

HLT[™] 立式化工通道泵

VERTICAL CHEMICAL PROCESS PUMPS

- 石化
Petrochemical
- 化工
Chemical
- 油库
Oil depot
- 印染
Dyeing
- 环保
Environmental protection

- 参照HG20596、API610标准
Conform to HG20596, API610 Standard
- 最大工作压力 2.0MPa
Max operating pressure 2.0MPa
- 流量 (3~400) 立方米/小时
Range of Capacity (3~400)m³/h
- 扬程 (7~125) 米
Total head (7~125)m
- 温度 (-20~200) °C
Range of operating Temperature (-20C~200) °C
- 1995年通过ISO9001质量管理体系认证
Attained the ISO9001 quality management system authentication in 1995
- 2005年通过ISO10012:2003国际测量管理体系认证
Attained the ISO10012:2003 measurement management system authentication in 2005
- 2006年通过AAA级企业标准体系认证
Attained the AAA standardization system authentication in 2006
- 2011年通过ANSI/API Spec. Q1, ISO/TS29001质量管理体系认证
Attained ANSI/API Spec. Q1, ISO/TS29001 quality management system authentication in 2011



省 级
化 工 泵
研 发 中 心



浙江省劳动保障
优秀企业

ISO9001
质量管
理体
系认
证



Q1-1125



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华泵新科技 省电省备件



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READ CAREFULLY BEFORE USING

一、HLT立式化工通道泵简介 INTRODUCTION TO HLT VERTICAL CHEMICAL PASSAGE PUMP

(一) 简介

HLT化工通道泵为立式离心泵，是参照API610标准，采用国内外先进的水力模型和原HT泵成熟设计而优化的产品。在性能上具有IJ化工流程泵相同的功能，具有较强的颗粒通过能力。轴封采用本公司的国家专利产品——171型机械密封，密封性能好、适应工况广。并可根据用户使用环境，配用API 682第三版推荐的密封布置与冲洗方案。

1. Introduction

HLT chemical process pump is a vertical centrifugal pump designed by referring to API 610 standard, adopting the advanced hydraulic model at home and abroad, and design of HT series pump, HLT pump has the same performance with IJ series pump, and has a strong capacity of conveying particles. The shaft seal adopts our own patent product 171 mechanical seal, which has a great seal performance and wide application. Sealing arrangement and flushing plan recommended by API 682 the 3rd edition can be used according to users' spot environment.

(二) 用途

HLT化工通道泵主要为石油、化工、油库、印染、环保、污水处理等行业输送易爆、有毒、有化学腐蚀性、易气化的液体而设计。也可用于高层建筑、水循环、小型锅炉给排水等工况，具有一般水泵不可比拟的可靠性。

2. Application

HLT vertical chemical process pump is designed mainly for industries of petroleum and chemical, oil depots, dyeing and printing, environmental protection, sewage treatment, as well as for water supply and drainage of tall buildings, water circulation, small-sized boilers, etc. Ordinary pumps are incomparable to it in terms of running reliability.

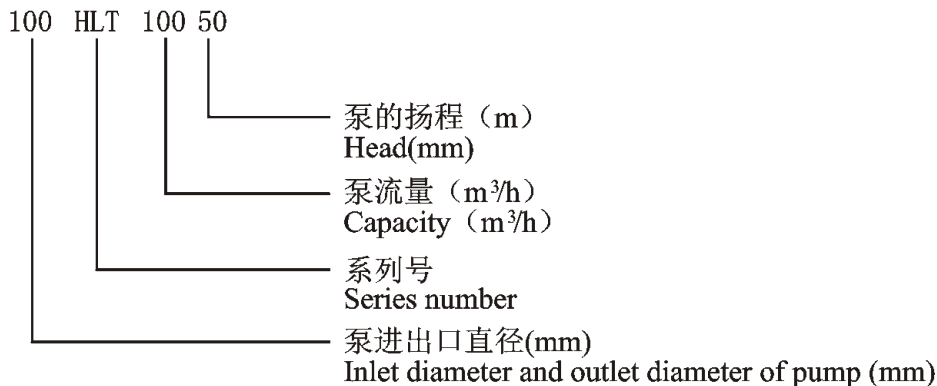
(三) 材料

与介质接触的过流部件，常用材料如下：304，321，316L，310S，2205，20#合金，904L，TA2(钛)，Ti/Pd(钛钯合金)，Ni(镍)，蒙乃尔合金等。

3. Materials

For wetted parts in contact with medium, the common materials are as follows: 304, 321, 316L, 310S, 2205, alloy 20#, 904L, TA2 (titanium), Ti/Pd (titanium-palladium alloy), Ni (nickel), Monel etc.

