

用心服务·品质卓越



### IR耐腐蚀保温泵 IR CORROSION RESISTANT THERMAL INSULATION PUMP

产品说明书 Product specification

## 1 概述

1.1 IR型保温泵是单级单吸（轴向吸人）悬臂式离心泵，供输送不含固体颗粒、具有腐蚀性、粘度类似水的液体。其标记，额定性能和尺寸等效采用国际标准ISO2858，技术条件执行GB/T 5656-1994标准，具有性能范围广、效率高、“三化”水平高和维修方便等特点。

IR型保温泵输送介质温度为-40℃~180℃,需要时采用密封改装及冷却措施可输送更高温度的介质。适用于化工、环保、石油、冶金、电力、造纸、食品、废水淨水处理、制药和合成纤维等行业用于输送各种腐蚀性的或不允许污染的类似于水的介质。

IR型系列泵的性能范围：

流量Q: 6.3~400m<sup>3</sup>/h;

扬程H: 5~125m;

转速n: 2900、1450r/min;

配套功率: 0.55~110kW;

进口直径: 50~200mm;

最高工作压力: 1.6MPa。

### 1.2 泵型号意义：

例：IR50-32-160A

IR-国际标准单级单吸耐腐蚀保温泵；

50-泵入口直径(mm);

32-泵出口直径(mm);

160-叶轮名义直径(mm);

A-叶轮经第一次切割。

## 2 泵的结构

2.1 IR型泵是全国泵行业采用ISO国际标准联合设计的系列产品，其主要由泵体、叶轮、密封环、叶轮螺母、泵盖、密封部件、中间支架、轴、悬架部件等组成。

### 2.2 泵的结构特点(见图1):

泵的结构特点是：IR型化工保温泵主要过流部位设有空心夹层，并设有可供通蒸汽、热水、热油、汽水等输送液和泵进行多重循环，保温有多种方式与外界保温系统联接。

泵盖通过止口固定在中间支架上，然后通过泵体与中间支架止口的联接把泵盖夹紧在中间，泵体是轴向吸人，径向排出，脚支承式，可直接固定在底座上。悬架部件通过止口固定在中间支架上，并用悬架支架支撑在底座上。

## 1 Brief introduction

1.1 IR chemical pump is of single-stage single suction anti-corrosive centrifugal pump (axial suction) to transport the corrosive liquid which doesn't contain granule and is similar with the water in adherence. Its label, rate and size meet with the standard of ISO2858. And the technology condition meets with the standard of GB/T 5656-1994. It features various performance, high efficiency and easy access to repair.

The medium temperature is between -40℃ and 180℃. The additional measurements in mechanical seal and cooling measurement can ensure transportation of higher temperature of medium. It is widely used at the industries to transport kinds of corrosive medium and the medium similar with water which must be immune to pollution such as petroleum, chemistry, metallurgy, synthetic fiber, pharmacy, foodstuff, waste water treatment.

Performance of series IR pump:

Flow Q: 6.3~400m<sup>3</sup>/h;

Lift H: 5~125m;

Rotation speed n: 2900, 1450r/min;

Power: 0.5~110kW

Inlet diameter: 50~200mm

Max. working pressure: 1.6MPa

### 1.2 Model explanation;

(IR50-32-160A as example)

IR- single-stage single suction corrosion resistant thermal insulation pump of international standard

50- diameter of pump suction(mm)

32- diameter of pump outlet(mm)

160- nominal diameter of impeller(mm)

A- First time of cutting outer diameter of impeller

## 2 Pump structure

2.1 The IR pump is a series product that is developed jointly by the China pump industry on the base of ISO standard. It consists of pump body, impeller, seal ring, impeller nut, pump cover, seal part and medium support, shaft and pendant, etc.

### 2.2 Structure feature(See fig. 1):

The structure feature as follows: IR heat preservation pump's main flow part has hollow interlayer, and multi-cycle for transporting the steam, hot water, hot oil and soda pop. Heat preservation has a variety of ways with the heat preservation outside. The pump cover is fastened at the medium support by stop part. And the pump cover is clapped at the middle by the connection of pump body and the stop part of medium support. The pump body is axial suction and radial exhaust. The foot can be fastened at the base. The pendant part can be fastened at the medium support by stop part and be supported at the base by pendant support. To convenient disassembly, the shaft coupling is made longer so that it is available not to

2.3 泵的旋转方向：泵通过加长联轴器由电动机直接驱动，从电动机端看，按顺时针方向旋转。

#### 2.4 泵的轴封型式：

填料密封：泵盖内设有填料函，采用软填料密封，填料函内可通入有一定压力的水，供密封冷却、润滑、清洗用。

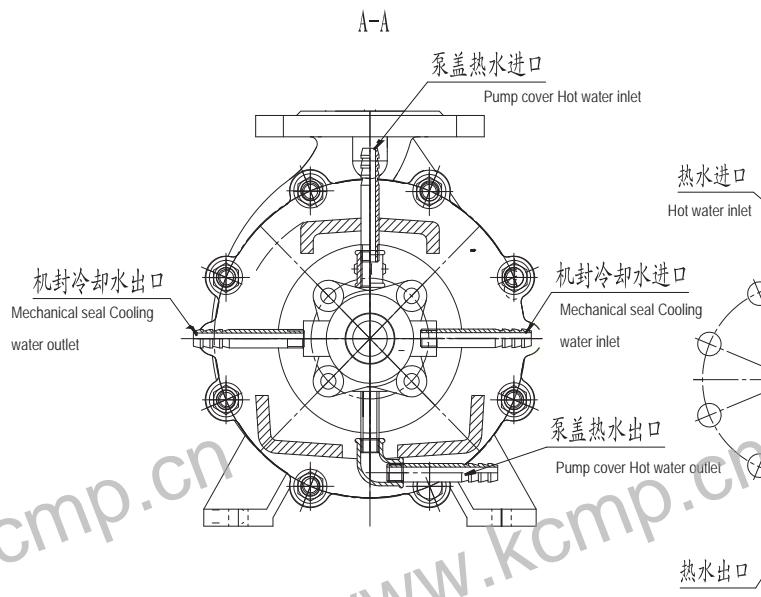
机械密封：单端面机械密封和双端面机械密封两种型式，密封腔内通入一定压力的水，冲洗磨擦端面，同时起冷却作用。

泵的密封型式采用填料密封或机械密封，由用户根据需要选用，同时根据需要允许采用适合于ISO3069规定的密封空腔尺寸的其他结构的轴封型式，如带波纹管的机械密封和付叶轮密封等等。

2.5 泵的材质：泵的过流部件均采用不锈钢材料。用户可根据所输送介质对泵腐蚀的情况，选用相适应泵的过流部件(即泵体、密封环、叶轮螺母、泵盖、叶轮和密封部件)材料(见表1)所示：

#### 2.6 产品应用

IR型化工保温泵适用于在常温下有凝固结晶性的化工介质，适用于汽化点需冷却的介质，也适用于高寒高原地带介质温度-40~+200℃输送溶液介质凝固点(或结晶点温度)高，具有腐蚀的液体。



- 1.泵体 (Pump body)
- 2.叶轮 (Impeller)
- 3.叶轮螺母 (Impeller net)
- 4.泵盖 (Pump cover)
- 5.轴套 (Shaft set)
- 6.机械密封 (Mechanical seal)
- 7.密封压盖 (Mechanical seal cover)
- 8.中间托架 (Medium support)
- 9.轴承压盖 (Bearing cover)
- 10.泵轴 (Pump shaft)
- 11.轴承 (Shaft)
- 12.支架 (Pendant part)

disassemble the connection pipe line for suction and outlet, pump body and motor. The only is to detach the middle connection part at lengthened shaft coupling to take down the rotor for repair. It is popular mode.

2.3 Pump rotation: The pump rotates under the drive of motor by lengthened shaft coupling. The rotation is clockwise when the observation point is at the motor.

#### 2.4 Shaft seal mode of pump

Filler seal: There is stuffing box at the pump cover sealed by soft filler. The pressured water can be filled the stuffing box to cool, lubricate and clean the seal.

Mechanical seal: There exit two modes for mechanical seal, Single-terminal face and two-terminal face. The seal cavity is filled with pressured water to clean the frictional terminal face and cool.

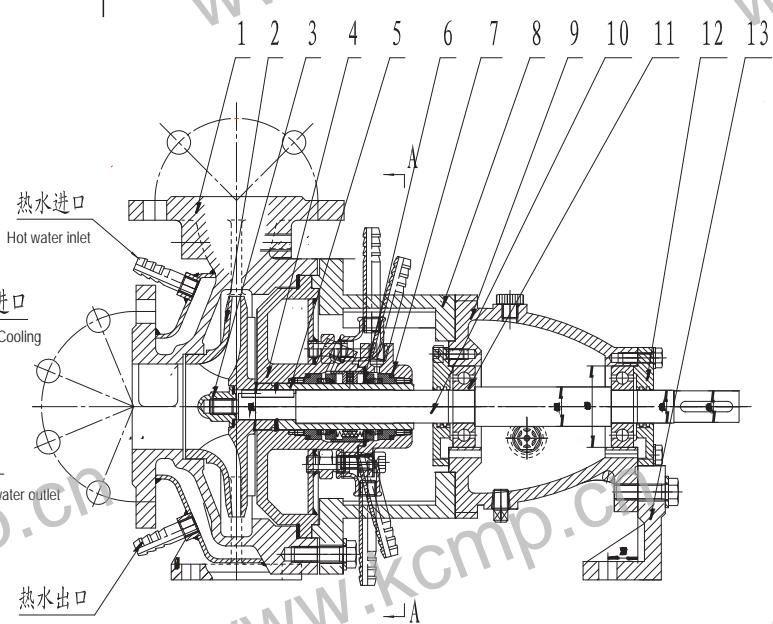
The seal mode is of filler seal and mechanical seal which are optional.

Meanwhile, it is allowable to adopt other structure of shaft seal such as mechanical seal with corrugated pipe and counter-shaft impeller that can match the size of seal cavity of ISO3069.

2.5 Pump material: The part in contact with the liquid is made of stainless steel. The user can choose the appropriate material for pump part in contact with the liquid such as pump body, seal ring, impeller nut, pump cover and seal part. (See table 1 )

#### 2.6 Product application

IR heat preservation pump's main flow part has hollow interlayer, and multi-cycle for transporting the steam, hot water, hot oil and soda pop. Heat preservation has a variety of ways with the heat preservation outside. The temperature: -40~+200 C (crystal spot temperature) is high. It can transport the high freezing point, corrosion liquid.



### 3 泵的性能参数 (见表2)

表2(Table 2)

型号 Modele	转速n Rotational Speed(r/min)	流量Q Discharge		扬程H Lift(m)	效率 η Efficiency (%)	功率Power(KW)		汽蚀余量 Cavitation remain (NPSH)r(m)	泵重量 Pump Weight(kg)
		(m³/h)	(L/S)			轴功率 Shaft Power	电机功率 Motor Power		
IR50-32-125	2900	7.5	2.08	23	43	1.09	2.2	2	45
		12.5	3.47	20	51	1.33		2	
		15	4.17	18	49	1.50		2.5	
	1450	3.75	1.04	5.75	36	0.16	0.55	2	
		6.3	1.75	5	45	0.19		2	
		7.5	2.08	4.5	44	0.21		2.5	
IR50-32-125A	2900	6.8	1.89	18.8	40	0.87	1.5	2	48
		11.3	3.14	16.4	50	1.01		2	
		13.6	3.78	14.7	47	1.16		2.5	
	1450	3.4	0.94	4.7	33.3	0.13	0.55	2	
		5.7	1.58	4.1	43	0.15		2	
		6.8	1.89	3.7	42	0.16		2.5	
IR50-32-160	2900	7.5	2.08	34.5	33	2.13	3	2	58
		12.5	3.47	32	46	2.37		2	
		15	4.17	30	50	2.45		2.5	
	1450	3.75	1.04	8.6	29	0.3	0.55	2	
		6.3	1.75	8	40	0.34		2	
		7.5	2.08	7.5	43	0.36		2.5	
IR50-32-160A	2900	6.8	1.89	28.5	30	1.76	3	2	58
		11.3	3.14	26.4	44	1.85		2	
		13.6	3.78	24.8	48	1.91		2.5	
	1450	3.4	0.94	7.1	25.9	0.25	0.55	2	
		5.7	1.58	6.6	37.1	0.28		2	
		6.8	1.89	6.2	41	0.28		2.5	
IR50-32-200	2900	7.5	2.08	51.8	28	3.78	5.5	2	58
		12.5	3.47	50	39	4.36		2	
		15	4.17	48	43	4.56		2.5	
	1450	3.75	1.04	12.9	23	0.57	1.1	2	
		6.3	1.75	12.5	33	0.65		2	
		7.5	2.08	12	36	0.68		2.5	
IR50-32-200A	2900	6.8	1.89	42.7	25	3.16	4	2	58
		11.3	3.14	41	38	3.24		2	
		13.6	3.78	39.5	41	3.57		2.5	
	1450	3.4	0.94	10.6	20	0.49	0.75	2	
		5.7	1.58	10.3	31	0.52		2	
		6.8	1.89	9.9	34	0.54		2.5	

