

## ZCQ 型

# 自吸式磁力泵



## 产品说明书

Products Specification

### 重要

操作人员在使用本产品前，  
请务必仔细阅读产品说明书，  
以确保操作安全。

### IMPORTANT

Please ensure that these instructions are read and understood by machine operators before using the product.

请详阅手册内容并善加保存  
Please read and save this manual



## ZCQ系列自吸式磁力驱动泵 ZCQ series self priming magnetic-driving pump

### ◆ 用途

ZCQ系列自吸磁力泵广泛应用于石油、化工、冶金、制药、电镀、环保等行业，可输送高温类易燃、易爆、剧毒、贵重液体。

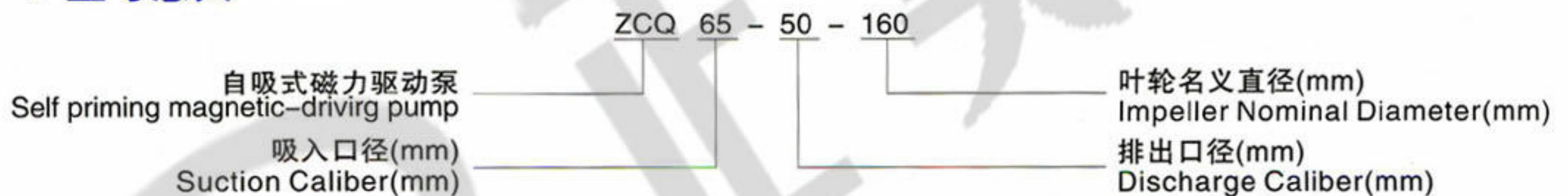
### ◆ 性能

流量：1.6-100m<sup>3</sup>/h  
扬程：15-80m  
功率：0.75-75kw  
自吸性能：4m/3分钟

### ◆ 特点

采用磁力传动原理及外混式轴向回水泵体结构，既无泄漏又能自吸。

### ◆ 型号意义



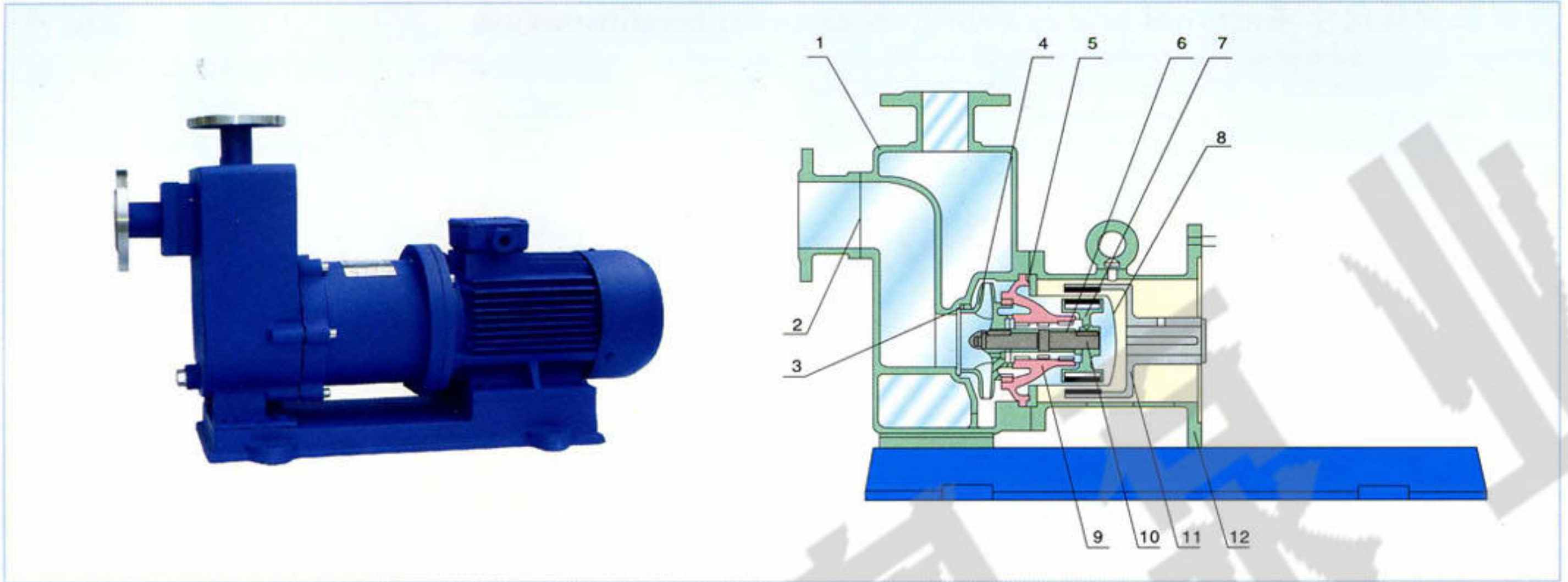
### 性能参数表

### Performance parameter table

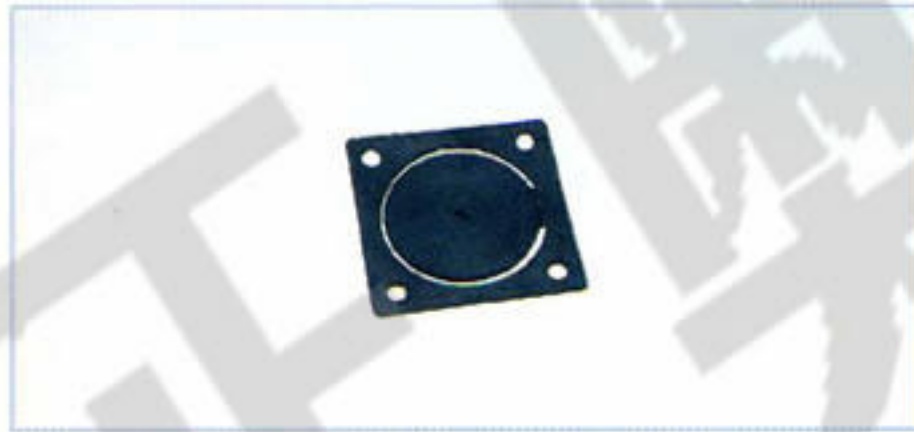
Type 型号	mm		L/min 流量Q Flow	(m) 扬程H Head	kw 功率 Power	(V) 电压 Voltage	(m/3min) 自吸性能 Self priming performance
	进口 inlet	出口 outlet					
ZCQ20-12-110	20	12	50	12	0.37	380	4
ZCQ25-20-115	25	20	110	15	1.1	380	4
