

SuperMag

MAGNETIC LIFTER FOR STEEL
PLATES AND BARS

SWITCH LEVER ROTATING
PARALLEL TO STEEL BAR



- ⦿ SUPER POWERFUL
- ⦿ COMPACT-LIGHT
- ⦿ SMOOTHLY ROTATING SWITCH LEVER

I. Introduction and advantages of SuperMag

SuperMag is a below-the-hook device that holds and lifts ferrous material. Containing permanent magnets, SuperMag is uniquely designed structurally in such a way that rotating round magnet in protective case direct the flow of magnetism within the device or out of the device via magnetism-conducting steel member. All SuperMag models are bi-polar designed with wider steel member, and they are efficient for round work-piece. There is a total of 9 models; 5 for flat material and 4 for flat and round one. As for the flat/round models, the ratio of adhesive force for flat material to that for round one ranges 3:2 to 5:4. However, the adhesive force for round material varies according to the diameter size of work-piece. In general, SuperMag helps to save substantial amount of labor hours in handling steel material. More specifically, SuperMag provides following advantages.

- (1) No electric power is needed and there is no danger from power outage.
- (2) It is easily attachable to and detachable from work-piece.
- (3) Various models are available for various weight and shape of work-piece
- (4) On-off mechanism is easily manageable for manual operation.
- (5) Designated capacity of each model is one third of actual adhesive force. (3:1 safety factor)

II. Preparation and operation

- (1) Before SuperMag is operated, the entire unit must be checked to find if there is any defect.
- (2) Brush the bottom part of unit and the surface of work-piece to be lifted and clean any irregular articles.
- (3) Check the functions of switch lever and safety latch.
- (4) SuperMag must be placed at the center of work-piece. In case of smaller work-piece, three corners of the unit must touch it.
- (5) For activating magnetic force, turn the switch lever from OFF to ON position, while pulling the lever slightly outwardly. (180 degrees.)
- (6) Check the capacity of adhesive force by lifting the work-piece at lower level so as to secure safe operation.
- (7) The work-piece should not be tilted during transportation. In case of uneven position, SuperMag's adhesive force may be weakened.
- (8) After work-piece is transported, unlock the safety latch and turn the switch lever to the OFF position.
- (9) Before operating SuperMag, the weight, shape, material, surface roughness, and thickness of the work-piece need to be checked, as these characters determine the capacity level of SuperMag. (Please, refer to the diagrams on Back Page)

III. MAINTENANCE-Inspection, Storage and Repair

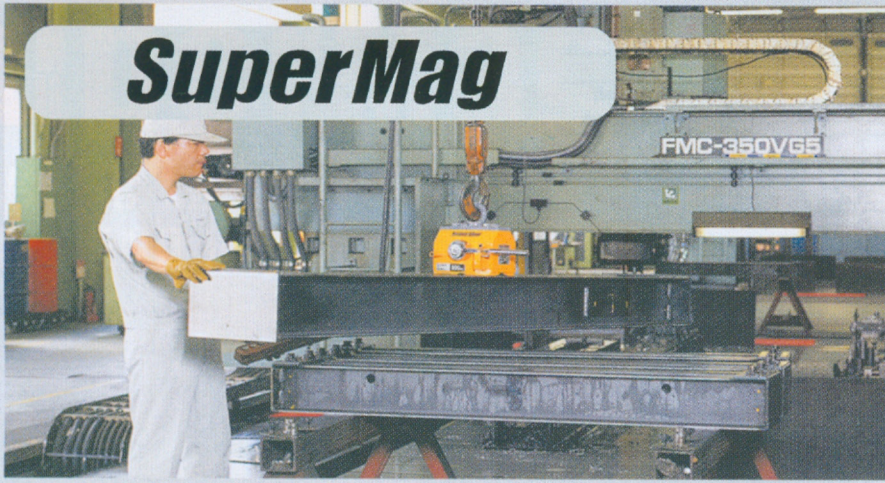
Weekly inspection-Once a week inspect the entire unit including nameplate, eyehook, exterior body and bolts.

In case any crack, deformity or other defect is found, the unit is in need of repair service.

Annual inspection- Each year the lifting capacity of SuperMag must be checked by manufacturer or authorized testing agent.

- (1) After SuperMag is used, the bottom of its poles needs to be cleaned with wash clothes. And it has to be stored on clean paper or plastic sheet not to attract any dirt or irregulars.
- (2) If it is not used for some time, the bottom of steel member has to be applied with preservative oil to prevent rusting and the unit needs to be covered with cloth or vinyl sheet.
- (3) In order to prevent possible damage to the magnetism of SuperMag, it has to be stored in distance from such electric instruments as electric transformer that generates forceful magnetism.
- (4) SuperMag must not be disassembled at any situation, as disassembling could cause significant loss of magnetic force.

