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耐普化工泵是您的最佳选择！

Your Best Choice——Nep's Chemical Process Pump!

## NH石油化工流程泵

## NH Chemical Process Pump

NH系列石油化工流程泵分为NHA(OH1)、NHE(OH2)两个系列，是卧式、径向剖分、单级悬臂式离心泵。符合API610标准。适合输送清洁或含颗粒、低温或高温、中性或有腐蚀性的液体。

NH petrol-chemical process pumps can be divided into NHA(OH1) and NHE(OH2) two series, which are horizontal type radially split single stage cantilever form centrifugal pumps, and conform to the standard API610. These pumps are widely used in transporting of clean or particle liquid, low or high temperature liquid, neutral or corrosive liquid.



## 节能

### Energy Conservation

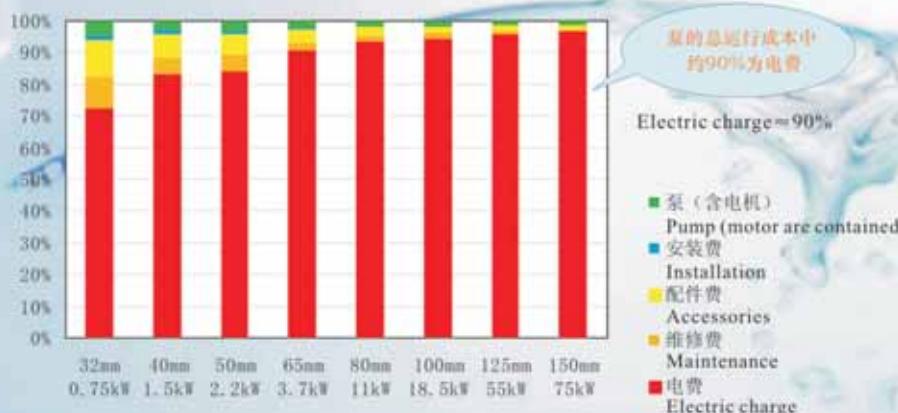
通过采用高效率水力模型设计（三维叶轮、泵体设计），实施最佳工矿点（精准切割叶轮），采用高效电机达到节能目的，大幅度降低总运行成本和减少CO<sub>2</sub>排放。

High efficiency hydraulic model design (3D impeller, pump casing design) are adopted. Optimal operating point is put into use (cut impeller accurately), high efficiency motor are adopted to save energy, reduce total operating cost sharply and reduce carbon emission.

#### 降低总运行成本 Reduce total operating cost

泵的总运行成本中约90%是电费，所以节省能源能使泵的总运行成本大幅度降低。

90% of total operating cost in pump running is electric charge, that is why energy conservation can reduce total operating cost sharply.



#### 泵节能 Energy conservation

泵名称：冷却水化工泵  
年运转时间：8760小时

Pump name: cooling water chemical pump  
Annual running time: 8760 hours

	旧型号泵工况参数 Pump duty parameters of old model		新型号泵工况参数 Pump duty parameters of new model		性能差 Performance difference
	泵形式 Pump model	旧型号 Old model	新型号 NHA100-200	运行点 Running point	
电机额定功率 Motor rated power	30kW	30kW	30kW	运行点 Running point	
工况点 Working point	150	150	150	运行点 Running point	
流量 Flow m³/hour	150	150	150	运行点 Running point	0%
扬程 Head m	10	11.4	10	运行点 Running point	-1.0m
效率 Efficiency %	62	65	65	运行点 Running point	+3.0%
轴功率 Pump shaft power kW	27.3	25.1	25.1	运行点 Running point	-1.2kW
电机效率 Motor efficiency %	90	92.1	92.1	运行点 Running point	+2.1%
耗电量 Power consumption	30.3	27.2	27.2	运行点 Running point	-1.1kW (-3.6%)
年耗电量 Annual power consumption	26428	23872	23872	运行点 Running point	-2556kWh



