

OPERATIONAL MANUAL

**MODEL: 100KG/300KG/600KG/1000KG/2000KG
MAGNETIC LIFTER**



by BLUEROCK® Tools

100KG/300KG/600KG/1000KG/2000KG MAGNETIC LIFTER

UNPACKING THE ITEM

Caution: This device is packed together with items that may be sharp, oily and overly heavy objects. Remove the device from the packaging in a safe manner. Check to ensure all accessories are included with the item while unpacking. If any parts are found to be missing, contact the retailer as soon as possible. Do not throw away the packaging until the item is out of the guarantee period. Dispose of the packaging in an environmentally responsible manner. Recycle if possible. Keep all plastic bags away from children due to risk of suffocation.

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Safety

DO NOT USE THIS DEVICE UNLESS YOU HAVE READ THE OPERATING INSTRUCTIONS!



Safety glasses must be worn at all times in work areas.



Appropriate footwear must be worn.



Safety gloves should be worn at all times and jewelry must not be worn.



Long and loose hair must be contained.



Close fitting/protective clothing must be worn.



Read operational manual prior to use.

PRE-OPERATIONAL SAFETY CHECKS

- Examine the body of the device and inspect for damage or defects.
- Ensure that the on/off handle is correctly attached to the device.
- Make certain the on/off handle is in the off position.

OPERATIONAL SAFETY CHECKS

- ONLY to be operated by qualified personal who have read instructions.
 - NOTE: Failure to read and follow instructions could result in property damage and/or serious injury!
- DO ensure all non-essential people are clear of the immediate work area.
- DO keep body parts, clothing & power cords clear of work area. Stay alert and use common sense when using this device.
- DO NOT make adjustments to device while the device is lifting.
- DO NOT use this device in water or any type of liquids.
- DO NOT leave the device actively lifting when not in use.
- DO NOT operate device outside of device specifications.
- DO NOT walk under lifted materials as death or dismemberment could occur.
- DO NOT remove device panel. Only to be removed for service by qualified personal and put back on the device after service is complete. Magnets inside are extremely strong and adjustments without proper equipment can result in serious injury.

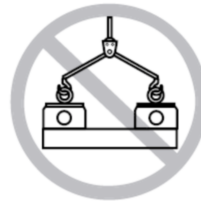
100KG/300KG/600KG/1000KG/2000KG MAGNETIC LIFTER

- DO NOT allow children or untrained personal to operate device.
- DO NOT use this device in the rain or a wet environment. If using outdoors, make sure the surface is clean and dry.
- DO NOT use on a work area that may contain a live electrical wire/circuit.
- DO NOT operate this device on the same work surface where welding is being performed. This could result in severe damage to the device or personal injury to the user.
- DO NOT engage the handle to the "on" position without magnetic material under the lifter.
- DO NOT drop, heat or shock the lifter as it could cause permanent damage to the lifter.

LIFTING SAFETY



Make certain material surface is free of debris or obstructions.



Do not use multiple magnets without proper spreader bar.



Do not carry material over or near people.



Make certain the material is properly distributed.



Do not allow people to stand on lifted materials.



No shear lifts.



Do not allow the magnet of lifted material to come into contact with any obstructions while lifting.



Make certain to lift material evenly so as to avoid an instable lift.

Included Accessories

DESCRIPTION	QTY
Instruction Manual	1
Primary Handle with Bolt	1

Additional Devices

Additional size magnetic lifters can be found in BLUEROCK® Tools online shop at www.bluerocktools.com or from your local retailer.

