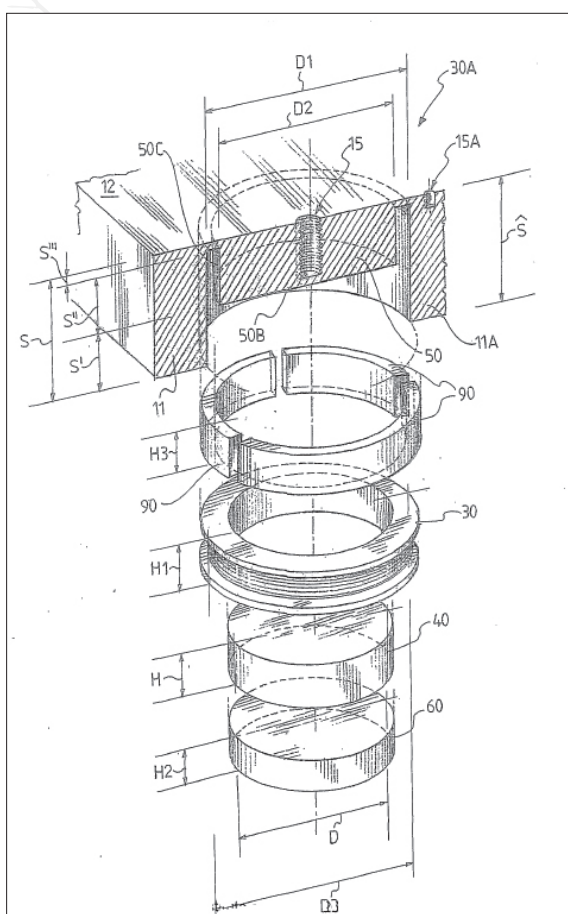


MILLTec

Milling series



**International
patent
WO 2009/130721**

MILLTEC is a MAG AUTOBLOK TECNOMAGNETE patent and represents the state of the art in the technological and constructive evolution of electro-permanent magnetic chucks for machining centers and milling machines.

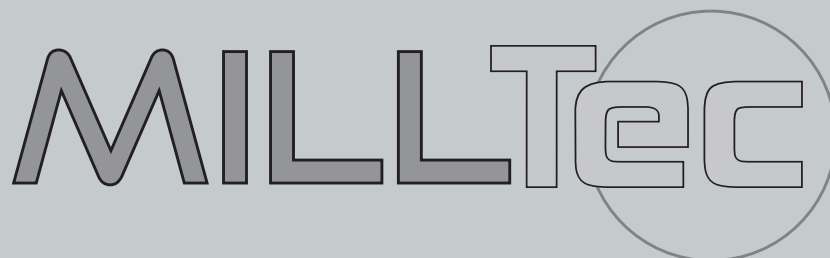
The frame is designed as a monolithic honeycomb structure and manufactured "from solid" with the same technology used for precision molds. The entire surface can be machined for the insertion of precision bushings, dowel pins or mechanical and magnetic stops to be used as a reference or to enhance the clamping force.

All of the magnetic and electrical components are inserted inside the frame in a special housing becoming an integral and solid part of the system.

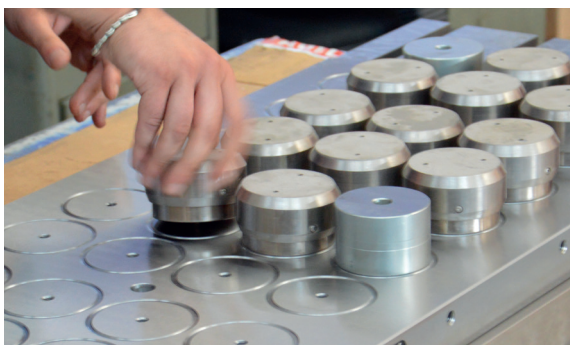
The magnetic poles are the result of a series of coring machining carried out from the lower side of the mono-block steel frame and highlighted on the upper working side by light circular engravings. The working surface is totally metallic without any presence of epoxy resin, brass or aluminum inserts.



- 1 Mono-block steel frame**
The coring machining and the assembly of the magnetic and electric circuit from the lower create an impenetrable shield from any external agent.
- 2 Light circular engravings**
To highlight the position of the magnetic polarity while maintaining a totally solid and metal surface without resin, brass or aluminum inserts.
- 3 M8 threaded holes**
For the use of fixed / mobile extensions or special accessories tailored to the application.
- 4 Quick fit connector**
Precise, safe and watertight for quick connection with the control unit.
- 5 M10 threaded holes**
To use with mechanical stops for reference.
- 6 Performance plate with technical data**
Data on voltage, current absorption, serial number.
- 7 Reversible permanent magnet AlNiCo**
- 8 Static permanent magnet Neodymium**
- 9 Encapsulated electric coil**
- 10 Hermetic closing cap**