SuperMag

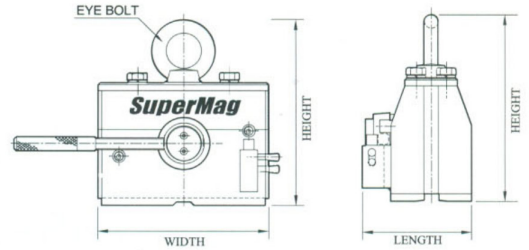
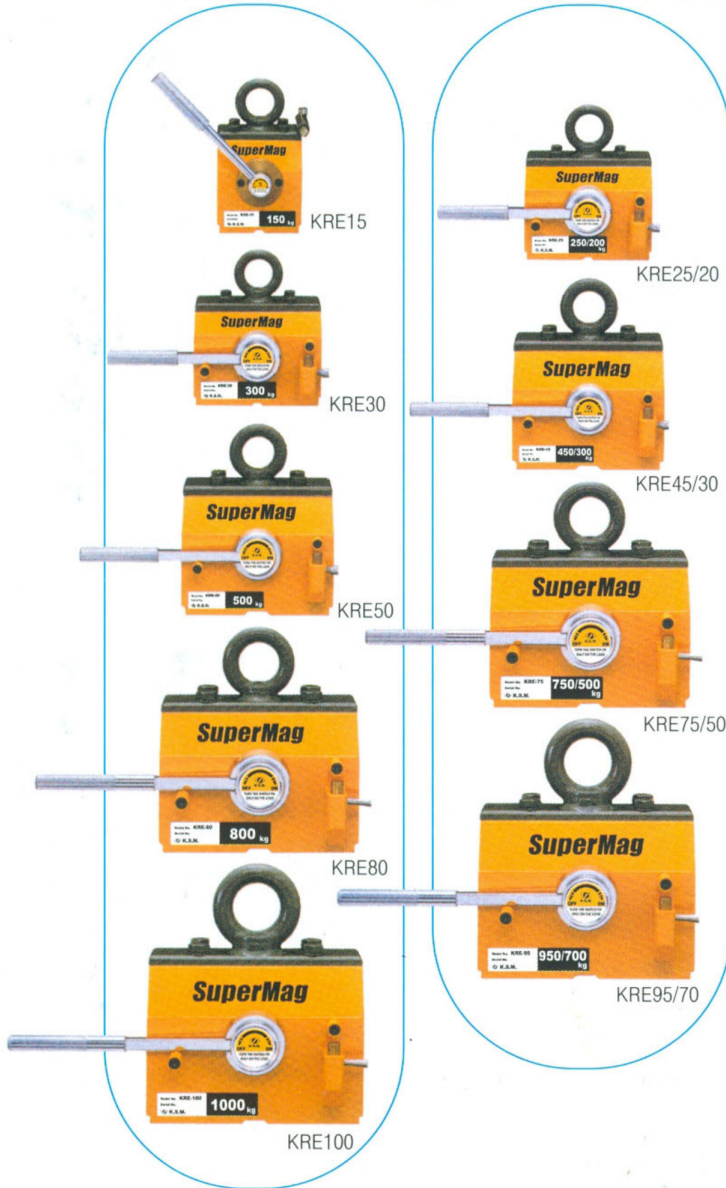


SUPERMAG MODELS AND SPECIFICATIONS

MODEL	DIMENSION (mm)			Wet (kg)	Capacity (kg)	
	Width	Length/w/switch	Height/w/eyebolt		Flat	Round/Dia.(mm)
KRE-15	102	85/102	119/179	7	150	
KRE-30	154	95/128	119/179	14	300	
KRE-50	184	115/148	149/220	21	500	
KRE-80	242	115/158	175/265	35	800	
KRE-100	263	115/158	199/309	44	1,000	
KRE-12/10	102	85/102	119/179	7	120	100/160
KRE-25/20	154	115/148	119/179	15	250	200/200
KRE-45/30	184	135/168	149/220	25	450	300/200
KRE-75/50	242	135/178	175/265	40	750	500/300
KRE-95/70	263	135/178	199/309	50	950	700/300

MODELS FOR FLAT

MODELS FOR FLAT AND ROUND

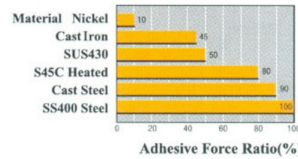


CONDITIONS OF WORK-PIECE TO BE CHECKED

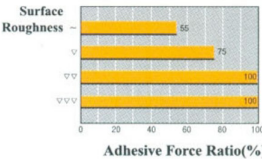
ADHESIVE FORCE varying according to STEEL ALLOY

ALLOY	ADH. FORCE(%)	ALLOY	ADH. FORCE(%)
SUS403	77%	SUS430	50%
SC42	95%	SKD11(H.T.)	40%
SKD11	75%	FCD600	85%
FCD400	85%	FC350	75%
FC250	75%	FC150	75%
SCM440	95%	SCM415	95%
S45C(H.T.)	80%	S45C	95%
S20C	100%	SS400	100%

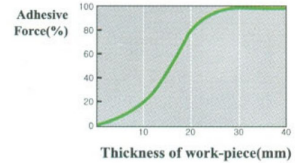
H.T. stands for heat-treated.



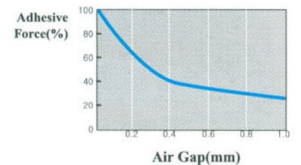
MATERIAL-ADHESIVENESS RELATION



SURFACE-ADHESIVENESS RELATION



THICKNESS-ADHESIVENESS RELATION



AIR GAP-ADHESIVENESS RELATION

SELECTION OF A RIGHT MODEL

Appropriate lifting magnet model is determined by the capacity of model and the weight of work-piece.

The weight of work-piece depends upon its volume in thousands of shapes. 1 liter of steel (10X10X10 cm) weighs approximately 7.85kg.

Example : 3cm(thickness) X 100cm X 150cm = 45,000 cubic cm = 45 liter
7.85kg(weight per liter) X 45(liter) = 353.25kg

For this work-piece, depending upon the character of steel alloy, KRE-50 or KRE-80 shall be selected.

Other factors shown on the above graphs should be considered.