续表2(Following Table 2)

型号 Modle	转速n Rotational Speed(r/min)	流量Q Discharge		扬程H Lift(m)	效率 η Efficiency (%)	功率Power(KW)		汽蚀余量 Cavitation remain (NPSH)r(m)	泵重量 Pump Weight(kg)
		(m³/h)	(L/S)			轴功率 Shaft Power	电机功率 Motor Power		
IR50-32-250	2900	7.5	2.08	82	23	7.28	11	2	92
		12.5	3.47	80	33	8.25		2	
		15	4.17	78.5	36.5	8.79		2.5	
	1450	3.75	1.04	20.5	17	1.23	2.2	2	
		6.3	1.75	20	27	1.27		2	
		7.5	2.08	19.6	31	1.29		2.5	
IR50-32-250A	2900	7	1.94	71.9	20	6.84	11	2	46
		11.7	3.25	70	32	6.97		2	
		14	3.89	68.8	34	7.71		2.5	
	1450	3.51	0.98	18	15.4	1.12	1.5	2	
		5.9	1.64	17.5	25	1.25		2	
		7.02	1.95	17.2	27.9	1.18		2.5	
IR50-32-250B	2900	6.6	1.83	63.6	20	5.71	7.5	2	52
		11	3.06	62	30	6.19		2	
		13.2	3.67	60.9	33	6.64		2.5	
IR65-50-125	2900	15	4.17	21.3	47	1.85	3	2	52
		25	6.94	20	62	2.2		2	
		30	8.33	18.6	63	2.41		2.5	
	1450	7.5	2.08	5.4	44	0.25	0.55	2	
		12.5	3.47	5	55	0.31		2	
		15	4.17	4.5	56	0.33		2.5	
IR65-50-125A	2900	13.6	3.78	17.6	44	1.48	2.2	2	52
		22.7	6.31	16.5	61	1.67		2	
		27.3	7.58	15.4	59.9	1.91		2.5	
	1450	6.8	1.89	4.5	41	0.20	0.55	2	
		11.3	3.14	4.1	54	0.23		2	
		13.6	3.78	3.7	53	0.26		2.5	
IR65-50-160	2900	15	4.17	34.2	44	3.18	5.5	2	52
		25	6.94	32	57	3.82		2	
		30	8.33	30	59	4.15		2.5	
	1450	7.5	2.08	8.55	39	0.45	0.75	2	
		12.5	3.47	8	51	0.53		2	
		15	4.17	7.5	52.5	0.58		2.5	
IR65-50-160A	2900	13.6	3.78	28.4	41	2.56	4	2	52
		22.7	6.31	26.5	56	2.93		2	
		27.3	7.58	24.8	56	3.29		2.5	
	1450	6.8	1.89	7.09	35.5	0.37	0.55	2	
		11.3	3.14	6.6	49.6	0.41		2	
		13.6	3.78	6.2	49.9	0.46		2.5	

续表2(Following Table 2)

型 号 Modle	转速n Rotational Speed(r/min)	流量Q Discharge		扬程H Lift(m)	效率 η Efficiency (%)	功率Power(KW)		汽蚀余量 Cavitation remain (NPSH)r(m)	泵重量 Pump Weight(kg)
		(m <sup>3</sup> /h)	(L/S)			轴功率 Shaft Power	电机功率 Motor Power		
IR65-40-200	2900	15	4.17	53.2	41	5.3	11	2	62
		25	6.94	50	52	6.55		2	
		30	8.33	47.6	53.5	7.27		2.5	
	1450	7.5	2.08	13.3	35	0.78	1.5	2	
		12.5	3.47	12.5	46	0.93		2	
		15	4.17	11.9	47.5	1.02		2.5	
IR65-40-200A	2900	13.6	3.78	43.9	38	4.28	7.5	2	98
		22.7	6.31	41	50	5.07		2	
		27.3	7.58	39.3	51	5.73		2.5	
	1450	6.8	1.89	11	31.8	0.64	1.1	2	
		11.3	3.14	10.3	44	0.72		2	
		13.6	3.78	9.8	44.8	0.81		2.5	
IR65-40-250	2900	15	4.17	81.2	34	9.76	15	2	115
		25	6.94	80	46	11.84		2	
		30	8.33	78.4	50	12.8		2.5	
	1450	7.5	2.08	20.3	28	1.48	3	2	
		12.5	3.47	20	39	1.75		2	
		15	4.17	19.6	43	1.86		2.5	
IR65-40-250A	2900	14	14	3.89	74.8	31	9.21	15	98
		23.4	23.4	6.5	71	45		10.1	
		28	28	7.78	68.6	47		11.13	
	1450	7	7	1.94	17.8	25	1.35	2.2	
		11.7	11.7	3.25	17.5	37.9		1.47	
		14	14	3.89	17.2	40		1.64	
IR65-40-250B	2900	13.2	13.2	3.67	62.8	31	7.29	11	115
		22	22	6.11	61.8	44		8.42	
		26.4	26.4	7.33	53	45		8.45	
IR65-40-315	2900	15	15	4.17	126.8	28	18.51	30	115
		25	25	6.94	125	39		21.8	
		30	30	8.33	124	42.5		23.85	
	1450	7.5	7.5	2.08	32.4	22	3.03	5.5	
		12.5	12.5	3.47	32	33		3.3	
		15	15	4.17	31.7	37		3.5	
IR65-40-315A	2900	14	14	3.89	111.2	25	16.97	22	115
		23.4	23.4	6.5	109.5	38		18.36	
		28	28	7.78	108.8	40		20.75	
	1450	7	7	1.94	28.4	22	2.46	4	
		11.7	11.7	3.25	28	33		2.71	
		14	14	3.89	27.8	37		2.87	

续表2(Following Table 2)

型号 Modele	转速 Rotational Speed(r/min)	流量Q Discharge		扬程H Lift(m)	效率η Efficiency (%)	功率Power(KW)		汽蚀余量 Cavitation remain (NPSH)r(m)	泵重量 Pump Weight(kg)
		(m³/h)	(L/S)			轴功率 Shaft Power	电机功率 Motor Power		
IR65-40-315B	2900	13.2	3.67	98	24	14.69	22	2	115
		22	6.11	96.5	37	15.63		2	
		26.4	7.33	95.9	39	17.67		2.5	
IR80-65-125	2900	30	8.33	23.2	60	3.16	5.5	3	51
		50	13.89	20	69	3.95		3	
		60	16.67	17.6	67	4.29		4	
	1450	15	4.17	5.8	54	0.44	0.75	2.5	
		25	6.94	5	64	0.53		2.5	
		30	8.33	4.4	62	0.58		3	
IR80-65-125A	2900	27.2	7.56	19.1	57	2.48	4	3	51
		45.3	12.58	16.5	67	3.04		3	
		54.4	15.11	14.5	64	3.36		4	
	1450	13.6	3.78	4.8	51	0.35	0.55	2.5	
		22.6	6.28	4.1	62	0.41		2.5	
		27.2	7.56	3.6	59	0.45		3	
IR80-65-160	2900	30	8.33	36	57	5.16	11	2	56
		50	13.89	32	67	6.51		2.3	
		60	16.67	28.4	65	7.14		3.3	
	1450	15	4.17	9	50	0.74	1.5	2	
		25	6.94	8	62	0.88		2.3	
		30	8.33	7.2	62	0.95		3.3	
IR80-65-160A	2900	27.2	7.56	29.7	54	4.08	7.5	2	56
		45.4	12.61	26.4	65	5.02		2.3	
		54.4	15.11	23.4	62	5.59		3.3	
	1450	13.6	3.78	7.4	47.3	0.58	1.1	2	
		22.7	6.31	6.6	60	0.68		2.3	
		27.2	7.56	5.9	59	0.74		3.3	
IR80-50-200	2900	30	8.33	55.2	53	8.51	15	2	64
		50	13.89	50	63	10.81		2.5	
		60	16.67	45.2	62	11.92		3.2	
	1450	15	4.17	13.5	44	1.25	2.2	2	
		25	6.94	12.5	57	1.49		2	
		30	8.33	11.5	58	1.62		2.5	
IR80-50-200A	2900	27.2	7.56	45.4	50	6.73	11	2	64
		45.3	12.58	41	61	8.29		2.5	
		54.4	15.11	37.2	59	9.35		3.2	

续表2(Following Table 2)

型号 Modle	转速n Rotational Speed(r/min)	流量Q Discharge		扬程H Lift(m)	效率 η Efficiency (%)	功率Power(KW)		汽蚀余量 Cavitation remain (NPSH)r(m)	泵重量 Pump Weight(kg)
		(m³/h)	(L/S)			轴功率 Shaft Power	电机功率 Motor Power		
IR80-50-200A	1450	13.6	3.78	11.1	41	1	2.2	2	64
		22.7	6.31	10.3	56.1	1.14		2	
		27.2	7.56	9.5	55	1.28		2.5	
IR80-50-250	2900	30	8.33	84	43	16	30	2	102
		50	13.89	80	53	20.57		2.5	
		60	16.67	75	54	22.71		3.2	
	1450	15	4.17	21	40	2.15	4	2	
		25	6.94	20	50	2.72		2	
		30	8.33	18.8	51	3.01		2.5	
IR80-50-250A	2900	27.2	7.56	69	42	12.18	22	2	110
		45.3	12.58	65.7	52	15.61		2.5	
		54.4	15.11	61.6	52	17.57		3.2	
	1450	13.6	3.78	17.3	40	1.6	3	2	
		22.7	6.31	16.4	49	2.07		2	
		27.2	7.56	15.4	50	2.28		2.5	
IR80-50-315	2900	30	8.33	128	38	27.54	45	2.5	110
		50	13.89	125	50	34.1		2.5	
		60	16.67	123	53	37.94		3	
	1450	15	4.17	32.5	37	3.59	7.5	2.5	
		25	6.94	32	48	4.54		2.5	
		30	8.33	31.5	52	4.94		3	
IR80-50-315A	2900	27.2	7.56	105	37	21	37	2.5	56
		45.3	12.58	102.6	48	26.4		2.5	
		54.4	15.11	101	50	29.94		3	
	1450	13.6	3.78	26.3	36	2.71	5.5	2.5	
		22.7	6.31	25.7	46	3.46		2.5	
		27.2	7.56	25.2	50	3.74		3	
IR100-80-125	2900	60	16.67	23.7	65	5.96	11	3	56
		100	27.78	20	73	7.47		4.2	
		120	33.33	16.3	69	7.72		4.8	
	1450	30	8.33	5.7	58	0.8	1.5	3	
		50	13.89	5	69	0.99		3.4	
		60	16.67	4.1	68	0.99		3.7	
IR100-80-125A	2900	55	15.28	19.4	62	4.68	7.5	3	4.8
		91.8	25.5	16.8	71	5.92		4.2	
		109	30.28	13.7	67	6.07		4.8	

续表2(Following Table 2)

型号 Modle	转速n Rotational Speed(r/min)	流量Q Discharge		扬程H Lift(m)	效率η Efficiency (%)	功率Power(KW)		汽蚀余量 Cavitation remain (NPSH)r(m)	泵重量 Pump Weight(kg)
		(m³/h)	(L/S)			轴功率 Shaft Power	电机功率 Motor Power		
IR100-80-125A	1450	27.5	7.64	5	56	0.67	1.1	3	56
		45.9	12.75	4.2	67	0.78		3.4	
		54.5	15.13	3.4	65	0.78		3.7	
IR100-80-160	2900	60	16.67	37	60	10.1	15	3.8	86
		100	27.78	32	73	11.9		4.3	
		120	33.33	28	73	12.54		5	
	1450	30	8.33	9.25	58	1.3	2.2	3	
		50	13.89	8	69	1.58		3.4	
		60	16.67	7	68	1.68		3.7	
IR100-80-160A	2900	54.6	15.17	30.6	57	7.98	15	3.8	95
		91	25.28	26.5	71	9.25		4.3	
		109.2	30.33	23.2	70.4	9.85		5	
	1450	27.3	7.58	7.66	55.3	1.03	1.5	3	
		45.5	12.64	6.6	67	1.22		3.4	
		54.6	15.17	5.8	65.3	1.32		3.7	
IR100-65-200	2900	60	16.67	56	63	14.53	22	3.4	95
		100	27.78	50	72	18.92		3.9	
		120	33.33	44	71	20.26		5.2	
	1450	30	8.33	14	60	1.91	4	2.5	
		50	13.89	12.5	68	2.5		2.5	
		60	16.67	11	63	2.85		3	
IRI00-65-200A	2900	54.6	15.17	46.5	60.1	11.51	18.5	3.4	114
		91	25.28	41.5	70	14.7		3.9	
		109.2	30.33	36.6	68	16		5.2	
	1450	27.3	7.58	11.6	57	1.51	3	2.5	
		45.5	12.64	10.3	66	1.93		2.5	
		54.6	15.17	9.1	60.1	2.25		3	
IR100-65-250	2900	60	16.67	88	57	25.24	37	3	114
		100	27.78	80	68	32.06		3.6	
		120	33.33	74	67	36.12		4.5	
	1450	30	8.33	22	50	3.63	5.5	2.5	
		50	13.89	20	63	4.33		2.5	
		60	16.67	18.5	64	4.73		3	
IR100-65-250A	2900	56.1	15.58	77	54	21.8	37	3	114
		93.5	25.97	70	65	27.44		3.6	
		112.2	31.17	64.7	64	30.91		4.5	

