

# CYSC107A 系列 15PPM 舱底水分离器

CYSC107A Series 15ppm Bilge Separator

## 使用说明书 Operation Instructions



武汉金鼎机电设备有限公司

Wuhan Jinding Machinery & Electrical Equipment Co.Ltd





目 录

一、概述.....2

二、制造及验收规范.....2

三、产品型号及代码.....3

四、主要技术参数 .....3

五、工作原理及接口规格 .....4

六、安装说明 .....5

七、操作说明 .....6

八、故障及处理方法.....7

九、维护与保养方法.....8

十、售后服务 .....9



## 一、概述/ Overview

CYSC107A系列15PPM舱底水分离器是根据IMO-MEPC107(49)规定研制的一种新型能分离乳化油的油水分离装置。

*CYSC107A series 15PPM bilge water separator is a new oil-water separation device developed according to IMO-MEPC107(49) regulations that can separate emulsified oil.*

该装置广泛用于船舶舱底水及港口、码头、工矿企业含油污水(乳化油)的处理。处理后的水质符合IMO-MEPC107(49)排放的规定。

*The device is widely used in the treatment of ship bilge water and oily sewage (emulsion oil) in ports, docks, industrial and mining enterprises. The treated water quality meets the IMO-MEPC107(49) discharge regulations.*

本装置由一级分离、二级分离、超滤分离、往复泵组、电控箱、15PPM舱底水报警装置和电磁阀等附件组成。处理范围从 $0.1\text{m}^3/\text{h}$ ~  $5.0\text{m}^3/\text{h}$ 共八种规格可供选择，结构形式可选配单筒或者双筒。

*The device consists of primary separation, secondary separation, ultrafiltration separation, reciprocating pump set, electric control box, 15PPM bilge water alarm device and electromagnetic valve and other accessories. The treatment range is from  $0.1\text{m}^3/\text{h}$  to  $5.0\text{m}^3/\text{h}$ , a total of eight specifications are available, and the structure can be selected with single or double cylinders.*

设备采用PLC控制，自动化程度高，自动/手动加热、自动排油、自动报警、自动记录、自动反冲洗，符合无人机舱要求。本装置在同规格产品中体积最小，重量最轻，功能最齐全。同时具备操作简单，滤芯自动反冲洗不堵塞，长期使用不需要更换等优点。

*The equipment is controlled by PLC, with a high degree of automation, automatic/manual heating, automatic oil discharge, automatic alarm, automatic*



*recording, automatic backwashing, and meets the requirements of the drone cabin. This device has the smallest volume, the lightest weight and the most complete functions among the products of the same specification. At the same time, it has the advantages of simple operation, automatic backwashing of the filter element without clogging, and no need to be replaced for long-term use.*

## 二、制造及验收规范/ *Manufacturing and Acceptance Specifications*

本说明书适用于本公司产品CYSC107A系列15ppm舱底水分离器的设计、制造、试验、验收和交付，是设备订货合同的附件。

*This manual is applicable to the design, manufacture, test, acceptance and delivery of the company's product CYSC107A series 15ppm bilge water separator, and is an attachment to the equipment order contract.*

设备设计、制造、试验和验收依据的规范、标准及相关文件按以下执行：

*The specifications, standards and related documents based on equipment design, manufacture, test and acceptance shall be implemented as follows:*

①国际海事组织环保会决议 MEPC.107（49）《修订的船舶机器处所舱底水防污染设备指南和技术条件》

*IMO Environmental Protection Council Resolution MEPC.107 (49) "Revised Guidelines and Technical Requirements for Bilge Water Pollution Prevention Equipment in Ship Machinery Spaces"*

②中华人民共和国海事局《国内航行海船法定检验技术规则》（2020）及修改通报第5篇第2章



*The Maritime Safety Administration of the People's Republic of China "Technical Regulations for Statutory Surveys of Sea-going Vessels in Domestic Voyages" (2020) and Amendment Bulletin, Chapter 2, Part 5*

③中华人民共和国海事局《内河船舶法定检验技术规则》（2019）及修改通报第7篇第2章

*The Maritime Safety Administration of the People's Republic of China "Technical Regulations for Statutory Inspection of Inland Water Vessels" (2019) and its amendments, Chapter 2, Chapter 7*