(四) 型号举例说明 Pump model illustration



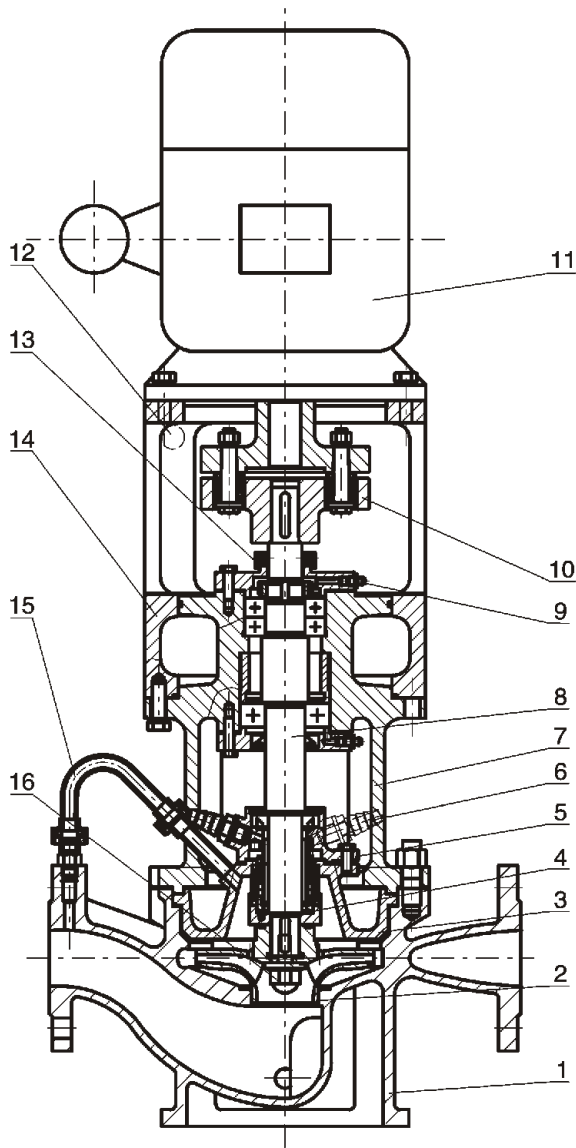
二、泵的结构 STRUCTURE

(一) 结构

HLT泵由电机、泵体、叶轮、泵盖、机械密封等主要零部件组成。泵的进出口直径相同，其中心线在同一水平线上，且与立轴正交。法兰按HG/T20592-2009, PN1.6MPa设计。采用标准立式电机。泵体与支座采用整体浇铸，增加了泵的强度和运行的稳定性。

1. Structure

HLT series pump is composed of some main components such as the motor, pump casing, impeller, Pump cover and mechanical seal, etc. The diameters of pump inlet and outlet are of the same size, and their centerlines are in the same horizontal line, and are perpendicular to the vertical shaft. The flanges are designed in accord with HG/T20592-2009, PN 1.6MPa. Using standard vertical motor, the pump casing and supporting seat are wholly casted, which improved the pump's intensity and stability.

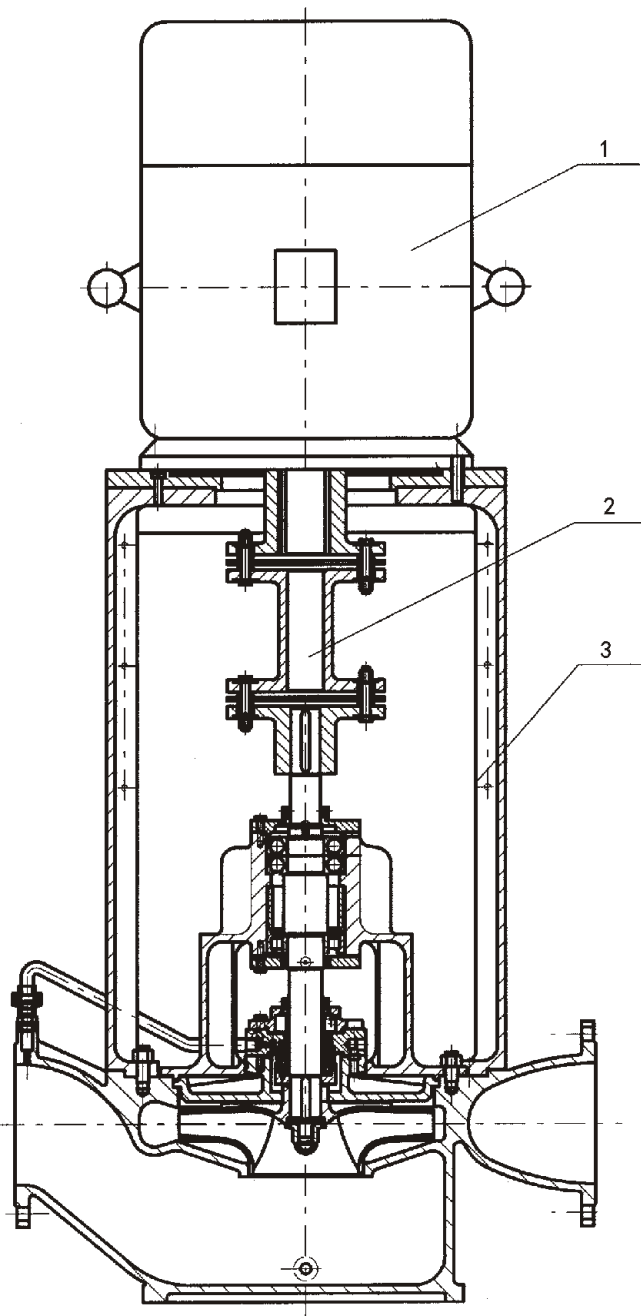


图Fig 1

- | | |
|---------|-----------------------------|
| 1、泵体 | 1. Pump casing |
| 2、叶轮 | 2. Impeller |
| 3、泵盖 | 3. Pump cover |
| 4、机封部件 | 4. Parts of mechanical seal |
| 5、静环压盖 | 5. Seal end gland |
| 6、管接头 | 6. Pipe joint |
| 7、轴承座 | 7. Bearing seat |
| 8、轴 | 8. Shaft |
| 9、注油口 | 9. Oil filling mouth |
| 10、联轴器 | 10. Coupling |
| 11、电机 | 11. Motor |
| 12、吊装位置 | 12. Hoisting location |
| 13、防尘罩 | 13. Dust proof guard |
| 14、中间支架 | 14. Middle bracket |
| 15、冲洗管 | 15. Flush tube |
| 16、叶轮螺母 | 16. Impeller nut |

参照API610-0H3标准模块化设计，45轴径以上规格采用独立的大支架，加中间节联轴器，拆泵时不用移动电机，只要拆下中间节联轴器，拧下轴承座与泵体连接螺栓，就可取出泵的传动部份。方便维修。

Pump with the shaft diameter above 45, the independent bearing seat and the metal slice coupling are adopted according to the standard modularized design in API 610-0H3, and there is an intersegmental coupling. When disassembling, there is no need to remove the motor, just remove the intersegmental coupling, and screw off the bolt connected between the bearing seat and the pump casing, the driving part can be pulled out of the pump casing, so it is easy to maintain.



