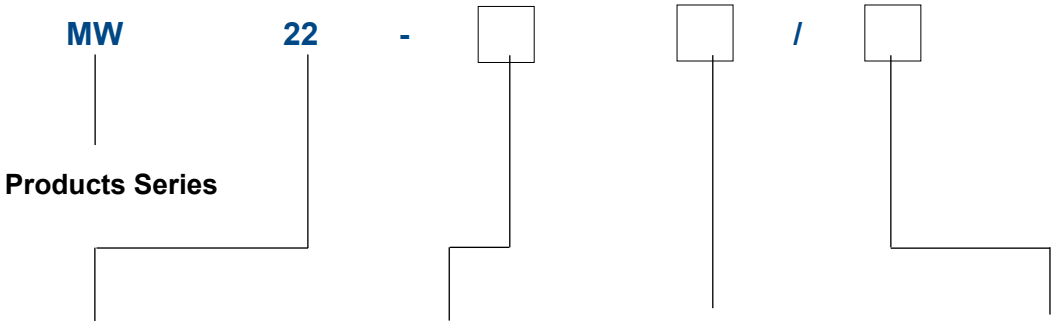
Electric Magnet

Widely applied in steel factory, ship-building company, heavy machine manufacturing, steel storage, port, and railway.

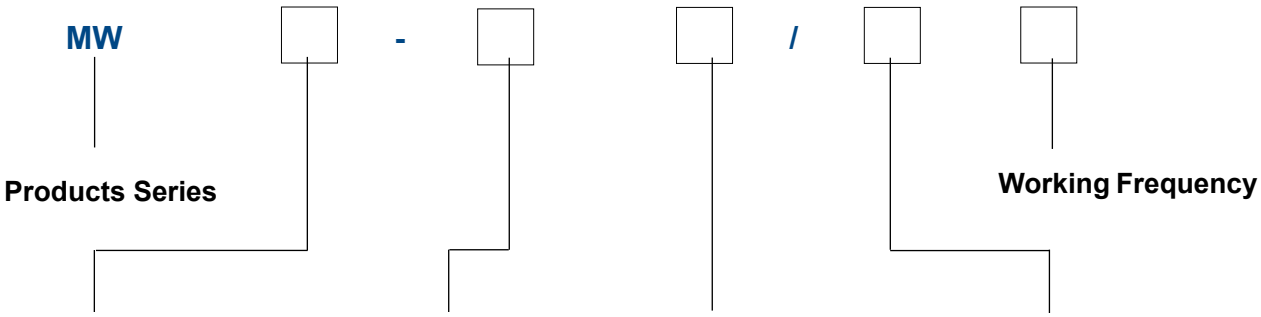
Products Code

1. Lifting electromagnet for loading square billet or some strip material (MW22, MW92, MW2, MW12, MW42, MW15, MW82, LNR, LMR series):

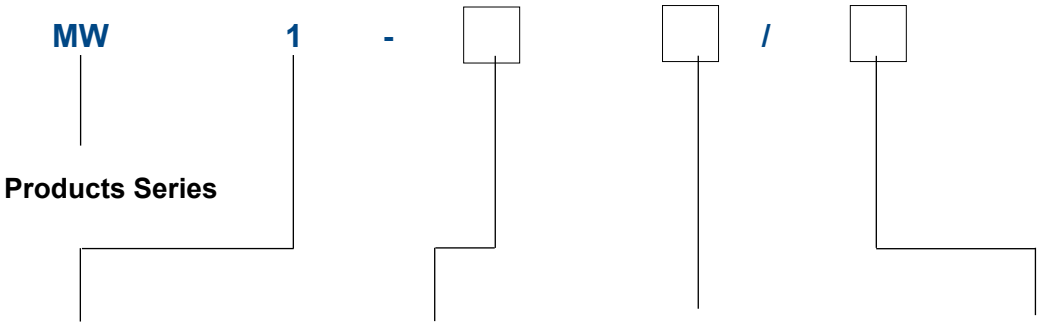


Design code	Basic specifications	Derived code	Auxiliary specifications code
12, 42 are double coil, 82 is superhigh temperature structure	Indicate Electromagnet length and width(cm)	L is Aluminum material. T is copper material	G, High temperature Type. CG, superhigh temperature