④ GB/T3181-1995 《漆膜颜色标准》

*GB/T3181-1995 "Color Standard of Paint Film"*

⑤ISO9001:2015 质量管理体系

*ISO9001:2015 Quality Management System*

⑥符合（IMO）MSC.282（86）决议关于航行船舶禁止使用石棉材料的决议。

*Compliant with (IMO) MSC.282 (86) resolution on the prohibition of the use of asbestos materials on sailing ships.*

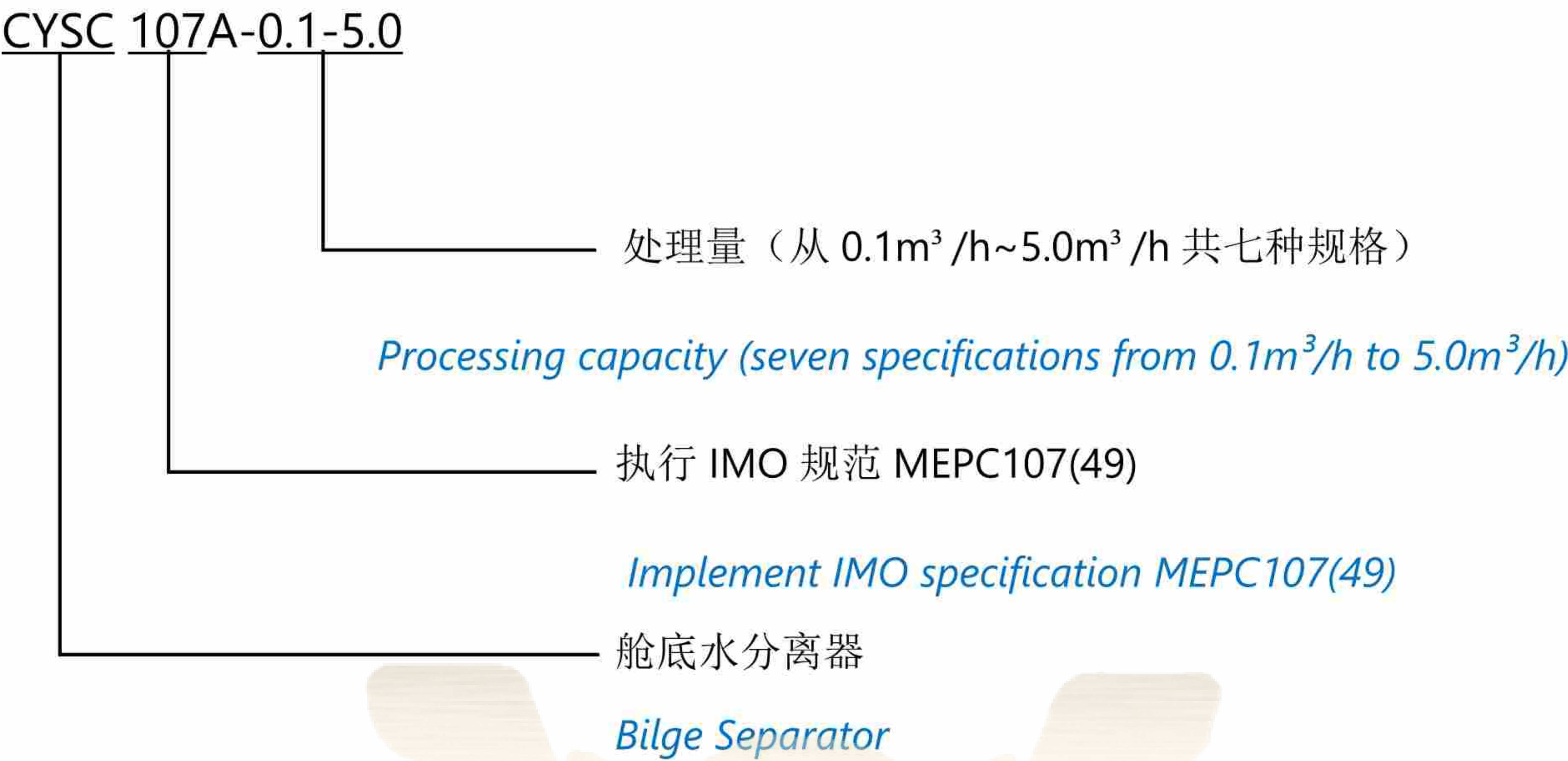
⑦ CB/I-324-94 《船用配电控制设备制造工艺》

*CB/I-324-94 "Manufacturing process of marine power distribution control equipment"*





