

Circular Lifting Magnets Type : LRH

"ELEKTROMAG" Lifting Magnets combine in their design the wealth of experience gathered over many years with the latest methods of calculating capacities in the light of new scientific advances. All magnetic, mechanical and electrical factors are ideally matched to give exceptional working capacity, economy and reliability in service. Wherever large quantities of Iron and Steel have to be handled, **"ELEKTROMAG"** Lifting magnets offer many substantial advantages.

Optimum dimensioning of magnetic poles and cross sections of iron components, combined with the high magnetic flux produced by the exciter coil ensure outstanding lifting capacity in relation to magnet dead weight. In this way, load-carrying capacity of the crane is used to the full, and a high rate of handling is achieved.

"ELEKTROMAG" LRH Lifting Magnets are of sturdy construction, guaranteeing extreme reliability and safety in toughest working conditions. These circular magnets are intended for all-purpose use, but are suitable in particular for handling bulk material of awkward irregular shape, such as pig iron, scrap, swarf and the like.

The magnet body is cast of high-grade dynamo steel of high permeability and maximum toughness.

The bumping plate of non magnetic, wear resistant high-manganese steel, is generously dimensioned and strongly rib-reinforced. The extra-high inner ringshaped rib closely surrounds the centre pole to safeguard pole edges against wear.

The standard three-fall chain suspension with common suspension ring has been dimensioned to suit all normal duty loads. To handle extreme weights, special chains are available at extra cost.

Two lugs for guide ropes are fitted as standard. For attachment of the supply cable, magnets are fitted with one solidly constructed cable clamp which effectively prevents cables from being pulled out.

For connection of the supply cable the standard model magnet is fitted with metal-clad plug & socket two-pole + earth, additionally protected by a cast-steel cover(2 in Fig.2).

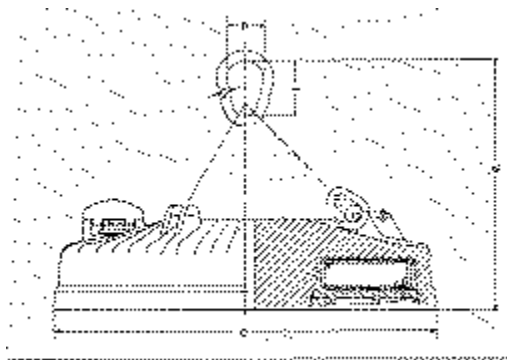
COILS

Standard exciter coils are wound with Aluminium conductor rated for class 'H' insulation. Coils are cast into their magnet body with a special resin compound of excellent heat conductivity and thus rigidly fixed in position. If required coils can be furnished with copper conductor. Use of special resins loaded with fillers as sealing compound ensures reliable conduction of heat to the magnet surface, maintaining high magnet performance over long, continuous service.

DUTY FACTOR

The permissible relative duty factor is 75%/10 mins. or 60%/10 mins. depending on magnet construction and application.

Magnets for extra heavy duty or handling of hot materials are available on request.



For dimensions please refer above Table.

TABLE FOR LIFTING MAGNETS TYPE: LRH.....

	1*						
Magnet Type	Rated power input (Cold Magnet)	Approx. weight	DIMENSIONS IN MM				
	KW		Kg	d	e	f	g
1	2	3	4	5	6	7	8
LRH 7	2.57	365	710	590	160	22	90
LRH 9	3.91	650	900	684	180	26	100
LRH 10	4.46	880	1000	702	180	26	100
LRH 11	5.94	1250	1130	899	260	36	140
LRH 13	8.48	1820	1330	973	260	36	140
LRH 15	10.3	2640	1500	1075	340	45	180
LRH 17	12.9	3470	1700	1222	350	51	190
LRH 19	17.2	4750	1900	1291	350	51	190

