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浙江亚宁消防设备有限公司

ZHEJIANG YANING FIRE FIGHTING EQUIPMENT CO.,LTD.



亚宁官网  
Website



亚宁微信公众号  
WeChat Official Account

CATALOG

船用亚宁消防为您保驾护航！

YANING GUARANTEE YOU A SAFE AND SMOOTH VOYAGE!

# 企业简介 Company profile

浙江亚宁消防设备有限公司

ZHEJIANG YANING FIRE FIGHTING EQUIPMENT CO.,LTD.

## 关于我们 About us

浙江亚宁消防设备有限公司（原宁波市海曙亚宁消防设备有限公司）坐落于浙江省江山市，始创于2005年，注册资本5000万元，是一家致力于船舶海洋工程消防设备设计研发、试验生产和安装维修为一体的现代化企业。公司占地面积约2万平方米，设有1个研发试验中心、1个企业级技术设计中心和1个火灾实验中心，为公司研发生产提供坚实基础。

Zhejiang Yaning Fire Fighting Equipment Co., Ltd. (formerly Ningbo Haishu Yaning Fire Fighting Equipment Co., Ltd.) is located in Jiangshan City, Zhejiang Province. Established in 2005 with a registered capital of 50 million yuan, the company is a modern enterprise dedicated to the design, R&D, testing, production, installation, and maintenance of firefighting systems and equipment for marine and offshore engineering. Covering an area of approximately 20,000 square meters, the company has one R&D testing center, one enterprise-level technical design center, and one fire testing center, providing a solid foundation for its research, development, and production efforts.

## 企业优势 Enterprise advantage



1个研发  
试验中心

1 R&D test center



1个火灾试  
验中心

1 fire test center



1个企业级  
技术设计中  
心

1 enterprise-level technical design



产品远销全球  
国家及地区  
20+

Products are exported to countries  
and regions around the world

20+



公司现有员工100余人，其中具有中高级以上职称的研发设计人员20余人，大专及以上学历专业人才 30余名。公司产品已获全球各主流船级社以及中国船舶检验局产品资格认证。同时，先后通过了ISO9001-2015质量管理体系认证、ISO14001-2015环境管理体系认证和ISO45001-2018职业健康安全管理体系认证，并荣获“国家高新企业”、“浙江省专精特新中小企业”、“衢州市绿色低碳工厂”等荣誉称号。2019年公司与中国船舶重工集团、海军工程大学签署合作协议，共建“舰艇消防安全研发试验中心”，建立“产-学-研”一体式开发架构。同时，与中国地质大学建立长期研发合作关系并设立研发中心，旨在不断提升企业研发能力和产品品质。

The company currently has over 100 employees, including more than 20 R&D and design personnel with intermediate or senior professional titles, and over 30 professionals with college degrees or higher. Its products have obtained certification from major global classification societies as well as the China Ship Inspection Bureau. Additionally, the company has achieved ISO 9001:2015 Quality Management System Certification, ISO 14001:2015 Environmental Management System Certification, and ISO 45001:2018 Occupational Health and Safety Management System Certification. It has also been honored with titles such as "National High-Tech Enterprise," "Zhejiang Provincial Specialized, Refined, Distinctive, and Innovative SME," and "Quzhou Green and Low-Carbon Factory." In 2019, the company signed a cooperation agreement with China Shipbuilding Industry Corporation and Naval University of Engineering to jointly establish the "Naval Vessel Fire Safety R&D and Testing Center," "Creating an Integrated "Industry-Academia-Research" development framework. Furthermore, it has formed a long-term R&D partnership with China University of Geosciences and set up a dedicated R&D center to continuously enhance its innovation capabilities and product quality.

## 企业文化 Corporate culture

经营理念：以质量求生存、以创新求发展

企业精神：科技领先拓展市场

服务理念：以客户为中心

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质量求生存

创新求发展

Survival by quality

Development by innovation

# 企业资质 Enterprise Qualification

## 荣誉证书 Certificate of Honor



## 专利证书 Patent Certificate

## Management System Certification 管理体系认证



## 船级社认证 Classification Society Certification



## 船用高压二氧化碳灭火系统 MARINE HP CO<sub>2</sub> FIRE EXTINGUISHING SYSTEM



### 制造标准 Manufacturing Standards

1. 经 MSC.206(81)和 MSC.339(91)修正的《国际消防安全系统规则》第 5 章  
Chapter 5 of International Code for Fire Safety Systems, as amended by MSC.206(81) and MSC. 339(91).
2. 中国船级社《钢质海船入级规范》(2025)  
China Classification Society Rules for Classification of Sea-going Steel Ships 2025.
3. 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)及其修改通报第 4 篇第 2-2 章  
Chapter 2-2 Part Four of Technical Regulations for the Statutory Surveys of Sea-going Ships Engaged on Non-international Voyages (2020) and its Amendments, of MSA, P.R. China.
4. 中华人民共和国海事局《内河船舶法定检验技术规则》(2019) 及其修改通报第 5 篇第 3 章  
Chapter 3, Part Five of Technical Regulations for the Statutory Surveys of Inland Waterways Ships (2019) and its amendments, of MSA, P.R. China.
5. ISO 15371:2015 《船舶与海上技术船用厨房烹调设备灭火系统》  
ISO 15371:2015 Ships and Marine Technology-Fire Extinguishing Systems for Protection of Galley Cooking Equipment.

### 适用范围 Application

国际、国内航行的船舶、舰艇和海上石油平台，亦可用于工矿企业、港口、码头、仓库等场所。  
International and domestic voyages, ships, warships and offshore oil platforms, as well as industrial and mining enterprises, ports, docks, warehouses and other places.

## 船用高压二氧化碳灭火系统技术参数

### Technical Parameters of Marine Carbon Dioxide Fire Extinguishing Device

#### 技术参数 Technical Parameters

|                                                     |                                                 |                                     |
|-----------------------------------------------------|-------------------------------------------------|-------------------------------------|
| 型号/Type                                             | YN- (8 ~ 82) ; YNN- (8-82)                      |                                     |
| 型式/Model                                            | 固定式 Fixed                                       |                                     |
| 工作压力<br>Working Pressure                            | 14.7MPa                                         |                                     |
| 气瓶容积<br>Cylinder Volume                             | CO <sub>2</sub> 储液瓶<br>CO <sub>2</sub> cylinder | 8 ~ 82L                             |
|                                                     | N <sub>2</sub> 瓶<br>N <sub>2</sub> cylinder     | 4L                                  |
| CO <sub>2</sub> 充装率<br>CO <sub>2</sub> Filling Rate | ≤0.67Kg/L                                       |                                     |
| 环境条件<br>Environmental Conditions                    | 环境温度<br>ambient temperature                     | -10℃ ~ +50℃                         |
|                                                     | 相对湿度<br>relative humidity                       | 93±3%                               |
| 使用电源<br>Power Supply                                | 主电源<br>main power supply                        | AC220V 50Hz/AC380V 50Hz/AC440V 60Hz |
|                                                     | 辅电源<br>auxiliary power supply                   | DC24V 3A                            |
| 功率消耗<br>Power Consumption                           | 警戒时<br>standby                                  | ≤30W                                |
|                                                     | 工作时<br>working                                  | 200W                                |
| 操作方式<br>Operation Method                            | 电动<br>electric                                  | 远程控制<br>remote control              |
|                                                     | 气动<br>pneumatic                                 | 远程控制<br>remote control              |
|                                                     | 手动<br>manual                                    |                                     |
|                                                     | 机械应急<br>emergency manual                        | 就地操作<br>local operation             |
| 施放延时<br>Release Delay                               | 气动延时<br>pneumatic delay                         | 20 ~ 40s                            |
|                                                     | 电延时<br>electric delay                           | 20 ~ 40s                            |
| 启动气源<br>Pilot Gas                                   | 使用气体<br>gas Type                                | N <sub>2</sub>                      |
|                                                     | 充装压力<br>filling pressure                        | 5.9MPa                              |

## 遥控施放箱

### Remote Control Release Box



气动延时/Pneumatic Delay



电延时/Electric Delay

## 主要技术参数 Main Technical Parameters

| 单个气瓶容积<br>Single Cylinder Volume | 气瓶个数<br>Number Of Cylinder | 充装气体<br>Filling Gas | 充装压力<br>Filling Pressure | 延时<br>Delay |
|----------------------------------|----------------------------|---------------------|--------------------------|-------------|
| 4L                               | 2                          | N <sub>2</sub>      | 5.9MPa                   | 20 ~ 40s    |

## 气控施放阀

### Pneumatic Control Valve



| 连接形式<br>Connection Type | 公称压力(MPa)<br>Nominal Pressure | 公称通径(mm)<br>Nominal Diameter | 适用介质<br>Medium  |
|-------------------------|-------------------------------|------------------------------|-----------------|
| 螺纹、法兰<br>Thread, Flange | 14.7                          | DN25 ~ DN32                  | CO <sub>2</sub> |
| 法兰<br>Flange            | 14.7                          | DN40 ~ DN150                 | CO <sub>2</sub> |

## 快开阀

### Quick Open Valve



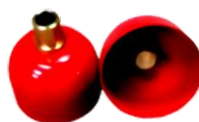
| 公称压力(MPa)<br>Nominal Pressure | 公称通径(mm)<br>Nominal Diameter | 适用介质<br>Medium  |
|-------------------------------|------------------------------|-----------------|
| 14.7                          | DN15 ~ DN150                 | CO <sub>2</sub> |



二氧化碳报警箱  
CO<sub>2</sub> Alarm Box



瓶头阀  
Cylinder Valve



A 型喷头  
A Type Nozzle

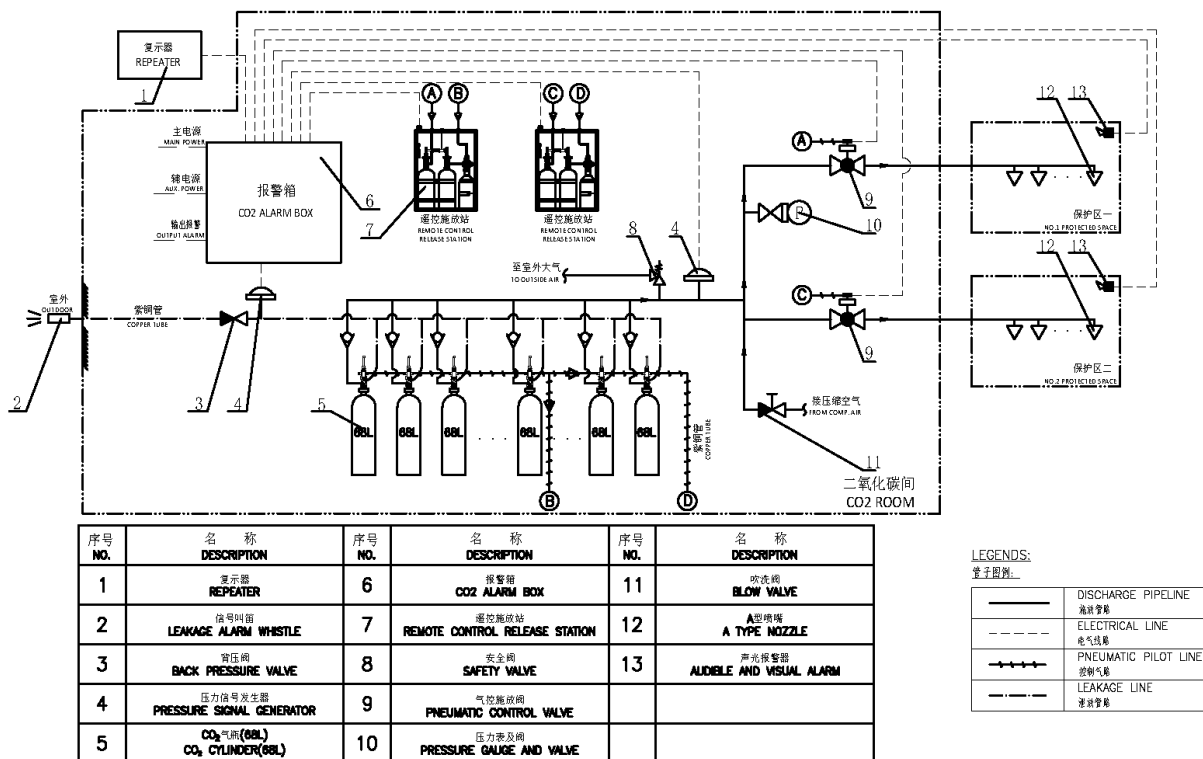


B 型喷头  
B Type Nozzle

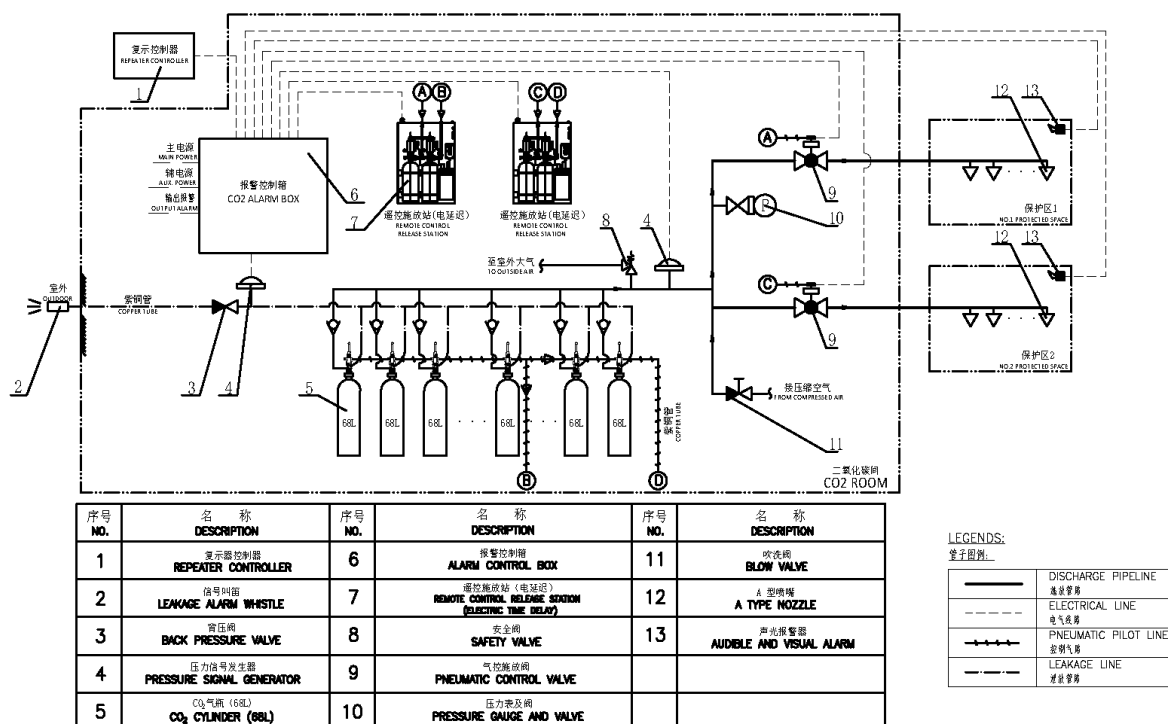


C 型喷头  
C Type Nozzle

船用高压二氧化碳灭火系统原理图（气动）  
SYSTEM DIAGRAM OF HP CO<sub>2</sub> FIRE EXTINGUISHING SYSTEM (PNEUMATIC)



船用高压二氧化碳灭火系统原理图（电启动）  
SYSTEM DIAGRAM OF HP CO<sub>2</sub> FIRE EXTINGUISHING SYSTEM (ELECTRIC)



## 船用低压二氧化碳灭火系统

### MARINE LP CO<sub>2</sub> FIRE EXTINGUISHING SYSTEM



### 制造标准 Manufacturing Standards

1. 经MSC.206(81)和MSC.339(91)修正的《国际消防安全系统规则》第5章  
Chapter 5 of International Code for Fire Safety Systems, as amended by MSC.206(81) and MSC. 339(91).
2. 中国船级社《钢质海船入级规范》(2025)及其修改通报第6篇第2章  
Chapter 2, Part Six of China Classification Society Rules for Classification of Sea-going Steel Ships 2025 and its amendments.
3. GB 19572—2013 低压二氧化碳灭火系统及部件  
GB 19572—2013 Low Pressure Carbon Dioxide Extinguishing System and Components.

### 适用范围及优势 Application and Advantages

大空间舱室，例如汽车运输船、客货滚装船和大型集装箱船等。

Large space cabins, such as car carriers, passenger and cargo ro-ro ships and large container ships, etc.

低压二氧化碳灭火系统因储容量大、重量较轻、占地面积较小和再充装时间较少等优势,在大型汽车运输船、大型滚装船大型集装箱船上也逐渐得以应用。该系统支持智能监控管理，实时显示运行参数，并具备压力和液位双重报警功能，实现冷水机组的自动开启和关闭。此外，系统可根据防护区域大小，调整主阀和辅阀的动作时间，确保有效灭火。

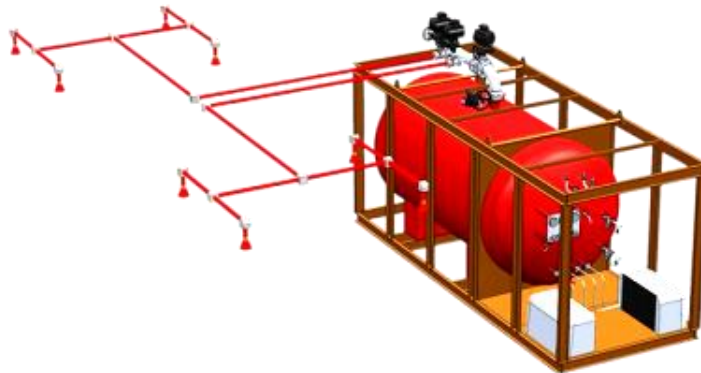
Low-pressure CO<sub>2</sub> system is gradually being used on large car carriers, large ro-ro ships and large container ships due to their advantages such as large storage capacity, light weight, small footprint and short refilling time. It is intelligent monitoring and management, displays operating parameters in real time, and features dual pressure and liquid level alarms, enabling automatic opening and closing of the chiller. Furthermore, the system can adjust the operating time of the main and auxiliary valves based on the size of the protected area to ensure effective fire extinguishing.

