

## 机械密封/Mechanical seal

机械密封及辅助系统/磁流体密封/旋转接头密封/船用艉轴密封  
MECHANICAL SEALS AND AUXILIARY SYSTEMS/MAGNETIC FLUID SEALS/  
ROTARY JOINT SEALS/MARINE STERN SHAFT SEALS

**江苏华青流体科技有限公司**  
Jiangsu Huaqing Fluid Technology Co., Ltd.

专业提供机械密封解决方案  
Professional To Provide Mechanical Seals Solutions

华青密封拥有品种齐全的产品

多样化的密封形式和全系列的尺寸规格

丰富经验的团队为您提供专业的机封密封解决方案！

Huaqing seal has a complete variety of products

Diversified seal types, full range of sizes and specifications, experienced team

We provide professional mechanical seal solutions!

江苏华青流体科技有限公司是一家致力为用户提供最合适的密封产品及解决方案的专业化供应商。

公司始建于1993年，主要从事机械密封及辅助系统、船用艉轴密封的研发、生产和销售。公司有专业的技术团队，有良好的研发、生产环境、有先进的制造设备及各种试验装置与检测设备。为了保证各种原材料的质量，建立了先进的检测中心，保障原材料的材质质量。并建立了高参数综合试验室，为各类密封产品失效分析提供了充足的数据，有效保证高参数工况下密封装置及辅助系统的运行稳定性。

公司产品广泛用于化工、石油、电力、油脂、船舶、污水、军工等各个领域，并承接各种非标产品的设计、制造及服务，致力于成为客户最值得依赖的合作伙伴。

Jiangsu Huaqing Fluid Technology Co., LTD Is a professional supplier of sealing products and solutions.

We founded in 1993, mainly engaged in the research and development, production and sales of mechanical seal, seal auxiliary system and marine stern shaft seal. We got professional technical team, good R & D, production environment, advanced manufacturing equipments and variety of testing and inspecting equipments. In order to ensure the quality of all kinds of raw materials, we established advanced testing center. In addition, a high-parameter comprehensive laboratory has been established to provide sufficient data for failure analysis of various sealing products and effectively ensure the operation stability of sealing device and auxiliary system under high-parameter working conditions.

Our products are widely used in chemical industry, petroleum, electric power, oil, shipping, sewage, military and other fields. We also provide the design, manufacture and service of various non-standard products, committed to become the most reliable partner of our customers.

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# 机械密封基本型式及代号

## Basic type and code of mechanical seal

### 一、华青机械密封基本型式字母及数字代号

Alphabate & digital code on elemental types of Huaqing Mechanical Seals

- H- 华青 (H for HuaQing Mechanical seals Co.,Ltd) 。
- U- 非平衡型机械密封 (U for unbalanced Mechanical seals) 如： HU3。
- B- 平衡型机械密封 (B for balanced Mechanical seals) 如： HB3。
- J- 集装式机械密封 (J for cartridge Mechanical seals) 。
- 1、2、3……代表华青机械密封设计顺序 (1、2、3……for design sequence) 如： HU1、HU2。
- HUU 华青双端机械密封 (HUU for double seals) 如： HUU803。
- HBM 华青金属波纹管密封 (HBM for metal Bellows Seals) 如： HBM1、HBM2。

### 二、按照DIN24960标准，华青机械密封通常编写方法如下：

(Complies with DIN24960 standard,HQMS)

#### 1、单端面集装式机械密封 (Cartridge single seals)

HU3-40-G9 (J) -B1kVVG2G2



#### 2、双端面集装式机械密封 (Cartridge double seals)

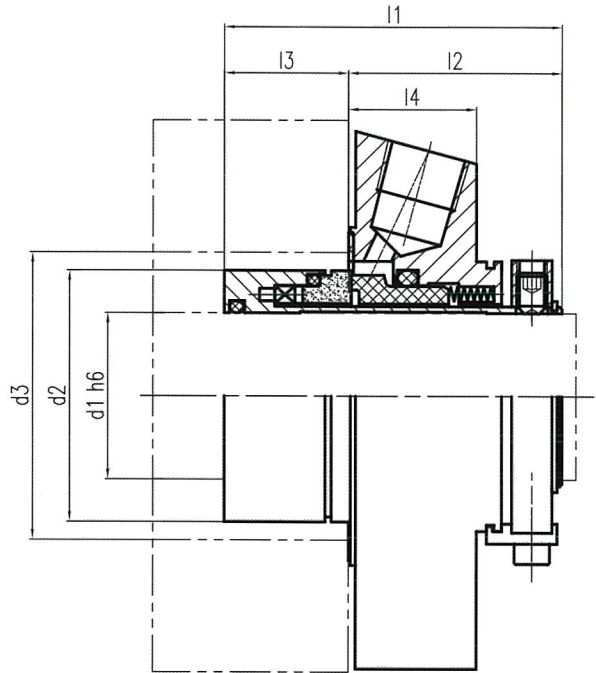
HUU805/50R-(J)-O1U2VVG2G2/O12B1kVVG2G2



如遇特殊工况、机械密封材料选择、机械密封选型，请于我公司联系并索取相关资料！

In case of special working conditions, selection of mechanical seal materials, selection of mechanical seals, please contact our company and obtain relevant information!

## 泵用HQCT型紧凑型集装箱式机械密封 HQCT Compact Cartridge Mechanical Seal for Pumps



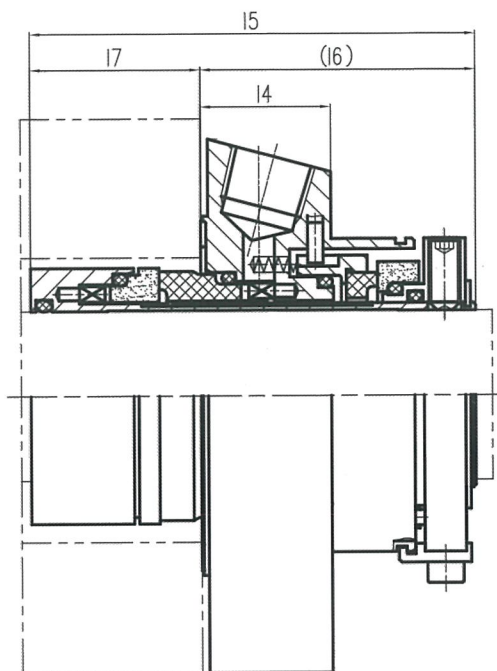
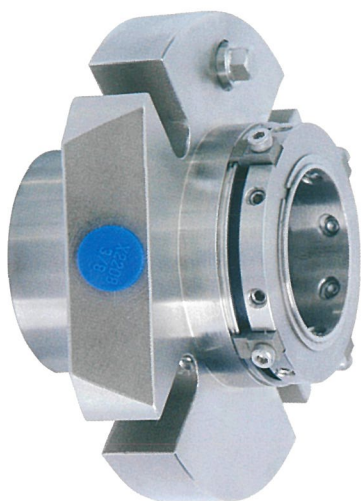
### 结构特点 / Structural features

HQCT 型机械密封为集装箱式密封，弹簧不与介质接触，可以广泛应用于含有杂质颗粒的工况，它有单端面 and 双端面两种密封结构。HQCT-SE 为带有冲洗接口的单端面密封，HQCT-QE 为带有无压急冷的单端面密封，设计与 HQCT-SE 相同，密封大气侧带有唇形骨架油封，密封端盖带有冲洗接口和急冷接口。

HQCT-DE 为双端面密封，双向平衡（隔离压降低或压力反向时，密封仍保持闭合），要求用隔离液系统，不必另加循环装置。

HQCT mechanical seal is a cartridge seal, the spring does not contact the medium, and can be widely used in working conditions containing foreign particles. It has two types of seals: single end face and double end face. HQCT-SE is a single-face seal with a flushing interface, HQCT-QE is a single-face seal with pressureless quenching, the same design as HQCT-SE, with a lip skeleton oil seal on the atmospheric side, and a sealed end cap with flushing interface and quench interface.

HQCT-DE is a double-face seal, which is balanced in both directions (the seal remains closed when the isolation pressure is reduced or the pressure is reversed), requiring the use of an isolation fluid system without the need for an additional circulation device.



HQCT-DE

**适用范围 / Operating ranges**

适用介质：油、水、酸、碱、盐等一般腐蚀性介质。

温度 -40~200℃

压力 ≤1.2MPa

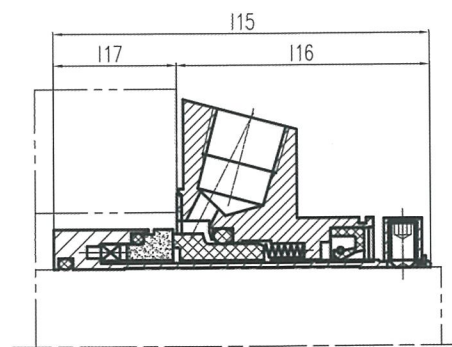
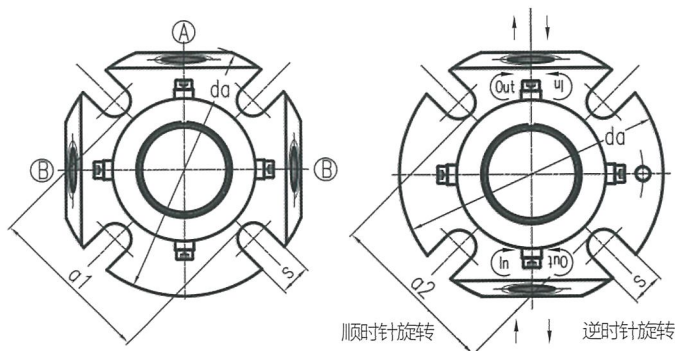
线速度 ≤10m/s

Applicable medium: oil, water, acid, alkali, salt and other corrosive medium.

Temperature -40 ~ 200 °C

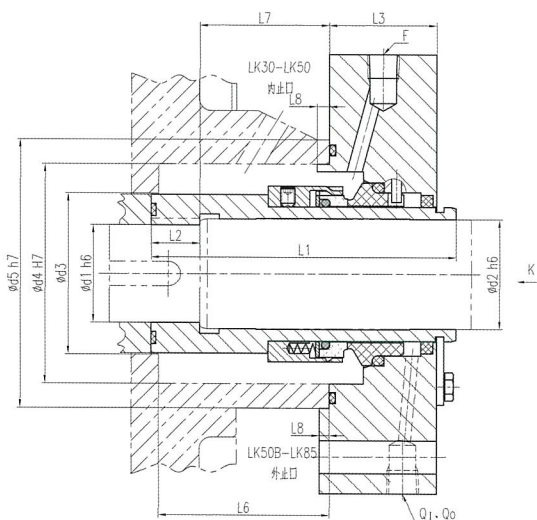
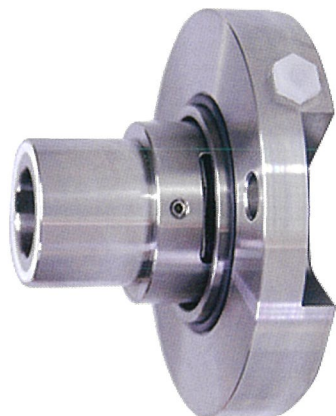
Pressure ≤1.2MPa

Linear speed ≤10m / s



HQCT-QE

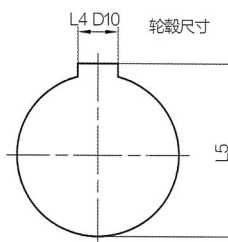
## 泵用HU3型集装式机械密封 HU3 type cartridge mechanical seal for pump



### 结构特点 / Structural features

机械密封采用单端面、多弹簧（或波形弹簧）、非平衡型集装式的结构，端面负荷均匀，旋转方向不限，安装方便可靠，冲洗方案可采用 PLAN11+61(62)。

The mechanical seal adopts a single end face, multiple springs (or wave springs), and an unbalanced cartridge structure. The end face load is uniform, the rotation direction is not limited, and the installation is convenient and reliable. The flushing scheme can use PLAN11 + 61 (62).



### 适用范围 / Operating ranges

适用介质：油、水、酸、碱、盐等一般腐蚀性介质。

压力  $\leq 0 \sim 1.6\text{MPa}$

温度  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

线速度  $\leq 20\text{m/s}$

Applicable medium: oil, water, acid, alkali, salt and other corrosive medium.

Pressure  $\leq 0 \sim 1.6\text{MPa}$

Temperature  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

Linear speed  $\leq 20\text{m/s}$

### 接口说明 / Connections

F — 冲洗孔

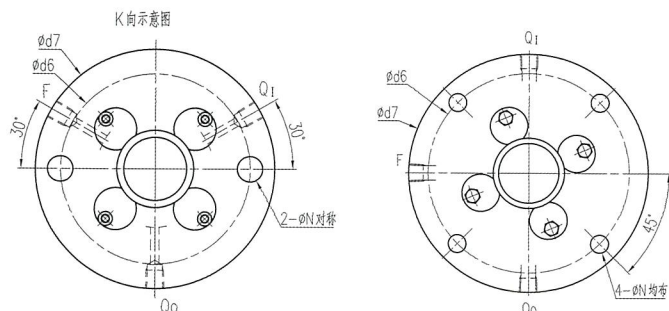
Q1 - 急冷液入口

Q0- 急冷液出口

F — Flush

Q1 - Quench Inlet

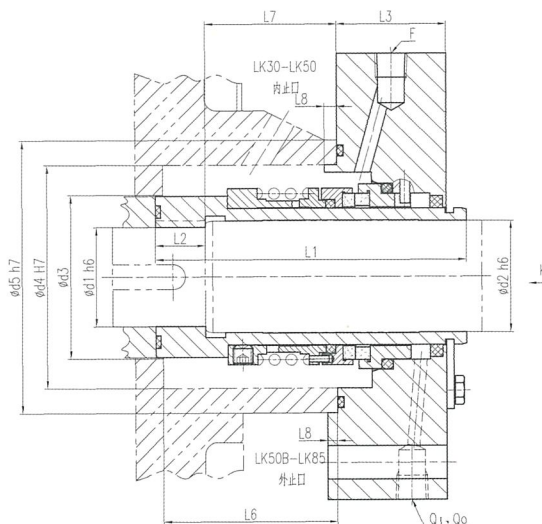
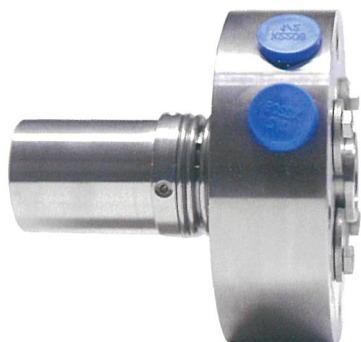
Q0 - Quench Outlet





# 泵用HU1型集装式机械密封

## HU1 type cartridge mechanical seal for pump



### 结构特点 / Structural features

机械密封采用单端面、单弹簧、非平衡型集装式的结构，端面负荷均匀，旋转方向不限，安装方便可靠，冲洗方案可采用PLAN11+61(62)。

The mechanical seal adopts single end face and single spring. Unbalanced cartridge structure, the end face load is uniform, the rotation direction is not limited, and the installation is convenient and reliable. The flushing scheme can adopt PLAN11 + 61 (62).

### 适用范围 / Operating range

适用介质：油、水、结晶性强碱、盐、高浓度流体浆料、有机溶剂及其他弱腐蚀溶剂。

压力  $\leq 0 \sim 1$  MPa

温度  $\leq -20^\circ\text{C} \sim 220^\circ\text{C}$

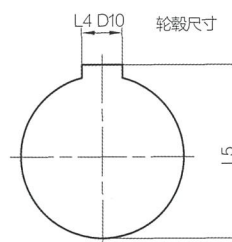
线速度  $\leq 20$  m/s

Applicable medium: oil, water, strong crystalline alkali, salt, highly soluble fluid slurry, organic solvents and other weakly corrosive solvents.

