



诺果理念

诺必诚 行必果

工作方针

注重市场实际
建立合作沟通
加强技术开发
严格过程控制
争创一流品质

诺果产品

源于专业 精于品质

Our Idea

Promise Keeping
Achievement Reaching

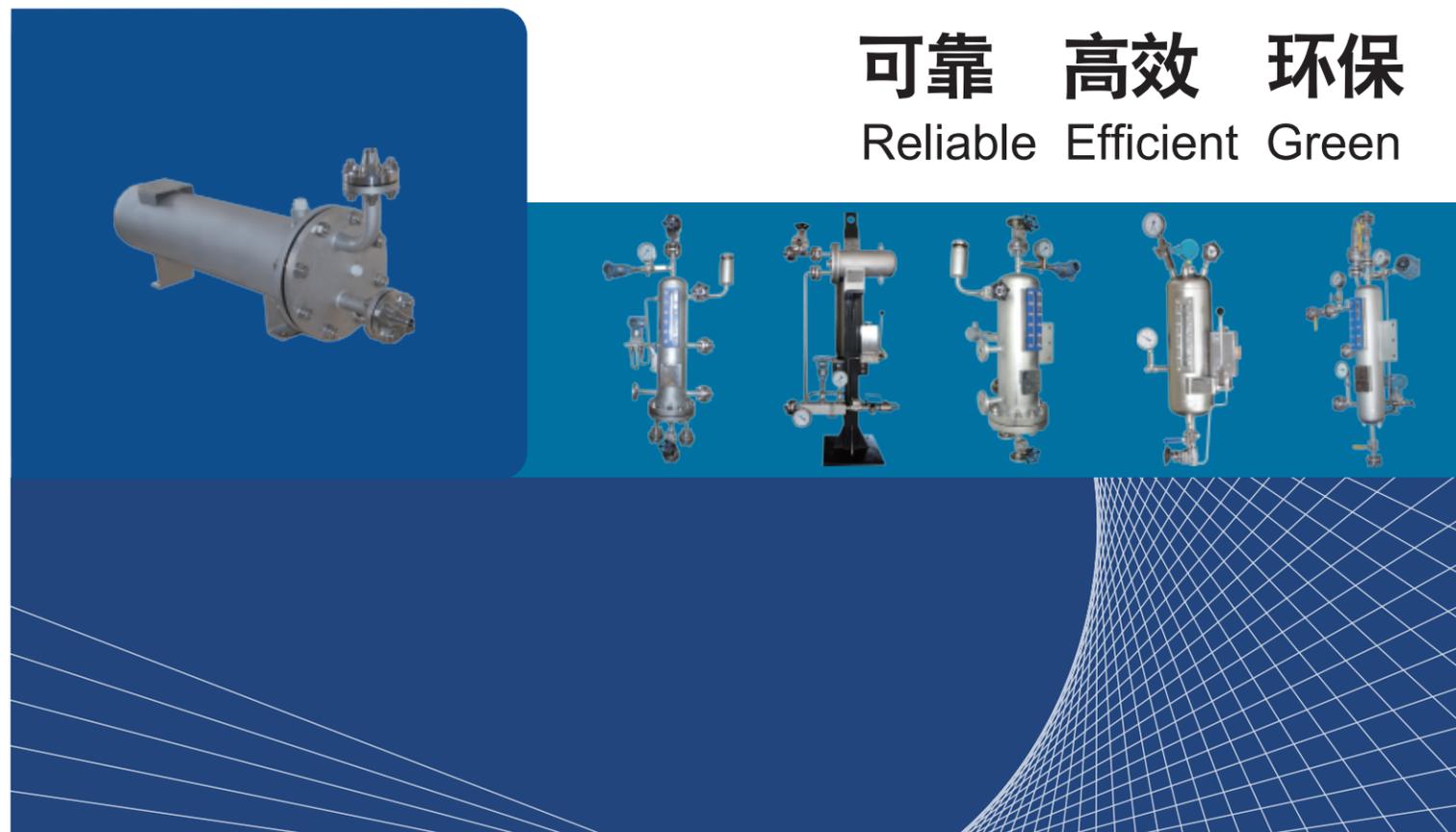
Our Policy

Marketing Orientation
Cooperation Communication
Strengthening Technology
Excellence Pursuing
Striving Quality

Our Produce

Origin from Professional
Perfect in Quality

可靠 高效 环保
Reliable Efficient Green



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上海诺果机电设备有限公司

Shanghai NuoGuo Mechanical & Electrical Equipment Co.Ltd.