## 技术参数 Technical Parameters

|                             |                                                                                |
|-----------------------------|--------------------------------------------------------------------------------|
| 型号<br>Model                 | YN-CO2L-5/30                                                                   |
| 环境温度<br>Ambient Temperature | -23°C ~ +50°C                                                                  |
| 工作压力<br>Working Pressure    | 2.0±0.2MPa                                                                     |
| 设计压力<br>Design Pressure     | 2.5MPa                                                                         |
| 工作温度<br>Working Temperature | -20°C ~ +50°C                                                                  |
| 充装系数<br>Filling Factor      | ≤95%                                                                           |
| 主电<br>Main Power            | AC440 50/60Hz / AC380 50/60Hz                                                  |
| 备电<br>Spare Power           | AC440 50/60Hz / AC380 50/60Hz / DC24V                                          |
| 应用方式<br>Application         | 全淹没、局部应用<br>total flooding, local application                                  |
| 喷放时间<br>Discharge Time      | ≤1 min(全淹没)、≤7 min(局部应用)<br>≤1 min (total flooding)、≤7 min (local application) |
| 启动方式<br>Activation Method   | 自动、手动、机械应急<br>automatic, manual, mechanical emergency operation                |

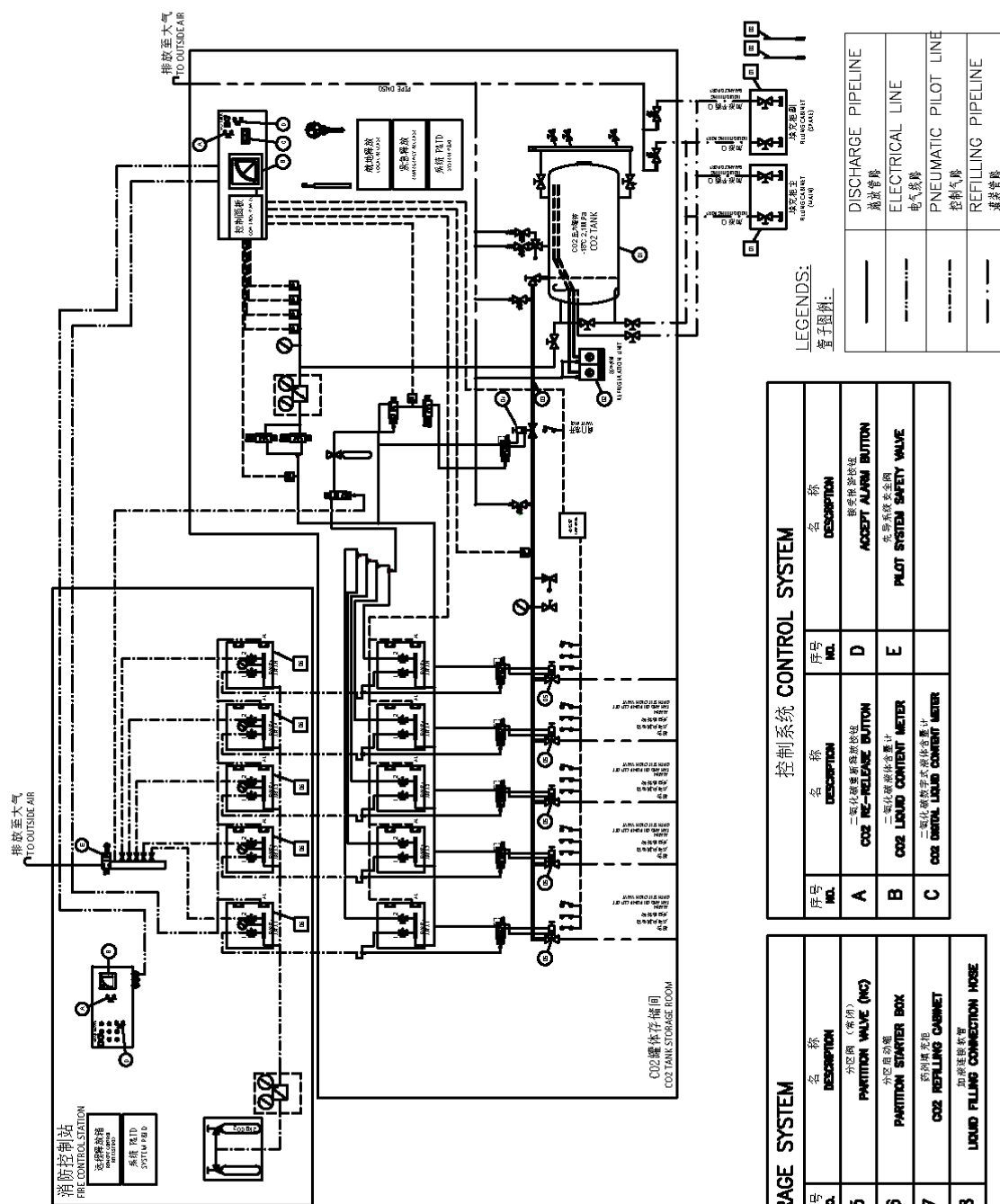


二氧化碳储罐  
 CO<sub>2</sub> Storage Tank



3D 模型  
 3D Model

# SYSTEM DIAGRAM OF LP CO<sub>2</sub> FIRE EXTINGUISHING SYSTEM



| 存储系统 STORAGE SYSTEM |                                         |           |                                                       |
|---------------------|-----------------------------------------|-----------|-------------------------------------------------------|
| 序号<br>NO.           | 名称<br>DESCRIPTION<br>二重冗余磁碟<br>COB TANK | 序号<br>NO. | 名称<br>DESCRIPTION<br>分区阀 (零件)<br>PARTITION VALVE (NC) |
| 1                   |                                         | 5         |                                                       |
| 2                   | 冷却装置<br>COOLING UNIT                    | 6         | 分区用分道<br>PARTITION STARTER BOX                        |
| 3                   | 管接及连接附件<br>PIPSES AND FITTINGS          | 7         | 药料罐 支柱<br>CO2 REFILLING CANNET                        |
| 4                   | 主控制 阀(零件)<br>MAIN CONTROL VALVE (NC)    | 8         | 加液系统软件<br>LIQUID FILLING CONTROL ROSE                 |

| 控制系统 CONTROL SYSTEM |                                                                 |           |                                       |
|---------------------|-----------------------------------------------------------------|-----------|---------------------------------------|
| 序号<br>NO.           | 名称<br>DESCRIPTION                                               | 序号<br>NO. | 名称<br>DESCRIPTION                     |
| A                   | 二氧化碳气源新装校核站<br>CO2 RE-REFILLING STATION                         | D         | 接受命令按钮<br>ACCEPT ALARM BUTTON         |
| B                   | 二氧化碳液体含量计<br>CO2 LIQUID CONTENT METER                           | E         | 安全系统紧急按钮<br>PILOT SYSTEM SAFETY VALVE |
| C                   | 二氧化碳液体流量平衡液体含量计<br>CO2 LIQUID FLOW BALANCE LIQUID CONTENT METER |           |                                       |

## 船用七氟丙烷灭火系统

### MARINE HFC-227ea FIRE EXTINGUISHING SYSTEM



#### 制造标准 Manufacturing Standards

1. 国际消防安全系统规则第 5 章

Chapter 5 of International Code for Fire Safety Systems.

2. MSC/Circ.848 经修正的 1974 年 SOLAS 公约所规定适用于机器处所和货油泵舱的固定式气体灭火系统认可导则

MSC/Circ.848 Revised Guidelines for the Approval of Equivalent Fixed Gas Fire-Extinguishing Systems, as Referred to in Chapter 11-2 of SOLAS 1974 for Machinery Spaces and Cargo Pump-Rooms.

3. MSC.1/Circ.1267 《经修订的 1974 年 SOLAS 公约规定的适用于机器处所和货泵舱的等效固定式灭火系统认可指南》修正案

MSC.1 /Circ.1267 Amendments to Revised Guidelines for the Approval of Equivalent Fixed Gas Fire-extinguishing Systems as Referred to in SOLAS 1974 for Machinery Spaces and Cargo Pump-Rooms.

#### 适用范围 Application

船舶消防、海上石油平台。

Marine and offshore oil platform.

#### 系统组成 System Composition

船用七氟丙烷灭火系统由储存瓶组、储存瓶组架、液体单向阀、集流管、选择阀、安全阀、吹洗阀、压力表、压力信号发生器、管网、喷嘴、药剂、火灾探测器、气体灭火控制器、声光报警器、警铃、放气指示灯、紧急启动 / 停止按钮等组成。

The system consists of cylinder rack, check valve, manifold pipe, selector valve, safety valve, flush valve, pressure gauge, pressure signal generator, pipeline, nozzle, agent, fire detector, gas fire controller, audible and visual alarm, alarm, release indicator, emergency ON/OFF button and etc.

## 技术参数 Technical Parameters

|                                          |                                                                                                                           |                                                                                 |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 型号/Type                                  | ZQC-10/20/30/40/70/90/120/150/180                                                                                         | 可气动启动或电动启动，也可手动现场操作<br>Pneumatic or electric start, also local manual operation |
| 充装密度<br>Filling Density                  | $\leq 0.95\text{Kg/L}$ (钢质焊接钢瓶/Welded Steel Gas Cylinders)<br>$\leq 1.125\text{Kg/L}$ (无缝钢瓶/Seamless Steel Gas Cylinders) |                                                                                 |
| 设计浓度<br>Design Concentration             | 8.5%                                                                                                                      |                                                                                 |
| 工作压力<br>Working Pressure                 | 公称工作压力(MPa)<br>Nominal Working Pressure                                                                                   | 2.5/4.2                                                                         |
|                                          | 最大工作压力(MPa)<br>Maximum Working Pressure                                                                                   | 4.2/5.3                                                                         |
| 气瓶容积<br>Cylinder Volume                  | 七氟丙烷容器瓶(L)<br>HCF-227ea Cylinder                                                                                          | 10/20/30/40/70/90/120/150/180                                                   |
|                                          | 氮气启动瓶(L)<br>Nitrogen Pilot Cylinder                                                                                       | 4                                                                               |
| 喷射时间(S)<br>Discharge Time                | $\leq 10$                                                                                                                 |                                                                                 |
| 工作温度范围 (°C)<br>Working Temperature Range | 0 ~ 50°C                                                                                                                  |                                                                                 |
| 喷嘴公称工作压力(MPa)<br>Nominal WP of Nozzle    | 10                                                                                                                        |                                                                                 |
| 单个喷嘴的保护半径(m)<br>Nozzle Protection Radius | $\leq 5$                                                                                                                  |                                                                                 |
| 喷嘴的保护高度(m)<br>Nozzle Protection Height   | 0.3 ~ 5                                                                                                                   |                                                                                 |
| 系统灭火方式<br>Fire Extinguishing Method      | 全淹没<br>Total Flooding                                                                                                     |                                                                                 |



七氟丙烷系统箱体式  
HFC-227ea System Cabinet Type



七氟丙烷系统组架式  
HFC-227ea System Rack Type



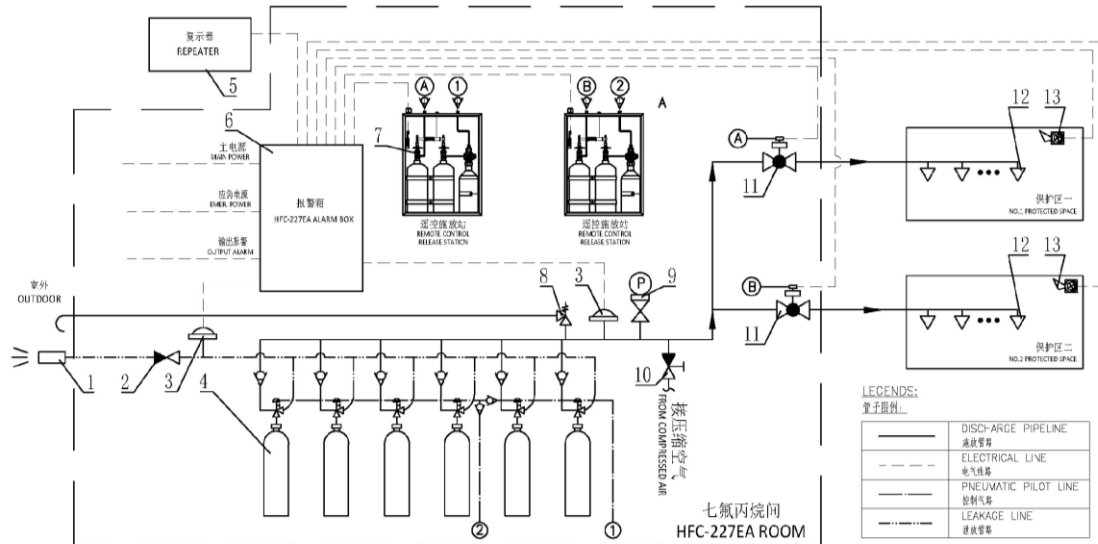
七氟丙烷喷头  
HFC-227ea Nozzle



七氟丙烷药剂  
HFC-227ea Agent

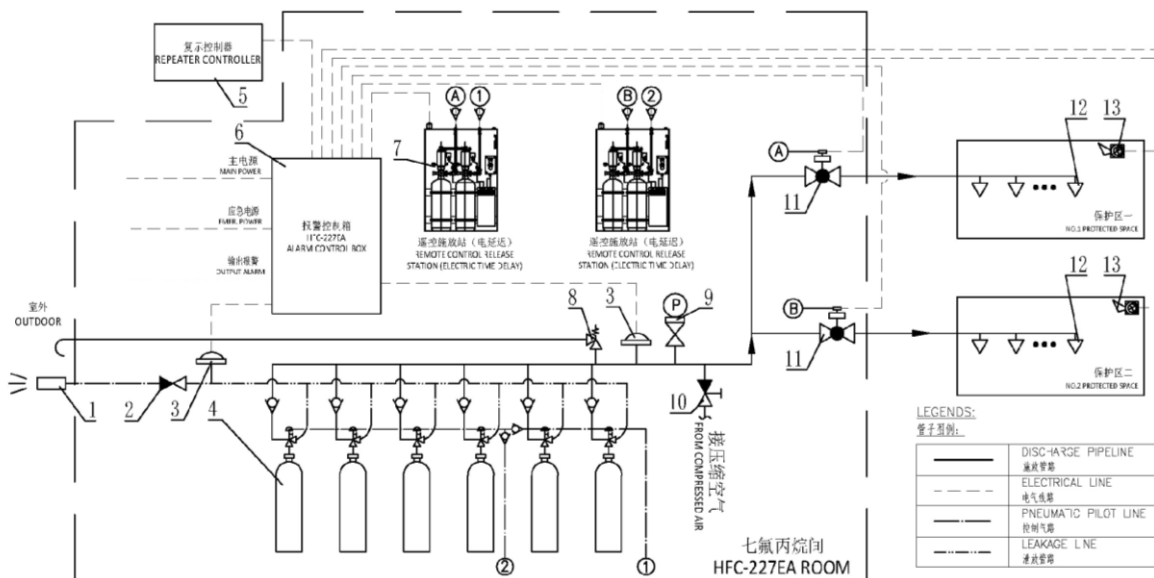


七氟丙烷灭火系统原理图 (气动)  
SYSTEM DIAGRAM OF HFC-227EA FIRE SUPPRESSION SYSTEM (PNEUMATIC)



| 序号<br>NO. | 名称<br>DESCRIPTION                    | 序号<br>NO. | 名称<br>DESCRIPTION                       | 序号<br>NO. | 名称<br>DESCRIPTION                | 序号<br>NO. | 名称<br>DESCRIPTION                 |
|-----------|--------------------------------------|-----------|-----------------------------------------|-----------|----------------------------------|-----------|-----------------------------------|
| 1         | 信号哨笛<br>LEAKAGE ALARM WHISTLE        | 5         | 重复器<br>REPEATER                         | 9         | 压力表及阀<br>PRESSURE GAUGE VALVE    | 13        | 声光报警器<br>AUDIBLE AND VISUAL ALARM |
| 2         | 背压阀<br>BACK PRESSURE VALVE           | 6         | 报警箱<br>HFC-227EA ALARM BOX              | 10        | 吹扫阀<br>BLOW VALVE                |           |                                   |
| 3         | 压力信号发生器<br>PRESSURE SIGNAL GENERATOR | 7         | 遥控释放站<br>REMOTE CONTROL RELEASE STATION | 11        | 气控释放阀<br>PNEUMATIC CONTROL VALVE |           |                                   |
| 4         | 七氟丙烷钢瓶<br>HFC-227ea CYLINDER         | 8         | 安全阀<br>SAFETY VALVE                     | 12        | 喷头<br>NOZZLE                     |           |                                   |

七氟丙烷灭火系统原理图 (电动)  
SYSTEM DIAGRAM OF HFC-227EA FIRE SUPPRESSION SYSTEM (ELECTRIC)



| 序号<br>NO. | 名称<br>DESCRIPTION                    | 序号<br>NO. | 名称<br>DESCRIPTION                                                   | 序号<br>NO. | 名称<br>DESCRIPTION                | 序号<br>NO. | 名称<br>DESCRIPTION                 |
|-----------|--------------------------------------|-----------|---------------------------------------------------------------------|-----------|----------------------------------|-----------|-----------------------------------|
| 1         | 信号哨笛<br>LEAKAGE ALARM WHISTLE        | 5         | 重复控制器<br>REPEATER CONTROLLER                                        | 9         | 压力表及阀<br>PRESSURE GAUGE VALVE    | 13        | 声光报警器<br>AUDIBLE AND VISUAL ALARM |
| 2         | 背压阀<br>BACK PRESSURE VALVE           | 6         | 报警控制箱<br>HFC-227EA ALARM CONTROL BOX                                | 10        | 吹扫阀<br>BLOW VALVE                |           |                                   |
| 3         | 压力信号发生器<br>PRESSURE SIGNAL GENERATOR | 7         | 遥控释放站 (电延迟)<br>REMOTE CONTROL RELEASE STATION (ELECTRIC TIME DELAY) | 11        | 气控释放阀<br>PNEUMATIC CONTROL VALVE |           |                                   |
| 4         | 七氟丙烷钢瓶<br>HFC-227ea CYLINDER         | 8         | 安全阀<br>SAFETY VALVE                                                 | 12        | 喷头<br>NOZZLE                     |           |                                   |

## 全氟己酮灭火装置

### FK-5-1-12 FIRE SUPPRESSION SYSTEM



#### 制造标准 Manufacturing Standards

- 1). 国际消防安全系统规则第 5 章;  
FSS Code, Chapter 5;
- 2). MSC/Circ.848 《经修正的 1974 年 SOLAS 公约所规定适用于机器处所和货油泵舱的固定式气体灭火系统的等效系统认可导则》;  
MSC/Circ.848, Guidelines for the Approval of Equivalent Fixed Gas Fire Extinguishing Systems, as referred to in SOLAS 1974, as amended, for Machinery Spaces and Cargo Pump-Rooms;
- 3). MSC.1/Circ.1267 《经修正的 1974 年 SOLAS 公约所规定适用于机器处所和货油泵舱的等效固定式气体灭火系统认可指南》修正案。  
MSC.1/Circ.1267, Amendments to the Guidelines for the Approval of Equivalent Fixed Gas Fire-Extinguishing Systems, as referred to in SOLAS 1974, as amended, for Machinery Spaces and Cargo Pump-Rooms.

#### 适用范围 Application

适用于保护船舶上的机舱、控制室、电气舱等关键区域。它能高效扑灭火灾的同时最大程度地减少对精密导航设备、电子系统和机械装置的二次损害。

It applies to critical areas onboard ships such as engine rooms, control rooms, and electrical compartments. It can efficiently extinguish fires while minimizing secondary damage to precision navigation equipment, electronic systems, and mechanical devices.