续表2(Following Table 2)

型 号 Modle	转速n Rotational Speed(r/min)	流量Q Discharge		扬程H Lift(m)	效率 η Efficiency (%)	功率Power(KW)		汽蚀余量 Cavitation remain (NPSH)r(m)	泵重量 Pump Weight(kg)
		(m³/h)	(L/S)			轴功率 Shaft Power	电机功率 Motor Power		
IR100-65-250A	1450	28	7.79	19.2	47	3.12	5.5	2.5	114
		45.5	12.64	17.4	61	3.53		2.5	
		56	15.56	16.2	60.9	4.06		3	
IR100-65-250B	2900	52.7	14.64	67.9	53.3	18.29	30	3	114
		87.8	24.39	61.7	64	23.1		3.6	
		105.4	29.28	57	62.9	26.03		4.5	
IR100-65-315	2900	60	16.67	132	48	44.96	75	2.8	165
		100	27.78	125	62	54.94		3.2	
		120	33.33	119	64	60.8		4.2	
	1450	30	8.33	33.5	44	6.22	11	2	
		50	13.89	32	58	7.52		2	
		60	16.67	30.5	60	8.31		2.5	
IR100-65-315A	2900	56.1	15.58	115.5	45	39.2	55	2.8	165
		93.5	25.97	109	61	45.53		3.2	
		112.2	31.17	104	61	52.13		4.2	
	1450	28	7.789	29.3	41	5.46	11	2	
		46.5	12.92	28	56	6.33		2	
		56	15.56	26.7	57	7.15		2.5	
IR100-65-315B	2900	52.7	14.64	102	44	33.29	55	2.8	165
		88	24.44	97	60	38.77		3.2	
		105.4	29.28	92	60	44.04		4.2	
IR125-100-200	2900	120	33.33	61	68	29.33	45	4.5	98
		200	55.56	50	77	35.39		5	
		240	66.67	41	70	38.3		5.8	
	1450	60	16.67	15.25	64	3.89	7.5	2.5	
		100	27.78	12.5	73	4.66		2.9	
		120	33.33	10.25	66	5.08		3.6	
IR125-100-200A	2900	109.1	30.31	50.5	64.9	23.13	37	4.5	98
		182	50.56	41.4	75	27.38		5	
		218.2	60.61	34	67.1	30.13		5.8	
	1450	54.7	15.19	12.6	61	3.08	5.5	2.5	
		91	25.28	10.3	71	3.6		2.9	
		109.4	30.39	8.5	63	4.02		3.6	
IR125-100-250	2900	120	33.33	90	62	47.48	75	3.7	150
		200	55.56	80	75	58.13		4.5	
		240	66.67	73	74	64.52		5.5	

续表2(Following Table 2)

型号 Module	转速n Rotational Speed(r/min)	流量Q Discharge		扬程H Lift(m)	效率η Efficiency (%)	功率Power(KW)		汽蚀余量 Cavitation remain (NPSH)r(m)	泵重量 Pump Weight(kg)
		(m³/h)	(L/S)			轴功率 Shaft Power	电机功率 Motor Power		
IR125-100-250	1450	60	16.67	22.5	59	6.23	11	2	150
		100	27.78	20	72	7.56		2.3	
		120	33.33	18.25	71	8.4		3	
IR125-100-250A	2900	112	31.11	78	59	40.35	75	3.7	165
		186.5	51.81	69.5	73	48.35		4.5	
		224	62.22	63.5	71	54.59		5.5	
	1450	56	15.56	19.5	56	5.31	11	2	
		93	25.83	17.4	70	6.29		2.3	
		112	31.11	15.9	68	7.13		3	
IR125-100-250B	2900	105.5	29.31	69	58	34.2	55	3.7	165
		175.5	48.75	61.5	71	41.42		4.5	
		211	58.61	56	69.9	46.06		5.5	
IR125-100-315	2900	120	33.3	132.5	52.6	82.37	110	4	165
		200	55.6	125	72	94.62		4.5	
		240	~.7	120	75	104.64		5	
	1450	60	16.7	33.5	53	10.33	22	2.5	
		100	27.8	32	65	13.42		2.5	
		120	33.3	30.5	66	15.11		3	
IR125-100-315A	2900	112	31.1	115.2	52	67.63	90	4	165
		186.5	51.81	108.7	71	77.81		4.5	
		224	62.22	104.3	72	88.42		5	
	1450	56	15.56	28.8	52	8.45	15	2.5	
		93	25.83	27.2	64	10.77		2.5	
		112	31.11	26.1	65	12.25		3	
IR125-100-400	1450	60	16.67	52	48	17.71	30	2.5	210
		100	27.78	50	55	24.77		2.5	
		120	33.33	48.5	62	25.58		3	
IR125-100-400A	1450	56	15.56	45	43	15.97	30	2.5	164
		93	25.83	43.2	54	20.27		2.5	
		112	31.11	41.9	60	21.31		3	
IR150-125-250	1450	120	33.33	24.8	66	12.29	18.5	2.5	164
		200	55.56	20	77	14.16		2.8	
		240	66.67	15	68	14A3		3.5	
IR150-125-250A	1450	109.1	30.28	20.5	62.5	9.75	15	2.5	164
		182	50.56	16.5	75	10.91		2.8	
		218.2	60.61	12.4	65.2	11.31		3.5	

续表2(Following Table 2)

型号 Module	转速 Rotational Speed(r/min)	流量Q Discharge		扬程H Lift(m)	效率 η Efficiency (%)	功率Power(KW)		汽蚀余量 Cavitation remain (NPSH)r(m)	泵重量 Pump Weight(kg)
		(m³/h)	(L/S)			轴功率 Shaft Power	电机功率 Motor Power		
IR150-125-315	1450	120	33.33	36.3	63	18.84	30	2.5	195
		200	55.56	32	75	23.25		2.8	
		240	66.67	28.5	72	25.89		3.8	
IR150-125-315A	1450	109.1	30.28	30	60	14.85	22	2.5	
		182	50.56	25.5	73	17.32		2.8	
		218.2	60.61	23.5	69	20.23		3.8	
IR150-125-315B	1450	99	27.5	24.7	59	11.29	18.5	2.5	
		165	45~83	22	72	13.74		2.8	
		198	55	19.4	69	15.17		3.8	
IR150-125-400	1450	120	33.33	57.5	61	30.82	55	2	237
		200	55.56	50	70	38.93		2.5	
		240	66.67	44	63	45.68		3	
IR150-125-400A	1450	109.1	30.28	47.5	58	24.35	37	2	
		182	50.56	41	68	29.94		2.5	
		218.2	60.61	36.5	60	36.17		3	
IR150-125-400B	1450	99	27.5	39.1	57	18.51	30	2	
		165	45.83	34	67	22.82		2.5	
		198	55	29.9	58	27.81		3	
IR200-150-250	1450	240	66.67	23	70	21.49	37	2.5	194
		400	111.11	20	79	27.59		2.8	
		460	127.78	18	80	28.2		3	
IR200-150-250A	1450	218.2	60.61	18.9	67	16.77	30	2.5	
		363	100.83	16.5	79	20.66		2.8	
		418	116.1	14.8	78	21.61		3	
IR200-150-315	1450	240	66.67	35.6	67	34.75	55	3	268
		400	111.11	32	79	44.15		3.5	
		460	127.78	29.4	77	47.86		4	
IR200-150-315A	1450	218.2	60.61	29.4	64	27.31	45	3	
		363	100.84	25.5	77	32.76		3.5	
		418	116.11	24.3	74	37.4		4	
IR200-150-315B	1450	197.7	54.92	24.1	63	20.61	37	3	
		329	91.39	21.6	76	25.48		3.5	
		378.8	105.22	19.7	73	27.86		4	
IR200-150-400	1450	240	66.67	55.8	67	54.47	90	3	289
		400	111.11	50	78	69.87		3.5	
		460	127.78	47	75	78.55		4	

续表2(Following Table 2)

型号 Modele	转速 Rotational Speed(r/min)	流量Q Discharge		扬程H Lift(m)	效率η Efficiency (%)	功率Power(KW)		汽蚀余量 Cavitation remain (NPSH)r(m)	泵重量 Pump Weight(kg)
		(m <sup>3</sup> /h)	(L/S)			轴功率 Shaft Power	电机功率 Motor Power		
IR200-150-400A	1450	218.2	60.61	46	64	42.74	75	3	289
		363	100.83	41	76	53.36		3.5	
		418	116.11	38.8	72	61.38		4	
IR200-150-400B	1450	197.7	54.92	37.7	63	32.24	55	3	289
		329	91.39	33.8	75	40.4		3.5	
		378.8	105.22	31.8	71	46.23		4	

注：上表所列的轴功率是按介质为水配的功率，可根据用户输送介质的重度和粘度不同，配用不同功率的电机。

Note: The shaft power listed on above table is the power with water as medium. Electric machine of different power may be adopted according to the media of different weight and viscosity delivered by users.

#### 4 泵的型谱图 (见表2)

#### 4 Pump parameter diagram (See fig.2)

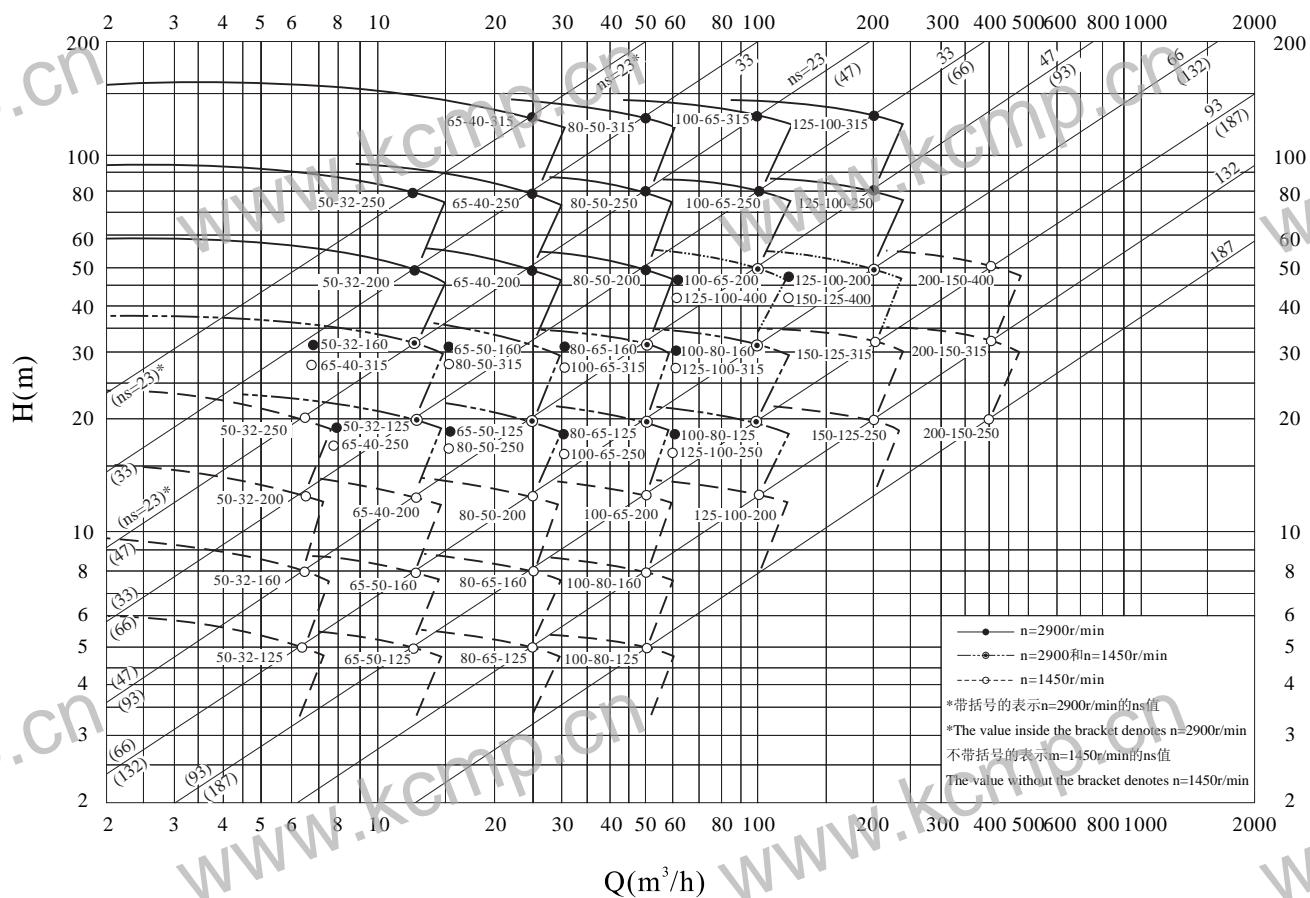


图2(Fig.2)

