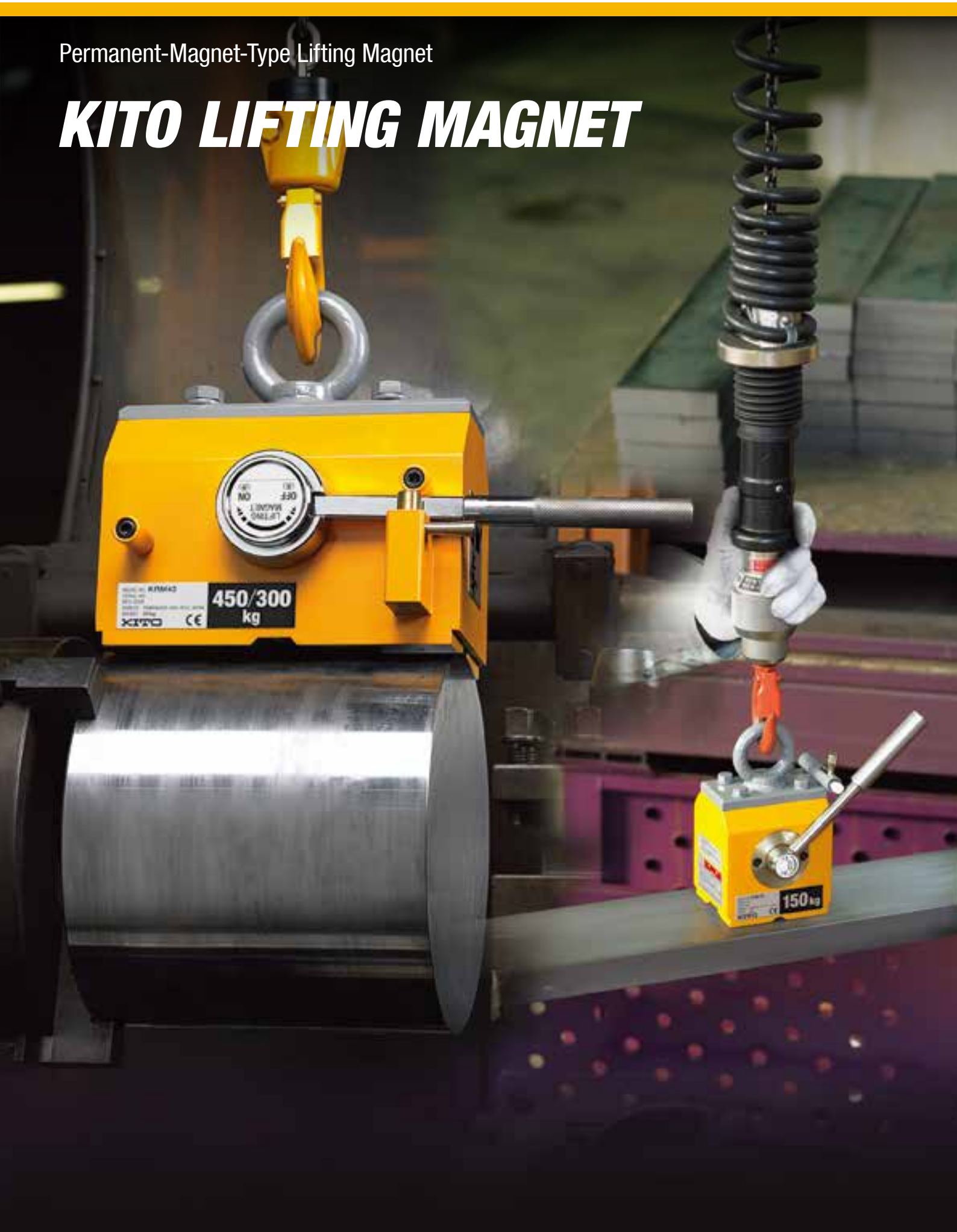