电费：0.8元/度  
Electric charge: ¥ 0.8/kWh



Annual CO<sub>2</sub>减排量  
Year CO<sub>2</sub> emission reduction  
12.2t-CO<sub>2</sub>  
(=27156 \* 0.00045 CO<sub>2</sub>/kWh)

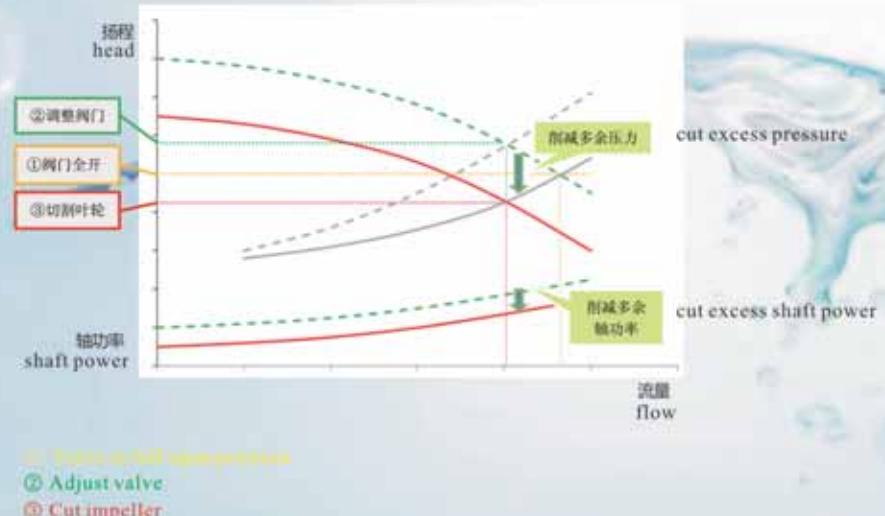
CO<sub>2</sub>换算排出系数: 0.00045  
(t-CO<sub>2</sub>/kWh)  
(0.00045系数据于国家电力相关资料)

CO<sub>2</sub> conversion efflux coefficient  
(t-CO<sub>2</sub>/kWh)  
(coefficient 0.00045 comes from  
State Power related data)

## 最佳工况点 Optimal operating point

根据用户的工况参数来确定叶轮直径，精确控制扬程的高出余量，降低轴功率，减少耗电量。

Impeller diameter is determined from working state parameter to control accurately higher margin of head, reduce shaft power and power consumption



## 省资源 Resource saving

### • 高速小型化 High speed miniaturization

通过提高转速、减少泵体积来降低泵房基建成本，减少占地面积，达到节省资源的目的。

Rise rotary speed and reduce pump volume to reduce infrastructure cost of pump housing and floor space, to achieve the purpose of saving resources.

极数 pole number : 4P  
电机功率 motor power: 18.5kW  
重量 weight: 500kg

极数 pole number : 2P  
电机功率 motor power: 15kW  
重量 weight: 309kg

2P相比4P质量减少38%!  
Compared to 4P, 2P's weight reduce 38%!  
 $= (500-309) / 500 \times 100\%$



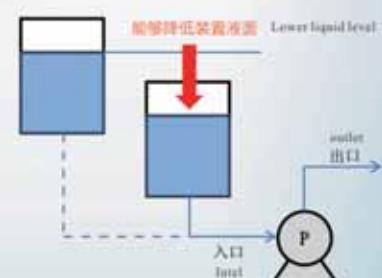
### • 低气蚀性和大使用范围 Low cavitation and wide application range

叶轮采用低气蚀性设计，提高化工泵抗气蚀能力，降低装置液面高度，削减装置建设成本。

注：能适用于-80 ~ +450℃液温和各种液体介质

Low cavitation performance design are adopted in impeller to improve cavitation - resistant ability of chemical pump, lower device liquid level and Cut device construction costs.

