

Hydraulic Deep Well Cargo Pump System--YQB consists of Hydraulic Station, Deep Well Pump and Control Device (pls see diagram).Hydraulic Station, installed in engine room, provides hydraulic power to all of the cargo pumps in vessel. Deep Well Pump (one pump per tank), built on deck, is submerged to the bottom of the cargo tank and is driven by hydraulic motor. Control Device, installed in the MasterControl Room, controls the output flow of Deep Well Cargo Pump and monitors the running of the system. The capacity of the pump can be controlled not only by Remote Control in Master Control Room, but also by Manual Control on the deck.

Hydraulic Deep Well Cargo Pump System-- YQB does not needs electric equipment at its working field, which therefore will definitely not generate static or electricspark. It is absolutely safe while pumping flammable, explosive or noxious chemicals.



# HUANGGONG 深井货泵

**DEEP WELL CARGO PUMP**

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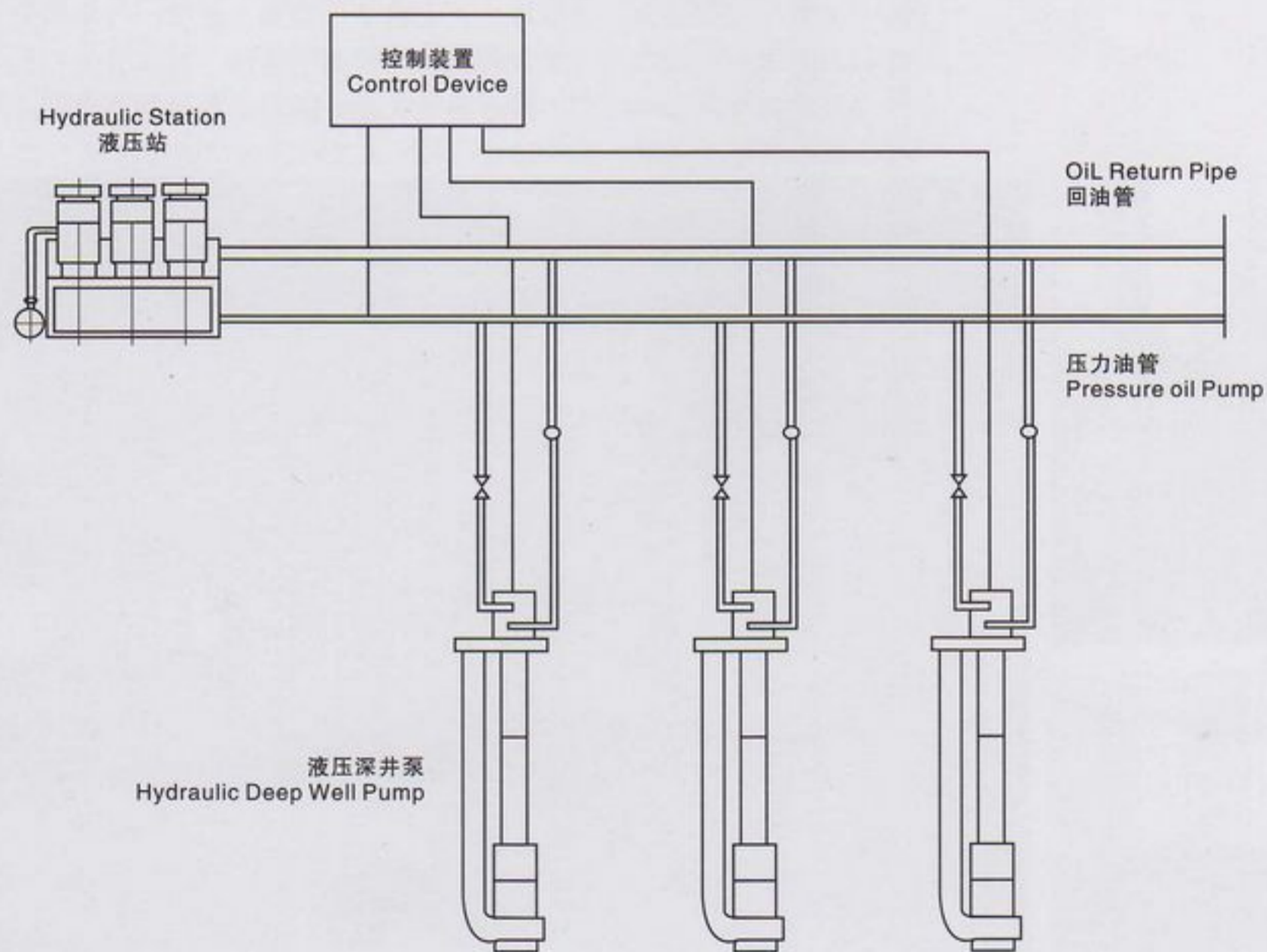
## 一、概述 General