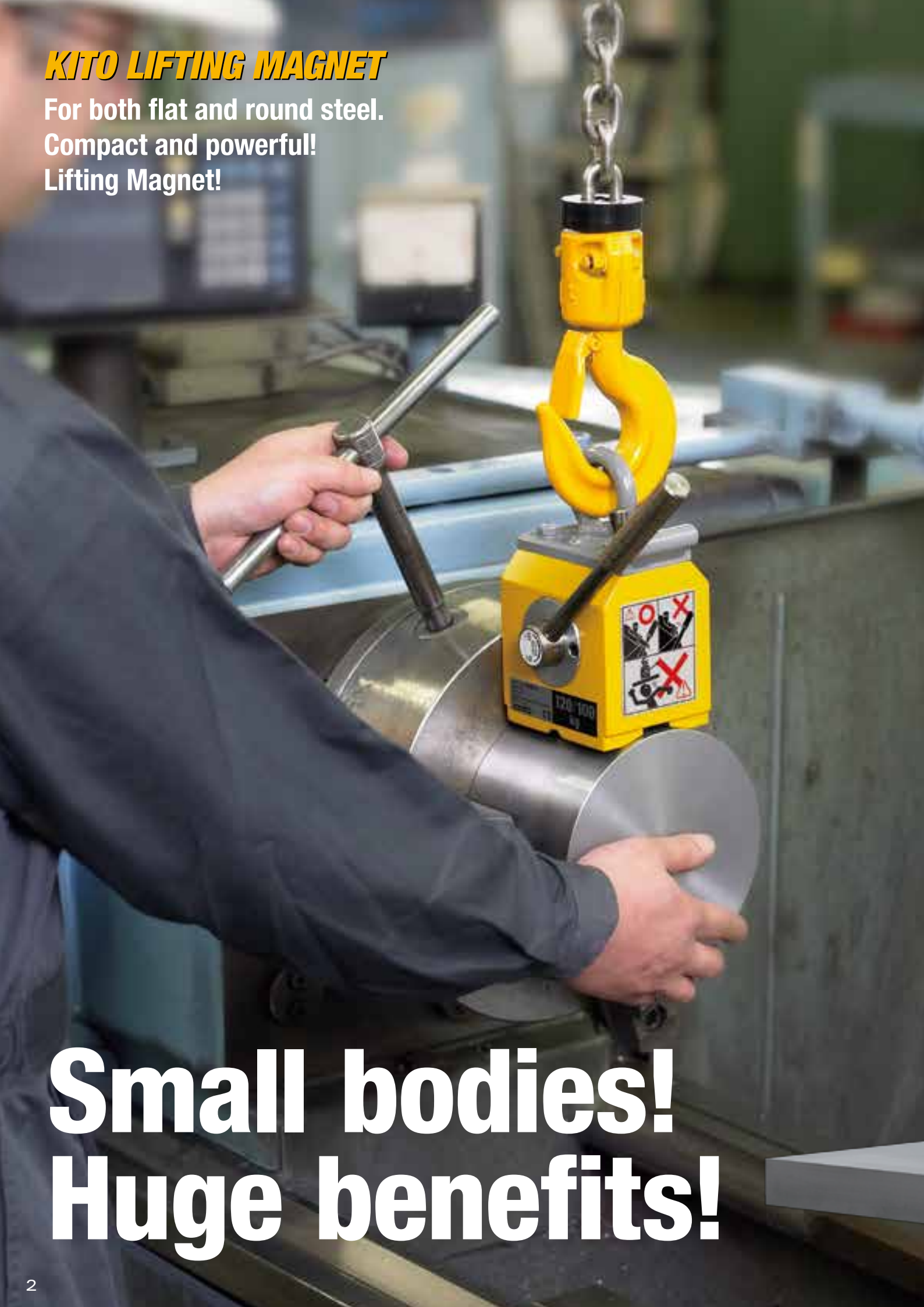
BULLETIN NO. KRLGE1410-01

