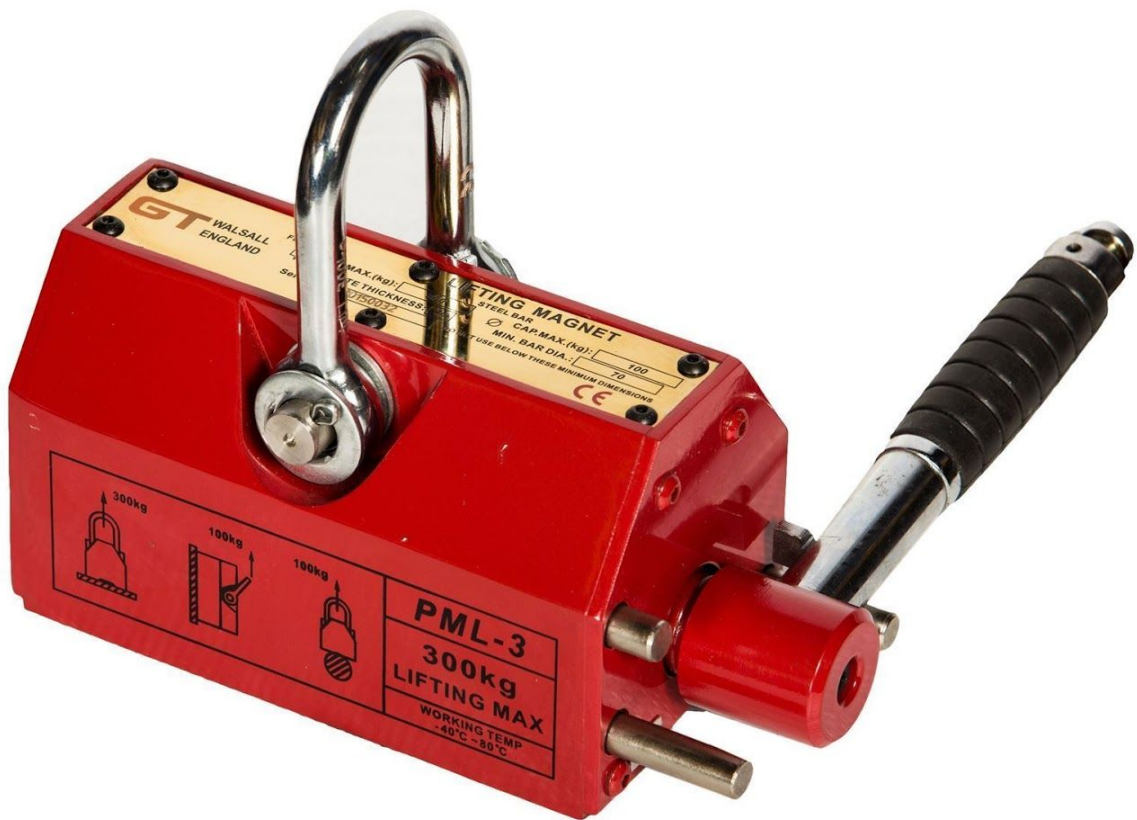


PERMANENT MAGNETIC LIFTER OPERATING INSTRUCTIONS



NOTE: Please read the operating instructions carefully before using this product. If any doubt remains, please contact our Head Office for more information.

