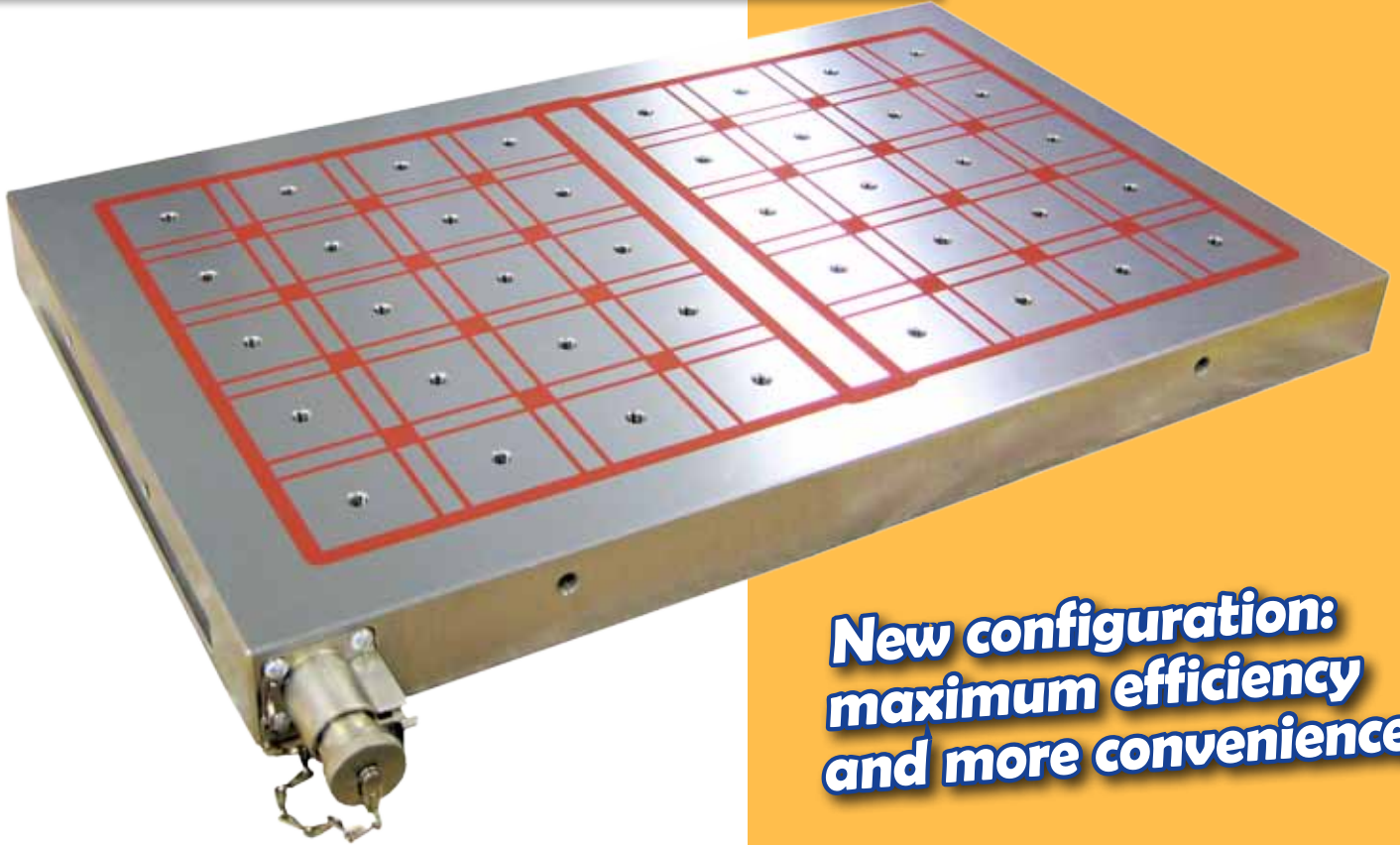




PERMANENT-ELECTRO  
MAGNETIC SYSTEMS  
FOR MILLING

## Serie HE50 "High Efficiency"



**New configuration:  
maximum efficiency  
and more convenience**

All the advantages of the QX technology are now available in the new configuration HE "High Efficiency", i.e. a more efficient polar layout to achieve the maximum magnetic flux concentration on the workpiece, in any setup.