KITO

Permanent-Magnet-Type Lifting Magnet

KITO LIFTING MAGNET





KITO LIFTING MAGNET

For both flat and round steel.
Compact and powerful!
Lifting Magnet!

Small bodies! Huge benefits!

Compact! Light weight!
High-performance magnet!
Lifting Magnet, for extremely efficient workability.

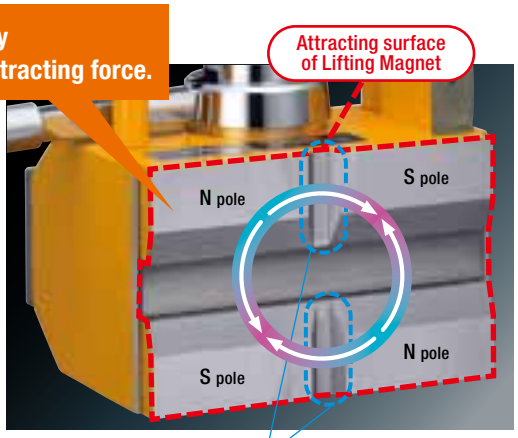
Enables you to position work accurately, bringing a piece to the exact place using strong attractive force.

KITO Lifting Magnet offers greatly improved magnetic force per volume.

Compact form and light weight enable easy handling. Select from 12 options.

◎Attracts and releases lifted loads easily by simple operation of a switch lever.
◎Uses permanent magnets, unaffectecd by power supply failure.
◎Unique Lifting Magnet structure.
◎12 options are provided from which you can select in accordance with form (flat steel or round steel) and weight of lifted loads.

Attaches tightly with reliable attracting force.



Although no grooves are provided on the attracting surfaces of KRL7 and KRM7, there are four magnetic poles.

Four magnetic poles unfailingly attach to lifted loads.

While a general lifting magnet has only two magnetic poles, Lifting Magnet has four magnetic poles.
This makes possible four bundles of magnetic force, for efficient and unfailing attachment to lifted loads.
Flat steel/Round steel common use types have V-shaped grooves in the bottom surfaces with larger open angles that enable magnetic force to flow efficiently to curved surfaces of round steel.

Please select from 12 options in accordance with your requirements.

Flat Steel Exclusive Use Types

KRL7 KRL15 KRL30 KRL50 KRL80 KRL100

Flat Steel/Round Steel Common Use Types

KRM7 KRM12 KRM25 KRM45 KRM75 KRM95

Flat Steel Exclusive Use Types

These types are used exclusively for lifting flat steel.

Code	* Maximum working load (kg)	Net weight (kg)	Dimensions (mm)														
			A1	A2	B1	B2	B3	B4	B5	B6	C1	C2	C3	D1	D2	D3	E
KRL7	70	4.2	102	155	154	94	48.5	60	35	12.5	86.5	65	21.5	123.5	25	28	100
KRL15	150	7		185	179	119	61				102	85	17	182			90
KRL30	300	14	154	257							127.5	95	32.5	180	20	60	180
KRL50	500	21	184	307	220	149	75	71	40	16	147.5	115		215			
KRL80	800	35	242	391	265	175	88	90	50	20	158		43	270	22	75	
KRL100	1000	44	263	431.5	309	199	101	110	60	25				300			

* Please refer to p.7 for maximum working load. •Net weight and dimensions in the above specifications are approximate values.

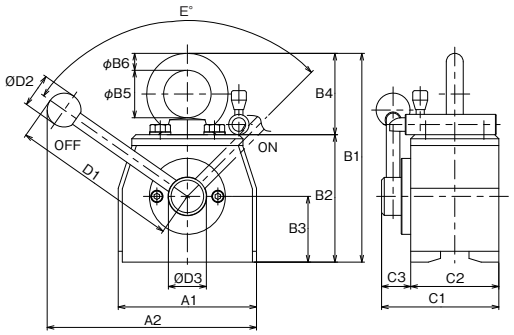
Flat Steel/Round Steel Common Use Types

(Attracting force varies depending on the diameter of round steel. Please refer to p.7 [Fig. 3] for more details.)

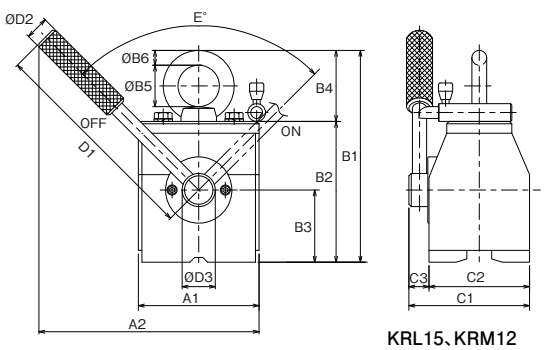
V-shaped grooves in the bottom surfaces with larger open angles enable lifting of round steel as well as flat steel.
The range of diameter of round steel to be lifted is ø80mm to ø600mm. (ø80mm to ø300mm for KRM7 and KRM12)