- 1、电机
- 2、中间节联轴器
- 3、大支架
- 1. Motor
- 2. Intersegmental coupling
- 3. Big bracket

图Fig 2

(二) 泵的密封

1、泵的轴封有本公司的专利产品171S、171S/CL、171C/CL机械密封等供用户选择。

2、机械密封的装配和使用见相应的《机械密封装配使用说明书》。

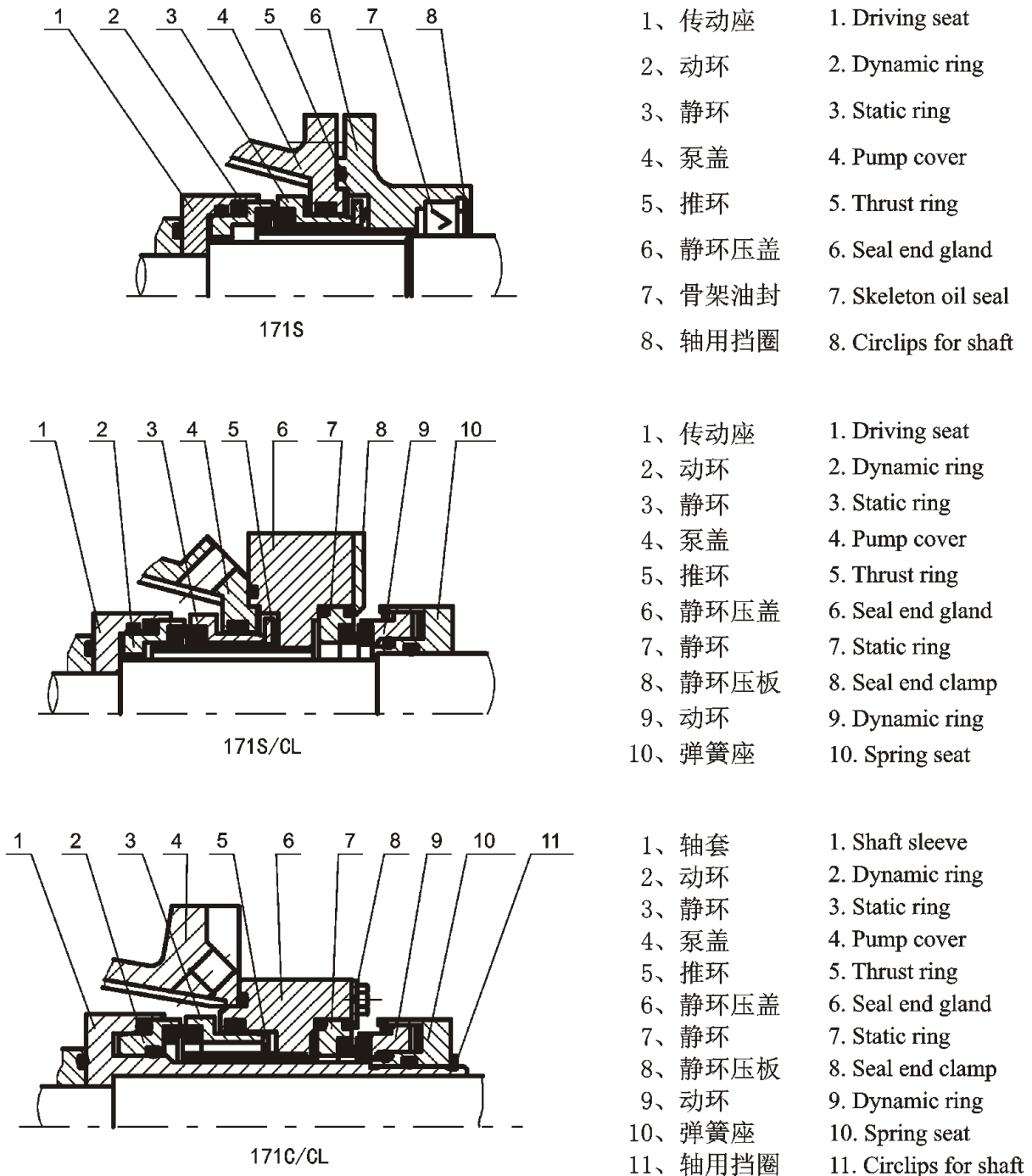
171S、171S/CL、171C/CL机械密封结构图3。

2. Pump seal

1. For shaft seal of pump, there are patent products, 171S, 171S/CL, 171C/CL mechanical seal, for your selection.

2. Refer to the "Operating Instruction of Mechanical Seal" for the installation and usage of mechanical Seal.

171S, 171S/CL, 171C/CL mechanical seal structure Fig 3.