2. Lifting electromagnets for carrying bulk material



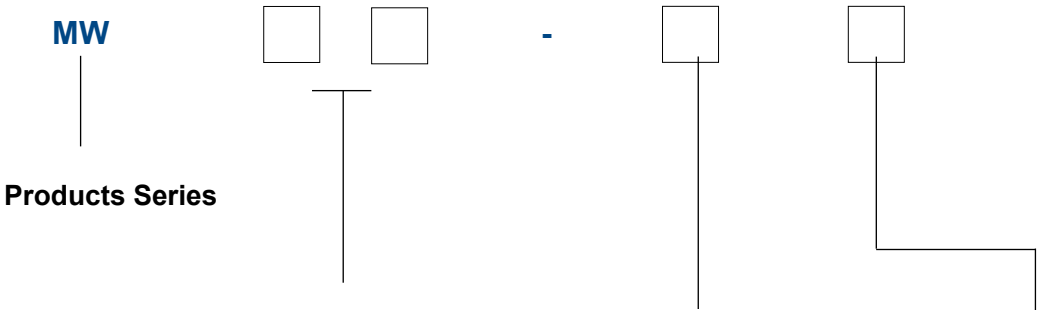
Design code	Basic specifications	Derived code	Auxiliary specifications code
5 is round structure. 6 is ellipse structure	Electromagnet diameter (cm)	L is Aluminum material. T is copper material	QS, submerged type. 1, normal temperature. 2, high temperature.



Design code	Basic specifications	Derived code	Auxiliary specifications code
	Lifting capacity (ton)		G, high temperature.

Note: MW1 series specification is same as MW5 series.

3. Lifting electromagnet for lifting steel plate



Design code	Basic specifications	Derived code
04 is round structure. 84 is rectangle structure	outer diameter (cm)	L is Aluminum material. T is copper material

Introduction

Lifting electromagnet usually be used with crane and applied in steel factory, ship-building company, heavy machine manufacturing, steel storage, port and railway. It loads ferro magnetic material instead of labor power.

It is the most ideal electromagnetic manipulator, liberate people from dangerous, abominable, and heavy work. It also applied to some bad condition, such as: hot temperature, under water, dusty, highly toxic, chilly, wild. it is an essential electronic equipment in metallurgy, transporting, and machine manufacturing.

The lifting electromagnet control is a complete set of controlling equipment. It can order the lifting electromagnet to increase its suction through some methods of electricity excitation, cutting power degauss, or forced excitation. And more, it adjusts the suction to achieve the steel plate's unloading; even when the power is cut off, it can keep the lifting iron's suction to avoid the steel object dropping off and damaging people or other equipment.

We also design and manufacture some non-standard electromagnet according to client's requirement.

Manufacturing of lifting electromagnet

Firstly, we guarantee the product quality, use simple process, establish and improve the multi-level quality guarantee system and strict testing method, avoid not qualified materials and spare parts get into the next process, do assembly a qualified rate 100%, produce the user satisfactory quality product.

Seven workstage:

1. Purchasing and sift raw material and parts
2. Parts manufacture and quality inspection

3. Assembley and quality inspection
4. Insulation glue water
5. Drying, cooling
6. Finished product processing
7. Inspection before delivery.

Welding Process

The lifting electromagnet welding include: Shell structure welding, welding of non-magnetic guard board and shell (include Cast steel shell), they are all arc welding.

Shell structure welding

The structure is welded by low carbon steel plate. mass density good few leftover material, short production time, suitable for simple, small batch, and short production products. But its integrality and sturdiness are less than casting steel parts.

There are some rules to ensure welding quality as following:

Preparation:

A. preliminary working: junction is stressed to weld. (such as up cover board and Boundary pole, up cover board and iron core), it must be finished by machine work, not less than 6grade fineness. The straightness and flatness not less than 9grade. And weld groove is made according to designing drawing.

B. Choose electrode: T42 steel electrode is good for mild steel shell of electromagnet.

1. Weld request: shell's welding must accord to GB986 rules. Lug welding is not less than H class in GB3323 rules. These requirements must be marked in drawing and tell the welding demanding.

2. Welding process requirements: the drawing should stress to ensure the connection tight and avoid being out of shape during working.