Pressure  $\leq 0 \sim 1$  MPa

Temperature  $\leq -20^\circ\text{C} \sim 220^\circ\text{C}$

Linear speed  $\leq 20$  m/s



### 接口说明 / Connections

F — 冲洗孔

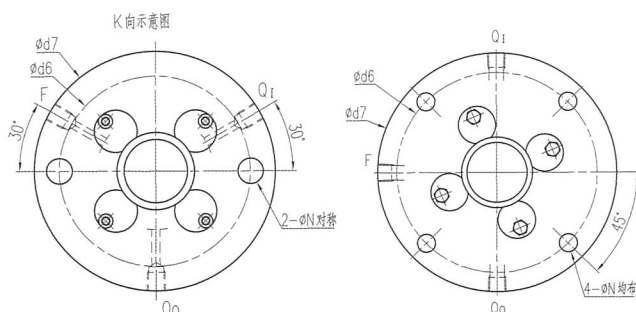
Qi — 急冷液入口

Qo — 急冷液出口

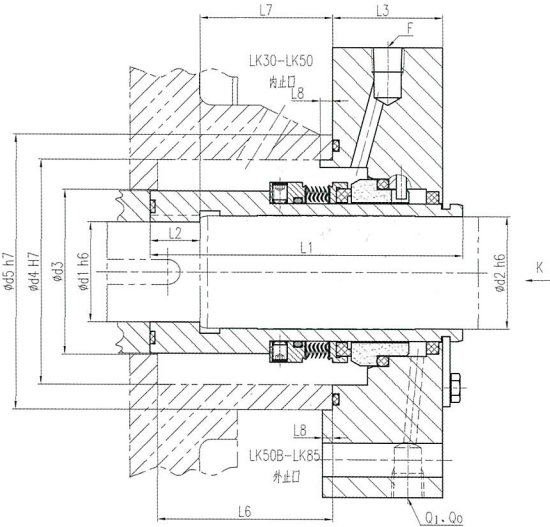
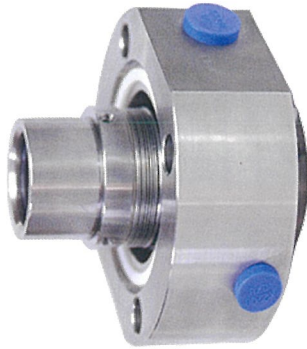
F — Flush

Qi — Quench Inlet

Qo — Quench Outlet



## 泵用HBM1型集装式机械密封 HBM1 cartridge mechanical seal for pump



### 结构特点 / Structural features

机械密封采用单端面、金属波纹管、平衡型集装式的结构，端面负荷均匀，旋转方向不限，安装方便可靠，冲洗方案可采用 PLAN 11+61(62)。

The mechanical seal adopts a single end face, a metal bellows, and a balanced cartridge structure. The end face load is uniform, and the rotation direction is not limited. The installation is convenient and reliable. The flushing scheme can adopt PLAN11 + 61 (62).

### 适用范围 / Operating ranges

适用介质：适用于石油、化工以及液化石油气等介质。

压力  $\leq 0 \sim 2.5\text{MPa}$

温度  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

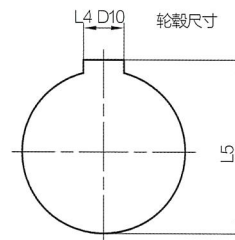
线速度  $\leq 15\text{m/s}$

Applicable medium: Suitable for petroleum, chemical and liquefied petroleum gas.

Pressure  $\leq 0 \sim 2.5\text{MPa}$

Temperature  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

Linear speed  $\leq 15\text{m/s}$



### 接口说明 / Connections

F — 冲洗孔

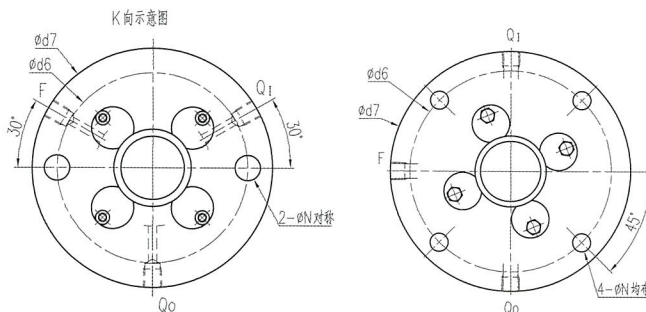
Q1 — 急冷液入口

Q0 — 急冷液出口

F — Flush

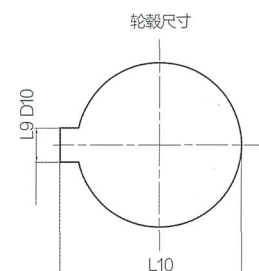
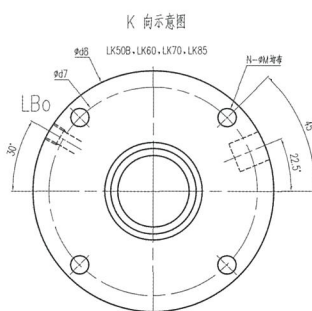
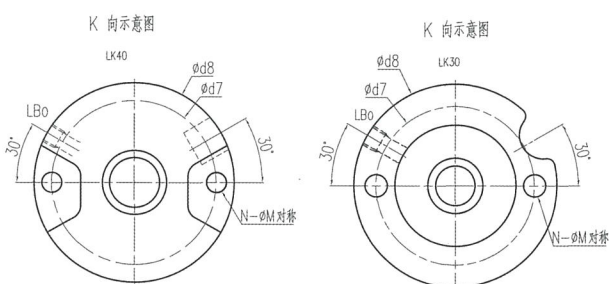
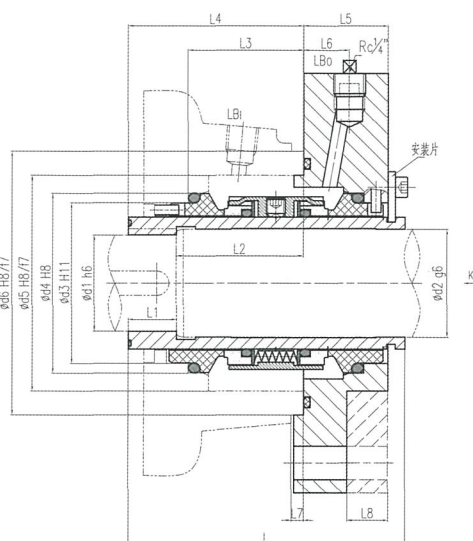
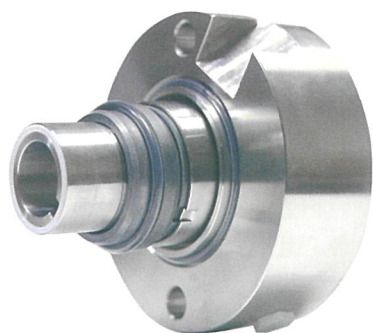
Q1 — Quench Inlet

Q0 — Quench Outlet



# 泵用HUU803型双端面集装式机械密封

## HUU803 double-end cartridge mechanical seal for pump



### 结构特点 / Structural features

机械密封采用双端面、多弹簧、非平衡型集装式的结构，轴向尺寸紧凑，端面负荷均匀，旋转方向不限，安装方便可靠，冲洗方案可采用 PLAN 54。

The mechanical seal adopts a double-end face, multiple springs, and unbalanced cartridge structure. The axial dimensions are compact, the end face load is uniform, the rotation direction is not limited, and the installation is convenient and reliable. The flushing scheme can adopt PLAN 54.

### 适用范围 / Operating ranges

适用介质：适用于输送易燃、易爆、有毒有害等危险介质。

压力  $\leq 0 \sim 1.6 \text{ MPa}$ 。

温度  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

线速度  $\leq 20 \text{ m/s}$

Applicable medium: Suitable for transporting flammable, explosive, toxic and hazardous dangerous media.

Pressure  $\leq 0 \sim 1.6 \text{ MPa}$ .

Temperature  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

Linear speed  $\leq 20 \text{ m/s}$

### 接口说明 / Connections

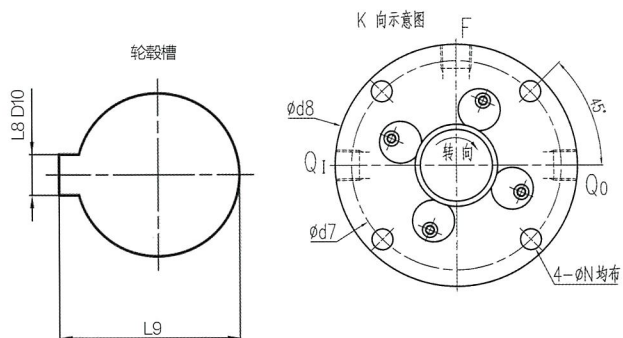
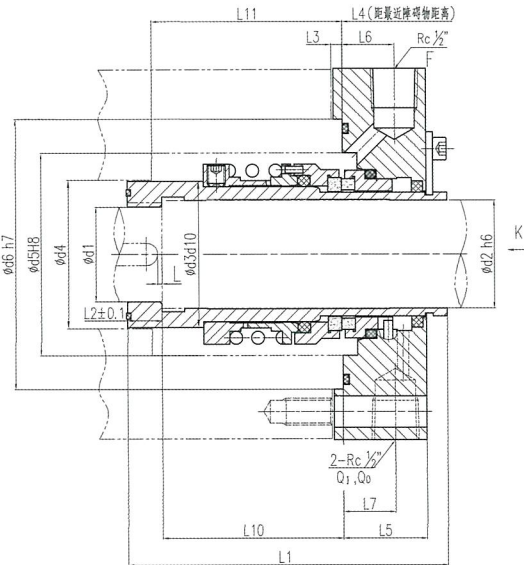
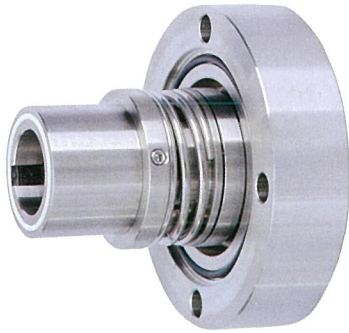
LBi - 隔离液入口

LBo- 隔离液出口

LBi - Barrier Inlet

LBo- Barrier Outlet

## 泵用HB1型集装箱式机械密封 HB1 cartridge mechanical seal for pump



### 结构特点 / Structural features

机械密封采用单端面、单弹簧、平衡型集装箱式的结构，端面负荷均匀，旋转方向不限，安装方便可靠，冲洗方案可采用 LAN 11+61(62)。

The mechanical seal adopts a single end face, a single spring, and a balanced cartridge structure. The end face load is uniform, the rotation direction is not limited, and the installation is convenient and reliable. The flushing scheme can adopt LAN 11 + 61 (62).

### 适用范围 / Operating ranges

适用介质：油、水结晶性强碱盐、高溶度流体浆料、有机溶剂及其他弱腐蚀溶剂。

压力 ≤ 0~2.5 MPa

温度 ≤ -40°C ~ 220°C

线速度 ≤ 20 m/s

Applicable medium: oil, water crystalline strong alkali salt, high solubility fluid slurry, organic solvent and other weak corrosive solvents.

Pressure ≤ 0 ~ 2.5 MPa

Temperature ≤ -40 °C ~ 220 °C

Linear speed ≤ 20 m / s

### 接口说明 / Connections

F — 冲洗孔

Q<sub>1</sub> — 急冷液入口

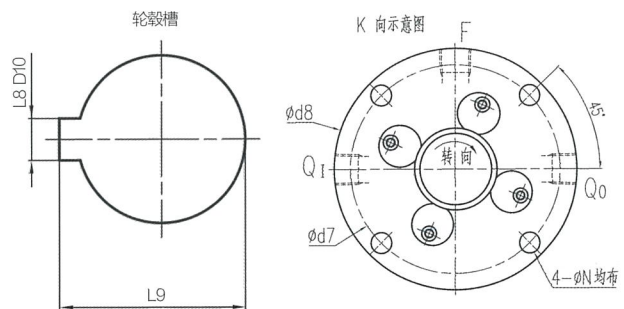
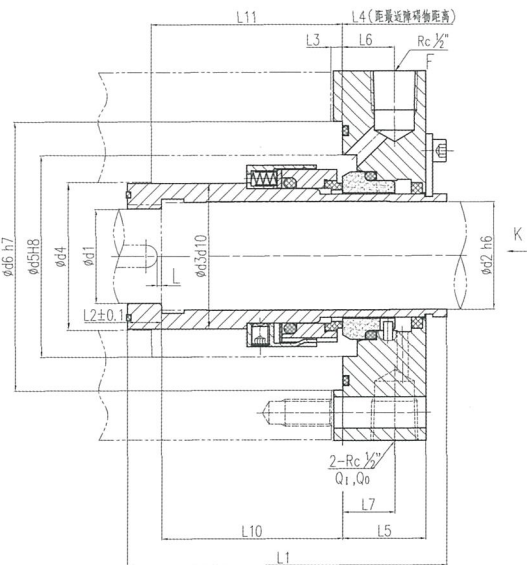
Q<sub>0</sub> — 急冷液出口

F — Flush

Q<sub>1</sub> — Quench Inlet

Q<sub>0</sub> — Quench Outlet

## 泵用HB35型集装式机械密封 HB35 cartridge mechanical seal for pump



### 结构特点 / Structural features

机械密封采用单端面、多弹簧、平衡型集装式的结构，端面负荷均匀，旋转方向不限，安装方便可靠，冲洗方案可采用 PLAN 11+61 (62)。

The mechanical seal adopts a single end face, multiple springs, and balanced cartridge structure. The end face load is uniform, the rotation direction is not limited, and the installation is convenient and reliable. The flushing scheme can adopt PLAN 11 + 61 (62).

### 适用范围 / Operating ranges

适用介质：适用于石油、化工以及液化石油气、弱酸、碱、盐及含少量颗粒介质。

压力  $\leq 0 \sim 2.5$  MPa

温度  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

线速度  $\leq 20$  m/s

Applicable medium: Suitable for petroleum, chemical industry and liquefied petroleum gas, weak acid, alkali, salt and medium containing a small amount of particles.

Pressure  $\leq 0 \sim 2.5$  MPa

Temperature  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

Linear speed  $\leq 20$  m / s

### 接口说明 / Connections

F — 冲洗孔

Q<sub>I</sub> — 急冷液入口

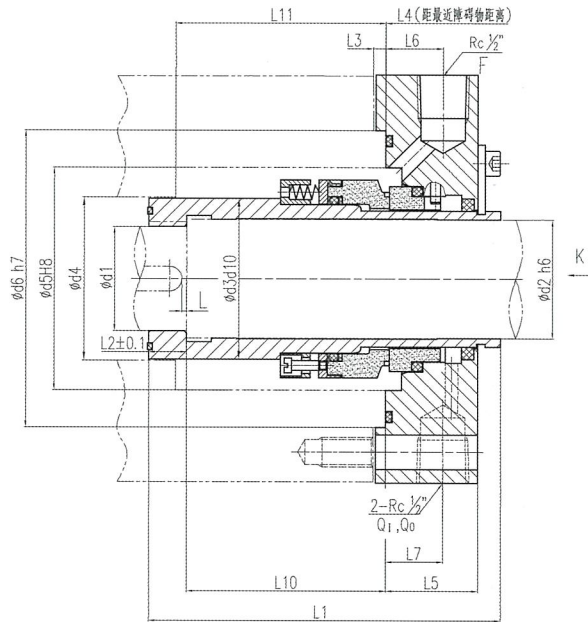
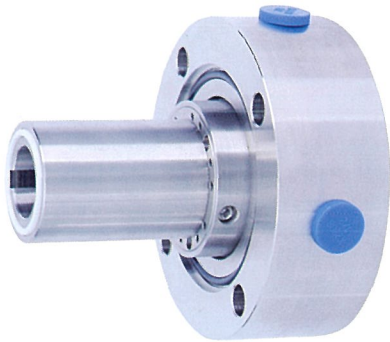
Q<sub>O</sub> — 急冷液出口

F — Flush

Q<sub>I</sub> — Quench Inlet

Q<sub>O</sub> — Quench Outlet

## 泵用HQB8KC型集装式机械密封 HQB8KC cartridge mechanical seal for pump



### 结构特点 / Structural features

机械密封采用单端面、多弹簧、平衡型集装式的结构，端面负荷均匀，旋转方向不限，安装方便可靠，冲洗方案可采用 PLAN 11+61(62)。

The mechanical seal adopts a single end face, multiple springs, and balanced cartridge structure. The end face load is uniform, the rotation direction is not limited, and the installation is convenient and reliable. The flushing scheme can adopt PLAN 11 + 61 (62).

### 适用范围 / Operating ranges

适用介质：适用于水、油、酸、碱等一般腐蚀性介质。

压力  $\leq 0 \sim 5\text{MPa}$

温度  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

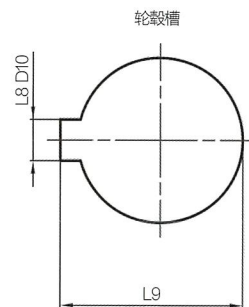
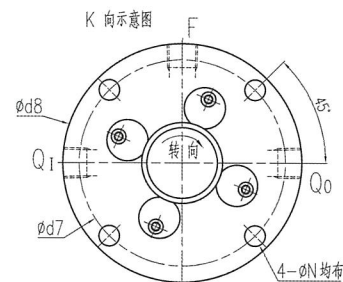
线速度  $\leq 20\text{m/s}$

Applicable medium: Suitable for water, oil, acid, alkali and other general corrosive medium.