三、产品型号及代码/ *Product model and code*



四、主要技术参数/ *The main technical parameters*

CYSC107A 系列 15PPm 舱底水分离器主要性能规格参数表

*CYSC107A series 15PPm bilge water separator main performance specification parameter table*

型号规格 <i>Model Specifications</i>	CYSC107A-0.1	CYSC107A-0.25	CYSC107A-0.5	CYSC107A-1.0	CYSC107A-2.0	CYSC107A-3.0	CYSC107A-5.0
处理量 m³/h <i>Processing capacity m³/h</i>	0.1	0.25	0.5	1.0	2.0	3.0	5.0
排放标准 <i>Emission Standards</i>	<15ppm						
设计压力 <i>design pressure</i>	0.2MPa						
工作压力 <i>work pressure</i>	<0.16MPa						
安全阀启跳压力 <i>Safety valve tripping pressure</i>	0.18~0.19MPa						
排油方式 <i>Oil discharge method</i>	自动或手动 ( <i>automatic or manual</i> )						
电加热 <i>Electric heating</i>	/		1kw		2kw		3kw
往复泵 往复泵	DZ-0.1	DZ-0.25	DZ-0.5	DZ-1.0	DZ-2.0	DZ-3.0	DZ-5.0





组 <i>Reciprocating pump set</i>	<i>reciprocating pump</i>						
	电机功率 <i>Motor Power</i>	0.18kw	0.37kw		0.55kw	0.75kw	1.1kw
泵吸入高度 <i>pump suction height</i>		≤6m					
电机转速 <i>Motor speed</i>		1400r/min	960r/min				
电制 <i>Electric system</i>		AC 380V/50HZ 3 φ  或 AC 440V/60HZ 3 φ  或三相 AC 220V/50HZ 3 φ					
外形尺寸 长×宽×高 <i>Dimensions</i> L×W×H		900×600×1250	950×600×1250	950×630×1250	1250×700×1450	1450×800×1800	1650×1050×1950 1650×1050×2200

五、工作原理及接口规格/ *Working principle and interface specifications*

①工作流程/ *work process*

舱底水通过外接底阀进入专用泵再注入一级分离器，小颗粒油滴聚积并与水分离，上浮至集油室，当油聚积到一定程度，油位检测装置就会发出信号，使排油电磁阀开启排油。

*The bilge water enters the special pump through the external bottom valve and then is injected into the first-stage separator. The small oil droplets accumulate and separate from the water, and float up to the oil collecting chamber. When the oil accumulates to a certain extent, the oil level detection device will send a signal to make The oil drain solenoid valve opens the oil drain.*

经过一级分离处理的水自动进入二级分离器。二级分离器的滤芯使水中残余的油再次聚积，通过油位检测装置发出信号，使二级排油电磁阀开启排油。

*The water after the primary separation treatment automatically enters the secondary separator. The filter element of the secondary separator makes the residual oil in the water accumulate again, and sends a signal through the oil level detection device*