图Fig 3

(三) 泵的联接

泵的联接采用直联，驱动机为标准立式电机，联轴器优先选用金属膜片联轴器，也可采用弹性套柱销联轴器结构见图：

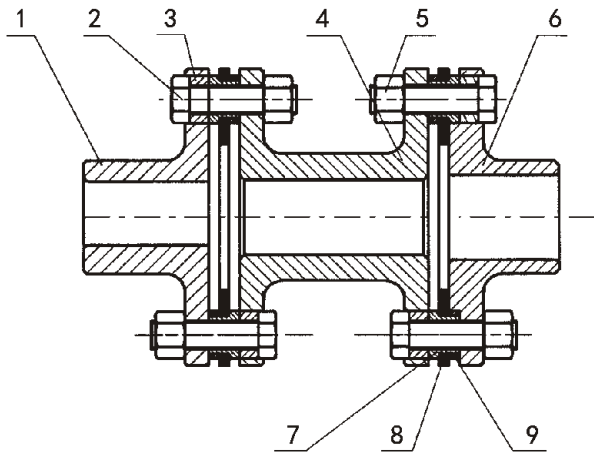


图4 膜片式联轴器

Fig4 Slice type coupling

3. Pump coupling

The driving way of the HLT series pumps is direct connection, and the driver is standard vertical motor. Metal slice coupling is a priority for adoption, elastic sleeve pin also can be adopted. Structure seen in the diagram:

- | | |
|-----------|--------------------------------|
| 1、泵联 | 1. Pump coupling |
| 2、螺栓 | 2. Bolt |
| 3、压套 | 3. Press sleeve |
| 4、中间加长节 | 4. Intermediate connector |
| 5、螺母 | 5. Nut |
| 6、电联 | 6. Motor coupling |
| 7、电联膜片压紧套 | 7. Press sleeve for slice |
| 8、膜片 | 8. Metal slice |
| 9、膜片压紧块 | 9. Press block for metal slice |

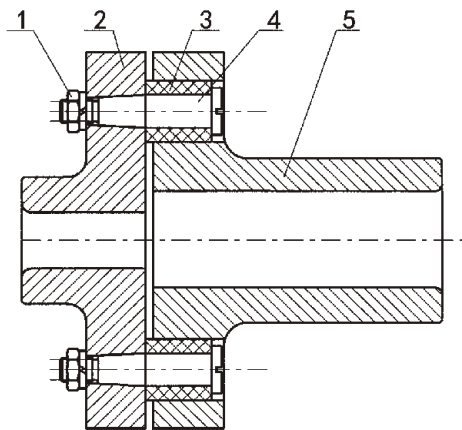


图5 弹性套柱销联轴器

Fig5 Elastic sleeve pin coupling

- | | |
|-------|-------------------|
| 1、螺母 | 1. Nut |
| 2、泵联 | 2. Pump coupling |
| 3、弹性套 | 3. Elastic sleeve |
| 4、柱销 | 4. Pin |
| 5、电联 | 5. Motor coupling |

(四) 泵的旋转方向

从电机端看（从上往下看），叶轮顺时针方向旋转。

4. Rotation direction of pump:

The impeller is rotating clockwise viewed from the motor end.

三、安装与操作指导 INSTALLATION AND OPERATION INSTRUCTIONS

(一) 安装

1、开箱后按装箱单检查泵和机组，如果证实没有错装、漏装或没有因装卸和运输过程中造成损坏，泵的进出口封盖完好，泵的里面没有杂物，可入库或直接送到安装现场。泵和机组在投入运行前的储存期(最长6个月)应防潮、防震、防尘。泵应存放在不受天气影响的地方并注意保养。储存期内泵体进、出口及其他管路进、出口应加以封闭。如储存期超过6个月，请与本公司联系更换易损件。

2、安装前仔细阅读《安装使用维护手册》，泵基础应具有足够的强度和尺寸，以便更好地吸收振动并牢固地支撑泵机组。泵基础的承重应为泵机组总重的3倍以上。

3、在输送含杂质、固体颗粒时，泵入口应该装有过滤网，过滤网采用锥形结构，其净面积为进口管道截面积的3倍以上。过滤网的目数应保证进入泵中的颗粒不大于1.6mm，并安装在短管上便于拆下清理。

4、对新安装的管路和储罐应冲洗干净，防止有固体物质进入机械密封影响使用效果和寿命。开车前用手盘动联轴器或泵轴，如在安装过程中产生卡死现象和碰擦异常情况应先排除。

1. Installation

1. Check the pump and the motor after the box is opened, if it is proved that there is no damage due to misleading, leakage or transportation, loading and unloading, and that the covers of the import and export are intact, as well as sure that there is no other thing entering the pump, well then, it needn't be taken down and reinstalled, and can be installed directly. Before putting into operation, the pump and the unit in the storage period (the longest is six months) should be in a moisture-proof, shock-proof, and dust-proof environment. Pump should be stored in the place without weather influence and is paid attention to maintenance. In the storage period, the inlet and outlet of the pump casing as well as that of other pipelines should be closed. Please contact the company if the storage period exceeds six months.

2. Pump foundation should have enough strength and size in order to better absorb the vibration and firmly support the pump unit. The weight of the pump foundation should be 3 times of the total weight of the pump unit.

3. When conveying medium containing foreign matter or solid particles, the filter net should be installed in the pump suction inlet, it adopts cone-shape structure, and its net area is above 3 times of sectional area of inlet pipeline. The filter net should ensure that the diameter of particles entering the pump is not longer than 1.6mm, and it should be installed on the short tube to facilitate cleaning.

4. New installed pipeline should be flushed, in case solid matters enter the mechanical seal and influence its using effect and service life. Rotate the coupling by hand, it should be felt easy to rotate, if there are stridulation and rolling voice, try to solve it.

(二) 启动

启动前先接通冷却冲洗液，停车时应先停车再关闭冷却冲洗液。

1、点动电机，检查电机转向，转向应与指示箭头一致（从电机端看，为顺时针方向旋转）。严禁开反车。电机转动方向的测试必须在泵充满液体时和冷却水畅通时进行，不允许干运行。开反车和干运行将会对泵造成危害。

2. Start

Before start, connect the cooling flushing liquid firstly, and shut down it after stop.