Pressure  $\leq 0 \sim 5\text{MPa}$

Temperature  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

Linear speed  $\leq 20\text{m/s}$



### 接口说明 / Connections

F — 冲洗孔

Q1 - 急冷液入口

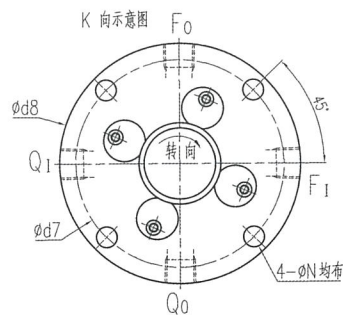
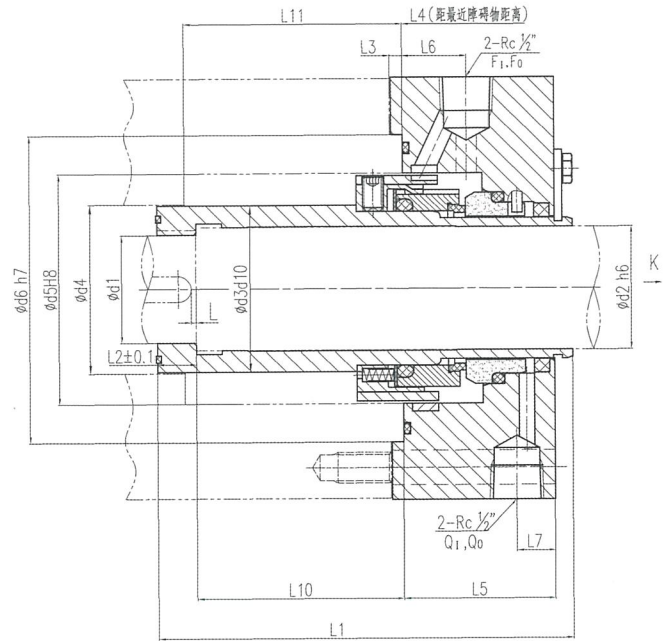
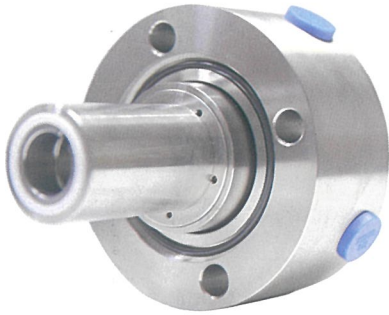
Q0 - 急冷液出口

F — Flush

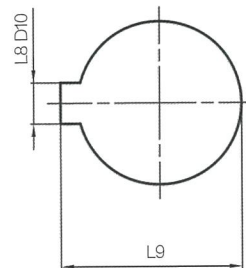
Q1 - Quench Inlet

Q0 - Quench Outlet

## 泵用HB35P型集装式机械密封 HB35P cartridge mechanical seal for pump



轮毂槽



### 结构特点 / Structural features

机械密封采用单端面、多弹簧、平衡型集装式的结构，端面负荷均匀，旋转方向不限，安装方便可靠，冲洗方案可采用PLAN23+61(62)。

The mechanical seal adopts a single end face, multiple springs, and balanced cartridge structure. The end face load is uniform, and the rotation direction is not limited. The installation is convenient and reliable. The flushing scheme can adopt PLAN 11 + 61 (62).

### 适用范围 / Operating ranges

压力  $\leq 0 \sim 2.5$  MPa

温度  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

线速度  $\leq 20$  m/s

Pressure  $\leq 0 \sim 2.5$  MPa

Temperature  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

Linear speed  $\leq 20$  m / s

### 接口说明 / Connections

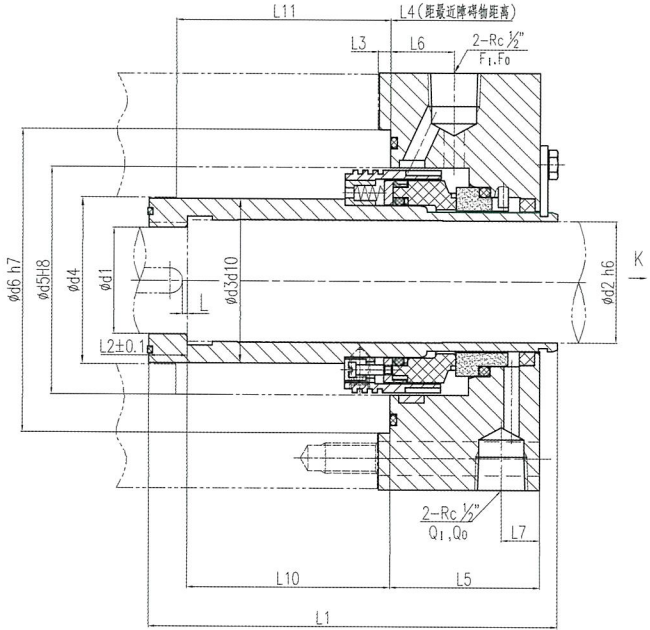
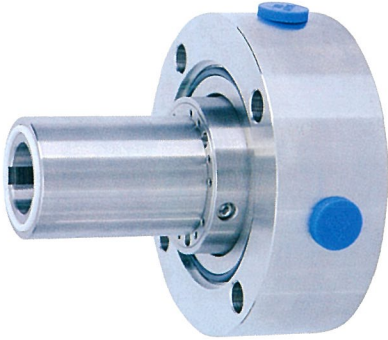
F<sub>i</sub> - 冲洗液入口 F<sub>i</sub> - Flush Inlet

F<sub>o</sub> - 冲洗液出口 F<sub>o</sub> - Flush Outlet

Q<sub>i</sub> - 急冷液入口 Q<sub>i</sub> - Quench Inlet

Q<sub>o</sub> - 急冷液出口 Q<sub>o</sub> - Quench Outlet

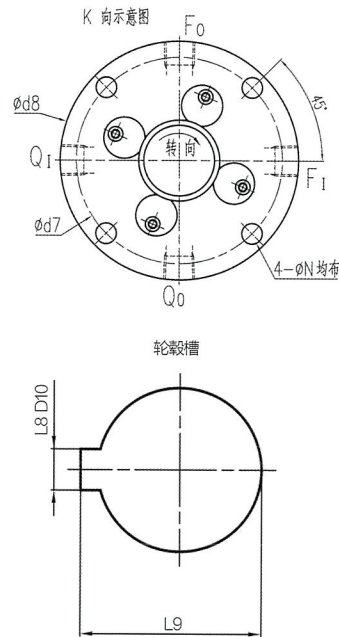
## 泵用HQB8KCP型集装箱式机械密封 HQB8KCP type cartridge mechanical seal for pump



### 结构特点 / Structural features

机械密封采用单端面、多弹簧、平衡型集装箱式的结构，端面负荷均匀，旋转方向不限，安装方便可靠，冲洗方案可采用PLAN23+61(62)。

The mechanical seal adopts a single end face, multiple springs, and balanced cartridge structure. The end face load is uniform, and the direction of rotation is not limited. The installation is convenient and reliable. The flushing scheme can use PLAN23 + 61 (62).



### 适用范围 / Operating ranges

适用介质: 适用于热水、热网循环水、锅炉给水等。

压力 ≤ 0~2.5MPa

温度 ≤ -40℃~220℃

线速度 ≤ 20m/s

Pressure ≤ 0 ~ 2.5MPa

Temperature ≤ -40 °C ~ 220 °C

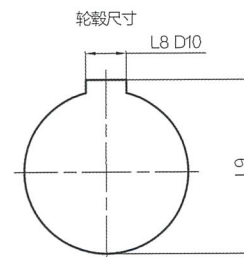
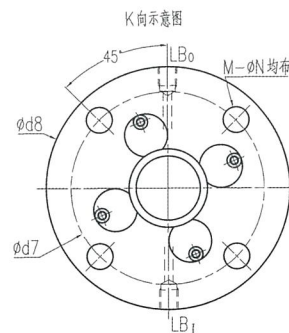
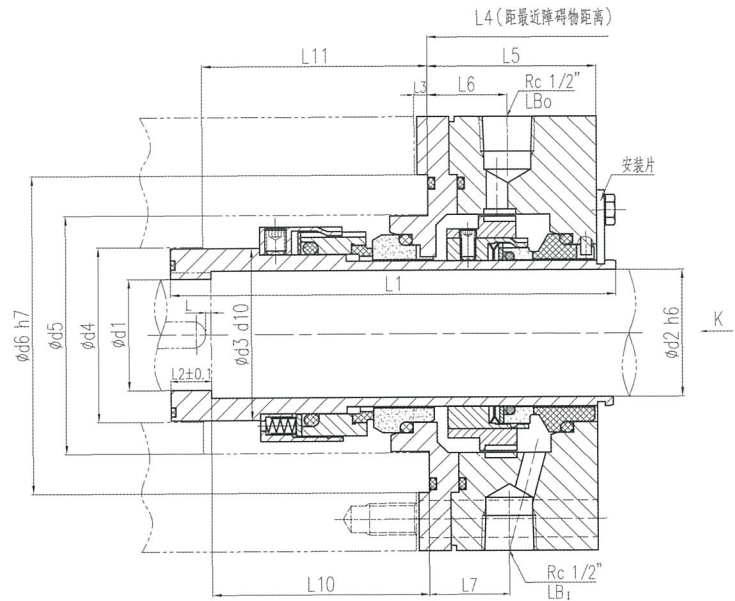
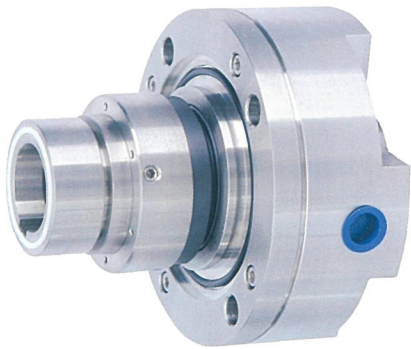
Linear speed ≤ 20m / s

### 接口说明 / Connections

Fi - 冲洗液入口	Fi - Flush Inlet
Fo- 冲洗液出口	Fo - Flush Outlet
Qi - 急冷液入口	Qi - Quench Inlet
Qo- 急冷液出口	Qo- Quench Outlet



## 泵用HB35-T型双端面集装式机械密封 HB35-T double end cartridge mechanical seal for pump



### 结构特点 / Structural features

双端面、串联式、多弹簧、O型圈密封、集装式机械密封，安装方便可靠。

可适用 PLAN 52 冲洗方案。

Double end face, tandem, multi-spring, O-ring seal, cartridge mechanical seal, easy and reliable installation. Suitable for PLAN 52 flushing solutions.

### 适用范围 / Operating ranges

适用介质：(轻、重) 烃类、水、油类、弱酸、弱碱等一般腐蚀性介质。

压力  $\leq 2.5\text{MPa}$

温度  $\leq 220^\circ\text{C}$

线速度： $\leq 20\text{m/s}$

Applicable medium: (light, heavy) hydrocarbons, water, oils, weak acids, weak bases and other general corrosive media.

Pressure  $\leq 2.5\text{MPa}$

Temperature  $\leq 220^\circ\text{C}$

Linear speed:  $\leq 20\text{m/s}$

### 接口说明 / Connections

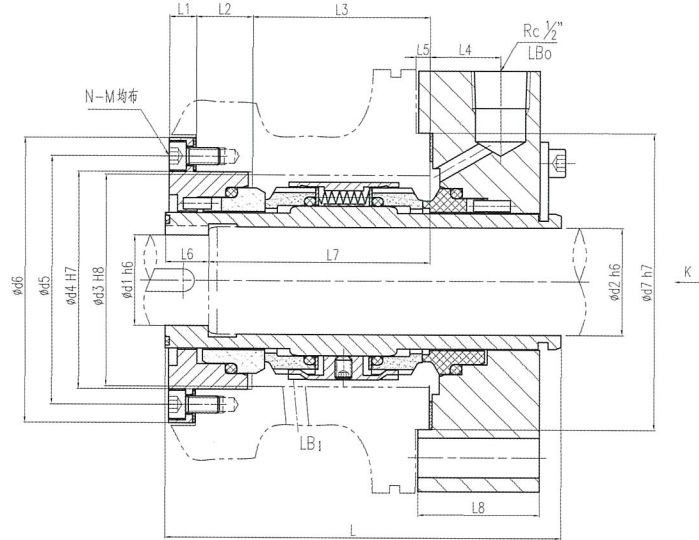
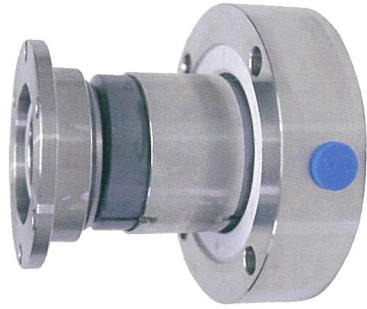
LBi - 缓冲液入口

LBo - 缓冲液出口

LBi - Buffer Inlet

LBo - Buffer Outlet

## 泵用HBB803型双端面集装式机械密封 HBB803 double end cartridge mechanical seal for pump



### 结构特点 / Structural features

机械密封采用双端面、多弹簧、平衡型集装式的结构，轴向尺寸紧凑，端面负荷均匀，旋转方向不限，安装方便可靠，冲洗方案可采用 PLAN 54。

The mechanical seal adopts a double-end face, multiple springs, and balanced cartridge structure. The axial dimensions are compact, the end face load is uniform, the rotation direction is not limited, and the installation is convenient and reliable. The flushing scheme can adopt PLAN 54.

### 适用范围 / Operating ranges

适用介质：适用于输送易燃、易爆、有毒有害等危害介质。

压力  $\leq 0 \sim 2.5 \text{ MPa}$

温度  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

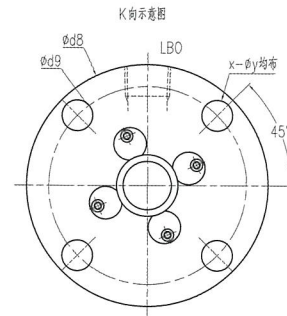
线速度  $\leq 20 \text{ m/s}$

Applicable medium: Suitable for transporting flammable, explosive, toxic and harmful hazardous media.

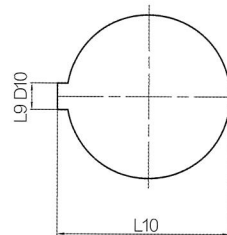
Pressure  $\leq 0 \sim 2.5 \text{ MPa}$

Temperature  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

Linear speed  $\leq 20 \text{ m/s}$



轮毂尺寸



### 接口说明 / Connections

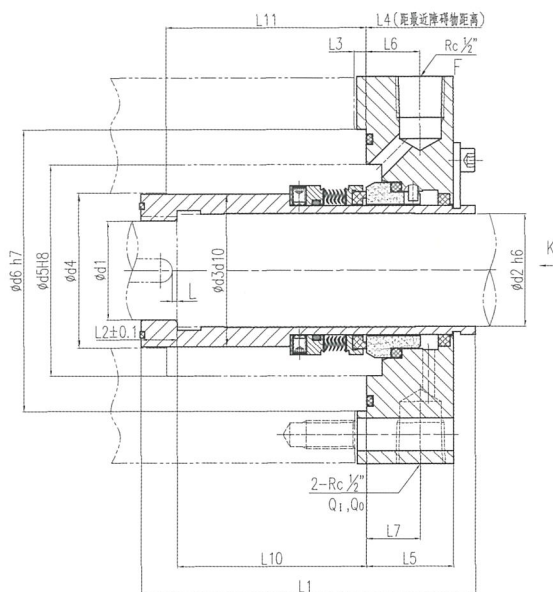
LB1 - 隔离液入口

LB0 - 隔离液出口

LB1 - Barrier Inlet

LB0 - Barrier Outlet

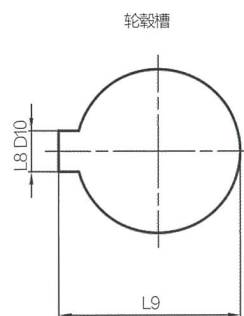
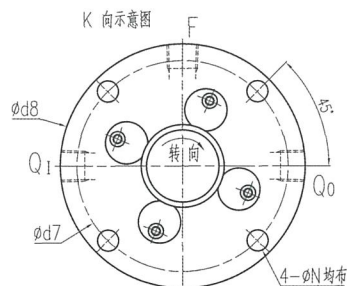
## 泵用HBM1型金属波纹管集装式机械密封 HBM1 metal bellows cartridge mechanical seal for pump



### 结构特点 / Structural features

机械密封采用单端面、金属波纹管、平衡型集装式的结构，端面负荷均匀，旋转方向不限，安装方便可靠，冲洗方案可采用PLAN11+61 (62)。

The mechanical seal adopts a single end face, a metal bellows, and a balanced cartridge structure. The end face load is uniform, and the direction of rotation is not limited. The installation is convenient and reliable. The flushing scheme can use PLAN11 + 61 (62).



### 适用范围 / Operating ranges

适用介质：适用于石油、化工以及液化石油气等介质。

压力 ≤ 0 ~ 2.5 MPa

温度 ≤ -40 °C ~ 220 °C

线速度 ≤ 15 m/s

Applicable medium: Suitable for petroleum, chemical and liquefied petroleum gas.

