



沈阳英太利科技有限公司
Shenyang ISF Technologies Co., Ltd.

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Tel/Fax: +86 24 25154286; +86 24 25133976

Website: <http://www.isfmagnet.com>

Electromagnetic Lifter Instruction



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一. Scope of application

1.1 This device is an electromagnet for DC lifting. It is suitable for machinery, metallurgy, transportation and other industries. It is used to handle magnetic materials.

1.2 Normal working conditions

1.2.1 Altitude \leq 2500 meters

1.2.2 Maximum temperature at different altitudes

Height	\leq 1000	1000-1500	1500-2000	2000-2500
Temperature	40	37.5	35	32.5

1.2.3 Minimum air temperature $>$ -25 ° C

1.2.4 Relative air humidity \leq 90% (temperature above 25 ° C)

1.2.5 Installation tilt is not more than 5 degrees

1.2.6 no significant shaking and shock oscillation

1.2.7 In a non-explosive medium, and the medium is free of gases and dust (including conductive dust) sufficient to corrode metals and damage insulation
Indoor products should be installed in a place to prevent rain and snow erosion.

二. Model and main parameters

Model	Voltage	Current
DKP-500	12V	40A

三. Structure and characteristics

3.1 Structure

3.1.1 The magnetic path of the lifting electromagnet is composed of the outer shell, the inner and outer magnetic poles, the iron core and the object

3.1.2 The coil is placed in a sealed container consisting of a housing and a non-magnetic protective plate, and is fixed with insulating glue.

3.1.3 Welded structure as a whole

3.2 Features

3.2.1 High-quality electrical cast steel or low-carbon steel with good magnetic permeability and processability is used as the magnetic conductor of the magnetic circuit.

3.2.2 The material of the coil is generally aluminum, with excellent insulation and heat resistance.

3.2.3 Fully sealed structure with better moisture resistance.



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3.2.4 Good heat dissipation, heat insulation, safety, reliability and long service life.

四. Electrical performance

4.1 The working state of the electromagnet is a repetitive short-time working system. The electromagnet is energized for a duration of 50% and a cycle is 10 minutes.

For Example: $TD\% = \frac{t_p}{(t_p + t_n)} 100\%$

t_p : working hours, t_n : Off time.

The electromagnet lifts the steel material to the destination after being energized, and releases the sucked material for a period of time t_p . The return time to the original position is the inactive time t_n . One cycle is the sum of the inactive and inactive time.

4.2 In the intermittent working condition when the rated operating voltage and the energization duration are 50%, the stable temperature rise of the solenoid coil cannot exceed the allowable temperature rise value.

五. Installation test run

5.1 After unpacking the box, check the random technical documents according to the packing list, and read the relevant documents carefully.

5.2 According to specific requirements, determine or select the hanging beam and installation method.

5.3 Check the electrical performance of the electromagnet (coil resistance and insulation resistance), the external dimensions and the strength and size of the supporting spreader, and install it if there are no problems.

5.4 Check the output parameters of the matching power control equipment and cable drum equipment, which should meet the requirements of the electromagnet.

5.5 Connect the cable connector that connects the cable drum and the electromagnet, turn on the power, and perform a test run of the electromagnet for 0.5 to 1 hour. If there is no abnormal phenomenon, it can be put into formal operation.



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六. Precautions for use

6.1 The cold insulation resistance of the electromagnet should be measured before use, and its value is not less than $1M \Omega$ at room temperature.

6.2 Do not work with electricity until the solenoid is placed on the surface of the object to be sucked. Never use the electromagnet as a hammer.

6.3 Need to choose the flat part of the waste pile to suck.

6.4 Never lift hot objects with electromagnets

6.5 Electromagnets must not be cooled with water or placed in water.

6.6 The electromagnet moves up and down with the crane to avoid smashing and breaking the power cable.

6.7 Periodically observe the voltage and current indication values on the electromagnet control cabinet during operation

6.8 Voltage allowable error does not exceed $\pm 10\%$.

6.9 The electromagnet should be kept dry. After use, it should be stored in a dry, ventilated place without harmful substances.

6.10 Always check the wear of the chain and pin, if it is less than 90% of the original diameter, please replace the genuine product in time.

七. Maintenance and repair

During the use of the solenoid, please perform maintenance and repair according to the following inspection table.



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Lifting electromagnet maintenance and repair table

Inspection section	Test items	Inspection cycle	What should be done below the standard
Coil-to-case	Insulation resistance	3 months	When it is lower than $1M \Omega$, it will be dried by electricity or returned to the factory for repair
Outlet box			Less than $1M \Omega$ after drying
Outlet box	Terminals	3 months	Loose should be reassembled; burnt should be replaced
	DC resistance of coil $20^\circ C$	6 months	10% below the standard value should be returned to the factory for repair
Cable	Twist	3 months	Relax when twisting
	trauma		Minor trauma should be repaired; broken should be replaced
Chain	abrasion	6 months	Less than 90% of the original diameter should be replaced
Lifting ear	Weld	3 months	Cracks should be repaired
Magnetic pole	Exterior	1 Year	Wear defects are repaired or replaced 5mm below the original size
welding	Weld	3 months	Cracks should be repaired