1. Rotating reversely is prohibited, test of the rotation direction of the motor must go head under the condition of full liquid in the pump or the smooth movement of the cooling water, rotating without water is also not allowed. Both of them will cause severe damage to the pump.

2. When the temperature of the medium is higher than

2、冷却冲洗液应是干净的不结垢的软水，易结垢的水质会堵塞冷却冲洗液通路。用冷凝水作冲洗液效果是理想的，密封冲洗液的温度应 $<75^{\circ}\text{C}$ 。轴承座冷却液的温度应为常温。冷却冲洗液的压力、流量应满足施工图及泵冲洗铭牌上的要求。当输送易结晶介质时，在再次启动前，应将密封部位的结晶物清理干净，以免冷却水堵塞不畅，损坏机械密封。

3、不允许用吸入管路的阀门来调节流量，以免发生汽蚀。

4、在出口管阀门关闭的情况下，泵连续工作时间不得超过3分钟。在该条件下运转时间过长易造成震动的增加，影响轴承和机械密封；液体温度升高而气化造成泵零件过早损坏。

60°C , the sealing chamber and bearing seat should be connected with cooling flushing water, or high temperature rise will cause bearing's damage. The cooling water should be clean and non-scaling, condensed water is the optimal choice as flushing water. The temperature of sealing flushing water should be $<75^{\circ}\text{C}$, and that of cooling water for bearing seat should be normal. See the construction drawing and pump rinsing nameplate for guidelines on the pressure and the capacity of the cooling water. When the transmitted medium is easy to crystallize, the sealing part should be cleaned before starting again, to prevent jam and the damage of the mechanical seal. damage of the mechanical seal.

3. Don't adjust the valve of the suction pipe for fear that the cavitation happens.

4. When the outlet valve closed, the work time of the pump should not exceed 3 minutes. Long time work under this condition will cause the increase of the vibration, and influence the bearing and the mechanical seal. Moreover, gasification due to the rising temperature of the liquid will lead to damage of pump parts.

(三) 运行

1、应经常检查冷却液的流动情况，如一旦发现断冷却液时，不要马上加冷却液，应停机待机械密封冷却后再加冷却液，以免机械密封受热胀冷缩而损坏，冷却液的温升在 28°C 以内是正常的。使用热虹吸罐冷却的泵，应经常注意罐里液位，随时添加。根据现场使用情况，输送介质温度 $\geq 100^{\circ}\text{C}$ 时，应每天更换冷却液一次，其它的至少每周更换冷却液一次。在没有给机械密封供液前严禁操作泵。机械密封干磨，甚至几秒钟，可能引起密封损坏。

2、机械密封的寿命和密封性能与多种因素有关，如抽送介质的干净程度和润滑性能。由于操作条件的差异，不可能具体说明它的寿命长短和密封性能好坏。参照JB/T1472—2011标准，机械密封可根据输送介质黏度不同允许有一定的泄漏量。其标准：机械密封在轴径大于 $\Phi 50\text{mm}$ 时允许有 $\leq 5\text{mL/h}$ 的泄漏，轴径小于 $\Phi 50\text{mm}$ 时允许有 $\leq 3\text{mL/h}$ 的泄漏。

3、经常检查紧固件有无松动，若有松动应随时加固。

3. Operation

1. Often check the condition of the cooling liquid. If it interrupted, don't dose water immediately, but do this after the mechanical seal is cooled in case it is damaged due to the sudden cooling or heating. The rising of the temperature of the cooling liquid within 28°C is normal. For pumps with the cooling water cup, often notice the water level, dose if necessary. According to the spotted using condition, when the medium temperature is higher than or equal to 100°C , the cooling liquid should be replaced once in a day, others, at least once in a week. Operating the pump without providing liquid for mechanical seal is strictly prohibited. Mechanical seal without liquid, even several seconds, will cause its damage.

2. The service life and sealing performance of the mechanical seal relate to many factors, such as the cleanliness and lubricating performance of the transmitted medium. The service life and sealing performance differ due to the different operating conditions. According to JB/T1472-2011 standard, mechanical seal and packing seal allow certain leakage based on different density of the medium. The standard

4、泵不应当在小于泵设计流量1/3时长期运转。如果必须在该条件下连续运转，则应在泵的出口安装旁通管，使泵的流量达到规定的使用范围。

5、泵轴承的润滑采用油脂润滑，润滑脂的牌号为《GB/T7324-2010》3号锂基润滑脂。每运行1000小时向轴承室灌注润滑脂一次。轴承室温度不能超过75℃，否则轴承室必须冷却，冷却液可以循环到密封腔，供机械密封冷却用(接管方式见结构图)。驱动机轴承的润滑方式和润滑脂牌号与泵相同，灌注时间可延长至每5000小时一次。

is: for mechanical seal, when the shaft diameter is $> \Phi 50\text{mm}$, the allowable leakage is $\leq 5\text{mL/h}$, and when it is $< \Phi 50\text{mm}$, the allowable leakage is $\leq 3\text{mL/h}$.

3. Often check the fastening pieces, if they are loose, fasten them.

4. Pump shouldn't operate for a long time when the capacity is 1/3 of the designed capacity. If it must go on continuous operation, a by-pass should be installed near the outlet of the pump, to make the capacity of pump reach the specified using range.