YQB型液压深井货泵系统由液压站，深井货泵及控制装置三大部分组成，见系统示意图。液压站安装在机舱内，由它向船上所有货泵提供液压能源，并有系统过载保护；深井货泵安装在甲板上，潜入到货舱底部工作，它由液压马达驱动，一舱一泵；控制装置安装在主控室内，通过它控制深井货泵的输出流量，及监测系统的运行状态。泵的流量既可在主控室内进行遥控，也可在甲板上进行现场手动控制。

YQB型液压深井货泵系统在使用现场没有电气设备，绝对不会产生静电及电火花，因此，在输送易燃易爆、有毒的化学品介质时，绝对安全可靠。

Hydraulic Deep Well Cargo Pump System-YQB consists of Hydraulic Station, Deep Well Pump and Control Device (pls see diagram). Hydraulic Station, installed in engine room, provides hydraulic power to all of the cargo pumps in vessel. Deep Well Pump (one pump per tank), built on deck, is submerged to the bottom of the cargo tank and is driven by hydraulic motor. Control Device, installed in the Master Control Room, controls the output flow of Deep Well Cargo Pump and monitors the running of the system. The capacity of the pump can be controlled not only by Remote Control in Master Control Room, but also by Manual Control on the deck.

Hydraulic Deep Well Cargo Pump System-- YQB does not needs electric equipment at its working field, which therefore will definitely not generate static or electric spark. It is absolutely safe while pumping flammable, explosive or noxious chemicals.



YQB型液压深井货系统示意图  
Diagram of Hydraulic Deep Well Cargo Pump System-YQB

## 二、产品特点 Features

- 货泵为离心泵结构，尺寸小，流量大，允许液货中含有微小颗粒。
  - 液压驱动，安全方便，采用当今最先进的比例控制技术，流量无级调节。
  - 现场无电气设备，绝对防爆。
  - 主控室遥控与现场手动控制并行。
  - 泵的过流部件根据液货的化学性质，分别采用304、316、316L不锈钢制造。
  - 货泵轴封采用机械密封，寿命长。
  - 在甲板上能监测泵密封是否泄漏。
  - 货泵采用易拆卸结构，维护方便。
  - 可用惰性气体清扫舱底残液，经济环保。
  - 适合各种货船使用，船舱深度不受限制。
- 
- Centrifugal type pump, small size, big capacity, tiny particles in cargo liquid permitted
  - Hydraulic drive, safe and easy operating, with the most advanced technology of "Ratio Control", stepless-adjustment capacity.
  - Without electric equipment at working field, absolute explosion prevention
  - Remote Control in Master Control Room synchronizes with Manual Control at field
  - According to different chemical properties of the liquid cargo, the pump' s wetted parts can be made with material of different stainless steels separately-----Ss304, SS316 and SS316L
  - Long-life shaft seal, with mechanical seal used
  - Pump' s seal leakage can be monitored on deck
  - Easy-dismantling, convenient-maintenance
  - Use inert gases to clear the residuary cargo in cargo tank, economical and environmental
  - Applied for various cargo tankers, unlimited to the depth of the cabin