The non-magnetic guard board and shell welding

The non-magnetic guard board is made of non-conduction alloy steel, whose material is 1Cr18Ni19Ti, manganese board is 20Mn23AL. It is dissimilar steel welding with shell, easy to craze. So, choosing electrode is very important. Our factory uses the Austenite stainless steel electrode with good plasticity and crack resistance. And more, the drawing should tell that the welding parts must be heated when in low room temperature in winter.

Electromagnets selection

The needed parameter when choosing electromagnets.

1. Crane type: e.g. 10+10T
2. Lifting object: e.g. Lift square billet
3. Lifting object's size and quality: e.g. Square billet: 150*150*12000mm，lift 6 pieces in normal temperature
4. Controlling cabinet: ordinary type, magnetic power type, adjustable magnetic type
5. Whether it needs inverter power supply or not: if internal contracting brake is direct current, don't need.

Operating Notice

1. Regularly, check all the welding joint on non-magnetic guard board or other part.
2. Check junction box and cable, repair or replace timely.
3. Regularly examine the Electromagnet insulation resistance and Coil dc resistance.
4. Inspect electric controlling equipment.

5. Review electromagnet working current in thermal state. Stop it once over time and find how it happend.

6. Keep the current and voltage stable, prevent useless magnetic disturbance , ensure fast unloading, avoid high and middle voltage impact current coil.

7. Use the electromagnet according to operating rules, don't change the current freely.

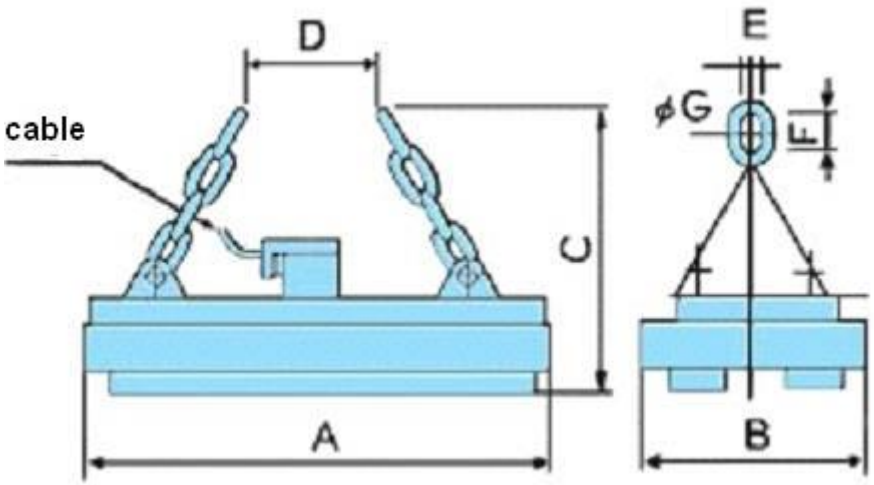
8. It must be used in possible condition range.

Electromagnet Parameter

1. MW22 series

Application: used for lifting steel ingot, large rolling billet early and structural steel. Different steel has different Magnetic circuit design. This series have many electromagnets for lifting different object: such as "I" steel, cogged ingot, beam slab and wire coil.

Lifting "I" steel



Lifting "I" steel

Technical Parameter in Normal Temperature

Type		MW22-8060L	MW22-11060L	MW22-120100L	MW22-140100L	MW22-140150L
Dimension (mm)	A	800	1100	1200	1400	1400
	B	600	600	1000	1000	1500
	C	900	900	950	1100	1100
	D	300	300	300	900	900
	E	110	110	125	125	125
	F	180	180	200	200	200
	G	32	32	38	38	38
Weight (Kg)		1000	1300	2400	2000	3000
Current (A)		34.1	27.3	45.5	63.6	81.9
Power (Kw)		7.5	6	10	14	18
Lifting capacity	Min. size	10 "I" steel	10 "I" steel	10 "I" steel	10 "I" steel	10 "I" steel
	Max. size	20a "I" steel	30a "I" steel	63a "I" steel	50a "I" steel	50a "I" steel
	Max. length (mm)	2000	2000	2000	2000	2000
	Bundle width (mm)	500	500	1000	650	650
	Single bundle weight (Kg)	5000	4000/6000	15000	3000/5000	4500/6000
	Bundles	4 pieces in 1 bundle	4 pieces in 2 or 1 bundles	4 pieces in 1 bundle	4 pieces in 4 or 2 bundles	4 pieces in 4 or 2 bundles

