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As we are constantly endeavouring to improve the performance of our equipment.
The company reserves the right to make alteration from time to time and equipment differ from that detailed in this brochure.

消防系列用泵
FIRE-FIGHTING PUMPS SERIES



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上海连成(集团)有限公司，是一家国内著名的研究制造泵、阀和流体输送系统、电气控制系统和环保设备的多元化经营的大型集团企业。

经过十多年的发展，现已拥有五大工业园区，分布于上海、江苏和浙江等经济发达地区，总占地面积达55万平方米，总部设在上海封浜工业园区。旗下拥有上海连成泵业制造有限公司、上海连成电机有限公司、上海连成阀门有限公司、上海连成集团物流有限公司、上海连成集团通用设备安装工程、上海阿美泰克工业设备有限公司、上海连成集团环境工程设备有限公司、上海连成集团苏州股份有限公司等多家全资子公司及控股公司，注册资金达5.8亿元以上，总资产达数十亿元。产品品种现已达三千多种，涵盖水泵、电机、电气柜、阀门、成套设备、机械配件等系列，其产品性价比合理，质量可靠，广泛应用于市政、水利、建筑、消防、电力、环保、石油、化工、矿业、医药等领域。集团销售业绩每年均为行业前茅。

集团公司目前拥有大型水泵测试中心、三坐标测量仪、动静平衡测量仪、激光快速成型仪、多功能抛丸机、自动氩弧焊机、大型立车、大型磨床、数控机床集群等各种国内外先进的生产检测设备2000台套以上。现有员工4500余人，大中专生占72.6%，其中中级职称者475人、高级职称者78人、国家级专家19人、教授6人。每年都投入大量资金用于技术创新、产品开发和设备引进，持有国家专利技术近达600余项，每年均参与大量的国家及行业标准起草及编写工作，涉及水利、化工、消防、城市供水等各领域产品及技术标准累计达数十部。集团建有完善的销售服务网络，设有30余家分公司及200多个分支机构，拥有一支2800多人的专业销售服务队伍，为广大客户提供专业的技术支持与优良的营销服务。

集团通过了ISO9001、ISO14001、OHSAS18001等国际管理体系认证，全面推行E R P信息化管理；先后获得国家和行业颁发的工业、消防、煤矿、石油化工等重要领域的工业产品生产许可证、CCC中国国家强制性产品认证、CQC产品认证、CE认证、卫生许可批件、MA煤安认证、SMA计量合格认证、节能认证、节水认证、采用国际标准认证、进出口企业资格等生产经营资质；并获得了“国家级创新型企业”、“中国驰名商标”、“上海市著名商标”、“上海市名牌产品”、“中国著名品牌”、“大型企业”、“国家首批水泵节能认证通过企业”、“上海市高新技术企业”、上海“市级企业技术中心”、“上海市知识产权示范企业”、“上海市民营制造业



50强”、“上海市百强工业企业”、“国家标准起草单位”、“中国水工业十大民族品牌”等众多的社会荣誉。

随着连成集团的永续经营，连成产品得到了用户广泛认可，目前拥有：国家体育场“鸟巢”、国家大剧院、上海世博工程、首都机场、广州白云机场、上海地铁、西安地铁、沈阳地铁、香港供水工程深圳沙湾泵站、澳门供水工程珠海平岗泵站、黄河灌溉山西夹马口泵站、山西省西范泵站、广东云安六都泵站、黄河小浪底水利工程、宁夏扬黄灌溉工程、鄂尔多斯城市饮水工程、秦山核电、岭奥核电、国电集团、大唐电厂、华能电厂、宝钢、首钢、唐钢、太钢、鞍钢、新疆八一钢铁、大庆油田、青海盐湖钾盐项目、山西焦化、潞安矿业、陕西咸阳化工、中海油惠州炼油项目、清华大学、海尔集团和安哥拉农业排灌工程、缅甸国家农业灌溉项目，以及核电、火电、水电、钢铁、油田、焦化、矿业、化工、炼油等一大批国内、外样板工程。在通用、拜耳、西门子、大众、可口可乐等国际知名企业在中国的工程均采用了连成集团的产品。