公司简介 Summary

上海诺果机电设备有限公司是一家专业从事密封储液罐、相关周边设备及系统集成（API682标准）的高科技企业。通过了ISO9001认证；并完全按照TSG R0004固容规系统流程执行。公司产品可完全按照钢制压力容器《GB150-2011》和管壳式换热器《GB151-2012》中的相关标准生产，也可按照ASMEVIII的相关标准设计制造。

Shanghai NuoGuo Mechanical & Electrical Equipment Co. Ltd is a technical company which engages in manufacturing seal pot of API 682 standard and relevant equipment, getting the certificate of ISO 9001, the procedure of produce and manufacture conforms to TSG R0004 standard, develops and packages seal auxiliary system. We can provide production according to the requirements of «GB150-2011» for pressure vessels and «GB151-2012» for heat exchanger, production according to the relevant requirement with the standard of ASME VIII.

过程控制，关注细节，谨慎周密，不断改进，精益求精是公司的质量文化；诺必诚，行必果是公司的经营准则；奉献优质产品，竭诚为用户提升效益是我们的宗旨。

Strictly control the production process, attention to detail, meticulous care, continuous improvement, excellence is the company's quality culture; Promise Keeping, Achievement Reaching is company's management guidelines; dedication to high quality products, wholehearted to improvement of benefit for customer is our aim.

主要产品 The main products

1. NG-系列密封冲洗系统 NG series seal flush system
 - NG-PLAN52/53A-系列/Series
 - NG-PLAN53B-系列(水冷和空冷)/Series(Water Cooling and Air Cooling)
 - NG-PLAN53C-系列/Series
 - NG-PLAN54-系列/Series
 - NG-PLAN65-系列/Series 集液装置/Liquid Collection System
2. NGH-系列换热器 NGH series heat exchanger
3. NG-SYB-系列手动补液泵 NG-SYB series manual refill pump
4. NG-BYC-系列补液车 NG-BYC series refill trolley
5. NG-XF-系列旋风分离器 NG-XF series cyclone separator
6. NG-SJ-系列流动视镜 NG-SJ series flow glass

■ NG-PLAN52/53A-系列 NG-PLAN52/53A-Series

特点介绍 Features

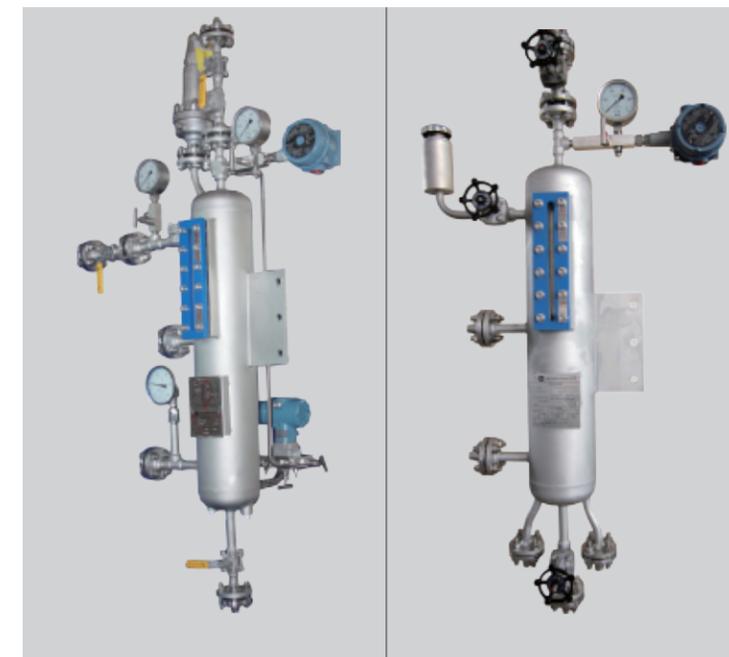
诺果公司NG-系列密封冲洗系统符合API682规范里所有的要求。其中储液罐按GB150-2011, GB151-2012标准设计、制造、试验和验收,设计压力达到4.2MPaG。该系列系统为双机械密封辅助系统的主要元件,其作用是储存缓冲/隔离液,为双机械密封提供缓冲/隔离液,导出由缓冲/隔离液传递出的密封腔热量,从而改善机械密封的工作环境,提高机械密封的可靠性和使用寿命,扩大机械密封的适用范围。该系统的储液罐内置换热盘管,采用模块化设计,结合相关配置(比如压力开关/压力变送器、液位开关/液位变送器、温度表、压力表、补液泵、安装支架等)应用范围广泛,可用作API682中Plan52缓冲液容器或Plan53A隔离液容器。