ZCQ32-25-115	32	25	110	15	1.1	380	4
ZCQ32-25-145	32	25	110	25	1.1	380	4
ZCQ40-32-132	40	32	180	20	2.2	380	4
ZCQ40-32-160	40	32	180	32	4	380	4
ZCQ50-40-145	50	40	240	25	4	380	4
ZCQ50-40-160	50	40	220	32	4	380	4
ZCQ65-50-145	65	50	280	25	5.5	380	4
ZCQ65-50-160	65	50	450	32	7.5	380	4
ZCQ80-65-125	80	65	800	20	7.5	380	4
ZCQ80-65-160	80	65	800	32	15	380	4
ZCQ100-80-160	100	80	1500	32	22	380	4



## ZCQ系列自吸式磁力驱动泵 ZCQ series self priming magnetic-driving pump



1、泵体 Pump body  
 不锈钢 Stainless steel



2、止回阀 Check valve  
 氟橡胶 Viton



3、静环 Standstill hoop  
 高纯氧化铝陶瓷 high-purity aluminaceramics



4、叶轮 Impeller unit  
 不锈钢 Stainless steel



5、密封圈 O-Ring  
 聚四氟乙烯 Polyterafluoroethylene



6、前后轴套 Front and back shaft sleeve  
 填充聚四氟乙烯 Fill up polyterafluoroethylene



7、内磁钢总成 Magnetic steel part  
 磁体组件 Magnetic body part



8、隔离套 Isolating suite  
 不锈钢 Stainless steel



9、隔板 Clapcard  
 不锈钢 Stainless steel(1Cr18Ni9Ti)