Milling series

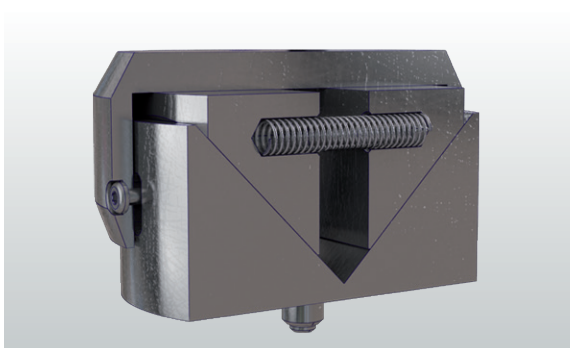
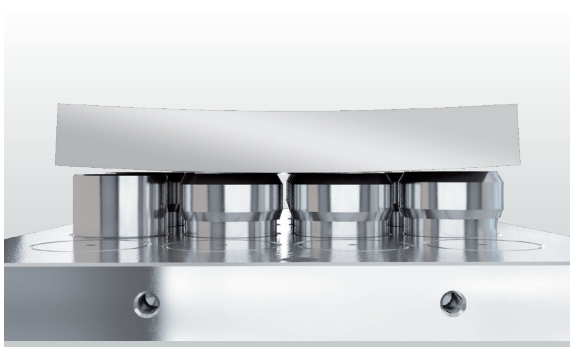


MILLTEC monolithic structure together with the RMP pole extensions create an extremely powerful clamping system for pieces on different heights or uneven surfaces, avoiding internal tensions in a simple and quick way.

It is possible to obtain the same precise flatness of the machine table on the machined piece even on large surfaces in a single set up.

RMP mobile extensions (MAG AUTOBLOK TECNOMAGNETE patent) are more efficient and easier to use.

- The internal mechanism with inclined "double surface" has a magnetic efficiency 20% higher than traditional extensions with a single inclined surface.
- The protective cover prevents chips and impurities from penetrating inside the mechanism.
- Performance remains constant without laborious maintenance for cleaning.
- The "double action" technology allows the free positioning of the extensions on the magnetic surface without the need to orient them according to the direction of the adjacent mobile extensions.
- The RMP extension, equipped with an integrated threaded pin, can be positioned quickly and easily without the possibility of error, without using tools.



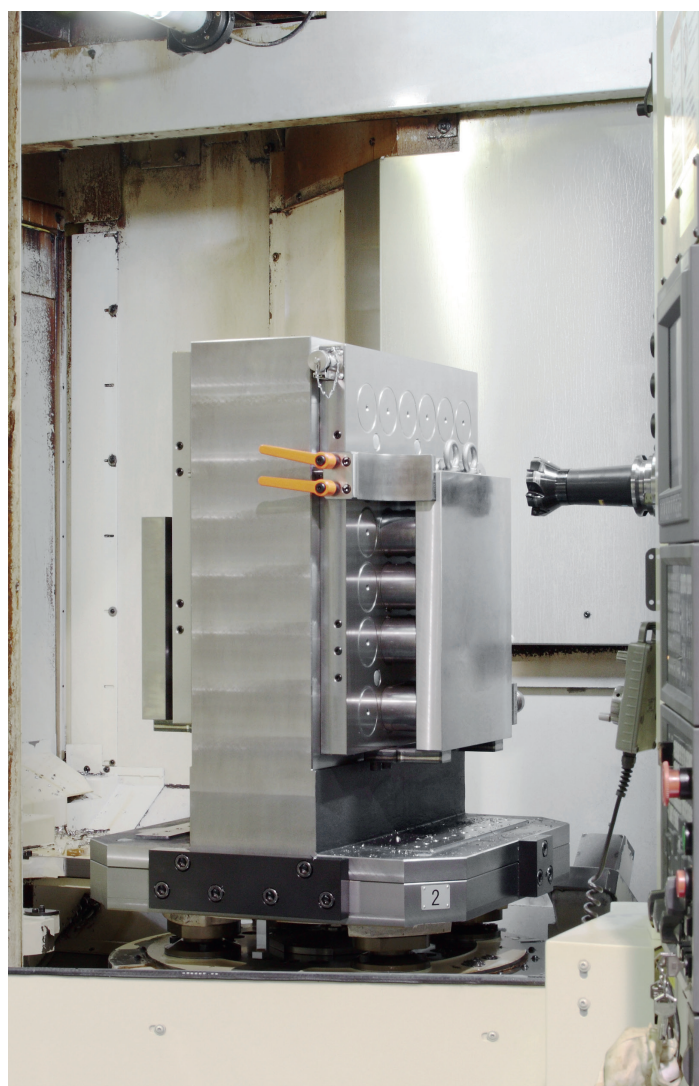
MILLTec CUBE

Milling series

MillTec GRIP can be easily installed on a tombstone to give life to MillTEC CUBE.

