Product name : Lifting magnet CM1000

PERFORMANCE PARAMETERS

Length	272 [mm]
Width	145 [mm]
Height	145 [mm]
handle length	300 [mm]
Material	Neodymium
maximal hoisting capacity	1000 [kg]
minimal thickness of lifted element	10
Maximum working temperature	80 °[C]
with separable magnetic field	yes
magnetic field switcher	tak, jeden dla wszystkich płaszczyzn
handling mode	ręczny
for the small parts holding	yes
Weight	40 [kg]

PRODUCT WILL BE SENT ONLY AFTER A CLIENT HAS MADE A COMPULSORY PREPAYMENT TO OUR BANKING ACCOUNT. AFTER ORDER PLACEMENT, THE CLIENT WILL RECEIVE BY E-MAIL CONFIRMATION CONTAING A LINK FOR PRINTING OF A PRO-FORMA INVOICE.

Nominal hoisting capacity: 1000 [kg]

Maximal hoisting capacity: >3500 [kg] – safety coefficient for static tests is 3,5.

DO NOT LIFT LOADS THAT ARE HEAVIER THAN THE NOMINAL HOISTING CAPACITY !

Lifting magnets are magnetic systems assembled by incorporation of stable magnets. They are used for lifting and moving heavy iron and magnetic steel elements. Devices of this kind do not require any external nor internal power supply. Magnetic field is switched on and off as a result of adjustment with a hand-operated lever. The lifting magnets' magnetic field is produced by sintered neodymium magnets of the latest generation. Thanks to their reduced dimensions and relatively small weight they are very handy and user-friendly. Lifting magnets may prove to be very useful in steel depots, plants, warehouses, workshops, docks and wherever they may be of service while moving items such as pipes, metal sheets and plates, as well as other large iron elements. Lifting magnets with CM series come with an two-year guarantee and "CЄ" compliance declaration.

Hoisting capacity of each lifting magnet depends on the following factors:

- thickness and form of an element lifted (for each lifting magnet dependence of hoisting capacity in relation to lifted elements

thickness is given). For pipes and rollers nominal hoisting capacity is reduced by approx. 50 per cent. The minimum thickness of an element for CM1000 is 10 mm,

Elements which are too thin can be attracted too weakly as the lifting magnet's magnetic field is not used fully. Only a small fraction of the magnetic field is enough to saturate very thin metal sheet, while bigger part of magnetic flux penetrates out of the sheet to the environment. In case like that the lifting magnet's magnetic circuit is not optimally compact. Moreover, thin elements tend to change their shape and their surface of contact with the lifting magnet becomes linear, which reduces dramatically the hoisting capacity strength. The most effective hoisting capacity comes with adequately thick elements that close the magnetic circuit properly, using all the magnetic flux of the lifting magnet. The following template gives optimal thickness of lifted elements for each type of the lifting magnets (i.e. thickness for which hoisting capacity efficiency is 100%).

Name	**Thickness of lifted element with which hoisting capacity of lifting magnet remains 100%**
CM 100	15 mm
CM 200	15 mm
CM 300	20 mm
CM 600	40 mm
CM 1000	40 mm
CM 1400	60 mm
CM 2000	80 mm

Before starting of work carefully consider per cent dependency of hoisting capacity as function of the lifted steel (efficiency of hoisting capacity curves may be found in a lifting magnet housing).

- size of an air gap comprised between the lifting magnet surface and surface being lifted (for each lifting magnet characteristics of hoisting capacity as function of air gap size is given),

Steel thickness [mm]	Non-magnetic gap between the lifting magnet poles and lifted element			
	D = 0,0	D = 0,1	D = 0,3	D = 0,5
	Nominal hoisting capacity of lifting magnet [kg]			
40	1005	980	720	665
20	750	686	557	514
15	530	460	363	351
10	298	266	227	223

The hoisting capacity depends on air gap comprised between magnet legs of the lifting magnet and a lifted element. If surface unevenness of a load R is smaller than 6,3 mm, the air gap next to the lifting magnet surface disappears and the hoisting capacity efficiency is not decreased. Such is the case with very clean, flat and polished surface. If, however, surface unevenness of lifted materials Ra is bigger than 6,3 mm, the air gap between the lifting magnet and element lifted should be considered. For rusted surfaces after rolling we may allow an air gap in a range of (0,1-0,3 mm), while for uneven porous surfaces the air gap may be predicted in a range of (0,3-0,5 mm).

Before starting of work find information about per cent dependency of hoisting capacity as function of the air gap (efficiency of hoisting capacity curves may be found in a lifting magnet housing).

- quality of lifted steel (generally, the bigger proportion of iron, the bigger hoisting capacity: efficiency of hoisting capacity coefficient for low-carbon steels is 1,0 ; for high-carbon steels - 0,90; for low-alloyed steels - 0,75; for cast iron 0,50),

Different ferromagnetic materials react with magnets in a different way (they have particular magnetic properties). Some of them are attracted more intensively, others – less intensively. This depends on structure as well as chemical composition of a given material. For example, pure iron (Armco) is attracted more strongly than carbon steels, and carbon steels are attracted more strongly than cast iron.

Name	Nominal hoisting capacity [kg]	Capacity limit for the material *) [kg]			
		Steel (low-carbon)	Steel (high-carbon)	Steel (low-alloyed)	Cast iron
CM 100	100	100	90	75	50
CM 200	200	200	180	150	100
CM 300	300	300	270	225	150
CM 600	600	600	540	450	300
CM 1000	1000	1000	900	750	500
CM 1400	1400	1400	1260	1050	700
CM 2000	2000	2000	1800	1500	1000

*) *such is admissible hoisting capacity for an element made of given material provided it is not decreased by additional factors (thickness, surface quality, shape).*

- environmental temperature as well temperature of lifted elements (it cannot be higher than **80°C**).

Lifting magnets from CM series are not classified as a source of noise – their level of acoustic pressure does not exceed 70 [dB].