Note : suitable for sorts of liquid medium which between -80 ~ +450℃.



省力  
Labor saving

机械密封标准配置 Standard configuration of mechanical seal

采用机械密封标配，轴封部件无泄漏，保护泵周围环境。

Standard configuration of mechanical seal are adopted. Shaft seal parts without leakage, protect the surroundings.

构造 Structure	机械密封 Mechanical seal	填料密封 Packing seal
泄漏量 Leakage amount	0 cc/min	15 cc/min
5年泄漏量 Leakage amount in 5 years	0 L	39420 L
金额换算 Converted amounts	0元	¥162元

填料密封5年泄漏量：  
Leakage amount of packing seal in 5 years  
**39420L**  
相当于家庭饮用水桶(18L)  
equivalent to **2190** drinking water barrels



高精度轴承部件设计保证平稳运行  
Design of high precision bearing parts ensure steady operation

- 稳定曲线性能保证平稳运行 Stability curve performance ensure steady operation  
稳定性性能具有随流量增大扬程减小的特性，在阀门调节和并列运行中，具有良好的操作性。  
Stability performance can decrease along with flow increasing, have favorable maneuverability in regulation and parallel operation of valves.

## 性能表

### Performance Chart

泵系列 Pump series	NHA(OH1)	NHE(OH2)
口径DN diameter	25~400mm	
流量Q flow rate	最大 max 2600m³/h	
扬程H head	最高 max 300m	
转速n rotate speed	2950rpm/1480rpm	
介质温度t medium temperature	-80~+300°C	-80~+450°C
工作压力P working pressure	最高 max 2.5MPa (压力-温度表) ( pressure-thermometer)	最高 max 5.0MPa (压力-温度表) ( pressure-thermometer)
材质 material	符合API材料等级要求 Meet the requirement of API material grade.	

## 型号说明

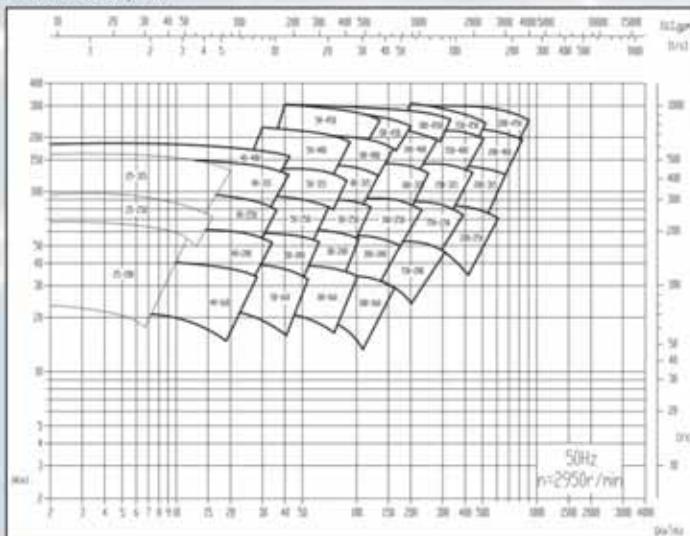
NHA100-315-X0

- X0-悬架部件代号 (X0、X1) Suspension parts code(X0、X1)
- 315-叶轮名义直径 (mm) Impeller nominal diameter(mm)
- 100-出口口径 (mm) Outlet diameter (mm)
- NHA(OH1)-系列代号 [NHE(OH2)] Series code [NHE(OH2)]