Lifting cogged ingot, beam slab

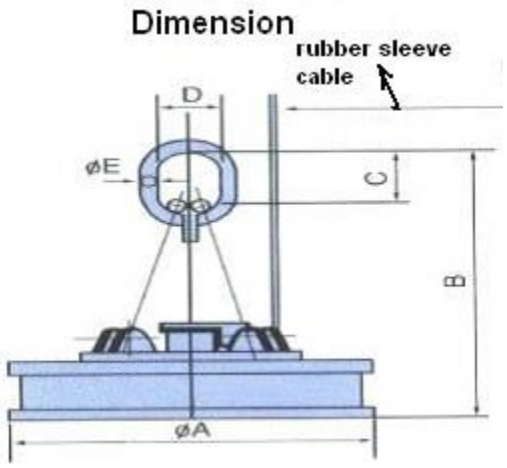
Model		MW22-110-90L	MW22-125-95L	MW22-150-75L	MW22-150-95L	MW22-170-65L	MW22-170-80L
Dimension (mm)	A	1150	1250	1500	1500	1700	1700
	B	900	950	770	960	650	820
	C	740	1150	685	1120	770	700
	D	--	300	--	500	--	--
	E	--	125	--	125	--	--
	F	--	200	--	200	--	--
	G	--	38	--	38	--	--

Weight (kg)		2500	3000	2400	3860	2720	3100
Current (A)		38	39	36.9	45.8	42.6	38.5
Power (kw)		8.6	8.6	8.12	10	9.4	8.5
Lifting capacity	Cogged ingot (mm)	200×240×12000 4pieces	256×295×12000 4pieces	4 electromagnets 130×130×8000 8pieces	320×420×10000 2pieces	150×150×10000 8pieces	240×320×10000 2pieces
	Beam slab (mm)	500×240×10000 2pieces	570×300×10000 2pieces		556×300×10000 2pieces	--	540×300×10000 2pieces

Model		MW22-16095L	MW22-20090L	MW22-25090L	MW22-7090L	MW22-16090L	MW22-17090L
Dimension (mm)	A	1600	2000	2500	700	1600	1700
	B	960	900	900	900	900	900
	C	1155	1700	1700	1000	1275	815
	D	640	600	600	200	700	--
	E	125	230	230	125	125	--
	F	200	370	370	200	200	--
	G	42	70	70	38	38	--
Weight (kg)		4130	5500	6000	1500	3000	3300
Current (A)		39.8	68.2	68.2	34	62.7	60
Power (kw)		8.8	15	15	7.5	13.8	13.2
Lifting capacity	Cogged ingot (mm)	-	330×550×10000 2 pieces	330×550×10000 3 pieces	4 electromagnets 115×115×2050 0 4 pieces	4 electromagnets 115×115×2000 0 10 pieces	150×150×12000 10 pieces
	Beam slab (mm)	-	1200×400×10000 1 piece	1200×400×10000 2 pieces			

2. MW5 series electromagnet

Application: used to carry cast iron ingot steel ball and some steel waste.



Technical Parameter in Normal Temperature

Model	Current (A)	Power (Kw)	Lifting capacity (Kg)			Weight (Kg)	Dimension (mm)				
			Steel ball	Steel ingot	Cutting		A	B	C	D	E
MW5-70L/1	15	3.3	2500	380/200	120/100	490	700	800	160	90	30
MW5-80L/1	18	3.96	3000	480/250	150/130	620	800	800	160	90	30
MW5-90L/1	26.6	5.85	4500	600/400	250/200	800	900	1090	200	125	40
MW5-110L/1	35	7.7	6500	1000/800	450/400	1350	1100	1140	220	150	45
MW5-120L/1	45.5	10	7500	1300/1000	600/500	1700	1200	1180	220	150	45
MW5-130L/1	54	11.9	8500	1400/1100	700/600	2060	1300	1240	250	175	50
MW5-150L/1	71.2	15.6	11000	1900/1500	1100/900	2830	1500	1250	350	210	60
MW5-165L/1	75	16.5	12500	2300/1800	1300/1100	3200	1650	1590	370	230	75
MW5-180L/1	102.4	22.5	14500	2750/2100	1600/1350	4230	1800	1490	370	230	75
MW5-210L/1	129	28.4	21000	3500/2800	2200/1850	7000	2100	1860	400	250	80
MW5-240L/1	154	33.9	26000	4800/3800	2850/2250	9000	2400	2020	450	280	90

