

DATE 日期		REV. 版本	DESCRIPTION 简 述	EDIT 编制	CHKD. 校对	RVE. 审核	APP. 审定
		A	签订技术协议				

# 技术协议书

## TECHNICAL AGREEMENT

<p>产品名称 PRODUCT NAME</p>	<p>液压滑动水密门技术协议 Marine Hydraulic Sliding Watertight Door</p>
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船名 SHIP NAME	XXXX				
船号 HULL	XXXX	船检 CLASS	XX		
名 称	单 位	主管人员	签名/日期	联系电话 / 邮 箱	
船 东 OWNER	XXXX				
船 厂 SHIP YARD					
设计院 DESIGNER					
制 造 厂 MANUFACTURE	无锡市东舟船舶设备股份有限公司 WUXI DONGZHOU MARINE EQUIPMENT CO.,LTD.			WUXIDONGZHOU@CHUANPO.COM	



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## 1. 总则 General

### 1.1 主题内容 Subject

本协议书规定了\_\_\_\_\_液压滑动式水密门的工作用途、技术要求、环境条件、随机文件、质量保证、试验验收与包装运输要求。

This Agreement describes the working function, technical requirement, environmental situation, documentation, guaranty, test and packing & shipment of watertight hydraulic sliding doors for\_\_\_\_\_.

### 1.2 适用范围 Application scope

本协议书适用于\_\_\_\_\_液压滑动式水密门的设计、制造、验收、订货和交货,作为合同的附件,是订货合同的依据。每船供货数量为 1 套。

This Agreement is suitable for design, manufacture, check, order and delivery of watertight hydraulic sliding doors for\_\_\_\_\_. It's attachment and basis of contract. The quantity of supply for this project is 1 set.

## 2. 规范标准 Rules & Standards

1) 《国际海上人命安全公约 (2009)》客船水密舱壁开口的关闭装置的要求。

The closing equipment requirement of watertight bulkhead opening stated in International Convention for the Safety of Life at Sea ,2009.

2) 《国际救生设备规则》及其修正案

International Lifesaving Equipment Regulations and Amendment.

3) 《国际航行海船法定检验技术规则 (2011)》

Technical Regulation for Statutory Survey of International Navigation Seagoing Ships 2011

4) CB/T3007-2011 《船用液压滑动式水密门》

CB/T3007-2011 Marine Watertight Hydraulic Sliding Door

5) ABS 船级社相关规范

ABS Rules and Regulations.



### 3. 主要参数和性能 Principal Parameter and Performance

#### 3.1 液压滑动式水密门的主要技术参数 Principal Technical Parameters

形式 TYPE	液压滑动式 Hydraulic watertight sliding
数量 QTY	1 扇 1set/shipset
开向 OPEN DIRECTION	
布置位置 LOCATION	在认可图中确认 To be confirmed in the Approved Drawings
门通孔尺寸 CLEAR SIZE of DOOR	
舱壁开口 CUTOUT IN WALL	在认可图中确认 To be confirmed in the Approved Drawings
工作压力 WORKING PRESSURE	7 MPa
液压油牌号 HYDRAULIC OIL BRAND	N32#抗磨低凝液压油 N32# low curdle hydraulic oil
电机功率 MOTOR POWER	约 1.5Kw (以认可图为准) ~1.5Kw (subject to the Approved Drawing)
电机防护等级 MOTOR PROTECTION GRADE	IP67
电源 POWER SUPPLY	一路 AC440V 60 Hz 3ph/一路 DC24V (来自母船充放电板) AC 440V 60 Hz 3ph; DC24V (From charge-discharge switch board of Ship)

#### 3.2 启动报警箱 Start-up alarm box

启动报警箱防护等级为 IP68，具有断相，过载保护功能，主要电器元件选用施耐德产品，电控箱内配线应选用低烟、无卤、阻燃船用电缆。  
Start-up alarm box to be protected with IP68 grade and has functions of phase break-off and overload protection. Main electric component will choose Schneider product. Low smoke, non-bittern and fire resistant marine cable to be used in the control box.



