



• PERMANENT MAGNETS FOR LIFTING STEEL •



SafeHold<sup>®</sup>  
Lift  
Magnets

# Additional Lift Magnet Considerations

## Load Factors

Thin sheets, rough and irregular surfaces, odd shapes and scale all affect holding power adversely and must be considered in establishing a safety factor. The magnet must be positioned on the load's center of gravity. Tilted or unbalanced loads significantly affect the holding power of the magnet.

## Capacity

Maximum attractive force is approximately twice the rated lifting capacity. Capacity ratings listed are on flat, clean, polished steel plate with magnet face in full contact with the load surface. The load factors listed should be taken into account when determining appropriate safety factors for a given load. A minimum of 3 to 1 safety factor must be applied based on the actual breakaway force for a given load. Refer to **ASME Standard B30.20** for inspection and operating procedures of Close Proximity Operated Lifting Magnets and read the Operating Manual before using magnet.

## Application Information

### Plates:

Material \_\_\_\_\_ Material Temp. \_\_\_\_\_ F°  
Maximum: Thickness \_\_\_\_\_ Width \_\_\_\_\_ Length \_\_\_\_\_ Weight \_\_\_\_\_  
Minimum: Thickness \_\_\_\_\_ Width \_\_\_\_\_ Length \_\_\_\_\_ Weight \_\_\_\_\_  
Are plates separated? Yes \_\_\_\_\_ No \_\_\_\_\_

### Bar/Pipe:

Material \_\_\_\_\_ Material Temp. \_\_\_\_\_ F°  
Maximum: O.D. \_\_\_\_\_ I.D. \_\_\_\_\_ Length \_\_\_\_\_ Weight \_\_\_\_\_  
Minimum: O.D. \_\_\_\_\_ I.D. \_\_\_\_\_ Length \_\_\_\_\_ Weight \_\_\_\_\_

### Bundles:

Material \_\_\_\_\_ Max O.D. \_\_\_\_\_ Min O.D. \_\_\_\_\_  
Length \_\_\_\_\_ Weight \_\_\_\_\_

### Method of banding:

Tightly \_\_\_\_\_ Loosely \_\_\_\_\_ Wire \_\_\_\_\_ Strapping \_\_\_\_\_

Describe bundle make-up and provide sketch: \_\_\_\_\_

# Service, Repair & Certification



## 5-STAR SERVICE®

Eriez' lift magnets are built in compliance with ASME B30.20. Eriez can inspect your magnets to ensure they remain in compliance. Our procedure includes:

- Inspection of lift magnet surface and resurfacing of poles, if needed
- Inspection of all other parts
- Replacement of any missing parts
- Repair/replacement of all damaged parts
- Replacement of warning labels and capacity markings
- Load testing and certification

Eriez' certified repairs come with a one-year "As New" warranty



# SafeHold Permanent Lift Magnets

## FEATURES

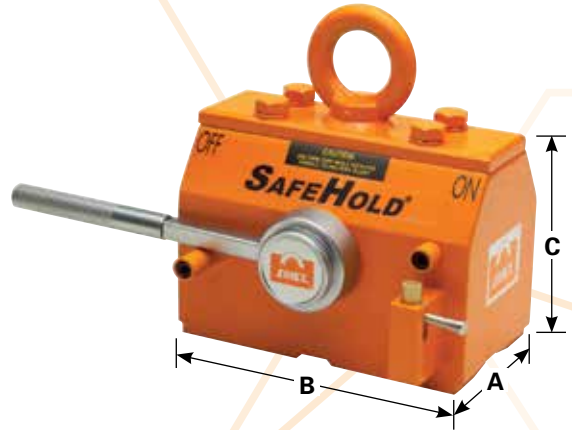
### RPL Series



Lift, move or position round or flat materials with the same magnet. Super compact rare earth SafeHold RPL series permanent lift magnets offer the flexibility to handle multiple operations.

