

# 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.

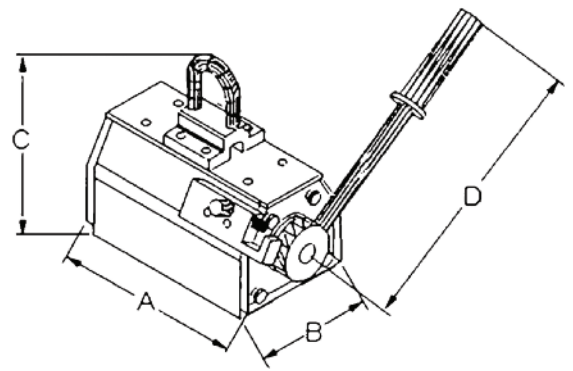
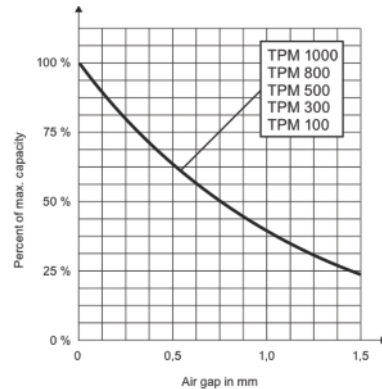
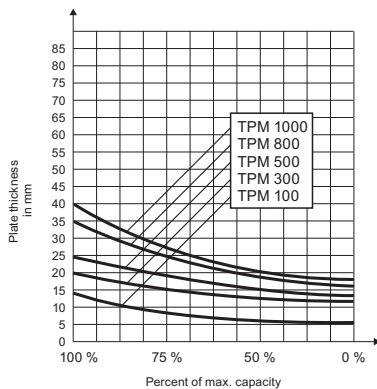
**Material type:** Certain materials have different abilities to carry magnetism. For materials other than mild steel a reduction factor must be applied in order to calculate the effective clamping force.

### 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	Dimensions				Weight	Price
	Maximum capacity WLL	Minimum thickness to obtain max. WLL	Maximum length of material	Maximum capacity WLL	Diameter	Maximum length of material		A	B	C	D		
	kg**	mm**	mm	kg**	mm	mm	kg	mm	mm	mm	mm	kg	£
TPM 0.1	100	15	2000	50	200-300	2000	300	122	69	185	160	6	£144
TPM 0.3	300	19	2500	150	200-300	2500	900	192	95	225	250	15.5	£352
TPM 0.5	500	25	3000	250	200-400	3000	1500	232	120	270	250	29.5	£467
TPM 0.8	800	35	3500	400	200-400	3500	2400	302	154	320	450	53	£731
TPM 1.0	1000	40	3500	500	200-400	3500	3000	332	154	320	450	60	£892

\*\*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).



## Permanent load lifting magnets model TPM

### Capacity

100 - 2000 kg (Flat material),  
50 - 1000 kg (Round material)

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

Compact design of the units for a large number of applications.

The load is not affected mechanically which allows lifting of flat as well as round material. The efficient magnet body provides strong lifting capacity at low dead weight. The permanent magnets do not require electric energy and will leave only minor residual magnetism on the material after use.

The magnets are activated / deactivated easily by turning a locking lever. In activated condition the hand lever will be safely locked and thus prevent unintended demagnetising.

The selection of the appropriate magnet model should be made under consideration of the varying conditions of the contact surface, kind of material alloy and plate thickness / bar diameter (see table).

**In order to achieve a maximum capacity, the contact surface should be bright and free from dirt, oil, grease, scale, corrosion, paint etc.**



## Technical data model TPM

Model	EAN-No. 4025092*	Flat material capacity** max. kg	Material thickness min. at max. capacity mm	Flat material length of material max. mm	Round material capacity** max. kg	Round material diameter mm	Round material length of material max. mm	Test load kg	Weight kg
TPM 0,1	*558853	100	14	2000	50	200 - 300	2000	300	6.8
TPM 0,3	*558860	300	20	2500	150	200 - 300	2500	900	15.5
TPM 0,5	*558877	500	24	3000	250	200 - 400	3000	1500	30.6
TPM 0,8	*558884	800	34	3500	400	200 - 400	3500	2400	56.0
TPM 1,0	*558891	1000	40	3500	500	200 - 400	3500	3000	61.0
TPM 2,0	*190367	2000	55	3500	1000	200 - 400	3500	6000	126.0

\*\*gemessen auf ziehblankem Material St 37

## Dimensions model TPM

Model	TPM 0,1	TPM 0,3	TPM 0,5	TPM 0,8	TPM 1,0	TPM 2,0
A, mm	122	192	232	302	332	392
B, mm	69	95	120	154	154	196
C, mm	185	225	270	320	320	420
D, mm	160	250	250	450	450	450

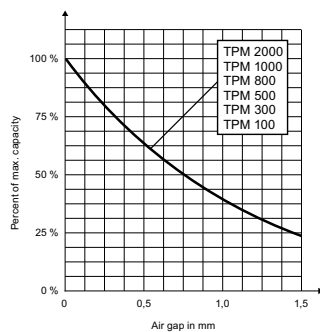


Diagram: WLL/air gap

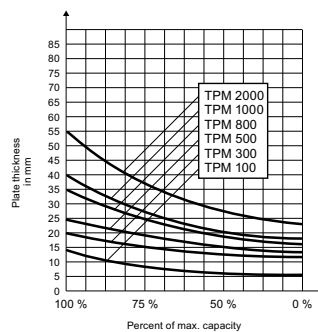
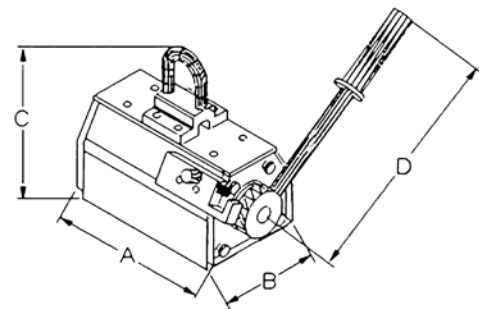
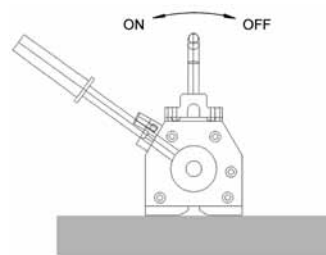


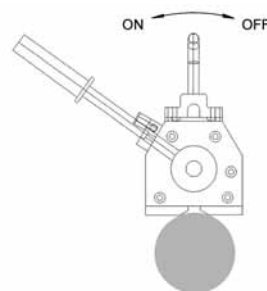
Diagram: WLL/material thickness



Model TPM



Correct use On/Off



Reduction of capacity	% of capacity
Temperature ≤ 60 °C	100 %
Humidity ≤ 80 %	100 %
St 52	95 %
Alloy steel	80 %
High carbon steel	70 %
Cast iron	45 %
Nickel	45 %
Austenitic, stainless steel	0 %
Brass	0 %
Aluminium	0 %