## 技术参数 Technical Parameters

|                               |                                                                                                                                                                                                       |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 型号<br>Model                   | YN1230-* (10-150)                                                                                                                                                                                     |
| 钢瓶容积<br>Cylinder Volume       | 10-150L                                                                                                                                                                                               |
| 充装密度<br>Filling Density       | 焊接气瓶≤0.95Kg/L<br>无缝气瓶≤1.12Kg/L<br>Welded cylinders: ≤ 0.95 kg/L<br>Seamless gas cylinders: ≤ 1.12 kg/L                                                                                                |
| 设计浓度<br>Design Concentration  | 5.9%                                                                                                                                                                                                  |
| 工作压力<br>Working Pressure      | 4.2MPa                                                                                                                                                                                                |
| 开启方式<br>Actuation Method      | 电动/气动/手动<br>Electric / Pneumatic / Manual                                                                                                                                                             |
| 使用温度<br>Operating Temp. Range | 0-50°C                                                                                                                                                                                                |
| 系统组成<br>System Composition    | 灭火药剂瓶组, 瓶头阀, 挠性软管组件, 气控阀, 喷嘴, 遥控释放站, 报警箱等<br>Fire extinguishing agent cylinder group, cylinder valve, flexible hose assembly, pneumatic control valve, nozzle, remote release station, alarm box, etc |

## 系统组成 System Components



全氟己酮钢瓶  
FK-5-1-12 Cylinder



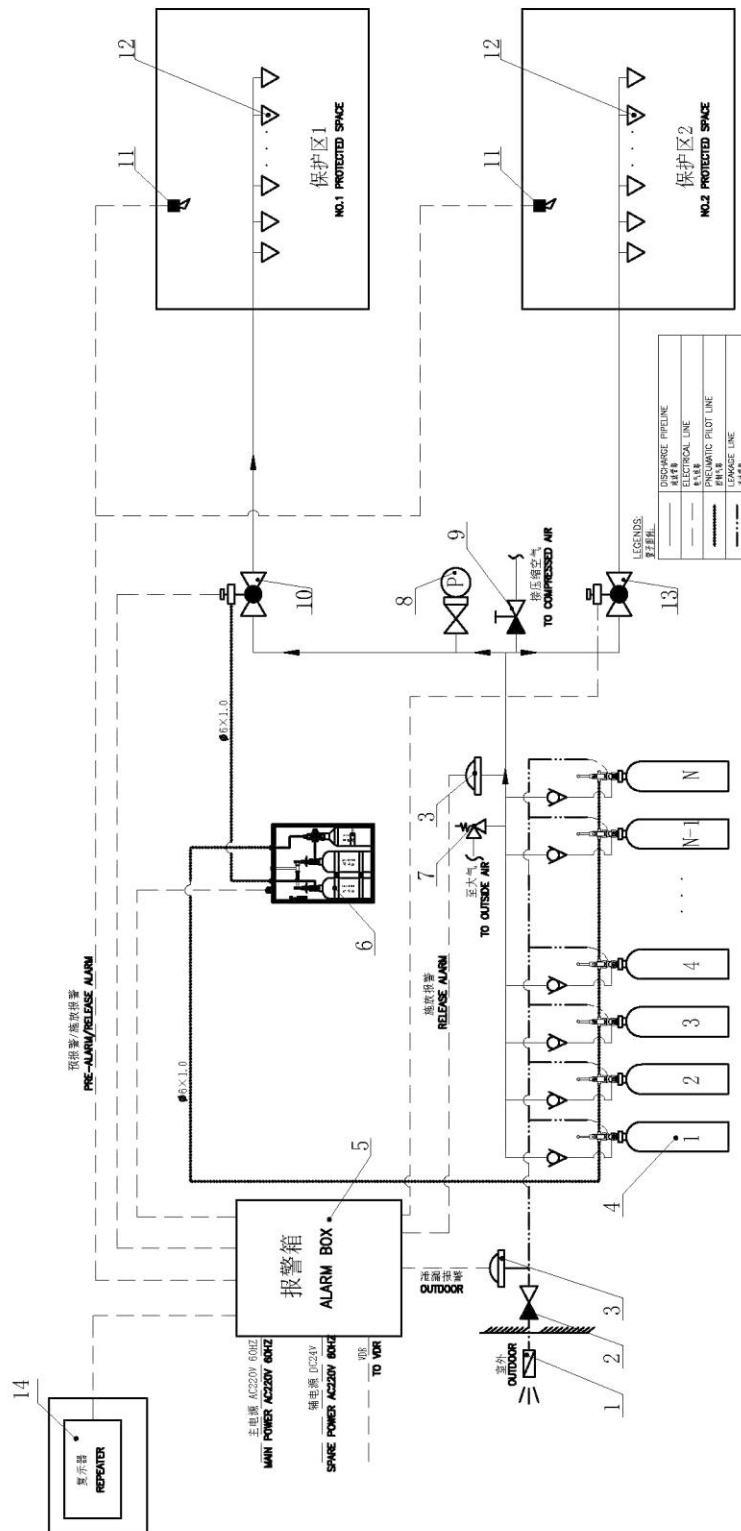
全氟己酮药剂  
FK-5-1-12 Agent



全氟己酮喷头  
FK-5-1-12 Nozzle

# 全氟己酮灭火装置原理图

## SYSTEM DIAGRAM OF FK-5-1-12 FIRE SUPPRESSION SYSTEM



| 序号<br>NO. | 名 称<br>DESCRIPTION                   | 序号<br>NO. | 名 称<br>DESCRIPTION                      | 序号<br>NO. | 名 称<br>DESCRIPTION                | 序号<br>NO. | 名 称<br>DESCRIPTION      |
|-----------|--------------------------------------|-----------|-----------------------------------------|-----------|-----------------------------------|-----------|-------------------------|
| 1         | LEAKAGE ALARM WHISTLE<br>信号哨笛        | 5         | 报警箱<br>ALARM BOX                        | 9         | 吹放阀<br>BLOW VALVE                 | 13        | 快开阀<br>QUICK OPEN VALVE |
| 2         | BACK PRESSURE VALVE<br>背压阀           | 6         | 遥控释放站<br>REMOTE CONTROL RELEASE STATION | 10        | 气控释放阀<br>PNEUMATIC CONTROL VALVE  | 14        | 重复器<br>REPEATER         |
| 3         | PRESSURE SIGNAL GENERATOR<br>压力信号发生器 | 7         | 安全阀<br>SAFETY VALVE                     | 11        | 声光报警器<br>AUDIBLE AND VISUAL ALARM |           |                         |
| 4         | CYLINDER (10-150L)<br>气瓶 (10-150L)   | 8         | 压力表及阀<br>PRESSURE GAUGE VALVE           | 12        | 喷头<br>NOZZLE                      |           |                         |

## 氮气惰化装置 N<sub>2</sub> INERT PLANT



氮气瓶组  
 N<sub>2</sub> Cylinder Group



氮气调压箱  
 N<sub>2</sub> Pressure Regulator Box



一级减压阀  
 First Stage  
 Pressure Reducing Valve



二级减压阀  
 Second Stage  
 Pressure Reducing Valve

### 制造标准 Manufacturing Standards

- 《国际消防安全系统规则》  
International Cade for Fire Safety Systems.
- 中国船级社 (CCS) 《钢质海船入级规范》(2025)  
CCS Rules for Classification of Sea-going Steel Ships 2025.

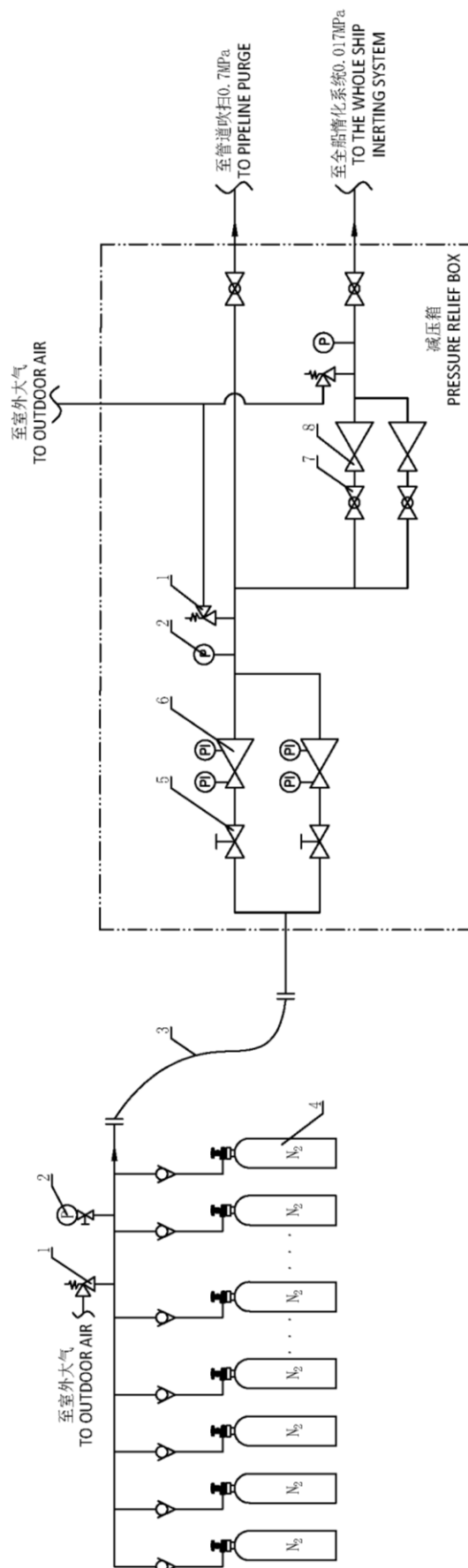
### 适用范围 Application

液化气船、化学品船的惰化。  
 LNG carrier, Chemicals ship inserting.

### 技术参数 Technical Parameters

| 型号 Type                                   | YND40/YND50      | YND68 |
|-------------------------------------------|------------------|-------|
| 储瓶容积 Cylinder Volume                      | 40L/50L          | 68L   |
| 充装压力 Filling Pressure                     | 20MPa/15MPa      | 15MPa |
| 介质 Medium                                 | N <sub>2</sub>   |       |
| 工作温度范围 (°C) Working Temperature Range     | -20°C ~ +55°C    |       |
| 一级工作压力出口 First Level of Outlet Pressures  | 0.7MPa           |       |
| 二级工作压力出口 Second Level of Outlet Pressures | 0.010 ~ 0.020MPa |       |
| 操作方式 Operating Method                     | 手动 Manual        |       |

# 氮气惰化装置原理图 SCHEMATIC DIAGRAM OF NITROGEN INERTING PLANT



LEGENDS:  
管子图例:

|                    |
|--------------------|
| DISCHARGE PIPELINE |
| 施放管路               |

| 序号<br>NO. | 名称<br>DESCRIPTION          | 序号<br>NO. | 名称<br>DESCRIPTION                      |
|-----------|----------------------------|-----------|----------------------------------------|
| 1         | 安全阀<br>SAFETY VALVE        | 5         | 截止阀<br>STOP VALVE                      |
| 2         | 压力表<br>PRESSURE GAUGE      | 6         | 一级减压阀<br>PRIMARY PRESSURE REDUCER      |
| 3         | 高压软管<br>HIGH PRESSURE HOSE | 7         | 球阀<br>BALL VALVE                       |
| 4         | 氮气瓶<br>NITROGEN CYLINDER   | 8         | 二级减压阀<br>SECOND GRADE PRESSURE REDUCER |

## 船用固定干粉灭火系统 MARINE FIXED DCP FIRE EXTINGUISHING SYSTEM

### 制造标准 Manufacturing Standards

1. MSC.1/Circ.1315/Rev.1 《经认可的用于保护散装运输液化气体船舶的化学干粉灭火系统指南》 MSC.1/Circ.1315/Rev.1 Guidelines for the Approval of Fixed Dry Chemical Powder Fire-extinguishing Systems for the Protection of Ships Carrying Liquefied Gases in Bulk
2. 中国船级社《散装运输液化气体船舶构造与设备规范》（2022）第 11 章及其变更通告 Chapter 11 of Rules for Construction and Equipment of Ships Carrying Liquefied Gases in Bulk 2022 and its Change Notices, CCS
3. MSC.370(93)《国际散装运输液化气体船舶构造和设备规则》第 11 章及其修正案 MSC.370(93) The Chapter 11 of IMO International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk and its Amendments



### 适用范围 Application

液化天然气运、液化石油气运输船、加注趸船。  
LNG carrier, LPG carrier, bunkering pontoon.

### 技术参数 Technical Parameters

| 型号规格<br>Type and Size | 干粉容积(L)<br>Tank Volume | 工作压力(MPa)<br>Working Pressure | 驱动气体<br>Pilot gas | 干粉枪喷射率<br>(kg/s)<br>DCP applicator discharge rate | 干粉枪射程(m)<br>DCP applicator range | 干粉炮喷射率<br>(kg/s)<br>DCP monitor discharge rate | 干粉炮射程 (m)<br>DCP monitor range |
|-----------------------|------------------------|-------------------------------|-------------------|---------------------------------------------------|----------------------------------|------------------------------------------------|--------------------------------|
| FPC-(200~10000)       | 200~10000              | 1.0-1.5                       | N <sub>2</sub>    | FQ3.5 /3.5<br>FQ5 /5                              | ≥12                              | 110/25/35/40/<br>45/45/50                      | ≥18/30/38/<br>40/45/50         |

### 装置组成 Plant Components



干粉贮罐与驱动瓶组  
DCP Tank & Pilot  
Cylinder Group



电控干粉炮  
Electric-controlled  
DCP Monitor



手动干粉炮  
Manual DCP Monitor

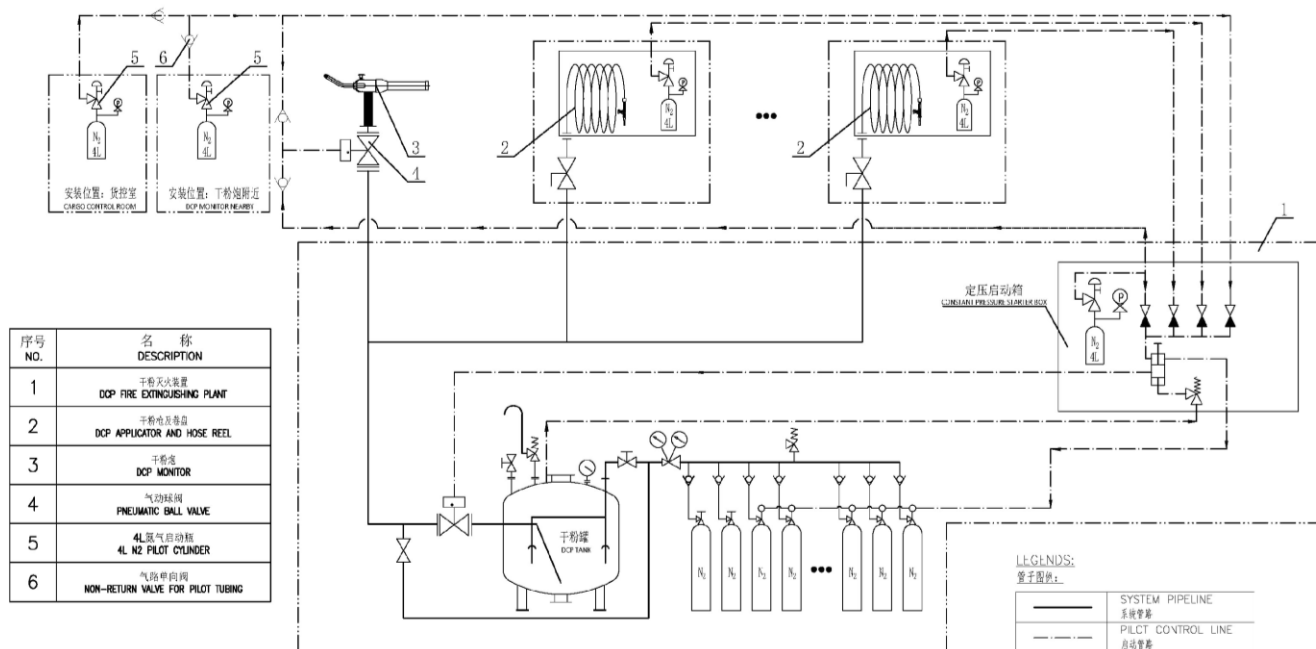


干粉枪  
DCP Applicator

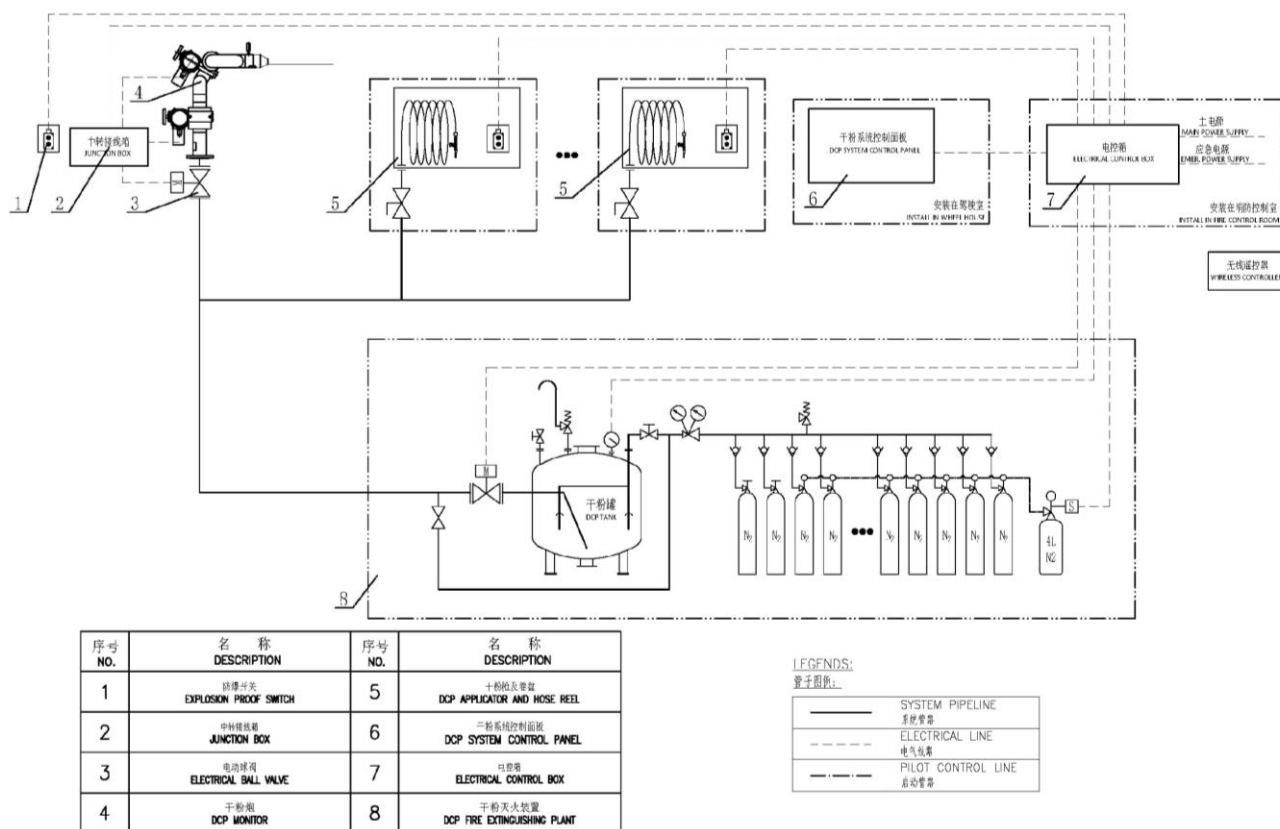


干粉卷盘箱  
DCP Hose Reel Box

船用固定式干粉灭火系统原理图（气动）  
SYSTEM DIAGRAM OF DRY CHEMICAL POWDER FIRE EXTINGUISHING SYSTEM



船用固定式干粉灭火系统原理图（电动）  
SYSTEM DIAGRAM OF DRY CHEMICAL POWDER FIRE EXTINGUISHING SYSTEM



## 压力式泡沫比例混合装置

### PRESSURE TYPE FOAM PROPORTIONED PLANT

#### 制造标准 Manufacturing Standards

1. 中国船舶行业标准 CB/T3571-2014 《船用低倍泡沫装置》

Chinese Shipbuilding Professional Standard CB/3571- 2014

Marine Low-expansion Foam Unit.

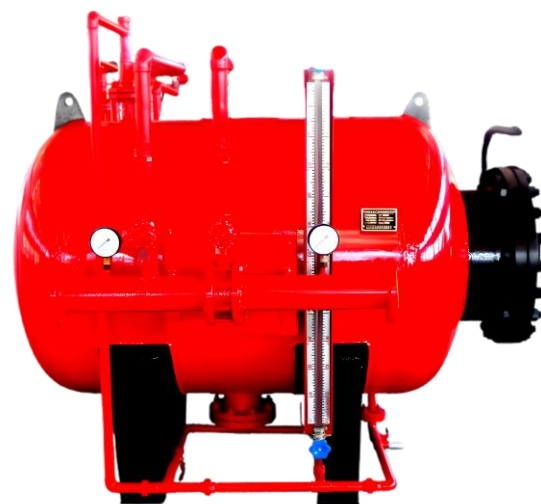
2. 中国国家标准 GB/T20031-2005 《泡沫灭火系统及部件通用技术条件》

National Standard of P.R.China, General Technical Specifications for Foam Fire Extinguishing System and Components.

GB/T20031-2005.

3. 经 MSC.339(91)修正的《国际消防安全系统规则》第 14 章  
Chapter 14 of International Code for Fire Safety Systems, as Amended by MSC.339(91).

4. 经 MSC.327(90)修正的《国际消防安全系统规则》第 6 章  
Chapter 6 of International Code for Fire Safety Systems, as Amended by MSC.327(90).