Nuoguo's NG series seal flush system meets the requirement of API 682 standard. The seal pot in the system is designed, manufactured, tested and inspected according to GB 10-2011, GB151-2012 standard, the maximum design pressure is 4.2 MPaG. This series system forms the main parts for the auxiliary system for dual seal, Its seal pot is used to buffer/barrier fluid, reduce the heat of seal chamber, and supply the buffer/barrier fluid for dual seal. Accordingly it can, improve the operating condition of mechanical seal, increase the reliability and life time of mechanical seal, extend the applicable range for seal. heat exchanger coil is located inside in the seal pot of system; Its modular design, and combination with other parts(such as pressure switch/pressure transmitter, level switch/ level transmitter, temperature gauge, pressure gauge, refilling pump, installation bracket, etc.) can reach a wide range of applications, either the buffer liquid seal pot of Plan52 or the barrier liquid seal pot of Plan53A.



NGC型储液罐有焊接的椭圆型封头和可拆卸的底部法兰(从而易于内部清洗)两种类型。包括双封头结构(G27型)、盘管可拆卸型(G28型)对外连接可选手法兰或螺纹接口。可以按照TSG R0004规定取压力容器许可证。

NGC type seal pot has two types, one is welded ellipse type head, the other is removable bottom flange(easy for internal cleaning). It includes dual heads(G27) and removable coil type(G28). The connections with user can be flange or thread.The pressure vessel certificate is available if required according to TSG R0004 standard



NG型密封冲洗系统具有如下优点
Advantage for NG Series Seal Flush System:

- 最大操作范围为4.2MPaG/200度,适用于一个大范围的操作条件
Operating range limits up to 4.2MPaG/200°C, suitable for a wide range of operating conditions
- 石英晶体液位视镜直观显示
Level visual display from level glass of quartz
- 模块化系统:配置灵活多样,API682 4TH版新规定要求变送器为默认配置。也可选配部件有压力报警开关、高/低液位报警开关、手动补液泵(或电动补液车)等;
Modular system: Configuration multiplicity, transmitter as default configuration in API 682-4th .Other selectable parts: pressure switch, high/low level switch, manual refill pump (or electric refill trolley), etc.
- 可拆卸型:采用盘管可拆卸的储液罐,提供最佳和最简单的容器内部清洁能力和方便盘管的清洗。
Removable flange type: using removable coil seal pot, best and easy to clean coils and interior of seal pot.

系统参数 System Parameters

	NG-P52-5gal		NG-P52-3gal		NG-P53A-5gal		NG-P53A-3gal		
	管程 /Tube	壳程 /Shell	管程 /Tube	壳程 /Shell	管程 /Tube	壳程 /Shell	管程 /Tube	壳程 /Shell	
应用/Application	轴径/Shaft Diameter ≥60mm		轴径/Shaft Diameter <60mm		轴径/Shaft Diameter ≥60mm		轴径/Shaft Diameter <60mm		
冷却盘管/Cooling Coil	有/Including		有/Including		有/Including		有/Including		
容积/Volume (L)	25		15		25		15		
壳程正常液位NLL容积 Volume at Normal LiquidLevel(L)	20		12		20		12		
冷却盘管容积 Coil Volume(L)	0.4		0.3		0.4		0.3		
换热能力/Heat Transfer (KW)	2.3		1.8		2.3		1.8		
允许温度/Allowable Temp.	95 C	200 C	95 C	200 C	95 C	200 C	95 C	200 C	
允许压力 Allowable Pressure(MPaG)	1.6	4.2	1.6	4.2	1.6	4.2	1.6	4.2	
需要的冷却水量/Required Cooling Water Capacity m3/h	0.7		0.4		0.7		0.4		
材料 Material	金属部件 Metal Parts	316SS/304SS		316SS/304SS		316SS/304SS		316SS/304SS	
	视镜主件/Main parts for sight glass	316SS/304SS		316SS/304SS		316SS/304SS		316SS/304SS	
重量/Weight(KG)	115		82		115		82		