5. Grease lubrication is used for the bearing, and the brand is No.3 lithium grease in *GB/T7324-2010*. Fill grease in the bearing housing once every 1000 hours, the temperature of bearing housing shouldn't exceed 75℃, or the bearing housing must be cooled, the cooling liquid can circulate into the sealing chamber for cooling of mechanical seal. (Way of connecting pipe can be seen in the structural diagram) when the Driver's lubricating way and grease brand are the same with those of the pump, fill the grease once every 5000 hours.

(四) 停车

1、停车前先关闭出口阀门(最多30秒)，如果配有止回阀则不必进行此项操作。切断电源，停止电机。关闭进口阀门和辅助管路，冷却管路需等泵冷却下来再关闭。

2、如有冰冻的危险，需将泵、冷却夹套和管路完全排空。泵停机后仍保持运行情况(如温度、压力)，则所有的密封、冲洗和冷却管路不能关闭。

3、如存在空气吸入的可能(有抽真空系统或其它机组共用管路)，轴封需保持密封状态。

4、检查泵的基础和管道支座有无倾斜下沉情况。

5、检查泵的各部件有无松脱情况。

6、检查电源接头有无松脱情况。

7、当系统需长时间停车时，应对泵全面的清洗，清除残留的腐蚀液，防止结晶。

4. Shutting down

1. Close the outlet valve before shutting down (30s at most), don't do this if there is a check valve. Cut the electric power off, and shut down the motor. Shut down the inlet valve and the auxiliary pipeline, and the cooling pipeline need to be shut down after the pump is cooled.

2. If there is freezing danger, the pump, the cooling jacket and the pipeline need to be fully emptied. If the pump still keep the operating conditions (eg: temperature, pressure) after stop, all the sealing, flushing and cooling pipelines cannot be shut down.

3. If there is the possibility of sucking in air (there is vacuum-pumping system or public pipeline), the shaft seal should be kept in the sealing state.

4. Check whether pump base and pipeline support are sloping or sinking.

5. Check the parts of the pump, make sure that they have been screwed up.

6. Check the power plug, make sure that it isn't loose.

7. When the system needs to be shut up for a long time, pump should be cleaned thoroughly, get rid of the remaining corrosive liquid to prevent crystallization.

四、泵的检修 MAINTENANCE

泵和机组只能由合格的技术人员或本公司的售后服务人员来维修。泵部件比较重，应采用正确的方法拆卸和起吊，避免人身伤害和机器损害。

（一）泵的拆卸

拆卸时按下列顺序操作：（以171S单端面机封为例）

- 1、拆下泵体和轴承座的联接螺栓，取出电机和传动部分；
- 2、拆下叶轮螺母，卸下叶轮；
- 3、取出泵盖及机封部件；
- 4、拧下泵盖与机封部件的连接螺栓，取出机封部件；
- 5、拆下轴承座与中间支架的联接螺栓，拆下泵联轴器、轴承后盖，往联轴器端取出主轴和轴承，拆下小圆螺母、止退垫片，敲出后轴承，拆下轴承前盖，敲出前轴承；
- 6、清洗、清理能继续使用的零部件，用于装配。
- 7、在工位上拆泵时应注意：
 - a、确认电机电源已关闭，以防突然启动造成人身伤害。
 - b、关闭泵的所有进出口阀门，排净管道内的液体。
 - c、如果需要请冲洗泵。
 - d、断开所有辅助管道、配管和妨碍拆泵的设备。

（二）泵的装配

泵的装配顺序基本上可以按照拆卸顺序的反向进行，装配前应将所有零件擦洗干净，检修或更换、已损坏零件。泵在性能、材料、结构确定后，其使用质量的好坏除做好必要的日常维护保养外，还在于维修装配的质量，而关键是轴承和机封的装配质量。

1、轴承的装配

- a、普通轴承安装前必须去掉轴承包封用防锈剂，然后进行清洗。轴承清洗和安装的正确与否，将直接影响到泵的轴承温升及噪音。清洗可采用含量为2%~3%的油酸钠皂水溶液（加热80℃~90℃）或664清洗剂溶液，浸泡（2~3）分钟，然后经清水漂洗后，将轴承置于汽油或煤油中清洗并脱水；
- b、后轴承装入轴后，圆螺母要压紧，不要忘了装

The pump and unit can only be maintained by qualified personnel or after-sale service personnel. Pump components are heavy. Proper methods of lifting and securing must be employed to avoid physical injury and/or equipment damage.

1. Disassembly of pump

The order of disassembly is as follows: (take 171S single mechanical seal as example)

- (1). Remove the connecting bolt between pump casing and bearing seat, then take out the motor and driving section.
- (2). Remove the impeller nut and the impeller.
- (3). Take out the pump cover and the mechanical seal.
- (4). Remove the connecting bolt between pump cover and mechanical seal, then take out the mechanical seal.
- (5). Remove the connecting bolt between the bearing seat and the middle bracket, remove the pump coupling, back cover of bearing, take the main shaft and the bearing out of the coupling end, remove the small round nut, retaining washer, then knock out the back bearing, remove the front cover of bearing, knock out the front bearing.
- (6). Wash and clean parts that are still workable and be used to assemble.
- (7). When disassembling the pump, pay attention to the following:
 - a. Make sure that the power of the motor has been turned off, avoiding physical damage caused by its sudden start.
 - b. Close all the inlet and outlet valves and drain off the liquid in pipes.
 - c. Flush the pump, if necessary.
 - d. Disconnect the auxiliary pipelines, tubes and equipments that hinder disassembling pump.

2. Assembly of pump

The pump's order of assembly is basically opposite to the order of disassembly. All parts must be wiped clean, repaired and damaged parts be replaced before assembly. After the pump's performance, materials and structure are determined, the key deciding the quality of the pump, besides necessary daily maintenance, also lies in the quality of assembly, especially the quality of assembly of the bearing and seal.