	2*			3*	4*					
	TEAR-OFF FORCE AT AIR-GAP OF				APPROXIMATE LIFTING CAPACITIES					
Magnet Type	d	d	d	Load capacity of chain (max)	5*					
	300	300	20		Slab ingot	Skull cracker ball	Pig	Cast iron Scrap (Grade 3a)	Solid Scrap (Grade 24)	Short Steel Turnings (Grade 40)
	Magnet cold	Magnet warm	Magnet warm							
	daN	daN	daN	Kg.	Kg.	Kg.	Kg.	Kg.	Kg.	Kg.
9	10	11	12	13	14	15	16	17	18	19
LRH 7	8940	7998	850	4250	3999	--	217	175	165	76
LRH 9	15380	13890	1680	5000	6945	--	376	303	286	133
LRH 10	19540	17630	1870	5000	8815	3000	485	390	369	171
LRH 11	25170	22690	2400	12600	11345	4000	643	518	490	227
LRH 13	36100	32530	3440	12600	16265	6000	976	786	743	344
LRH 15	47600	42870	4530	17000	21435	8000	1364	1098	1038	481
LRH 17	62240	56020	5920	25000	28010	10000	1905	1534	1450	671
LRH 19	78800	70900	7500	25000	35450	12000	2576	2074	1961	908

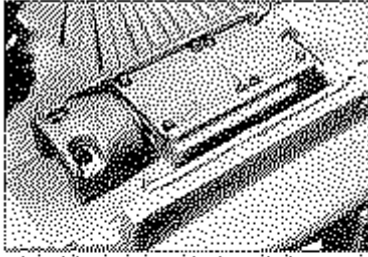
1 Kg.= 0.981 daN ; 1 daN= 1.02 Kg.

NOTES ON ABOVE TABLE

- * Standard operating voltage is 220 V DC. Rated power input for cold magnets listed in column 2 governs selection of suitable electrical switchgear, rectifier, etc. In continuous service, heating of the exciter windin reduces power input. Permissible relative duty factor is 75%/10 min. or 60%/10 min.
- * The tear-off forces listed in columns 10, 11, 12 relate to a level solid thick slab and an air gap correspond 1/300 or 1/20 respectively of the magnets outer diameter 'd'.
- * The figure in column 13 for each magnet size represents the permissible load which can be suspended wit standard chain arrangement, taking into account safety requirements. Where loads exceeding these limits ar be handled, please order special purpose chains, quoting the maximum weight to be lifted.
- * Listed lifting capacity guide values in columns 14 to 19 apply to magnets at service temperature.
- * Lifting capacities for various types of bulk material listed in columns 16, 17, 18, 19 are average values, w may be exceeded or not be reached in actual duty, since the volume seized in each lifting operation depends largely on type, shape, density, alloy composition, distribution and storage of the material, as well as on the of the crane driver.

CABLE TERMINAL BOX

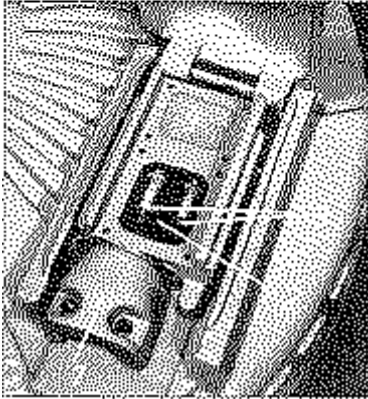
CABLE TERMINAL BOX



The watertight cable terminal box has two compartments, each closed off by its own cover. The supply cable is led to the connector chamber (2) through one bolted cover (1) and is connected to terminals (3) and the earthing screw terminal.

Connector chamber (4) is sealed by cast compound to prevent entry of foreign bodies and moisture into the coil.

Magnets LRH 9 to LRH 19 can on request be fitted with watertight cable terminals in place of standard plug-in connectors.



ELECTRICAL SWITCHGEAR

Switchgear used for the control of lifting magnets must be provided with adequate protective gear to limit the voltage generated when the inductive exciter circuit is switched off. Provision must also be made for a brief counter flow current surge to energise the system and throw off the load.

We supply a wide range of plant and switchgear to feed magnets from 3-phase or power mains or generators, in standard and special purpose models to suit all requirements.

To ensure continuity of operation and guard against the danger of accidents in case of power failure, we also supply complete equipments for stand-by or buffer battery operation.

Where the crane driver cannot keep the magnet under visual observation (e.g. special magnets used for raising material under water) electronic instrumentation can be fitted giving optical or acoustic signals to indicate that the load has been seized or released.