APPLICATION AND FEATURE

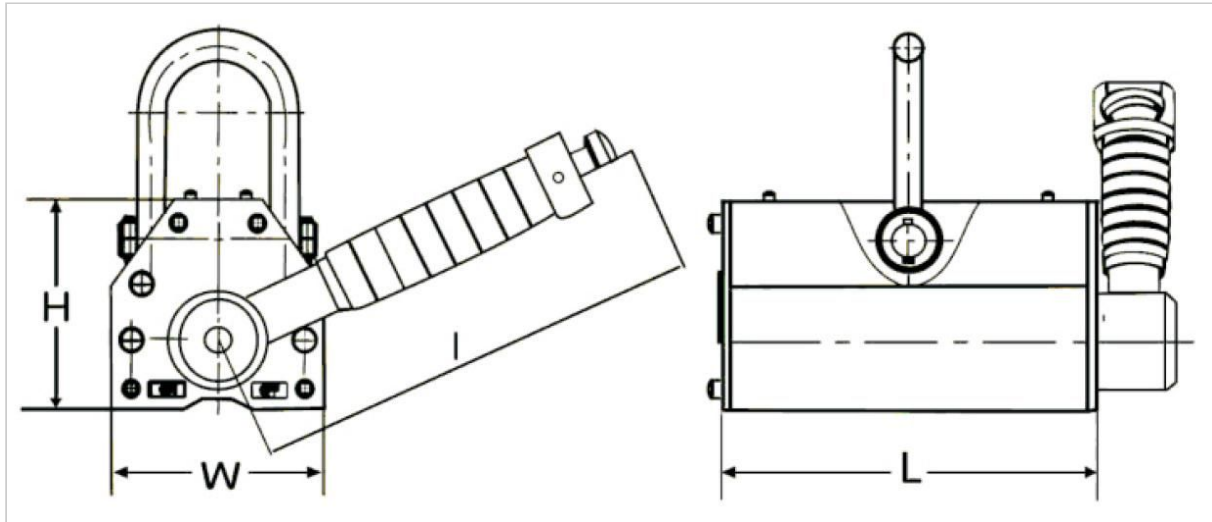
Model PML (permanent magnetic lifter) is mainly used to fasten or hold steel/iron workpieces during lifting or handling operations. It is capable of holding steel/iron plate and cylindrical steel.

They are widely used as hoist devices in factories but are safe and convenient in many other workplaces. Easy and safe in operation, convenient for carrying goods at docksides, warehouses and within commercial and transportation industries. By using them, you can improve working environments and practices and enhance efficiency greatly

CONSTRUCTION & SPECIFICATION

Construction: Model PML (permanent magnetic lifter) has a strong magnetic circuit produced by Neodymium Iron Boron (NdFeB) magnetic materials. The ON or OFF of the magnetic circuit is controlled by turning the main handle. There is a locking key in the handle to offer safe control and a Vee slot on the bottom surface for a cylindrical workpiece to be held in place.

2.1 Specifications



Code	Model	Rated Capacity Plate (kgs)	Cylindrical Capacity (kgs)	Tear Off Force (kgs)	L (mm)	W (mm)	H (mm)	I (mm)	Working Temperature (°C)	Net Weight (kgs)
T2801	PML-1	100	30	350	92	64	70	142	-40 to +80	3
T2803	PML-3	300	100	1050	165	88	96	176	-40 to +80	10
T2806	PML-6	600	200	2100	236	118	120	219	-40 to +80	24
T2810	PML-10	1000	300	3500	264	168	168	266	-40 to +80	50
T2820	PML-20	2000	600	7000	378	230	217	462	-40 to +80	125

OPERATION

3.1 Before any use or operation, you should clean the surface of the workpiece being lifted and ensure that the bottom of the lifting magnet is free of any dirt or debris; such as rust and or metallic burr. Place the lifter on the surface of the workpiece and make sure the centreline of the lifter and the workpiece overlap clearly. Then turn the handle from 'OFF' to 'ON' until the inner slide key of handle passes the lifter's stop pin. Make sure the handle's inner slide key is automatically locked by the stop pin. Only after all these instructions have been followed should the operator begin to use the lifting magnet.

3.2 During any lifting and handling operation, overloading is totally prohibited. It is also forbidden to pass underneath or stand under the workpiece that is being held by the magnetic lifter. The temperature of the workpiece and the surrounding area should be between no less than -40°C or no more than 80°C . It's unsafe to use the lifter in an area where heavy vibration could occur or in an area that could cause an impact to the lifter during the course of use or during a lifting operation.

