Spindle machine with vertical angular capacity and table rotations on the horizontal plane.

- Reduces cascade of nonconformities, because it can include at the end of each task dimensional control. This way, only one geometrically validated part advances to the next step or process.

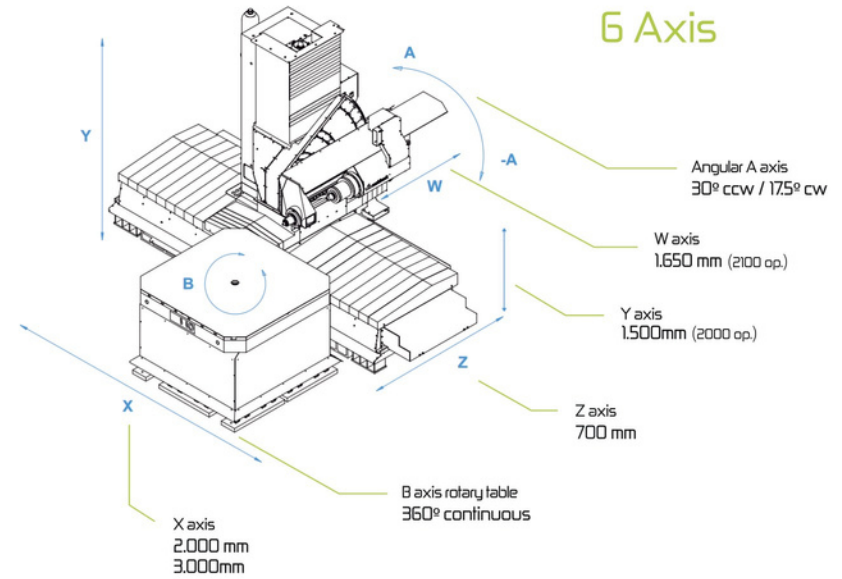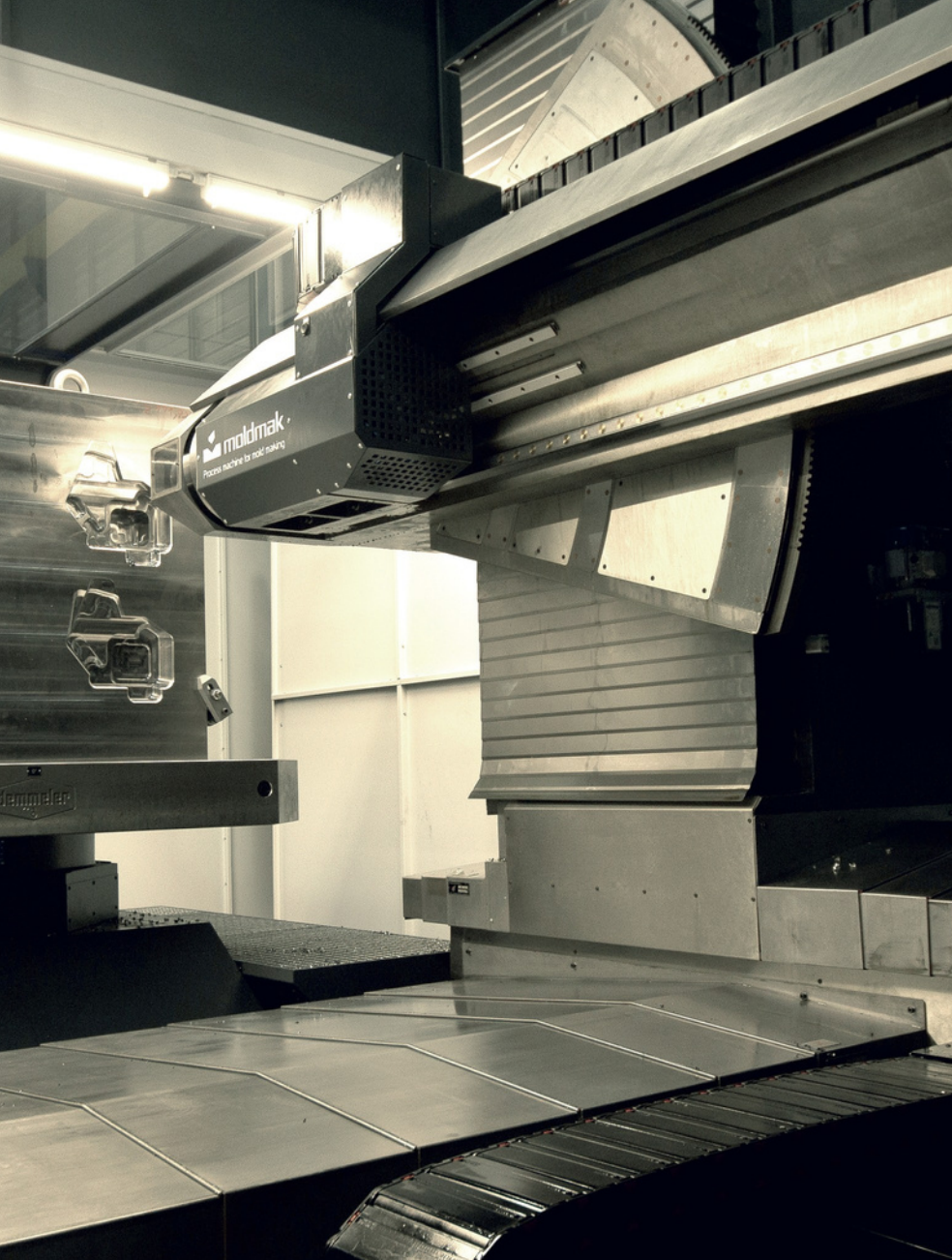| Industry 4.0 | IoT | Communication | Maintenance | Management | Monotorization |