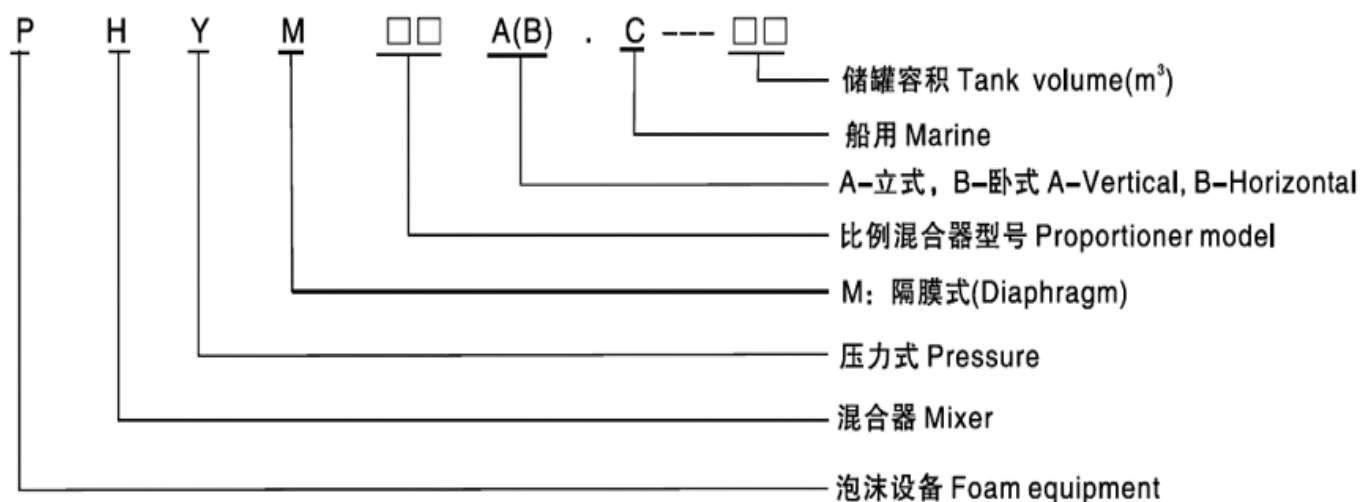


#### 适用范围 Application

油船、化学品船和直升机甲板。

Oil tanker, chemical tanker and helicopter deck area.

#### 型号及意义 Model and Significance



## 技术参数 Technical Parameters

### PHYM 系列产品 PHYM Series Product

| 类型<br>Type                                            | 压力式<br>Pressure type                                                                                                 | 负压式<br>Negative pressure type |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------|
| 产品型号<br>Model                                         | PHYM32A.C/32B.C 系列/Series;<br>PHYM48A.C /48B.C 系列/Series;<br>PHYM64A.C/64B.C 系列/Series;<br>PHYM96A.C/96B.C 系列/Series | 泡沫比例混合器<br>Foam proportioner  |
|                                                       |                                                                                                                      | PH32C                         |
| 工作压力<br>Working Pressure (MPa)                        | 0.6 -1.2                                                                                                             | 0.6-1.2                       |
| 混合液流量范围<br>Foam Solution Scope(L/S)                   | 8 ~ 32; 16 ~ 48; 24 ~ 64; 48 ~ 96                                                                                    | 4/8/16/24/32                  |
| 混合比<br>Mixture Ratio (%)                              | 3%; 6%                                                                                                               | 3%                            |
| 卧式罐容积<br>Horizontal Type Tank Volume(M <sup>3</sup> ) | 0.2~10.0                                                                                                             |                               |
| 立式罐容积<br>Vertical Type Tank Volume(M <sup>3</sup> )   | 0.2~3.0                                                                                                              |                               |



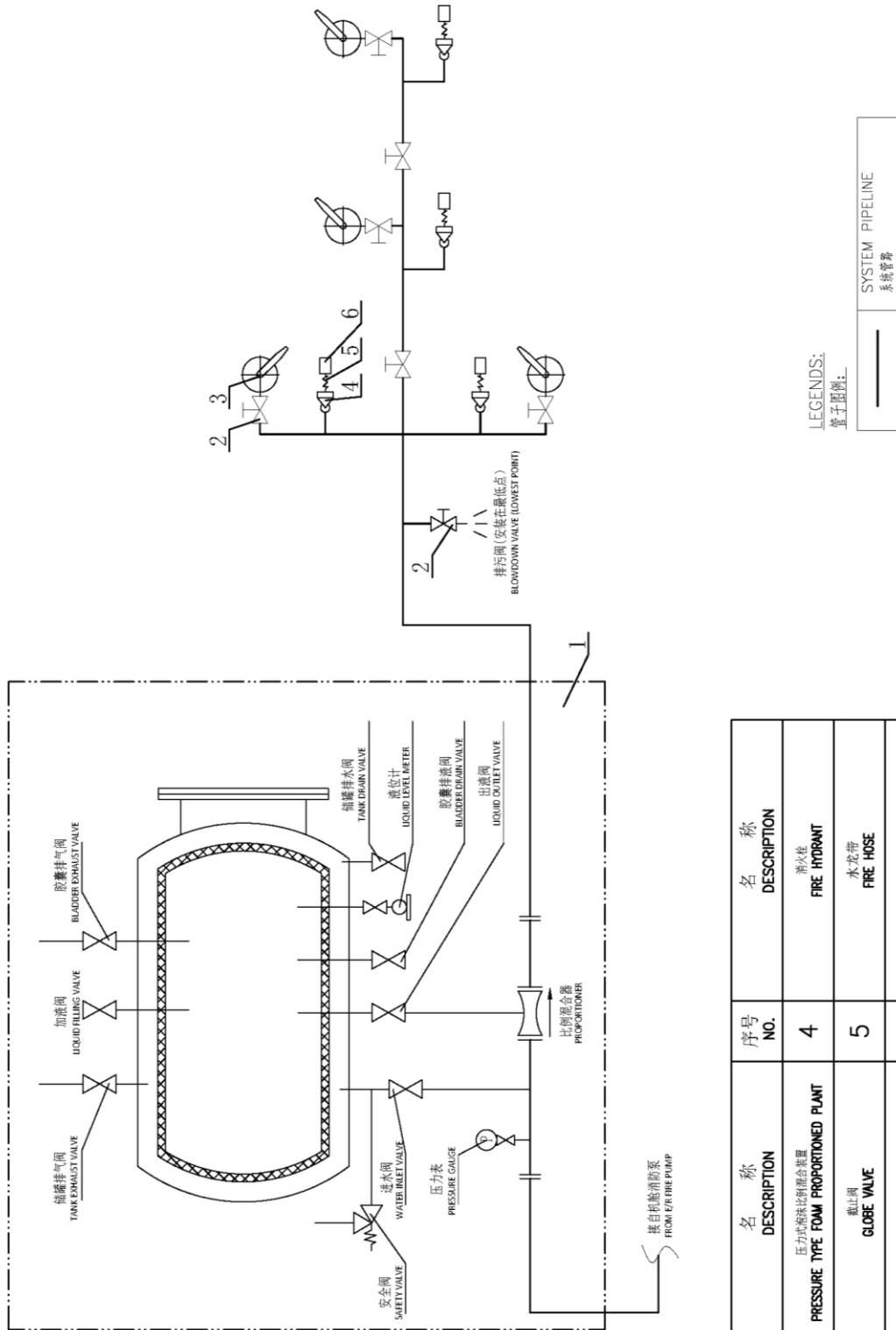
### 泡沫比例混合器基本参数

#### Basic Parameters of Foam Proportioner

| 类型<br>Type                                  | 压力(MPa)<br>Pressure | 混合液流量(L/s)<br>Mixing Liquid Flow | 压力损失(MPa)<br>Pressure Loss |
|---------------------------------------------|---------------------|----------------------------------|----------------------------|
| 空气泡沫比例混合器<br>Air Foam Proportioner          | 0.6 ~ 1.2           | 4 ~ 32                           |                            |
|                                             |                     | 16 ~ 48                          |                            |
|                                             |                     | 16 ~ 64                          |                            |
| 压力式泡沫比例混合器<br>Pressurized Foam Proportioner | 0.6 ~ 1.2           | 4 ~ 16                           | ≤0.2                       |
|                                             |                     | 8 ~ 32                           |                            |
|                                             |                     | 16 ~ 48                          |                            |
|                                             |                     | 16 ~ 64                          |                            |
|                                             |                     | 24 ~ 72                          |                            |
| 管线式泡沫比例混合器<br>Pipeline Foam Proportioner    | 0.6 ~ 1.2           | ≤3.3                             | ≤0.4                       |
|                                             |                     | ≤6.6                             |                            |
|                                             |                     | ≤1.33                            |                            |
| 夹入式泡沫比例混合器<br>Clamping Type Proportioner    | 0.6 ~ 1.2           | 13.3 ~ 100                       | ≤0.2                       |
|                                             |                     | 20 ~ 200                         |                            |

压力式甲板泡沫灭火系统原理图

SYSTEM DIAGRAM OF HIGH EXPANSION FOAM FIRE EXTINGUISHING SYSTEM



## 平衡式泡沫比例混合装置

### BALANCED TYPE FOAM PROPORTIONING PLANT



#### 制造标准 Manufacturing Standards

经 MSC.339(91)修正的《国际消防安全系统规则》第 14 章

Chapter 14 of International Code for Fire Safety Systems, as Amended by MSC.339(91).

#### 适用范围 Application

油船、化学品船、直升机甲板、海油平台。

Oil tankers, chemical tankers, helicopter deck, offshore oil platform.

#### 型号及意义 Model and Significance



PHP100-50:表示平衡泡沫比例混合装置，储液罐容积 5m<sup>3</sup>，泡沫液混合最大流量 100L/S。

For example, PHP100-50 means capacity of tank is 5m<sup>3</sup>, Max. mixture flow is 100L/S.

## 技术参数 Technical Parameters

|                                        |           |       |       |        |        |        |        |        |        |                      |
|----------------------------------------|-----------|-------|-------|--------|--------|--------|--------|--------|--------|----------------------|
| 比例混合器<br>Proportion mixer              | PHP32     | PHP48 | PHP64 | PHP100 | PHP120 | PHP150 | PHP180 | PHP200 | PHP260 | PHP600-X             |
| 混合液流量范围<br>Solution Range(L/S)         | 8~32      | 16~48 | 24~64 | 24~100 | 32~120 | 48~150 | 48~180 | 64~200 | 64~260 | 600m <sup>3</sup> /h |
| 工作压力范围<br>Working Pressure Range (MPa) | 0.6 ~ 1.2 |       |       |        |        |        |        |        |        | 1.4                  |
| 工作温度<br>Working Temperature (°C)       | 0 ~ 45°C  |       |       |        |        |        |        |        |        |                      |
| 储罐容积<br>Tank volume(L)                 | 100Δ      |       |       |        |        |        |        |        |        |                      |
| 混合比<br>Mixture Ratio (%)               | 3/6       |       |       |        |        |        |        |        |        | 3                    |

注：100Δ为产品型号 100 倍计， 如 PHP32-15, 即：15x100=1500L。以此类推。

Note: 100Δ is calculated based on 100 times the product model, such as PHP32-15, that is:

15x100=1500L. And so on.



泡沫喷头  
Foam Nozzle



泡沫泵  
Foam Pump

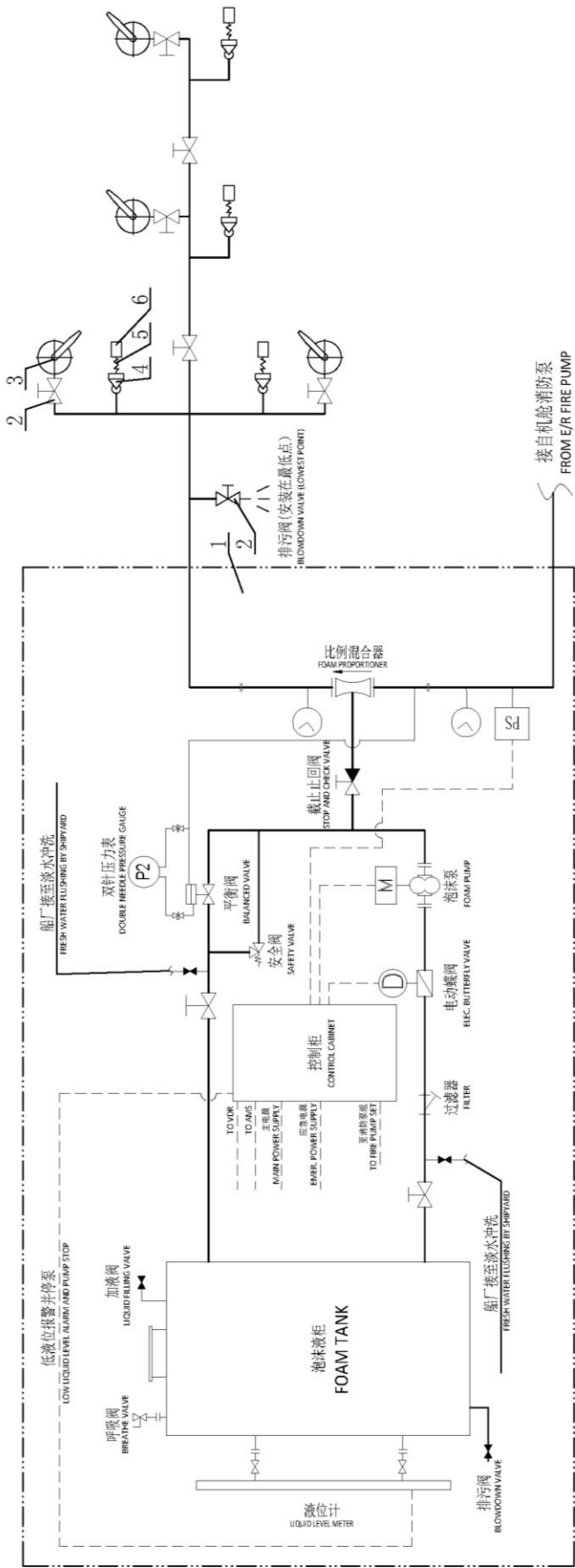


泡沫液柜  
Foam Cabinet Tank



泡沫液罐  
Foam Bladder Tank

平衡式甲板泡沫灭火系统原理图  
SYSTEM DIAGRAM OF BALANCED TYPE FOAM PROPORTIONED PLANT



LEGENDS:  
管子图例:

|      |                         |
|------|-------------------------|
| ——   | SYSTEM PIPELINE<br>系统管路 |
| ---- | ELECTRICAL LINE<br>电气线路 |

| 序号<br>NO. | 名称<br>DESCRIPTION                                    | 序号<br>NO. | 名称<br>DESCRIPTION        |
|-----------|------------------------------------------------------|-----------|--------------------------|
| 1         | BALANCED TYPE FOAM PROPORTIONED PLANT<br>平衡式泡沫比例混合装置 | 4         | FIRE HYDRANT<br>消防栓      |
| 2         | GLOBE VALVE<br>截止阀                                   | 5         | FIRE HOSE<br>水龙带         |
| 3         | FIRE MONITOR<br>消防炮                                  | 6         | FOAM APPLICATOR<br>空气泡沫枪 |

## 高倍泡沫灭火系统

### HIGH-EXPANSION FOAM FIRE EXTINGUISHING SYSTEM



#### 制造标准 Manufacturing Standards

1.1974 年国际海上人命安全公约及其修正案第 II-2 章第 10 条

Regulations 10 Chapter II-2 of International Convention for the Safety of Life at Sea,1974,as Amended.

2.经 MSC.327(90)修正的《国际消防安全系统规则》第 6 章

Chapter 6 of International Code for Fire Safety Systems, as Amended by MSC.327(90).

3.MSC.1/Circ.1384 固定式高倍泡沫系统认可指南

MSC.1/Circ.1384 Guidelines for the Testing and Approval of fixed High-expansion Foam Systems.

4.MSC.1/Circ.1271 用于保护机器处所和货泵舱的内部空气成泡的高倍泡沫灭火系统认可指南

MSC.1/Circ.1271 Guidelines for the Approval of High-expansion Foam Systems Using inside Air for the Protection of Machinery Spaces and Cargo Pump-rooms.

#### 适用范围 Application

保护机器处所、货物处所、货泵舱、车辆处所、特种处所和滚装处所等。

System for the protection of machinery spaces 、 cargo spaces、 pump rooms、 vehicle、 special category and ro-ro spaces and etc.

## 泡沫发生器技术参数

### Technical Parameters of Foam Generator

|                                     |            |                              |                                    |
|-------------------------------------|------------|------------------------------|------------------------------------|
| 型号<br>Model                         | PF1        | 发泡倍数<br>Foam expansion       | ≥300 倍<br>≥300 times               |
| 额定工作压力<br>Rated working pressure    | 0.6        | 50%析液时间<br>50% drainage time | ≥10min                             |
| 额定流量<br>Rated flow                  | 1L/s       | 泡沫液型号<br>Foam liquid type    | Suolong-3%HEF                      |
| 工作压力范围<br>Working pressure range    | 0.6-1.2MPa | 系统类型<br>System Type          | 内部空气成泡系统<br>Inside air foam system |
| 混合比<br>Mixing ratio                 | 3%         | 泡沫供给速率<br>Foam supply rate   | 30m <sup>3</sup> /min              |
| 最小设计填充率<br>Minimum design fill rate | 1.2m/min   |                              |                                    |

## 平衡式泡沫比例混合装置技术参数

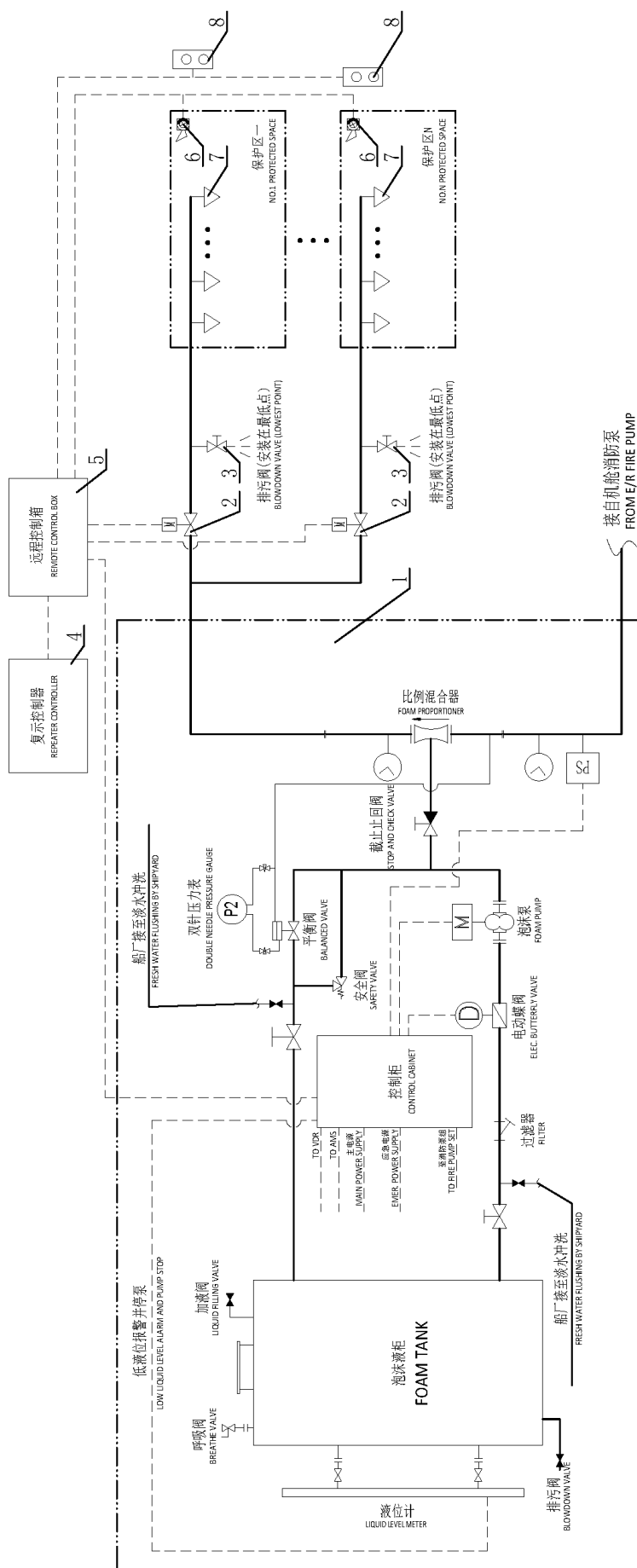
### Technical Parameter of Balanced Type Foam Proportioner Plant

|                                                   |         |          |          |           |           |
|---------------------------------------------------|---------|----------|----------|-----------|-----------|
| 型号<br>Model                                       | PHP32-△ | PHP48-△  | PHP64-△  | PHP100-△  | PHP150-△  |
| 混合液流量范围<br>Mixed Liquid Flow Range                | 4-32L/s | 16-48L/s | 24-64L/s | 24-100L/s | 48-150L/s |
| 工作压力范围<br>WP Range (MPa)                          | 0.6-1.2 |          |          |           |           |
| 工作温度 (°C)<br>Operating Temperature                | 0-45°C  |          |          |           |           |
| 混合比(%)<br>Mixing Ratio                            | 3%      |          |          |           |           |
| 储罐容积(L)<br>Tank Volume                            | 100△    |          |          |           |           |
| 进出口压差 (MPa)<br>Inlet & Outlet Pressure Difference | ≤0.2MPa |          |          |           |           |

注：100△为产品型号 100 倍计，如 PHP32-15，即：15x100=1500L。以此类推。

Note: 100△ is calculated based on 100 times the product model, such as PHP32-15, that is: 15x100=1500L. And so on.