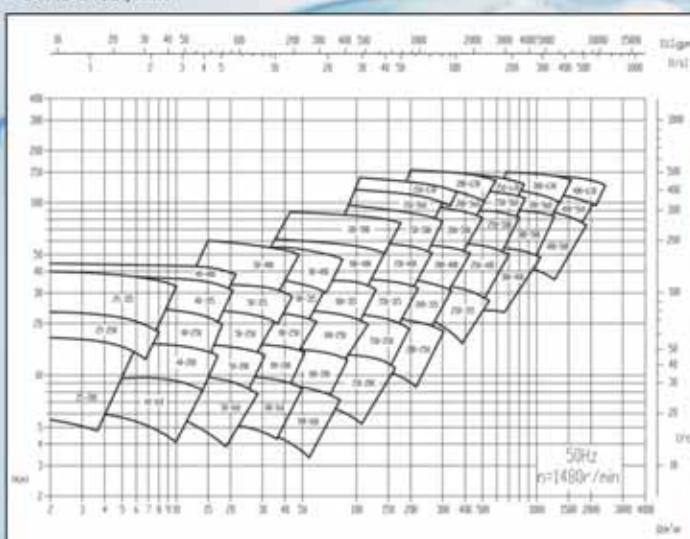
## NHA(OH1)、NHE(OH2)型谱图

## Model Spectrum

- 50Hz-2950r/min



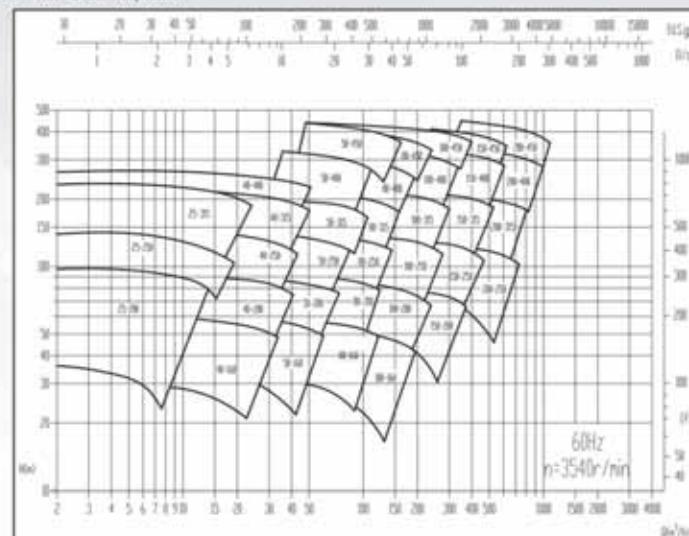
- 50Hz-1480r/min



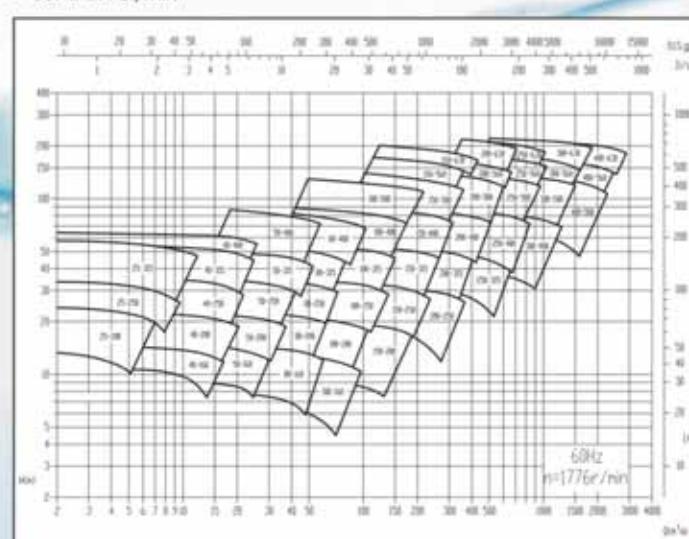
## NHA(OH1)、NHE(OH2)型谱图

## Model Spectrum

- 60Hz-3540r/min



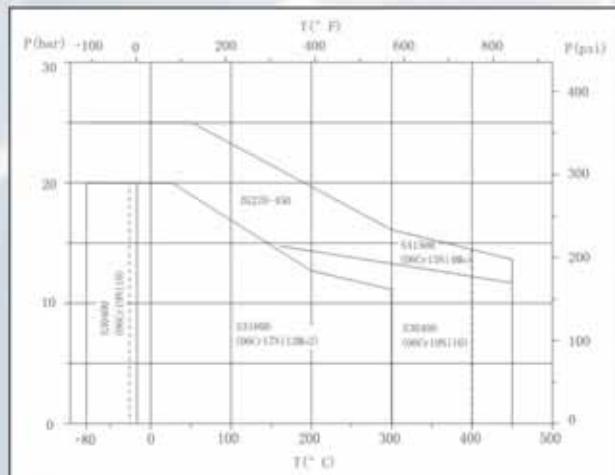
- 60Hz-1776r/min



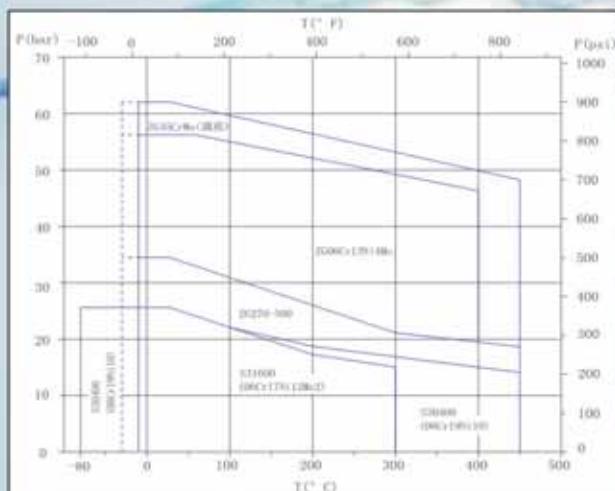
## 压力-温度表

### Pressure Thermometer

· NHA ( OH1 ) (最大允许工作压力 Maximum permissible working pressure)

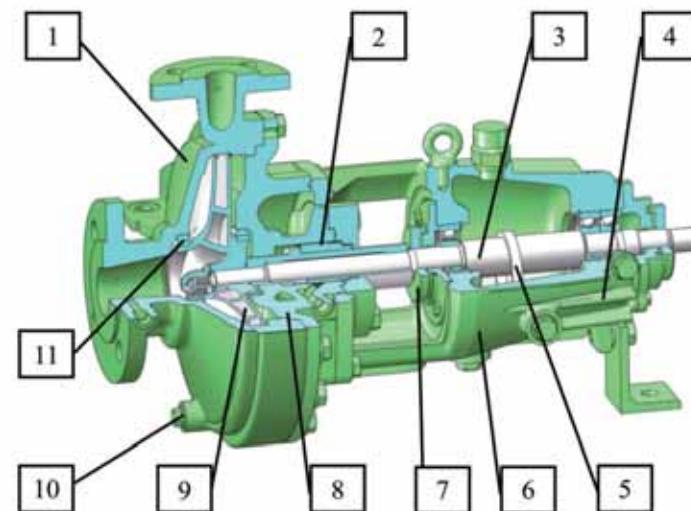


NHE ( OH2 ) (最大允许工作压力 Maximum permissible working pressure)



## 主要零件结构特点

### Major Parts Structural Features



#### 1. 泵体 pump casing

大口径（出口流速小、能够承受较高的管口力和力矩载荷、低噪音）  
Heavy calibre (low exports velocity, can bear higher nozzle pressure and moment load, low noise)

径向排出口（泵体自排气）  
Radial direction outlet opening (pump casing self-exhaust)

泵体垫片小（垫片不易断裂）  
Small washer in pump casing (washer not easy to break)

#### 2. 密封腔 seal space

适用于填料密封或机械密封（单或双封）  
Suitable for packing seal or mechanical seal (single or double seal)

可采用喉部衬套  
Throat bushings can be used.