Pressure ≤ 0 ~ 2.5 MPa

Temperature ≤ -40 °C ~ 220 °C

Linear speed ≤ 15 m / s

### 接口说明 / Connections

F — 冲洗孔

Q<sub>1</sub> - 急冷液入口

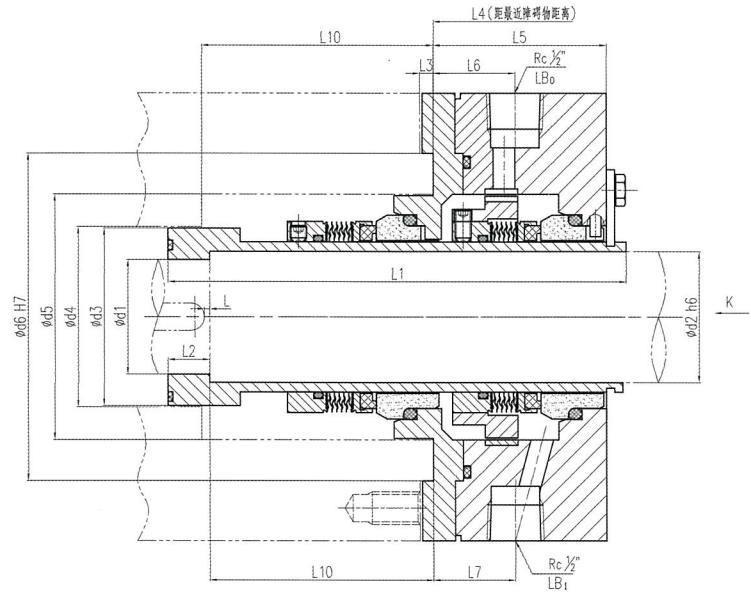
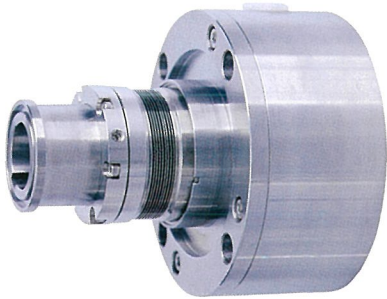
Q<sub>0</sub> - 急冷液出口

F — Flush

Q<sub>1</sub> - Quench Inlet

Q<sub>0</sub> - Quench Outlet

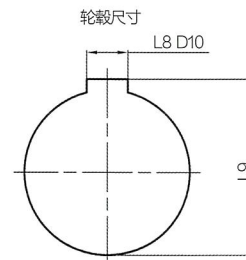
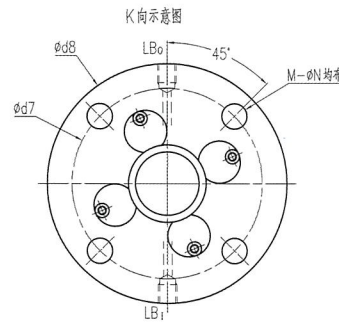
## 泵用HBM1-T型金属波纹管集装式机械密封 HBM1-T metal bellows cartridge mechanical seal for pump



### 结构特点 / Structural features

机械密封采用双端面、金属波纹管、平衡型集装式的结构，端面负荷均匀，旋转方向不限安装方便可靠，冲洗方案可采用 PLAN 52.

The mechanical seal adopts a double-end face, a metal bellows, and a balanced cartridge structure. The end face load is uniform, and the rotation direction is unlimited. The installation is convenient and reliable. The flushing scheme can adopt PLAN 52.



### 适用范围 / Operating ranges

适用介质：适用于输送中高粘度、易燃、易爆、有危害的介质。

压力  $\leq 0 \sim 2.5 \text{MPa}$

温度  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

线速度  $\leq 20 \text{m/s}$

Applicable medium: suitable for conveying medium and high viscosity, flammable, explosive and hazardous medium.

Pressure  $\leq 0 \sim 2.5 \text{MPa}$

Temperature  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

Linear speed  $\leq 20 \text{m/s}$

### 接口说明 / Connections

LBI - 缓冲液入口

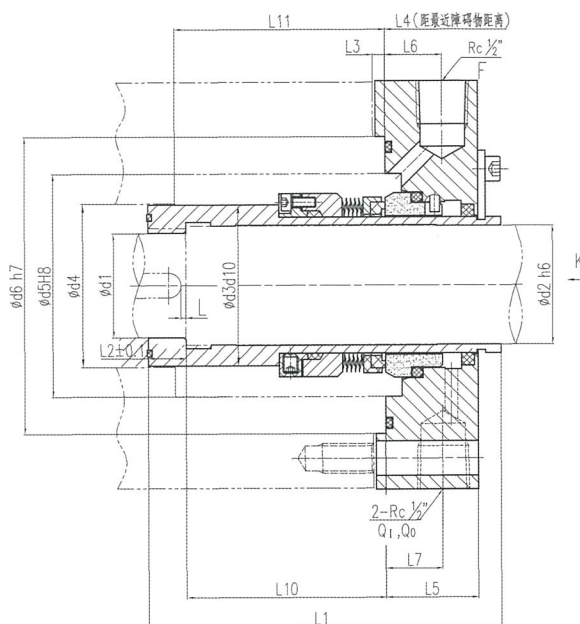
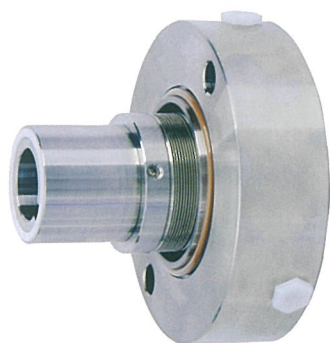
LBO- 缓冲液出口

LBI - Buffer Inlet

LBO- Buffer Outlet

## 泵用H65型金属波纹管集装式机械密封

### H65 type metal bellows cartridge mechanical seal for pump



#### 结构特点 / Structural features

机械密封采用单端面，金属波纹管、平衡型集装式的结构，端面负荷均匀，旋转方向不限，安装方便可靠，冲洗方案可采用 11+61 (62)。

The mechanical seal adopts a single end face, a metal bellows, and a balanced cartridge structure. The end face load is uniform, the rotation direction is not limited, and the installation is convenient and reliable. The flushing scheme can adopt 11 + 61 (62).

#### 适用范围 / Operating ranges

适用介质：适用于高温、中高粘度的介质。

压力  $\leq 0 \sim 2.5 \text{ MPa}$

温度  $\leq -40^\circ\text{C} \sim 400^\circ\text{C}$

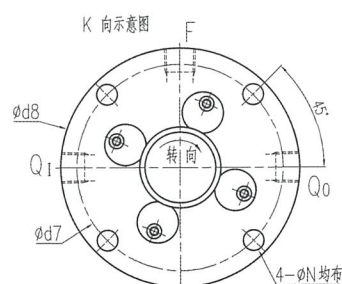
线速度  $\leq 20 \text{ m/s}$

Applicable medium: suitable for high temperature, medium and high viscosity media.

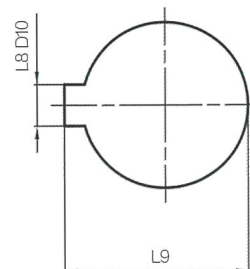
Pressure  $\leq 0 \sim 2.5 \text{ MPa}$

Temperature  $\leq -40^\circ\text{C} \sim 400^\circ\text{C}$

Linear speed  $\leq 20 \text{ m/s}$



轮毂槽



#### 接口说明 / Connections

F — 冲洗孔

Q1 - 急冷液入口

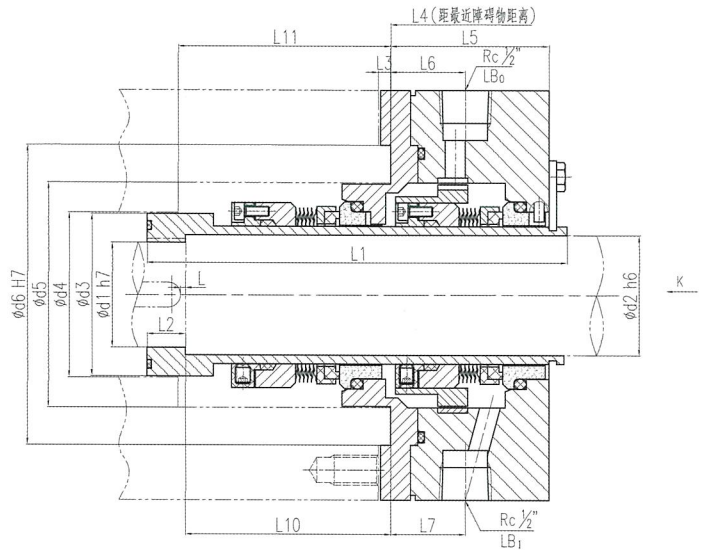
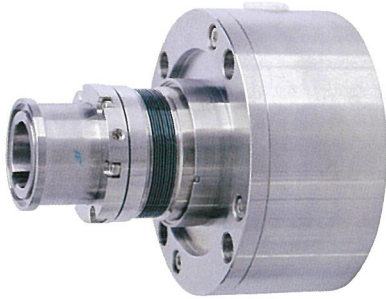
Q0 - 急冷液出口

F — Flush

Q1 - Quench Inlet

Q0 - Quench Outlet

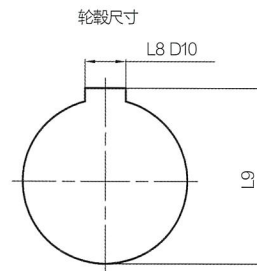
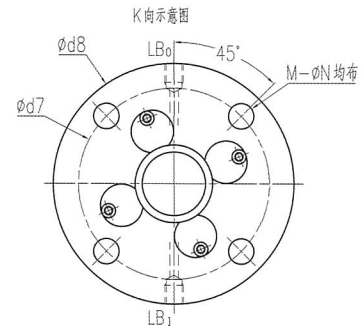
## 泵用H65-T型金属波纹管集装式机械密封 H65-T metal bellows cartridge mechanical seal for pump



### 结构特点 / Structural features

机械密封采用双端面、金属波纹管、平衡型集装式的结构，端面负荷均匀，旋转方向不限，安装方便可靠，冲洗方案可采用PLAN 52。

The mechanical seal adopts a double-end face, a metal bellows, and a balanced cartridge structure. The end face load is uniform, the rotation direction is not limited, and the installation is convenient and reliable. The flushing scheme can adopt PLAN 52.



### 适用范围 / Operating ranges

适用介质：适用于高温、中高粘度的介质。

压力  $\leq 0 \sim 2.5 \text{ MPa}$

温度  $\leq -40^\circ\text{C} \sim 400^\circ\text{C}$

线速度  $\leq 20 \text{ m/s}$

Applicable medium: suitable for high temperature, medium and high viscosity media.

Pressure  $\leq 0 \sim 2.5 \text{ MPa}$

Temperature  $\leq -40^\circ\text{C} \sim 400^\circ\text{C}$

Linear speed  $\leq 20 \text{ m/s}$

### 接口说明 / Connections

LB<sub>i</sub> - 缓冲液入口

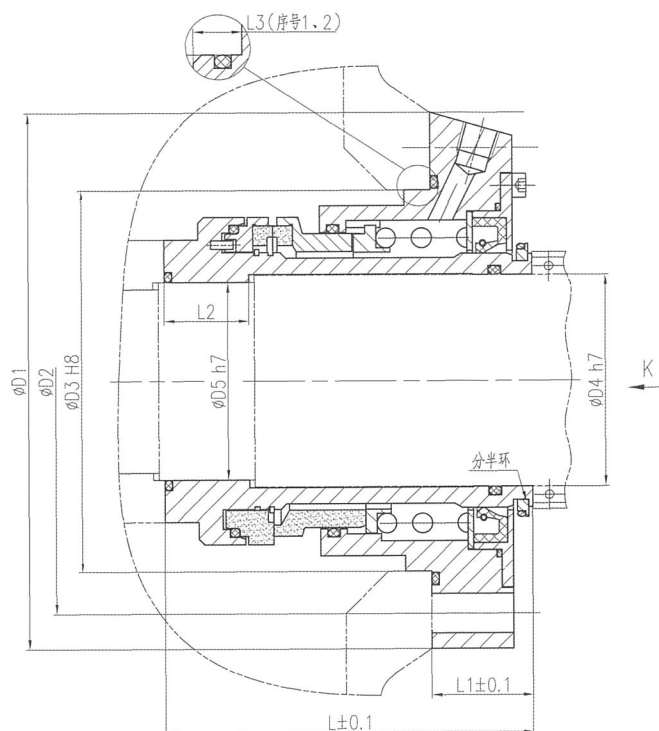
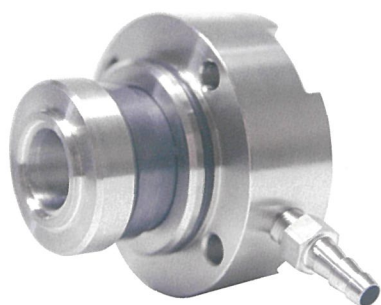
LB<sub>o</sub> - 缓冲液出口

LB<sub>i</sub> - Buffer Inlet

LB<sub>o</sub> - Buffer Outlet

## 渣浆泵用HQZJ型集装式机械密封

### HQZJ type cartridge mechanical seal for slurry pump



#### 结构特点 / Structural features

单端面平衡型机械密封，安装方便可靠，大弹簧（多弹簧）外置不与介质接触，采用敞开式密封腔体。外接冲洗水（API 682 Plan62 冲洗方案）压力 $\leq 0.05\text{MPa}$ ，且保持急冷液畅通无阻且不能间断。

Single-end balanced mechanical seal, convenient and reliable installation, large spring (multi-spring) externally does not contact the medium, and adopts an open sealed cavity. The external flushing water (API 682 Plan62 flushing scheme) has a pressure of  $\leq 0.05\text{MPa}$ , and the rapid cooling liquid is kept unobstructed and uninterrupted.

#### 适用范围 / Operating ranges

适用介质：适用于输送液体中含有高悬浮固体颗粒的介质（如矿砂灰渣、煤泥、泥沙）等固体含量 $\leq 30\%$  (wt)

压力 $\leq 1.6\text{MPa}$

温度 $\leq 80^\circ\text{C}$  ( $150^\circ\text{C}$ )

线速度 $\leq 10\text{m/s}$

Applicable medium: suitable for conveying medium with high suspended solid particles in the liquid (such as ore slag, coal slime, sediment) and other solid content  $\leq 30\%$  (wt)

Pressure  $\leq 1.6\text{MPa}$

#### 接口说明 / Connections

Q<sub>I</sub> - 急冷液入口

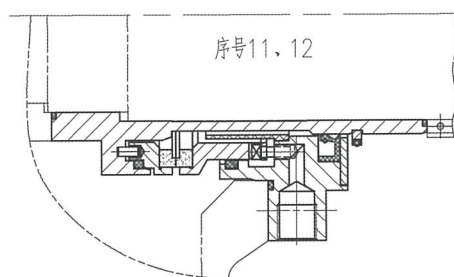
Q<sub>O</sub> - 急冷液出口

D - 排液口（配堵头）

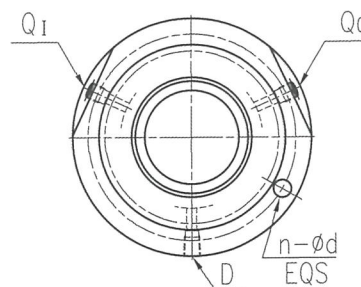
Q<sub>I</sub> - Quench Inlet

Q<sub>O</sub> - Quench Outlet

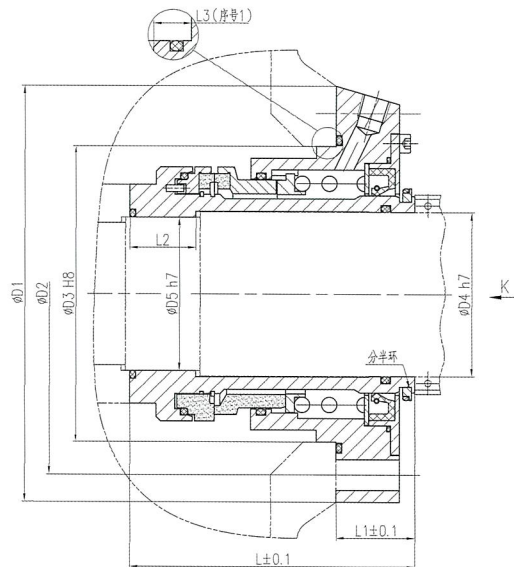
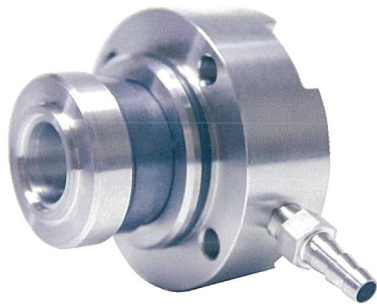
D - Drain (with plug)



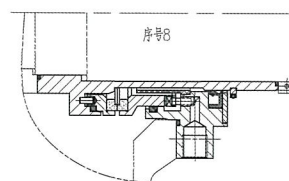
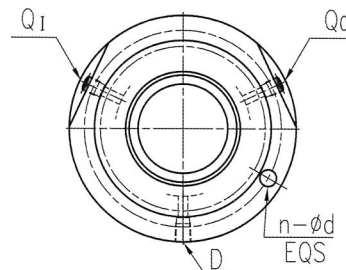
K向示意图



## 脱硫泵用HQDT型集装式机械密封 HQDT type cartridge mechanical seal for desulfurization pump



K向示意图



### 结构特点 / Structural features

单端面平衡型机械密封，安装方便可靠，大弹簧（多弹簧）外置不与介质接触，采用敞开式密封腔体。外接冲洗水（API 682 Plan62 冲洗方案）压力 $\leq 0.05\text{MPa}$ ，且保持急冷液畅通无阻且不能间断。

Single-end balanced mechanical seal, easy and reliable installation, large spring (multi-spring) externally does not contact the medium, and adopts an open sealed cavity. The external flushing water (API 682 Plan62 flushing scheme) has a pressure of  $\leq 0.05\text{MPa}$ , and the rapid cooling fluid is kept unobstructed and uninterrupted.