(1). Installation of bearing

- a. For plain bearing, anti-rust agent used for sealing

止退垫片,止退垫片的耳环应压弯于圆螺母缺口内;

c、当将轴和轴承组件装入轴承座时应慢慢转动主轴,平稳的敲入;

d、将前轴承装入轴承座,装配时不得用铁器直敲主轴和轴承;

e、装上前后轴承盖后,转动主轴应轻松自如,没有滞留感;(注意勿使前轴承压盖骨架油封弹簧脱落)

f、装上防尘罩、键和联轴器,与中间支架和电机联接(成为泵的传动部分备用)。

2、机封的装配

a、泵的机械密封有本公司的专利产品171S、171S/CL、171C/CL机械密封等供用户选择。

b、机械密封的装配和使用见相应的《机械密封装配使用说明书》

3、总成组装

a、将带电机的传动部分朝天放置,装入密封泵盖组件;

b、将叶轮键放入键槽内,

c、在叶轮轮廓端装上O型圈,然后装到轴上;

d、将装有O型圈的叶轮螺母拧紧、压紧叶轮。转动叶轮应感觉轻松自如,如感觉较重或卡住现象,应重新装配;

e、装入泵体,拧紧螺栓。

f、最后接上冲洗管路或热虹吸罐。

the bearing must be got rid of and cleaned. **That whether the bearing is cleaned or installed correctly shall have a direct influence on the temperature rise and the bearing noise.** Soap liquor containing 2%-3% of NaOA (being heated 80°C-90°C) or 664 cleaning agent liquor can be used for cleaning, after being soaked for 2-3 minutes and rinsed, the bearing is cleaned in the gas or kerosene then is evaporated.

b. After placing the back bearing into the shaft, press the round nut tightly. Remember to install retaining washer, whose ear ring shall be pressed bending inside the round nut notch.

c. When placing the shaft and the bearing assembly into the bearing seat, rotate the main shaft slowly and strike them steadily.

d. Place the front bearing into the bearing seat, do not strike the main shaft and bearing with iron tool.

e. After installing the front and back covers of bearing, it is easy to turn the main shaft (pay attention to not let the spring in the skeleton oil seal fall off)

f. Install the dustproof guard, key and coupling, connect with the middle bracket and motor (as the driving part of the pump).

2. Installation of mechanical seal

a. For shaft seal of pump, there are our company's patented 171S、171S/CL、171C/CL mechanical seals for users to choose.

b. See the corresponding instructions on the installation of mechanical seal for guidelines on installing and using mechanical seals.

3. Installation of back-pull-out assembly

a. Place the driving part of the motor on its back side, and install the pump cover and the sealing module.

b. Place the impeller key in the key slot.

c. Install the O ring on the outlet end of impeller, and then install it on the shaft.

d. Tighten the impeller nut, press the impeller. Rotate the impeller, it should be felt easy to rotate, if not, reassemble it.

e. Install the pump casing and screw down the bolt.

f. At last, connect the flushing pipeline or hot siphon pot.

五、订货须知 NOTICE TO ORDER

(一) 配用电机的额定输出功率与泵的额定轴功率之比应按照下列的百分数:

泵的轴功率	百分比%
22kW以下	125%
(22~75)kW	115%
75kW以上	115%

1. The ratio of the motor's rated power to the pump's shaft power should be the following:

The shaft power of the pump	the ratio (%)
Below 22kW	125%
(22-75)kW	115%
Above 75kW	115%

(二) 订货时按《泵工作条件》详细填写。

2. When ordering, please fill in the table "Working conditions of the pump".

(三) 保修条款只有在使用本公司原厂备件时才有法律效力。

3. Warranty is valid only when genuine spare parts of our company are used.

泵工作条件 Working Conditions of the Pump							
工作条件 Operating conditions				输送介质 Pumped fluid			
流量 Capacity	m ³ /h	最大 Max	额定 Rated	最小 Min	1介质 1Media	最大比例 Max ratio	% 最小比例 Min ratio %
扬程 Total head	m	最大 Max	额定 Rated	最小 Min	2介质 2Media	最大比例 Max ratio	% 最小比例 Min ratio %
进口压力 Suction pressure	MPa	最大 Max	额定 Rated	最小 Min	3介质 3Media	最大比例 Max ratio	% 最小比例 Min ratio %
出口压力 discharge pressure	MPa	最大 Max	额定 Rated	最小 Min	固 体 Solid	含量 (湿基) Content (humidity) Wt %	
必需汽蚀余量 NPSH required	m			粒度直径 Particle diameter mm			
操作条件 Operating conditions	连续 Continuous		间断 Intermittent		介质特性 Medium characteristics	腐蚀 Corrosion	磨(冲)蚀 Abrasion
现场资料和公用事业条件 Spot conditions					泵送温度 Operation temp	℃	最大 正常 最小 Max Normal Min
位置 Position					密度 Density	在操作温度下 Under operating temp kg/m ³	
室内 Indoor	有采暖 With heating		有遮棚 With shield		粘 度 Viscosity	在操作温度下 Under operating temp mPa.s	
室外 Outdoor	无采暖 Without heating		无遮棚 Without shield		汽化压力 Vapor pressure	在操作温度下 Under operating temp MPa(A)	
必须的防寒气候条件 Requirement of Cold-proof					比 热 Specific heat	kcal/kg℃	
必须的耐湿热气候条件 Requirement of Damp-heat-proof					氯化物浓度 Concentration of chloride	PPM	
现场资料 Site condition					H2S (硫化氢) 浓度 Concentration of H2S	PPM	
海拔高度 Altitude				m	危险程度 Hazardous liquid	易燃 易爆 有毒 Flammable Explosive Toxic	
大气压力 Atmosphere pressure				kPa	挥发特性 Volatile characteristics	易 不易 Easy Not easy	
相对湿度 Relative humidity	最大 Max	最小 Min			%	沸 点 Boiling point	℃
环境温度范围 Ambient temp. Range						℃	结晶温度 Crystallization temp
异常条件 Abnormal conditions	粉尘 Dust	烟雾 Smoking				熔 点 Smelting point	℃
危险区域 Electrical classification	类 Class	级 Division	组 Group		闪 点 Point of flammability	℃	
电源 Power source	伏特 Volt	赫兹 Hz	相 Phase		相容的液体 Compatible liquid		
冷却水 Cooling water	温度 Temp	℃	压力 Pressure	MPa		相容的橡胶 Compatible rubber	
	氯化物浓度 Chloride concentration			PPM		临界温度 Critical temp	℃
仪表压缩空气 Compressed air of instrument	最大/最小压力 Max / Min. Pressure			/MPa		临界压力 Critical pressure	MPa
传动方式 Driving way					其 它 Other		
联轴器 Coupling type							