功能描述 Function Description

NG-系列密封冲洗系统能实现双密封操作中缓冲/阻隔系统的所有基本功能
NG series seal flush system can realize all basic functions of dual seal barrier and buffer system

- 缓冲室加压 Chamber pressured
- 泄漏补偿 Leakage compensation
- 利用虹吸效果或强制循环系统实现缓冲/阻隔液体的循环
Using thermal syphon or forced circulation system to realize the circulation of buffer liquid and barrier liquid
- 密封系统的冷却 Cooling for seal flush system
- 产品泄漏的选择性吸收和防止空转（串联布置）
Selectivity absorption for product leakage and prevent dry running (tandem configuration)

Plan52当密封泄漏量达到或超过设定值时压力变送器发出高压报警，当液位低于或高于设定值时液位变送器报警连锁。
For Plan52, when the leakage of seal liquid reach or exceed the setting value, the pressure transmitter will send an alarm signal of higher pressure; when the liquid level lower higher signal will than be triggered the setting value, an alarm and interlock.

Plan53A使用压缩空气或氮气进行加压；加压由压力变送器（开关）监控。每当缓冲/阻隔液体太低时，液位变送器（液位开关）将发出信号。
For Plan53A, the seal flush system is pressured by compressed air or nitrogen. The pressure of system is monitored by transmitter (or switch). When the level of barrier liquid goes too low, the level transmitter (level switch) can send a signal.



■ NG-PLAN53B-系列(水冷、空冷) NG-Plan53B Series(Water Cooling, Air Cooling)

特点介绍 Features

Plan53B 系统为带压双端面密封提供冲洗液。预充压的气囊式蓄能器为循环系统提供压力，冲洗液由一个内部泵送环来维持，密封中产生的热量由水冷（或空冷）换热器带走。整个系统参照API682 G16型相关要求设计、制造、试验和验收；同时也能满足《GB150-2011》中的相关规定。其中空冷系统属我公司专利技术，专利号：ZL 2011 20342352.7

Plan53B can provide fluid for the outer seal of a pressurized dual seal. Pre-pressurized bladder accumulator provides pressure to the circulation system. Flow is maintained by an internal pumping ring. Heat is removed from the circulation system by an air-cooled or water-cooled heat exchanger. The whole system conforms API 682 G16 for design, manufacture, test and inspection, also meet the relevant requirement of GB150-2011. The air cooled system is our patent product. The patent number is ZL 2011 20342352.7

系统参数 System Parameters

参考型号/Type	NG-P53B/G16-5gal(3gal/5gal/10gal)
蓄能器容积 Accumulator Volume (L)	10/20/30/50(可选 for options)
允许温度 Allowable Temperature	正常/Normal: -15 C ~ 75 C ; 可按特殊要求供货/Supply for special requirements.
允许压力 Allowable Pressure	4.2MpaG(标准设计 Standard design); 6.4MpaG(特殊设计 Special design)
冷却方式/Cooling	水冷换热器或空冷换热器/Water Cooler or Air Cooler
水冷换热器换热面积 Area of Water Cooler	0.2m ² 、0.35m ²
空冷换热器冷量 Capacity of Air Cooler	1kW、2kW 翅片式/Fin type
可包含仪表 Option for instruments	压力变送器（开关）、温度表、压力表等 Pressure Transmitter (switch), Temp. Gauge, Pressure Gauge, etc.
补液方式 Refilling type	手动补液泵、移动补液车 Manual filling pump, Mobile filling trolley

密封腔压力、系统运行压力与预充气体压力之间的关系

Relationship for seal chamber pressure, system operation pressure and pre-charge pressure of accumulator

