

**KAKKU HEAVY DUTY CIRCULAR LIFTING ELECTRO-MAGNETS  
SERIES A & C**

**APPLICATION**

KAKKU Heavy Duty Circular Lifting Electro-magnet are designed for handling steel and cast iron objects like plates, pigs scraps, sponge iron, solid ingots etc..

**DESIGN AND CONSTRUCTIONAL FEATURES**

§ The lifting electro-magnets are provided with high permeability cast / fabricated steel shell. The frame of the electro-magnet accommodates the coil, protected at the bottom with a non-magnetic plate to withstand the blows against loads being lifted. The pole pieces which are exposed to lifting

pressures, are manufactured from special wear resistant steel. The coil is assembled within the electro-magnets, such that it can resist shocks and vibrations. The gaps between shell and the coil are filled with a special heat-resistant Silicon Rubber compound to enhance the mechanical and electrical strength of the coil. The coils are manufactured from high conductivity annealed copper tape. Turn to turn insulation is suitable to withstand high temperatures.

§ The non-magnetic plates are provided with sufficient insulation to protect the coils from the heat of the hot objects being lifted by the magnets. The terminal box is specially designed to protect the terminals from external damages. Each Lifting Magnet is provided with a device for voltage surge protection.

§ When the electro-magnet works at higher than 65% duty factor, the voltage across the electro-magnet coil

should be decreased to the following value:

$$U = \frac{1555}{\sqrt{DF_a}} \quad (V)$$

Where DF<sub>a</sub> = actual value of relative duty factor(DF)

**ORDERING INFORMATION**

- § Specify type No.
- § Shape Circular/ Rectangular
- § Temperature of handling material (in °C)
- Specify optional extras if any.

**TECHNICAL DATA**

Rated Voltage	: 220V DC
Duty Factor	: 50% / 75%
Windings	: Copper / Aluminium
Class of Insulation	: class – H / C
Other operating conditions	: Height above sea level not over 2000 Mtrs.
Lifting Capacity & Power Consumption	: See table – A
Insulation Voltage	: 660V

**OPTIONAL EXTRAS**

§ Suitable series resistance for duty factor of more than 65%.

**PRINCIPLE OF OPERATION**

When the electro-magnet coil is energised, it is capable of lifting loads as indicated in Table A. The control panels supplied along-with the lifting magnets provides the reverse currents for demagnetisation.

**TABE-A, (MILL DUTY ALUMINIUM WOUND MAGNETS)**

Magnet Type	Supply Volts (V) DC	KW (Cold) Approx.	Dimensions (Approx.)		Lifting Capacity Kgs. (approx)			Magnet Weight (Kgs.- Approx)	Duty Factor
			OD	H	Sponge Iron	Heavy melting Scrap	Pig Iron		
A-112	110	5.5	1220	1350	250	500	575	1650	50%
A-113	110	9.2	1320	1350	350	700	805	1900	50%
A-115	230	12.0	1475	1500	480	960	1104	2100	50%
A-116	230	13.2	1650	1550	525	1050	1208	3200	50%
A-116Y	230	17.0	1650	1600	800	1600	1840	3900	50%
A-118X	230	18.0	1850	1650	1000	2000	2300	4700	50%
A-119X	230	23.0	1950	1700	1200	2400	2760	5700	50%

**Electronic & Power Control Co.**  
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1, Industrial Estate, Bhilai 490 026,  
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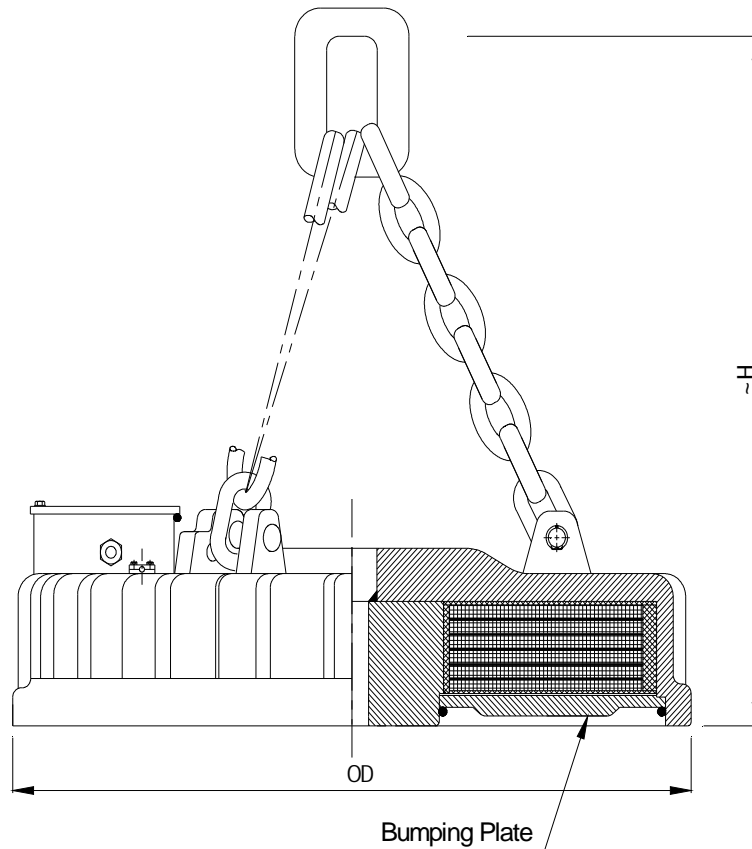


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**TABE-B, (MILL DUTY COPPER WOUND MAGNETS)**

Magnet Type	Supply Volts (V) DC	KW (Cold) Approx.	Dimensions (Approx.)		Lifting Capacity Lgs. (approx)			Magnet Weight (Kgs.- Approx)	Duty Factor
			OD	H	Sponge Iron	Heavy melting Scrap	Pig Iron		
C-116	220	10.87	1620	1600	500	1000	1150	3100	50%
C-116X	220	14.5	1650	1600	725	1450	1668	3600	50%
C-118	220	18.9	1850	1650	900	1800	2070	4200	50%
C-118X	220	19.6	1870	1650	1000	2000	2300	4500	50%
C-118XX	220	23.3	1870	1650	1200	2400	2760	5400	50%
C-119X	220	27.5	1930	1650	1500	3000	3450	6600	50%
C-316X	220	16.5	1670	1600	850	1700	1955	4200	50%



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