10、泵轴 Pump shaft  
 不锈钢 Stainless steel



11、外磁钢总成 Exterior magnetic steel part  
 磁体组件 Magnetic body part

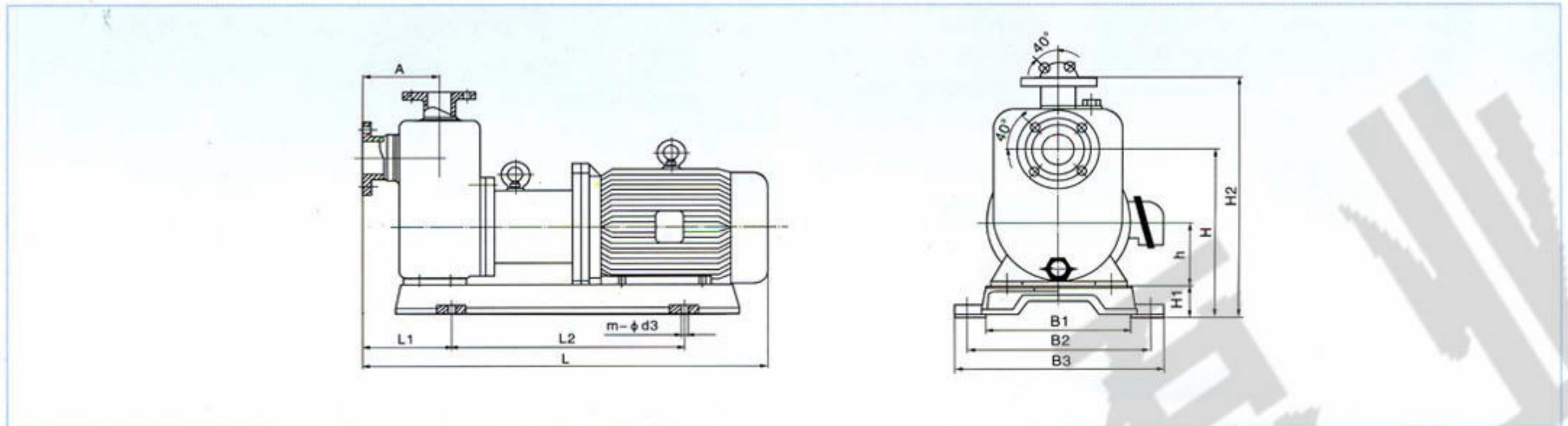


12、联接架 Braced framing  
 铸铁 Cast iron



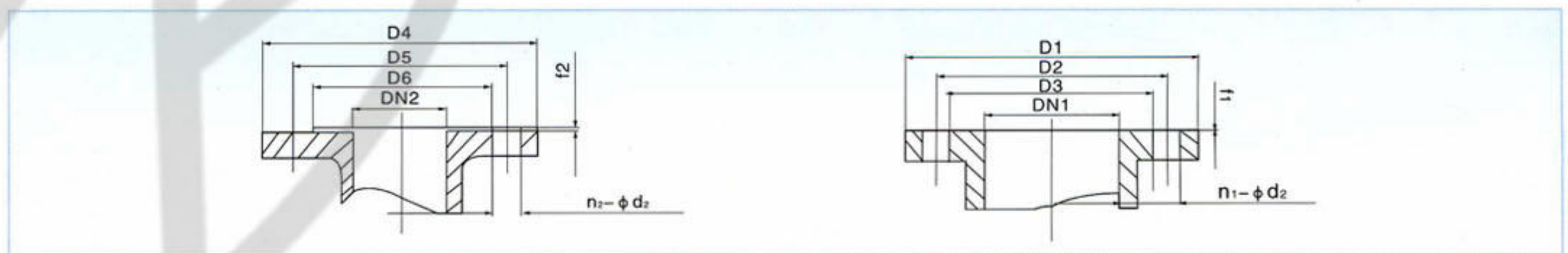
## ZCQ系列自吸式磁力驱动泵 ZCQ series self priming magnetic-driving pump