- Powerful rare earth magnets
- Lift flat and round material
- Five models with capacities up to 5,000 lbs on flat and 1,250 lbs on round material
- Locking mechanism built into handle for one hand operation
- Manual On/Off
- No power supply required

### XPL Series



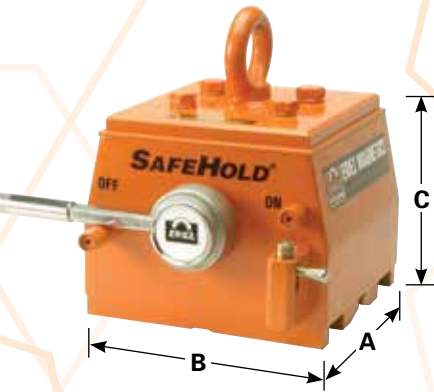
Manually operated rare earth permanent lift magnets offer high capacity and versatility for their size and cost. Extremely easy to operate, these magnets are capable of handling flat and round material.

- Powerful rare earth magnets
- Lift flat and round material
- Six models with capacities up to 3,500 lbs on flat and 2,700 lbs on round material
- Designed to handle wide ranges of diameters on round materials
- Easy to rotate handle with no backlash
- Manual On/Off
- No power supply required

Model #	RPL - 2	RPL - 7	RPL - 15	RPL - 25	RPL - 50	XPL - 3/2	XPL - 6/4	XPL - 10/6	XPL - 17/12	XPL - 22/16	XPL - 35/27	
Flat - max cap (lbs.)	250	750	1,500	2,500	5,000	300	600	1,000	1,700	2,200	3,500	
Min Thickness - max cap (in.)	1	1	1-3/4	1-3/4	2-3/8	3/8	1/2	3/4	1-1/4	2	2	
Round - max cap (lbs.)	125	375	750	1,250	—	200	400	600	1,200	1,600	2,700	
Min to Max OD (in.)	3	5	6-1/2	10	—	2-1/2 to 5	3 to 9	3 to 10	4 to 15	4 to 15	6 to 18	
Material Thickness Capacity Ratings *	11 Gauge	50	100	100	90	NR	90	100	120	150	160	160
	1/4 inch	110	250	260	220	NR	240	360	380	440	500	530
	3/8 inch	180	500	670	600	NR	300	550	700	830	1,000	1,000
	1/2 inch	210	680	1,050	900	NR	300	600	900	1,320	1,360	1,330
	3/4 inch	240	710	1,350	1,500	NR	300	600	1,000	1,550	1,680	2,080
	1 inch	250	750	1,430	1,880	NR	300	600	1,000	1,630	2,000	2,830
	1 1/4 inch	250	750	1,460	2,260	NR	300	600	1,000	1,700	2,000	2,830
	1 1/2 inch	250	750	1,460	2,400	3,660	300	600	1,000	1,700	2,100	2,960
	1 3/4 inch	250	750	1,500	2,500	4,000	300	600	1,000	1,700	2,100	3,260
	2 inch	250	750	1,500	2,500	4,660	300	600	1,000	1,700	2,200	3,500
Dimensions	A (in.)	3-9/16	6-3/8	9-1/8	10-5/8	14-7/8	3-3/8	4-1/2	5-5/16	5-5/16	5-5/16	6-1/8
	B (in.)	2-1/2	3-5/8	4-13/16	6-15/16	8-7/16	4	6-1/16	7-1/4	9-1/2	10-3/8	13-1/2
	C (in.)	2-5/8	3-9/16	4-5/8	6-13/32	8-11/32	4-11/16	4-11/16	5-7/8	6-7/8	7-13/16	9-7/8
	Weight (lbs.)	7	22	53	110	276	16	33	55	88	111	212

\*Notes: 1. Listed capacity ratings are on flat, clean, polished steel plate with magnet face in full contact with the load surface. 2. Material Thickness: Lifting capacity.