密封腔大致压力 Seal Chamber Pressure(P1)Bar	系统运行压力 System operation Pressure(P2)Bar
由机封厂确定 /By Seal vendor	P1 x 110% or P1 + 2Bar
蓄能器预充气体压力（皮囊式） Pre-charge pressure for bladder accumulator(P3)Bar	压力开关设定压力 Setting value for pressure switch(P4) Bar
= P2 x 85%	= P2最小值 Min

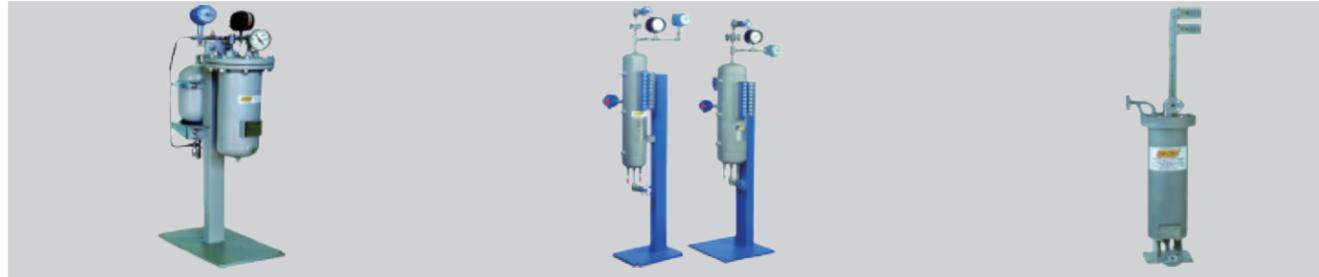


优点及应用 Advantage and Application

- 系统压力由皮囊式蓄能器形成。
Pressurization is by means of a pre-loaded bladder accumulator.
- 氮气通过皮囊式蓄能器的隔膜与隔离液分开。氮气不能直接进入隔离液或工艺介质。
The nitrogen is separated from the barrier medium by membranes in the accumulator nitrogen cannot get into the barrier medium or process medium.
- 隔离液压力的建立不需要连接氮气口。
Barrier pressure is created without any need for connecting to a nitrogen supply.
- 系统部件和仪表应用灵活。
Combination with a wide range of system components / instruments possible.
- 系统可用于石油、化工、油气、冶炼等工业。
Recommended application for Petrochemical, Chemical, Oil and Gas, Refining.

■ NG-PLAN53C-系列 NG-Plan53C Series

Plan53C 系统为带压双端面密封提供冲洗液。利用活塞式蓄能器为循环系统提供压力，冲洗液由一个内部泵送环来维持，密封中产生的热量由水冷（或空冷）换热器带走。整个系统参照API682G17型相关要求设计、制造、试验和验收。

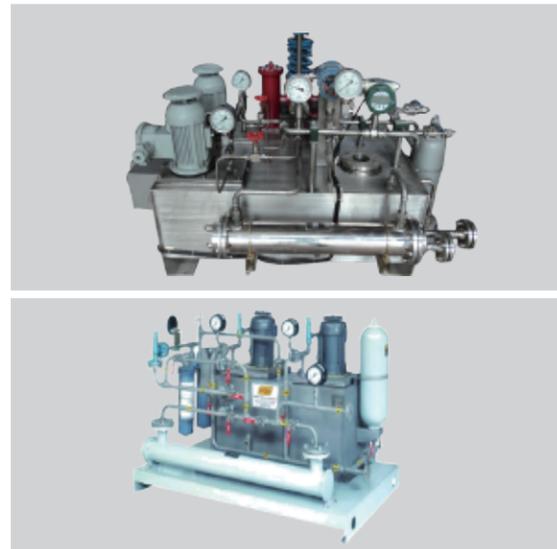


Plan53C can provide fluid for the outer seal of a pressurized dual seal. A piston type accumulator provides pressure to the circulation system. Flow is maintained by an internal pumping ring. Heat is removed from the circulation system by an air-cooled or water-cooled heat exchanger. The whole system refers to API 682 G17 for design, manufacture, test and inspection.