### 外形和安装尺寸 External and drawing of installation dimension



型号 Type	A	B1	B2	B3	h	H	H1	H2	L	L1	L2	m-φd3
ZCQ20-12-110	100	185	195	225	205	275	50	370	345	135	225	4-φ13.5
ZCQ25-20-115	132	200	260	290	80	245	54	370	550	145	290	4-φ13.5
ZCQ32-25-115	132	200	260	290	80	245	54	370	550	145	290	4-φ13.5
ZCQ32-25-145	105	200	260	290	80	265	54	380	555	130	290	4-φ13.5
ZCQ40-32-132	140	200	225	260	90	265	54	400	640	150	340	4-φ13.5
ZCQ40-32-160	150	290	340	370	112	295	50	400	730	175	310	4-φ13.5
ZCQ50-40-145	150	290	340	370	112	295	50	400	730	175	310	4-φ13.5
ZCQ50-40-160	150	290	340	370	112	295	50	440	730	175	310	4-φ13.5
ZCQ65-50-145	150	290	340	370	132	355	80	500	810	270	310	4-φ13.5
ZCQ65-50-160	185	320	345	390	132	385	80	545	865	340	340	4-φ13.5
ZCQ65-40-200	180	340	400	440	160	446	96	650	1040	230	610	4-φ18.5
ZCQ80-65-125	200	270	316	350	132	446	82	630	960	230	520	4-φ13.5
ZCQ80-65-160	200	340	400	440	160	446	96	630	1060	230	610	4-φ18.5
ZCQ80-50-200	200	340	400	440	180	470	96	680	1090	230	610	4-φ18.5
ZCQ80-50-250	200	375	460	510	220	510	100	760	1250	280	700	4-φ28
ZCQ100-80-160	240	340	400	440	180	465	96	650	1090	250	700	4-φ24
ZCQ100-65-200	240	375	460	510	220	510	100	760	1250	280	700	4-φ28
ZCQ100-65-250	240	435	520	570	280	620	120	860	1410	300	880	4-φ28

### 进出口法兰尺寸表 Flange dimension of inlet and outlet table



型号 Type	DN1	D1	D2	D3	f1	n1-φd1	DN2	D4	D5	D6	f2	n2-φd2
ZCQ20-12-110	20	90	65	50	2	4-φ11	12	40	55	80	2	4-φ11
ZCQ25-20-115	25	100	75	58	3	4-φ11	20	96	65	48	2	4-φ11
ZCQ32-25-115	32	120	90	69	3	4-φ14	25	100	75	58	3	4-φ11
ZCQ32-25-145	32	120	90	69	3	4-φ14	25	100	75	58	3	4-φ11
ZCQ40-32-132	40	150	110	84	3	4-φ18	32	140	100	78	3	4-φ14
ZCQ40-32-160	40	150	110	84	3	4-φ18	32	140	100	78	3	4-φ14
ZCQ50-40-145	50	165	125	99	3	4-φ18	32	140	100	78	3	4-φ14
ZCQ50-40-160	50	165	125	99	3	4-φ18	32	140	100	78	3	4-φ14
ZCQ65-50-125	65	185	145	118	3	4-φ18	50	165	125	99	3	4-φ18
ZCQ65-50-160	65	185	145	118	3	4-φ18	50	165	125	99	3	4-φ18
ZCQ65-40-200	65	185	145	118	3	4-φ18	40	150	110	84	3	4-φ18
ZCQ80-65-125	80	200	160	132	3	4-φ18	65	185	145	118	3	4-φ18
ZCQ80-65-160	80	200	160	132	3	4-φ18	65	185	145	118	3	4-φ18
ZCQ80-50-200	80	200	160	132	3	4-φ18	50	165	125	99	3	4-φ18
ZCQ80-50-250	80	200	160	132	3	4-φ18	50	165	125	99	3	4-φ18
ZCQ100-80-160	100	220	180	156	3	4-φ18	80	200	160	132	3	4-φ18
ZCQ100-65-200	100	220	180	156	3	4-φ18	65	185	145	118	3	4-φ18
ZCQ100-65-250	100	220	180	156	3	4-φ18	65	185	145	118	3	4-φ18