3.3 本液压水密门能够在下列环境条件下使用:

**Hydraulic Sliding Door Application Environment**

环境温度:  $-10^{\circ}\text{C}\sim 45^{\circ}\text{C}$

Environment temperature:  $-10^{\circ}\text{C}\sim 45^{\circ}\text{C}$

空气相对湿度: 95%

Atmosphere relative humidity: 95%

横倾 $\pm 15^{\circ}$       Inclining:  $\pm 15^{\circ}$

3.4 接口 **Connection**

机械接口: 液压水密门整套提供, 门框与舱壁焊接, 液压泵站与底座固定, 启动报警箱安装在液压泵站上, 警铃警灯、按钮盒与舱壁用螺栓连接, 蓄能器、手摇泵的座板与舱壁的适当位置焊接, 限位开关与基座用螺栓连接, 电气元件用船用电缆连接, 液压管路、电缆及通舱件由船厂负责提供并安装。

Mechanical connection: supply complete set of watertight hydraulic sliding door. Door frame to be welded with bulkhead. Hydraulic pump station and foundation to be fixed. The start-up alarm box to be installed on the hydraulic pump station. Alarm bell and lamp, button box to be connected with bulkhead by screws. The accumulator and the hand pump bedplate to be welded with the suitable position of bulkhead. Limit switches to be connected with foundation by bolts. Electric components to be connected with marine cables, and hydraulic piping、electric cables and coupling to be supplied by shipyard and fitted by shipyard.



#### 4.设备及备件清单 Equipment and Spare Parts List

##### 4.1 设备清单 Equipment List

no.	名称 Description	数量 Qty	材料 Material	备注 Remarks
1	液压滑动式水密门 Watertight hydraulic sliding door	1套/船 1Set/ship	组合件 Assembly unit	
2	油缸 Cylinder	2只/船 2_pcs/ship	组合件 Assembly unit	
3	电动, 手动液压泵组 Hydraulic pump unit	1套/船 1Set/ship	组合件 Assembly unit	配齐外接管接头
4	手动泵组 Hand operation pump unit	2套/船 2Set/ship	组合件 Assembly unit	
5	蓄能器 Accumulator	1套/船 1Set/ship	组合件 Assembly unit	提供 ABS 证书
6	报警控制箱 alarm control box	1套/船 1_Set/ship	组合件 Assembly unit	IP68
7	按钮盒 Button box	2套/船 2 Sets/ship	组合件 Assembly unit	IP68
8	警铃警灯 Alarm bell with lamp	2套/船 2Sets/ship	组合件 Assembly unit	IP56
9	接近开关 Limit switch	2套/船 2Sets/ship	组合件 Assembly unit	IP68 施耐德
10	手摇杆 Manual pump stick	3套/船 3Sets/ship	组合件 Assembly unit	带支架
11	驾驶室遥控面板 Wheelhouse remote control board	1块/船 1Set/ship	组合件 Assembly unit	
12	上甲板指示盒 Upper deck indicator box	1套/船 1Set/ship	组合件 Assembly unit	IP56 以上
13	充气工具 charge tool	1套/船 1Set/ship	组合件 Assembly unit	
14	ABS 船检证书 ABS certificate			1 正 2 副 One original, Two copies
15	工厂合格证书 Conformity certificate			1 份 one set



16	设备装箱清单 packing list			1 份 one set
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#### 4.2 备件清单 Spare Parts List

名称 Description	数量 Qty	备注 remarks
油缸密封圈 cylinder seal	1 套/船(set/ ship)	油缸用/for cylinder
保险丝 fuse	6 只/船(pc/ ship )	
指示灯灯泡 bulb of indication lamp	6 只/船(pc/ ship )	红. 绿. 黄
手摇泵密封圈 had pump seal ring	1 套/船(set/ ship )	手摇泵用/for hand pump
水密门封条 door seal strap	10 米 (m)	

### 5.设计与制造 Design & manufacture

#### 5.1 组成 Component

本船所需 1 套水密门, 共有 1 套电动液压泵组。

This vessel needs 1 set of watertight doors, totally 1 set of electric hydraulic pump units.