Specifications

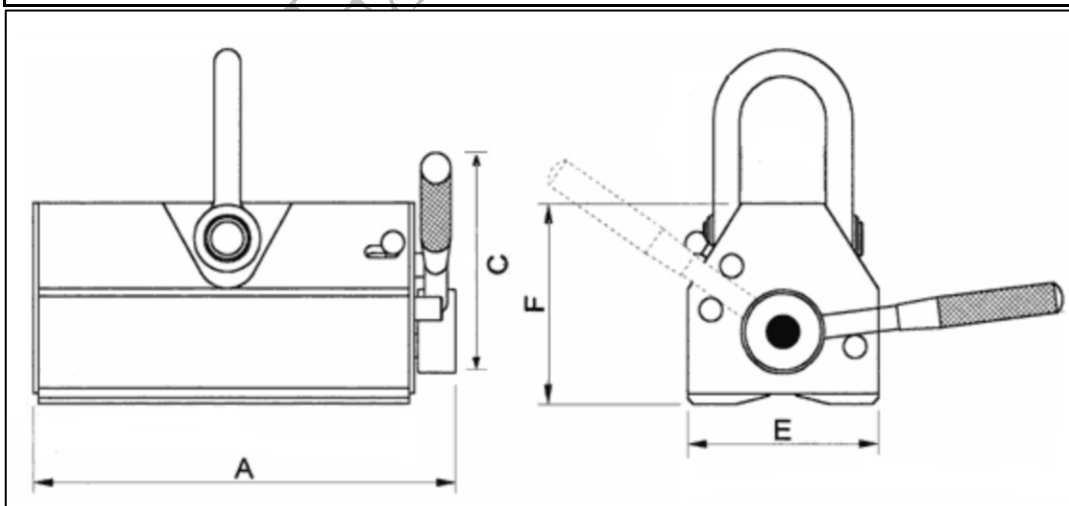
DEFINITIONS

➤ AIR GAP

- Anything that prevents the magnet from making full contact with the material being lifted is considered an “air gap.” Examples of an “air gap” would be items like paint, rust, ice, water, machine grooves, holes, oil, rust, debris, etc. It is always recommended that there is a limited “air gap” so the device can make full contact with the material.

➤ BREAKAWAY FORCE

- The force required to separate the magnet from the material being lifted is considered the “breakaway force.” This is the force when the magnet is being pulled in a direction perpendicular to the magnet’s face. The “breakaway force” is directly proportional to the materials specifications. The lifter’s “breakaway force” increases until the material being lifted exceeds the saturation thickness of the material.



100KG/300KG/600KG/1000KG/2000KG MAGNETIC LIFTER

LIFTER MODEL		100KG	300KG	600KG	1000KG	2000KG
Lifting Capacity (lbs)		220	660	1320	2200	4400
Max rated load for round steel (lbs)		99	297	594	990	1980
Max rated load for flat steel (lbs)		220	660	1320	2200	4400
Max "Breakaway force" (lbs)		N/A	1980	3960	6600	13200
Distance (in)	A	3.6	6.4	9.1	10.2	14.9
	C	5.7	5.9	7.7	11.2	16.8
	E	2.5	3.6	4.8	6.9	9.2
	F	2.8	3.5	4.6	6.4	8.3
Net Weight (lbs)		7	22	50	100	200