## 磁力泵常见故障及其排除方法

故障形式	产生原因	排除方法
泵不出水	<ol style="list-style-type: none"> <li>1、水泵反转</li> <li>2、进水管漏气</li> <li>3、泵腔蓄水太少</li> <li>4、电压太高，启动时联轴器打滑</li> <li>5、吸程太高</li> <li>6、没有灌水或泵内灌水不足</li> <li>7、叶轮受阻不转</li> <li>8、底阀堵塞或锈死</li> </ol>	改变电机接线 杜绝漏气 增加蓄水量 调整电压 降低泵安装位置 放净空气、灌满水 清洗叶轮、泵壳、隔离套 清除堵塞物和修理底阀
流量不足	<ol style="list-style-type: none"> <li>1、吸入管径太小</li> <li>2、叶轮流道堵塞</li> <li>3、扬程过高</li> <li>4、转速太低</li> <li>5、叶轮磨损或腐蚀严重</li> <li>6、安装的总扬程太高或吸水扬程超过规定</li> <li>7、吸入管路有空气漏进</li> <li>8、密封环严重磨损</li> </ol>	调换进水管 清洗叶轮 开大出水阀 恢复额定转速 更换叶轮 降低扬程、降低泵的安装位置 杜绝漏气 更换密封环
扬程过低	<ol style="list-style-type: none"> <li>1、流量过大</li> <li>2、转速太低</li> </ol>	关小出水阀 恢复额定转速
噪音太大	<ol style="list-style-type: none"> <li>1、轴严重磨损</li> <li>2、轴套严重磨损</li> <li>3、驱动磁钢杯与隔离套接触</li> <li>4、转动部分和固定部分有摩擦</li> <li>5、吸水扬程超过规定或底阀阻塞</li> <li>6、泵没有固定好</li> </ol>	更换泵轴 更换轴套 调整间隙或更换部件 检修、更换零件 降低水泵位置或消除堵塞物 重新固定好
漏液	<ol style="list-style-type: none"> <li>1、螺钉松动</li> <li>2、O型密封圈损坏</li> <li>3、泵壳或隔离套破裂或腐蚀穿孔</li> </ol>	拧紧螺钉 更换O型密封圈 更换泵壳或隔离套



## Common faults and removal methods of magnetic pump

Fault form	Cause	Removal method
No Water from the pump	<ol style="list-style-type: none"> <li>1. Reversion of water pump</li> <li>2. Air leakage of water inlet channel</li> <li>3. Too little water store in the pump chamber</li> <li>4. Too high voltage causing the skid of coupling during activation</li> <li>5. Too high suction head</li> <li>6. No watering or insufficient watering in the pump</li> <li>7. The impeller is blocked and doesn't rotate.</li> <li>8. The bottom valve is clogged or rust buildup.</li> </ol>	<p>Change the wire splice of the engine Stop the air leakage Increase the water storage Adjust the voltage</p> <p>Reduce the installation position of the pump Empty the air and watering to the full Wash the impeller, pump casing and distance sleeve Remove the stuffing and repair the bottom valve</p>
Insufficient flow	<ol style="list-style-type: none"> <li>1. The suction pipe caliber is too small</li> <li>2. The impeller flow channel is stuffed</li> <li>3. Too high head</li> <li>4. Too low speed of rotation</li> <li>5. Serious abrasion or corrosion of the impeller</li> <li>6. The total head installed is too high or the water suction head exceeds the regulation.</li> <li>7. There is air coming into the suction pipeline.</li> <li>8. Serious abrasion of seal ring</li> </ol>	<p>Exchange the water inlet pipe Wash the impeller Release the discharge valve to a larger extent Restore the rated rotation speed Change the impeller Reduce the head and debase the installation position of the pump Stop the air leakage Change the seal ring</p>
Extra low head	<ol style="list-style-type: none"> <li>1. Over flow</li> <li>2. Too low rotation speed</li> </ol>	<p>Turn down the discharge valve Restore the rated rotation speed</p>
Too loud noise	<ol style="list-style-type: none"> <li>1. Serious abrasion of shafts</li> <li>2. Serous abrasion of shaft sleeve</li> <li>3. Contact between driven magnetic steel cup and distance sleeve</li> <li>4. Friction between rotating part and fixed part</li> <li>5. The water suction head exceeds the regulation or the bottom valve is stuffed.</li> <li>6. The pump is not fixed well.</li> </ol>	<p>Change the pump shafts Change the shaft sleeve Adjust the clearance or change compon ents Service and change parts Debase the position of the pump or remove the stuffing Fix it properly again</p>
Leakage	<ol style="list-style-type: none"> <li>1. The bolt is loose.</li> <li>2. O-ring is damaged.</li> <li>3. The pump casing or distance sleeve is broken or corroded to be perforated.</li> </ol>	<p>Screw down the bolt tightly Change the O-ring Change the pump casing or distance sleeve</p>