*to make the secondary oil drain solenoid valve open to drain the oil.*

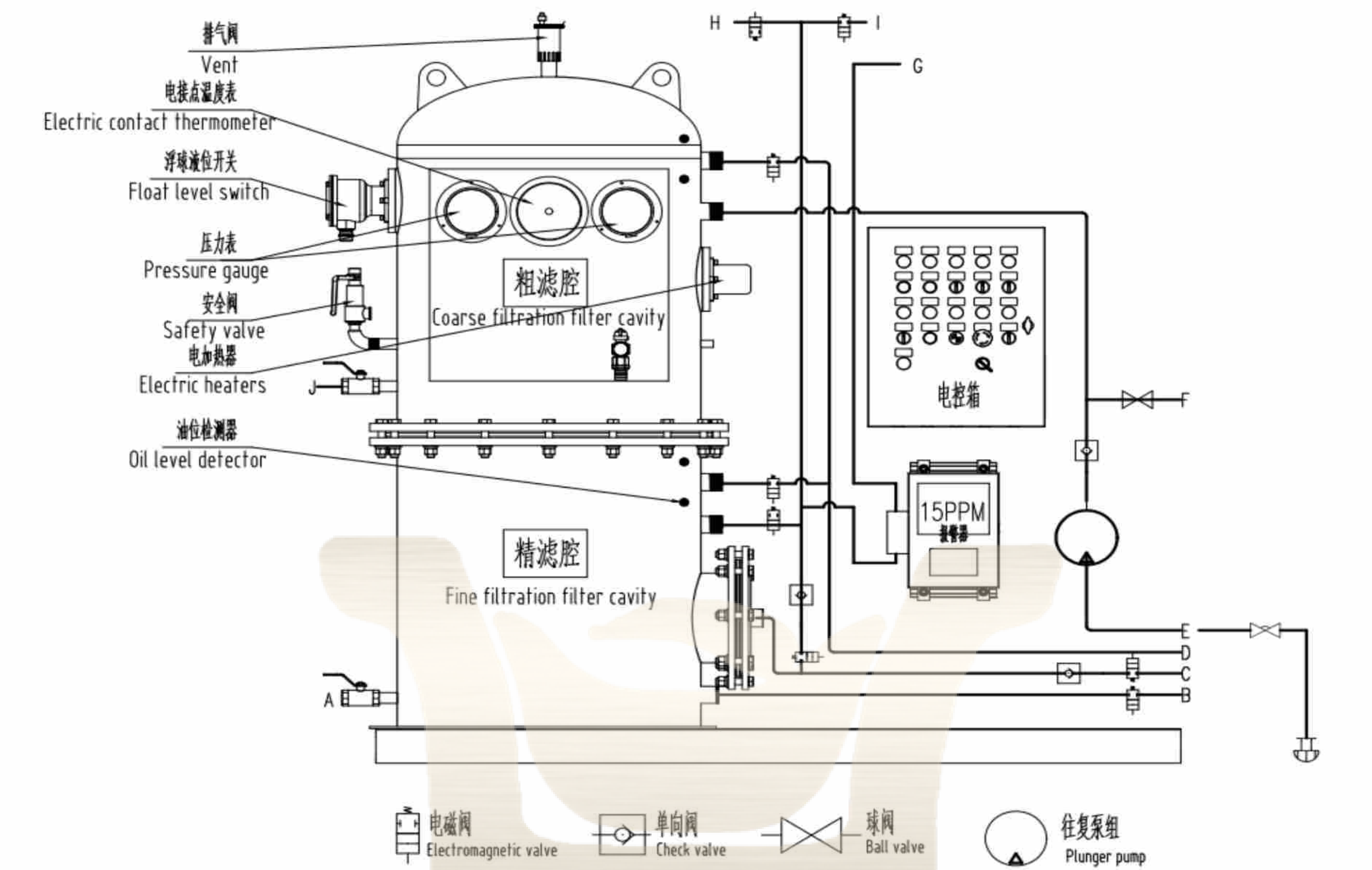
经过二级分离的达标水通过常开电磁阀排至舷外。当排放水含油量超标时，不达标水自动进入超滤器。舱底水经超滤器处理后如排放水含油量达标，则达标水经电磁阀排至舷外；如排放水含油量仍然不达标，则超标水经电磁阀流回舱底。自动反冲洗能使各级分离器具有恢复功能。在温度较低，当舱底水含重油时，具有防干烧的电加热装置可以使其粘度降低，使其更容易分离。

*The water up to the standard after the secondary separation is discharged to the overboard through the normally open solenoid valve. When the oil content of the discharge water exceeds the standard, the water that does not meet the standard automatically enters the ultrafilter. After the bilge water is treated by the ultrafilter, if the oil content of the discharged water reaches the standard, the water that meets the standard will be discharged to the outside of the string through the solenoid valve; if the oil content of the discharged water still does not meet the standard, the excess water will flow back to the bilge through the solenoid valve. Automatic backwashing can make all levels of separators have a recovery function. At lower temperatures, when the bilge water contains heavy oil, the electric heating device with anti-dry burning can reduce its viscosity and make it easier to separate.*