ACTUAL LIFTER CAPACITY

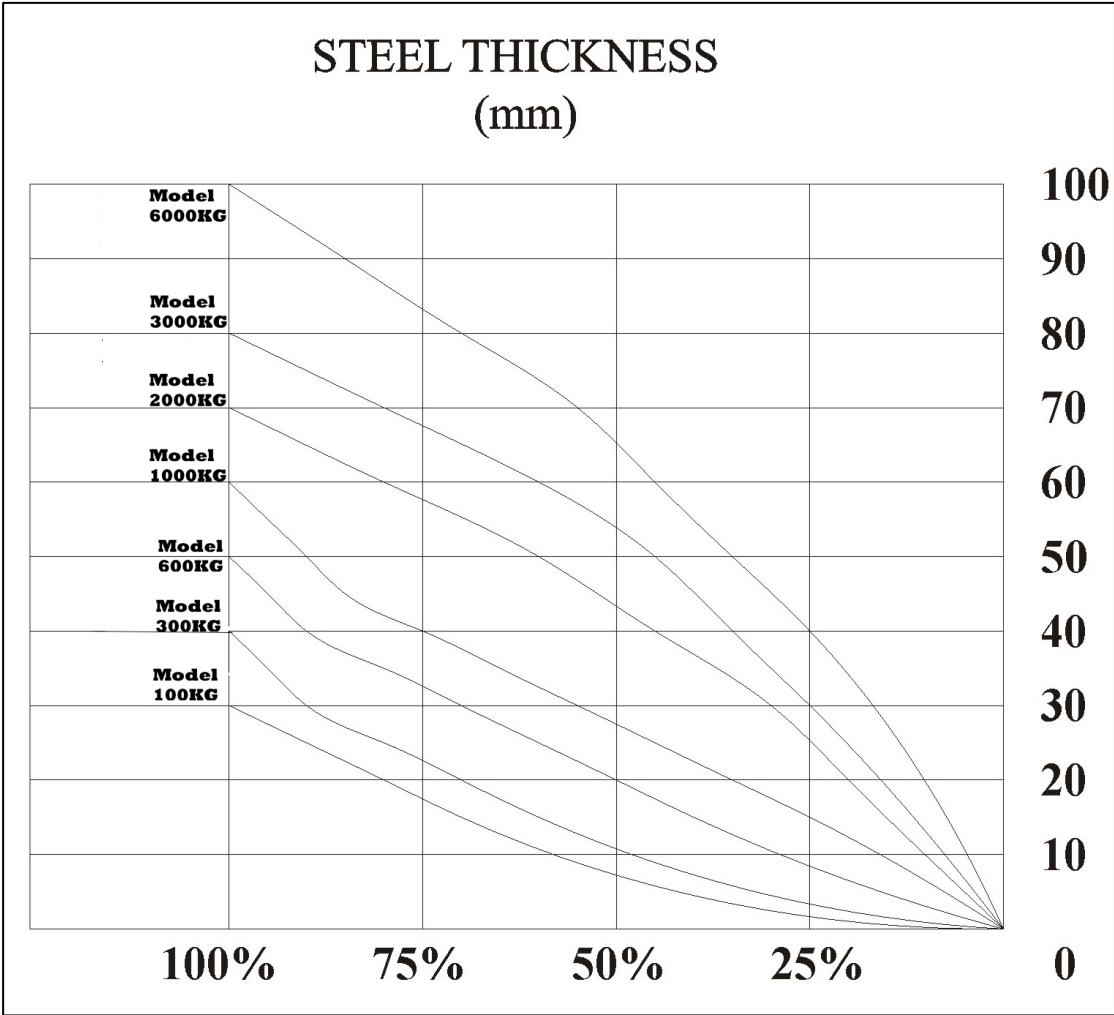
➤ The actual lifting capacity of the magnet is affected by the following factors

Material Thickness	Air Gap	Carbon Composition	Round Bar or Pipe	Sheet
The thickness of the steel plate (see steel thickness graph below).	A gap between the lifting magnet and the steel load produced by paint, dirt, roughness, or uneven surface of material (see air gap graph below)	When lifting high carbon steel, the lifting capacity will be 30% less. If lifting cast iron, the lift value will be 50% less.	A round bar must contact the V shape slot at the bottom of the lifting magnet. The actual capacity value will be approximately 40% of that plate. When lifting pipes, its thickness should also be taken into account. The actual capacity value is also affected by the diameter of the material.	A large thin steel sheet can be bent in an arc profile and then peeled off when lifted, even though it is light. When lifting a sheet from a stack, the magnetic flux may penetrate through the sheet and adhere to lower pieces. This is an extremely unsafe lift.

EFFECTIVE PERCENTAGE OF RATED CAPACITY

Thickness (mm)	6000KG	3000KG	2000KG	1000KG	600KG	300KG	100KG
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%