连成集团矢志于打造世界顶级流体处理工业企业，秉承永远珍惜人与自然和谐关系、为提高人类生活质量不懈努力的宗旨，为实现“百年连成”远大目标，一直致力于环保型、节能型产品的研发与制造，为民族企业的振兴与发展不懈努力！

水，因连成至高致远……！

在消防领域中,连成提供各种类型的消防用泵及消防控制系统,作为系统主要设备,其工况性能、安全指数以及消防过程所要求具备的一切指标，连成均能绝对保证和控制。同时，连成的消防系列水泵均通过中国国家固定灭火系统和耐火构件质量监督检测中心的权威检测。

In the field of fire-fighting, Liancheng provides various types of fire-fighting pumps and fire control systems. As major equipment of the system, Liancheng pumps come with operating conditions, performances, reliability indexes and indicators in compliance with the requirements of fire-fighting process. Meanwhile, Liancheng series fire pumps all have passed the standard tests of China State Quality Supervision & Testing Center for Fixed Fire Extinguishing Systems and Fireproof Components.

连成系列消防用泵 Liancheng Series Fire-fighting Pumps

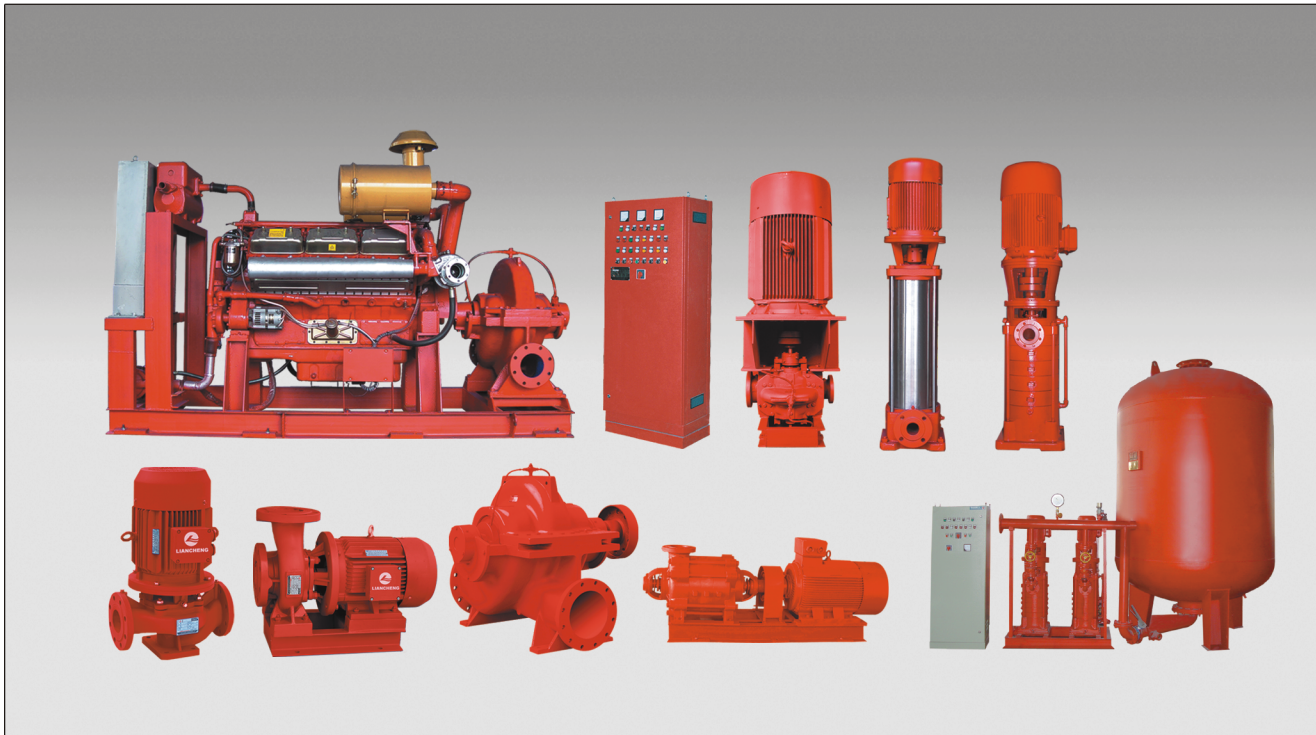
- XBD-SL(W)单级单吸消防泵
- XBD-DL、XBD-SLD多级单吸消防泵
- XBD-SLO(W)中开双吸消防泵
- XBD系列成套消防给水设备
- XBC系列柴油机消防泵组
- 消防电气控制设备