## 三、应用 Application

主要应用在化学品船上，用于抽送各种酸、碱、盐类化学品溶液及酮、醇、醛类有机物溶液。

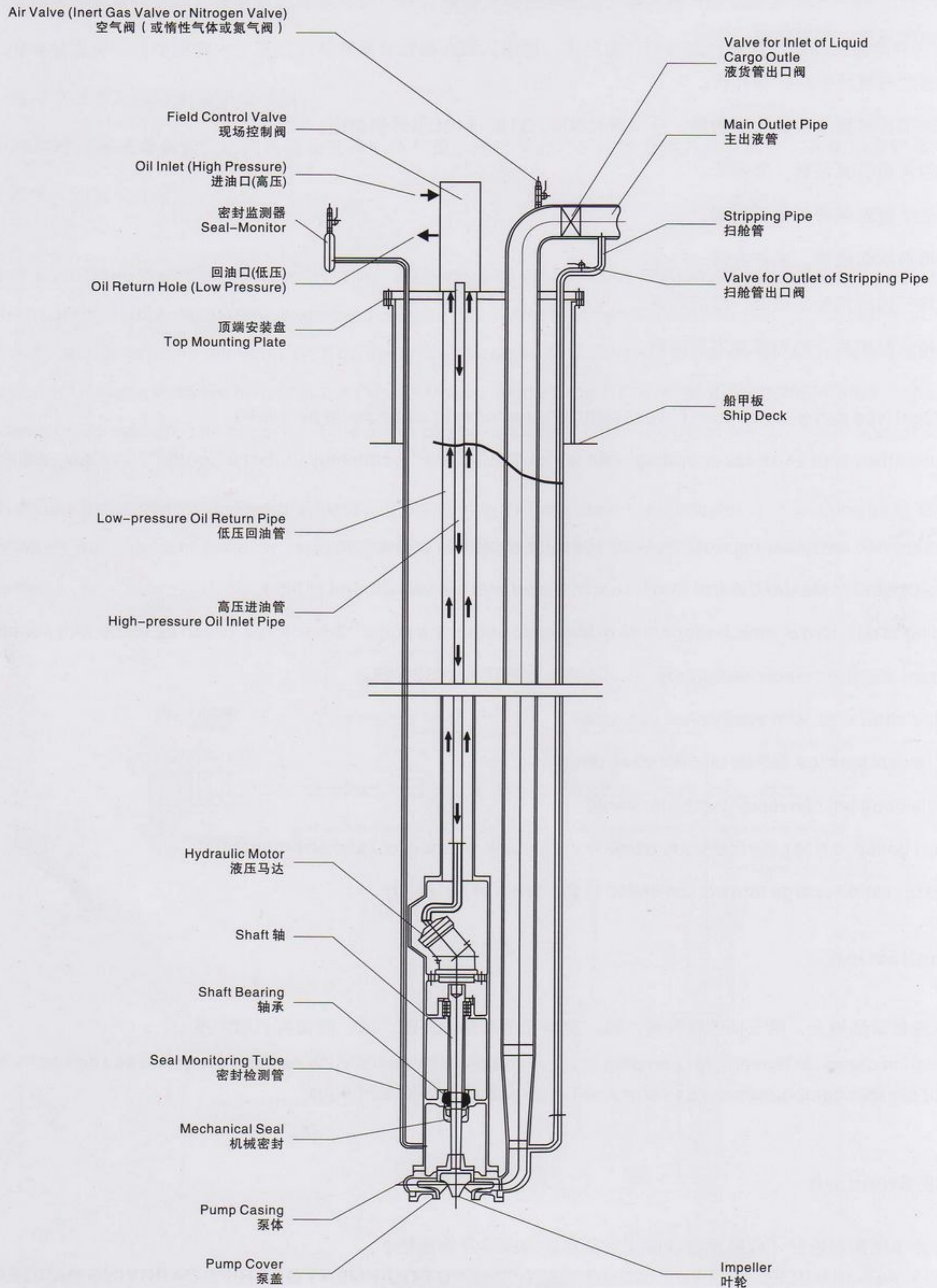
Mainly used in chemical tankers, for pumping various chemical solutions such as acid, alkali and salt solutions as well as solutions of organic compoundsuch as ketone, ethanol and aldehyde solutions