Technical Parameter in High Temperature

Model	Current (A)	Power (Kw)	Lifting capacity (Kg)			Weight (Kg)	Dimension (mm)				
			Steel ball	Steel ingot	Cutting		A	B	C	D	E
MW5-70L/2	12.77	2.8	2500	380/200	120/100	520	700	820	160	90	30
MW5-80L/2	16.1	3.54	3000	480/250	150/130	650	800	800	160	90	30
MW5-90L/2	20.5	4.51	4500	600/400	250/200	900	900	1090	200	125	40
MW5-110L/2	27.5	6.05	6500	1000/800	450/400	1500	1100	1350	220	150	45
MW5-120L/2	33.6	7.4	7500	1300/1000	600/500	1800	1200	1280	220	150	45
MW5-130L/2	40.6	8.93	8500	1400/1100	700/600	2300	1300	1280	250	175	50
MW5-150L/2	51.4	11.3	11000	1900/1500	1100/900	3200	1500	1620	350	210	60
MW5-165L/2	60.6	13.3	12500	2300/1800	1300/1100	3500	1650	1630	370	230	75

3. MW61 series electromagnet

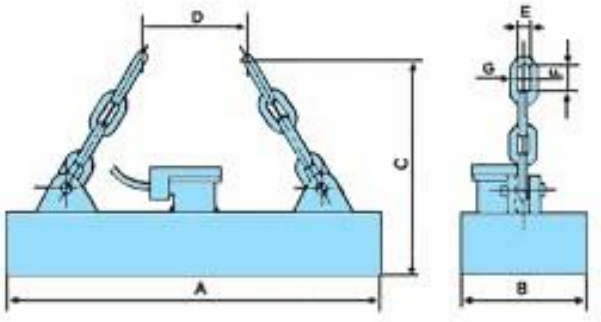
Model	Voltage (V)	Current (A)	Power (Kw)	Lifting capacity (Kg)		Weight (Kg)	Dimension (mm)					
				Steel ingot	cutting		A	B	C	D	E	F
MW61-200150L/1-75	DC-290/200	109.8/75.7	31.9/15.2	2200/1900	1000/800	4200	2000	1500	1300	250	180	70
MW61-300150L/1-75		195/135	56.6/27	3400/2850	1500/1250	5700	3000	1500	1570	310	210	60
MW61-180160L/1-75		113/78	32.7/15.5	2550/2000	1150/900	5000	1800	1600	1500	310	210	60
MW61-250200L/1-75		179/123	51.9/24.6	5000/4200	2300/1800	8400	2500	2000	2000	390	280	90
MW61-450250L/1-75		267.3/184	77.53/36.8	12000/10000	5800/3500	22000	4500	2500	2000	390	280	90
MW61-150110L/1	DC-220	54	11.9	1500/1200	800/700	2500	1500	1100	1240	250	175	50
MW61-250150L/1		118.6	26	2800/2400	1300/1000	6500	2500	1500	2000	310	210	60

4. MW1 series electromagnet

Model	Current (A)	Lifting capacity（kg）			Dimension (mm)		Weight (kg)
		steel plate	cutting	Steel ingot	ΦA	H	
MW1-6	15	6000	80	200	700	800	492
MW1-6（cast）	13.4	6000	80	200	776	884	640
MW1-16	35	16000	200	600	1100	1140	1350
MW1-16A/G	32.8	25000	--	--	1400	1175	3400
MW1-45	75	45000	600	1800	1650	1530	5520
MW1-45A	82	35000	-	1300	1650	1210	2700
MW1-45B	71	35000	-	1500	1650	1210	3650