②工作原理图/ *Working principle diagram*



CYSC107A系列15PPM舱底水分离器系统原理图（安装图）  
CYSC107A Series 15PPM Bilge Separator system



③接口尺寸/ Connection size

接口 interface	A	B	C	D	E	F	G	H	I	J
	清洗水手动回舱 Wash water back	清洗水自动回舱 Wash water back	反冲洗水入口 Backwash water inlet	排油口 oil drain	舱底水入口 bilge water inlet	清水 Shimizu	报警器回舱 Alarm back to cabin	不达标回舱水 Substandard return tank water	达标排放水 Standard discharge water	清洗水回舱 Wash water back to tank
规格 Specification	CYSC107A-0.1									
	CYSC107A-0.25	G1/2"	G1/2"	G1/2"	G1/2"	G1/2"	φ 8	G1/2"	G1/2"	G1/2"
	CYSC107A-0.5									
	CYSC107A-1.0	G1/2"	G1"	G1/2"	G1"	G1"	φ 8	G1"	G1"	G1/2"
	CYSC107A-2.0	G1"	G1 1/4"	G1/2"	G1 1/4"	G1 1/4"	φ 8	G1 1/4"	G1 1/4"	G1"
	CYSC107A-3.0									
	CYSC107A-5.0	G1"	G1 1/2"	G1"	G1 1/2"	G1 1/2"	φ 8	G1 1/2"	G1 1/2"	G1"



## 六、安装说明/ *Installation Notes*

### (一) 安装要求/ *installation requirements*

A、选择安装位置时，必须按照装置的最大尺寸，在前方和顶部留出足够位置，以便维修和更换零件。

*When choosing a mounting location, it is necessary to allow sufficient space at the front and top of the unit for servicing and replacement of parts according to the largest size of the unit.*

B、装置安装要牢固，进出管路均要加以固定，防止震动。

*The installation of the device should be firm, and the inlet and outlet pipelines should be fixed to prevent vibration.*

C、从舱底油污水至泵吸口的吸入管段的长度尽可能短，要密封，不得有漏泄现象。

*The length of the suction pipe section from the bilge oily sewage to the pump suction port should be as short as possible, and it should be sealed without leakage.*

D、管系和电路均按要求安装。

*Piping and circuits are installed as required.*

E、排油管路越短越好，排油箱最好放于低处承接污油。

*The shorter the oil discharge pipeline, the better, and the oil discharge tank is best placed at a low place to receive the dirty oil.*

F、所有电磁阀均要水平安装。

*All solenoid valves are to be installed horizontally.*

G、进入过滤器的压力水应保证0.3mpa的压力。

*The pressure water entering the filter should ensure a pressure of 0.3mpa.*



H、海底阀的安装见首页使用特别提示。

*For the installation of the subsea valve, see the special instructions on the first page.*

(二) 排水管的安装原则/ *Installation principle of drain pipe*

A、排水管的出水点应高于排污油点1米以上，以保证有足够的排油背压。（见装置系统原理图）

*The water outlet point of the drain pipe should be more than 1 meter above the oil discharge point to ensure sufficient back pressure for oil discharge. (See device system schematic diagram)*

B、如果舷旁排水口与排油口在0.5米和1米之间，则应在其高位装设大于120毫米的透气管，以其产生背压。（见装置系统原理图）

*If the side discharge port and the oil discharge port are between 0.5m and 1m, a vent pipe larger than 120mm should be installed at its height to generate back pressure. (See device system schematic diagram)*

(三) 其它要求/ *other request*

A、为了在首次使用时灌注清水和维修清洗用，应安装清水管或海水管。

*In order to fill with clean water and for maintenance and cleaning when it is used for the first time, a clean water pipe or a sea water pipe should be installed.*

B、为了达到清洗效果，反冲洗水要带有0.3MPa的压力，清洗水最好为热水。

*In order to achieve the cleaning effect, the backwash water should have a pressure of 0.3MPa, and the cleaning water should preferably be hot water.*

C、为了便于预过滤器的维修保养，可将其放于钢板上，海底阀放入舱底，用管路



连接，要密封无漏泄。

*In order to facilitate the maintenance of the pre-filter, it can be placed on the steel plate, and the subsea valve can be placed in the bilge, connected with pipelines, and must be sealed without leakage.*

D、对于泥沙较多的环境（如挖泥船的机舱和泵舱）海底阀还适当提高，以减少分离器的保养工作量。

*For environments with more sediment (such as the engine room and pump room of dredgers), the subsea valve is also appropriately increased to reduce the maintenance workload of the separator.*

## 七、操作说明/ *Instructions*

### （一）使用前准备/ *Preparation before use*

A、安装完毕后，首先检查一下，各部位是否按要求安装到位，泵的管系部位是否漏泄，电源是否接通。

*After the installation is completed, first check whether all parts are installed in place according to the requirements, whether the piping parts of the pump are leaking, and whether the power supply is connected.*