## 四、执行标准 Standard

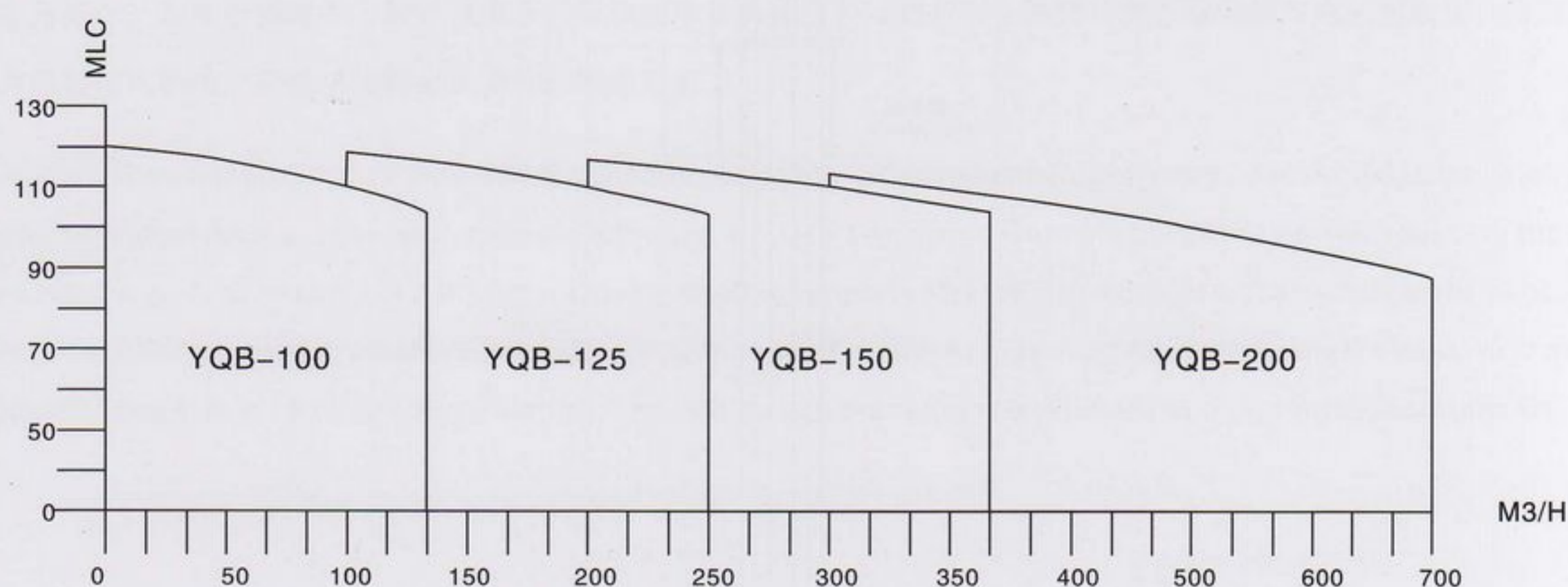
本产品符合中国船舶设计《散装运输危险化学品船舶构造及设备规范》。

In accordance with RULES FOR THE CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING DANGEROUS CHEMICALS IN BULK China' s Standard of Ship Design

## 五、泵的结构 Structure of the Pump



## 六、泵的型谱 Spectrum of Series and Models



## 七、泵的制造材料 Material

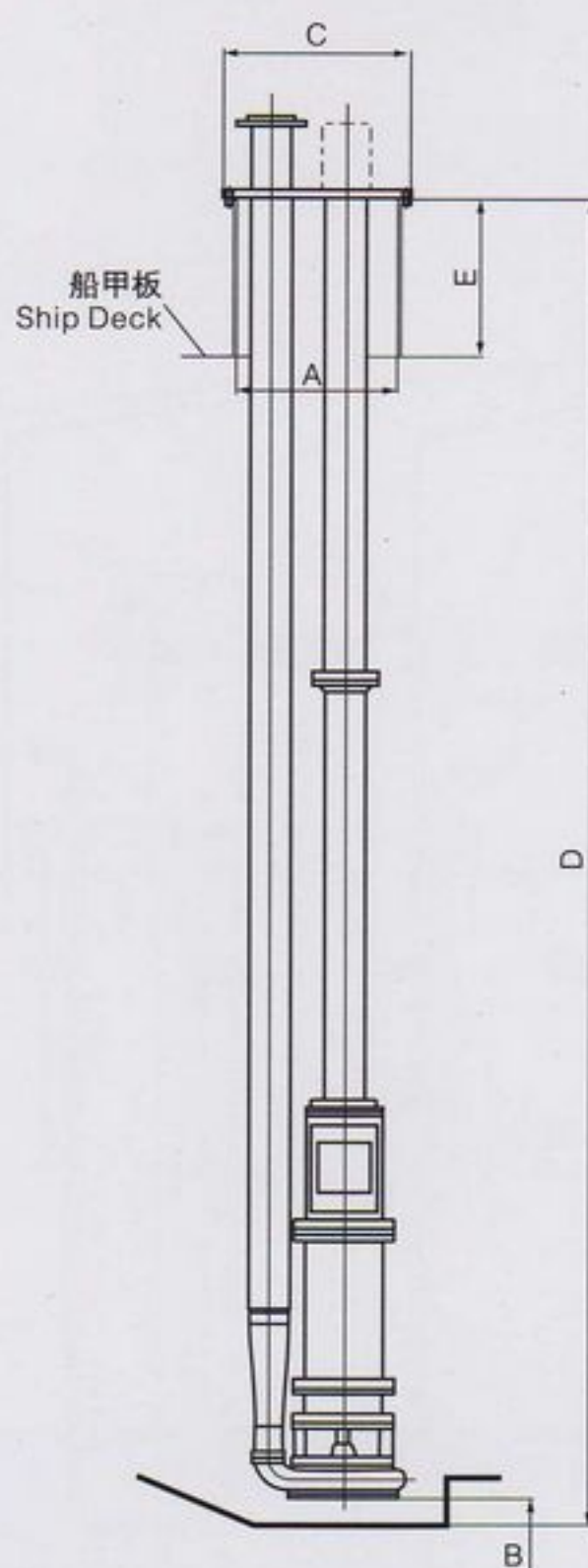
中国国家标准GB1221 National Standard of the People's Republic China	美国钢铁学会标准AISI American Iron and Steel Institute	应用 Aisiapplication
OCr18Ni9	304	各种有机物、盐类 Various organics & salts
OCr17Ni12Mo2	316	各种有机物、弱酸、弱碱、盐类 Various organics, weak acids, mild bases and salts
OCr17Ni14Mo2	316L	中等腐蚀性的酸、碱 Moderate-erosion acids & alkalis