5. MW84 series electromagnet

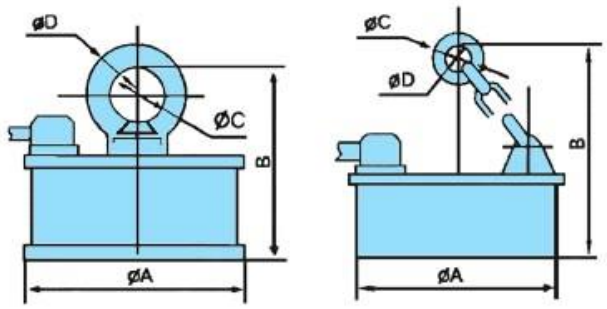
Application: this series is special for lifting middle or thick steel plate. Working is safe and fast. When it lifts long steel plate, it is better to use several electromagnets to ensure the safe loading. For some thick plate (6mm-32mm) the space between electromagnets is 3-4 m, the extra length is half of this space. There are different types for different lifting quality, 350 type and 400 type. 350 type is applied in thick plate factory, ship-building factory, machine making. It can lift one or several steel plates one time with adjustable magnetic control. 400 type lift steel plates as many as possible. If you need, we can design a special electromagnet for loading under high temperature of 700 Celsius.



Model	Dimension (mm)							Weight (kg)	Power (kw)	Target object's width (mm)				
	A	B	C	D	E	F	G			δ6	δ8	δ10	δ12	δ16
MW84-9030T	900	300						185	0.41	2300	2700	3000	3200	3600
MW84-10535T	1050	350	960	400	110	180	32	330	0.9	2650	3150	3350	3550	4050
MW84-14035T	1400	350	940	500	110	180	32	430	1.2	3000	3500	3700	3900	4400
MW84-17535T	1750	350	940	700	110	180	32	510	1.5	3350	3850	4050	4250	4750
MW84-21035T	2100	350	920	800	110	180	32	600	1.8	3850	4200	4400	4600	5100
MW84-24535T	2450	350	980	900	110	180	32	720	2.5	4200	4550	4750	4950	5450
MW84-12040L	1200	400	1017	400	110	180	32	550	3.0	4550	3500	3700	4000	4500
MW84-16040L	1600	400	996	700	110	180	32	690	3.2	3400	3900	4100	4400	4900
MW84-20040	2000	400	970	800	110	180	32	840	5.0	3800	4300	4500	4800	5300
MW84-24040L	2400	400	890	700	110	180	32	90	6.0	4200	4700	4900	5200	5700
MW84-13042L/G	1260	420	1040	500	110	180	32	650	2.4	3060	3560	3760	4060	4560
MW84-17042L/G	1680	420	1045	700	110	180	32	850	3.7	3480	3980	4180	4480	4980
MW84-21042L/G	2100	420	1010	800	110	180	32	1050	4.0	3900	4400	4600	4900	5400
MW84-25042L/G	2520	420	1050	900	110	180	32	1250	4.8	4320	4820	5020	5320	5820

6. MW04 series electromagnet

Application: the small round electromagnet is used to lift single steel plate or long steel plate. It also can be regarded as a fixture or hand to grasp some small object. You should consider the steel plate's width, thickness, weight when choosing electromagnet and its controlling equipment.



Model		MW04-17T		MW04-22T		MW04-32T		MW04-40T	
Dimension (mm)	A	165		216		318		406	
	B	113		147		178		480	
	C	30		40		60		100/55	
	D	10		16		25		16	
Weight（kg）		7		15		30		75	
Power (KW)		0.10		0.20		0.25		0.40	
One electromagnet lifting size (mm) L×W		1200×1200		1400×1400		1600×1600		2500×2500	
(Several electromagnets) One electromagnet shares size (mm) L×W		600×1200		700×1400		800×1600		1000×2500	
Attraction	Thickness	δ3.2	δ5	δ6	δ10	δ10	δ20	δ12	δ32
	Fasten around	>100kg	>200kg	>300kg	>600kg	>800kg	>2000kg		>4000kg

Yuantai Crane Machinery

Crane&Hoist Solution Supplier

Address
3#-A-2005, Shenglong Plaza, Zhengzhou City, Henan Province, China.
Tel/Whatsapp/Wechat:
008613653868275
Fax
0086-371-65760775
Email
jason@ytcrane.com
Website
www.ythoist.com