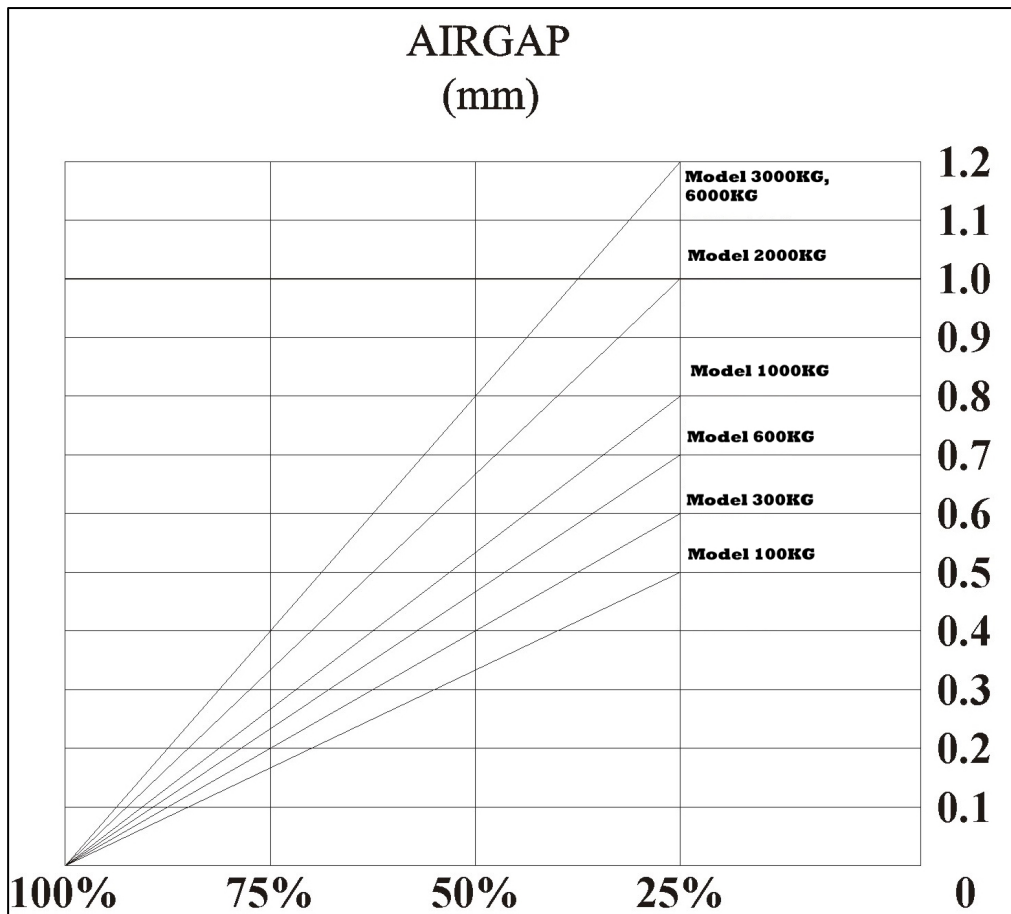
STEEL THICKNESS GRAPH



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AIR GAP GRAPH

- Caution: Always consider the air gap when choosing the proper magnetic lifter for the material.



FORMULA FOR RANGE OF LIFTING CAPACITY

- Actual Capacity = Nominal Capacity (lbs) x T Factor (%) x A Factor (%)

T Factor = Thickness Holding Power (%) A Factor = Air Gap Holding Power (%)

- Example: Model 600KG's rated lifting power is 1,320lbs.

In the example we will lift 3/8" standard steel plate with 8 mils of paint on it.

3/8" = 0.375" = 9.5mm

9.5mm = T Factor (%) = 35%

8 mils = 0.20mm = 8 Thousandth of an Inch

0.20mm = A Factor (%) = 80%

Actual Capacity = 1320 (lbs) x 35 (%) x 80 (%) = 369.60 (lbs)

So the 600KG can lift 369.60 lbs worth of 3/8" sheet with 0.20mm worth of paint on it.

Operations

Note

THOROUGHLY READ THROUGH THE ENTIRE MANUAL BEFORE OPERATING THIS DEVICE!