## 5 泵的外形图及尺寸 (见图3及表3)

## 5. Outline diagram & size (See fig.3 & table 3)

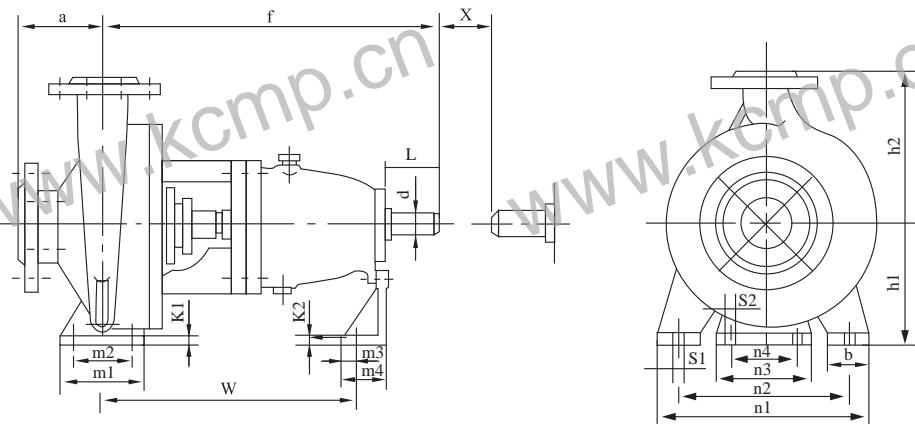


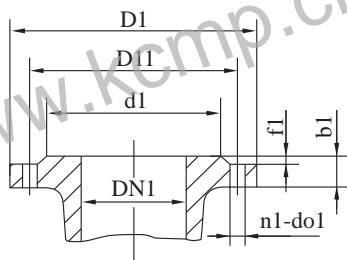
图3 (Fig.3)

表 3(Table 3)

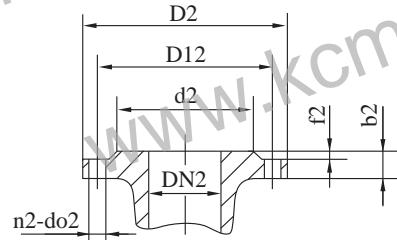
产品型号	泵				泵座												W	螺栓孔		轴端		间端 X
	a	f	h1	h2	b	m1	m2	m3	m4	n1	n2	n3	n4	K1	K2	S1	S2	d	L			
IR50-32-125	80	385	112	140	50	100	70	19	60	190	140	145	110	12	10	285	$\Phi 14$	$\Phi 14$	24	50	100	
IR50-32-160			132	160						240	190											
IR50-32-200			160	180						210	160											
IR50-32-250	100	500	180	225	65	129	95	25	65	320	250	145	110	16	14	370	$\Phi 14$	$\Phi 14$	32	80	100	
IR65-50-125	80	385	112	140	50	100	70	19	60	240	190											
IR65-50-160			132	160						265	212											
IR65-40-200			160	180						320	250											
IR65-40-250	100	500	180	225	65	125	95	25	65	345	280	145	110	16	14	370	$\Phi 14$	$\Phi 14$	32	80	100	
IR65-40-315			200	250						345	280											
IR80-65-125	100	385	132	160	50	100	70	19	60	240	190	145	110	12	10	285	$\Phi 14$	$\Phi 14$	24	50	100	
IR80-65-160			180	200						265	212											
IR80-50-200			200	225						320	250											
IR80-50-250	125	500	180	225	65	125	95	25	65	345	280	145	110	16	14	370	$\Phi 14$	$\Phi 14$	32	80	100	
IR80-50-315			225	280						345	280											
IR100-80-125	100	385	160	180	65	125	95	19	60	280	212	145	110	12	10	285	$\Phi 14$	$\Phi 14$	24	50	100	
IR100-80-160			200	225						320	250											
IR100-65-200			180	225						360	280											
IR100-65-250	125	500	200	250	80	160	120	28	65	400	315	145	110	16	14	370	$\Phi 18$	$\Phi 18$	42	110	140	
IR100-65-315			225	280						400	315											
IR125-100-200	125	500	200	280	80	160	120	25	65	360	280	145	110	16	14	370	$\Phi 18$	$\Phi 14$	32	80	140	
IR125-100-250			225	280						400	315											
IR125-100-315			250	315						500	400											
IR125-100-400			280	355	100	200	150	28	65	500	400	145	110	20	14	370	$\Phi 22$	$\Phi 22$	42	110	140	
IR150-125-250			250	355	80	160	120			400	315											
IR150-125-315			280	355	100	200	150			500	400											
IR150-125-400			315	400	100	200	150	28	65	500	450	145	10	20	14	370	$\Phi 22$	$\Phi 18$	42	110	140	
IR200-150-250			530	280						65	500											
IR200-150-315			530	315						80	550											
IR200-150-400			670	315	400	100	200	150	38	80	550	450	20	14	370	$\Phi 22$	$\Phi 18$	48	110	180		
IR200-150-400			670	315	450					80	500											

## 6 泵进出口法兰示意图及尺寸 (见图4及表4)

## 6. Diagram & size of suction flange & outlet flange (See fig.4 & table 4)



吸入口法兰(Suction flange)



排出口法兰(Exhaust flange)

图4 (Fig.4)

表 4(Table 4)

产品型号 (Product model)	吸入口法兰尺寸(Suction flange size)							排出口法兰尺寸(Exhaust flange size)								
	DN1	D1	D11	d1	b1	f1	n1-do1	DN2	D2	D12	d2	b2	f2	n2-do2		
IR50-32-125	50	165	125	99	20	3	4-18	32	140	100	76	18	2	4-18		
IR50-32-160																
IR50-32-200																
IR50-32-250																
IR65-50-125	65	185	145	118	20	3	4-18	50	165	125	99	20	3	4-18		
IR5-50-160																
IR65-40-200																
IR65-40-250																
IR65-40-315	80	200	160	132	20	3	8-18	65	185	145	118	20	3	4-18		
IR80-65-125																
IR80-65-160								50	165	125	99	20	3	4-18		
IR80-50-200																
IR80-50-250																
IR80-50-315								8-18	65	185	145	118	20	3	4-18	
IR100-80-125	100	220	180	156	22	3										
IR100-80-160						80			200	160	132	20	3	8-18		
IR100-65-200																
IR100-65-250						65			185	145	118	20	3	4-18		
IR100-65-315																
IR125-100-200	125	250	210	184	22	3	8-18	100	220	180	156	22	3	8-18		
IR125-100-250																
IR125-100-315									125	250	210	184	22	3	8-18	
IR125-100-400																
IR150-125-250	150	285	240	211	24	3	8-22	125	250	210	184	22	3	8-18		
IR150-125-315																
IR150-125-400																
IR200-150-250	200	340	295	266	24	3	12-22	150	285	240	211	24	3	8-22		
IR200-150-315																
IR200-150-400																

## 7 泵安装外形图及尺寸 (见图5及表5)

## 7. Diagram & size of suction flange & outlet flange (See fig.5 & table 5)

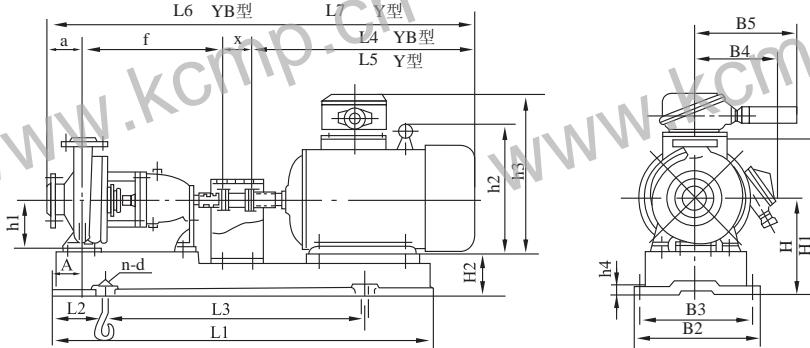


图5 (Fig.5)

表 5(Table 5)

产品型号 (Product model)	电机型号Motor model	外形及安装尺寸 Outline and installation size																					
		A	L1	L2	L3	L4	L5	a	f	x	L6	L7	B2	B3	B4	B5	h1	h2	h3	h4	H	H1	H2
IR50-32-125	YB801-4/0.55	80	820	150	540	330	290	80	385	100	895	855	360	320	150	225	175	340	25	197	337	117	4- φ 19
	YB802-2/1.1		920	170	600	360	315				925	880			160						107		
	YB90S-2/1.5					385	340				950	925	390	350			95	355	30			97	
	YB90L-2/2.2					430	380				995	945			180		245	380					
	YB100L-2/3.0																						
IR50-32-160	YB801-4/0.55	80	820	150	540	330	290	80	385	100	895	855	360	320	150	225	175	340	25	217	377	137	4- φ 19
	YB802-4/0.75					360	315				925	880			160		195	355			127		
	YB90S-4/1.1					385	340				950	925	390	350	180		245	380	30			117	
	YB90L-2/Z2					430	380				995	945			190		245	380				105	
	YB100L-2/3					460	400				1025	965					315	470				85	
	YB112M-2/4										1075	1040	450	400	210								
	YB132S1-2/5.5		1020	190	660	510	475																
IR50-32-200	YB801-4/0.55	80	820	150	540	330	290	80	385	100	895	855	360	320	150	225	75	340	25	245	425	165	4- φ 19
	YB802-4/0.75					360	315				925	880			160		195	355			155		
	YB90S-4/1.1					385	340				950	925	390	350	180		265	400	30			133	
	YB90L-4/1.5					460	400				1025	965			90		315	470			440	113	4- φ 24
	YB112M-2/4										1075	1040	450	400	210	240						80	
	YB132S1-2/5.5		1020	190	660	510	475										385	530			260		
	YB132S2-2/7.5										1220	1170	490	440	265								
	YB160M1-2/11		1140	210	740	510	475																
IR50-32-250	YB90S-4/1.1	95	1020	190	660	360	315	100	500	100	1060	1015			60	225	195	355		280	505	148	4- φ 24
	YB90L-4/1.5					385	340				1085	1040	450	400							490	175	
	YB100L1-4/Z2						430				1130	1080			180		245	380				165	
	YB100L2-4/3						460				1210	1175	490	440	210		180	315	470				
	YB132S2-2/7.5						510				1355	1305	540	490	263	240	385	530	30		300	525	140
	YB160M1-2/11						510				1395	1350			285		430	565				120	
	YB160M2-2/15						655				1430	1370											
	YB160L-2/18.5						695																
	YB180M-2/22						730																

续表 5(Following Table 5)