## 使用过程中注意事项(重要) Notes for use (Important)

- (一)因磁力泵轴承的冷却和润滑是靠被输送的介质，所以绝对禁止空运转，同时避免在工作中途停电后再启动时所造成的空转运转。
- (二)被输送介质中，若含有固体颗粒，泵入口要加过滤网；如含有铁磁质微粒，需加磁性过滤器。
- (三)泵在使用中环境温度应小于40℃，电机温升不得超过75℃。
- (四)被输送的介质及其温度应在泵材允许范围内(详见磁力泵耐腐蚀性能表)。工程塑料泵的使用温度<60℃，吸入压力不大于0.1MPa，最大工作压力为0.6MPa；金属泵的使用温度<80℃，风冷式高温泵的使用温度<180℃，水循环式高温泵使用温度<280℃，输送吸入压力不大于0.2MPa，最大工作压力1.6MPa、密度不大于1600kg/m<sup>3</sup>，粒度不大于30×10<sup>-6</sup>m<sup>2</sup>/S的不含硬颗粒和纤维的液体(若超过该范围，订货时必须说明，方可正常使用)。
- (五)对于输送液为易沉淀结晶的介质，使用后应及时清洗，排净泵内积液。
- (六)磁力泵运行500小时后，应拆检轴承和端面动环的磨损情况，若轴承和轴套的间隙大于0.5~1mm，叶轮轴向窜动1.5~2mm时，应更换轴承和轴向动环。
- 注意：1、磁力泵在维修拆装过程中，内、外磁钢部件辐射出来的磁场将对如：心脏起搏器、信用卡、计算机磁盘、手表、精密仪器、仪表等产生磁场干扰，甚至产生危害性的影响。
- a)上述物件应远离磁性器件，保持1米以上的距离。
- b)装配好的整机磁力泵，不存在上述问题，因结构上有磁回路屏，可放心使用。
- 2、装配内磁转子对准外磁转子轴向到位时，由于磁吸力(尤其是钕铁硼或稀土钴强磁)，用户应采取适当的缓冲措施，以免卡、夹手指，防止工伤事故。

1. Because the cooling and lubrication of the bearing of the magnetic pump rely on the conveyed medium, the idle running should be prohibited absolutely. It is also necessary to avoid the idle running caused by the reactivation after the power failure during operation.
  2. If the convey medium contains solid grains, the pump inlet should be provided with an additional strainer; in case of ferromagnetic substance particles, a magnetic filter should be added.
  3. The ambient temperature for the pump during operation should be lower than 40℃ and the temperature rise of the engine should not exceed 75℃.
  4. The conveyed medium and its temperature should be within the allowable range of pump materials (See the table for corrosion-proof performance of magnetic pump). For engineering plastic pump, the working temperature is <60℃ with suction pressure not higher than 0.1MPa and 0.6MPa maximum working pressure; for metal pump, the working temperature is <80℃; for air-cooled high temperature pump, the working temperature is <180℃; and for water circulating high temperature pump, the working temperature is <280℃, transporting the liquid containing no hard grains and fibers with suction pressure not higher than 0.2MPa, 1.6MPa maximum working pressure, density not larger than 1600kg/m<sup>3</sup> and gran ularity not larger than 30×10<sup>-6</sup>m<sup>2</sup>/S (In case of exceeding this range, description should be given in the order for normal operation.)
  5. If the transportation liquid is medium easily generating crystal sediment, it is necessary to wash promptly after use to clean away the deposited liquid in the pump.
  6. After the magnetic pump operates for 500 hours, it is necessary to disassemble and check the abrasion condition of the bearing and the rotating seal ring on the end surface. If the clearance between the bearing and the bearing bush is larger than 0.5~1mm and the axial float of the impeller is within 1.5~2mm, it is necessary to change the bearing and the axial rotating seal ring.
- Note:
- (1) During disassembling and installing the magnetic pump for service, the magnetic field radiated by the internal and external magnetic steel components will cause magnetic field interference and even have a hazardous effect on such articles as heart pacemakers, credit cards, computer disks, watches, precision instruments and meters.
    - a) The above articles should be kept far away from the magnetic parts with a distance longer than 1 m.
    - b) The complete magnetic pump assembled has not the above problems. As there is a magnetic loop screen on the structure, it can be used at ease.
  - (2) When the internal magnetic rotor of the installation aims at the external magnetic rotor with a right axial direction, due to the magnetic attraction (esp. Nd-Fe-B or rare earth-cobalt strong magnetic) the user should take proper buffer measures in case the fingers may be trapped or clamped so as to avoid industrial accidents.