## 八、扫舱过程 Stripping Procedure

在抽送舱内货物见底时，保持货泵继续运转，开启扫舱管阀门，同时关闭出口蝶阀，从“扫舱气体入口处”输入一定压力的惰性气体(如氮气、低氧空气等)。可将连接管内剩留的货物从扫舱管排入主货管，使残留在舱底的货物最少。

When the liquid cargo in tanker is pumped out until the bottom of the tank, keep the pump running and open the valve for stripping pipe, meanwhile close the butterfly valve at outlet and introduce inert gases under some pressure from "intake of stripping gas" such as nitrogen or low-oxygen air. The residuary cargo in connecting pipe can be transferred into main cargo pipe via stripping pipe, as for the least residuary cargo in the cargo tank.

## 九、安装尺寸 Installation Dimension



YQB型液压深井货泵安装尺寸图  
Installation Dimension of Hydraulic Deep Well Cargo Pump System—YQB

泵型号 Pump model	A	B	C	D	E
YQB-100	450	32	560		500
YQB-125	550	40	660		500
YQB-150	670	45	785		500

## 十、订货注意事项 Order Information

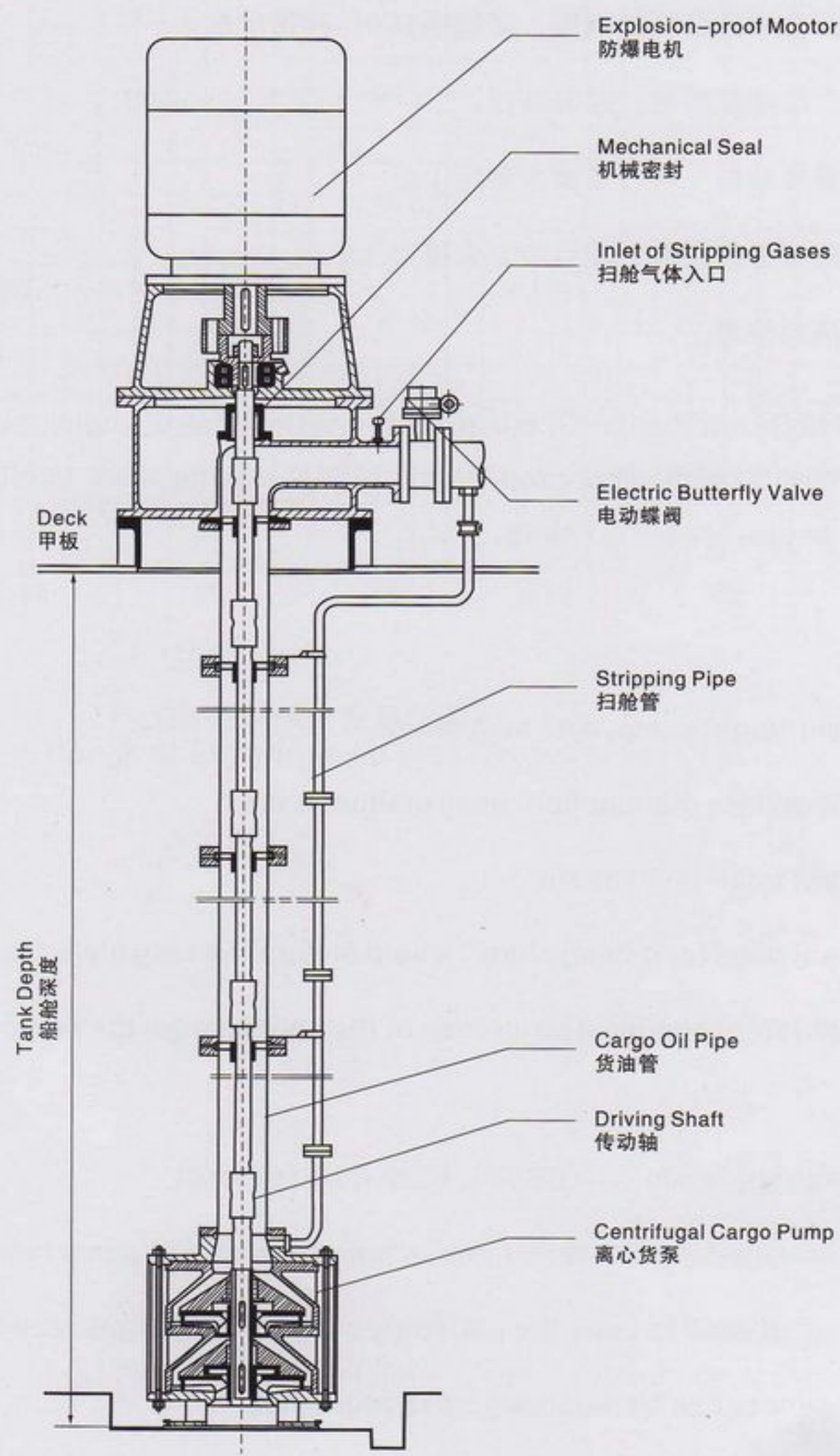
- 1、确定泵的流量，扬程或压力。
- 2、确定泵所输送的货物名称，化学性质。
- 3、确定泵过流部件制造材质。
- 4、确定甲板至舱底的深度。