3.3 When lifting cylindrical workpieces, ensure the workpiece is in contact with the lifter's Vee slot lines. The capacity for cylindrical iron/steel is generally only 30% of the unit's rated capacity for standard flat plate e.g. plate capacity WLL 100kgs would equate to cylindrical capacity WLL 30kgs.

3.4 After every lifting or handling operation is finished, press down the button of the handle to disengage the slide key from the stop pin and accordingly turn the handle from "ON" to "OFF" until it is released. At this point the lifter is in a neutral condition and it can be safely taken away from the workpiece that was being lifted.

MAIN FACTORS OF CONSIDERATION FOR THE SAFE USE OF A MAGNETIC LIFTER

4.1 The thickness and surface of the workpiece is critical.

Before **EACH AND EVERY** operation, it is necessary to find out its effective capacity of the lifter depending on the thickness of the item being Lifting. According to STEEL THICKNESS percentage curve on the chart on this instruction guide, the user should determine the capacity and assess the lift requirement. Also care should be taken to make a clear estimate to determine the effective capacity of the lifter depending on the workpiece surface condition according to the AIR GAP percentage curve detailed in the chart on this instruction guide.

For assistance with the surface quality, if the roughness(Ra) is less than $6.3\mu\text{m}$, the effective lifting capacity can be as the maximum i.e.100%. However, if the surface roughness(Ra) is above $6.3\mu\text{m}$ or even worse, the air gap between the lifter and workpiece should be closely calculated and estimated to affect the lifting capacity.

To find out the effective capacity on this AIR GAP please closely study the AIR GAP curve percentage chart on this instruction guide. Combining both factors then calculate the actual lifting capacity on this condition. The curve is also printed on both sides of each magnetic lifter.

4.2 CRITICAL SAFETY CONSIDERATIONS FOR LIFTING ANY WORKPIECE

Taking the magnetic lifter's capacity in hand, it should be considered for low-carbon steel plate as the usual standard which has the coefficient 1.

After measurement and careful analysis, the capacity coefficient for medium-carbon steel is 0.95, for high-carbon steel is 0.90, for a low-alloy steel is 0.75 and for cast iron is 0.50.