B、启动前，首先将分离器注满清水（海水），具体操作程序：1、关闭控制箱的电源开关。2、打开各腔的手动验油阀，使装置内空气排出，直至旋塞出水后，逐腔依次分别关闭。3、关闭注水阀。

*Before starting, first fill the separator with clean water (sea water). The specific operation procedures: 1. Turn off the power switch of the control box. 2. Open the manual*



*oil inspection valve of each cavity, so that the air in the device is exhausted, until the water is discharged from the cock, and then closed one by one in turn. 3. Close the water injection valve.*

C、启动泵前，检查皮带的松紧适度，各联接面有无松动等现象。各活动件应加注润滑油（脂）。

*Before starting the pump, check the tightness of the belt and whether the connection surfaces are loose or not. All moving parts should be filled with lubricating oil (grease).*

D、将压力表的压力最高调到0.16MPa。

*Adjust the pressure of the pressure gauge to a maximum of 0.16MPa.*

## （二）运行/ run

A、启动泵向装置中泵入污油（乳化油），即开始工作。

*Start the pump to pump dirty oil (emulsified oil) into the device, and start working.*

B、将安全阀的压力调到0.18mpa~0.19mpa。

*Adjust the pressure of the safety valve to 0.18mpa~0.19mpa.*

C、在处理粘度大的污油时，如水温 $\leq 20^{\circ}\text{C}$ 时，可启动电热器加热，控制器温度可调节，一般调定温度达到 $40^{\circ}\text{C}$ 时停止加温，温度降到 $20^{\circ}\text{C}$ 时自行启动。且本电加热器具具有防干烧功能。

*When dealing with dirty oil with high viscosity, such as when the water temperature is  $\leq 20^{\circ}\text{C}$ , the electric heater can be started to heat, and the temperature of the controller can be adjusted. Generally, the heating will be stopped when the set*



*temperature reaches 40 °C, and it will start automatically when the temperature drops to 20 °C. And the electric heater has the function of preventing dry burning.*

D、检查各运动部件、仪器、仪表工作是否正常运行参数是否符合规定的要求。特别检查15PPM油份浓度报警装置的运行数据。

*Check whether the moving parts, instruments and meters work normally and whether the operating parameters meet the specified requirements. In particular, check the operating data of the 15PPM oil concentration alarm device.*

E、取水样应在装置运行半小时后进行。

*Water samples should be taken after the device has been running for half an hour.*

F、探摸专用泵电机外表温度及观察传达机械工作是否正常。

*Check the surface temperature of the special pump motor and observe whether the conveying machinery works normally.*

### (三) 停机/ *downtime*

当油污水处理完后往装置中泵入清水继续工作一段时间至将油污排尽。如装置带有电加热器的将开关转向关闭位置，关闭控制箱电源。保持装置内清水总是满的。

*After the oily sewage is treated, pump clean water into the device and continue to work for a period of time until the oily sewage is completely drained. If the device has an electric heater, turn the switch to the OFF position to turn off the power to the control box. Keep the unit full of clean water at all times.*