- Reduced weight and thickness
- New fast connector
- High flexibility
- Increased contact surface
- Total reliability

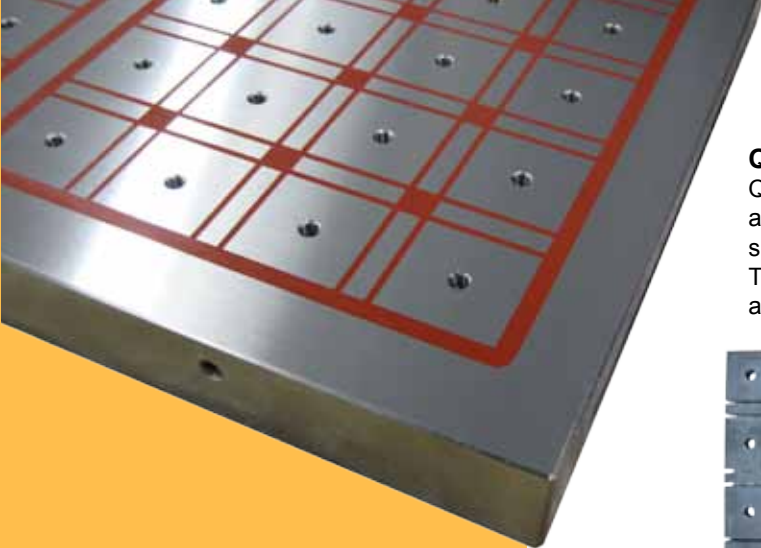
- Suitable for pieces of any size
- Up to 16 kg/cm<sup>2</sup> in active magnetic area
- Min. short-circuiting depth: 12mm



**TECNOMAGNETE®**  
Safety through power



INTERNATIONAL  
PATENT



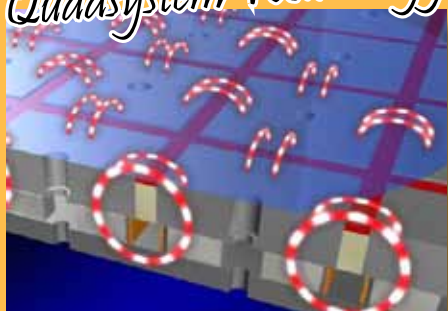
### QuadExtra configuration

Quad Extra is based on an exclusive patent that allows to create a magnetic area through a modular polar plate machined from a solid block, fixed with special high resistance screws to the main monoblock frame. The lean design with no other fixing parts grants a "Full proof" seal in addition to an absolute mechanical stability and reliability.



The clamping surface is made of steel and resin; the "double grid" polar layout allows to get closer magnetic stitches for a better clamping of small parts.

## Quadsystem Technology



### Quad Extra series: the "unique" advantages

- High structural rigidity based on monoblock construction and integral polar plates.
- Poles with precision threaded holes in hard steel to fix polar extensions.
- Less resin in contact with the workpiece for a better reliability
- Reduced weight and thicknesses.
- Innovative ERGON connector for most practical use.

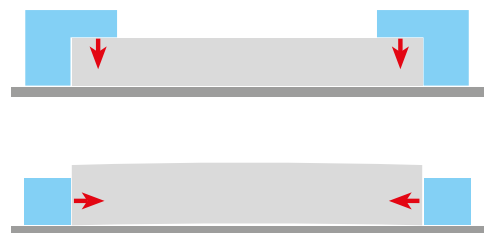
### HE version: more efficiency in operations

The innovative HE configuration presents a new arrangement of magnetic poles, favoring the maximum magnetic concentration on the piece, in any setup.

- High Efficient polar layout for a perfect balance between magnetic and neutral areas.
- Larger neutral areas for special machining to create dedicated top tooling, reference pins or mechanical stops.
- Increased force concentration on small / medium size pieces.
- Better steel vs resin ratio in contact with the workpiece to improve machining quality and reliability in time.