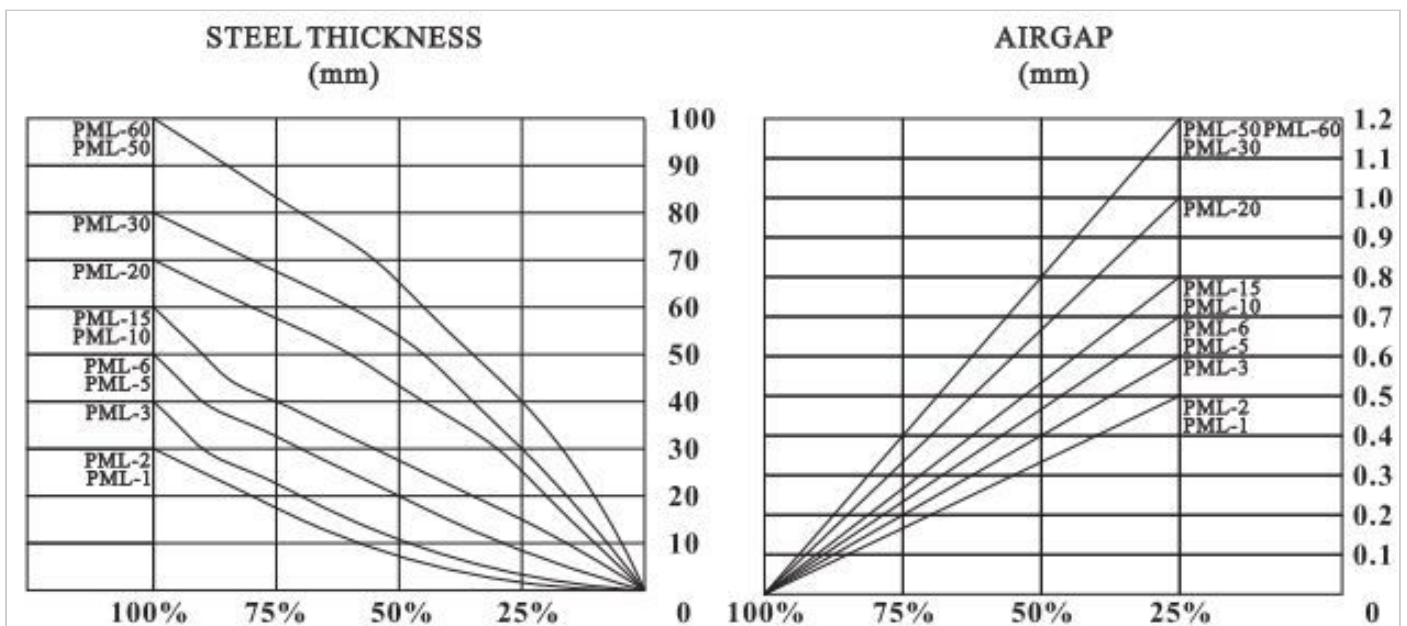
MAINTENANCE AND SAFETY NOTICE

5.1 Before using the magnetic device ,please carefully read and consider all risk assessments of any lift taking place . Take care to read the operating instructions in full, in order to prevent and avoid any accident.

5.2 Care should be taken to avoid any impact or bump of the magnetic lifter when out of service .

Internal damage could occur which will probably affect its lifespan but could also cause potential for lifting in an unsafe manner .

Never bump the magnetic lifter handle or damage the workpiece holding contact surface. When not in use it is good and safe practice to protect the magnetic lifter holding surface area by applying anti-rust oil.



Safety capacity curve

Thickness (mm)	Effective percentage of rated capacity						
	PML-60 PML-50	PML-30	PML-20	PML-15 PML-10	PML-6 PML-5	PML-3	PML-2 PML-1
100	100%						
90	85%						
80	70%	100%					
70	55%	80%	100%				
60	45%	60%	80%	100%			
50	35%	45%	60%	90%	100%		
40	25%	35%	45%	75%	90%	100%	
30	-	25%	30%	55%	70%	90%	100%
20	-	-	20%	35%	50%	70%	80%

Safety Capacity Data for Thickness(Reference)

5.3 Inspect the handle frequently and before each lift, to make sure its slide key can move easily and is flexible. The stop pin should always be able to lock firmly. This should be checked prior to each lift.

5.4 It is strictly forbidden to turn the magnetic lifter's handle without the iron/steel workpiece being in contact with its intended holding surface.

5.5 Users should be trained and competent people, who must have read and understood these safe use instructions. Maintenance must be executed by authorised or professional technicians, who must strictly follow the instructions and guidelines.

5.6 It is forbidden to modify the magnetic lifter in any way.

5.7 The magnetic lifter should be inspected and tested with data recorded at least once every year and/or to suit the legal requirements of the working country of use.

5.8 If its main body shows any visible signs of damage or any of the moving parts are damaged in any way, then the unit should be removed from service and destroyed to avoid any possibility of future use.

Product Code	Part No.	Plate Capacity kgs	Cylindrical Capacity kgs	Tear-Off Force kgs	H mm	I mm	L mm	W mm	Weight kgs
PML100	PML-1	100	30	350	70	142	92	64	3
PML300	PML-3	300	100	1,050	96	176	165	88	10
PML600	PML-6	600	200	2,100	120	219	236	118	24
PML1000	PML-10	1,000	300	3,500	168	266	264	168	50
PML2000	PML-20	2,000	600	7,000	217	462	378	230	125
PML3000	PML-30	3,000	1,000	10,500	265	567	453	290	220
PML5000	PML-50	5,000	1,500	17,500	265	707	647	290	355
PML6000	PML-60	6,000	2,000	19,200	265	707	713	290	398