八、故障及处理方法/ *Trouble and handling method*

现象 <i>Phenomenon</i>		原因 <i>reason</i>	排除方法 <i>Method of exclusion</i>
安全阀起跳 <i>Safety valve jumps</i>		排油或反冲洗过程中气动三通阀未开启，泵背压升高。 <i>The pneumatic three-way valve is not opened during the oil discharge or backwashing process, and the back pressure of the pump increases.</i>	打开气动三通脚上部气缸盖排除活塞在气 中的卡住现象 <i>Open the upper cylinder head of the pneumatic tee foot to eliminate the jamming of the piston in the cylinder</i>
分离后的排出水不合标准 <i>The discharged water after separation is not up to standard</i>		1.舱底水中混有较多的化学清洗剂。 2.分离装置排油动作失灵，污油混入排出水中 3.舱底水分离滤器元件失效 <i>1. There are more chemical cleaning agents mixed in the bilge water.</i> <i>2. The oil discharge action of the separation device fails, and the dirty oil is mixed in expel water</i> <i>3. Failure of the bilge water separation filter element</i>	1.减少化学清洗剂混入机舱 2.检查并消除控制箱故障 3.更换舱底水分离滤器 <i>1. Reduce the mixing of chemical cleaning agents into the cabin</i> <i>2. Check and eliminate control box faults</i> <i>3. Replace the bilge water separation filter</i>
泵不出水或排量降低 <i>No water from the pump or reduced displacement</i>		1.橡胶衬套严重磨损,容积效率下降 2.泵轴密封泄漏 <i>1. The rubber bushing is seriously worn and the volumetric efficiency drops</i> <i>2. Pump shaft seal leakage</i>	1. 更换橡胶衬套及泵体单向球 2. 调整密封松紧度或更换密封圈 <i>1. Replace the rubber bushing and pump body one-way ball</i> <i>2. Adjust the tightness of the seal or replace the seal</i>
泵不能启动或停转 <i>Pump won't start or stop</i>		1.柱塞与泵体配合过紧（新泵） 2. 泵内有异物 <i>1. The plunger is too tight with the pump body (new pump)</i> <i>2. There is a foreign body in the pump</i>	1.人力推送帮助启动 2.拆卸排出异物，修复缺损 <i>1. Human push to help start</i> <i>2. Disassemble and discharge foreign body and repair defects</i>
真空度过高自动停泵 <i>If the vacuum is too high, the pump will automatically stop</i>		过滤器堵塞，吸入止回阀堵塞或吸入管系上的阀门关闭 <i>Clogged filter, clogged suction check valve or closed valve on suction piping</i>	清洗吸入过滤器，检查清洗吸入止回阀，开足吸入管路上的阀门 <i>Clean the suction filter, check and clean the suction check valve, and fully open the valve on the suction line</i>
电加热系统 <i>Electric heating system</i>	集油室温度不上升 <i>The temperature of the oil collection chamber does not rise</i>	1.加热器电阻丝断 2.交流接触器或中间继电器接触不良 <i>1. The heater resistance wire is broken</i> <i>2. Poor contact of AC contactor or intermediate relay</i>	1.调电加热器 2.消除接触不良 <i>1. Adjustable electric heater</i> <i>2. Eliminate bad contact</i>
自动排油系统 <i>automatic row oil system</i>	油位检测器正常，但仍不能正常排油 <i>The oil level detector is normal, but the oil still cannot be drained normally</i>	1.油位检测器与壳体短路 2.油位检测器金属探头与连接部分绝缘破坏 <i>1. The oil level detector is short-circuited with the housing</i> <i>2. The metal probe of the oil level detector insulated from the connection part destroy</i>	1.消除短路现象 2. 调换油位检测器 <i>1. Eliminate short circuit phenomenon</i> <i>2. Replace the oil level detector</i>
	电磁先导阀不动作 <i>Solenoid pilot valve does not operate</i>	1.继电器触头接触不良 2.电磁脚线包断线 3.电磁阀线包烧坏 <i>1. Poor contact of relay contacts</i>	1.消除接触不良 2.接通线路 3. 检查电源和绝缘情况，调换电磁阀 <i>1. Eliminate bad contact</i>





		<div>2. Electromagnetic foot wire package is broken</div> <div>3. The solenoid valve wire package is burned out</div>	<div>2. Connect the line</div> <div>3. Check power supply and insulation, replace solenoid valve</div>
	<div>排油时间短，排油动作频繁</div> <div>Short oil discharge time and frequent oil discharge actions</div>	<div>1. 低位检测器被油污黏附</div> <div>2. 空气汤入集油室，真空度下降</div> <div>3. 排油电磁阀故障</div> <div>1. The low-level detector is adhered by oil stains</div> <div>2. The air soup enters the oil collecting chamber, and the vacuum degree drops</div> <div>3. Oil drain solenoid valve failure</div>	<div>1. 拆下擦净再装</div> <div>2. 检查本体和管路密封部分及消除漏气</div> <div>3. 更换排油电磁阀</div> <div>1. Remove, wipe and re-install</div> <div>2. Check the sealing part of the body and pipeline and eliminate air leakage</div> <div>3. Replace the oil drain solenoid valve</div>
	<div>排油指示灯一直亮，但排出是水不是油</div> <div>The oil discharge indicator light is always on, but the discharge is water not oil</div>	<div>1. 高低限位油位电极全部被油污黏附</div> <div>2. 油位检测器绝缘损坏，产生短路现象</div> <div>1. The high and low limit oil level electrodes are all adhered by dirty oil</div> <div>2. The insulation of the oil level detector is damaged, resulting in a short circuit</div>	<div>1 拆下擦净再装</div> <div>2. 消除短路现象或调换油位电极</div> <div>1 Remove and wipe clean</div> <div>2. Eliminate the short circuit phenomenon or replace the oil level electrode</div>
	<div>电接点压力表指针已到设定高值，报警指示灯不亮</div> <div>The pointer of the electric contact pressure gauge has reached the set high value, and the alarm indicator does not light up</div>	<div>1. 电接点压力表电线插头松落</div> <div>2. 接触器接触不良</div> <div>1. The electrical contact pressure gauge wire plug is loose</div> <div>2. Poor contact of the contactor</div>	<div>1. 拧紧电线插头</div> <div>2. 消除接触不良</div> <div>1. Tighten the wire plug</div> <div>2. Eliminate good contact</div>