PURPOSE

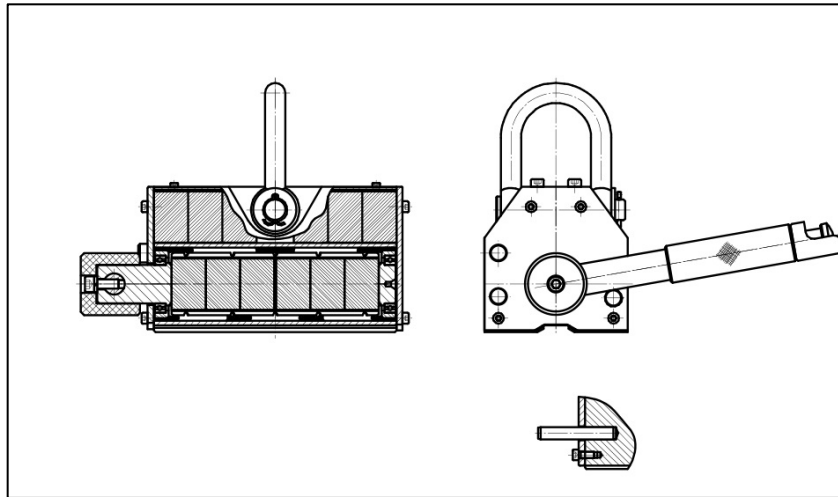
- The purpose of the 100KG/300KG/600KG/1000KG/2000KG magnetic lifter is to lift steel, iron, round and other magnetic material. These are commonly used in manufacturing and warehousing operations for handling magnetic material. These magnets eliminate the need for clamps, slings and chains increasing working efficiency.
- These lifters do not require a power source.

OPERATIONAL PRINCIPLES

- The lifter has a magnetic “path” produced by Nd-Fe-B rare earth magnets.
- In the “on” position, the magnet is engaged in the “pathway” and works to lift material.
- In the “off” position, the magnets “pathway” is not engaged and the device will have very little residual magnetism.
- The magnet will not engage into the “on” position unless it is positioned touching magnetic material.

DEVICE COMPONENTS

- The main components of the magnetic lifter are the lifter body and main handle.



TRANSPORTING THE DEVICE

- When transporting the device, always carry with both hands.
- If transporting inside a vehicle, it is recommended to transport it flat so as to avoid the item falling over.
- DO NOT carry the device by the handle.
- DO NOT allow the lifter base to get damaged when transporting.

USING THE DEVICE

- Do all pre-operational and operational safety checks from Chapter 1.
- Consider your security and stability as well as the orientation of the device in the work area.
 - Consider the material type, weight, condition, strength, density and rigidity. These factors directly affect the tools operation and user safety.
 - The magnetic adhesion is highly affected by the composition of the material being lifted.
 - Alloys with higher iron content are typically more susceptible to magnetic fields than those with lower iron content. Know the material you are lifting.
 - **IMPORTANT: Consult the operational chart to make sure the planned lift is within the capabilities of the device.**
- Ensure the handle is securely attached.
- Ensure the work surface is clean and free of debris, oil, rust, paint, dirt, etc.
 - If you do not take this into account, lifting capacity will be reduced.
- Position the lifter on the steel gently so as not to cause and dents on the lifter or surface.
 - Take care to place the lifter on the center of the material load. This would be a center point of mass so that the weight is distributed evenly on all remaining sides.
- Press the button at the top of the handle and turn the handle from the “off” position to the “on” position. Ensure the safety lock is engaged towards the machine to keep the device in the “on” position.
- Move or lift the load.
- To disengage the magnet when in the “on” position, simply press the button at the top of the handle to disengage the lock and slowly move the handle to the “off” position.

General Maintenance

CAUTION!

INTERNAL MAGNETS ARE EXTREMELY STRONG AND CAN CAUSE SERIOUS INJURY TO PERSONS HANDLING OR ADJUSTING! DO NOT TAKE THEM OUT OR REPLACE WITHOUT UNDERSTANDING THE PROPER HANDLING PROCEDURES!

➤	Inspect all device surfaces for damage.
➤	Keep device clean and free of debris.
➤	Check for misalignment, binding and breakage of all moving parts. If damaged, repair tool before use.
➤	Protect magnet from rusting by oiling the bottom base after use.
➤	Store in a dry area.
➤	Check handle to ensure the safety button moves freely.
➤	Annual calibration check is recommended.

Breakdown View

