

TPM PERMANENT LIFTING MAGNETS

TPM permanent lifting magnets are ideal tools for easy, quick and economical transport of heavy objects made from ferro-magnetic material. Typical operating areas are workshops and warehouses, loading and unloading of machines as well as construction of jigs and fixtures.

Factors that reduce the magnetic clamping force:-

Air gap: High magnetic forces created by the TPM allow the magnet to clamp components through the air gap, however, air gaps will reduce the magnetic performance as they provide a barrier between the contact surfaces. Air gaps occur in a number of different ways such as paint, dust and heavy mill scale. Poorly machined surfaces also constitute an air gap. Please down rate the magnet capacity in accordance with the adhesive force/air gap diagram below.

Material thickness: If the TPM is used to lift plates thinner than the recommended minimum thickness, the clamping forces will be significantly reduced. Performance curves can be identified in conjunction with the adhesive force/flat thickness diagram below:

Contact area: Full lifting capacity can only be achieved when the magnet has full contact area with the component being lifted. If the contact surface has holes in or is uneven then the performance will be affected accordingly. Always carry out a trial lift in these circumstances to establish correct lifting before transporting the load.

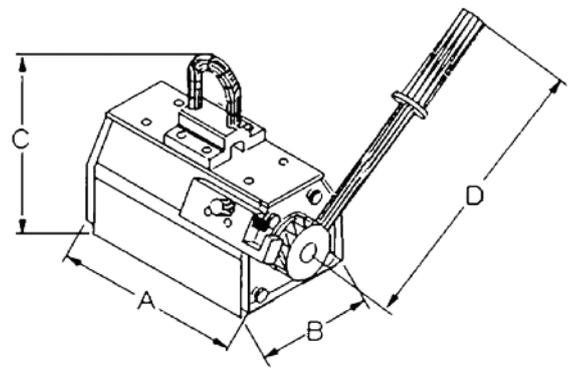
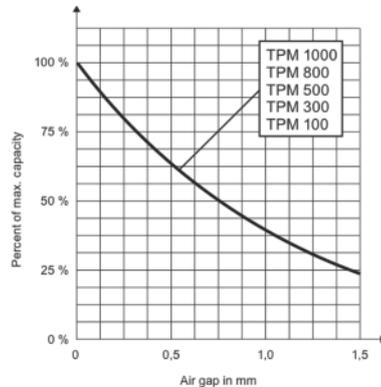
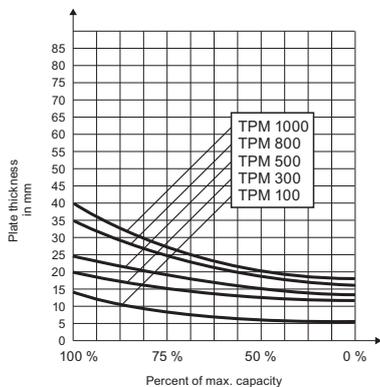
Material type: Certain materials have different abilities to carry magnetism. For materials other than mild steel a reduction factor must be applied in order to calculate the effective clamping force.

Typical values:

Ferrous alloy steels 0.8
High carbon steels 0.7
Cast iron 0.55

Examples of reduced WLL:

Mild steel 500g
Cast iron 500kg x 0.55 = 275kgs



Model	Flat material			Round material			Tear off force kg	Dimensions				Weight kg
	Maximum capacity WLL kg**	Minimum thickness to obtain max. WLL mm**	Maximum length of material mm	Maximum capacity WLL kg**	Diameter mm	Maximum length of material mm		A mm	B mm	C mm	D mm	
TPM 0.1	100	14	2000	50	40-300	2000	300	122	69	185	160	5.3
TPM 0.3	300	20	2500	150	60-300	2500	900	192	95	225	250	13.5
TPM 0.5	500	24	3000	250	60-400	3000	1500	232	120	270	250	27.5
TPM 0.8	800	34	3500	400	60-400	3500	2400	302	154	320	450	52
TPM 1.0	1000	40	3500	500	80-400	3500	3000	332	154	320	450	57

**Maximum lifting capacity is achieved by using mild steels with the noted minimum thickness.
Mild steel st37 - Fe 360 to BS EN 10 025 1990 (DIN 17100).