产品型号 (Product model)	电机型号Motor model 功率Power(kw)	外形及安装尺寸 Outline and installation size																					
		A	L1	L2	L3	L4	L5	a	f	x	L6	L7	B2	B3	B4	B5	h1	h2	h3	h4	H	H1	H2
IR65-50-125	YB801-4/0.55	80	820	150	540	330	290	80	385	100	895	855	360	320	150	30	175	340	25	197	337	117	4- φ 19
	YB802-4/0.75										950	925			160		195	355				107	4- φ 19
	YB90L-2/2.2					385	340				995	945	390	350	180		245	380				97	4- φ 19
	YB100L-2/3		920	170	600	430	380				1025	965			190		265	400				85	4- φ 19
	YB112M-2/4					460	400				1075	1040	450	400	210		315	470				65	4- φ 24
	YB132S1-2/5.		1020	190	660	570	475																4- φ 24
IR65-50-160	YB801-4/0.55	80	820	150	540	330	290	80	385	100	895	855	360	320	150	30	175	340	25	217	377	137	4- φ 19
	YB802-4/0.75					360	315				925	880			160		195	355				127	4- φ 19
	YB90S-4/1.1					385	340				950	925			180		245	380				117	4- φ 19
	YB90L-4/1.5		920	170	600	430	380				995	945	390	350	190		265	400				105	4- φ 19
	YB100L-2/3					460	400				1025	965			210	30	315	470				85	4- φ 24
	YB112M-2/4					510	475				1075	1040	450	400	210		385	530				232	4- φ 24
	YB132S1-2/5.5		1020	190	660	510	475				1220	1170	490	440	265		232	392	57				4- φ 24
	YB132S2-2/7.5					655	605				1140	210	740	655	605		232	392	57				4- φ 24
	YB160M1-2/11																232	392	57				4- φ 24
IR65-40-200	YB802-4/0.75	80	920	170	600	330	290	100	385	100	915	875			150	30	175	340		245	425	165	4- φ 19
	YB90S-4/1.1					360	315				945	900	390	350	160		195	355				155	4- φ 19
	YB90L-4/1.5					385	340				970	945			180		245	380				145	4- φ 19
	YB100L1-4/2		920	170	600	430	380				1015	965			210		315	470				113	4- φ 24
	YB132S1-2/5					510	475				1095	1060	450	400	210	30	385	530				260	4- φ 24
	YB132S2-2/7		1020	190	660	510	475				1240	1190	490	440	265		260	440	100				4- φ 24
	YB160M1-2/11					655	605				1140	210	740	655	605		260	440	100				4- φ 24
	YB160M2-2/15																260	440	100				4- φ 24
	YB160L1-2/18.5																260	440	100				4- φ 24
IR65-40-250	YB90S-4/1.1	95	1020	190	660	360	315	100	500	100	1060	1015			160	30	195	355		260	490	175	4- φ 24
	YB90L-4/1.5					385	340				1085	1040			225		245	380				165	4- φ 24
	YB100L1-4/2					430	380				1130	1080			180		265	400				153	4- φ 24
	YB100L2-4/3					460	400				1160	1100			190		265	400				153	4- φ 24
	YB112M-4/4										1355	1305			240		385	530				140	4- φ 24
	YB160M1-2/11		1270	225	840	655	605				1395	1350	540	490	265		430	565				120	4- φ 24
	YB160M2-2/15					695	650				1430	1370			285		475	625	40		320	525	4- φ 24
	YB160L1-2/18.5					730	670				1505	1470	610	550	315		475	625	40		340	590	4- φ 24
	YB180M-2/22										1530	1500	610	550	315		530	670	40			140	4- φ 24
	YB200L1-2/30		1420	250	940	805	775				1565	1540			345		530	670	40			115	4- φ 24
IR65-40-315	YB100L2-4/3	95	1140	210	740	430	380	125	500	100	1155	1105			180	30	245	380		300	550	200	4- φ 24
	YB112M-4/4					460	400				1185	1125			190		265	400				188	4- φ 24
	YB132S-4/5.5					510	475				1235	1200			210		315	470				168	4- φ 24
	YB132M-4/7.5					550	515				1275	1240			240		385	530				160	4- φ 24
	YB160M-4/11					655	605				1380	1330			265		430	565				140	4- φ 24
	YB160M2-2/15		1270	225	840	695	650				1420	1375	540	490	285		475	625	40		340	590	4- φ 24
	YB160L-2/18					730	670				1455	1395			345		530	670	40			115	4- φ 24
	YB180M-2/22										1530	1500	610	550	315		530	670	40				4- φ 24
	YB200L1-2/30		1420	250	940	840	815				1565	1540			345		530	670	40				4- φ 24
	YB200L2-2/37																					4- φ 24	
	YB225M-2/45																					4- φ 24	

续表 5(Following Table 5)

产品型号 Product model	电机型号Motor model 功率Power(kw)	外形及安装尺寸 Outline and installation size																					
		A	L1	L2	L3	L4	L5	a	f	x	L6	L7	B2	B3	B4	B5	h1	h2	h3	h4	H	H1	H2
IR80-65-125	YB801-4/0.55	80	820 150 540	330 290	360 315	385 340	430 380	460 400	100 385	100	915 875	360 320	150	175 340	25	137	4-Φ19						
	YB802-4/0.75																						
	YB90S-4/1.1																						
	YB90L-4/1.5																						
	YB100L-2/3																						
	YB112M-2/4																						
	YB132S1-2/5.5																						
	YB132S2-2/7.5																						
	YB160M1-2/11																						
IR80-65-160	YB802-4/0.75	80	920 170 600	330 290	360 315	385 340	430 380	100 385	100	915 875	390 350	150	175 340	25	165	4-Φ19							
	YB90S-4/1.1																						
	YB90L-4/1.5																						
	YB100L1-4/2.2																						
	YB132S1-2/5.5																						
	YB132S2-2/7.5																						
	YB160M1-2/11																						
	YB160M2-2/15																						
IR80-50-200	YB90S-4/1.1	80	920 170 600	360 315	385 340	430 380	460 400	100 385	100	945 900	390 350	160	175 340	25	165	4-Φ19							
	YB90L-4/1.5																						
	YB100L1-4/2.2																						
	YB100L2-4/3																						
	YB112M-4/4																						
	YB132S2-2/7.5																						
	YB160M1-2/11																						
	YB160M2-2/15																						
	YB160L-2/18.5																						
	YB180M-2/22																						
IR80-50-250	YB100L1-4/2.2	95	1020 90 660	430 380	460 400	510 475	550 515	655 605	703 670	100 500	100	1150 1105	450 400	180	225	245 380	30	265 490	165	4-Φ24			
	YB100L2-4/3																						
	YB112M-4/4																						
	YB132S-4/5.5																						
	YB132M-4/7.5																						
	YB160M2-2/15																						
	YB160L-2/18.5																						
	YB180M-2/22																						
	YB200L1-2/30																						
	YB200L2-2/37																						
IR80-50-315	YB112M-4/4	95	1140 210 740	460 400	510 475	550 515	655 605	703 670	100	1185 1125	345 225	190 240	225	265 400	30	325 605	213	4-Φ24					
	YB132S-4/5.5																						
	YB132M-4/7.5																						
	YB160M-4/11																						

续表 5(Following Table 5)

产品型号 Product model	电机型号 Motor model	外形及安装尺寸 Outline and installation size																					
		A	L1	L2	L3	L4	L5	a	f	x	L6	L7	B2	B3	B4	B5	h1	h2	h3	h4	H	H1	H2
IR80-50-315	YB160L-4/15	95	270	225	840	695	650	125	500	100	1420	375	540	410	265	240	385	530	40	345	625	185	4- ϕ 28
	YB200L1-2/30					805	775				1530	1500	610	550	315	290	475	625		365	645	165	
	YB200L2-2/37		1420	250	940						1565	1540			245		530	670			140		
	YB225M-2/45					840	815				1660	1655	660	600	385	330	575	770		385	665	135	
	YB250M-2/55		1620	290	1060	930	930				1735	1725	730	670	410		640	830				105	
	YB280S-2/75		1820	320	1200	1010	1000																
IR100-80-125	YB80-4/0.75	95	920	170	600	330	290	100	385	100	915	875	390	350	150	225	175	340	30		165	4- ϕ 19	
	YB90S-4/1.1					360	315				945	900			160		195	355			155		
	YB90L-4/1.5					385	340				970	925			180		245	380		245	425	145	
	YB100L1-4/2.2					430	380				1015	965			190		265	400			133		
	YB100L2-4/3					460	400				1045	985			210		315	470			113		
	YB112M-4/4					1020	190	660	510	475	1095	1065	450	400	210		385	530		260	440	100	
	YB132S1-2/5.5					1140	210	740	655	605	1240	1190	490	440	265								
	YB132S2-2/7.5																						
	YB160M1-2/11																						
	YB160M2-2/15																						
IR100-80-160	YB90L-4/1.5	95	1020	190	660	385	340	100	500	100	1085	1040	450	400	160	225	195	355	30		155	4- ϕ 24	
	YB100L1-4/2.2					430	380				1130	1080			180		245	380		245	445	145	
	YB100L2-4/3					460	400				1160	1100			190		265	400			133		
	YB112M-4/4					510	475				1210	1175	490	440	210		315	470		260	460	128	
	YB132S2-2/7.5					550	515				1355	1305	265	385	530		280	480		120			
	YB160M1-2/11					665	605				1395	1350	285	430	565			100					
	YB160M2-2/15					695	650				1430	1370	290	475	625		300	500		100			
	YB160L2-2/18.5					730	670				1505	1475	610	550	315								
	YB180M-2/22					805	775				1545	1515	315	475	625		320	545		120			
	YB200L1-2/30					840	815				1580	1555	345	30	670					95			
IR100-65-200	YB100L1-4/2.2	95	1140	210	740	430	380	100	500	140	1175	1120	490	440	180	225	245	380	30		180	4- ϕ 24	
	YB100L2-4/3					460	400				1200	1140			190		265	400		280	505	168	
	YB112M-4/4					510	475				1250	1215			210		315	475			148		
	YB132S-4/5.5					550	515				1290	1255			285		430	565		300	525	140	
	YB132M-4/7.5					655	605				1395	1345			265		385	530					
	YB160M2-2/15					695	650				1435	1390	540	490	265		475	625		320	545	120	
	YB160L-2/18.5					730	670				1470	1410	285	475	625		320	545		95			
	YB180M-2/22					805	775				1545	1515	610	550	315		30	670					
	YB200L1-2/30					840	815				1580	1555	345	385	530		320	570		160			
	YB200L2-2/37					655	605				1420	1370	540	490	265								
IR100-65-250	YB225M-2/45	110	1270	225	840	430	380	125	500	140	1195	1145	490	440	180	225	245	380	30		200	4- ϕ 24	
	YB112M-4/4					460	400				1225	1165			190		265	400		300	550	188	
	YB132S-4/5.5					510	475				1275	1240			210		315	470			168		
	YB132M-4/7.5					550	515				1315	1280			240		385	530					
	YB160M-4/11					655	605				1420	1370	540	490	265								
	YB160L-4/15					695	650				1460	1415											

续表 5(Following Table 5)

产品型号 Product model	电机型号Motor model 功率Power(kw)	外形及安装尺寸 Outline and installation size																										
		A	L1	L2	L3	L4	L5	a	f	x	L6	L7	B2	B3	B4	B5	h1	h2	h3	h4	H	H1	H2	n-d				
IR100-65-250	YB180M-2/22	110	1270	225	840	730	670	125	500	140	1495	1435	540	490	285	240	200	430	565	30	320	570	140	4- φ 24				
	YB200L1-2/30		1420	250	940	805	775				1570	1540	610	550	315			475	625		340	590	140	4- φ 28				
	YB200L2-2/37		1420	250	940	840	815				1605	1580			345	290		530	670	40	575	770	115					
	YB225M-2/45		1620	290	1060	935	930				1700	1695	660	600	385			640	830		360	610	110					
	YB250M-2/55		1820	320	1200	1010	1000				1775	1765	730	670	410	330							80					
	YB280S-2/75		1820	320	1200	1010	1000																					
IR100-65-315	YB132S-4/5.5	110	1270	225	840	510	475	125	530	140	1305	1270			210		225	315	470		30	345	625	213	4- φ 24			
	YB132M-4/7.5		1420	250	940	550	515				1345	1310	540	490				385	530					185				
	YB160M-4/11		1420	250	940	655	605				1450	1400			265			430	565		360	645	185					
	YB160L-4/15		1620	290	1060	695	650				1490	1445						475	625		530	670	40	575				
	YB180M-4/18.5		1820	320	1200	730	670				1525	1465	610	550	285			640	830		385	665	105	640				
	YB200L2-2/37		1820	320	1200	805	775				1600	1570			315	290								105				
	YB225M-2/45		1820	320	1200	840	815				1635	1610	660	600	345													
	YB250M-2/55		1820	320	1200	935	930				1730	1725			385													
	YB280S-2/75		1820	320	1200	1010	1000				1805	1795	730	670	410													
	YB280M-2/90		1820	320	1200	1060	1050				1860	1845																
IR25-100-200	YB112M-4/4	110	1140	210	740	460	400	125	500	140	1225	1165			190	225	200	265	400					188	4- φ 24			
	YB132S-4/5.5		1270	225	840	510	475				1275	1240	490	440	210			315	470	30	300	580	168					
	YB132M-4/7.5		1270	225	840	550	515				1315	1280						385	530		320	600	160					
	YB160M-4/11		1420	250	940	655	605				1420	1370	540	490	265			430	565		475	625	40	530				
	YB200L1-2/30		1420	250	940	805	775				1570	1540	610	550	315	290		640	830		340	620	140	640				
	YB200L2-2/37		1620	290	1060	840	815				1605	1580			345			530	670		575	770	40	640				
	YB225M-2/45		1620	290	1060	935	930				1700	1695	660	600	385			575	770		360	640	110	640				
	YB250M-2/55		1820	320	1200	1010	1000				1775	1765	730	670	410			640	830						80			
	YB280S-2/75		1820	320	1200	1060	1050				1870	1860			410													
	YB280M-2/90		1820	320	1200	1060	1050				1870	1860			410													
IR125-100-250	YB132S-4/5.5	110	1270	225	840	510	475	140	530	140	1320	1285			210		225	315	470					213	4- φ 24			
	YB132M-4/7.5		1420	250	940	550	515				1360	1325	540	490				385	530	30	345	625		168				
	YB160M-4/11		1420	250	940	655	605				1465	1415			265			430	565		360	645	185	640				
	YB160L-4/15		1620	290	1060	695	650				1505	1460	610	550	285			530	670		575	770	40	640				
	YB180M-4/18.5		1820	320	1200	730	670				1540	1480						640	830		385	665	105	640				
	YB225M-2/45		1820	320	1200	840	815				1650	1625	660	600	345	290		530	670		575	770	40	640				
	YB250M-2/55		1820	320	1200	935	930				1745	1740			385			640	830		575	770	40	640				
	YB280S-2/75		1820	320	1200	1010	1000				1820	1810	730	670	410	330		640	830		385	665	105	640				
	YB280M-2/90		1820	320	1200	1060	1050				1870	1860			410													
	YB280M-2/110		1820	320	1200	1240					1906	1900						640	830		410	725	30	640				
IR125-100-315	YB160M-4/11	110	1270	225	840	655	605	140	530	140	1465	1415	540	490	265		250	385	530		370	685	210	4- φ 24	4- φ 28			
	YB160L-4/15		1420	250	940	695	650				1505	1460						430	565		390	705	210	190				
	YB180M-4/18.5		1420	250	940	730	670				1540	1480	610	550	285			530	670		575	770	40	640				
	YB180L-4/22		1620	290	1060	750	710				1560	1520			315	290		640	830		640	830	40	640				
	YB200L-4/30		1820	320	1200	805	775				1615	1580			345			640	830		640	830	40	640				
	YB225S-4/37		1820	320	1200	845	820				1655	1630						640	830		640	830	40	640				
	YB280S-2/75		1820	320	1200	1010	1000				1820	1810	730	670	410	330		640	830		410	725	30	640				
	YB280M-2/90		1820	320	1200	1060	1050				1870	1860			410			640	830		640	830	40	640				
	YB315S-2/110		1820	320	1200	1240					1906	1900						640	830		410	725	30	640				
	YB315S-2/110		1820	320	1200	1240					1906	1900						640	830		640							