## 主要零件结构特点

## Major Parts Structural Features

3.轴 shaft 轴偏差小（轴封处<0.05mm） Small axial misalignment (<0.05mm in shaft seal) 临界转速>工作转速 Critical speed of revolution> working speed 能保护并密封所传输的液体 Can protect translated liquid and seal	4.轴承支架（带散热筋） bearing bracket (with radiation rib) 散热筋自然空冷 Natural air cooling in radiation rib
5.甩油环 oil slinger 防止局部润滑油温过高 To prevent over-temperature of local part of lubricating oil 充分混合润滑油 Intensive mixing lubricating oil	6.整体悬架部件 overall suspension parts 自动油润滑的耐磨轴承 Antifriction bearing which can do oil lubrication automatically 高强度的主轴 Main shaft of high-strength 组件少、通用性强 Less parts, has strong generality
7.迷宫式密封（标准） labyrinth seal (standard) 耐磨轴承密封 Wear-resisting bearing seal 无附加轴承升温 No additional temperature rise in bearing	8.泵盖 pump cover 可提供冷却或加温 Can provide cooling or warming 冷却腔装配简单方便 Easy to assembly cooling chamber

## 主要零件结构特点

## Major Parts Structural Features

9.叶轮 impeller 标准型闭式叶轮（高效）、低气蚀 Standard enclosed impeller(high efficiency), low cavitation 开式叶轮 Open style impeller 可使用附加叶轮（诱导轮） Additional impeller can be used (guiding impeller)	10.泵体排液 pump casing drain 用螺纹（G或NPT） Use screw thread.(G or NPT) 可连接法兰 Can be connected to flange
11.耐磨件 wear-resistant parts 叶轮和泵体带有密封环（可冲洗） There are seal rings in impeller and pump casing 轴套 Shaft sleeve	

## 主要零部件材质表（常用材质推荐）

## Major Parts Material Table (Recommended general materials)

注：客户有特殊要求时按合同和技术协议要求选配材质。  
Note: Material will be choose according to contract and technical agreement if customers have special requirements.

## 主要零部件材质表（常用材质推荐）

Major Parts Material Table (Recommended general materials)

使用条件 Service conditions	温度 Temp. (°C)	材料等级 Material grade	泵体泵盖 Pump casing Pump cover	叶轮 Impeller	密封环 Seal ring	轴 Shaft	泵体泵盖的 双头螺栓 Double end bolt of pump casing and pump cover	泵壳垫片 Washer for pump casing	过流的 紧固件 Overflowing fastener
淡水、冷凝水、冷却塔水、海水和工业流程用水。 Fresh water, condensate water, cooling tower water, boiling water and water for industrial circuit.	全温 All	S-6	碳钢 carbon steel GB/T12224 A185	12%铬钼 chrome steel ZG1Cr13	AISI4140钢 steel 42CrMo AISI4140钢 steel 35CrMoV	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket
锅炉供水(双壳型)。 Boiler water supply double-shell (barrel shape)		C-6	12%铬钼 chrome steel ZG1Cr13						
污水、回流储水、排泄水以及含有这些水的烃类、包括碳氢化合物。 Sewage, backflow storage water, drain water and above water which contain hydrocarbon, circulating liquor are included.	>95	S-6	碳钢 carbon steel GB/T12224 A185	12%铬钼 chrome steel ZG1Cr13	AISI4140钢 steel 42CrMo AISI4140钢 steel 35CrMoV	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket
污水、回流储水、排泄水以及含有这些水的烃类、包括碳氢化合物。 Sewage, backflow storage water, drain water and above water which contain hydrocarbon, circulating liquor are included.	<175		碳钢 carbon steel GB/T12224 A185						
柴油：汽油；石墨油；煤油；船用油；轻油；中等和重润滑油；燃料油；纯润滑油；溶剂油；沥青；合成或合成油。 Diesel: gasoline; asphalt; kerosene; gas oil; light, medium and heavy lubricants; fuel oil; residual oil; crude oil; pitch; synthetic crude oil base oil.	<370	C-6	12%铬钼 chrome steel ZG1Cr13	12%铬钼 chrome steel ZG1Cr13	12%铬钼 chrome steel ZG1Cr13	AISI4140钢 steel 42CrMo AISI4140钢 steel 35CrMoV	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket
开采矿物油，钻井液，盐水，放射性液体及海水。 Mineral oil, formation water, saltwater, radioactive liquids and seawater.									