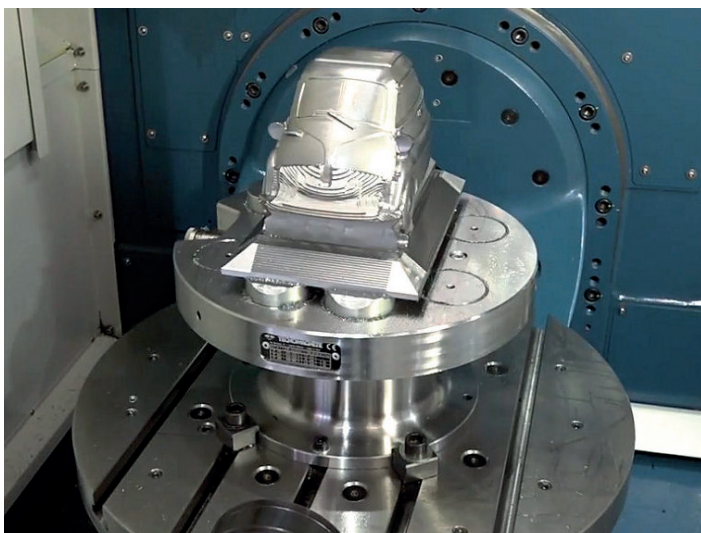
The work-holding uniformity is guaranteed by the GRIP function which allows the creation of magnetic tombstones with unique characteristics of stability, rigidity and strength.

The reduced thickness of the magnetic plate lowers the total weight and increases the productivity of the machine. Mechanical wear and stress are diminished by maximizing the machines load capacity and travel times.



MILLTec ROUND

Milling series



MillTec ROUND is the circular version optimized to be installed on 5-axis machines.

The reduced thickness and low weight facilitate the machine's performance while preserving the light and useful capacity of the machine.

Equipped with a set of pole extensions, it allows you to lift the piece from the working surface and perform:

- Complete profiling
- Undercut machining
- Through holes and pockets

MillTec ROUND is available in MillTec Duo configuration, i.e. in combination with a solid support that raises the magnetic chuck and work-piece from the machine table for better tool access.



MILLTEC BLOCK - MILLTEC HDN

MILLTEC BLOCK

It is for work-holding applications of complex designs utilizing large, thick pieces.

The system is composed of a combination of 2/4/6/8 modular elements with 4 poles, independent from each other and freely positionable on the machine table.

Each module is supplied with 4 fixed pole extensions which can be machined to better adapt to the geometry of the piece and the machining needs.

The system is modular and expandable according to application needs: it is possible to couple several MillTec Block systems together to form "magnetic grid" of different density. MillTec Block is installed directly with screws on the machine table by using the through holes present on each module or coupled "back-to-back" for self-anchoring applications.



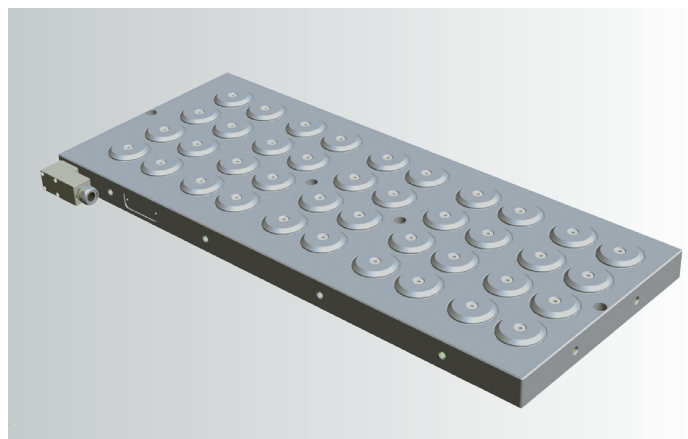
MILLTEC HDN

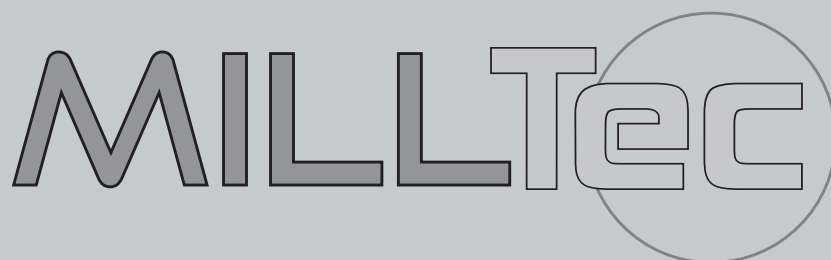
The machining of alloy steel parts with magnetic plates can lead to the persistence of a magnetic halo after the demagnetization cycle due to the chemical composition of the material.

MillTec HDN solves these problems through an innovative NUFLUX demagnetization circuit that completely removes the magnetic residue from the piece.