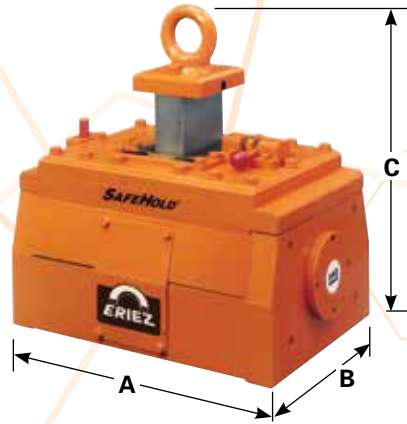
## EPL Series



EPL Series Permanent Lifting Magnets can lift and transfer steel and iron without slings, hooks or cables. Make quick work of difficult time consuming steel handling.

- Highest rated capacity permanent lift magnet on the market
- Handle flat materials with ease
- Four models with capacities up to 7,500 lbs on flat material
- Easy to rotate handle with no backlash
- Manual On/Off
- No power supply required

## APL Series



The SafeHold APL series is ideal for loading and unloading steel sheets from anywhere that limits operator access. Permanent magnets turn on and off automatically, without having to manually release the magnet.

- Crane activated On/Off mechanization
- No manual-magnet activation required
- Handle flat materials with ease
- Four models with capacities up to 3,800 lbs on flat material
- No power supply required

## MPL Series



These permanent magnets turn off and on with the actuation of a switch on the magnet or an optional pendant.

Lift, move or position in less time without having to manually release the magnet. Ideal for locations that limit operator access and they can handle both flat and round material.

- No risk of dropping load due to power failure
- No costly D.C. power supply
- No batteries to recharge or replace

# FEATURES

EPL - 4	EPL - 28	EPL - 55	EPL - 75	APL - 6	APL - 11	APL - 24	APL - 38	MPL-30/20	Model #
450	2,800	5,500	7,500	600	1,100	2,400	3,800	3,000	Flat - max cap (lbs.)
1-1/4	1-1/4	2	1-3/4	1/2	1-1/4	2	2	1-1/4	Min Thickness - max cap (in.)
—	—	—	—	—	—	—	—	2,000	Round - max cap (lbs.)
—	—	—	—	—	—	—	—	6 to 16	Min to Max OD (in.)
100	210	—	—	130	120	150	190	120	11 Gauge
280	750	1,010	1,180	450	400	610	920	450	1/4 inch
360	1,320	1,960	2,080	530	620	1,070	1,440	900	3/8 inch
410	1,800	2,460	2,910	600	760	1,550	1,880	1,200	1/2 inch
420	2,180	2,680	3,680	600	780	1,780	2,410	1,200	3/4 inch
440	2,280	3,900	4,700	600	880	1,980	2,610	2,400	1 inch
450	2,800	4,690	6,450	600	1,100	2,160	3,460	3,000	1 1/4 inch
450	2,800	4,750	6,520	600	1,100	2,260	3,660	3,000	1 1/2 inch
450	2,800	4,840	7,500	600	1,100	2,330	3,780	3,000	1 3/4 inch
450	2,800	5,500	7,500	600	1,100	2,400	3,800	3,000	2 inch
2-7/8	11-7/16	14-1/2	15-7/8	10-5/16	10-13/16	14	18-1/4	5-1/4	A (in.)
9-1/2	11-13/16	12	14	9-9/16	11-15/16	11-15/16	12	16	B (in.)
7-1/8	9	9	10-5/8	17-3/16	21-1/2	22-1/4	23-1/8	17-3/4	C (in.)
37	225	348	534	167	291	401	514	360	Weight (lbs.)

Capacity is lower on thinner materials. 3. NR - Not recommended

All specifications are subject to change without notice.

# SafeHold Lift Magnets

Eriez' SafeHold® Permanent Lift Magnets are ideal for carrying semi-finished products such as machined parts, castings, press molds, steel plates, bars, tubes and more. These magnets are available in ceramic and rare earth models, lift up to 7,500 pounds, need no outside power source and can be turned on and off with ease.