续表 5(Following Table 5)

产品型号 Product model	电机型号Motor model 功率Power(kw)	外形及安装尺寸 Outline and installation size																								
		A	L1	L2	L3	L4	L5	a	f	x	L6	L7	B2	B3	B4	B5	h1	h2	h3	h4	H	H1	H2	n-d		
IR125-100-400	YB160L-4/15	130	1620	290	1060	695	650	140	530	140	1505	1460	660	600	315	285	265	40	385	530	280	280	4- φ 28			
	YB180M-4/18.5					730	670				1540	1480					240		430	565		260				
	YB180L-4/22					750	710				1560	1520					280		475	625		240				
	YB200L-4/30					805	775				1615	1585					345		290	530	670	215	215			
	YB225S-4/37					845	820				1655	1630					385		330	575	770	190				
	YB225M-4/45					870	845				1680	1655					315		290	530	670	210	210			
	YB250M-4/55					935	930				1745	1740					385		330	575	770	190				
IR150-125-250	YB160M-4/11	110	1270	225	840	655	605	140	530	140	1465	1415	540	490	610	550	265	30	385	530	30	370	695	210	4- φ 24	
	YB160L-4/15					695	650				1505	1460	285	240			430		565	40	390	745	210	210		
	YB180M-4/18.5					730	670				1540	1480	315	290			475		625				190	190		
	YB180L-4/22					750	70				1560	1520	345	290			530		670				165	165		
	YB200L-4/30					805	775				1615	1585	385	330			575		770				165			
	YB225S-4/37					845	820				1655	1630	315	290			530		670				165			
IR150-125-315	YB180M-4/18.5	130	1620	290	1060	730	670	140	530	140	1540	1480	660	600	315	285	240	40	430	565	40	440	775	260	260	
	YB180L-4/22					750	710				1560	1520					345		290	475	625			225	225	
	YB200L-4/30					805	775				1615	1585					385		330	575	770			190		
	YB225S-4/37					845	820				1655	1630					315		290	530	670			190		
	YB225M-4/45					870	845				1680	1655					345		290	530	670			190		
	YB250M-4/55					935	930				1745	1740					385		330	575	770			190		
IR150-125-400	YB200L-4/30	110	1620	290	1060	805	775	140	530	140	1615	1585	660	600	315	285	240	40	475	625	40	475	875	275	275	
	YB225S-4/37					845	820				1655	1630					345		290	530	670			250	250	
	YB225M-4/45					870	845				1680	1655					385		330	575	770			225	225	
	YB250M-4/55					935	930				1745	1740					385		330	575	770			195	195	
	YB280S-4/75					1010	1000				1820	1810	730	670	410	385	280	315	290	530	670	40	475	875	275	275
	YB280M-4/90					1060	1050				1870	1860					385		330	640	830				195	195
IR200-150-250	YB180L-4/22	130	1620	290	1060	750	710	160	530	180	1620	1580	660	600	315	285	240	40	430	565	40	440	815	260	260	
	YB200L-4/30					805	775				1675	1645					315		290	475	625			240	240	
	YB225S-4/37					845	820				1715	1690					345		290	530	670			215	215	
	YB225M-4/45					870	845				1740	1715					385		330	575	770			190	190	
	YB250M-4/55					935	930				1805	1800					385		330	640	830			160	160	
	YB280S-4/75					1010	1000				1880	1875					385		330	640	830			160		
IR200-150-315	YB200L-4/30	130	1820	320	1200	805	775	160	670	180	1815	1785	730	670	315	285	240	40	475	875	40	475	875	275	275	
	YB225S-4/37					845	820				1855	1830					345		290	530	670			250	250	
	YB225M-4/45					870	845				1880	1855					385		330	575	770			225	225	
	YB250M-4/55					935	930				1945	1940					385		330	640	830			195	195	
	YB280S-4/75					1010	1000				2020	2010	730	670	410	385	280	315	290	575	770	40	475	925	225	225
	YB280M-4/90					1060	1050				2070	2060					410		330	640	830				195	195
IR200-150-400	YB250M-4/55	130	1820	320	1200	935	930	160	670	180	1945	1940	730	670	315	285	240	40	475	925	40	475	925	275	275	
	YB280S-4/75					1010	1000																			

## 8 泵的拆卸与装配

### 8.1 泵的拆卸顺序

8.1.1 拆下泵体上的放液管堵和悬架上的放液管堵，放净泵内液体及悬架内储油室的存油。如外引液密封管路的亦应拆下。

8.1.2 拆下泵体中间支架联接螺栓，将中间支架、悬架部件、密封部件等全部转子组件从泵体中取出（在此之前应先拆出加长联轴器的中间联接件）。

8.1.3 松开叶轮螺母，取出叶轮和键。

8.1.4 将泵盖连同轴套、机械密封端盖及机械密封等组合件一起从轴上取下。此时应注意勿使轴套与泵盖等相对滑动，然后再拆下机械密封端盖，将机械密封连同轴套一起取出，再把轴套和机械密封拆开。如果是软填料密封，可先从泵盖上取下轴套，再顺次拆下填料压盖、填料和填料环等。对结构特殊的机械密封，要注意其不同的拆装方法。

8.1.5 拆下中间支架和悬架支架。

8.1.6 拆下泵联轴器和键。

8.1.7 拆下悬架两端的防尘盘和轴承的前、后盖，再把轴连同轴承一起从悬架体内取下。

8.1.8 拆开轴承和轴。

### 8.2 泵的装配

泵的装配顺序基本上可按照拆卸顺序的反方向进行。但装配时要注意检查各密封面垫片应完好。

## 9 泵的安装

9.1 泵的安装是否合理，对泵的正常运行和使用寿命有重要影响，所以安装和校正必须仔细进行，泵的外形及安装尺寸（见图5和表5）。

9.2 安装泵的地点，应便于巡回检查和检修。

9.3 开箱后检查泵和电机，如果证实没有任何因装卸和运输过程中造成的损坏和紧固联接件松动，泵没有尘土、污物等进入泵内，则可不必重新拆卸和装配，直接送到使用现场去安装。

9.4 安装泵的基础平面应用水平仪找平，待基础水泥凝固后，将泵安放基础上，并用水平仪检查泵和电机轴的水平情况，如不水平，应用垫铁调正，直到水平为止。然后通过灌浆孔用水泥浇灌底座和地脚螺栓孔眼。

9.5 水泥干固后，应检查底座和地脚螺栓孔眼是否松动，合适后拧紧地脚螺栓，重新检查水平度。

9.6 在电机、泵和底座重新安装情况下，应严格检查泵轴和电机的同轴度。测量联轴器的外圆上下左右的差异不得超过0.1毫米，两联轴器端面间隙一周上最大和最小的间隙差不得超过0.3毫米。

9.7 泵的吸入管路和吐出管路应有各自的支架，不允许管路的重量直接由泵来承受，以免把泵压坏。

9.8 泵的安装位置高于液面（在泵的吸程允许范围内）时，应在吸入管路端部装上底阀，并在排出管路上设置灌液螺孔或阀门，供起动前灌泵之用。泵的安装位置低于液面（灌注情况）时，应在吸入管路上装上控制阀门和过滤装置，以防杂物吸入泵内。

9.9 本IR型系列泵均按1.6MPa规格设计，所以选择管路法兰时应与之相匹配。

## 8. Assembly & disassembly

### 8.1 The order for pump disassembly

8.1.1 Disassembly the liquid exhaust pipes at the pump body and pendant to exhaust the liquid inside the pump and lift oil inside the oil store at the pendant. The outer seal pipe line also should be disassembled.

8.1.2 Disassembly the connection bolt at the medium support of pump body and take out the all rotor parts including medium support, pendant and seal part of the pump body. (it is must to disassembly the medium connection part of the lengthened shaft coupling ahead.)

8.1.3 Loosen the impeller nut and take out the impeller and key.

8.1.4 Disassembly the pump cover and muff, terminal cover of mechanical seal and mechanical seal from the shaft. Meanwhile,

it is must not to cause relative slide between the muff and pump cover. And then disassemble the terminal cover of mechanical seal and take out the mechanical seal and muff together. After, it is necessary to detach the muff and mechanical seal. In case of soft filler seal, the first is to take down the muff from the pump cover and then disassembly the filler gland, filler and filler ring, etc. As for special structure of mechanical seal, it is necessary to choose different disassembly mode.

8.1.5 Disassemble the medium support and pendant support.

8.1.6 Disassemble the shaft coupling and key.

8.1.7 Disassemble the dust-proof plate at the two ends and the front, back covers at the bearing and take down the shaft and bearing from the pendant.

8.1.8 Disassemble the bearing and shaft.

### 8.2 Pump assembly

The assembly order can be the reverse order of disassembly. But it is necessary to ensure whether the washers of all seals are perfect.

## 9. Installation of pump

9.1 The reasonable installation can play a key role for normal operation and life. It is must to carefully install and emend. See fig.5 and table 5 to learn the outline and installation size.

9.2 The place to install should be convenient to check and repair.

9.3 Check the pump and motor to ensure they are all at good condition. If they are all at good condition, it is allowable to install.

9.4 The base level to install the pump should be checked with level gauge. Install the pump at the base after the cement is solid. If the level condition isn't perfect, it is must to use iron cushion to make base level. Finally, it is must to use cement to fill the base and foot screw.

9.5 After the cement is solid, it is necessary to check whether the base and foot screw relax. If they are at good condition, it is to fasten the foot screw and recheck the level.

9.6 After the motor, pump and base are installed, it is must to strictly check the concentricity of the pump shaft and motor. The difference of the outer circularity around the shaft coupling should be no more than 0.1mm. The max. and mini. gaps of a circle at the terminal face of the two shaft couplings should be no more than 0.3mm.

9.7 The suction pipe line and outlet pipe line should have their respective support. It is not allowable that the pump bears the weight of the pipe line.

9.8 When the installation position of pump is higher than the liquid level (with the allowable range of pump suction limit), it is must to fit bottom valve at the end of pipe line and to set the pour screw hole or valve to pump pour before start. When the installation position below the liquid level, it is allowable not to install the bottom valve. Meanwhile, it is necessary to fit control valve and filter to prevent the impurity from invasion to hurt the impeller and pump part.