高倍泡沫灭火系统原理图  
SYSTEM DIAGRAM OF HIGH EXPANSION FOAM FIRE EXTINGUISHING SYSTEM



LEGENDS:  
管子图例:

|      |                         |
|------|-------------------------|
| —    | SYSTEM PIPELINE<br>系统管路 |
| ---- | ELECTRICAL LINE<br>电气线路 |

| 序号<br>NO. | 名称<br>DESCRIPTION                               | 序号<br>NO. | 名称<br>DESCRIPTION                        |
|-----------|-------------------------------------------------|-----------|------------------------------------------|
| 1         | 平衡式泡沫比例混合装置<br>BALANCED FOAM PROPORTIONED PLANT | 5         | 远程控制台<br>REMOTE CONTROL BOX              |
| 2         | 电动球阀<br>ELECTRIC BALL VALVE                     | 6         | 声光报警器<br>AUDIBLE AND VISUAL ALARM        |
| 3         | 截止阀<br>GLOBE VALVE                              | 7         | 高位泡沫发生器<br>HIGH EXPANSION FOAM GENERATOR |
| 4         | 重复控制器<br>REPEATER CONTROLLER                    | 8         | 启停按钮盒<br>START-STOP BUTTON BOX           |

## 消防炮 FIRE MONITOR

### 制造标准 Manufacturing Standards

1. 中国国家标准 GB 19156-2019 《消防炮》

National Standard of P.R.China, GB 19156-2019 General Specifications for Fire Monitors.

2. 中国国家标准 GB 19157-2025 《远控消防炮系统通用技术条件》

National Standard of P.R.China, GB 19157-2003 General Specifications for Remote Control Fire Monitors System.

3. 中国船舶行业标准 CB/T3571-2014 《船用低倍泡沫装置》

Chinese Shipbuilding Professional Standard CB/T3571-2014 Marine Low-expansion Foam Unit.

4. 国际海事组织 MSC.98(73) 国际消防安全系统规则

IMO MSC.98 (73) International Code for Fire Safety Systems.

### 适用范围 Application

油船、化学品船、公务船、工程船、石油平台等。

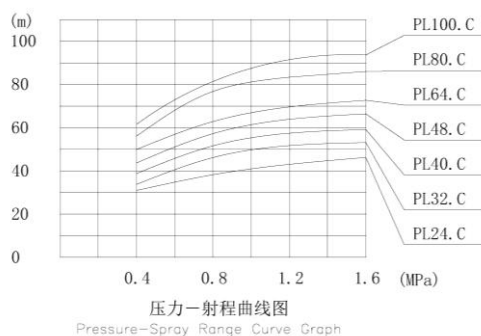
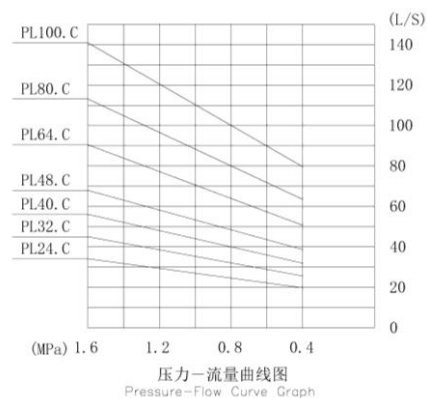
Oil tankers, chemical tankers, official ship, engineering ship, oil platform.



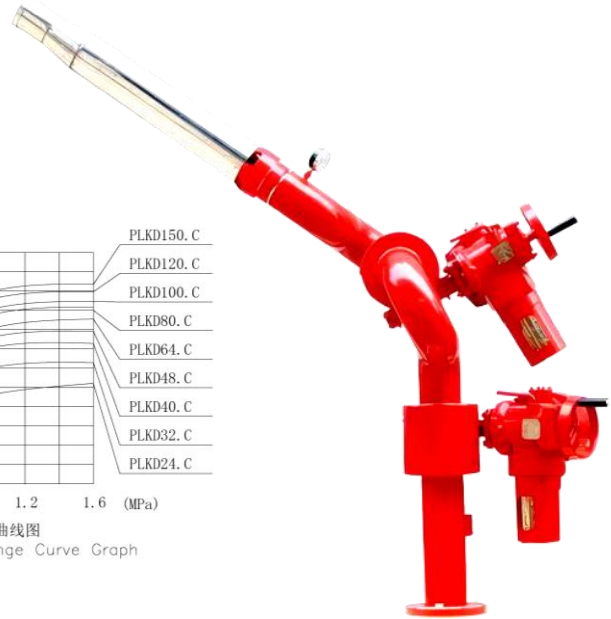
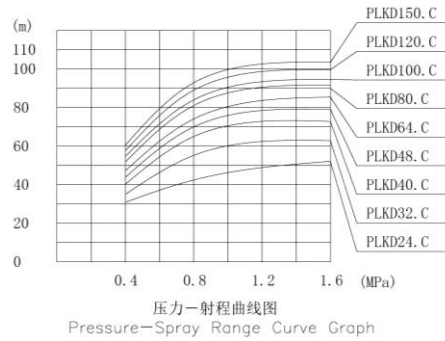
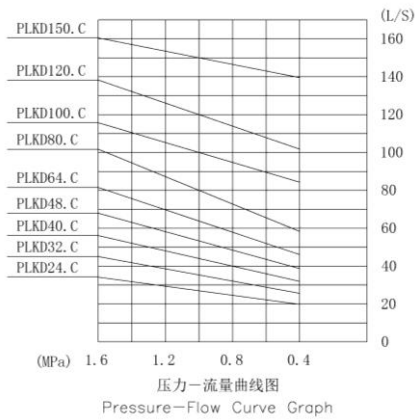
### 技术参数 Technical Parameters

#### 1. 手动消防炮 Manual Monitor

|                                    |                                                                     |      |      |      |            |      |        |
|------------------------------------|---------------------------------------------------------------------|------|------|------|------------|------|--------|
| 型号<br>Type                         | 24                                                                  | 32   | 40   | 48   | 64         | 80   | 100    |
| 额定流量(L/S)<br>Flow Rate             | 24                                                                  | 32   | 40   | 48   | 64         | 80   | 100    |
| 泡沫射程(m)<br>Foam Spray Range        | ≧ 42                                                                | ≧ 48 | ≧ 55 | ≧ 60 | ≧ 70       | ≧ 80 | ≧ 85   |
| 水射程(m)<br>Water Spray Range        | ≧ 55                                                                | ≧ 60 | ≧ 65 | ≧ 70 | ≧ 75       | ≧ 85 | ≧ 90   |
| 额定工作压力(MPa)<br>Nominal WP (MPa)    | 0.8MPa                                                              |      |      |      | 1.0MPa     |      | 1.2MPa |
| 工作压力范围(MPa)<br>Pressure Range(MPa) | 0.4 ~ 1.2MPa                                                        |      |      |      |            |      |        |
| 发泡倍数(20℃)<br>Expansion Ratio       | ≧ 6                                                                 |      |      |      |            |      |        |
| 25％析液时间(20℃)<br>Drainage Time      | ≧ 2.5 min                                                           |      |      |      |            |      |        |
| 水平转角<br>Horizontal Rotation Angle  | 360°                                                                |      |      |      |            |      |        |
| 垂直转角<br>Vertical Rotation Angle    | ≧ -30° ~ ≧ +60°                                                     |      |      |      |            |      |        |
| 图纸批准号<br>DWG Approval NO.          | SH07A00067                                                          |      |      |      | SH11A00497 |      |        |
| 检验标准<br>Inspection Standard        | GB19156-2019《消防炮通用技术条件》<br>General Specifications for Fire Monitors |      |      |      |            |      |        |

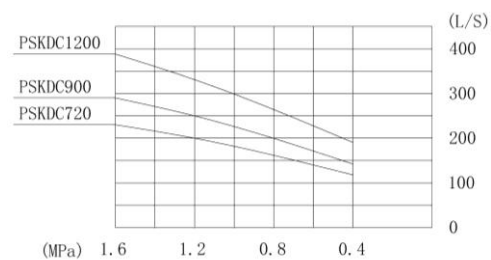


## 2. 电控消防炮 Electric-controlled Monitor

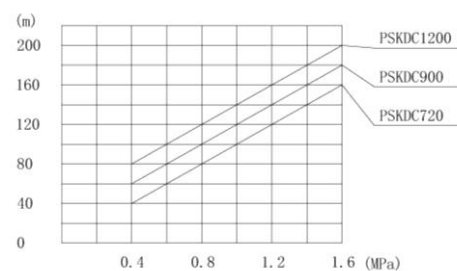


| 型号 Type                           |            | 24                                                                                                                                                                       | 32   | 40   | 48   | 64     | 80   | 100    | 120  | 150        |
|-----------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|--------|------|--------|------|------------|
| 额定工作压力(MPa)<br>Nominal WP         |            | 0.8MPa                                                                                                                                                                   |      |      |      | 1.0MPa |      | 1.2MPa |      | 1.4MPa     |
| 工作压力范围<br>Pressure Range (MPa)    |            | 0.4 ~ 1.2MPa                                                                                                                                                             |      |      |      |        |      |        |      | 0.4-1.4MPa |
| 流量(L/S)<br>Flow Rate              | 泡沫<br>Foam | 24                                                                                                                                                                       | 32   | 40   | 48   | 64     | 80   | 100    | 120  | 150        |
|                                   | 水<br>Water | 24                                                                                                                                                                       | 32   | 40   | 48   | 64     | 80   | 100    | 120  | 150        |
| 射程(m)<br>Range                    | 泡沫<br>Foam | ≥ 40                                                                                                                                                                     | ≥ 48 | ≥ 50 | ≥ 60 | ≥ 70   | ≥ 80 | ≥ 85   | ≥ 90 | ≥ 95       |
|                                   | 水<br>Water | ≥ 45                                                                                                                                                                     | ≥ 55 | ≥ 65 | ≥ 70 | ≥ 75   | ≥ 85 | ≥ 90   | ≥ 95 | ≥ 100      |
| 水平回转角度<br>Horizontal Rotate Angle |            | 270°                                                                                                                                                                     |      |      |      |        |      |        |      |            |
| 仰俯角度<br>Pitch Angle               |            | -30 ~ +60°                                                                                                                                                               |      |      |      |        |      |        |      |            |
| 发泡倍数(20℃)<br>Expansion Rate       |            | ≥ 6                                                                                                                                                                      |      |      |      |        |      |        |      |            |
| 25％析液时间(20℃)<br>25% Drainage Time |            | ≥ 2.5 min                                                                                                                                                                |      |      |      |        |      |        |      |            |
| 电源<br>Power                       |            | AC380V/50Hz; DC24V                                                                                                                                                       |      |      |      |        |      |        |      |            |
| 电机功率<br>Motor Power               |            | 0.37KW                                                                                                                                                                   |      |      |      |        |      |        |      |            |
| 图纸批准号<br>DWG Approval NO.         |            | SH13A00385                                                                                                                                                               |      |      |      |        |      |        |      |            |
| 检验标准<br>Inspection Standard       |            | GB19156-2019 《消防炮通用技术条件》 GB19157-2003 《远控消防炮系统通用技术条件》<br>General Specifications for Fire Monitors;<br>General Specifications for Remote Controlled Fire Monitor Systems; |      |      |      |        |      |        |      |            |

### 3.电控消防水炮 Electric-controlled Water Monitor



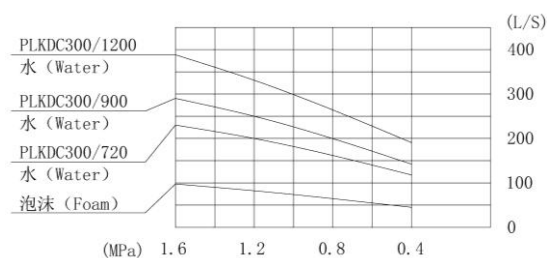
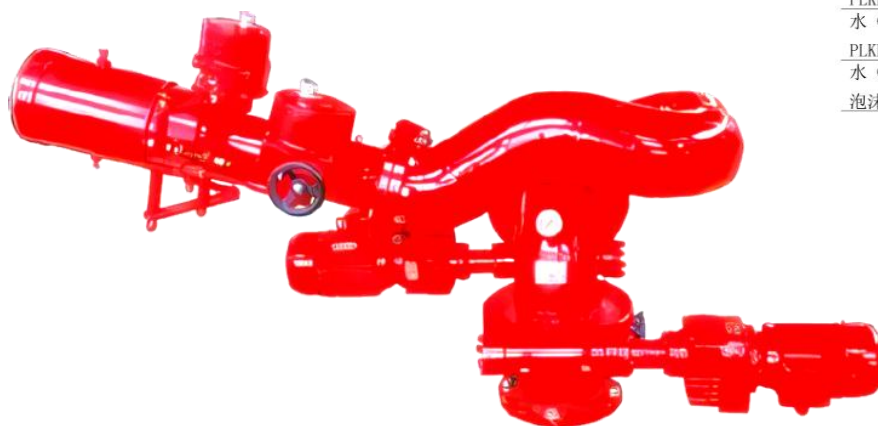
压力—流量曲线图  
Pressure—Flow Curve Graph



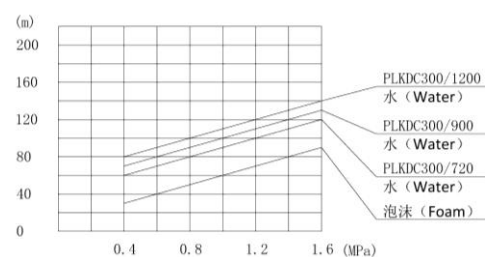
压力—射程曲线图  
Pressure—Spray Range Curve Graph

| 序号<br>NO. | 型号 Type<br>项目 Item                  |            | PSKDC1200                                                                         | PSKDC900              | PSKDC720              |
|-----------|-------------------------------------|------------|-----------------------------------------------------------------------------------|-----------------------|-----------------------|
| 1         | 额定工作压力<br>Nominal Working Pressure  |            | 1.2MPa                                                                            |                       |                       |
| 2         | 工作压力范围<br>Working Pressure Range    |            | 0.4 ~ 1.6MPa                                                                      |                       |                       |
| 3         | 流量<br>Flow Rate                     | 水<br>Water | 1200 m <sup>3</sup> /h                                                            | 900 m <sup>3</sup> /h | 720 m <sup>3</sup> /h |
| 4         | 射程<br>Spray Range                   | 水<br>Water | ≥ 160m                                                                            | ≥ 140m                | ≥ 120m                |
| 5         | 水平回转角度<br>Horizontal Rotation Angle |            | 300°                                                                              |                       |                       |
| 6         | 仰俯角度<br>Pitch Angle                 |            | -30° ~ +70°                                                                       |                       |                       |
| 7         | 电源<br>Power                         |            | AC380V, 50Hz; DC24V                                                               |                       |                       |
| 8         | 电机功率<br>Motor Power                 |            | 水平回转: 1.1KW, 俯仰回转: 2.2KW;<br>Horizontal Rotate: 1.1 KW, Vertical Rotate: 2.2KW    |                       |                       |
| 9         | 遥控距离<br>Remote Control Distance     |            | ≤ 150m                                                                            |                       |                       |
| 10        | 连接方式<br>Connect Way                 |            | 法兰连接, DN200 1.6MPa HG/T20592-2009;<br>Flange Connect, DN200 1.6MPa HG/T20592-2009 |                       |                       |

#### 4.电控消防泡沫/水两用炮 Electric-controlled Foam/Water Dual Monitor



压力—流量曲线图  
Pressure—Flow Curve Graph



压力—射程曲线图  
Pressure—Spray Range Curve Graph

| 序号<br>NO. | 型号 Type<br><br>项目 Item              |            | PLKDC300/1200                                                                     | PLKDC300/900 | PLKDC300/720 |
|-----------|-------------------------------------|------------|-----------------------------------------------------------------------------------|--------------|--------------|
| 1         | 额定工作压力<br>Nominal Working Pressure  |            | 1.2MPa                                                                            |              |              |
| 2         | 工作压力范围<br>Working Pressure Range    |            | 0.4 ~ 1.6MPa                                                                      |              |              |
| 3         | 流量<br>Flow Rate                     | 水<br>Water | 1200 m³/h                                                                         | 900 m³/h     | 720 m³/h     |
| 4         |                                     | 泡沫<br>Foam | 300 m³/h                                                                          |              |              |
| 5         | 射程<br>Spray Range                   | 水<br>Water | ≧ 120m                                                                            | ≧ 110m       | ≧ 100m       |
|           |                                     | 泡沫<br>Foam | ≧ 70m                                                                             |              |              |
| 6         | 水平回转角度<br>Horizontal Rotation Angle |            | 300°                                                                              |              |              |
| 7         | 仰俯角度<br>Pitch Angle                 |            | -30° ~ +70°                                                                       |              |              |
| 8         | 25%析液时间(20℃)<br>25% Drainage Time   |            | ≧ 2.5 min                                                                         |              |              |
| 9         | 电源<br>Power                         |            | AC380V, 50Hz; DC24V                                                               |              |              |
| 10        | 电机功率<br>Motor Power                 |            | 水平回转：1.1KW， 俯仰回转： 2.2KW；<br>Horizontal Rotate: 1.1 KW, Vertical Rotate: 2.2KW     |              |              |
| 11        | 遥控距离<br>Remote Control Distance     |            | ≦ 150m                                                                            |              |              |
| 12        | 连接方式<br>Connect Way                 |            | 法兰连接， DN200 1.6MPa HG/T20592-2009；<br>Flange Connect, DN200 1.6MPa HG/T20592-2009 |              |              |

# 消防炮塔 FIRE MONITOR TOWER

## 制造标准 Manufacturing Standards

1. 中国国家标准 GB50135-2019 《高耸结构设计规范》

GB50135-2019 Code for Design of Tall-slender Structures.

2. 中国国家标准 GB50006-2021 《钢结构设计规范》

GB50006-2021 Design Code for Steel Structures.

## 适用范围 Application

船舶、码头、石油及化工企业、海上石油平台辅助船等。

Ships, dock, oil or chemical enterprise, offshore oil platform support ship and etc.