■ NG-PLAN54-系列 NG-Plan54 Series

Plan54系统是利用一个外部带压系统（通常为油站系统）为双端面密封提供干净的冲洗液。冲洗液的循环通过外部压力系统来维持。外部系统压力应比内部密封压力高至少1.4Bar。Plan54油站系统比传统的Plan53系统具有更大的流量和热传递能力。油站系统主要包括油箱、油泵、油冷却器、油过滤器、温度压力等仪表、阀门管件等。标准的容积有10加仑、20加仑、30加仑，流量从0.4m³/h到1.2m³/h，压力可达200Bar。

Plan54 system utilizes a external pressurized system (Normally is seal oil system) feed clean fluid to the dual seal. Circulation is by pressure system. The pressure of external system is maintained at least 1.4Bar greater than the process pressure being sealed. Seal oil system of API 682 Plan54 will provide flow and heat removal capabilities better than a traditional Plan53 system. Seal oil system includes oil reservoir, oil pump, oil cooler, oil filter, instrument of temperature and pressure, valve and pipe, etc. The standard volume series have 10 Gallon, 20 Gallon, 30 Gallon with flows ranging from 0.4m³/h up to 1.2m³/h and pressure to 200Bar.



■ NG-PLAN65-系列 集液装置 NG-Plan65 Series Liquid Collection System

Plan65系统是一个检测机械密封泄漏的集液系统。主要用于单端面机械密封且泄漏的是液体的泵。系统中包含集液罐，浮球液位开关，孔板，管路等。

Plan65 system is a liquid collection system that can measure leakage of mechanical seal. It is used for the pumps equipped with single seal where seal leakage is expected to be liquid(no gas). The system includes liquid collection reservoir, float liquid switch, orifice, pipe, etc.

■ NGH型换热器介绍 NGH type heat exchanger 特点介绍 Features

NGH型换热器主要用于在密封循环中冷却密封冲洗液或者隔离液来达到减少密封运行温度的作用。NGH型换热器主要有立式和卧式两种安装形式及八种不同规格可供选择，且能满足API682要求。冲洗液或者隔离液走管程（或走壳程），而冷却水走壳程（或走管程）。

NGH type heat exchanger is used for cooling the flush liquid in the mechanical seal circulation to reduce the temperature of mechanical seal operating temperature. NGH type heat exchanger has two installation type (vertical and horizontal) and eight different models, and meet the requirement of API 682. The flush liquid or barrier liquid through the tube (or shell) and the cooling water through the shell (or tube).

在壳体侧，能有效地对于冷却水进行排液或者排气，且可加装排气和排液阀。对于管程内的冲洗液或者隔离液，也可在非使用状态下进行有效地排液，当卧式安装时，可实现自动排液（符合API682规定的低点排放要求）。易于安装和维修。

In shell side, the cooling water can be efficiently drained or vented, the valve can be installed for venting and drainage. For flush liquid or barrier liquid in the tube, it also can be efficiently drained in idle condition. For horizontal installation of heat exchanger, the liquid can be automatic drained (meet the low-point drainage requirement of API 682), easy for installation and maintenance.

另外，可按API682要求，选择使用温度仪表（温度表或温度变送器）来对冷却后的冲洗液的温度进行监控。

In addition, according to the requirement of API 682, the heat exchangers can also be combined with a temperature instrument (temperature gauge or temperature transmitter) to monitor the temperature of cooled flush liquid.

NGH型换热器可用于API 682/ISO21049中的Plan21, Plan23, 和Plan53B中的水冷换热器。

NGH type heat exchanger is used for Plan 21, Plan23 and water cooler of Plan 53B of API 682/ISO21049.

NGH型换热器具有如下优点/NGH type heat exchanger's advantage:

- 操作范围：6.4MPaG/320度（管程），适用于一个大范围的操作条件
Operating range: 6.4MPaG/320°C (Tube); Suitable for a wide range of operating conditions.
- 换热器可以拆卸：管程清洗简便
Heat exchanger can be dismantled: simply and convenient cleaning of the tubes.
- 冷却水侧和工艺介质侧可完全排气和排液。
Cooling water side and process side can be completely vented and drained.
- 304/316L不锈钢材质：具有高耐腐蚀性
304/316L stainless steel: high resistance to corrosive media.