## 产品抗化学腐蚀状况 Chemical resistance guide

抗化学腐蚀标签注释:

- A—优秀;
- B—好
- C—一般
- X—不能接受
- 不能用于

液体最高温度标签注释:

- 1—20度(68F);
- 2—40度(104F);
- 3—60度(140F);
- 4—80度(176F);
- 5—100度(212F);
- 6—120度(248F)

Chemical resistance ratings:

- A—Excellent
- B—Good
- C—Fair
- X—Not Recommended
- Data Not Available

Maximum operating temperature:

- 1—20℃ (68F);
- 2—40℃ (104F);
- 3—60℃ (140F);
- 4—80℃ (176F);
- 5—100℃ (212F);
- 6—120℃ (248F)

化学药品 CHEMICAL	材料 MATERIAL									
	聚丙烯 PP	聚偏二氟乙烯 Polymethylene fluoride fibre	聚四氟乙烯 PTFE	不锈钢 Stainless steel	氟橡胶 FKM	丁腈橡胶 Chemigum	三元乙丙胶 EPDM	95陶瓷 95 Ceramic	高密度碳 High density carbon	
硫酸 Sul furica Acid	0~10%	A4	A6	A6	B1	A6	B2	A4	A5	A6
	10~75%	A3	A3	A6	x	A4	x	A3	A5	A6
	75~100%	B2	B1	A4	C1	A4	-	B2	A5	A4
硝酸 Nitric Acid	10%	A3	A3	A5	A5	A5	x	A2	A5	A6
	30%	A2	A3	A6	A5	A6	x	A2	A5	A6
	50%	B2	A3	A3	A5	A1	x	x	A5	A5
盐酸 Hydrochloric Acid	0~25%	A4	A6	A6	x	A3	B1	A3	A5	A6
	25~40%	A4	A6	A6	x	B2	x	C2	A5	A6
氢氟酸 Hydrofluoric Acid	10%	B2	A6	A6	x	A3	x	A3	-	A3
	30%	C2	A6	A6	x	A4	-	B3	-	A3
	60%	x	A5	A6	x	A4	-	C2	-	A2
醋酸 Acetic Acid	20%	A2	A3	A6	B5	B1	B2	A2	A5	A4
	80%	B1	A3	A6	B1	x	-	-	A5	A4
氢氧化钠 Sodium Hydroxide	20%	A3	A3	A6	B1	B1	B2	A3	-	A3
	50%	A3	A3	A6	B1	x	B1	A4	-	A3
溴水 Bromine Water	C1	A4	A3	C1	A2	-	x	A1	A2	
乙醇 Ethyl Alcohol	A2	A6	A3	B5	A3	x	B3	A3	A5	
丙酮 Acetone	A2	x	A6	A5	x	-	B2	A3	A5	
氟里昂12 Freon12	x	A4	A6	B5	A1	x	B1	A4	A4	
氯化铝 Aluminum Chloride	A4	A6	A6	x	A5	B4	A4	A4	A5	
氨水 Ammonia Liquid	A1	A4	A6	A5	C1	B1	B3	A3	A5	
王水 Aqua regia	C2	A1	A5	x	B2	-	C2	A4	-	
甲醛 Formaldehyde.	A4	A4	A6	A4	A4	x	A4	A4	A5	
汽油 Gasoline	x	A6	A6	A5	B3	B3	x	A4	A6	
煤油 Kerosene	A1	A6	A6	A5	A1	B1	x	A4	A6	
甲醇 Methyl alcohol	A3	A6	A6	A5	B2	B4	A3	A5	A6	
甲苯 Toluene	C1	A3	A4	A5	B1	-	x	A5	A4	
三氯乙烯 Trichloroethylene	C1	A6	A6	B5	A1	-	x	A4	A6	
二甲苯 Xylene	x	A3	A6	A5	B1	-	x	A5	A5	
无水硝酸 Nitric acid anhydrous	C1	A3	A3		A1	-	x	A5	A2	
发烟硫酸 Oleum	x	x	A6	x	A4	-	x	A5	A2	
氢氧化钾 Potassium hydroxide	A4	A3	A6	A1	B1	C2	A5	-	A6	

注: 95陶瓷——含氧化铝95%。 Note: 95 cerami means containing 95 percent of alumina





本公司保留产品设计改进权，如有变动，恕不另行通知。2011



## 上海正奥泵业制造有限公司

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