六、HLT立式化工通道泵性能参数表 PERFORMANCE TABLE OF HLT CHEMICAL PASSAGE PUMP

型号 Pump model	基本参数 Basic Parameter	转速 r/min Speed	流量 m ³ /h Capacity Range	额定 扬程 m Total head	效率 % Efficiency	轴功率 kW Shaft power	配 套 电 机 Matched motor		
							比重 $\gamma=1.00$	比重 $\gamma=1.35$	比重 $\gamma=1.84$
25HLT6-7		2900	6	7	56.2	0.20	Y801-2/0.75	Y801-2/0.75	Y801-2/0.75
32HLT4-20		2900	4	20	39.7	0.55	Y802-2/1.1	Y802-2/1.1	Y90S-2/1.5
32HLT4-46		2900	4	46	24	2.09	Y100L-2/3	Y112M-2/4	Y132S1-2/5.5
40HLT6-80		2900	6	80	25	5.3	Y132S2-2/7.5	Y160M1-2/11	Y160M2-2/15
40HLT12.5-20		2900	12.5	20	57.8	1.18	Y90L-2/2.2	Y100L-2/3	Y112M-2/4
50HLT12.5-30		2900	12.5	30	52.7	1.94	Y100L-2/3	Y112M-2/4	Y132S1-2/5.5
50HLT12.5-50		2900	12.5	50	39.1	4.35	Y132S1-2/5.5	Y132S2-2/7.5	Y160M1-2/11
50HLT12.5-80		2900	12.5	80	35.7	7.63	Y160M1-2/11	Y160M2-2/15	Y160L-2/18.5
65HLT25-20		2900	25	20	68.1	2.00	Y100L-2/3	Y112M-2/4	Y132S1-2/5.5
50HLT25-32		2900	25	32	63.9	3.41	Y132S1-2/5.5	Y132S2-2/7.5	Y160M1-2/11
65HLT25-50		2900	25	50	58.1	5.86	Y132S2-2/7.5	Y160M1-2/11	Y160M2-2/15
65HLT25-80		2900	25	80	51.2	10.64	Y160M2-2/15	Y160L-2/18.5	Y200L1-2/30
65HLT25-125		2900	25	125	43	19.79	Y200L1-2/30	Y200L2-2/37	Y250M-2/55
80HLT50-20		2900	50	18	74.8	3.28	Y132S1-2/5.5	Y132S2-2/7.5	Y160M1-2/11
80HLT50-32		2900	50	32	73.1	5.96	Y160M1-2/11	Y160M1-2/11	Y160M2-2/15
80HLT50-50		2900	50	50	69	9.87	Y160M2-2/15	Y160L-2/18.5	Y200L1-2/30
80HLT50-80		2900	50	80	63.1	17.26	Y180M-2/22	Y200L1-2/30	Y225M-2/45
80HLT50-125		2900	50	125	56.2	30.29	Y200L2-2/37	Y250M-2/55	Y280S-2/75
100HLT100-20		2900	100	20	79	6.89	Y160M1-2/11	Y160M2-2/15	Y160L-2/18.5
100HLT100-32		2900	100	32	79	11.03	Y160M2-2/15	Y180M-2/22	Y200L1-2/30

主要产品系列

ÍJ 化工流程泵
AZ 浆泵
HLT 立式化工通道泵
HJD 化工多级泵
HPA/HPB 石油化工流程泵
HZW 轴流泵
ÍFK 氟塑料泵
HY 化工液下泵
MHT 轻型渣浆泵
HZJ 重型渣浆泵
HYM 液下渣浆泵
FGD 石灰石石膏脱硫泵
HBE 液环真空泵
HW 化工混流泵
MSD 中开多级泵
HYD 液下多级泵
HRV 高温熔盐泵
ÍP 石化流程泵
HBR 工业软管泵

MAIN PRODUCT SERIES

ÍJ Chemical process pump
AZ Pulp pump
HLT Vertical chemical process pump
HJD Chemical multi-stage pump
HPA/HPB Petrochemical process pump
HZW Axial-flow pump
ÍFK Plastic pump
HY Chemical submerged pump
MHT Light-duty slurry pump
HZJ Heavy-duty slurry pump
HYM Submerged slurry pump
FGD Pump for flue gas desulfurization
HBE Liquid ring vacuum pump
HW Chemical mixed-flow pump
MSD Split multistage pump
HYD Submerged multistage pump
HRV High temperature liquid salts pump
ÍP Petrochemical process pump
HBR Industry hose pump

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