### 适用范围 / Operating ranges

适用介质：含石膏，石灰浆液等杂质含量较高的介质  
固体物含量  $< 30\%$  (wt)

压力 $\leq 1.6\text{MPa}$

温度 $\leq 80^\circ\text{C}$  (150 $^\circ\text{C}$ )

线速度 $\leq 10\text{m/s}$

Applicable medium: medium containing gypsum, lime slurry and other impurities with a high solid content  $< 30\%$  (wt)

Pressure $\leq 1.6\text{MPa}$

Temperature $\leq 80^\circ\text{C}$  (150 $^\circ\text{C}$ )

Linear speed  $\leq 10\text{m/s}$

### 接口说明 / Connections

Q1 - 急冷液入口

Q0 - 急冷液出口

D - 排液口 (配堵头)

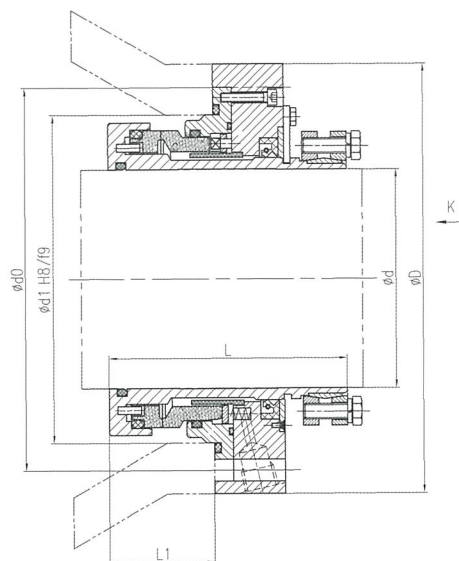
Q1 - Quench Inlet

Q0 - Quench Outlet

D - Drain (with plug)



## 大型脱硫泵用HTM型集装式机械密封 HTM type cartridge mechanical seal for large desulfurization pump



### 结构特点 / Structural features

单端面平衡型机械密封，安装方便可靠，大弹簧（多弹簧）外置不与介质接触，采用敞开式密封腔体。外接冲洗水（API682 Plan62 冲洗方案）压力 $\leq 0.05\text{MPa}$ ，且保持急冷液畅通无阻且不能间断。

Single-end balanced mechanical seal, convenient and reliable installation, large spring (multi-spring) externally does not contact the medium, and adopts an open sealed cavity. The pressure of external flushing water (API682 Plan62 flushing plan) is less than or equal to  $0.05\text{MPa}$ , and the rapid cooling fluid is kept unobstructed and uninterrupted.

### 适用范围 / Operating ranges

适用介质：含石膏，石灰浆液等杂质含量较高的介质

固体物含量  $< 30\%$  ( wt)

压力 $\leq 1.6\text{MPa}$

温度 $\leq 80^\circ\text{C}$  (150 $^\circ\text{C}$ )

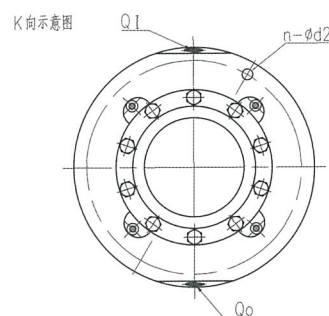
线速度 $\leq 10\text{m/s}$

Applicable medium: medium with high impurity content such as gypsum and lime slurry, solid content  $< 30\%$  (wt)

Pressure $\leq 1.6\text{MPa}$

Temperature $\leq 80^\circ\text{C}$  (150 $^\circ\text{C}$ )

Linear speed  $\leq 10\text{m/s}$



### 接口说明 / Connections

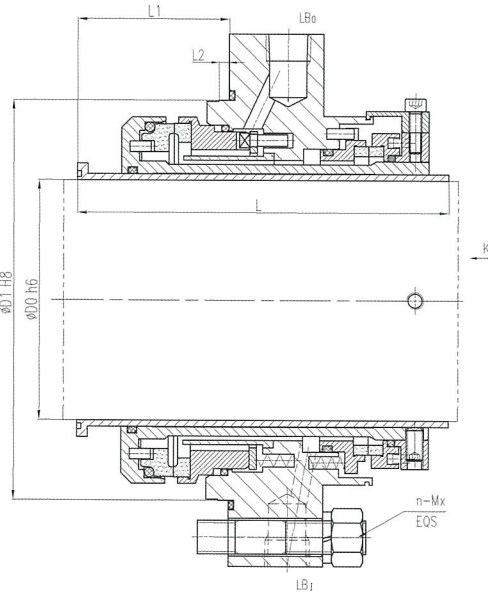
Q1 - 急冷液入口

Q0- 急冷液出口

Q1 - Quench Inlet

Q0- Quench Outlet

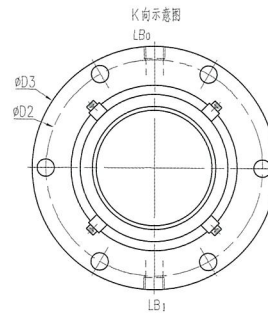
## 渣浆泵用HT1-D型双端面集装箱式机械密封 HT1-D double-end cartridge mechanical seal for slurry pump



### 结构特点 / Structural features

双端面集装箱式机械密封，安装方便可靠，介质端弹簧不与介质接触，可有效防止杂质颗粒的堵塞；可双向承压、弹簧被保护的串联双端面集装箱式机械密封，可适用 Plan54、55 冲洗方案。

Double-end cartridge mechanical seal, convenient and reliable installation, the medium-end spring does not contact the medium, which can effectively prevent the blockage of foreign particles; tandem double-end cartridge mechanical seal that can bear pressure in both directions and is protected by the spring, can be used for Plan54, 55 rinse program.



### 适用范围 / Operating ranges

适用介质：适用于输送液体中含有高悬浮固体颗粒（如矿砂灰浆、煤泥、泥沙等）纸浆、纤维浆液等介质。

压力 $\leq 1.6\text{MPa}$

温度 $\leq 80^\circ\text{C}$ ( $150^\circ\text{C}$ )

线速度 $\leq 10\text{m/s}$

固体物含量 $\leq 40\%$ (wt)

Applicable medium: suitable for conveying liquid pulp and fiber slurry containing highly suspended solid particles (such as ore mortar, slime, mud, etc.).

Pressure $\leq 1.6\text{MPa}$

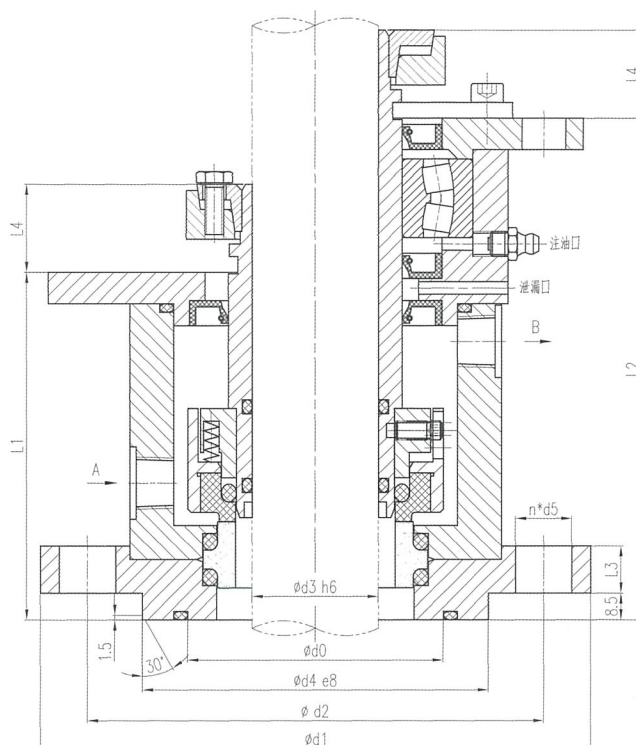
Temperature $\leq 80^\circ\text{C}$  ( $150^\circ\text{C}$ )

Linear speed  $\leq 10\text{m/s}$

Solid content:  $\leq 40\%$  (wt)

## 釜、搅拌器用HQM451型集装箱式机械密封

### HQM451 cartridge mechanical seal for kettle and agitator



#### 结构特点 / Structural features

单端面、非平衡型、多弹簧、O型圈密封、集装箱式机械密封，安装方便可靠。

Single end face, unbalanced type, multiple springs, O-ring seal, cartridge mechanical seal, easy and reliable installation.

HQM451K 单端面密封

HQM451K single end seal

HQM451KL 单端面密封 附轴承和骨架油封

HQM451KL single face seal with bearing and skeleton oil seal

#### 适用范围 / Operating ranges

适用介质:油、水、弱酸、弱碱及易燃、易爆、有毒气体等。

压力-0.1-1.6MPa

温度 $\leq -10 -200 (350)^\circ\text{C}$

线速度 $\leq 2\text{m/s}$

Applicable medium: oil, water, weak acid, weak alkali and flammable, explosive, toxic gas, etc.

Pressure-0.1-1.6MPa

Temperature  $\leq -10 -200 (350)^\circ\text{C}$

Linear speed  $\leq 2\text{m/s}$

#### 接口说明 / Connections

A - 缓冲液入口

B - 缓冲液出口

A - Buffer Inlet

B - Buffer Outlet

## 釜、搅拌器用HQM451-D型双端面集装箱式机械密封 HQM451-D double end cartridge mechanical seal for kettle and agitator



### 结构特点 / Structural features

双端面、非平衡型、多弹簧、O型圈密封、集装箱式机械密封，安装方便可靠。

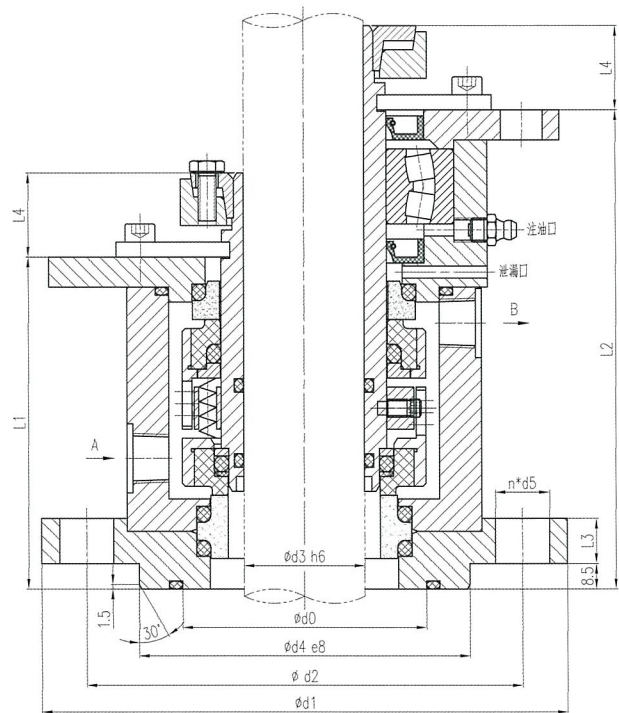
Double end face, unbalanced type, multiple springs, O-ring seal, cartridge mechanical seal, easy and reliable installation.

HQM451K-D双端面密封

HQM451K-D double end seal

HQM451KL-D双端面密封附轴承和骨架油封

HQM451KL-D double end face seal with bearing and skeleton oil seal



### 适用范围 / Operating ranges

适用介质:油、水、弱酸、弱碱及易燃、易爆、有毒气体等。

压力-0.1-1.6MPa

温度 $\leq$ -10-200 (350) $^{\circ}$ C

线速度 $\leq$ 2m/s

Applicable medium: oil, water, weak acid, weak alkali and flammable, explosive, toxic gas, etc.

Pressure-0.1-1.6MPa

Temperature  $\leq$ -10-200 (350)  $^{\circ}$ C

Linear speed  $\leq$  2m / s

### 接口说明 / Connections

A - 缓冲液入口

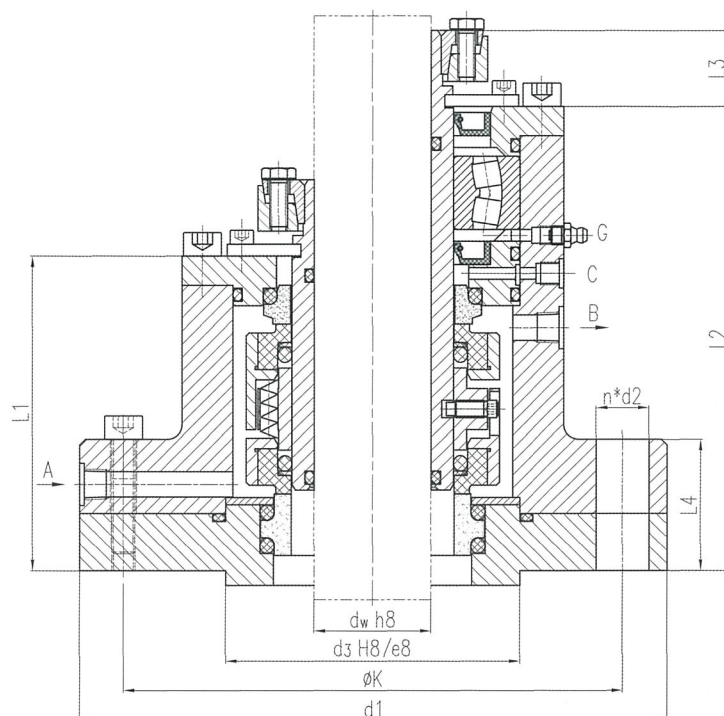
B - 缓冲液出口

A - Buffer Inlet

B - Buffer Outlet

## 釜、搅拌器用HQHS-D型双端面集装式机械密封

### HQHS-D double end cartridge mechanical seal for kettle and agitator



#### 结构特点 / Structural features

双端面;任意旋向;集装式密封。

HQHS-D系列是为中、高压容器应用设计的釜用密封。

HQHS(L)-D为非平衡型设计,公称压力达PN25,隔离液必须加压。

HQHS-D

双端面密封,非平衡型。

HQHSL-D

双端面密封,非平衡型,带有轴承。

Double end face; arbitrary rotation direction; cartridge seal.

The HQHS-D series is a kettle seal designed for medium and high pressure vessel applications.

HQHS (L) -D is a non-balanced design, with a nominal pressure of PN25, and the isolation fluid must be pressurized.

HQHS-D

#### 适用范围 / Operating ranges

轴径=20...500mm

压力=真空..25 (40)bar

温度=-20°C...+200(350)°C

线速度=5m/s

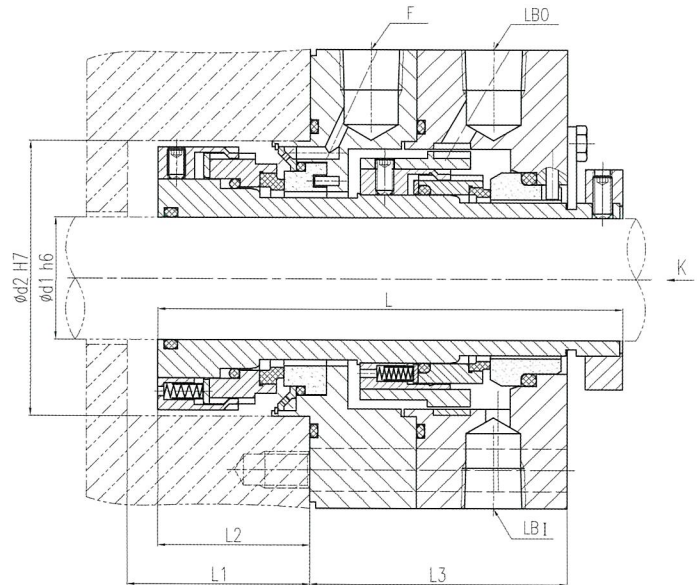
Shaft diameter = 20 ... 500mm

Pressure = Vacuum: 25 (40) bar

Temperature = -20 °C ... + 200 (350) °C

Linear speed = 5 m / s

## API682标准HB35K-T型双端面集装式机械密封 API682 standard HB35K-T double end cartridge mechanical seal



### 结构特点 / Structural features

机械密封尺寸符合 API 682 标准。机械密封采用双端面、多弹簧、平衡型集装式的结构，端面负荷均匀，旋转方向不限，安装方便可靠，冲洗方案可采用 PLAN 11+52(53)，其中 PLAN 11 采用多点冲洗结构。

The mechanical seal size complies with API 682. The mechanical seal adopts a double-end face, multiple springs, and balanced cartridge structure. The end face load is uniform, the rotation direction is not limited, and the installation is convenient and reliable. The flushing scheme can adopt PLAN 11 + 52 (53), of which PLAN 11 uses multi-point flushing structure.