### Beyond traditional limits

When operating with vices and clamps the workpieces are never completely free and it is therefore necessary to proceed with multiple setups to complete the machining cycle.



With Quad Extra the area to be machined is always free and the force is distributed uniformly over the entire contact surface without compressing or deforming the workpiece.



The machine's capacities can be exploited at the best. The absence of vibration allows higher stock removal, longer-life for the tools, better finishing and superior accuracies.

### Exclusive know-how

The Quadsystem technology, patented by Tecnomagnete, represents the most advanced frontier of the permanent-electro magnetism.

Great strength, total security, long-term reliability, no stray flux are the great characteristics of this technology.

The system, indifferent to any electrical breakdown, is intrinsically safe.

The absence of electrical consumption during clamping allows energy savings and a "cold" condition of the magnetic surface for an absolute mechanical stability and reliability.

The force of the magnets remains constant indefinitely.



# QUAD EXTRA HE50

maximum flexibility and productivity

## FLEXIBLE

- 5 faces of the workpiece free
- all useful strokes utilized
- workpieces larger than the table

## SAFE

- constant and concentrated force
- no power supply during clamping
- no dispersion of magnetic flux

## AFFORDABLE

- no maintenance
- no machine modifications
- reduced tool consumption

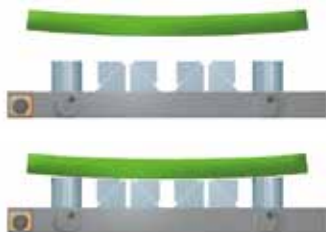
## EFFICIENT

- easy and quick positioning
- dramatic reduction of idle times
- high accuracies and tolerances

## Mobile and fix polar extensions

A flexible magnetic bed through a set of mobile and 3 fix extensions allows to achieve a:

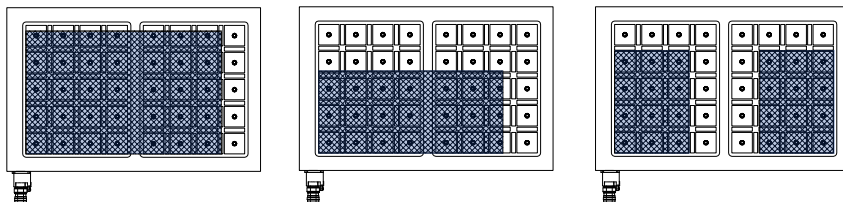
- quick, total and differentiated automatic shimming of the workpiece
- distortion-free clamping
- rapid stress release on workpiece of any size
- centesimal planarity in a single positioning
- contouring and through drilling using a bed of fix extensions



## Quick connector

QuadExtra modules are equipped with the exclusive waterproof fast connectors ERGON series, IP 67 waterproofing. Fixed connections can be provided to assemble magnetic tables.

## Machining examples



Examples of machining on a chuck model QX 406 HE50 (dimensions 400 x 620 x 51 mm).  
Workpiece in FE 275 JR, average air-gap 0.2 mm, positioned on mobile and fixed polar extensions.  
Cutting speed: 340 m/min.

	Workpiece dimensions	Max stock removal (cm <sup>3</sup> /min)	
		FACE MILLING	CONTOURING
A	480 x 300 x 50 mm	720	144
B	450 x 200 x 50 mm	400	80
C	250 x 180 x 50 mm	300	60

With workpiece in cast iron or alloyed steel, the Max stock removal values could be reduced respectively up to 20% and 50%. Side stops are recommended whenever cutting parameters must be increased.

Face milling



Contouring



Drilling



Welded frames



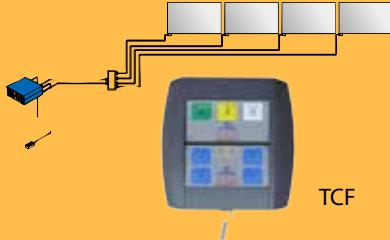
Mould machining



ST100F



ST200F



**Electronic control units**

ST series electronic controls have been designed for quick activation and deactivation cycles, to save power, to limit electromagnetic emissions and grant long reliability in time. A RS232 connector is located on the back side, to interlock the controller with the machine PLC.