1. Confirm the requirement for the pump' s capacity, head or pressure
2. Confirm the name and chemical property of the liquid cargo to pump
3. Confirm the required material of wetted parts
4. Confirm the distance from deck to cargo tank bottom

## 一、结构/Structure

CLB型电动深井泵由双级离心泵、连接管及电机座，电机四大部件组成，电机座、电机安装在甲板上，离心泵及连接管安装在货舱内，浸没在货物中，传动轴支承在滚动轴承及特种塑料导轴承中，并通过弹性联轴器与电机相联接；传动轴的密封采用机械密封结构，能适应各种化工介质的输送要求。

Electric Deep Well Cargo Pump—CLB consists of double-absorb centrifugal pump, connecting pipe, motor base and electromotor. Motor base and electromotor are mounted on deck. Centrifugal pump and connecting pipe were mounted in cargo tank, submerged in cargo. Driving shaft is supported by rolling bearings and special plastic pilot bearing and is connected with electromotor by flexible coupling. Mechanical seal is used for driving shaft's seal, with material of Ceramic/Graphite for Primary Ring/Mating Ring, which can meet the requirement to pump various chemicals.



CLB 型电动深井货泵结构图  
Structure of Electric Deep Well Cargo Pump—Clb

## 二、产品特点 Features

CLB型电动深井货泵安装在化学品船甲板上，伸入到货舱底部工作，泵通过传动轴由防爆电机拖动，电机防爆等级按被输送的液货性质来选择，安全可靠。

### 该产品具有以下特点：

- 双级离心泵结构，扬程高。
- 机械驱动，故障少，易维护。
- 一次性投资少，成本低。
- 传动轴密封采用机械密封，密封可靠，寿命长。
- 泵的过流部件根据液货的化学性质，分别采用304、316、316L不锈钢制造。
- 导轴承选用国际品牌进口材料制造，能输送190多种化学品。
- 可用惰性气体清扫舱底残液，经济环保。
- 可安装温度报警传感器（按订货要求确定）。
- 可安装密封泄漏报警传感器（按订货要求确定）。
- 适合小型化学品船使用。

Electric Deep Well Cargo Pump—CLB is mounted to the deck of chemical tanker and work at the bottom of the cargo tank. The pump is driven by explosion-proof motor through driving shaft. Explosion-proof grade will be chosen as per the property of the liquid cargo, ensuring safety.