- XBD-SL (W) Single-stage Single-suction Fire-fighting Pump
- XBD-DL, XBD-SLD Multi-stage Single-suction Fire-fighting Pump
- XBD-SLO (W) Split Double-suction Fire-fighting Pump
- XBD Series Complete Fire Water Supply Equipment
- XBC Series Diesel Engine Fire Pump Unit
- Fire Electric Control Equipment



连成系列消防用泵的优势 Advantages of Liancheng Series Fire-fighting Pumps

- 型谱覆盖区宽，高效区广。
 - 性能好，效率高。
 - 技术先进，专利技术多。
 - 产品品质可靠，全部通过权威机构的专业检测。
 - 品种多，规格全，可满足不同场合的消防泵需求。
- Broad type spectrum coverage and wide high-efficiency area;
 - Superior performance and high efficiency;
 - State-of-the-art techniques and lots of patented technologies;
 - Reliable product quality and passing professional inspection of the authority;
 - Wide variety, full range of specifications and meeting fire-fighting pump needs in different occasions.



XBD 系列单级单吸消防泵

XBD Series Single-stage Single-suction Fire-fighting Pump



XBD系列单级单吸立式（卧式）固定式消防泵组（泵）是本公司符合国内工矿企业、工程建设、高层大厦消防之需，经国家消防装备质量监督检测中心封样检测质量性能全面符合GB6245—2006国标要求。产品性能达到国内同类型产品先进水平。

XBD系列泵性能参数在满足消防工矿的前提下,兼顾生活(生产)给水工况的要求,该产品既可用于独立消防给水系统,又可用于消防（生产）共用给水系统，还可用于建筑、市政、工矿给排水以及锅炉给水等场合。

XBD Series Single-stage Single-Suction Vertical (Horizontal) Fixed-type Fire-fighting Pump (Unit) is designed to meet fire-fighting needs in domestic industrial and mineral enterprises, engineering construction and high-rises. Through the sampled test by the State Quality Supervision & Testing Center for Fire-fighting Equipment, its quality and performance both comply with the requirements of National Standard GB6245-2006, and its performance takes the lead among domestic similar products.

The performance parameters of XBD Series Pump take account of the requirements of domestic (production) water supply conditions while satisfying fire-fighting needs in industrial and mineral enterprises. It can be used for independent fire water supply system, common water supply for fire-fighting (production), as well as water supplies and drainages in buildings, municipal projects, industrial and mineral enterprises and boilers.