系统参数A System Parameters

卧式安装换热器 Horizontal installation heat exchanger						
NGH-P23/21W						
	管程 Tube	壳程 Shell	管程 Tube	壳程 Shell	管程 Tube	壳程 Shell
应用 Application	轴径Shaft diameter ≥60mm		轴径Shaft diameter <60mm		Plan53B中换热器 Water Cooler of Plan53B	
设计温度 Design Temperature	320 C	120 C	320 C	120 C	320 C	120 C
设计压力(MPaG) Design Pressure	6.4	1.6	6.4	1.6	6.4	1.6
换热面积(m ²) Heat Exchanger Area	0.75(Ø22X2.5)		0.6(Ø22X2.5)		0.35(Ø22X2.5)	
材料 Material	金属部件 Metal Parts	304SS /316L	304SS	304SS /316L	304SS /316L	304SS
	螺栓Bolts	304SS	304SS	304SS	304SS	304SS
	密封圈 O-ring	金属缠绕垫/Spiral-wound metal gasket				
可选配部件 Option parts	排气阀、排液阀、温度表 Vent valve, drain valve, temp. gauge					



系统参数B System Parameters

立式安装换热器 Vertical installation heat exchanger						
NGH-P23/21L						
	管程 Tube	壳程 Shell	管程 Tube	壳程 Shell	管程 Tube	壳程 Shell
应用 Application	轴径Shaft diameter ≥60mm		轴径Shaft diameter <60mm		Plan53B中换热器 Water Cooler of Plan53B	
设计温度 Design Temperature	320 C	120 C	320 C	120 C	320 C	120 C
设计压力(MPaG) Design Pressure	6.4	1.6	6.4	1.6	6.4	1.6
换热面积(m ²) Heat Exchanger Area	0.8(Ø14X1.5)		0.6(Ø14X1.5)		0.4(Ø14X1.5)	
材料 Material	金属部件 Metal Parts	304SS /316L	304SS	304SS /316L	304SS /316L	304SS
	螺栓Bolts	304SS	304SS	304SS	304SS	304SS
	密封圈 O-ring	金属缠绕垫/Spiral-wound metal gasket				
可选配部件 Option parts	排气阀、排液阀、温度表 Vent valve, drain valve, temp. gauge					



■ NG-SYB-系列手动补液泵 NG-SYB series manual refill pump

NG-SYB系列手动补液泵的工作原理是通过手柄的运动带动活塞运动，将低压润滑油转变为高压油输送到需要的地方
SYB系列手动补液泵有手柄、活塞、低压单向阀、高压单向阀、油箱等组成。
NG-SYB series manual refill pump is driven by the movement of handle. The low pressure lubrication oil is boosted to high pressure lubrication oil and pumped to the required place. SYB series manual refill pump includes handle, piston, low pressure check valve, high pressure check valve, oil tank, etc.

性能参数 Performance Parameters

- 油箱容积/Oil Tank Volume: 2L;
- 使用压力/Operating Pressure: 5MPa;
- 活塞行程/Piston Distance: 25mm;
- 注油量/Refill Volume: 12ml/one.



■ NG-BYC-系列补液车 NG-BYC Refill Trolley

NG-BYC 系列补液车可以在不停泵或不希望气体排到空气中时对储罐进行补液。
NG-BYC series refill trolley can refill your supply tanks without interrupting operation or venting unwanted gases to atmosphere.

性能参数 Performance Parameters

初次加液，压力可达到103bar。
Capable of injecting new barrier fluid into the supply tank at pressure up to 103bar.



■ NG-XF-系列旋风分离器 NG-XF series cyclone separator

NG-XF系列旋风分离器可以用来清洁悬浮液中的杂质和颗粒，将分离后的洁净液体注入密封工作区域或其他需要的场合。
NG-XF series cyclone separator can be used to separate the impurities and particles from suspended liquid. And the separated clean liquid will be injected into mechanical seal or other needed place.

设计特点 Characteristic

- 1、符合JB/T 6633-1993标准/According to JB/T 6633-1993 standard;
- 2、螺纹连接（法兰连接可选）/Connection: NPT(flange for option);
- 3、O型圈材料：氟橡胶。/O-ring material: Viton.