### 适用范围 / Operating ranges

适用介质:适用于输送易燃、易爆、有毒有害等危险介质。

压力  $\leq 0 \sim 4$ MPa

温度  $\leq -40^{\circ}\text{C} \sim 220^{\circ}\text{C}$

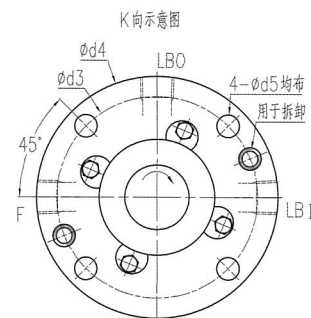
线速度  $\leq 20$ m/s

Applicable medium: Suitable for transporting flammable, explosive, toxic and hazardous dangerous media.

Pressure  $\leq 0 \sim 4$ MPa

Temperature  $\leq -40^{\circ}\text{C} \sim 220^{\circ}\text{C}$

Linear speed  $\leq 20$  m / s



### 接口说明 / Connections

F — 冲洗孔

LBI — 隔离(缓冲)液进口

LBO — 隔离(缓冲)液出口

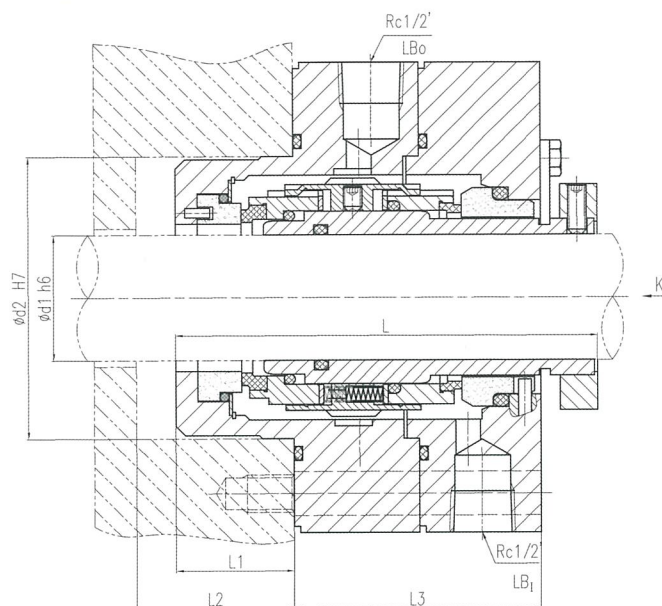
F — Flush

LBI — Barrier (Buffer) Inlet

LBO — Barrier (Buffer) Outlet

## API682标准HB35KP-D型双端面集装式机械密封

### API682 standard HB35KP-D double end cartridge mechanical seal



#### 结构特点 / Structural features

机械密封尺寸符合API 682标准。机械密封采用双端面、多弹簧、平衡型集装式的结构,轴向尺寸紧凑,端面负荷均匀,旋转方向不限,安装方便可靠,冲洗方案可采用PLAN 52/53/54。

The mechanical seal size complies with API 682. The mechanical seal adopts double-end face, multi-spring, balanced cartridge structure, compact axial dimension, uniform end face load, unlimited rotation direction, convenient and reliable installation, PLAN 52/53/54 can be used for the flushing scheme.

#### 适用范围 / Operating ranges

适用介质:适用于输送易燃、易爆、有毒有害等危险介质。

压力 $\leq 0 \sim 4$ MPa

温度 $\leq -40^{\circ}\text{C} \sim 220^{\circ}\text{C}$

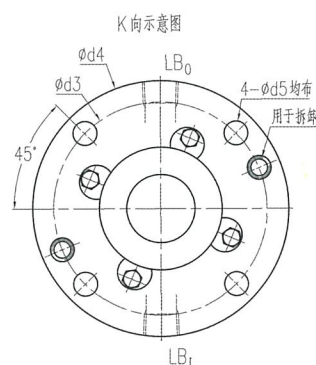
线速度 $\leq 20$ m/s

Applicable medium: Suitable for transporting flammable, explosive, toxic and hazardous dangerous media.

Pressure  $\leq 0 \sim 4$ MPa

Temperature  $\leq -40^{\circ}\text{C} \sim 220^{\circ}\text{C}$

Linear speed  $\leq 20$  m / s



#### 接口说明 / Connections

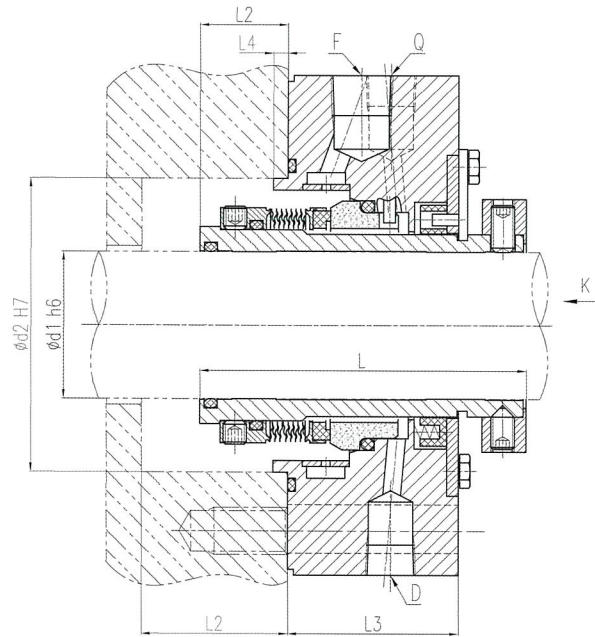
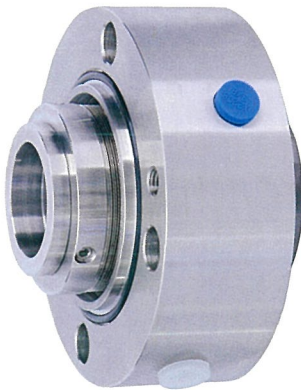
LB<sub>I</sub> - 隔离(缓冲)液进口

LB<sub>O</sub> - 隔离(缓冲)液出口

LB<sub>I</sub> - Barrier (Buffer) Inlet

LB<sub>O</sub> - Barrier (Buffer) Outlet

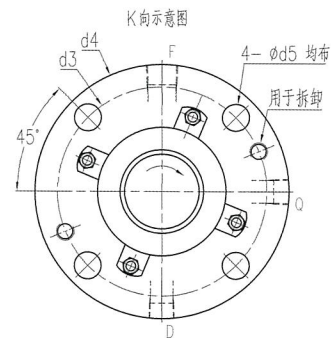
## API682标准HBM1-S型集装式机械密封 API682 standard HBM1-S cartridge mechanical seal



### 结构特点 / Structural features

机械密封尺寸符合API 682标准。机械密封采用单端面、金属波纹管、平衡型集装式的结构,端面负荷均匀旋转方向不限,安装方便可靠,冲洗方案可采用PLAN11+61(62),其中PLAN 11采用多点冲洗结构。

The mechanical seal size complies with API 682. The mechanical seal adopts a single end face, a metal bellows, and a balanced cartridge type structure. The end face load is uniformly rotated in any direction, which is convenient and reliable. The flushing scheme can adopt PLAN11 + 61 (62), of which PLAN 11 adopts a multi-point flushing



### 适用范围 / Operating ranges

适用介质: 适用于石油、化工以及液化石油气、弱酸、碱、盐及含少量颗粒介质。

压力  $\leq 0 \sim 4$  MPa

温度  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

线速度  $\leq 20$  m/s

Applicable medium: Suitable for petroleum, chemical industry and liquefied petroleum gas, weak acid, alkali, salt and medium containing a small amount of particles.

Pressure  $\leq 0 \sim 4$  MPa

Temperature  $\leq -40^\circ\text{C} \sim 220^\circ\text{C}$

Linear speed  $\leq 20$  m / s

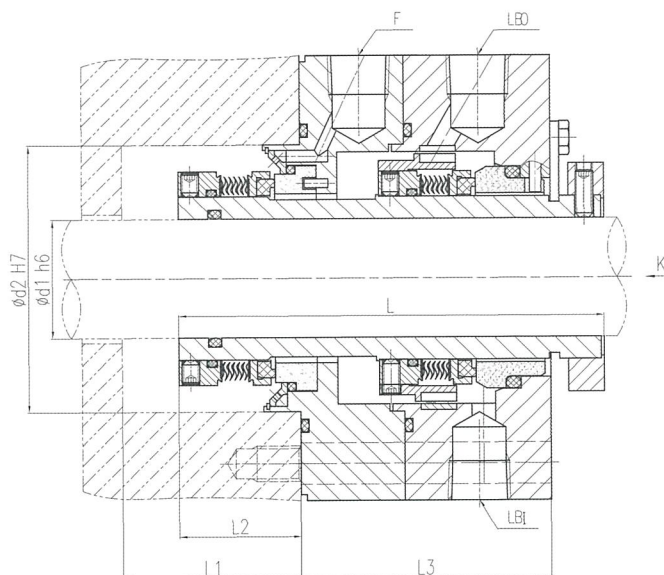
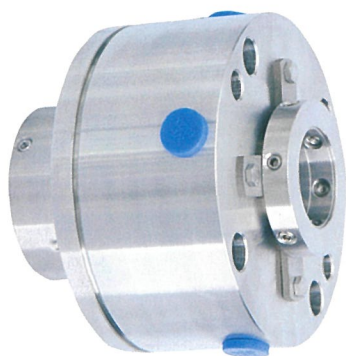
### 接口说明 / Connections

- F- 冲洗液接口
- Q- 急冷液或吹扫接口
- D- 泄漏口
- F- Flush
- Q- Quench
- D- Drain



# API682标准HBM1-T型双端面集装式机械密封

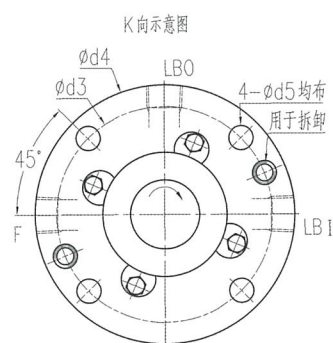
## API682 standard HBM1-T double end cartridge mechanical seal



### 结构特点 / Structural features

机械密封尺寸符合 API 682 标准。机械密封采用双端面、金属波纹管、平衡型集装式的结构，端面负荷均匀旋转方向不限，安装方便可靠，冲洗方案可采用 PLAN11+52(53)，其中 PLAN 11 采用多点冲洗结构。

The mechanical seal size complies with API 682. The mechanical seal adopts double-end face, metal bellows, and balanced cartridge structure. The end face load is evenly rotated in any direction. Installation is convenient and reliable. The flushing scheme can adopt PLAN11 + 52 (53), of which PLAN 11 adopts a multi-point flushing structure.



### 适用范围 / Operating ranges

适用介质:适用于输送中高粘度、易燃、易爆、有危害的介质。

压力 $\leq 0\sim 4$ MPa

温度 $\leq -40^{\circ}\text{C} \sim 220^{\circ}\text{C}$

线速度 $\leq 20$ m/s

Applicable medium: suitable for conveying medium and high viscosity, flammable, explosive and hazardous medium.

Pressure  $\leq 0 \sim 4$ MPa

Temperature  $\leq -40^{\circ}\text{C} \sim 220^{\circ}\text{C}$

Linear speed  $\leq 20$  m / s

### 接口说明 / Connections

F — 冲洗孔

LBI - 隔离(缓冲)液进口

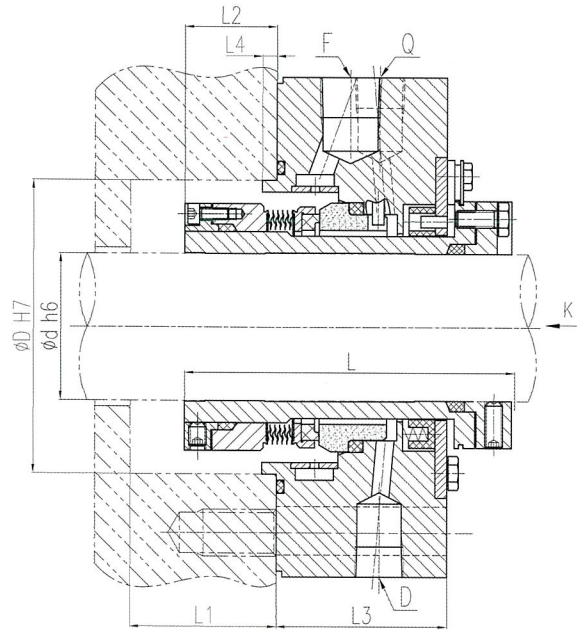
LBo- 隔离(缓冲)液出口

F — Flush

LBI - Barrier (Buffer)Inlet

LBo- Barrier (Buffer)Outlet

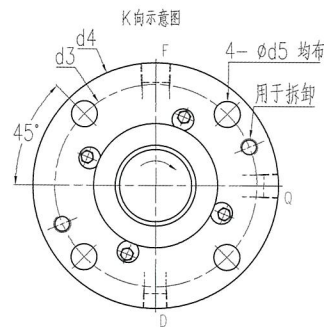
## API682标准H65-S型集装式机械密封 API682 standard H65-S type cartridge mechanical seal



### 结构特点 / Structural features

机械密封尺寸符合 API 682 标准。机械密封采用单端面、金属波纹管、平衡型集装式的结构，端面负荷均匀，旋转方向不限，安装方便可靠，冲洗方案可采用 11+61(62)，其中 PLAN 11 采用多点冲洗结构。

The mechanical seal size complies with API 682. The mechanical seal adopts a single end face, a metal bellows, and a balanced cartridge structure. The end face load is uniform, the rotation direction is not limited, and the installation is convenient and reliable. The flushing scheme can adopt 11 + 61 (62), of which PLAN 11 adopts a multi-point flushing structure.



### 适用范围 / Operating ranges

适用介质:适用于高温、中高粘度的介质。

压力  $\leq 0 \sim 4$  MPa

温度  $\leq -40^{\circ}\text{C} \sim 400^{\circ}\text{C}$

线速度  $\leq 20$  m/s

Applicable medium: suitable for high temperature, medium and high viscosity media.

Pressure  $\leq 0 \sim 4$  MPa

Temperature  $\leq -40^{\circ}\text{C} \sim 400^{\circ}\text{C}$

Linear speed  $\leq 20$  m / s

### 接口说明 / Connections

F- 冲洗液接口

Q- 急冷液或吹扫接口

D- 泄漏口

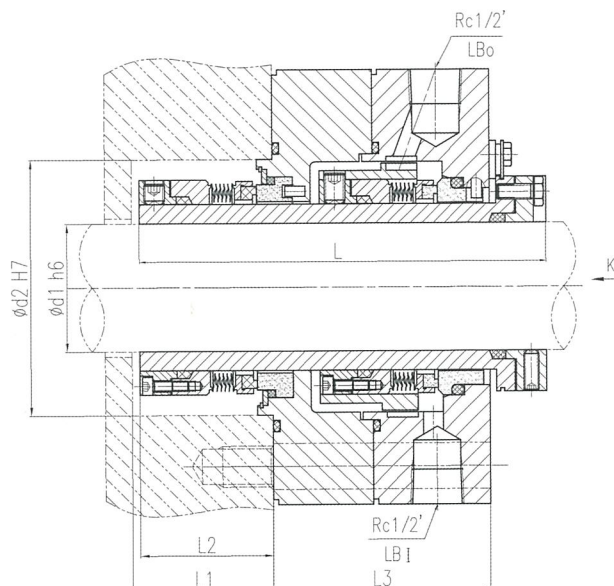
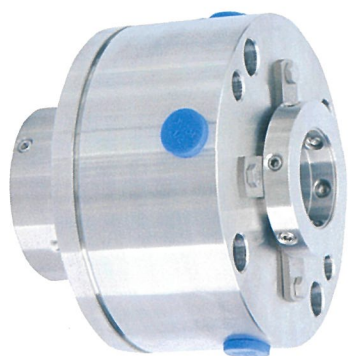
F- Flush

Q- Quench

D- Drain

## API682标准H65-T型双端面集装式机械密封

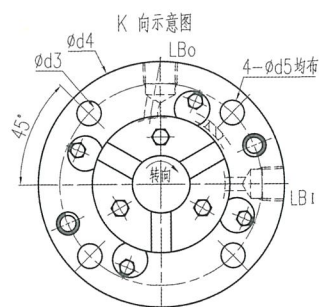
## API682 standard H65-T type double-end cartridge mechanical seal



### 结构特点 / Structural features

机械密封尺寸符合 API 682 标准。机械密封采用双端面、金属波纹管、平衡型集装式的结构，端面负荷均匀，旋转方向不限，安装方便可靠，冲洗方案可采用 PLAN 52(53)。

The mechanical seal size complies with API 682. Mechanical seal adopts double-end face, metal bellows, balanced cartridge structure, uniform end face load, unlimited rotation direction, convenient and reliable installation, PLAN 52 (53) can be used for flushing scheme.