## Flats

- unload raw material
- load plates to burn/laser tables
- unload parts after cutting
- use multiple magnets on a spreader beam for large pieces



## Structural

- move/position angles, channels and tubes for welding
- handle both square and round structural tubing



## Rounds

- excellent for loading bar stock into lathes
- wide range of diameters can be handled
- custom pole shoes available on some models if required



## Irregular Shapes

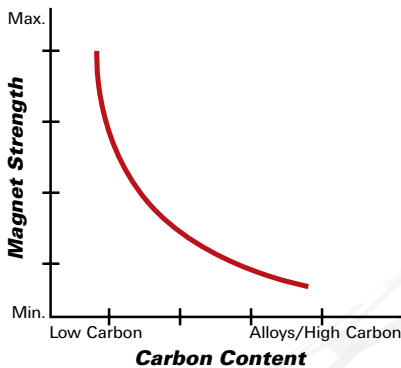
- handle castings, both finished and rough
- move frames, small fabrications, etc.



# Lift Magnet Considerations

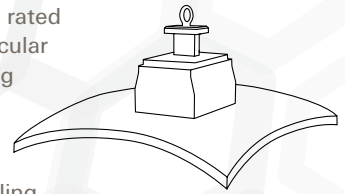
## Carbon Content

Magnet capacity is based on lifting low carbon steel. Materials containing less iron and more carbon will reduce lifting capacity.



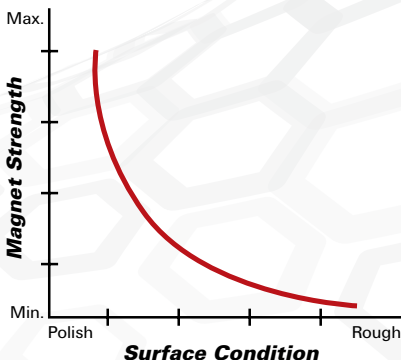
## Sag - Unsupported Overhang

The holding power of a magnet is rated with the pull of the load perpendicular to the face of the magnet. Sagging or bending of the load at the ends causes a force that is not perpendicular to the magnet face. This "bending" causes a peeling action that may strip the load off the magnet. To ensure the overhang of a flexible load falls within acceptable limits, refer to the chart below. Beyond these limits, multiple magnets will be required.



## Surface Condition (Air Gap)

Paint, coatings, scale, ice or other materials between the load surface and the magnet will adversely affect the holding power of the magnet. Magnet face and load surface must be clean and smooth.



UNSUPPORTED OVERHANG	12"	18"	24"	30"	36"	48"	60"	72"		
MATERIAL THICKNESS	AMOUNT OF SAG IN MATERIAL CAUSED BY ITS OWN WEIGHT (inches)									
22 Ga. (.0299")	11/32	1-11/16	5-5/16	13-5/32	...	<b>UNSAFE</b>				
18 Ga. (.0478")	1/8	11/16	2-3/32	5-5/32	10-5/8					
16 Ga. (.0598")	3/32	7/16	1-11/32	2-9/32	6-3/4				21-9/16	...
14 Ga. (.0747")	1/16	9/32	7/8	2-1/8	4-3/8				13-13/16	...
11 Ga. (.120")	...	3/32	11/32	13/16	1-11/16				5-11/32	13-1/32
3/16	...	1/16	1/8	5/16	11/16	2-3/32	5-1/8	10-5/8		
1/4	...	1/32	3/32	3/16	3/8	1-7/32	2-15/16	6-3/32		
5/16	...	...	1/16	1/8	1/4	25/32	1-7/8	3-29/32		
3/8	...	...	1/32	3/32	5/32	17/32	1-15/16	2-23/32		
1/2	...	...	...	1/16	3/32	5/16	3/4	1-17/32		
3/4	...	...	...	...	1/16	1/8	5/16	11/16		



## WORLD AUTHORITY IN SEPARATION TECHNOLOGIES



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