## 主要零部件材质表（常用材质推荐）

Major Parts Material Table (Recommended general materials)

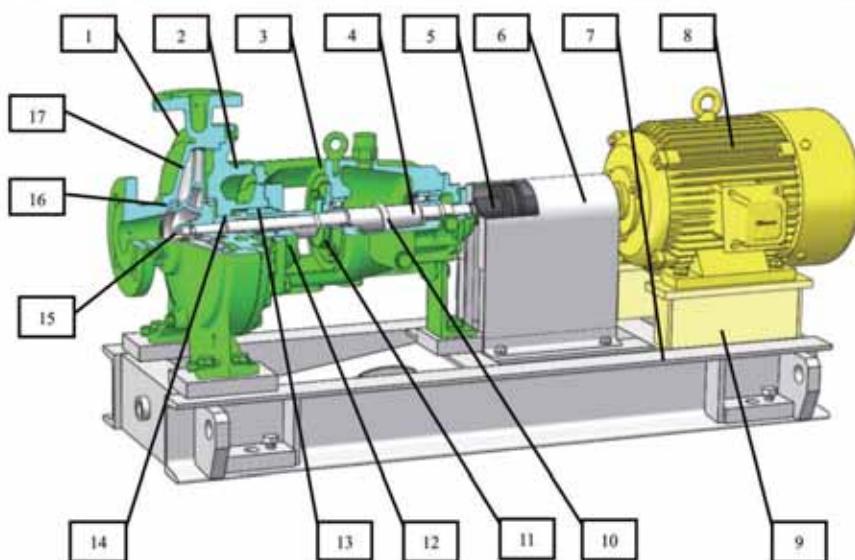
使用条件 Service conditions	温度 Temp. (°C)	材料等级 Material grade	泵体泵盖 Pump casing Pump cover	叶轮 Impeller	密封环 Seal ring	轴 Shaft	泵体泵盖的 双头螺栓 Double end bolt of pump casing and pump cover	泵壳垫片 Washer for pump casing	过流的 紧固件 Overflowing fastener
污水、回流存储水、排泄水以及含有这些水的烃类，包括碳氢化合物。 Sewage, backflow storage water, drain water and above water which contain hydrocarbon, circulating liquor are included.	>175	C-6	12%铬钼 chrome steel ZG1Cr13	12%铬钼 chrome steel ZG1Cr13	12%铬钼 chrome steel ZG1Cr13	AISI4140钢 steel 42CrMo AISI4140钢 steel 35CrMoV	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket
锅炉供水罐部分 Axial parts of boiler water supply									
锅炉循环器 Boiler circulator									
FCC油 FCC thick liquid									
碳酸钾 Potassium carbonate									
乙酸盐-盐酸液 (只有CO2) Acetate-salt acid (only contains CO2)	<150	S-9	碳钢 carbon steel GB/T12224 A185	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket	镍合金 nickel alloy Ni440C	镍合金 nickel alloy Ni440C	镍合金 nickel alloy Ni440C	镍合金 nickel alloy Ni440C 梯形槽垫片 steel shape spiral wound gasket	镍合金 nickel alloy Ni440C 梯形槽垫片 steel shape spiral wound gasket
浓度>90% 氢氟酸 Concentration >90% hydrofluoric acid									
丙酮、丁酮、液体石油 和氯、乙腈、低量作 基底温度)	>196	A-7	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket	奥氏体不锈钢 austenitic stainless steel 16Cr13PN10 梯形槽垫片 steel shape spiral wound gasket
硫酸浓度15%-85% Sulphuric acid concentration 15%-85%									
碳酸钾 Potassium carbonate	<370	A-8	11奥氏体不锈钢 11 austenitic stainless steel 0Cr17Ni2M2	11奥氏体不锈钢 11 austenitic stainless steel 0Cr17Ni2M2 梯形槽垫片 steel shape spiral wound gasket	11奥氏体不锈钢 11 austenitic stainless steel 0Cr17Ni2M2 梯形槽垫片 steel shape spiral wound gasket	11奥氏体不锈钢 11 austenitic stainless steel 0Cr17Ni2M2 梯形槽垫片 steel shape spiral wound gasket	11奥氏体不锈钢 11 austenitic stainless steel 0Cr17Ni2M2 梯形槽垫片 steel shape spiral wound gasket	11奥氏体不锈钢 11 austenitic stainless steel 0Cr17Ni2M2 梯形槽垫片 steel shape spiral wound gasket	11奥氏体不锈钢 11 austenitic stainless steel 0Cr17Ni2M2 梯形槽垫片 steel shape spiral wound gasket
酸性水 Acidic water	<260								
苯苯酚 Benzene phenol 盐水，放射性液体及海水。 Saltwater, radioactive liquids and seawater.	全部 All	D-1	双相不锈钢 duplex stainless steel 022Cr13 NiMo2N	双相不锈钢 duplex stainless steel 022Cr13 NiMo2N 梯形槽垫片 steel shape spiral wound gasket	双相不锈钢 duplex stainless steel 022Cr13 NiMo2N 梯形槽垫片 steel shape spiral wound gasket	双相不锈钢 duplex stainless steel 022Cr13 NiMo2N 梯形槽垫片 steel shape spiral wound gasket	双相不锈钢 duplex stainless steel 022Cr13 NiMo2N 梯形槽垫片 steel shape spiral wound gasket	双相不锈钢 duplex stainless steel 022Cr13 NiMo2N 梯形槽垫片 steel shape spiral wound gasket	双相不锈钢 duplex stainless steel 022Cr13 NiMo2N 梯形槽垫片 steel shape spiral wound gasket
苯苯酚 Benzene phenol 盐水，放射性液体及海水。 Saltwater, radioactive liquids and seawater.									