性能参数 Performance Parameters

- 1、设计压力/Design Pressure: ≤12MPa
- 2、设计温度/Design Temperature: ≤450℃
- 3、材质/Material: 304SS or 316SS



■ NG-SJ-系列流动视镜 NG-SJ series flow glass

NG-SJ系列流动视镜的阀体是采用不锈钢制造，视窗采用无碱铝硅酸盐特种工业玻璃。结构简单、安装方便、视窗清晰不粘垢，具有耐高温、耐压、化学稳定性好、钢化强度高、透明度好等特点。广泛应用于石化、电力、化工、液压等行业的腐蚀性介质流程管线上，以及各类机器的冷却水管路上。

NG-SJ series flow glass, with valve body of stainless steel and glass window of alkali aluminosilicate glass. is of simple structure, easy installation, non-stick window, with the temperature, pressure, chemical stability, high strength steel, good transparency. Widely used in corrosion liquid's pipeline of petrochemical, power, chemical, hydraulic medium industries, and used in the cooling water pipe of machine.

性能参数 Performance Parameters

- 1、使用压力/Operating Pressure: <1.6MPa;
- 2、使用温度/Operating Temperature: 100℃.
- 3、联接尺寸(螺纹) /Connect: 3/8" 1/2" 3/4" 1"

用户须知 User instructions

- 用户收到产品时，应及时对产品进行验收，与装箱单及安装示意图对照、校对，然后按照原来包装方式放入包装箱内。安装时应小心轻放，不得损伤仪表、仪器及容器壁。

When user receives a product of seal pot, it is timely to check the product, with packing list and installation diagram, and then put the seal pot into the box according to original packaging. It should be handled with care during installation, to avoid any damage of instruments, equipment, and vessel wall.

- 对运行的储罐，要定期打开排尽口排泄适当液体，以冲出储罐内沉积的杂质。

Periodically open the drainage to flush out any residues inside the pot.

- 要定期巡视运行的储罐的工作状况，观察管路是否泄漏，并即时补液，随时观察温度。

Conduct regularly the work status of seal pot to observe whether the pipeline leaks, and re-fill timely, and observe the temperature of liquid at any moment.

售后服务 After service

本产品在使用过程中如出现问题，应及时通知本公司。我们将在24小时内提出具体解决方案。如属产品质量问题，我们将免费维修或退换，直至产品达到规定要求，用户满意。

If you have any question for seal pot during use, please contact our company in time. Our service engineer will be available within 24 hours. In the case of product quality problems, our company will repair or replace free of charge until the products meet the requirements to satisfy the customer.

订货须知 Ordering Information

订货时须注明产品完整型号、容积、材质及配置界限，注明附件的供应商。

例： NGC-P52/G27-3GAL(全配)

表示： 一个plan52方案12L， 304SS材质的密封储液罐（全配）

When ordering, the following information for seal pot shall be marked in the order list: complete type, volume, material and supply scope. If special sub-vendor for auxiliary equipments is needed, please mark in the table.

For Example: NGC-12L/P52-304 (complete configuration)

Meaning: one seal pot for plan 52, 12L volume, 304SS material (complete configuration)



订货清单 Orders

项目/Project	参数/Parameter
型号/Type	NG-P52/G27-3GAL
容积/Volume(L)	12L(3gal)
压力/Pressure	4.2MPa
API冲洗方案/API Flush Plan	PLAN52
法兰标准/Flange Standard	ANSI B16.5
液位开关/Level Switch	SOR
压力开关/Pressure Switch	UE
加液方式/Re-filling Type	手动补液泵/Manual refill pump
压力表/Pressure gauge	VIKA
Plan53A 压力源/Pressure resource	N2
备注/Remark	表面喷砂或抛光/Blasting or polishing the surface

交工资料 Delivery Documents

- 系统总图/General Drawing
- 水压试验报告/Hydraulic Test Report
- 系统运行试验报告/System Performance Test Report
- 材质报告/Material Certificate and Report
- 仪表相关资料/Instrumentation Documents
- 系统合格证/System Certificate

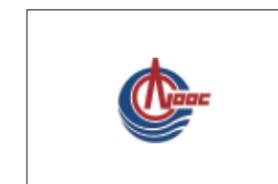
应用业绩 Case



SINOPEC



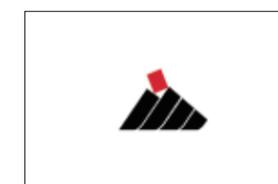
CNPC



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CHEMCHINA



CSCLSC



SXYCPC