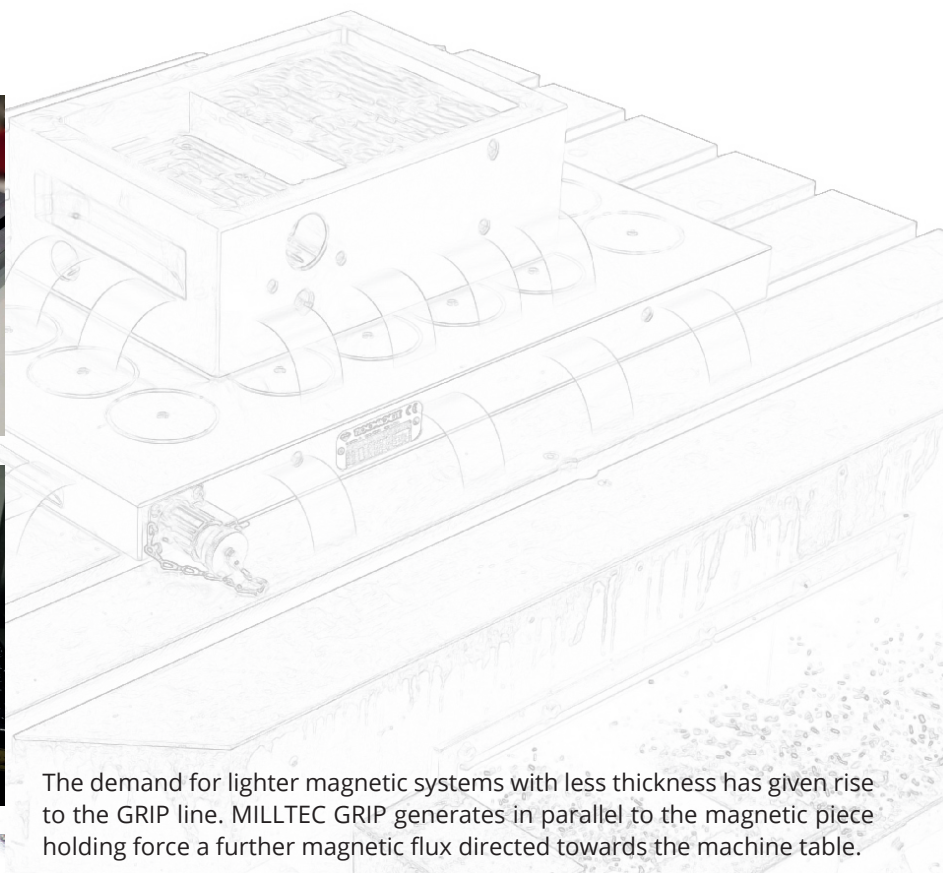
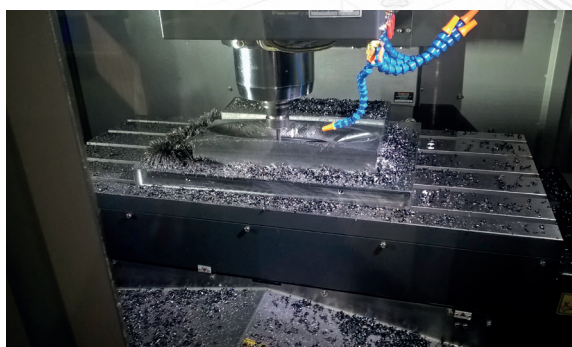
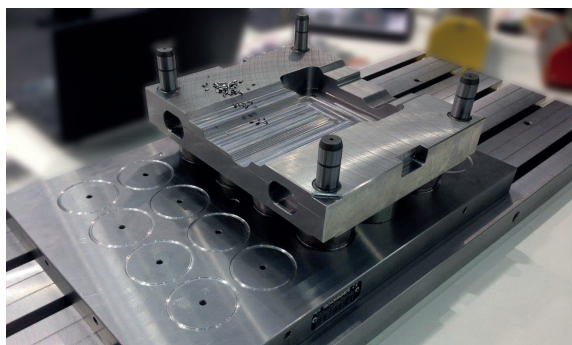
It comes complete with special conical pole extensions that concentrate the magnetic flux on the piece to be clamped for maximum performance.

The ST200 / R series control unit allows you to choose between 8 magnetization levels, thus adapting the clamping force to the characteristics of the piece itself.





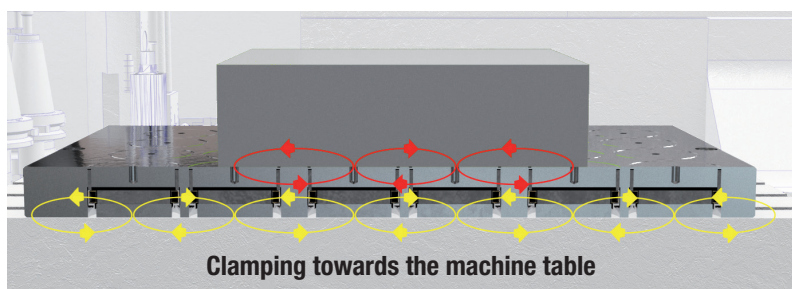
GRIP function



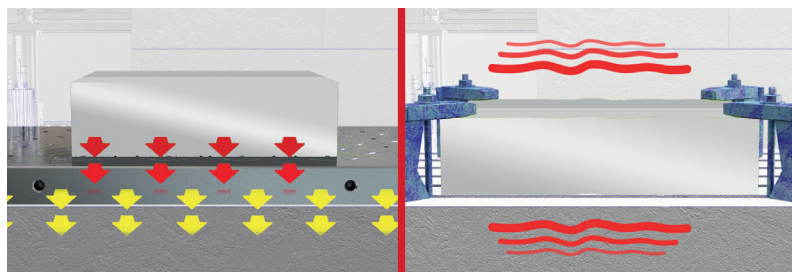
The demand for lighter magnetic systems with less thickness has given rise to the GRIP line. MILLTEC GRIP generates in parallel to the magnetic piece holding force a further magnetic flux directed towards the machine table.

The GRIP effect does not reduce the magnetic clamping force of the workpiece but is added to it to make the whole **workpiece / magnetic plate / machine table** monolithic. This determines a perfect stability, structural uniformity, eliminating vibrations and resonances during processing.