Code	* Maximum working load (kg)		Net weight (kg)	Dimensions (mm)														
	Flat steel	Round steel		A1	A2	B1	B2	B3	B4	B5	B6	C1	C2	C3	D1	D2	D3	E
KRM7	70	50 (ϕ120)	5	102	155	154	94	48.5	60	35	12.5	96.5	75	21.5	123.5	25	28	100
KRM12	120	100 (ϕ160)	7		185	179	119	61				102	85	17	182			90
KRM25	250	200 (ϕ200)	15	154	257							147.5	115	32.5	180	20	60	180
KRM45	450	300 (ϕ200)	25	184	307	220	149	75	71	40	16	167.5			215			
KRM75	750	500 (ϕ300)	40	242	391	265	175	88	90	50	20	178	135	43	270	22	75	
KRM95	950	700 (ϕ300)	50	263	431.5	309	199	101	110	60	25				300			

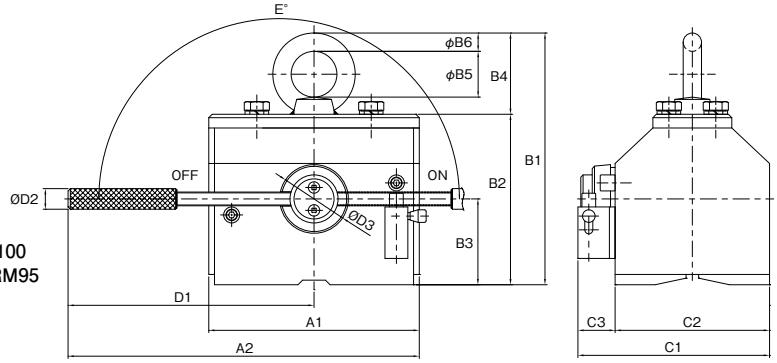
* Please refer to p.7 for maximum working load. •Net weight and dimensions in the above specifications are approximate values.



KRL7、KRM7



KRL15、KRM12



KRL30、KRL50、KRL80、KRL100
KRM25、KRM45、KRM75、KRM95

When using Lifting Magnet

Please be sure to understand the usage conditions before using Lifting Magnet.

Attracting force

Effective attracting force varies depending on conditions of a lifted load such as material, thickness, diameter, surface roughness, coating or plating, and a gap between a lifted surface of a load and an attracting surface of Lifting Magnet. Please refer to the following Figs. 1 to 6.
* A lightweight load may sometimes not be released easily since magnetic force remains briefly in the attracted lifted load.

Maximum working load

"Maximum working load," which is shown as a reference for use of Lifting Magnet, refers to one third of maximum lifting capacity, whereas "maximum lifting capacity" refers to attracting force obtained in the most preferable conditions.

Usage temperature

The temperature of lifted loads and their ambience should be in a range of -20°C to +50°C when using Lifting Magnet.

Humidity

85% RH or less, with no condensation.

Sealability

Lifting Magnet does not have waterproof construction. It cannot be used outdoors where water can enter into the product.

Objects lifted

Steel plates, shape steel and round steel, and their processed products.
* Non-magnetic bodies (metallic materials that are not attracted to magnets.) such as aluminum, stainless steel and brass cannot be attracted. Please use lifted loads with plate thickness of 15 mm or more.

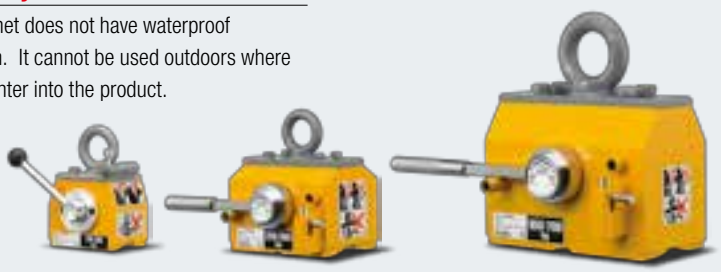
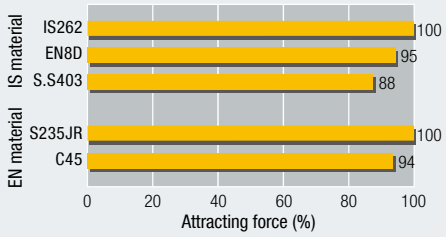


Fig.1 Difference of attracting force due to material (%)



Please ask KITO for information when other materials are to be used.