9.9 The series IR pump is designed according to the 1.6MPa. So the flange should match with pipe line.

## 10 泵的使用 (起动、运行和停车)

### 10.1 起动

10.1.1 准备必要的工具。

10.1.2 起动前要把泵和现场清理干净。

10.1.3 检查悬架体储油室的油位，油面应在油位置中心线2毫米左右。

10.1.4 未接联轴器前应检查原动机的转向，与泵的转向箭头一致后，接好联轴器。

10.1.5 用手转动联轴器，应感觉轻松且轻重均匀，并注意辨别泵内有无摩擦声和异物流动等杂音，如有则应设法排除。并将联轴器的防护罩装好。

10.1.6 泵的安装位置低于液面（灌注情况）时，起动前打开吸入管路的闸阀，使液体充满泵内。如泵的安装位置高于液面（真空情况），起动前要灌泵或抽真空，使泵内和吸入管内充满液体，排净泵内空气。

10.1.7 起动前检查基础螺栓有无松动。压盖是否歪斜。以及润滑油和冷却水的供应情况。

10.1.8 关闭进出口压力(或真空)表和出水阀门，(如有旁通管，此时也应关闭)起动电机(最好先点动，确认泵转向正确后，才开始正式运行)，然后打开进出口压力(或真空)表，当泵达到正常转速，且仪表指出相应压力时，再慢慢打开出水阀门，调节到需要的工况。在吐出管路关闭的情况下，泵连续工作的时间，不能超过3分钟。

10.1.9 起动过程中要时时注意原动机的功率读数及泵的振动情况。

10.1.10 密封情况：机械密封应无泄漏，发热现象，填料密封应呈连续滴流状态。

### 10.2 运行

10.2.1 经常检查泵和电机的温升情况，轴承的温升不应大于35℃，极限温度不应大于75℃。

10.2.2 注意悬架体储油室油位的变化，经常控制在规定范围内，为了保持油的清洁和良好的润滑，应根据现场使用实际情况，定期更换新油。一般情况，每运转1500小时后，要全部更换新油一次。

10.2.3 在运转过程中，发现有不正常的声音或其他故障时，应立即停车检查，待排除故障后才能继续运转。

10.2.4 绝不允许用吸入管路上的闸阀调节流量，以免产生汽蚀。

10.2.5 泵不宜在低于30%设计流量下连续运转，如果必须在该条件下连续运转，则应在出口处安装旁通管，排放多余流量。

### 10.3 停车

10.3.1 缓慢关闭吐出口管路闸阀（如果泵在倒灌情况下使用，还要关闭吸人管路的闸阀），并关闭各种仪表的开关。

10.3.2 切断电源。

10.3.3 如果密封采用外部引液时，还要关闭外引液阀门。

10.3.4 如果环境温度低于液体凝固点时，要放净泵内液体，以防冻裂。

10.3.5 如果长时间停车不用，除将泵内的腐蚀性液体放净处，各零部件应拆卸清洗干净，尤其是密封腔。最好是将泵拆下清洗后重新装好，除涂油防锈处理和封闭泵进、出口外，还应定期检查。

## 10 Operation of pump(start, operation and stop)

### 10.1 Start

10.1.1 Collect necessary tool.

10.1.2 Clean the pump and spot before start.

10.1.3 Check the oil level of the oil store at the pendant and the oil level should be 2mm around the center level.

10.1.4 Check the motor rotation before connection of shaft coupling. When the rotation is same as the pump rotation, it is to connect the shaft coupling.

10.1.5 With hand mm the shaft coupling, it is normal to feel soft and even. It is necessary to ensure there is no abnormal sound and friction inside the pump. And it is to install the protective cover of shaft coupling.

10.1.6 When the installation position is below the liquid level, i.e. at the condition of reverse flow, it is must to open the gate valve to make the liquid fill with pump before pump start. When the installation position of pump is higher than the liquid level(vacuum condition), it is must to let off air and let the liquid fill with pump and pipe line.

10.1.7 Check whether the base screw relax and the gland is inclined and the supply condition of lubricant and cool water.

10.1.8 Close the inlet and outlet pressure meter(or vacuum) and water exhaust valve. (If there exists by-pass pipe, it should be closed.) And start the motor(It had better to start motor after ensure of right rotation.) and open the inlet & outlet pressure meter(or vacuum meter). When the pump reaches the normal rotation speed and the relative pressure appears at the meter, it is to slowly open the outlet valve to adjust until needed condition. When the outlet pipe line closes, the continuous time for pump operation should be no more than three minutes.

10.1.9 It is must to track the motor power and the pump vibration.

10.1.10 Seal condition: The mechanical seal should be immune to leakage and heating and the filler seal should keep the condition of continuous flow.

### 10.2 Operation

10.2.1 It is must to regularly check the temperature rise of the motor and pump. The temperature rise of the bearing should be no more than 35℃. The limit temperature should be no more than 75℃.

10.2.2 It is must to track the change in oil level of the oil store at the pendant and control it at the normal level. To keep oil clear and good lubrication, it is must to change fresh oil according to practical condition. In general, it is must to replace oil every 1500h operation.

10.2.3 During operation, once irregular sound or other fault appears, it is must to stop for check until recovery.

10.2.4 It is prohibited to use the gate valve at the suction pipe line to adjust flow to avoid cavitation appearance.

10.2.5 The pump shouldn't operate continuously in case of a flow under 30% design flow. If it is must to do so, it is necessary to install by-pass pipe at the outlet to exhaust the excess flow.

### 10.3 stop

10.3.1 Slowly close the gate valve at the outlet pipe line(it is must to close the gate valve of suction pipe line in case of reverse flow.) and close the meter switch.

10.3.2 Power cut-off

10.3.3 If the seal needs external liquid supply, it is must to close external liquid supply valve.

10.3.4 If the ambient temperature is below the coagulation point, it is must to exhaust the liquid inside the pump.

10.3.5 In case of long-term stop, it is must to exhaust the corrosive liquid inside the pump and clean the parts, especially to clean the pump after assembly of pump and reassemble the pump. Besides coating corrosion-proof oil and closing the inlet and outlet, it is must to check regularly.

## 11 使用机械密封注意事项

本IR型系列泵可根据不同的使用条件，安装不同形式的机械密封，(如内装单端面平衡型和非平衡型，双端面平衡型及非平衡型，外装式机械密封等。)密封形式不同，使用方法和注意事项也有所不同，具体情况应按照《机械密封安装使用说明书》中的规定去处理。下面仅提几点一般应注意的事项：

11.1 一般机械密封适用于清洁的，无悬浮颗粒的介质中，因此，对新安装的管路系统和储液罐，应认真冲洗干净，严防固体杂质进入机械密封端面而使密封失效。

11.2 在易结晶的介质中使用机械密封应注意经常冲洗。停车后重新起动前，要将机械密封上的结晶清洗干净。

11.3 拆卸机械密封应仔细，不许用手锤、铁器等敲击，以免破坏动、静环密封面。

11.4 如果有污垢拆不下来时，应设法清除污垢，冲洗干净后再进行拆卸，以免损坏密封元件。

11.5 安装机械密封前，应检查所有密封元件是否有失效或损坏，如有则应重新修复或更换。

11.6 应严格检查动环与静环的相对磨擦密封面，不允许有任何细微的划痕、碰伤等缺陷。所有零部件，包括泵体、叶轮、密封腔等在装配前均应冲洗干净，尤其动、静环端面，要用清洁、柔软的布或棉纱认真擦拭干净，然后涂上一层清洁的油脂或机油。

11.7 装配中注意消除偏差，紧固螺钉时，要均匀拧紧，避免发生偏斜，使密封失效。

11.8 正确调整弹簧的压缩量，泵安装好以后，以手扳动转子时，应感觉到密封弹簧既有一定的压缩量，而又能轻快、灵活地转动没有咬紧感觉。如感觉太紧或盘不动，则适当调松一些。

11.9 对有外部冲洗的机械密封，起动前应先开启冲洗液，使密封腔内充满密封液。停车时，先停泵，后关密封冲洗液。

## 12 可能发生的故障、原因及消除方法

故障现象							
产生振动及噪音	功率消耗过大	流量、扬程不足	泵输出不出液体	故障的可能因素	密封处泄漏过多	轴封（包括填料函）发热	泵过份发热及转不动
泵内或吸入管内留有空气	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
吸上扬程过高或灌注液不够	<input type="radio"/>	<input type="radio"/>					
吸入管径过小或有杂物堵塞	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>			
吸入管浸入深度不够或漏气	<input type="radio"/>	<input type="radio"/>					
转速过低	<input type="radio"/>	<input type="radio"/>					
泵转向不对	<input type="radio"/>	<input type="radio"/>					
总扬程与泵扬程不符	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		
介质重度与粘度与泵要求不符	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		
在流量过小时运转产生振动				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
泵与电机轴线不一致或轴弯曲				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
转动部分与固定部分有磨擦				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
轴承磨损严重或损坏				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
密封环磨损过多		<input type="radio"/>	<input type="radio"/>				
轴套、填料或动静环磨损过多			<input type="radio"/>				
填料（或机械密封）选用或安装不当			<input type="radio"/>				
转动部分不平衡引起振动				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
油室量过多（或油过脏）			<input type="radio"/>			<input type="radio"/>	<input type="radio"/>
管路或泵内有杂物堵塞	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>			
密封液压力不当					<input type="radio"/>	<input type="radio"/>	
填料压盖过紧				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
泵转速过高				<input type="radio"/>	<input type="radio"/>		
填料压盖过松					<input type="radio"/>		
消除方法							
重新灌泵排除空气							
降低泵位，增加进口处压力							
加大吸入管径，清除堵塞							
增大浸入深度或检修管路							
按规定要求检查原动机转速							
调整转向							
降低吐出系统阻力或高度							
应进行换算并调换合适功率电机							
加大流量或设旁通循环管							
校正							
检修泵或改善使用工况							
更换之							
更换之							
更换之							
按使用要求重新选用或安装							
检查原因设法消除							
按油位要求计加油(或换新油)							
检查并排除							
应按密封腔前的压力，加大0.049~0.147MPa							
适当调整之							
调整泵的转速							
调整填料压盖							

## 12 Fault, cause and elimination

Fault							
Appearance of vibration and noise				Too severe leakage out of the seal			
Cause				Shaft seal (including stuffing box) heating			
Elimination				Too heating pump and pump stop			
Heating bearing and bearing abrasion				Heating bearing and bearing abrasion			
Air exists inside the pump and suction pipe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			Refill pump to exhaust air
Suction lift too high or inadequate liquid fill	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				Lower pump position to increase inlet pressure
Too thin suction diameter or impurity block	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				Increase suction diameter and remove the block
Inadequate depth into the liquid of suction pipe or air leakage	<input type="radio"/>	<input type="radio"/>					Increase depth to immerse or repair pipe line
High or low rotation	<input type="radio"/>	<input type="radio"/>					Adjust to the nominal rotation
Wrong rotation	<input type="radio"/>	<input type="radio"/>					Change to right rotation
The general lift doesn't match with the pump lift	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		Lower the resistance or height of outlet system
The medium adhesion doesn't match with pump requirement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		Use suitable motor
Vibration appears when the flow is too small			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Increase flow or set by-pass cycle pipe
The axis of pump and motor doesn't align or the shaft bent			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Adjust
There exists friction between rotation part and solid part			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Check pump or improve operation condition
Severe abrasion or broken of bearing			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Replace
Too abrasive seal ring		<input type="radio"/>	<input type="radio"/>				Replace
Too abrasive muff, filler or dynamic & static ring		<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Replace
Unappropriate choice or installation of filler (or mechanical seal)		<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Rechoice or reinstallation
Unbalance rotation to cause vibration			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Elimination
Too much oil(or too dirty oil)		<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		Fill oil according to oil level(or replace fresh oil)
There is impurity to block the pipe line or pump	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				Check and eliminate
Unappropriate seal liquid pressure				<input type="radio"/>	<input type="radio"/>		Add the pressure of 0.049~0.147MPa on the base of the pressure at the front of the seal cavity
Too tight or loose of filler gland		<input type="radio"/>		<input type="radio"/>	<input type="radio"/>		Adjust
		<input type="radio"/>	<input type="radio"/>		<input type="radio"/>		
				<input type="radio"/>			

## 13 泵与介质接触的主要零件材料耐腐蚀性能选择

Choice of anti-corrosive performance of main parts in pump in contact with medium

13.1 金属材料耐腐蚀性能通常用腐蚀深度(又称腐蚀速度)作为评定金属材料耐腐蚀性能的一项主要指标。

13.2 腐蚀深度是指金属材料在单位时间内腐蚀的金属深度,单位用“毫米/年”(mm/a)表示。

13.3 按照腐蚀程度的不同,通常分为: 腐蚀深度小于0.1mm/a的材料,称为耐腐蚀性能材料; 腐蚀深度为0.1~1mm/a,称为尚耐腐蚀材料; 腐蚀深度大于1mm/a,称为耐腐蚀性不好的材料。

13.4 一般泵与介质接触的主要零件的材料选用在指定介质情况下,尚耐腐蚀性材料就可以。

13.5 为便于用户选用泵时,根据所输送介质条件,选择适宜泵的主要零件材料耐腐蚀性能,本说明书汇编了: ZG1Cr18Ni9(303), ZG1Cr18Ni9Ti(305), ZG0Cr18Ni12Mo2Ti(306), ZG1Cr18Ni12Mo2Ti(307), ZG00Cr17Ni14Mo2(316L), ZG1Cr18Mn13Mo2CuN(402)等材料耐腐蚀性能表(表6~表10)供选泵时参考。