MILLTEC GRIP is suitable for all machine tools and mechanical processing, it can be easily installed by using the through holes supplied as standard and one GRIP cycle to be carried out only at the time of first installation using the appropriate ST200SK controller.



GRIP generates a magnetic self-clamping force towards the machine table, keeping the force that holds the piece unchanged. The uniform clamping force towards the machine table eliminates the possibility of bending or deformations, that are typical of traditional mechanical elements of brackets.



Clamping with magnetic GRIP

Traditional mechanical clamping

Uniformity and Quality

The elimination of machining vibrations enhances the locking uniformity characteristics of the magnetic systems: better finish quality, higher machining accuracy, faster speeds and reduced tool consumption.

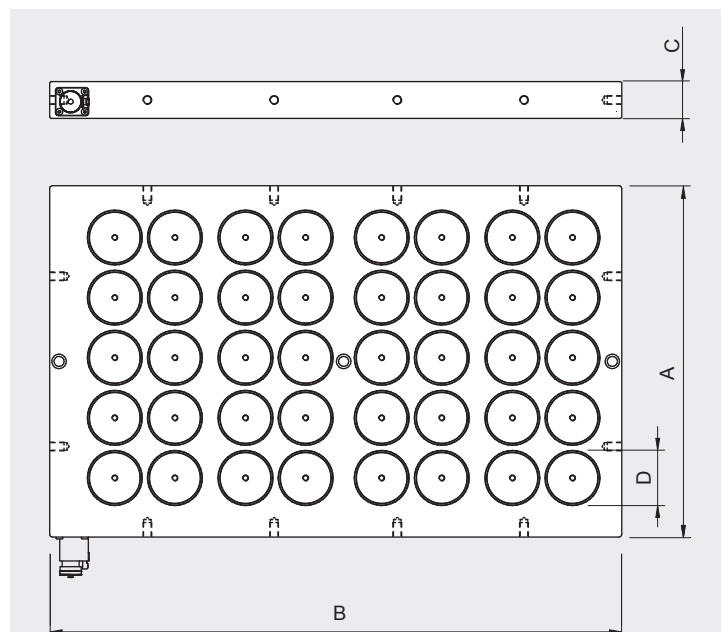
Thanks to the GRIP technology the magnetic modules can be made with extremely low thickness while maintaining high structural rigidity.

The reduced thickness and weight of MillTec GRIP increases the performance and load capacity of the machine with faster working cycles and less stress.

MillTec GRIP offers great operational advantages for a marked increase in productivity and quality.

MILLTEC BASIC MTB

Permanent-electro magnetic plates with round polarity



Standard supply

- Permanent-electro magnetic plate with mono-block frame full metallic surface and quick waterproof connector ERGON 5 pin
- Drawing of machinable areas to drill through holes for installation based on the size of the magnetic plate
- CE declaration of conformity
- Instruction manual on digital support

Recommended accessories

- Fix extension **Cod. PFR70/20** (pag. 42)
- Moving extension **Cod. PFR70/45** (pag. 42)
- Moving extension **Cod. RMP70/45** (pag. 42)

Model	Size				Poles	Clamping force	Weight
	A	B	C *	D			
	mm	mm	mm	ø mm	n.	kN	Kg
MTB 304 HD	320	420	51	70	12	77	55
MTB 306 HD	320	600	51	70	18	115	75
MTB 308 HD	320	790	51	70	24	154	95
MTB 310 HD	320	975	51	70	30	193	120
MTB 404 HD	405	420	51	70	16	103	65
MTB 405 HD	405	500	51	70	20	128	80
MTB 406 HD	405	600	51	70	24	154	95
MTB 408 HD	405	790	51	70	32	205	120
MTB 410 HD	405	975	51	70	40	257	150
MTB 506 HD	485	600	51	70	30	193	110
MTB 508 HD	485	790	51	70	40	257	145
MTB 510 HD	485	975	51	70	50	321	180
MTB 606 HD	570	600	51	70	36	231	130
MTB 608 HD	570	790	51	70	48	308	170
MTB 610 HD	570	975	51	70	60	385	210

* ± 0,5 mm

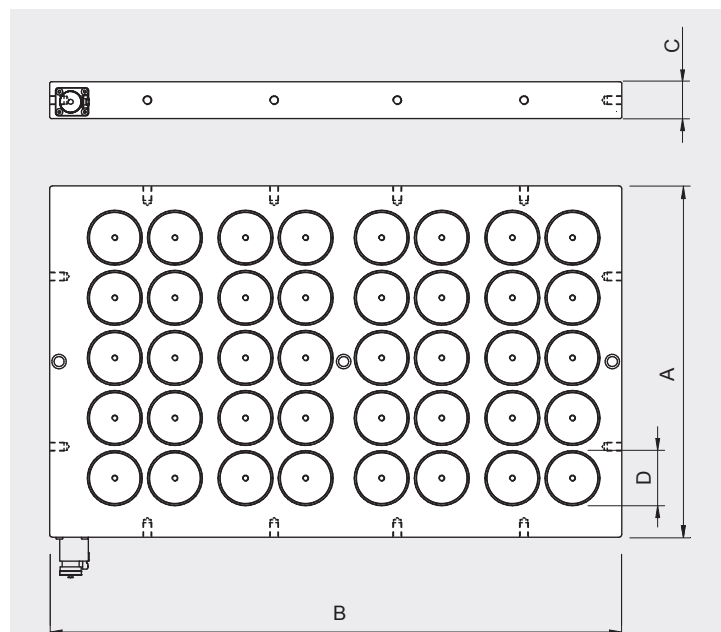
Minimum size of work-piece: 160 x 160 mm

