Product name : Permanent magnetic vise TMJ-500

PERFORMANCE PARAMETERS

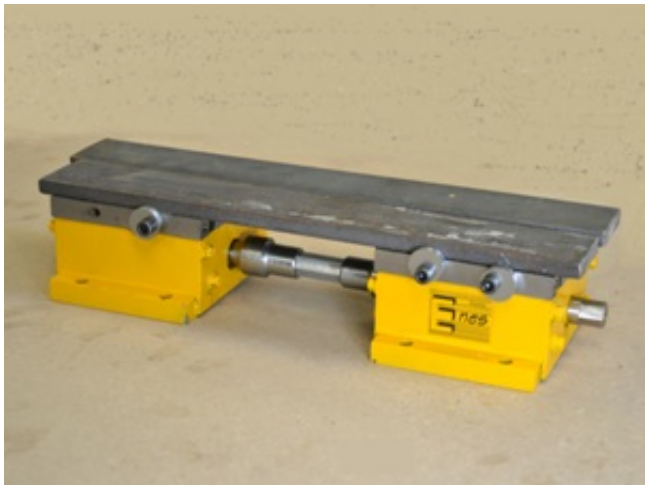
Length	200 [mm]
Width	150 [mm]
Height	71 [mm]
Magnet type	Neodymium
Maximal hoisting capacity	500 [kg]
Maximum working temperature	≤ 80 °[C]
Pole layout	transverse to the machining direction, 3 poles (N-S-N)
With separable magnetic field	yes
Magnetic field switcher	yes, one for all planes
Handling mode	manual use
For the small parts holding	yes
Number of axis to attach details	1
Weight	9.3 [kg]

TMJ series one-sided permanent magnetic vises have a wide range of applications in grinding, cutting, drilling and milling operations both on conventional and CNC machine tools. The vise is built on the basis of durable neodymium magnets. It does not require any electrical power supply, so it is completely safe for a user.

The body of the chuck is made from a uniform steel block with two pole pieces screwed to it. Additionally, eccentric packing plates are mounted on pole pieces for better clamping of a workpiece in the horizontal plane at high machining forces. The magnetic field can be turned on and off with the use of a box wrench by turning it by 180° to the right or to the left respectively.

Universal one-sided magnetic vises are designed for clamping ferromagnetic workpieces (i.e. iron, structural steel, alloy steel, cast iron). The rigidity of the vise and the power of neodymium magnets allow clamping heavy workpieces, while the small dimensions allow machining a workpiece from five sides in a single clamping position. TMJ series vises are resistant to the action of water and coolants with pH > 8.7.

Pivots of the magnetic roller available on both sides allow combining two or more vises into one set, thanks to which it is possible to clamp long workpieces.

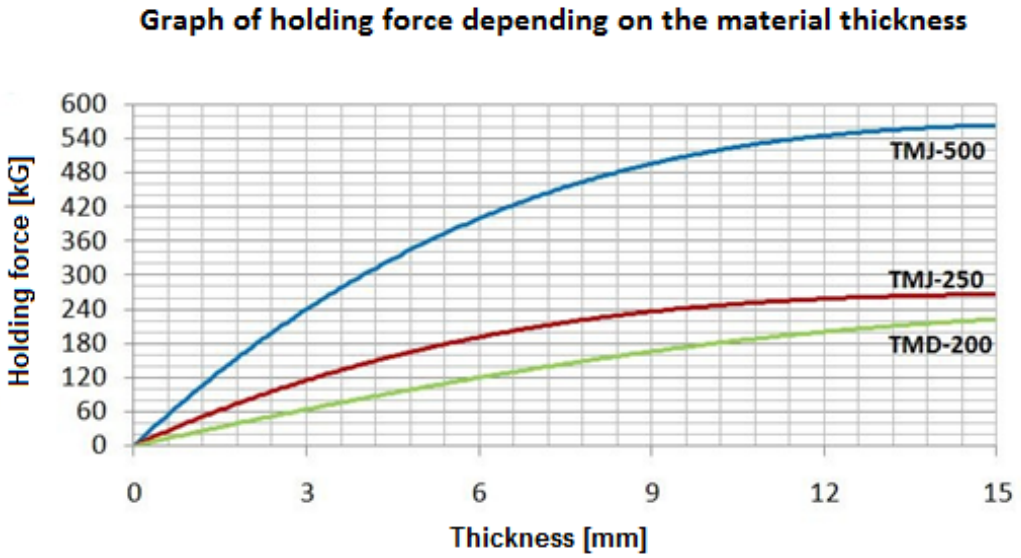


Parameters that affect the clamping force:

- type of material - the higher the iron content in steel, the better magnetic properties:
  - low-carbon steel (St3s) - 100%
  - high-carbon steel - 90%
  - low alloy steel - 75%
  - cast iron - 50%

- surface quality - the size of the non-magnetic gap between pole pieces and the workpiece clamped (the bigger the gap, the lower the clamping force). Milled plates of St3s steel were used for the tests.

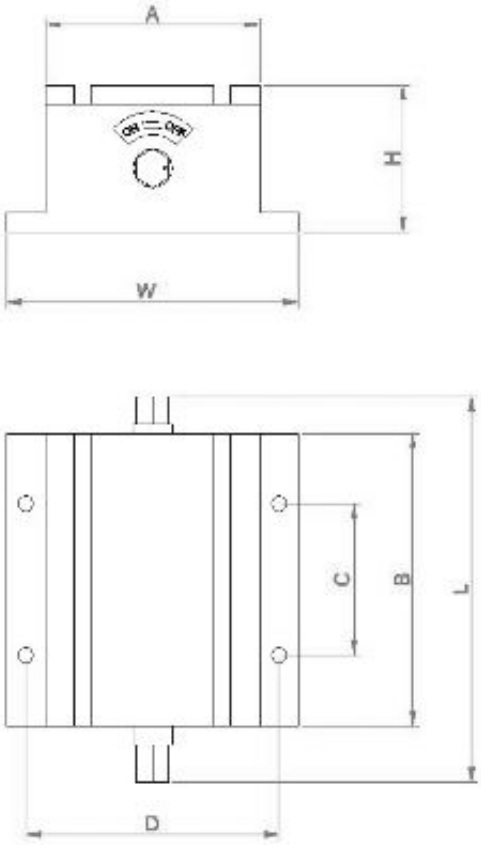
- thickness of the material clamped - in order to obtain 100% of the clamping force, the workpieces should have a thickness of at least 15 mm.



Tests conducted for steel plates made of St3s and the quality of surface obtained after milling

- shape of workpieces clamped - in order to obtain the full holding force, the size of the workpiece clamped should be no less than the working area of the chuck.

Schematic diagram and dimensions of available TMJ chucks are presented below:



Type of the chuck	Dimensions [mm]						
	A	B	L	W	H	C	D
TMJ-250	102	106	142	128	65	55	115
TMJ-500	110	150	200	150	76	-	-