ZG1Cr18Ni9 (303)钢的耐腐蚀性能表

表6

介质条件			腐蚀深度 (mm/a)	介质条件			腐蚀深度 (mm/a)
介质	浓 度(%)	温 度(℃)		介质	浓 度(%)	温 度(℃)	
硝 酸	0.5~99	20	<0.1	硫酸	0.5	190	0.06~0.14
	7~37	沸	0.1~1		1	20~90	0.002
	65	沸	<1		5	20	0.6
	93	37	0.01		5	40	<3
	93	55	0.21		5	50	3~4.5
	97	55	0.76		5	100~105	3.3~15
	99	55	1.25		10~50	20	2~5
	99	沸	<10		80	20	0.46
					90~95	20	0.006~0.008
醋 酸	10	沸	<0.1	柠檬酸	1~50	20	<0.1
	50	沸	<1		5	140	<1
	80	沸	<3		50	沸	<10
					95	20~140	<0.1

ZG1Cr18Ni9Ti (305)钢的耐腐蚀性能表

表7

介质条件			腐蚀深度 (mm/a)	介质条件			腐蚀深度 (mm/a)
介质	浓 度(%)	温 度(℃)		介质	浓 度(%)	温 度(℃)	
硝 酸	30	20	0.007	混合酸	H <sub>2</sub> SO <sub>4</sub> 78	20	0.003
	50~56	20	0		HNO <sub>3</sub> 0.5		
	93	43	0.05		H <sub>2</sub> sO <sub>4</sub> 78	90	0.05
	95	37~55	0.03		HNO <sub>3</sub> 0.5		
	97	55	0.76		H <sub>2</sub> SO <sub>4</sub> 78	20	0.0018
	99	55	1.25		HNO <sub>3</sub> 1		
	99.67	55	< 10		H <sub>2</sub> SO <sub>4</sub> 78	90	0.0251
硫 酸	2	50	0.016		HNO <sub>3</sub> 1		
	2	100	3~6.5	氢氧化钾	20	20~沸	<0.1
	5	50	3~4.5		50	20	<0.1
	5	100~105	3.3~15		50	沸	<0.1
	80	20	0.46		熔化的		> 10
醋 酸	1~浓	20~40	<0.1	氢氧化钠	~12	100	0.0044
	10		<0.1		~35	100	0.008
	50		<0.1	重铬酸钾	25	20~沸	<0.1
	80		< 0.3		氯化锰	10~50	100
磷 酸	10	80	0.01	过氧化钠	10	20~沸	<0.1
	28		0.67	亚硫酸钠	25~50	沸	<0.1
	45		0.1~1	硫酸钠	5~饱和	100	<0.1
	60	60	1.7		熔化的	900	>10
	80	110	腐蚀深度过大	硝酸银	10	沸	<0.1
柠檬酸	1~50	20	<0.1		氯	干燥的	20
	5	140	<1		干燥的	100	> 10
	50		< 10	漂白粉	潮湿的	40	0.48
	95	20~140	<0.1		干燥的	20~100	<1
硫	熔化的	130	<0.1	氯化氢	干燥的	100~500	< 10
	熔化的	445	<3				

ZG0Cr18Ni12Mo2Ti (306)钢的耐腐蚀性能表

表8

介质条件			腐蚀深度 (mm/a)	介质条件			腐蚀深度 (mm/a)
介质	浓度(%)	温 度(℃)		介质	浓度(%)	温 度(℃)	
硝 酸	1~5	20	<0.1	氢氟酸	10	20	<0.1
	1~5	80	<0.1		10	100	1~3
	5	沸	<0.1		10~20	沸	<0.1
	20	20~80	<0.1		30	100	<0.1
	50	20~50	<0.1		40	90	<0.1
	50	80	<0.1		50	90	<0.1
	50	沸	<0.1		50	100	<0.1
	60	20 ~ 60	<0.1		60	90	<0.1
	60	沸	0.1~1		70	90	<0.1
	65	20	<0.1	草 酸	2.5	20	<0.1
硫 酸	65	85	<0.1		2.5	60	<0.1
	65	沸	0.1~1		2.5	沸	<0.1
	90	20	<0.1		10	20	<0.1
	90	70	0.1~1		10	沸	1~3
	90	沸	1~3		50	沸	0.1~1
	99	20	0.1~1		25	沸	<0.1
	99	沸	3~10		50	20	<0.1
	0.5	20	<0.1	氢氧化钾	50	沸	<0.1
	1	20	<0.1		68	120	<0.1
	3	20	<0.1		5~10	20	<0.1
	40	20	<0.1		10	沸	<0.1
亚硫酸	80	20	0.1~1	高锰酸钾	0.5		1~3
	98	20	<0.1		3		<0.1
	2	20	<0.1		5		<0.1
	20	20	<0.1		10		0.1~1
					30		3~10

ZG1Cr18Ni12Mo2Ti (307)钢的耐腐蚀性能表

表9

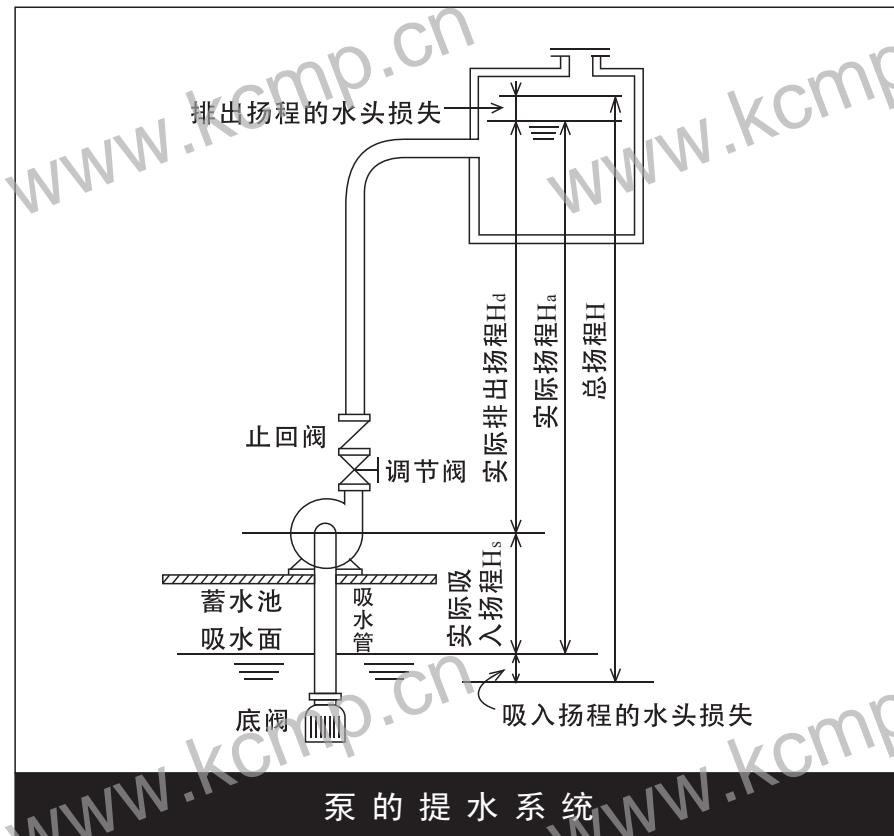
介质条件			腐蚀深度 (mm/a)	介质条件			腐蚀深度 (mm/a)
介质	浓度(%)	温 度(℃)		介质	浓度(%)	温 度(℃)	
硫酸	1	85	<1	铬 酸	10	沸 腾	<1
	3	80	<3		50	20	<0.1
	5	20	<0.1		50	沸 腾	<3
	5	80	1~3	氢氧化钠	10~30	20~沸腾	<0.1
	10	20	<0.1		40~60	120	<0.1
	10	80	1~3		60	160	<3
	20	20	<0.1		78	120	<0.1
	20	60	<3		熔 体	318	1~3
	40	20	<0.1		25~50	20~沸腾	<0.1
	40	60	>10		68	120	<0.1
	80	20	<1		熔 体	300	1~3
	80	60	3~10	氯	干 燥 的	20	<0.1
亚硫酸	20	20	<0.1		潮 湿 的	20	<10
	饱和溶液	20	<0.1		潮 湿 的	100	>10
	潮湿气体	20	<0.1		氯 水	20	<1
	饱和溶液	160~200 (0.8~2MPa)	<0.1	氯 苯	钝 的	沸 腾	<0.1
磷酸	1~80	20	<0.1		干 燥 中 溶 液	20	<0.1
	1~45	沸 腾	<0.1	漂白粉	溶 液 +25%Cl	20	<0.1
	1	140(0.3MPa)	<0.1		干 燥 的 气 体	20~100	<1
	80	60	<0.1		干 燥 的 气 体	200	<10
	80	110~沸腾	1~3	氯化铁	30~50	20	3
盐 酸	0.5	20	<0.1	氯化铵	28~饱和溶液	100	<0.1
	0.5	沸 腾	<3	氯化钙	饱和溶液	100	<0.1
	1	20	<0.1	碘	溶 液	20	>10
	1	50	<3	碘 仿	蒸 汽	60	<0.1
	5	20	<0.1	溴化钾	溶 液	20	<0.1
	5	60	<3	亚硫酸酐	潮 湿 的	20	<0.1
	10	20	<1		潮 湿 的	300	<0.3
	10	60	3~10		潮 湿 的	500	<1
	20	20	<3		潮 湿 的	900	<3
	20	60	>10	亚硫酸钠	50	沸 腾	<0.1
	30	60	3~10	亚硫酸氢钠	50	沸 腾	<0.1
铬 酸	10	20	<0.1	纤维素	纤维素蒸煮时	沸 腾	0(mo h)
				尿 素	溶 液	20	<0.1

ZG00Cr17Ni14Mo2 (316L)钢的耐腐蚀性能表

表10

介质条件			腐蚀深度 (mm/a)	介质条件			腐蚀深度 (mm/a)
介质	浓 度(%)	温 度(℃)		介质	浓 度(%)	温 度(℃)	
硫酸	0~30	25	< 0.3	甲酸+醋酸	20	沸 腾	0.401
	10	0≤	< 0.3		45		
	40	25	> 0.3	醋 酸	30	沸 腾	0
	85	25	< 0.3		50	沸 腾	0.005
	98	25~50	< 0.3		70	沸 腾	0.018
磷酸	40	70~100	< 0.3		99	沸 腾	0.035
	40	沸 腾	< 0.3	熔融尿素	尿素32~34	190~150	0.065
	50~60	70~100	< 0.3		CO <sub>2</sub> 10~11		
	50~60	沸 腾	> 0.3		NH <sub>3</sub> 35 - 36		
	70	70~90	< 0.3		H <sub>2</sub> O19 - 21		
	70	100	> 0.3	熔融尿素	CO <sub>2</sub> 35	170~180	0.024
	80	70~80	< 0.3		NH <sub>3</sub> 54 - 55		
	80	> 80	> 0.3		H <sub>2</sub> O10		
粗醋酸	浓	81	2.2	熔融尿素	尿液30	188	0.17
		190	14		甲铵30		
		沸 腾	< 0.0005		NH <sub>3</sub> 20		
甲酸+醋酸	20	沸 腺	0.26		H <sub>2</sub> O20		
	70	沸 腺	0.26	注：熔融尿素的压力=200			

13.6 ZG1Cr18Mn13Mo2CuN (402)钢是无镍的不锈钢，在大多数化工介质中的耐腐蚀性相当或优于ZG1Cr18Ni9Ti(305)钢，尤其是在腐蚀性能与磨损并存的条件下比ZG1Cr18Ni9Ti更优，机械性能和铸造性能好，但气孔敏感性比ZG1Cr18Ni9Ti大，其耐腐蚀性能在此基础上可参照ZG1Cr18Ni9Ti耐腐蚀性能表。



IR 耐腐蚀保温泵



# 上海凯程制泵有限公司

SHANGHAI KAICHENG PUMP CO.,LTD

地址：上海市陕西北路1438号

邮编：200060

电话：021-62989587 62989687  
021-56701122 52527372  
0086-21-62989871

传真：021-62989790

国内贸易邮箱：kcmp@kcmp.cn

国际贸易邮箱：Sell@kcmp.cn

公司邮箱：kaicheng@sh163.net

公司网址：<http://www.kcmp.cn>

免费咨询电话：8008207382

Add: No.1438 Shanxi North Road.Shanghai.

Zip: 200060

Tel: 021-62989587 62989687  
021-56701122 52527372  
0086-21-62989871

Fax: 021-62989790

Domestic Trade: kcmp@kcmp.cn

International Trade: Sell@kcmp.cn

E-mail: kaicheng@sh163.net

Web: [www.kcmp.cn](http://www.kcmp.cn)