Minimum thickness of work-piece: 18 mm

Suitable control unit **Cod. ST200FA** (pag. 45)

MILLTEC GRIP MTG

Permanent-electro magnetic plates GRIP auto clamp with round polarity



Standard supply

- Permanent-electro magnetic plate with mono-block frame full metallic surface and quick waterproof connector ERGON 5 pin
- GRIP auto clamp feature
- Drawing of machinable areas to drill through holes for
- installation based on the size of the magnetic plate
- CE declaration of conformity
- Instruction manual on digital support

Recommended accessories

- Fix extension **Cod. PFR70/20** (pag. 42)
- Moving extension **Cod. PFR70/45** (pag. 42)
- Moving extension **Cod. RMP70/45** (pag. 42)

Model	Size				Poles	Clamping force	Weight
	A	B	C *	D			
	mm	mm	mm	ø mm	n.	kN	Kg
MTG 304 HD	320	420	42	70	12	77	40
MTG 306 HD	320	600	42	70	18	115	60
MTG 308 HD	320	790	42	70	24	154	75
MTG 310 HD	320	975	42	70	30	193	95
MTG 404 HD	405	420	42	70	16	103	50
MTG 405 HD	405	500	42	70	20	128	65
MTG 406 HD	405	600	42	70	24	154	75
MTG 408 HD	405	790	42	70	32	205	95
MTG 410 HD	405	975	42	70	40	257	120
MTG 506 HD	485	600	42	70	30	193	90
MTG 508 HD	485	790	42	70	40	257	115
MTG 510 HD	485	975	42	70	50	321	140
MTG 606 HD	570	600	42	70	36	231	105
MTG 608 HD	570	790	42	70	48	308	135
MTG 610 HD	570	975	42	70	60	385	165

* ± 0,5 mm

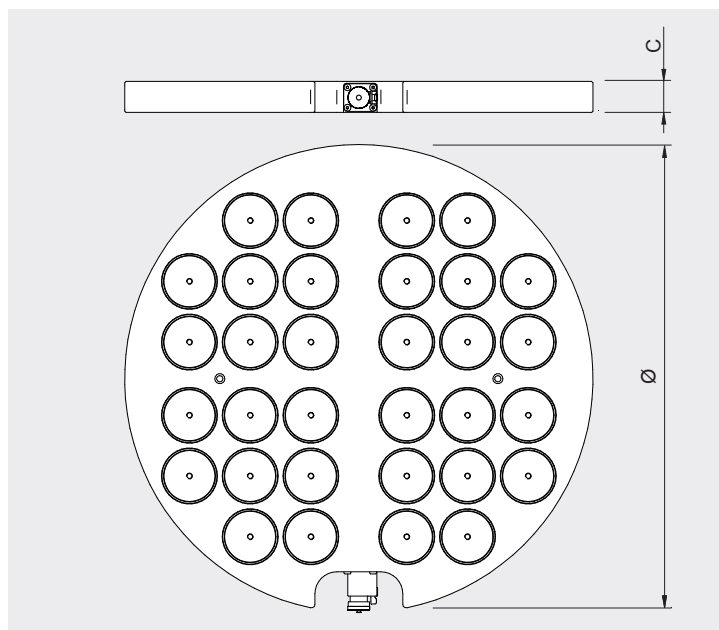
Minimum size of work-piece: 160 x 160 mm

Minimum thickness of work-piece: 18 mm

Suitable control unit **Cod. ST200SK** (pag. 45)

MILLTEC GRIP ROUND MTG/R

Permanent-electro magnetic plates GRIP auto clamp with round polarity



Standard supply

- Permanent-electro magnetic plate with mono-block frame full metallic surface and quick waterproof connector ERGON 5 pin
- GRIP auto clamp feature
- Drawing of machinable areas to drill through holes for
- installation based on the size of the magnetic plate
- CE declaration of conformity
- Instruction manual on digital support

Recommended accessories

- Fix extension Cod. PFR70/20 (pag. 42)
- Moving extension Cod. PFR70/45 (pag. 42)
- Moving extension Cod. RMP70/45 (pag. 42)

Model	Size		Poles	Clamping force	Weight
	Ø diameter	C *			
	mm	mm	n.	kN	Kg
MTG /R 400	400	42	12	77	50
MTG /R 500	500	42	16	103	65
MTG /R 600	640	42	32	205	105
MTG /R 700	740	42	44	282	135
MTG /R 800	800	42	52	324	160
MTG /R 900	900	42	68	437	195
MTG /R 1000	1000	55	80	514	310