INDEX Six in One
Horizontal Machining Centre with Deep Hole Drilling

- Moldmak INDEX 2000/3000 is a horizontal machining centre with 6 axis of high capacity, to execute molding areas and structures. With only 2 setups it can execute all necessary machining operations in the 6 faces of the part. It provides the use of deep hole drilling tools dedicated axis "W" with axis A and B. Rotary table interpolation capability to the linear axis (X,Y,Z).

- The main advantage of the equipment developed by MOLDMAK comes from its multitasking capability, wich enables it to respond effectively to the needs of various machining operations, normally implicit in the mold production process (milling, tapping, drilling, boring and finishing). This wide operation capacity enables you to reduce the number of part setups throughout the production process and thereby increase productivity levels. To ensure the high levels of accuracy required, Moldmak machines can be equipped with tool measuring and dimensional part control equipment. The resources ensure the quality of the machining performed reducing the nonconformities associated to the machining processes.

  Moldmak machines offer last generation technology, with software applications that allow you to closely monitor production indicators, anticipate events and analyse process trends in full alignment with Industry 4.0 precepts.

6 Axis

Angular A axis
30º ccw / 17.5º cw

W axis
1.650 mm (2100 op.)

Y axis
1.500mm (2000 op.)

Z axis
700 mm

B axis rotary table
360º continuous

X axis
2.000 mm
3.000mm

Highlights

Foundry Structure – 35 ton

Emulsion Tank – 3.000 + 2.000 Lts

High pressure pump – 100 bar; 100 L/min

Direct drive axis – 20 m/min

DAPI – Process control

Geometric validation of the part

Process/Productivity Monitoring

Peripherals

ATC – up to 200 tools

Tool measuring – longitude and diameter

Electrical cabinet cooling

Big Milling
Machine

3+2 Milling
Machine

Drilling
Machine

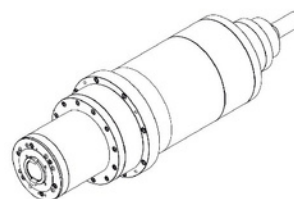Tapping
Machine

Boring
Machine

Coordinate
Measuring
Machine

Table

	2.000 x 2.000 mm
Centred max load	26.000 Kg (up to 50.000 Kg op.)
Table speed	4,2 / 6,7 rpm
Blockage	Hydraulic
d1000 plane operation precision	≤ 0,015 mm
Movement precision	≤ 0,015 mm

Motor Spindle

Power	36/54 kW
rpm	8.000 / 10.000
Torque S1	298,4 Nm
Torque S6	612 Nm
Taper	HSK100

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Horizontal Machining Centre with Deep Hole Drilling

Machine Cover

Complete cover round the machine with sliding doors.

Easy access to operator's working area.

All peripherals within the machine.

Wide workpiece entry when transported with crane.

5.000

6.660 / 7.660

7.260

MULTI-TASKING

Multitasking capability enables it to respond effectively to the needs of various machining operations

HIGH STIFNESS = HIGH PRECISION

Extremely robust and vibration free structure, helps to reduce tool wear

ANGULAR CAPACITY

The angular capacity with the rotary table ability allows machining with shorter tools

ROTARY TABLE - B AXIS

The rotary table allows machining all around the part with the same setup

moldmak

Process machine for mold making

DAPI - Drilling Adaptive Process Intelligence

The correct variable control is critical for machine's reaction during deep hole drilling operations.

When reaching intersection points the machine will automatically adjust the feed and rpms until all controlled parameters are stable again.

This automatic adjustment is generated by the machine without the use of CNC or CAM pre-programmed instructions.

This software application can be programmed to provide warnings when vibration or axial load level goes above the predefined set point.

This feature can also be used to program the machine to automatically change the tool (by a twin tool) when the predefined set point vibration level is reached (usually by tool wear).

Machining support software applications

Moldmak Sensing
Control Machine Parameters

- Tool penetration force
- Tool vibration
- Spindle power used in the process
- Force made during the process
- Power used in the linear axis
- Force required by the axes
- Emulsion monitoring

In the deep hole drilling process:

- Allows to predict conditions for tool sharpening
- Avoid tool break
- Control for twin tool change
- Monitories and adjusts technological parameters in case of interceptions
- Allows presetting parameters by tool typology

DAPI

From Portugal to the world

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