### Main Features:

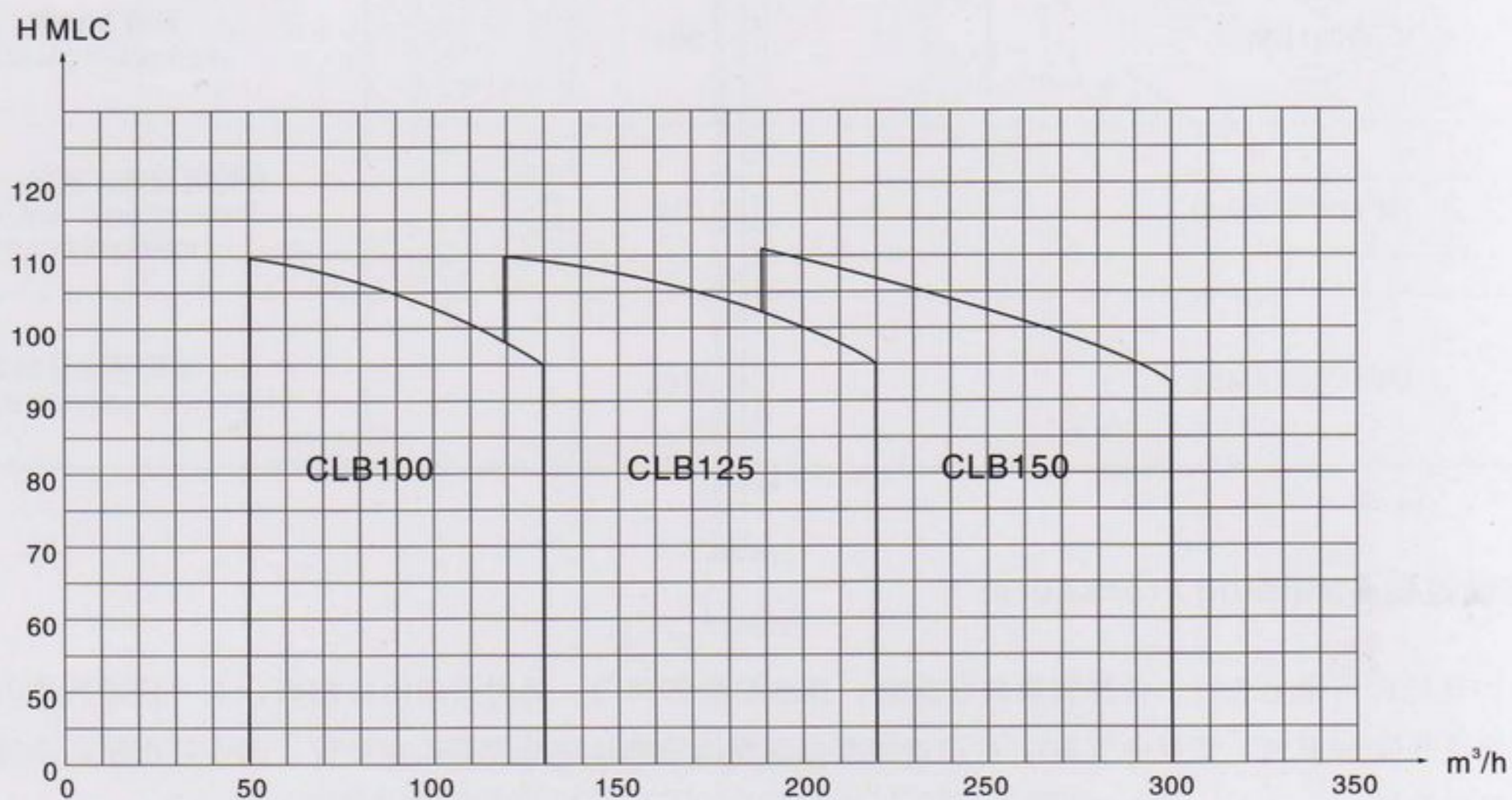
- Two-stage centrifugal pump, with high head
- Mechanical drive, less malfunction, easy maintenance
- Low cost for first total-investment
- Mechanical seal used for driving shaft's seal ensure the long life & the reliability of the seal
- According to different chemical properties of the liquid cargo, the pump's wetted parts can be made with material of different stainless steels separately----SS304, SS316 and SS316L
- Pilot is made of material from world famous brand, which can pump more than 190 kinds of chemicals.
- Inert gases can be used to clear the residuary cargo in cargo tank, economical and environmental
- Temperature sensor can be mounted, upon requested
- Seal-leakage sensor can be mounted, upon requested
- Suitable for small chemical tankers

### 三、应用 Application

主要应用在化学品船上，用于抽送各种酸、碱、盐类化学品溶液及酮、醇、醛类有机物溶液。

Mainly used in chemical tankers, for pumping various chemical solutions such as acid, alkali and salt solutions as well as solutions of organic compound such as ketone, ethanol and aldehyde solution

### 四、泵的型谱 Spectrum of Series and Models



CLB型电动深井货泵型谱  
Performance Range of Electric Deep Well Cargo Pump-CLB

## 五、泵的制造材料 Material

CLB型电动深井泵过流部件（如泵、连接管等）的制造材料应根据被输送介质的腐蚀性来选择，常用材料见下表：

The material of wetted parts of Electric Deep Well Cargo Pump—CLB such as pump and connecting pipe should be chosen according to the corrosiveness of the medium liquid to pump and often-used material is as follows:

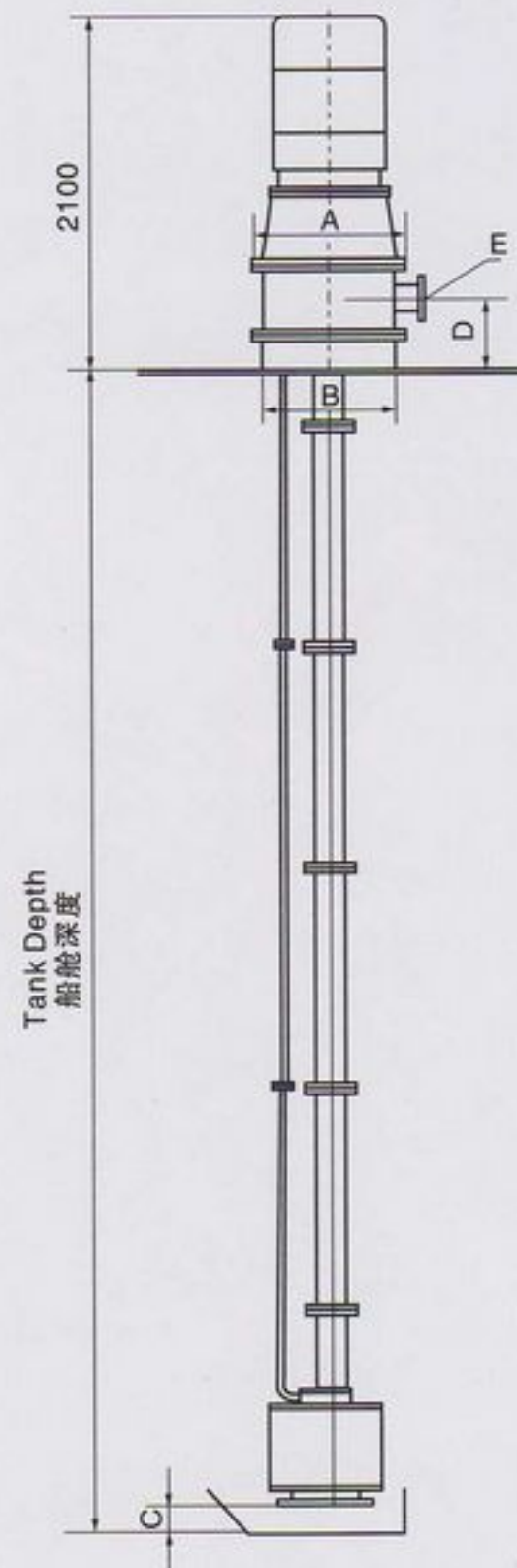
中国国家标准GB1221 National Standard of the People's Republic China	美国钢铁学会标准AISI American Iron and Steel Institute	应用 Aisiapplicatioin
OCr18Ni9	304	各种有机物、盐类 Various organics & salts
OCr17Ni12Mo2	316	各种有机物、弱酸、弱碱、盐类 Various organics, weak acids, mild bases and salts
OCr17Ni14Mo2	316L	中等腐蚀性的酸、碱 Moderate-erosion acids & alkalis

## 六、扫舱过程 Stripping Procedure

在抽送舱内货物见底时，保持货泵继续运转，开启扫舱管阀门，同时关闭出口蝶阀，从“扫舱气体入口处”输入一定压力的惰性气体(如氮气、低氧空气等)。可将连接管内剩留的货物从扫舱管排入主货管，使残留在舱底的货物最少,达到国际允许的残留标准。

When the liquid cargo in tanker is pumped out until the bottom of the tank, keep the pump running and open the valve for stripping pipe, meanwhile close the butterfly valve at outlet and introduce inert gases under some pressure from "intake of stripping gas" such as nitrogen or low-oxygen air. The residuary cargo in connecting pipe can be transferred into main cargo pipe via stripping pipe, as for the least residuary cargo in the cargo tank.

## 七、安装尺寸 Installation Dimension



CLB型电动深井货泵安装尺寸图  
Installation Dimension of Electric Deep Well Cargo Pump-CLB

型号 Model	A	B	C	D	E
CLB100	670	583	10	160	PN1.6DN100
CLB125	850	743	12	180	PN1.6DN125
CLB150	850	743	12	180	PN100DN150

## 八、订货注意事项 Order Information

- 1、确定泵的流量，扬程或压力。
- 2、确定泵所输送的货物名称，化学性质。
- 3、确定泵过流部件制造材质。
- 4、确定电机防爆等级。
- 5、确定甲板至舱底的深度。

1. Confirm the requirement for the pump's capacity, head or pressure
2. Confirm the name and chemical property of the liquid cargo to pump
3. Confirm the required material of wetted parts
4. Confirm the explosion-proof grade the electromotor
5. Confirm the distance from deck to cargo tank bottom