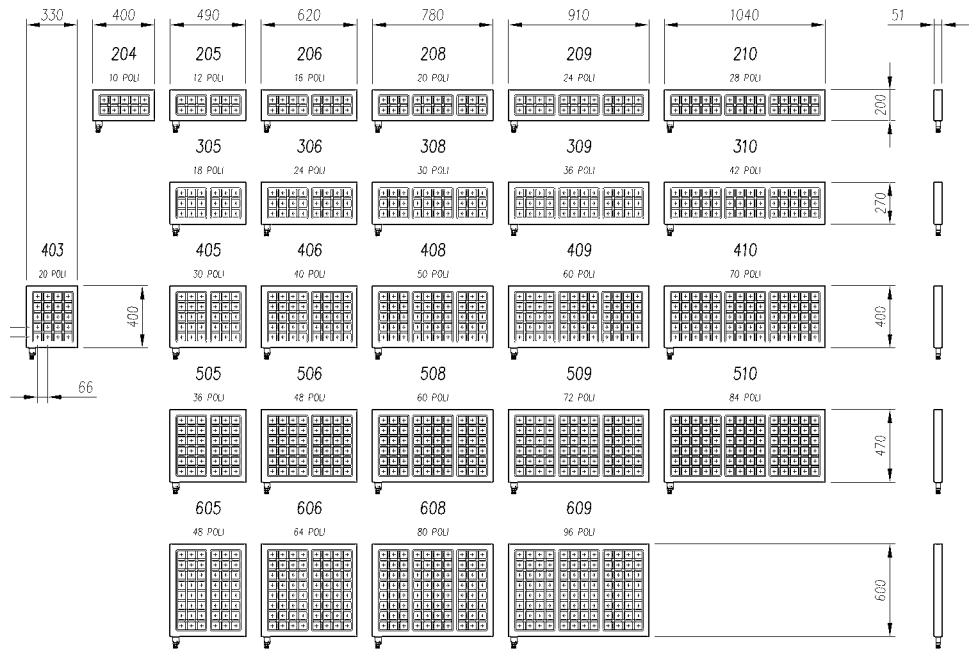
The **ST100** version at 230V is compact and light, is built with integrated push button.

The **ST200** version, available from 200V to 400V, is equipped with the practical TC remote pendant and it is suitable to activate modules of large dimensions and to control tables with multiple chucks.

**Modularity for any need**

Quad Extra is ideal to configure magnetic tables as well in horizontal and vertical. The TCF remote push-buttons let you individually activate each modules in a table.

**STANDARD DIMENSIONS**



Technical data, drawings and details are available here: [www.tecnomagnete.com/engdrw.htm](http://www.tecnomagnete.com/engdrw.htm)

**TECHNICAL CHARACTERISTICS**

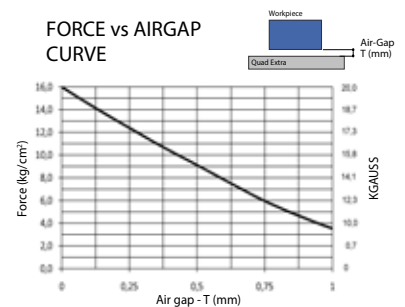
**QX HE50 Series**

- Pole dimensions: 50x50 mm
- Force/pole: 400 daN
- Up to 16 kg/cm<sup>2</sup> in active magnetic area
- 2 side slots to fix the chuck on machine table
- Minimum short-circuiting depth: 12 mm

**Control Units**

- UCS current detecting system;
- MSC machine safety connector and EC controller (DB9);
- Digital push-buttons for MAG/DEMAG cycles (ST100: built-in; ST200: remote TC series)
- Wiring chuck-controller armored cable with PVC oil-resistant coat (ST100: 3m; ST200: 5m).
- Power supply cable 4m (without connector).
- Dimensions: 135x135x75 mm (ST100); 331x275x85 mm (ST200).

**FORCE vs AIRGAP CURVE**



\*\* Data refer to mild steel workpiece in direct contact with the full magnetic area at 0mm air-gap. These values could be scaled down depending on the height of polar extensions used.

We reserve the right to make changes related to the technological progress.

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