## 技术参数 Technical Parameters

| 型号<br>Type                                        | TP8                                                                                                                            | TP10 | TP12 | TP16 | TP18 | TP20 |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|------|
| 上平台高度 (m) Height                                  | 8                                                                                                                              | 10   | 12   | 16   | 18   | 20   |
| 平台间距(m)<br>Distance                               | 2.5 m<br>(如有设中、下平台/ if have middle or lower platform)                                                                          |      |      |      |      |      |
| 泡沫/水管道<br>Foam /Water Pipe                        | $\leq 80\text{L/S}$ 时, 使用 6"管道 less than 80 L/S, cw 6" pipe.<br>$\leq 150\text{L/S}$ 时, 使用 8"管道 less than 150 L/S, cw 8" pipe. |      |      |      |      |      |
| 水幕耗水量 (L/S)<br>Water Consumption of Water Curtain | $\geq 6$                                                                                                                       |      |      |      |      |      |

## 船用对外消防泵 MARINE DIESEL FIRE PUMP

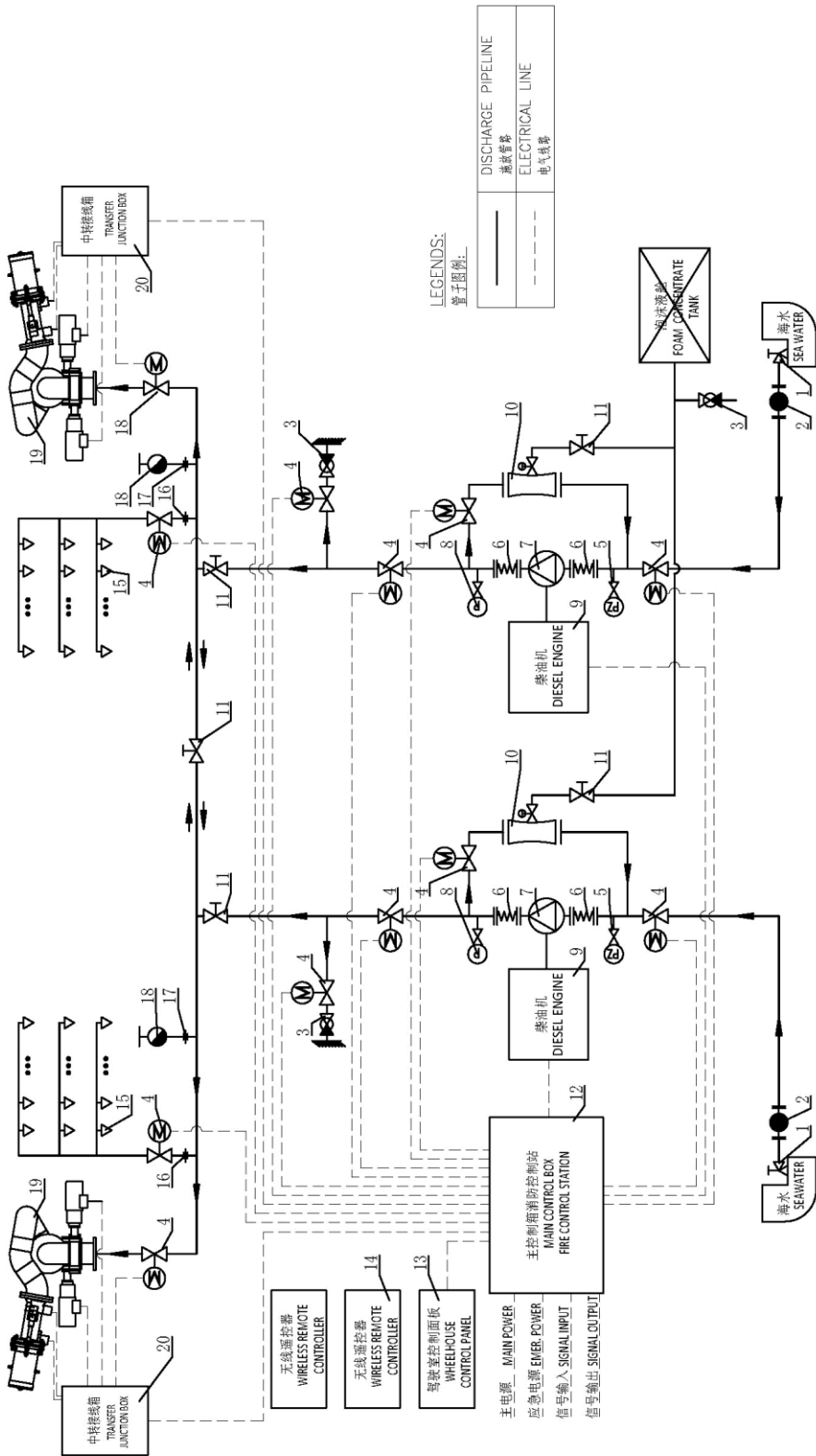


| 泵型号<br>Type      | 流量(m³/h)<br>Flow Rate | 扬程(m)<br>Lift Range | 转速(rpm)<br>Speed | 汽蚀余量(m)<br>NPSH | 轴功率(KW)<br>Shaft Power | 配套功率(KW)<br>Mating Power | 效率(%)<br>Efficiency |
|------------------|-----------------------|---------------------|------------------|-----------------|------------------------|--------------------------|---------------------|
| 350CXB300-565    | 1500                  | 140                 | 1800             | 4.5             | 715                    | 850                      | 79                  |
| 350CXB300-565(A) | 1200                  | 140                 | 1800             | 3.5             | 587                    | 700                      | 78                  |
| 300CXB250-565    | 1000                  | 140                 | 1800             | 3               | 496                    | 600                      | 77                  |
| 350CXB250-565(A) | 800                   | 140                 | 1800             | 2.5             | 410                    | 500                      | 75                  |
| 250CXB200-565    | 600                   | 140                 | 1800             | 2.5             | 314                    | 400                      | 73                  |
| 200CXB150-565    | 400                   | 140                 | 1800             | 2.5             | 218                    | 275                      | 70                  |
| 200CXB150-565(A) | 300                   | 140                 | 1800             | 2.5             | 164                    | 200                      | 70                  |

注：该系列水泵可根据其动力转速的变化来改变流量及扬程，最大流量可达 2400 m³/h 以上，最高扬程可达 160m 以上。

Note: this series of water pumps can change the flow rate and lift range according to its rotate speed, the maximum flow rate can get to more than 2400 m³/h, and the highest lift range can get to more than 160m.

# 对外消防灭火系统原理图 SYSTEM DIAGRAM OF EXTERNAL FIRE FIGHTING SYSTEM



| 序号<br>NO. | 名 称<br>DESCRIPTION               | 序号<br>NO. | 名 称<br>DESCRIPTION                         | 序号<br>NO. | 名 称<br>DESCRIPTION                                 | 序号<br>NO. | 名 称<br>DESCRIPTION                              |    |                                                 |
|-----------|----------------------------------|-----------|--------------------------------------------|-----------|----------------------------------------------------|-----------|-------------------------------------------------|----|-------------------------------------------------|
| 1         | 海阀<br>SEA VALVE                  | 5         | 真空压力表及阀<br>VACUUM PRESSURE GAUGE AND VALVE | 9         | 柴油引擎<br>DIESEL ENGINE                              | 13        | 驾驶室控制面板<br>WHEELHOUSE CONTROL PANEL             | 17 | 消防栓减压孔板<br>FIRE HYDRANT PRESSURE RELIEF ORIFICE |
| 2         | 过滤器<br>FILTER                    | 6         | 膨胀节<br>EXPANSION JOINT                     | 10        | 比例混合器<br>PROPORTIONER                              | 14        | 无线遥控<br>WIRELESS REMOTE CONTROLLER              | 18 | 四路甲板消防水栓<br>FOUR-WAY DECK FIRE HYDRANT          |
| 3         | 截止止回阀<br>STOP CHECK VALVE        | 7         | 水泵<br>WATER PUMP                           | 11        | 截止阀<br>STOP VALVE                                  | 15        | 水幕喷头<br>WATER CURTAIN NOZZLE                    | 19 | 电控消防炮<br>ELECTRIC FIRE MONITOR                  |
| 4         | 电动蝶阀<br>ELECTRIC BUTTERFLY VALVE | 8         | 压力表及阀<br>PRESSURE GAUGE AND VALVE          | 12        | 主控制站消防控制站<br>MAIN CONTROL BOX FIRE CONTROL STATION | 16        | 水幕高压注水<br>WATER CURTAIN PRESSURE RELIEF ORIFICE | 20 | 分路转接箱<br>TRANSFER JUNCTION BOX                  |

## 空气泡沫枪/泡沫背桶 FOAM APPLICATOR/FOAM BUCKET



PQ8A.C



PQ8B.C

### 制造标准 Manufacturing Standards

1. 中国国家标准 GB20031-2005 《泡沫灭火系统及部件通用技术条件》

National Standard of P.R.China, GB20031-2005 General Technical Specifications for Foam Fire Extinguishing System.

2. 中国船舶行业标准 CB/T3571-2014 《船用低倍泡沫装置》

Chinese Shipbuilding Professional Standard CB/T3571-2014 Marine Low-expansion Foam Unit. 经

3. MSC.339(91)修正的《国际消防安全系统规则》第 14 章

Chapter 14 of International Code for Fire Safety Systems, as Amended by MSC.339(91).

### 适用范围 Application

船舶消防。

Marine fire-fighting.

### 技术参数 Technical Parameters

| 产品型号<br>Model                            | PQ8A.C | PQ8B.C |
|------------------------------------------|--------|--------|
| 工作压力<br>Working Pressure (MPa)           | 0.5MPa | 0.5MPa |
| 混合液流量<br>Foam Concentrate Flow Rate(L/S) | 8      | 8      |
| 射程<br>Range(m)                           | 22     | 22     |
| 便携式背桶<br>Portable Bucket                 | /      | 20L    |

## 消防水软管站

### FIRE WATER HOSE REEL STATION



## 消防水泡沫软管站

### FIRE WATER/FOAM HOSE REEL STATION



## 制造标准 Manufacturing Standards

中国国家标准 GB15090-2005 《消防软管卷盘》

National Standard of P.R. China, GB15090-2005 Fire Hose Reel.

## 适用范围 Application

石油平台、船舶、输油码头、厂矿企业、化工部门、油库、加油站。

Oil platforms, ships, oil terminals, factories and mines, chemical departments, oil depots, gas stations.

## 技术参数 Technical Parameter

| 型号/Model                       | SJP8  | SJP16 | PJP8     | PJP16 |
|--------------------------------|-------|-------|----------|-------|
| 额定压力(MPa)<br>Working Pressure  | 0.7   |       | 0.7      |       |
| 额定流量(L/S)<br>Rated Flow Rate   | 8±8%  | 16±8% | 8±8%     | 16±8% |
| 射程 (m)<br>Range                | 18~28 |       | ≥18      |       |
| 混合比 (%)<br>Mixture Ratio       | /     |       | 3% or 6% |       |
| 泡沫液类型<br>Foam Concentrate Type | /     |       | AFFF     |       |
| 泡沫箱容积(L)<br>Foam Tank Volume   | /     |       | 100~500  |       |

## 消防水枪

### FIRE WATER GUN



|                               |                      |
|-------------------------------|----------------------|
| 外形尺寸(mm)<br>Size              | 275*90*220           |
| 重量(kg)<br>Weight              | ≤2.0                 |
| 进水口径<br>Inlet Diameter        | 65、50、40             |
| 额定压力(MPa)<br>Rate Pressure    | 0.6                  |
| 额定流量(L/min)<br>Rate Flow      | 480                  |
| 承压范围(bar)<br>Working Pressure | 3.5--25              |
| 喷射功能<br>Jet Function          | 直流、喷雾<br>jet and fog |

## 消防软管

### FIRE HOSE



|                       |                 |
|-----------------------|-----------------|
| 长度(m)<br>Length       | 20 、 30         |
| 通径<br>Diameter        | DN40            |
| 表面颜色<br>Surface Color | 消防红<br>Fire red |
| 材质<br>Material        | 橡胶<br>rubber    |

## 固定式局部水基灭火系统

### FIXED WATER-BASED LOCAL APPLICATION FIRE FIGHTING SYSTEMS

#### 中高压固定式局部水基灭火系统

#### MID-HIGH PRESSURE FIXED WATER-BASED LOCAL APPLICATION FIRE FIGHTING SYSTEM

#### 制造标准 Manufacturing Standards

1.1974年国际海上人命安全公约及其修正案第11-2章第10.5.6条

Regulations 10.5.6, Chapter II-2 of International Convention for the Safety of Life at Sea, 1974, as Amended.

2.MSC.1/Circ.1387《经修订的适用于A类机器处所的固定式局部水基灭火系统认可导则》

MSC.1/Circ.1387 Revised Guidelines for the Approval of Fixed Water-based Local Application Firefighting Systems for Use in Category A Machinery Spaces.

#### 适用范围 Application

A类机器处所及类似危险区域局部灭火。

Fixed local application fire-extinguishing in category A machinery spaces and similar risks.



#### 技术参数 Technical Parameters

|                                     |                                                                                  |
|-------------------------------------|----------------------------------------------------------------------------------|
| 产品名称<br>Product Name                | 中高压局部水基灭火系统<br>MP&HP of Fixed Water-based Local Application Fire Fighting System |
| 型号<br>Type                          | YNXSWC3                                                                          |
| 喷头安装高度<br>Installation Height       | 0.5 ~ 7m                                                                         |
| 喷头最大水平距离<br>Max. Horizontal Spacing | 2.8m                                                                             |
| 喷头布置形式<br>Nozzle Arrangement Form   | 1x1、1x2、1x3、1x4                                                                  |
|                                     | 2x2、2x3、2x4、3x3、3x4、3x5                                                          |
| 最大工作压力<br>Max. Working Pressure     | /                                                                                |
| 最小工作压力<br>Min. Working Pressure     | 3MPa                                                                             |
| 喷头流量系数<br>Flow Factor K             | 1.6                                                                              |
| 喷雾锥角度<br>Spray Angle                | 100°                                                                             |
| 喷头材料<br>Material                    | QA19-2                                                                           |

## 低压固定式局部水基灭火系统

### LOW PRESSURE FIXED WATER-BASED LOCAL APPLICATION FIRE FIGHTING SYSTEM

#### 制造标准 Manufacturing Standards

1.1974 年国际海上人命安全公约及其修正案第 11-2 章第 10.5.6 条

Regulations 10.5.6, Chapter II-2 of International Convention for the Safety of Life at Sea, 1974, as Amended.

2.MSC.1 /Circ.1387《经修订的适用于 A 类机器处所的固定式局部水基灭火系统认可导则》

MSC.1 /Circ.1387 Revised Guidelines for the Approval of Fixed Water-based Local Application Firefighting Systems for Using in Category A Machinery Spaces.

#### 适用范围 Application

A 类机器处所及类似危险区域局部灭火。

Fixed local application fire-extinguishing in category A machinery spaces and similar risks.

#### 技术参数 Technical Parameters



|                                     |                                                                               |
|-------------------------------------|-------------------------------------------------------------------------------|
| 产品名称<br>Product Name                | 中高压局部水基灭火系统<br>LP of Fixed Water-based Local Application Fire Fighting System |
| 型号<br>Type                          | YNXSWC-L                                                                      |
| 喷头安装高度<br>Installation Height       | 0.5 ~ 7m                                                                      |
| 喷头最大水平距离<br>Max. Horizontal Spacing | 2.2m                                                                          |
| 喷头布置形式<br>Nozzle Arrangement Form   | 1x1、1x2、1x3、1x4                                                               |
|                                     | 2x2、2x3、2x4、3x3、3x4、3x5                                                       |
| 最大工作压力<br>Max. Working Pressure     | 1.2MPa                                                                        |
| 最小工作压力<br>Min. Working Pressure     | 0.8MPa                                                                        |
| 喷头流量系数<br>Flow Factor K             | 5.4                                                                           |
| 喷雾锥角度<br>Spray Angle                | 120°                                                                          |
| 喷头材料<br>Material                    | QA19-2                                                                        |

## 火灾报警单元 Fire Alarm Unit



感烟探测器  
Smoke Detector



火焰探测器  
Flame Detector



手动报警按钮  
Manual Call Point



声光报警器  
Audible and Visual Alarm



火灾显示盘（嵌入式）  
Fire Display Panel  
(embedded)



火灾显示盘（壁挂式）  
Fire Display Panel  
(wall-mounted)



火灾报警控制器（嵌入式）  
Fire Alarm Controller  
(embedded)



火灾报警控制器（壁挂式）  
Fire Alarm Controller  
(wall-mounted)

火灾控制单元  
Fire Control Unit



远程控制箱  
Remote Control Box



水泵控制柜  
Pump Control Box

喷射部件  
Spray Components



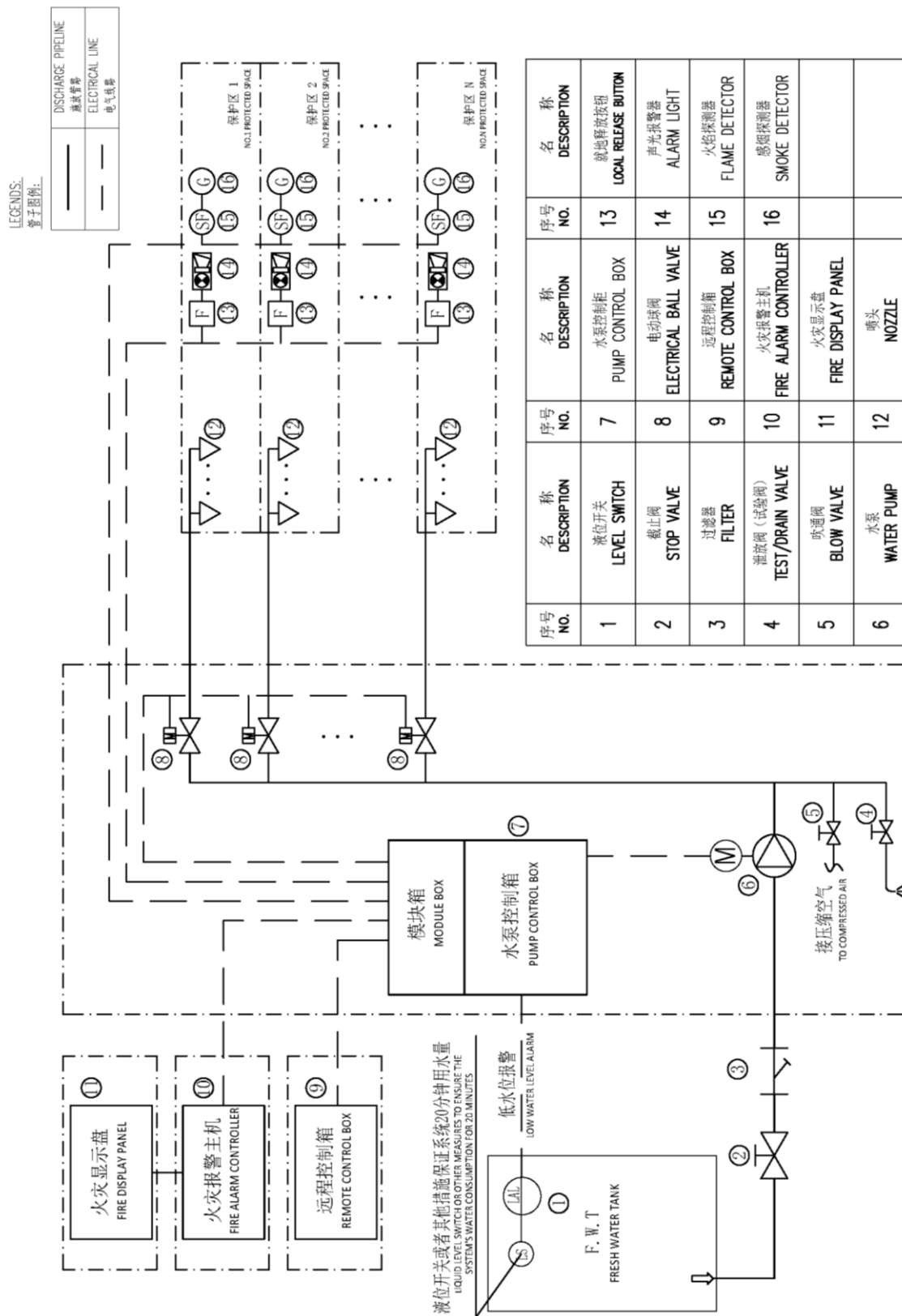
中高压细水雾喷头  
M&HP Water Mist Nozzle



低压细水雾喷头  
LP Water Mist Nozzle

# 固定式局部水基灭火系统原理图

## SYSTEM DIAGRAM OF FIXED WATER-BASED LOCAL APPLICATION FIRE FIGHTING SYSTEM



## 喷淋装置 WATER SPRINKLER SYSTEM



### 制造标准 Manufacturing Standards

1. 经 MSC.327(90)和 MSC.339(91)修正的《国际消防安全系统规则》第 8 章

Chapters of International Code for Fire Safety System, as Amended by MSC.327(90) and MSC.339(91).