液压水密门主要由机械、液压和电气三大部分组成。

Watertight door includes three parts ,as the mechanism,hydraulic and electric.

机械部分为门框、门板、导向滚轮、油缸支架组成。

Mechanism part includes door frame,door plate,guide roller and cylinder bracket.

液压部分为液压泵组 (包括电机、油泵、电磁换向阀、节流阀、溢流阀、单向阀、液位计、高低压压力继电器、低压压力继电器、液位控制器等)、油缸、手摇泵、手动换向阀、蓄能器、压力表等组成。

Hydraulic part consists of hydraulic pump unit (including motor, oil pump, electromagnetism change valve, throttle, overflow valve, one way valve, level switch, high-low pressure relay, low pressure relay, level controller



etc), oil cylinder, hand pump, hand change valve, accumulator and pressure gauge etc.

电气部分由启动报警箱、警铃警灯（组合式）、接近开关、操作按钮盒等组成。

Electric part consists of start-up alarm box, alarm lamp and bell(combination type),limit switch and button box etc.

## 5.2 主要功能 Principal function

A) 当船舶正浮时，应能从驾驶室在 45s~50s 内遥控关闭所有的水密门；  
When the ship is floating, all watertight doors could be remotely closed from wheelhouse within 45s~50s.

B) 动力关门速度应大致均匀，从开始移动至门完全关闭的时间，在任何情况下不小于 20 秒，但也不大于 40 秒，手动关门所需时间不大于 90 秒；  
The velocity to close each door by power to be even and the time of closing door from starting moving to close fully not to be less than 20s in any case and not to be more than 40s. The time of closing door by hand not to exceed 90s.

C) 滑动式水密门的耐压试验压力为：0.10Mpa；

Test pressure: 0.10Mpa；

D) 在门两侧能手动和电动开启、关闭液压水密门。在上甲板设有对应的控制单元能关闭水密门。

Door to be opened and closed by hand and electric power on both sides of door. Control unit to be setted on the upper deck to close the door.

E) 在失电情况下，可利用蓄能器的能量操作水密门关----开-----关各一次。  
In case of power-off, it is capable of using the power of accumulator to operate the door three times i.e. close-open-close.

F) 报警和指示功能：Alarm & indication function

1.在门开始移动时，门两侧的警铃会发出声响和灯光报警。

When door starts to move, the alarm bells at both sides of door will send the audible and visable alarm.

2.用动力遥控门时，在门开始移动前 5~10 秒到门完全关闭期间，应连续





发出声响报警。

When remote controlling the door by power, before the door begins to move 5~10 seconds until to the door completely closed, it shall continue to send the audible and visable alarm.

3.在手动操作的情况下，只要当门移动时声响报警即可。在启动报警箱上设有：油箱低油位、液压系统低油压、动力电源失电、电机过载、门开关状态指示、蜂鸣器及试灯按钮灯。

When operate the door by hand, audile alarm will occur when door moves. The start-up alarm box has the low level indication of oil tank, low oil pressure indication of hydraulic system, out of power indication, motor overload indication, door open & close indication, buzzer ,test lamp and button lamp.

4.在启动报警箱上设有：电源指示灯、泵组启动、停止按钮、泵运转指示灯、泵自动/手动转换开关等。

On the start up box, there are power indication lamp, pump unit start and stop button, pump running indication lamp and the auto/hand change switches of pump.

5.输出下列信号至驾驶室：门开、关状态指示；遥控关按钮及转换开关；油箱低油位、液压系统低油压、动力电源失电、电机过载一个综合灯光报警指示灯。

These signals will be transferred to wheelhouse, including door open & close indication, remote close button and change switch, oil tank low level, hydraulic system low oil pressure, out of power and a general alarm indicating lamp for motor over load.