### 适用范围 / Operating ranges

适用介质:适用于高温、中高粘度的介质。

压力 $\leq 0 \sim 4$ MPa

温度 $\leq -40^{\circ}\text{C} \sim 400^{\circ}\text{C}$

线速度 $\leq 20$ m/s

Applicable medium: suitable for high temperature, medium and high viscosity media.

Pressure  $\leq 0 \sim 4$ MPa

Temperature  $\leq -40^{\circ}\text{C} \sim 400^{\circ}\text{C}$

Linear speed  $\leq 20$  m / s

### 接口说明 / Connections

LBi - 隔离(缓冲)液进口

LBo - 隔离(缓冲)液出口

LBi - Barrier (Buffer) Inlet

LBo - Barrier (Buffer) Outlet

## HQ-TH 轴端密封 (碳环密封) HQ-TH Shaft Seal (Carbon Floating Ring seals)



### 结构特点 / Structural features

碳环密封属于流阻型非接触密封，依靠密封间隙的流体阻力效应来限制介质的泄漏。主要用于风机、鼓风机、压缩机和离心机等工业设备的轴封。结构简单，安装容易，运行可靠，维修方便，不需要复杂的润滑冷却系统，可以干运行。

密封功率消耗低，发热量小。轴的振动和窜动对他几乎无影响。

Carbon Ring Seal is a flow resistance-type mechanical seal that depends on the effect of seal gap flow resistance to limit medium leak. It is mainly used for industrial equipment shaft seal such as draught fan, air blower, compressor and centrifuge. Its characteristics are simple structure, easy to install, works reliably, easy maintenance, no need complicated lubricating and cooling system. It can dry run. Seals consume lower power and a small heat. It cannot be barely affected by shaft vibration and traverse.

### 应用条件 / Application conditions

一般密封气体介质，对于易燃易爆有毒的气体时，可通入隔离气体或隔离液，压力应高于介质压力 0.5~1 bar，这样可以实现介质的零泄漏。可根据用户的使用要求进行多种形式的密封环组合。

Generally, it seals gas medium and can be injected isolated gas or spacer fluid for inflammable and explosive toxic gases.

Pressure should be higher than medium pressure 0.5~1 bar. This can achieve zero leak of medium.

We can choose a combination of a various form of sealing rings according to customers' requirements.

### 适用范围 / Available Range

轴径：40~340mm

压力：真空 ~5bar

温度：-20~200 (500) °C

Shaft Diameter: 40~ 340mm

Pressure: vacuum ~5bar

Temperature: -20~200(500)°C

### 材料 / Materia

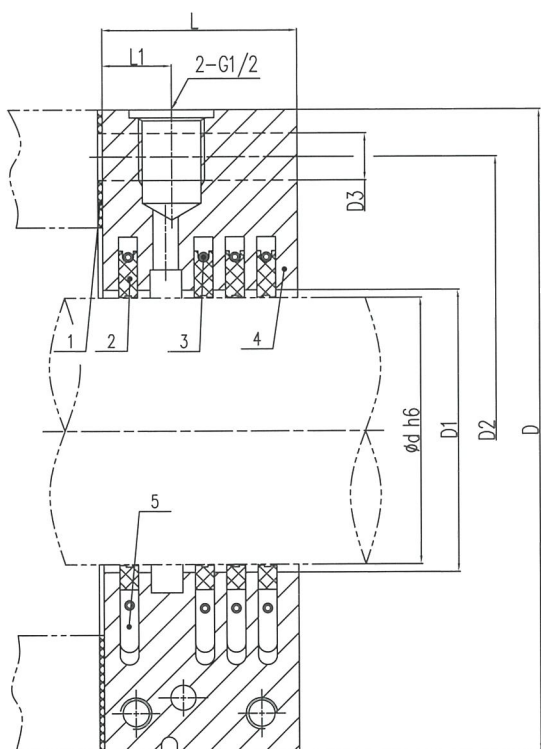
密封环 (3 瓣)：石墨 金属件：不锈钢或由工况条件定

O 型圈和密封垫根据工况条件选择。

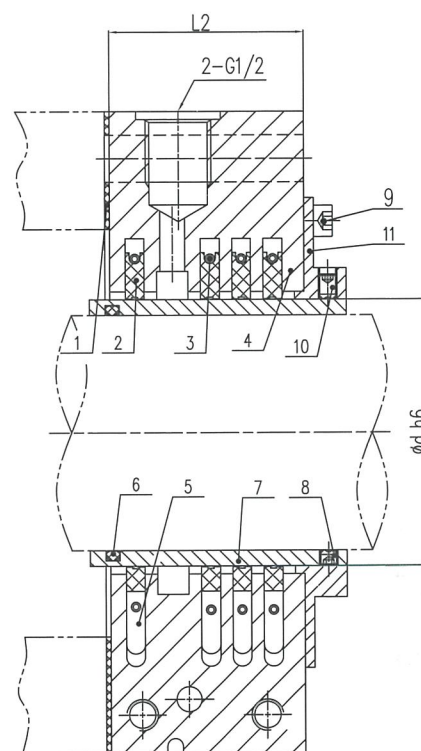
Sealing Ring: Carbon

Metal parts: stainless steel(determined by working conditions)

O-Ring and gasket are chosen according to working conditions.



HQ-TH-A



HQ-TH-B

**接口说明：**

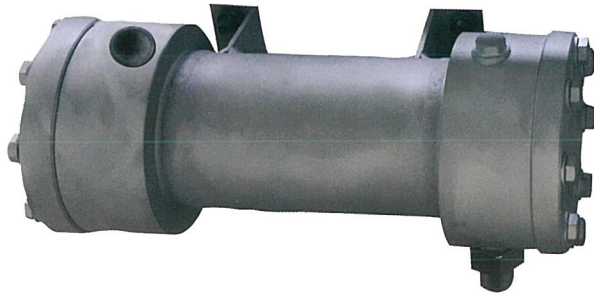
- 1 - 密封垫
- 2 - 密封环 (3 瓣)
- 3 - 拉簧
- 4 - 分瓣密封体
- 5 - 止动片
- 6 - O 型圈
- 7 - 轴套
- 8 - 防转螺钉
- 9 - 螺钉
- 10 - 安装片

**Connections:**

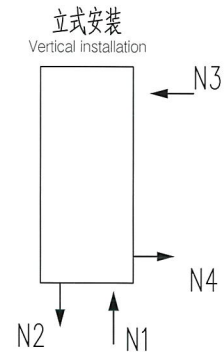
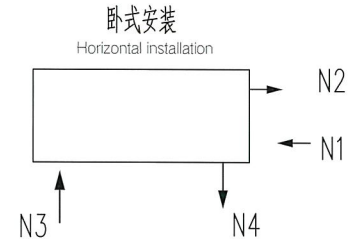
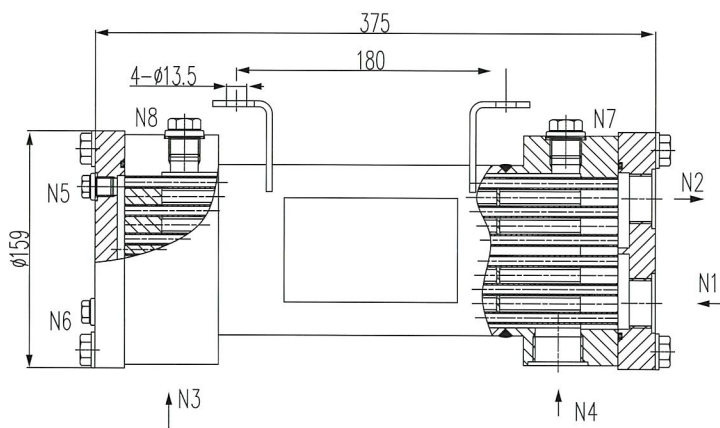
- 1 - Gasket
- 2 - Sealing ring (3 piece)
- 3 - Tension spring
- 4 - Housing (2-Piece)
- 5 - Detent
- 6 - O - Ring
- 7 - Shaft sleeve
- 8 - Set screw
- 9 - Cap head screw
- 10 - Setting washer

# HRL-3110列管式换热器

## HRL-3110 Tubular Heat Exchanger



HRL-3110列管式换热器



接口说明	
N1	冷却水进口
N2	冷却水出口
N3	密封液进口
N4	密封液出口
N5	冷却水排气孔
N6	冷却水排液孔
N7	密封液排气孔
N8	密封液排液孔

### 产品描述 / Product Description

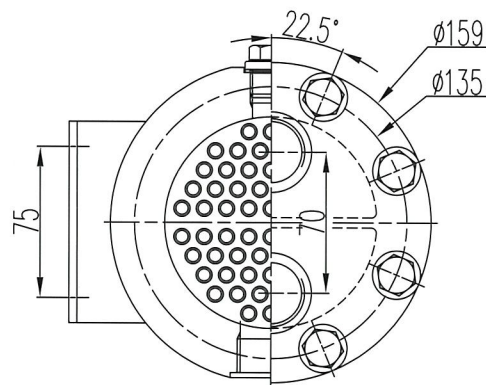
HRL-3110 换热器在密封系统中用来冷却循环液。设计为列管式换热器，HRL-3110 的显著特点是具有高冷却功率且结构紧凑。

HRL-3110 heat exchanger is used to cool the circulating fluid in sealing system. Designed as a tubular heat exchanger, the HRL-3110 is characterized by its high cooling power and compact structure.

### 产品特点 / Product Features

循环液直接通过壳程，冷却水通过管程。换热器可卧式安装也可立式安装。打开端盖后，可以清洗冷却和循环介质区域（用合适的溶剂清洗）。

Circulating liquid pass directly through the shell side and cooling water pass through the pipe side. The heat exchanger can be installed horizontally or vertically. After opening the end cover, the cooling and circulating media areas can be cleaned (Use the appropriate cleaning solvent).

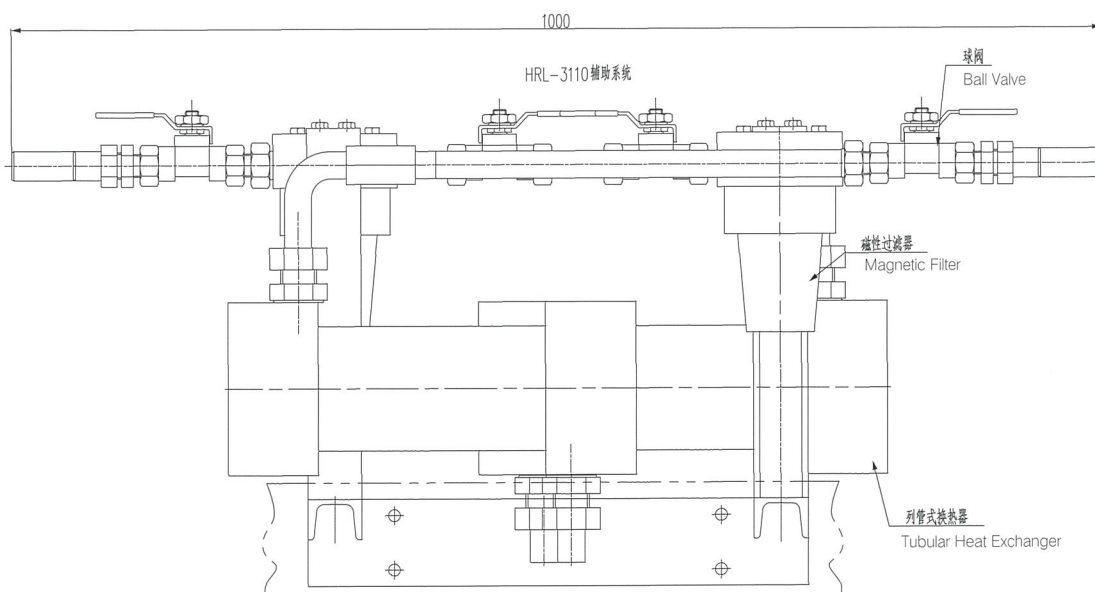
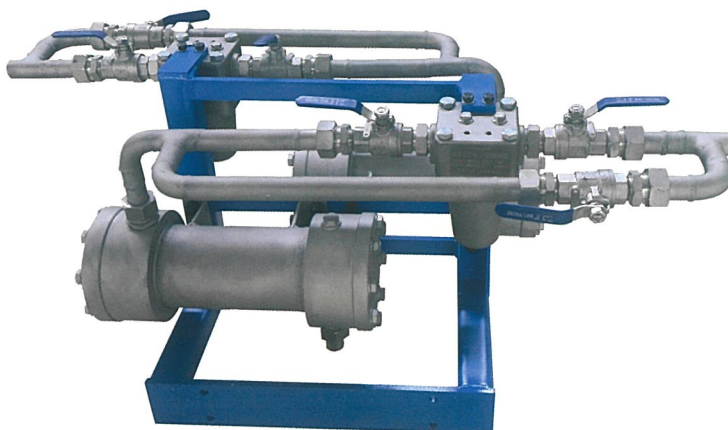


### 列管式换热器参数 / Technical Parameters

外壳设计压力: 110bar;	设计容量: 1.8L
列管设计压力: 25bar;	设计容量: 0.7L
设计温度: 150°C;	换热面积: 0.5m <sup>2</sup>
Shell design pressure: 110Bar	Design capacity: 1.8L
Design pressure of tube: 25Bar	Design capacity: 0.7L
Design temperature: 150°C	Heat exchange area: 0.5m <sup>2</sup>

## HRL-3110辅助系统

### HRL-3110 Auxiliary System

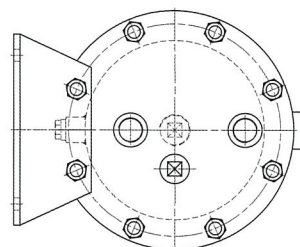
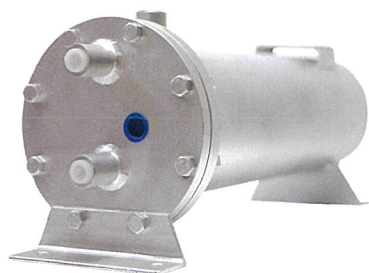


#### 产品描述 / Product Description

HRL-3110 辅助系统是由换热器、磁性过滤器、阀门、管路等零部件组成（可按用户定制）。用于冷却缓冲液，内循环液等，换热效果优异。

HRL-3110 auxiliary system is composed of heat exchanger, magnetic filter, valve, pipeline and other parts (can be customized). Which is used for cooling buffer, internal circulation liquid, etc., excellent heat exchange effect.