九、维护与保养方法/ Maintenance and maintenance methods

A、预过滤器每60天清洗一次，清除杂质及污渍。

The pre-filter is cleaned every 60 days to remove impurities and stains.

B、泵组60天检查一次，清洗加润滑油。

Check the pump set every 60 days, clean and add lubricating oil.

C、每隔30天，将液位控制器电极取下来清洗一遍。

Every 30 days, remove the electrode of the liquid level controller and clean it.

D、每隔180天，打开凝聚过滤器和过滤器放污旋塞，将其污泥杂质清洗出来。

Every 180 days, open the coalescing filter and filter drain cock to clean out the



*sludge impurities.*

E、凝聚过滤器的压力大于0.19mpa时安全阀上出现滴水或排水，说明滤芯有堵塞。可将滤芯用80℃~100℃的热水清洗1 小时左右，然后用清水冲清数遍，如清洗后压力还未消除，则需要更换滤芯。更换滤芯时要特别注意两端面密封，切切不可有串通现象。（滤芯使用寿命为一年）

*When the pressure of the coalescing filter is greater than 0.19mpa, dripping water or drainage appears on the safety valve, indicating that the filter element is blocked. The filter element can be washed with hot water at 80 °C~100 °C for about 1 hour, and then rinsed several times with clean water. If the pressure has not been eliminated after cleaning, the filter element needs to be replaced. When replacing the filter element, special attention should be paid to the sealing of both ends, and there should be no collusion. (The service life of the filter element is one year)*

F、当过滤器的压力超过规定压力时，过滤器就要人工反清洗，通过清洗压力会降下来，使其正常工作。在正常工作期间滤膜工作90天后，用氢氧化钠清洗。（氢氧化钠用量参数0.1型0.25kg、0.25型0.5kg、0.5型1 kg、1.0型2kg 、2.0型4kg 、3.0型6 kg和5.0型10 kg）

*When the pressure of the filter exceeds the specified pressure, the filter needs to be manually back cleaned, and the pressure will be lowered through cleaning to make it work normally. After 90 days of operation during normal operation, the filter was cleaned with sodium hydroxide. (Sodium hydroxide dosage parameters: 0.1 type 0.25kg, 0.25 type 0.5kg, 0.5 type 1 kg, 1.0 type 2kg, 2.0 type 4kg, 3.0 type 6 kg and 5.0 type 10 kg)*

G、装置检修完后，均应加满清水进行湿保养。



*After the device is overhauled, it should be filled with clean water for wet maintenance.*

#### 十、售后服务/ *After-sales service*

供货商为船厂安装和交船时提供技术服务和售后服务。

设备的保修期为船厂交船后12个月。在保修期内，设备出现的非人为故障，制造方应负责及时的免费技术服务。

*Suppliers provide technical services and after-sales services for shipyard installation and delivery.*

*The warranty period of the equipment is 12 months after delivery from the shipyard.*

*During the warranty period, the manufacturer shall be responsible for timely free technical services for non-human failures of the equipment.*

#### 联系方式/ **Contact Us**

地址：武汉市江岸区新南路1号

Add: No. 1, Xinnan Road, Jiang'an District, Wuhan

电话：027-82415922 027-82421635

Tel: 027-82415922 027-82421635

传真：027-82426529 027-83290499

Fax: 027-82426529 027-83290499

网址：www.cn-jdjd.com

Web: www.cn-jdjd.com

邮箱：zzc@cn-jdjd.com

Mail: zzc@cn-jdjd.com