2. 经 MSC.265(84)和 MSC.284(86)修订的与 SOLAS 公约 11-2/12 条规定等效的喷水器系统认可指南修正案(A.800(19)决议)

MSC.265(84) and MSC.284(86) Amendments to the Revised Guidelines for Approval of Sprinkler Systems Equivalent to that Referred to in SOLAS Regulation II-2/12(Resolution A.800(19).

3. MSC.44(65)高速船固定喷水系统的标准

MSC.44(65) Standard for Fixed Sprinkler Systems for High Speed Craft.

### 适用范围 Application

国际、国内航行船舶。

Ships engaged on international/domestic voyages.

### 湿式报警阀 Wet Type Alarm Valve



| 型号<br>Model | 公称通径<br>DN(mm) | 公称压力<br>Nominal<br>(MPa) | 延迟时间<br>Delay time<br>(s) | 外形尺寸<br>Dimensions<br>(mm) |
|-------------|----------------|--------------------------|---------------------------|----------------------------|
| ZSFZ80      | 80             | 1.2                      | 15<t<60                   | 980 x 310 x 455            |
| ZSFZ100     | 100            |                          |                           | 1030 x 340x 480            |
| ZSFZ150     | 150            |                          |                           | 1085 x 36 x 540            |

## 主要零部件 Main Components



压力水柜  
Pressure Water Tank



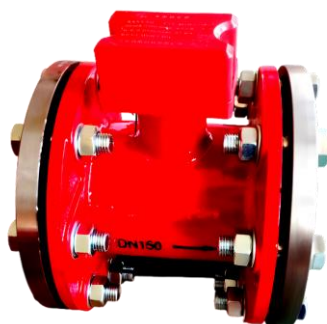
喷淋泵  
Sprinkler Pump



补水泵  
Jockey Pump



水泵控制箱  
Water Pump Control Box



水流指示器  
Water Flow Indicator



安全信号蝶阀  
Safety Signal Butterfly Valve



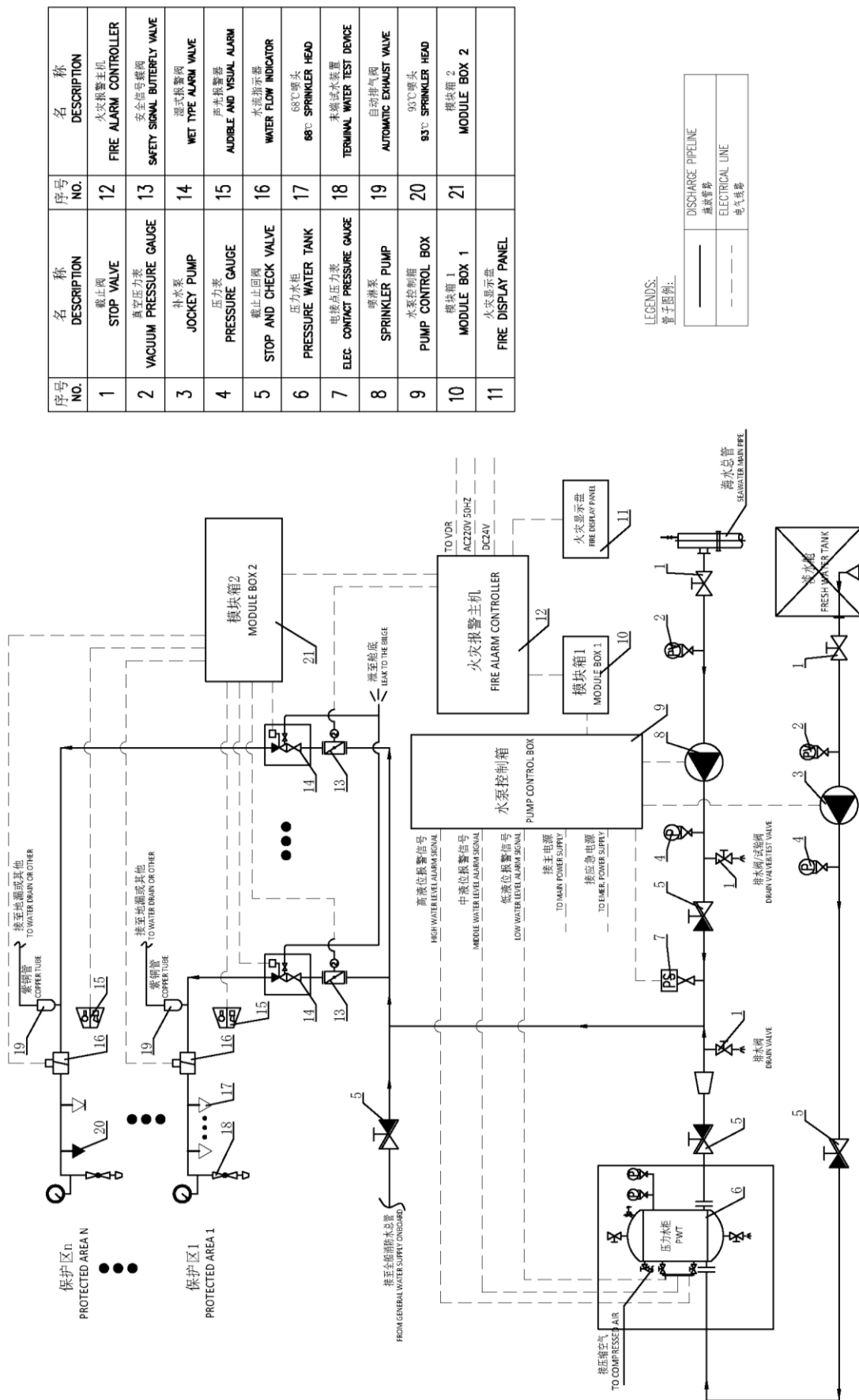
末端试水装置  
Terminal Water Test Device



洒水喷头  
Sprinkler Head

# 水喷淋灭火系统原理图

## SYSTEM DIAGRAM OF FIXED WATER SPRINKLER SYSTEM



## 固定式压力水雾灭火系统

### FIXED PRESSURE WATER MIST FIRE EXTINGUISHING SYSTEM

#### 制造标准 Manufacturing Standards

1.1974 年国际海上人命安全公约及其修正案第 11-2 章第 10 条

SOLAS Convention, 1974 Chapter 2, Item 10.

2.MSC/Circ.1165 《经修订的机器处所和货泵舱的等效水基灭火系统认可指南》及其修正案  
MSC/Circ.1165 Revised Guidelines for the Approval of Equivalent Water-based Fire Extinguishing System for Machinery Spaces and Cargo Pump-rooms.

3.经 MSC.217(82)和 MSC.339 (91) 修正的《国际消防案全系统规则》第 7 章

MSC.217(82) and MSC.339 (91) FSS Code Chapter 7.

#### 适用范围 Application

机舱、货泵舱、空压机间等机器处所。

Engine room, cargo pump room, compressor room and other machinery spaces.

#### 技术参数 Technical Parameters

|                                      |             |                    |            |             |            |             |
|--------------------------------------|-------------|--------------------|------------|-------------|------------|-------------|
| 产品型号 Model                           |             | YW- A              | YW- B      |             | YW- C      |             |
| 喷头型号 Nozzle Type                     |             | SSF-WH-8-1.65      | ZSTWB27-90 | ZSTWB54-120 | ZSTWC27-90 | ZSTWC54-120 |
| 系统设计压力 Design Pressure               |             | 15MPa              | 1.6MPa     |             |            |             |
| 喷头最大水平间距<br>Max Hori. Space          | 天花板 Ceiling | 2.8mx2.8m          | 3.5mx3.5m  |             |            |             |
|                                      | 舱底 Bottom   | 2.8mx2.0m          | 3.0mx2.0m  |             |            |             |
| 喷头流量 K 系数 K Factor                   |             | 1.65               | 27±1.5     | 54±3        | 27±1.5     | 54±3        |
| 最大围闭空间高度 Max Enclosed Height         |             | 7m                 | 9m         |             |            |             |
| 喷头在天花板下的距离<br>Distance Under Ceiling |             | ≧0.1m              | ≧0.1m      |             |            |             |
| 最大安装高度<br>Max Install Height         | 天花板 Ceiling | ≦7m                | ≦9m        |             |            |             |
|                                      | 舱底 Bottom   | 0.65m              | 0.65m      |             |            |             |
| 距舱壁最大距离 Max Distance to Cabin        |             | ≦1.2m              | ≦1.7m      |             |            |             |
| 最大围闭空间容积 Max Enclosed Volume         |             | 3000m <sup>3</sup> |            |             |            |             |

#### 系统组成 System Components



柴油机泵  
Diesel Fire Pump



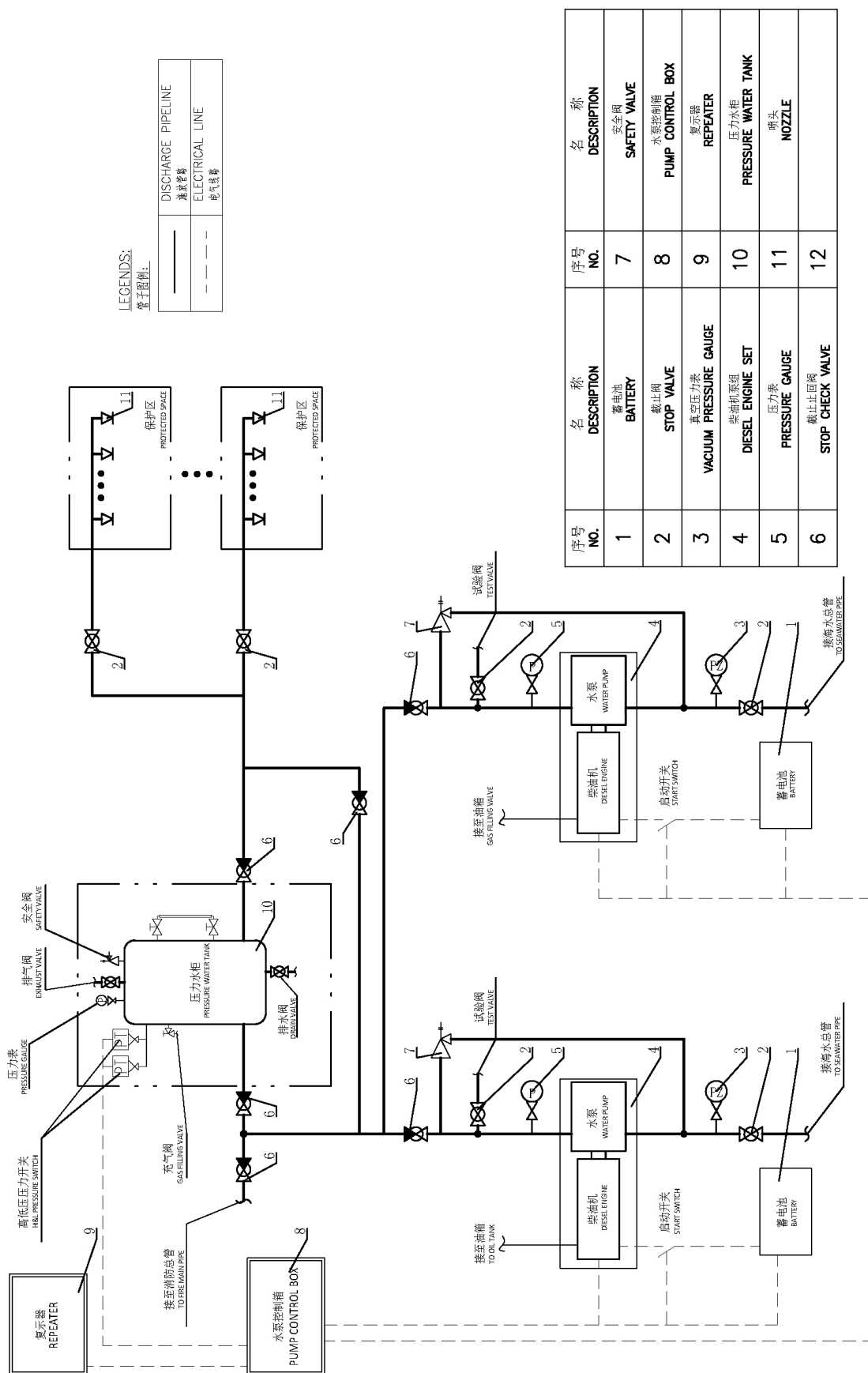
压力水柜  
Pressure Water Tank



水雾喷嘴  
Water Spray Nozzle

# 固定式压力水雾灭火系统原理图

## SYSTEM DIAGRAM OF FIXED PRESSURE WATER SPRAY SYSTEM



## 滚装处所压力水雾灭火系统

### PRESSURE WATER MIST FIRE EXTINGUISHING SYSTEM FOR RO-RO SPACES

#### 制造标准 Manufacturing Standards

1.1974 年国际海上人命安全公约及其修正案第 11-2 章第 10 条

SOLAS Convention, 1974 Chapter 2,Item 10.

2.MSC.1 /Circ.1430 《经修订用于滚装处所和特种处所固定式水基灭火系统设计和认可指南》

MSC.1 /Circ.1430 Revised Guidelines for the Design and Approval of Fixed Water-based Fire-fighting System for Ro-Ro Spaces and Special Category Spaces.

3.经 MSC.217(82)和 MSC.339 (91) 修正的《国际消防案全系统规则》第 7 章

MSC.217(82) and MSC.339 (91) FSS Code Chapter 7.

#### 适用范围 Application

车辆滚装处所、特种处所等。

Ro-Ro Spaces Special Category Spaces and etc.

#### 技术参数 Technical Parameters

| 名称 Name                |                               | 滚装处所及特种处所用固定式水基灭火装置<br>Fixed water-based fire-fighting system for ro-ro spaces and special spaces |
|------------------------|-------------------------------|---------------------------------------------------------------------------------------------------|
| 型号 Model               |                               | YW -CGT                                                                                           |
| 系统设计压力 Design Pressure |                               | 1.6MPa                                                                                            |
| 灭火介质 Medium            |                               | 淡水、海水 fresh water, sea water                                                                      |
| 系统启动方式 Starting Mode   |                               | 电气手动、手动 Electrical Manual & Manual                                                                |
| NOZZLE<br>喷头           | 型号<br>Model                   | ZSTWC-20/90、ZSTWC-20/120、ZSTWC-20/125、ZSTWC-20/150                                                |
|                        |                               | ZSTWC-27/90、ZSTWC-27/120、ZSTWC-27/125、ZSTWC-27/150                                                |
|                        |                               | ZSTWC-54/90、ZSTWC-54/120、ZSTWC-54/125、ZSTWC-54/150                                                |
|                        |                               | ZSTWC-67/90、ZSTWC-67/120、ZSTWC-67/125、ZSTWC-67/150                                                |
|                        | 工作压力范围 Working Pressure       | 0.35 ~ 1.2MPa                                                                                     |
|                        | 型式 Type                       | 开式 Open-type                                                                                      |
|                        | 材质 Material                   | HPb59-1                                                                                           |
|                        | 安装高度 Install Height           | ≤ 9m                                                                                              |
|                        | 最大水平间距 Max Horizontal Space   | 3.0mx3.0m                                                                                         |
|                        | 天花板下距离 Distance Under Ceiling | ≤ 0.6m                                                                                            |

#### 系统组成 System Components



水雾泵  
Water Mist Pump



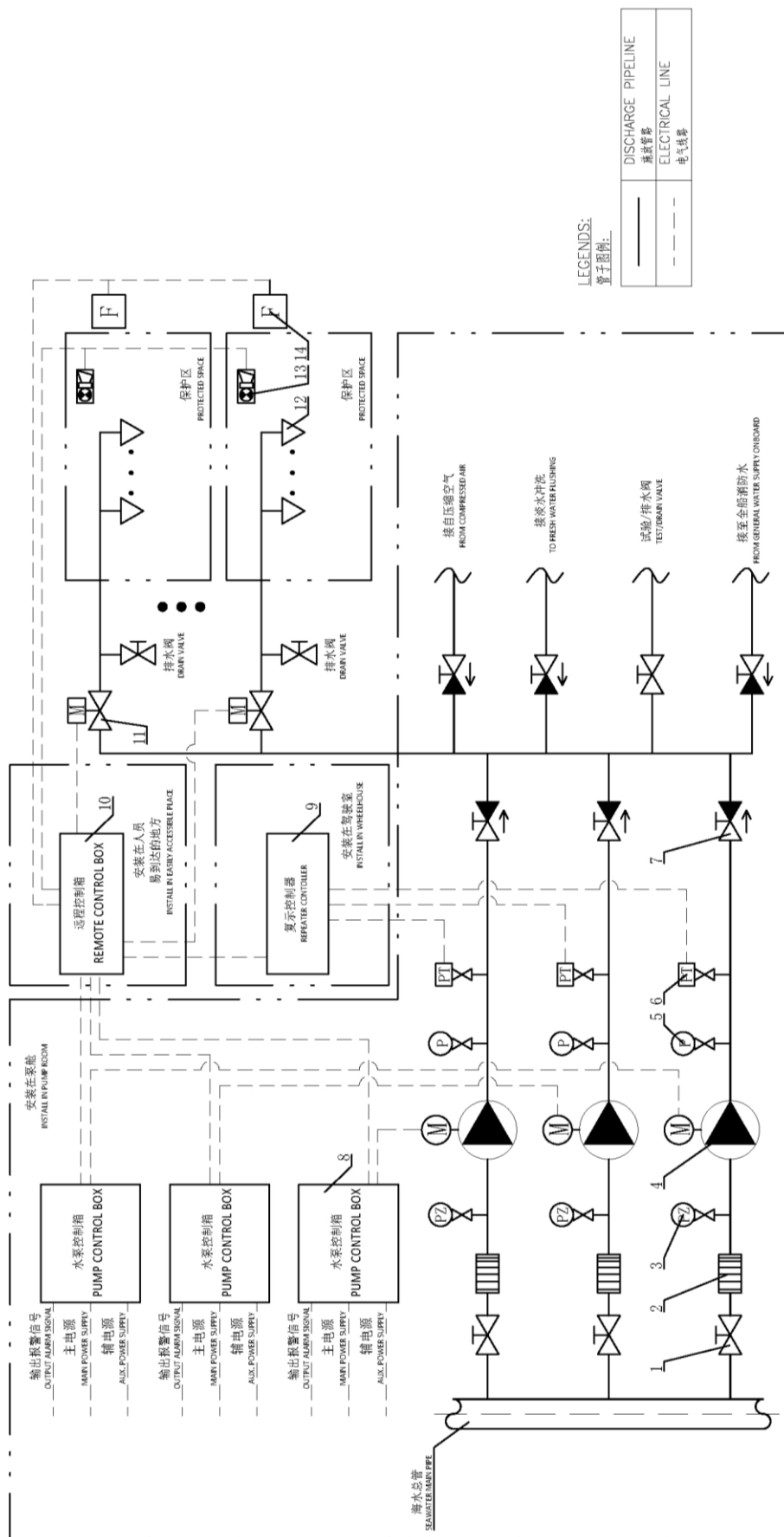
水泵控制箱  
Pump Control Box



水雾喷嘴  
Water Spray Nozzle

# 滚转处所压力水雾灭火系统原理图

## SYSTEM DIAGRAM OF WATER PRESSURE SPRAY SYSTEM FOR RO-RO SPACE



| 序号<br>NO. | 名 称<br>DESCRIPTION             | 序号<br>NO. | 名 称<br>DESCRIPTION       | 序号<br>NO. | 名 称<br>DESCRIPTION           | 序号<br>NO. | 名 称<br>DESCRIPTION               |    |                           |
|-----------|--------------------------------|-----------|--------------------------|-----------|------------------------------|-----------|----------------------------------|----|---------------------------|
| 1         | 截止阀<br>STOP VALVE              | 4         | 水泵<br>WATER PUMP         | 7         | 截止止回阀<br>STOP CHECK VALVE    | 10        | 远程控制箱<br>REMOTE CONTROL BOX      | 13 | 声光报警器<br>ALARM LIGHT      |
| 2         | 过滤器<br>FILTER                  | 5         | 压力表<br>PRESSURE GAUGE    | 8         | 水泵控制箱<br>PUMP CONTROL BOX    | 11        | 电动蝶阀<br>ELECTRIC BUTTERFLY VALVE | 14 | 启动按钮盒<br>START BUTTON BOX |
| 3         | 真空压力表<br>VACUUM PRESSURE GAUGE | 6         | 压力传感器<br>PRESSURE SENSOR | 9         | 重复控制器<br>REPEATER CONTROLLER | 12        | 喷头<br>NOZZLE                     | 15 |                           |

# 手提式灭火器

## PORTABLE FIRE EXTINGUISHERS

### 适用范围 Application

各类船舶、油库、石油平台、码头等。

Various types of ships, oil depot, oil platforms, wharf.