## 换热器HRL Heat Exchange HRL

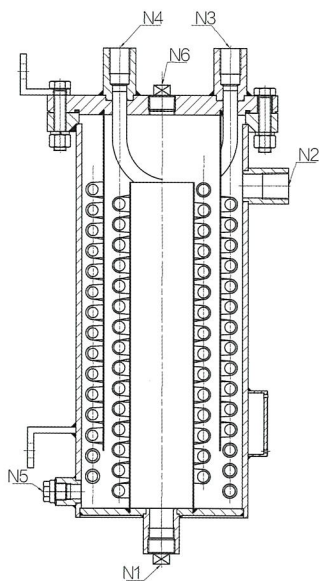


### 卧式安装接口说明:

- N1- 冷却液入口 (Rc3/4)
- N2- 冷却液出口 (Rc3/4)
- N3- 冲洗液入口 (Rp1/2)
- N4- 冲洗液出口 (Rp1/2)
- N5- 排污口 ( G3/8 配管螺纹外六角螺塞)
- N6- Rc3/4 配堵头 ( 备用)

Description of horizontal installation interface:

- N1-Coolant Inlet (Rc3/4)
- N2-Coolant Outlet (Rc3/4)
- N3-Flush Inlet (Rp1/2)
- N4-Flush Outlet (Rp1/2)
- N5-Sewage Draining Outlet (G3/8 Piping Threaded Outer Hex Plug)
- N6-Rc3/4 with plug (spare)



### 立式安装接口说明:

- N1- 排污口 (Rc3/4 配堵头)
- N2- 冷却液入口 (Rc3/4)
- N3- 冲洗液出口 (Rp1/2)
- N4- 冲洗液入口 (Rp1/2)
- N5 - G3/8 配管螺纹外六角螺塞 ( 备用 )
- N6 - 冷却液出口 (Rc3/4)

Description of vertical installation interface :

- N1-Sewage Draining Outlet(Rc3/4 with plug)
- N2-Coolant Inlet (Rc3/4)
- N3-Flush Inlet (Rp1/2)
- N4-Flush Outlet (Rp1/2)
- N5-G3/8 Piping Threaded Hex Plug (spare)

### 产品描述 / Product Description

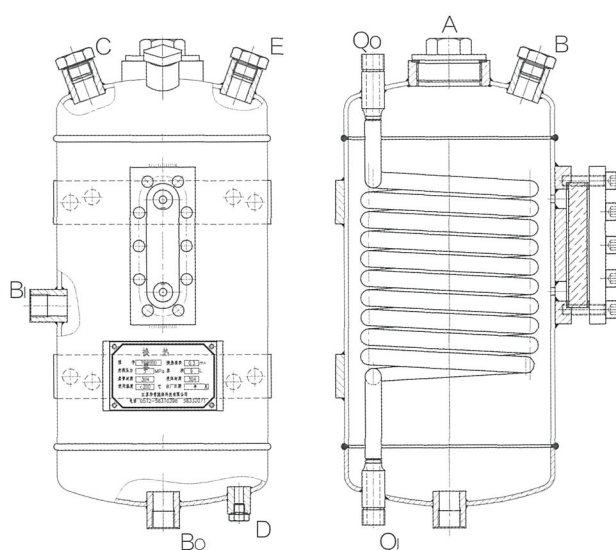
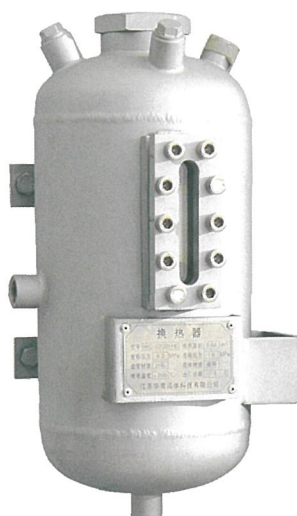
用于机械密封辅助系统 21、23 方案，对密封介质进行冷却或加热，换热盘管采用螺旋结构，换热效果明显，换热面积有 0.4、0.6、0.8m<sup>2</sup>，管程压力 6.3MPa，壳程压力 1.6MPa，使用温度 <250℃，可立式或卧式安装。也可按用户定制。

It is used for the schemes 21 and 23 of the mechanical seal auxiliary system to cool or warm the sealing medium. The heat exchange coil adopts a spiral structure, which has obviously heat exchange effect. The heat exchange area is 0.4, 0.6, 0.8 m<sup>2</sup>, and the tube side pressure is 6.3 MPa. The shell-side pressure is 1.6MPa, the working temperature is <250 °C, and it can be installed vertically or horizontally. It also can be customized by your requirement.



## 储液罐HQTS2000

### Liquid storage tank HQTS2000



接口说明	
B1	储液罐密封液入口
B0	储液罐密封液出口
Q1	冷却液入口
Q0	冷却液出口
A	液位报警接口
B	储罐密封液注入口
C	通用连接接口
D	泄漏口
E	压力气体连接口

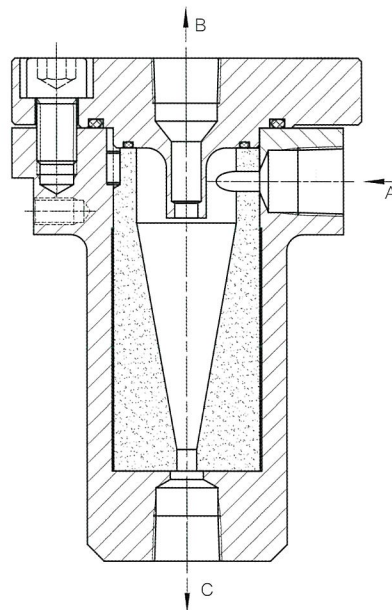
#### 产品描述 / Product Description

用于机械密封辅助系统 52、53A 方案中，为机械密封提供缓冲液（隔离液），及时带走密封端面摩擦产生的热量，改善密封使用环境。组成包括液位视镜、冷却盘管、管路元件和仪表等。可按用户定制。

标配 9 升。

It is used in the mechanical seal auxiliary system 52 and 53A schemes to provide a buffer solution (isolating liquid) for the mechanical seal, to take away the heat generated by the friction of the seal end face in time, and improve the sealing environment. The composition includes a level sight glass, a cooling coil, a pipeline element and an instrument. Can be customized according to user.

## 旋液分离器HQZY系列 Cyclone hydraulic separator HQZY series



### 产品描述 / Product Description

HQZY 系列旋液分离器主要用来分离悬浮液内的杂质和颗粒 (如: 循环中的污水、泥浆、原油杂质等), 最佳的过滤效率是固体颗粒的比重远大于流体的 (API682 第 4 版推荐至少两倍), 旋液分离器的使用压差不得小于 0.17MPa。对双支点泵, 每端机械密封应各自配一个单独的旋液分离器。

HQZY series cyclone hydraulic separator is mainly used to separate impurities and particles in the suspension (such as sewage, mud, crude oil impurities in the circulation, etc.). The best filtration efficiency is that the specific gravity of solid particles is much larger than that of fluids (API682 No. 4 The recommended version is at least twice). For double-fulcrum pumps, each end of the mechanical seal should be equipped with a cyclone hydraulic separator.

### 接口说明 / Connections

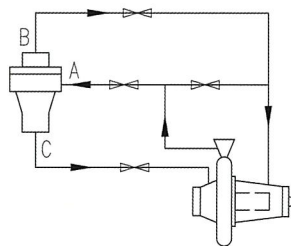
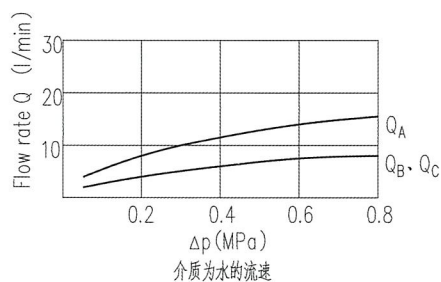
- A- 来自泵的出口 Rc1/2
- B- 连接密封腔 Rc1/2
- C- 到泵入口 Rc1/2
- A- Outlet Rc1 / 2 from the pump
- B- connection sealed cavity Rc1/2
- C- to pump inlet Rc1/2

### 操作范围 / Scope of operation

允许压力 : 6.4 MPa (Max)  
允许温度 : 125°C (Max)

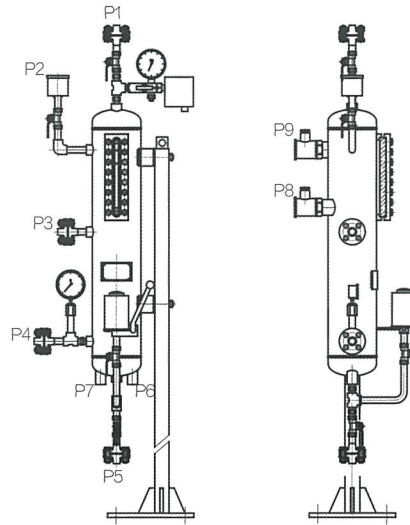
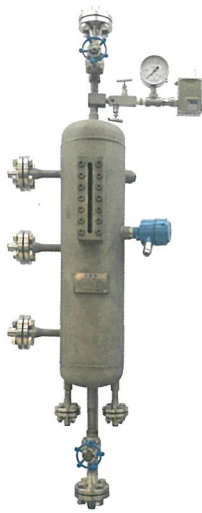
旋液分离器必须立式安装。在出口 (C) 和 (B) 处的压力必须低于入口 (A) 的压力。清洁的液体被输送到顶部的出口 (B), 而分离出的杂质出口 (C) 送到泵的入口。

The hydrocyclone must be installed vertically. The pressure at the outlets (C) and (B) must be lower than the pressure at the inlet (A). The clean liquid is sent to the top outlet (B), and the separated impurity outlet (C) is sent to the pump inlet.



## API682标准储液罐 ( PLAN52、PLAN53A、PLAN53B )

### API682 standard storage tank ( PLAN52、PLAN53A、PLAN53B )



接口说明	
P1	压力源(排气孔)
P2	补液口
P3	缓冲液入口
P4	缓冲液出口
P5	排液口
P6	冷却液入口
P7	冷却液出口
P8	低液位检测口
P9	高液位检测口

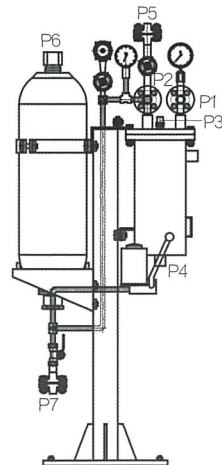
#### 产品描述 / Product Description

用于机械密封辅助系统 52、53A 方案中,为机械密封提供缓冲液(隔离液),及时带走密封端面摩擦产生的热量,改善密封使用环境。组成包括液位视镜、冷却盘管、管路元件和仪表等。可按用户定制。

标配 12 升和 20 升。

It is used in the mechanical seal auxiliary system 52 and 53A schemes to provide a buffer solution (isolating liquid) for the mechanical seal, to take away the heat generated by the friction of the seal end face in time, and improve the sealing environment. The composition includes a level sight glass, a cooling coil, a pipeline element and an instrument. Can be customized according to user.

12 and 20 liters are standard.



接口说明	
P1	隔离液出口
P2	隔离液入口
P3	冷却水出口
P4	冷却水入口
P5	排气口
P6	气囊充气入口
P7	排液口

#### 产品描述 / Product Description

用于机械密封辅助系统 53B 方案中,为机械密封提供隔离液,及时带走密封端面摩擦产生的热量,改善密封使用环境。组成包括水冷换热器(空冷换热器)、蓄能器、管路元件和仪表等。可按用户定制。

It is used in the mechanical seal auxiliary system 53B scheme to provide isolation fluid for the mechanical seal, timely take away the heat generated by the friction of the seal end face, and improve the sealing environment. The composition includes a water-cooled heat exchanger (air-cooled heat exchanger), an accumulator, piping components, and instruments. Can be customized according to user.

## 机械密封用材料代号表

### Material code table for mechanical seal

代号	摩擦副材料	代号	辅助密封材料	代号	弹性元件及结构件材料
A1	整体浸渍碳石墨	V	氟橡胶 (F-26)	F2	06Cr19Ni10(304)
A2	镶装浸渍碳石墨	V1	高温氟橡胶 (FE2463)	F3	07Cr7Ni7Al(17-7PH)
B1k	整体浸渍咪喃树脂碳石墨	V2	V78E	F4	022Cr19Ni10(304L)
B2k	镶装浸渍咪喃树脂碳石墨	V3	F406	G1	06Cr17Ni12Mo2(316)
B1H	整体浸渍环氧树脂碳石墨	V4	AFLAS	G2	022Cr17Ni12Mo2(316L)
B2H	镶装浸渍环氧树脂碳石墨	V5	F404	G3	015Cr21Ni26Mo5Cu2(904L)
B1F	整体浸渍酚醛树脂碳石墨	V6	V7500	M1	Hast.C-276
B2F	镶装浸渍酚醛树脂碳石墨	K	6375	M2	Hast.B
B3	整体填充二硫化钼石墨	K1	CN800、8480	M3	Carpenter 20 Cb3
B32	镶装填充二硫化钼石墨	P	丁腈橡胶 (NBR)	M4	Monel alloy K500
U1	整体钴基碳化钨	P1	氢化丁腈橡胶 (HNBR)	M5	Inconel 718
U12	整体镍基碳化钨	E	三元乙丙橡胶 (EPDM)	T1	022Cr22Ni5Mo3N(2205)
U2	整体镍基碳化钨	N	氯丁橡胶 (CR)	T2	TA2
U22	镶装镍基碳化钨	S	硅橡胶 (VMQ)	T3	AM350
U3	整体镍铬基碳化钨	B	丁基橡胶 (IIR)	T4	4J42
U32	镶装镍铬基碳化钨	M1	PTFE 包覆氟橡胶	T5	022Cr25Ni7Mo4N(2507)
U4	整体碳化钨硬质合金	M2	PTFE 包覆乙丙橡胶	E	20Cr13(420)
U42	镶装碳化钨硬质合金	M3	PTFE 包覆硅橡胶	E1	1Cr17Ni2
U5	整体轻型硬质合金	M4	PTFE 包覆氯丁橡胶	D	65Mn
U52	镶装轻型硬质合金	M5	聚全氟乙丙烯包覆氟橡胶	D1	Q235
O1	整体反应烧结碳化硅	M6	聚全氟乙丙烯包覆乙丙橡胶	N	H62
O12	镶装反应烧结碳化硅	M7	聚全氟乙丙烯包覆硅橡胶	N1	ZCuZn16Si4
O2	整体无压烧结碳化硅	T	PTFE	N2	QSn4-3
O22	镶装无压烧结碳化硅	T1	弹簧蓄能圈	N3	QA19-4
O3	碳化硅加碳	C	柔性石墨		
I1	金属表面堆焊钴基 2#	C1	增强柔性石墨垫		
I2	金属表面喷焊 Ni60	C2	金属柔性石墨缠绕垫		
I3	金属表面喷碳化钨				
J1	金属表面喷涂氧化铬				
V	氧化铝陶瓷				
Q	氮化硅				
Y1	填充 20% 玻纤的聚四氟乙烯				
Y2	填充 5% 石墨 15% 玻纤的聚四氟乙烯				
Y3	填充铜粉四氟				

## 机械密封选型数据表

### Mechanical Seal Selection Data Sheet

用户单位：\_\_\_\_\_ 所属地址：\_\_\_\_\_

设备详情：

设备名称 / 泵号 / 供应商：\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

安装方式：卧式 立式 标准 / 冲洗方案：\_\_\_\_\_

原有机封型式：单端面 双端面 (背靠背 / 面对面 / 串联式)

使用条件：

工况介质：\_\_\_\_\_ 毒性：有 无 转向（从驱动端看）：顺 逆

PH 值：\_\_\_\_\_ 比重：\_\_\_\_\_ 结晶：有 无

粘度：\_\_\_\_\_ cp 温度：\_\_\_\_\_ (°C) 腐蚀性：有 无

转速：\_\_\_\_\_ rpm 润滑性：有 无 颗粒：有 % 无

压力：入口压力：\_\_\_\_\_ 出口压力：\_\_\_\_\_ 腔体压力：\_\_\_\_\_

冲洗液：无 有 / 冲洗液名称：\_\_\_\_\_ 压力：\_\_\_\_\_ 温度：\_\_\_\_\_

隔离液：无 有 / 隔离液名称：\_\_\_\_\_ 压力：\_\_\_\_\_ 温度：\_\_\_\_\_

缓冲液：无 有 / 缓冲液名称：\_\_\_\_\_ 压力：\_\_\_\_\_ 温度：\_\_\_\_\_

急冷液：无 有 / 急冷液名称：\_\_\_\_\_ 压力：\_\_\_\_\_ 温度：\_\_\_\_\_

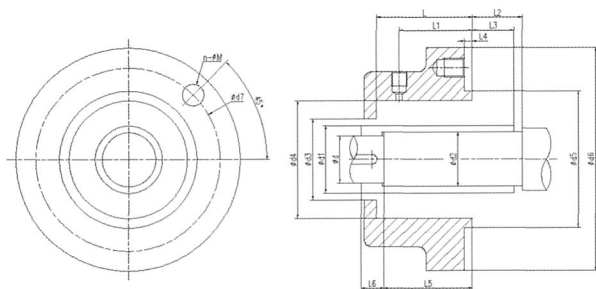
机械密封材料

金属零部件（与介质接触）：\_\_\_\_\_ 压盖：\_\_\_\_\_

密封面材质：\_\_\_\_\_ 弹簧：\_\_\_\_\_

O 型圈：\_\_\_\_\_ 垫片：\_\_\_\_\_ 波纹管：\_\_\_\_\_

设备尺寸：（图形仅供参考）



d	_____	L	_____
d1	_____	L1	_____
d2	_____	L2	_____
d3	_____	L3	_____
d4	_____	L4	_____
d5	_____	L5	_____
d6	_____	L6	_____
d7	_____	n-øM	_____

备注：

欢迎从 [www.zjg-huaqing.com](http://www.zjg-huaqing.com) 下载表格

填表人：\_\_\_\_\_ 日期：\_\_\_\_\_



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## 江苏华青流体科技有限公司

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2021 版

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