5.门状态指示：在驾驶室、就地均有门的指示位置，红灯表示门完全打开；绿灯表示门完全关闭；中间状态为红灯闪烁，并留有 VDR 的接口（每扇门的开关信号和综合报警信号）。

Door status indication: there are door status indications in wheelhouse and locally. Red lamp means door full open; green lamp means door full close. Red lamp flashing means door in the middle status. There is VDR





interface (each door's open & close signal and general alarm signal).

### 5.3 表面处理 Surface treatment

表面处理: 除锈达 Sa2.5 级, 底漆为环氧富锌底漆, 油漆按工厂标准, 颜色在认可图中由 船厂确定。

Sand blast to Sa2.5 grade. Primer to be of epoxy zinc primer. Paint as per the standard of maker, and the color to be decided by shipyard on the approval drawing.

5.4 铭牌、标志按 GB/T13306-91 《标牌》标准, 铭牌: 不锈钢、中英文对照。

Nameplate and the mark as per GB/T13306-91, to be of stainless steel and in English/Chinese.

## 6. 质量保证 Guaranty

6.1 设备出厂前应按认可的试验大纲进行陆上台架试验、验收和交货, 设备经买方检验合格并由 ABS 船检合格后装船。

Door to be tested and accepted by Buyer and ABS before shipment

6.2 产品经卖方质量部门检验合格后, 提前 1 周通知签约方派人参加产品出厂试验。

Seller inform buyer to attend the test one week in advance.

6.3 提供必要的售后服务。

Seller need to be in charge of essential after service.

6.4 在拥护遵守使用说明书和保养条件下, 设备自本船交船之日起 12 个月内, 出现任何质量问题, 卖方负责免费修理。

The maker should assure quality guarantee of 12 months from the date of ship delivery, any quality questions, seller is responsible for repair without extra cost.

6.5 满足合同规定设备交货时有效的 ABS 规范, 并提供 ABS 船检证书。

Maker need to provide the ABS certificate to shipyard.

## 7. 交货准备 Prepare for shipment

封存、装箱、运输、贮存

Seal、packing、transport、storge



清洗干燥后的零部件，在加工部分应涂上优质防锈油脂处理。所有未油漆的机加工件表面油封有效期不少于半年，从出厂之日算起。

按常规运输的要求进行，并附装箱清单。

产品应放置在空气流通干燥的仓库内。

Clean all parts and coat the anti rust grease on machined parts. The valid perild of oil seal for all unpainted surfaces of machining parts not to be less than half one year from the ex-factory date. Packing List will be attached. Product should be putted in ventilated and dry warehouse.

### 8. 提供资料 Documentation

资料包括: Documentation

No.	图纸名称 Description	认可图 Drawing for approval	工作图 Working drawing	完工图 Final drawing	备注 remarks
1	总图 Assembly drawing	√	√	√	
2	液压原理图、液压管接图 Hydraulic schematic and hydraulic piping diagram	√	√	√	
3	电气原理图、电气接线图 Electric schematic and wiring connection diagram	√	√	√	
4	上甲板指示盒外形图 Upper deck indicator box outline drawing	√	√	√	
5	控制箱外形图 control box outline drawing	√	√	√	
6	遥控板外形图 remote board outline drawing	√	√	√	
7	按钮盒外形图 button box outline drawing	√	√	√	
8	警铃外形图 alarm bell outline drawing	√	√	√	
9	手动泵外形图 hand pump outline drawing	√	√	√	



(产品名称) 技术协议书  
TECHNICAL AGREEMENT FOR PRODUCTION NAME

船厂: XXX

船号: XXX

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11	供货清单 Supply list	√	√	√	
12	备件清单 spare parts list	√	√	√	
13	试验大纲 test program	√	√	√	
14	使用说明书 operation manual	√	√	√	
15	ABS 船检证书 <u>ABS</u> certificate			√	1 正 2 副 1 original and 2 copy
16	工厂合格证 Maker conformity certificate			√	
17	装箱清单 packing list			√	

### 9. 补充Others

阀件使用同力士乐系列国内产品；管接头材料为碳钢。