* ± 0,5 mm

Minimum size of work-piece: 160 x 160 mm

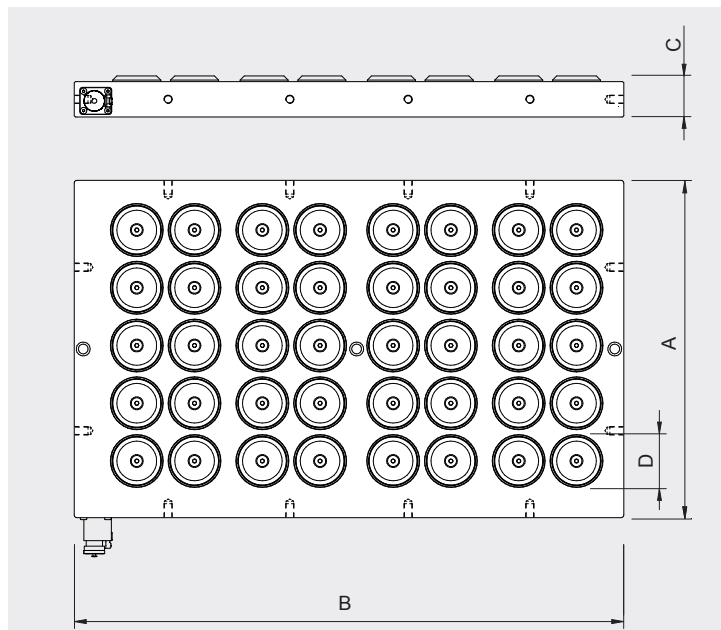
Minimum thickness of work-piece: 18 mm

Suitable control unit Cod. ST200FA (pag. 45)

Available also version **MILLTEC BASIC ROUND MTG/R**
with control unit Cod. ST200SK (pag. 45)

MILLTEC HDN

Permanent-electro magnetic plates with round polarity for pre-machined alloy steel products.



Standard supply

- Permanent-electro magnetic plate with mono-block frame full metallic surface and quick waterproof connector ERGON 5 pin
- Drawing of machinable areas to drill through holes for
- Installation based on the size of the magnetic plate
- CE declaration of conformity
- Instruction manual on digital support

Model	Size				Poles	Clamping force	Weight
	A	B	C *	D			
	mm	mm	mm	ø mm	n.	kN	Kg
MTB 304 HDN	320	420	59	70	12	21	55
MTB 306 HDN	320	600	59	70	18	32	75
MTB 308 HDN	320	790	59	70	24	43	95
MTB 310 HDN	320	975	59	70	30	53	120
MTB 404 HDN	405	420	59	70	16	28	65
MTB 405 HDN	405	500	59	70	20	36	80
MTB 406 HDN	405	600	59	70	24	43	95
MTB 408 HDN	405	790	59	70	32	57	120
MTB 410 HDN	405	975	59	70	40	71	150
MTB 506 HDN	485	600	59	70	30	53	110
MTB 508 HDN	485	790	59	70	40	71	145
MTB 510 HDN	485	975	59	70	50	89	180
MTB 606 HDN	570	600	59	70	36	64	130
MTB 608 HDN	570	790	59	70	48	85	170
MTB 610 HDN	570	975	59	70	60	107	210

* ± 0,5 mm

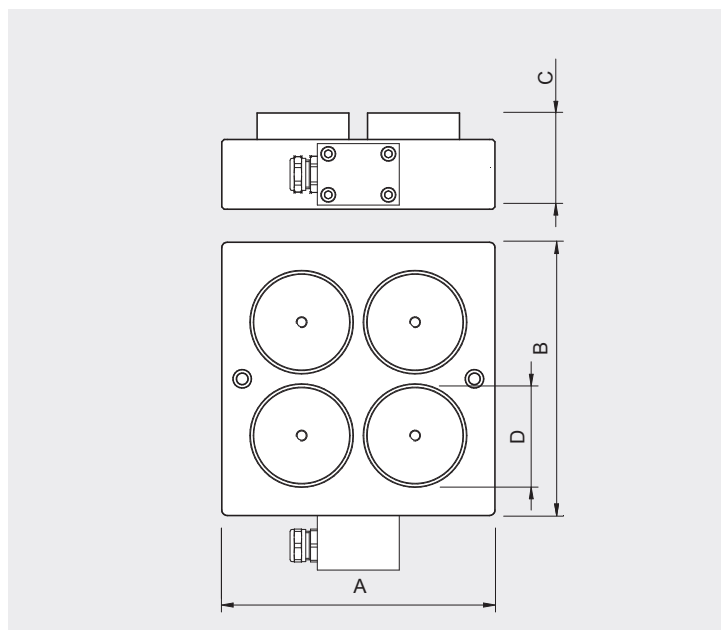
Minimum size of work-piece: 160 x 160 mm

Minimum thickness of work-piece: 12 mm

Suitable control unit **Cod. ST200R** (pag. 45)

MILLTEC BLOCK

Permanent-electro magnetic plates with round polarity



Standard supply

- Permanent-electro magnetic plate with mono-block frame full metallic surface, waterproof hard-wired with 5 m cable
- Installation holes (n.2) on each module
- n.4 fix extensions type PFR 70/20 on each module
- n.1 junction box with quick connector
- CE declaration of conformity
- Instruction manual on digital support