## 结构外形图

Structure Outside Drawing

主要零件表  
Major Parts Table

序号 No.	名称 Name	序号 No.	名称 Name	序号 No.	名称 Name	序号 No.	名称 Name
1	泵体 Pump casing	6	联轴器罩 Coupling shell	11	密封 Seal	16	密封环 Seal ring
2	泵盖 Pump cover	7	底座 Foundation	12	机封压盖 Mechanical seal gland	17	叶轮 Impeller
3	轴承支架 Bearing bracket	8	电机 Motor	13	机械密封 Mechanical seal		
4	轴 Shaft	9	电机支脚 Motor feet	14	轴套 Shaft sleeve		
5	联轴器 Coupling	10	甩油环 Oil slinger	15	叶轮螺母 Impeller nut		

## 结构外形图

Structure Outside Drawing

## 配件表

Accessories Table

序号 No.	名称 Name	数量 Qty.	序号 No.	名称 Name	数量 Qty.
1	机封冲洗管路 Mechanical seal flushing line	1件 1 pc.	4	进、出口压力表 Inlet/outlet pressure gauge	各1个 1 each
2	油杯 Oil cup	1件 1 pc.	5	地脚螺栓 Foundation bolt	1套 1 set
3	进出口反法兰 Inlet/outlet counter flange	1套 1 set			

耐普高效化工泵，再创节能新高度！  
Efficient chemical process pump, better energy conservation!