Fig.2 Difference of attracting force due to plate thickness (%)

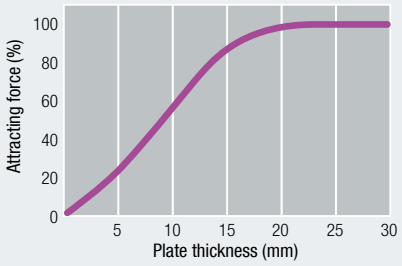


Fig.3 Difference of attracting force due to diameter of round steel (%)

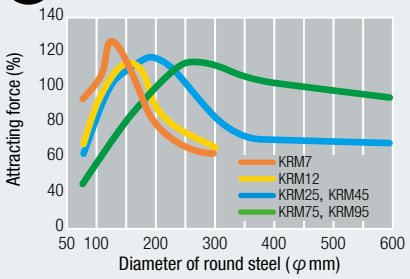


Fig.4 Difference of attracting force due to surface finishing (%)

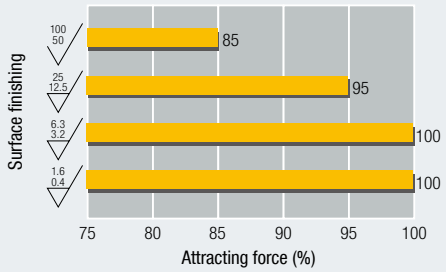


Fig.5 Difference of attracting force due to coating and plating (%)

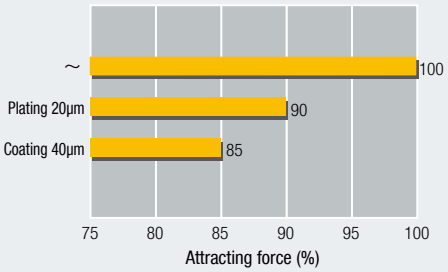
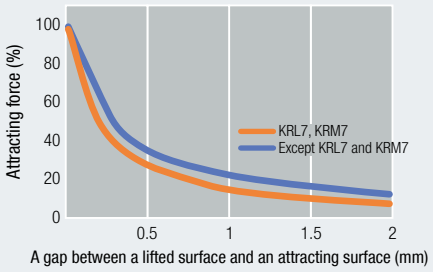


Fig.6 Difference of attracting force due to gap (%)



Selection of a type for use Multiply weight of a lifted load by correction coefficients obtained by conditions of the lifted load and usage conditions. Select a type of Lifting Magnet that has maximum working load necessary for safe lifting.

Selection conditions

(1) Weight of a lifted load

(2) Conditions of a lifted load

Apply conditions of a lifted load to Figs. 1 to 6 and read effective attracting force, from which correction coefficients are obtained.
For example, when effective attracting force is 80%, a correction coefficient is 1/0.8.

(3) Usage conditions

Determine a correction coefficient, taking balance, swing, etc. of the load into consideration. Minimum value is 1.1 under general usage conditions.
If inching or bounding occurs in the load, the correction coefficient should be a value with a margin.

Example of selection

When the conditions of a lifted load are as follows: flat steel 100 kg, material of EN8D, plate thickness of 30mm, surface finishing of 25/12.5 and no coating or gap, while usage conditions are general.

Weight of a lifted load	Conditions of a lifted load	[Fig.1] Material	[Fig.2] Plate thickness	[Fig.3] Diameter of round steel	[Fig.4] Surface finishing	[Fig.5] Coating and plating	[Fig.6] Gap	Usage conditions
		EN8D	30mm	—	25/12.5	none	none	general
100kg	Correction coefficient	1/0.95	1/1	—	1/0.95	—	—	1.1

•Necessary maximum working load = 100 x 1/0.95 x 1/0.95 x 1.1 = 121.8kg Accordingly, KRL15 or more should be selected.

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