Model	Size			Modules	Poles/module	Clamping force	Weight
	A	B	C *				
	mm	mm	mm	n	n.	kN	Kg
MTB BK2 HD	200	200	71	2	4	51	30
MTB BK4 HD	200	200	71	4	4	103	60
MTB BK6 HD	200	200	71	6	4	154	90
MTB BK8 HD	200	200	71	8	4	205	120

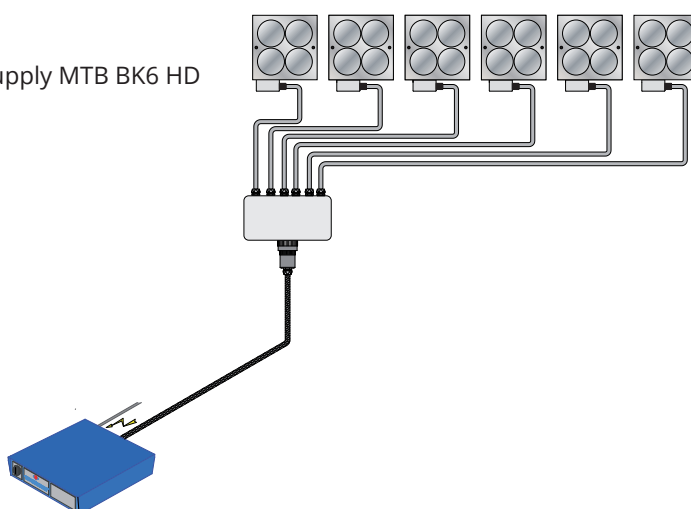
* $\pm 0,5$ mm

Minimum size of work-piece: 160 x 160 mm

Minimum thickness of work-piece: 18 mm

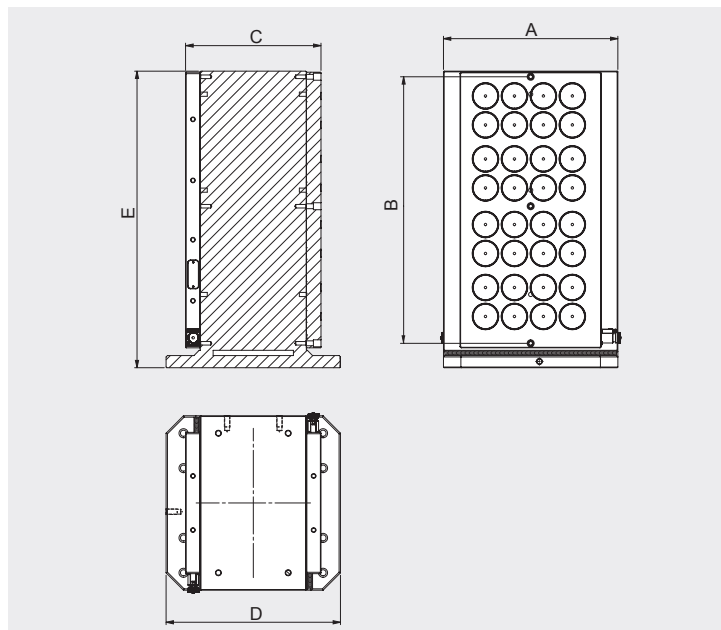
Suitable control unit **Cod. ST200FA** (pag. 45)

Example of supply MTB BK6 HD



MILLTEC CUBE

Permanent-electro magnetic tombstones with round polarity



Standard supply

- Cubo (tombstone) with 2 or 4 faces in cast iron, electro-welded or in aluminum
- Permanent-electro magnetic plate with mono-block frame full metallic surface and quick waterproof connector ERGON 5 pin
- Drawing of machinable areas to drill through holes for installation based on the size of the magnetic plate
- CE declaration of conformity
- Instruction manual on digital support

Recommended accessories

- Fix extension **Cod. PFR70/20** (pag. 42)
- Moving extension **Cod. PFR70/45** (pag. 42)
- Moving extension **Cod. RMP70/45** (pag. 42)

Model	Size			Magnetic faces	Poles per face	Clamping force per face	Weight
	A	B	C - D - E				
	mm	mm	mm	n	n.	kN	Kg
MTB 404 HD CUBE	405	420	on design	1, 2 or 4	16	103	on design
MTB 405 HD CUBE	405	500	on design	1, 2 or 4	20	128	on design
MTB 406 HD CUBE	405	600	on design	1, 2 or 4	24	154	on design
MTB 408 HD CUBE	405	790	on design	1, 2 or 4	32	205	on design
MTB 506 HD CUBE	485	600	on design	1, 2 or 4	30	193	on design
MTB 508 HD CUBE	485	790	on design	1, 2 or 4	40	257	on design
MTB 606 HD CUBE	570	600	on design	1, 2 or 4	36	231	on design
MTB 608 HD CUBE	570	790	on design	1, 2 or 4	48	308	on design

* $\pm 0,5$ mm

Minimum size of work-piece: 160 x 160 mm

Minimum thickness of work-piece: 18 mm

Suitable control unit **Cod. ST200FA** (pag. 45)

Available special size on demand also in configuration **QUADEXTRA HD, HE, HP, HDN**



Technical characteristics and dimensions are not obliged.
MAG AUTOBLOK TECNOMAGNETE Spa may give in every time some modifications



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