### 手提式干粉灭火器

#### PORTABLE DRY POWDER FIRE EXTINGUISHER



MF/ABCE2

MF/ABCE3

MF/ABCE4

MF/ABCE5

MF/ABCE6

MF/ABCE8

| 型号<br>Model                                    | MF/ABCE2   | MF/ABCE3   | MF/ABCE4   | MF/ABCE5   | MF/ABCE6 | MF/ABCE8    |
|------------------------------------------------|------------|------------|------------|------------|----------|-------------|
| 灭火剂重量<br>Extinguishant weight                  | 2kg        | 3kg        | 4kg        | 5kg        | 6kg      | 8kg         |
| 有效喷射时间<br>Effective Discharge Duration         | ≥8s        | ≥13s       | ≥13s       | ≥13s       |          | ≥15s        |
| 有效喷射距离<br>Effective Discharge Distance         | ≥3.0m      | ≥3.5m      | ≥3.5m      | ≥3.5m      |          | ≥4.5m       |
| 灭火级别<br>Fire Rating                            | 1A 21B C E | 2A 34B C E | 2A 55B C E | 3A 89B C E |          | 4A 144B C E |
| 筒体工作压力<br>Working Pressure of Cylinder         | 1.2MPa     |            |            |            |          |             |
| 喷射剩余率<br>Rate of Residual Extinguishing Medium | ≤10%       |            |            |            |          |             |
| 使用温度<br>Operating Temperature                  | -20℃- +60℃ |            |            |            |          |             |

## 手提式水基型（泡沫）灭火器

### PORTABLE WATER-BASED (FOAM) FIRE EXTINGUISHER

| 型号<br>Model                                    | MP/AB6     | MP/AB9 |
|------------------------------------------------|------------|--------|
| 灭火剂类型<br>Type of Extinguishing Agent           | 3%AFFF     | 3%AFFF |
| 灭火剂量<br>Fire extinguishing agent quality       | 6L         | 9L     |
| 有效喷射时间<br>Effective Discharge Duration         | ≥9s        | ≥13s   |
| 有效喷射距离<br>Effective Discharge Distance         | ≥3.0m      | ≥3.0m  |
| 喷射剩余率<br>Rate of Residual Extinguishing Medium | ≤10%       | ≤10%   |
| 灭火级别<br>Fire Rating                            | 2A 55B     | 2A 89B |
| 使用温度 Operating Temperature                     | 5°C- +60°C |        |



MP/AB 6

MP/AB 9

## 手提式二氧化碳灭火器

### PORTABLE CARBON DIOXIDE FIRE EXTINGUISHERS



MT/BE2



MT/BE3



MT/BE5



MT/BE7

| 型号<br>Model                                    | MT/BE2       | MT/BE3 | MT/BE5 | MT/BE7 |
|------------------------------------------------|--------------|--------|--------|--------|
| 灭火剂量<br>Extinguishant weight                   | 2kg          | 3kg    | 5kg    | 7kg    |
| 有效喷射时间<br>Effective Discharge Duration         | ≥8s          | ≥9s    | ≥9s    | ≥9s    |
| 灭火级别<br>Fire Rating                            | 21BE         | 21BE   | 34BE   | 55BE   |
| 筒体工作压力<br>Working Pressure of Cylinder         | 17MPa        |        |        |        |
| 有效喷射距离<br>Effective Discharge Distance         | /            |        |        |        |
| 喷射剩余率<br>Rate of Residual Extinguishing Medium | ≤10%         |        |        |        |
| 使用温度 Operating Temperature                     | -20°C- +60°C |        |        |        |

## 推车式灭火器 WHEELED FIRE EXTINGUISHERS

### 推车式干粉灭火器 WHEELED DRY POWDER FIRE EXTINGUISHER



MFT/ABCE35

MFT/ABCE50

| 型号 Model                                    | MFT/ABCE35   | MFT/ABCE50 |
|---------------------------------------------|--------------|------------|
| 灭火剂量 Fire Extinguishing Agent Weight        | 35Kg         | 50Kg       |
| 有效喷射时间 Effective Discharge Duration         | ≥30s         | ≥30s       |
| 有效喷射距离 Effective Discharge Distance         | ≥6m          | ≥6m        |
| 筒体工作压力 Working Pressure of Body             | 1.2MPa       | 1.2MPa     |
| 喷射剩余率 Rate of Residual Extinguishing Medium | ≤10%         | ≤10%       |
| 灭火级别 Fire Extinguishing Rank                | 6A 233BCE    | 10A 297BCE |
| 使用温度 Operating Temperature                  | -20°C- +60°C |            |

### 推车式水基型（泡沫）灭火器 WHEELED WATER-BASED (FOAM) FIRE EXTINGUISHER

### WHEELED WATER-BASED (FOAM) FIRE EXTINGUISHER



MPT/AB45



MPT/AB65



MPT/AB135

| 型号 Model                                    | MPT/AB45    | MPT/AB65 | MPT/AB135 |
|---------------------------------------------|-------------|----------|-----------|
| 灭火剂量 Fire Extinguishing Agent Weight        | 45L         | 65L      | 135L      |
| 有效喷射距离 Effective Discharge Distance         | ≥6m         | ≥6m      | ≥6m       |
| 有效喷射时间 Effective Discharge Duration         | ≥40 ~ ≤210s |          |           |
| 公称压力 Nominal pressure (MPa)                 | 1.2MPa      |          |           |
| 喷射剩余率 Rate of Residual Extinguishing Medium | ≤10%        |          |           |
| 灭火剂成分 Extinguishing Agent Composition       | 3%AFFF      |          |           |
| 灭火级别 Fire Extinguishing Rank                | 6A 183B     | 6A 233B  | 10A 297B  |

## 推车式二氧化碳灭火器

### WHEELED CARBON DIOXIDE FIRE EXTINGUISHER



MTT/BE24

| 型号 Model                                    | MTT/BE 24    | MTT/BE 30 |
|---------------------------------------------|--------------|-----------|
| 筒体工作压力 Working Pressure of Cylinder         | 15MPa        | 15MPa     |
| 灭火剂重量 Fire Extinguishing Agent Weight       | 24kg         | 30kg      |
| 有效喷射距离 Effective Discharge Distance         | /            | /         |
| 有效喷射时间 Effective Discharge Duration         | ≥20s         | ≥20s      |
| 喷射剩余率 Rate of Residual Extinguishing Medium | ≤10%         | ≤10%      |
| 灭火级别 Fire Extinguishing Rank                | 89BE         | 144BE     |
| 使用温度 Operating Temperature                  | -20°C- +60°C |           |

## 灭火试验房 FIRE TESTING ROOM



500 立方灭火试验房  
500m<sup>3</sup> Fire Extinguishing Test Room



试验数据采集中心  
Test Data Collection Centre



1200+立方灭火试验房  
1200m<sup>3</sup> Fire Extinguishing Test Room

### 引言 Introduction

亚宁公司气体灭火试压房是专为企业提供“产品合规检测、技术升级研发、定制方案验证”的专业技术平台，聚焦七氟丙烷、IG541、二氧化碳、氮气惰化气体等主流及新型灭火介质，覆盖从组件到系统的全维度测试与研发支持，助力企业攻克技术难题、满足市场合规要求、提升产品核心竞争力。

Yanling's Gas Suppression Pressure Test Room is a professional technical platform dedicated to supporting enterprises with product compliance testing, technological upgrade R&D, and customized solution validation. It focuses on mainstream and innovative extinguishing agents, including HFC-227ea, IG-541, CO<sub>2</sub>, and N<sub>2</sub> inerting systems. The laboratory provides comprehensive testing and R&D support across the entire spectrum, from individual components to complete integrated systems. This empowers enterprises to overcome technical challenges, fulfill market compliance requirements, and enhance their products' core competitiveness.

## 适配场景技术参数 Parameters for adaptation to various scenarios

| 适配场景<br>Applicable Scenarios                                                            | 关键技术参数<br>Key Technical Parameters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 测试能力覆盖<br>Testing Capabilities Coverage                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 数据中心 / 服务器机房<br>Data Centers /<br>Server Rooms                                          | <ul style="list-style-type: none"> <li>- 模拟防护区尺寸: 3m×3m×2.8m (标准)、5m×4m×3m (大型)</li> <li>- 环境温度: 0~40°C (可调节)</li> <li>- 火灾类型: 电气火灾 (1000V 以下)、固体表面火灾 (A 类)</li> <li>- 介质喷射压力: 0.8~4.2MPa (可调)</li> <li>- 浓度监测精度: ±0.1% VOL</li> <li>-- Simulated protected area dimensions: 3m × 3m × 2.8m (Standard), 5m × 4m × 3m (Large)</li> <li>- Ambient temperature: 0~40°C (Adjustable)</li> <li>- Fire types: electrical fires (up to 1000V), solid surface fires (Class A)</li> <li>- Agent discharge pressure: 0.8~4.2 MPa (Adjustable)</li> <li>- Concentration monitoring accuracy: ±0.1% VOL</li> </ul> | <p>灭火系统启动响应时间测试、介质扩散均匀性验证、设备兼容性 (无腐蚀 / 无残留) 检测</p> <p>Fire suppression system activation response time testing, Agent dispersion uniformity verification, Equipment compatibility inspection (non-corrosive / residue-free)</p> |
| 石油化工 / 工业配电室<br>Petrochemical<br>Facilities / Industrial<br>Power Distribution<br>Rooms | <ul style="list-style-type: none"> <li>- 模拟防护区容积: 10~50m³ (可扩展)</li> <li>- 耐温范围: -20~60°C</li> <li>- 火灾类型: 可燃液体火灾 (B 类)、电气火灾 (380V/10kV)</li> <li>- 耐压测试范围: 0~6.0MPa</li> <li>- 泄漏率检测精度: ≤0.5%/24h</li> <li>- Simulated enclosure volume: 10–50 m³ (Expandable)</li> <li>- Temperature resistance range: -20 to 60 °C</li> <li>- Fire types: flammable liquid fires (Class B); electrical fires (380V / 10kV)</li> <li>- Pressure testing range: 0–6.0 MPa</li> <li>- Leakage detection accuracy: ≤ 0.5% per 24h</li> </ul>                                                                            | <p>灭火组件 (容器阀、选择阀) 耐压密封测试、系统长期可靠性 (1000 次循环) 测试</p> <p>Pressure resistance and seal testing for system components (container valves, selector valves), Long-term system reliability testing (1,000 cycles)</p>                   |
| 精密制造 / 仪器实验室<br>Precision<br>Manufacturing /<br>Instrumentation<br>Laboratories         | <ul style="list-style-type: none"> <li>- 模拟防护区洁净度: Class 8 级 (无尘)</li> <li>- 环境湿度: 30%~70% RH (可调)</li> <li>- 火灾类型: 微小固体火灾 (A 类)、可燃气体火灾 (C 类)</li> <li>- 喷射时间控制精度: ±0.1s</li> <li>- 残留介质检测下限: 0.01mg/m³</li> <li>- Simulated enclosure cleanliness: Class 8 (dust-free)</li> <li>- Ambient humidity: 30%–70% RH (Adjustable)</li> <li>- Fire types: small-scale solid fires (Class A); flammable gas fires (Class C)</li> <li>- Discharge time control accuracy: ±0.1s</li> <li>- Residual agent detection limit: 0.01mg/m³</li> </ul>                                                                 | <p>低损伤灭火介质验证、精密设备兼容性测试、灭火后残留污染度检测</p> <p>Low-Hazard extinguishing agent validation, Precision equipment compatibility testing, Post-Extinguishing residual contamination detection</p>                                          |

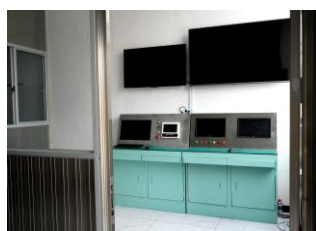
## 内部设备 Internal Device



油盘  
Oil Pan



灭火装置  
Extinguishing Plant



数据采集系统  
DAS



模拟主机  
Main Engine Simulator

## 涡扇炮试验塔 TURBOFAN CANNON TESTING TOWER



### 引言 Introduction

涡扇炮实验塔是一套集流体动力测试、涡扇发射模拟及相关性能验证于一体的综合性实验设施，该实验塔可广泛应用于涡扇炮相关技术研发、性能优化及产品检测等场景，通过模拟不同流体环境、发射参数下的工作状态，为技术人员提供精准的实验数据支撑，助力提升涡扇炮的可靠性、适配性及核心性能，为相关领域的技术创新与产品升级奠定基础。

The Turbofan Firefighting Cannon Test Tower is an integrated experimental facility designed for fluid dynamic testing, turbofan discharge simulation, and associated performance validation. This system supports a wide range of applications, including R&D, performance optimization, and product testing for turbofan-based fire suppression systems. By simulating various fluid environments and operational parameters, it provides technicians with high-precision experimental data, thereby enhancing the reliability, compatibility, and core performance of turbofan cannon. This facility establishes a critical foundation for technological innovation and product advancement in firefighting technology.

## 核心设备 Main Equipment Components

| 核心设备<br>Main Equipment<br>Components       | 作用描述<br>Function Description                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 380 立方米水箱<br>380 m <sup>3</sup> Water Tank | <p>作为实验核心储水单元，采用高强度防腐材质搭建，具备大容量、稳压力、抗冲击的特点，可为涡扇炮试验提供持续、稳定的流体供给，保障实验过程中压力参数的精准可控</p> <p>"Serving as the experimental core water storage unit, this high-strength, corrosion-resistant tank provides a continuous, stable, and impact-resistant fluid supply for Turbofan Firefighting Cannon tests. Its stable pressure maintenance ensures precise control of experimental parameters."</p>                                                                                    |
| 试验塔<br>Test Tower                          | <p>主体为钢结构框架设计，配备高精度测量传感器、数据采集终端及安全防护系统，是涡扇炮安装、定位及开展发射试验的核心场地，可实现对试验过程的实时监测与数据记录。</p> <p>The main structure employs a steel frame design, integrated with high-precision measurement sensors, data acquisition terminals, and safety protection systems. As the core site for the installation, positioning, and launch testing of the Turbofan Firefighting Monitor, it enables real-time monitoring and comprehensive data recording throughout the experimental process.</p> |
| 试验用涡扇炮<br>Experimental<br>Turbofan Cannon  | <p>定制化实验核心装置，适配水箱流体供给系统，具备可调节发射功率、角度及频率的功能，用于模拟实际工况下的发射作业，验证其动力输出、流体喷射效率等关键性能。</p> <p>As a customized core experimental device, it interfaces with the water tank fluid supply system and features adjustable discharge power, angle, and frequency. This configuration is used to simulate actual working condition operations and validate key performance parameters including power output and fluid jet efficiency.</p>                                                   |
| 配套泵房<br>Auxiliary Pump<br>House            | <p>作为动力保障单元，集成高压水泵、阀门控制系统及管路连接组件，负责将水箱内的流体加压后稳定输送至涡扇炮，同时可根据实验需求精准调节流体压力、流量等参数，确保实验流程的顺畅推进。</p> <p>"Serving as the power assurance unit, this system integrates high-pressure pumps and valve control to pressurize fluid from the water tank and deliver it steadily to the Turbofan Firefighting Cannon. It allows for precise adjustment of fluid parameters (pressure and flow rate), ensuring smooth testing progression."</p>                                             |



涡扇炮  
Turbofan Cannon



柴油机泵  
Diesel Pump



水泵控制箱  
Pump Control Box

## 消防炮试验台 FIRE MONITOR TEST BENCH



### 引言 Introduction

本消防炮喷射试验台是一款专为消防喷射设备性能检测与调试打造的专业化试验装置，整体设计高度为 2 米，结构紧凑且符合工业级试验标准，可广泛应用于消防设备生产企业、质检机构、科研单位等场景，为消防炮及配套系统的性能验证提供精准、可靠的试验平台。该试验台不仅具备基础的喷射功能验证，还可针对消防炮的射程、喷射角度、雾化粒径、泡沫覆盖效率等关键性能指标进行精准测试，为产品优化升级、质量检测认证、技术研发创新提供数据支撑。

This fire monitor test bench is a specialized experimental apparatus exclusively designed for the performance testing and debugging of fire discharge equipment. With an overall height of 2 meters, it features a compact structure that complies with industrial-grade testing standards. It is suitable for widespread application in various settings, including fire equipment manufacturing plants, quality inspection institutions, and scientific research units, providing a precise and reliable testing platform for the performance verification of fire monitors and their supporting systems. The bench not only verifies basic discharge functions but also allows for precise testing of key performance indicators such as monitor range, discharge angle, droplet size distribution, and foam coverage efficiency. It thereby provides critical data support for product optimization, quality certification, and technological R&D.

## 关键系统 Critical System

| 关键系统<br>Critical System                           | 作用描述<br>Function Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 压力式泡沫比例混合装置<br>Pressure Foam Proportioning System | <p>作为消防灭火的核心配套设备，可根据试验需求精准控制泡沫液与水的混合比例，保障泡沫喷射的稳定性与灭火效率，适配不同类型泡沫灭火剂的试验场景</p> <p>As a core auxiliary firefighting equipment, it can precisely control the mixing ratio of foam concentrate and water according to test requirements. This ensures the stability of foam discharge and fire suppression efficiency, making it adaptable to testing scenarios involving various types of foam extinguishing agents.</p>                                                                                                             |
| 电动直流喷雾炮<br>Electrically-Driven DC Spray Monitor   | <p>采用电动驱动方式，具备可调节的喷射角度、可控的射程、优良的雾化效果等性能，可模拟实际火灾场景下的喷射作业，满足不同压力、流量条件下的喷射性能测试。</p> <p>Utilizing an electric drive mechanism, it features adjustable discharge angle, controllable range, and superior aerosolization performance. The system can simulate spraying operations under real-fire scenarios, meeting performance testing requirements across different pressure and flow rate conditions.</p>                                                                                                                         |
| 一体化管路系统<br>Integrated Piping System               | <p>采用耐腐蚀、高强度管材搭建，管路布局科学合理，配套专业阀门、压力表等组件，可实现试验介质的稳定输送与压力、流量等参数的实时监测，确保试验过程的安全性及流畅性。</p> <p>Constructed with corrosion-resistant, high-strength piping materials, the system features a scientifically optimized layout and is equipped with professional components such as valves and pressure gauges. It ensures the stable conveyance of test media and enables real-time monitoring of parameters including pressure and flow rate, thereby guaranteeing both the safety and operational fluency of the testing process.</p> |



电控消防炮  
Electrically Controlled Fire Monitor



消防炮喷射试验  
Fire Monitor Discharge Test