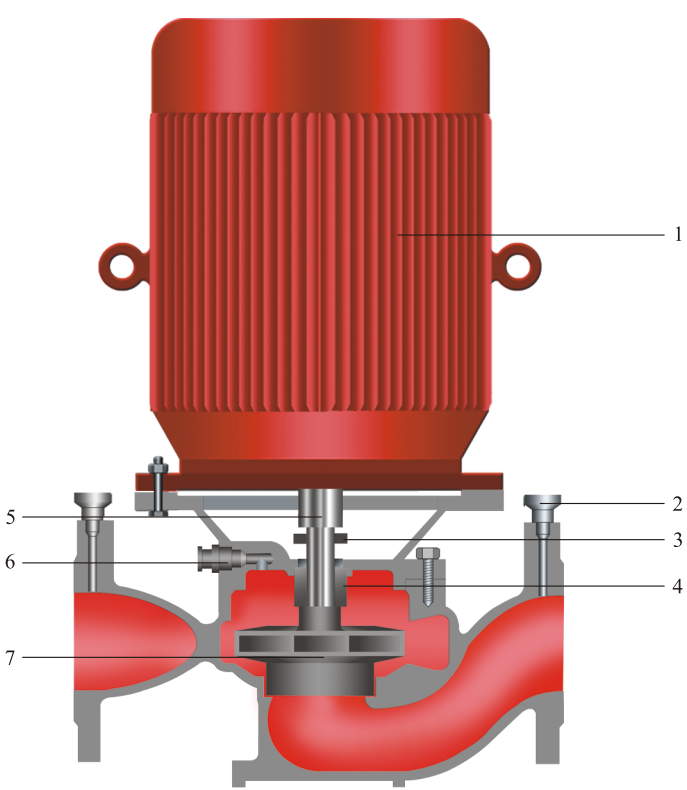


适用领域

- 工业及民用建筑固定消防系统
- 消防栓灭火系统
- 自动喷淋灭火系统
- 水喷雾灭火系统

Applicable Fields

- Fixed fire-fighting systems of industrial and civil buildings
- Fire hydrant fire-fighting system
- Automatic sprinkler fire-fighting system
- Spraying fire-fighting system



1	电机	Motor
2	旋塞	Cock
3	挡水圈	Water deflector
4	轴封	Shaft seal
5	轴	Shaft
6	放气阀	Release valve
7	叶轮	Impeller

Dn	50~350mm
Q	18~720m³/h
p	0.3~1.5Mpa
t	max 80℃
P ₀	max 1.6Mpa

产品结构特点及性能优势

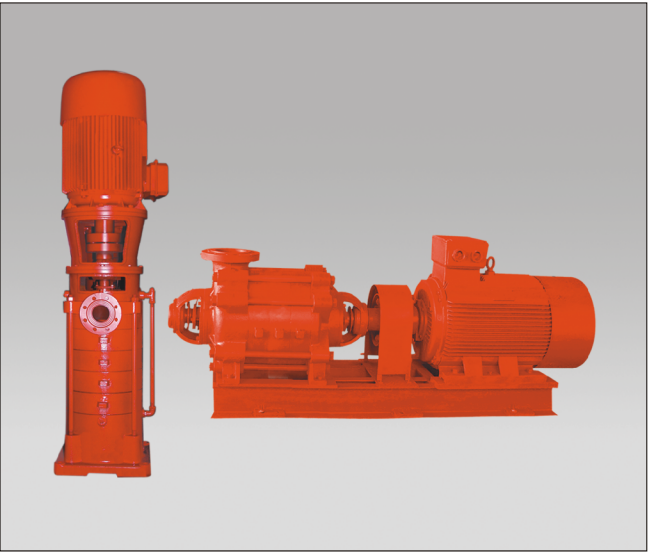
- 采用CFD专业流体设计软件，提高了泵的效率。
- 泵体、泵盖、叶轮等过流部件采用树脂砂铝模造型，保证了流道及外观的光滑美观，从而提高泵的效率。
- 电机与泵直联，简化了中间传动结构，增强了运行的平稳性，使该机组运行平稳，安全可靠。
- 轴的机封位置是相对易被锈蚀之处，直联式泵轴一旦被锈蚀，易造成机械密封失效。XBD型单级单吸泵此处采用镶配不锈钢套，避免锈蚀发生，提高了机封寿命，降低了运行维护成本。
- 由于泵与电机同轴，简化了中间传动结构，基建投资比普通泵少20%。

Product Structural Features & Performance Advantages

- Professional CFD flow design software is adopted, enhancing the pump's efficiency;
- The parts where water flows including pump casing ,pump cap and impeller are made of resin bonded sand aluminum mould, ensuring smooth and streamline flow channel and appearance and enhancing the pump's efficiency.
- The direct connection between motor and pump simplifies intermediate driving structure and improves operating stability, making the pump unit run stably, safely and reliably;
- The shaft mechanical seal is comparatively easier to get rusted; the rustiness of directly-connected shaft may easily cause the failure of mechanical seal. XBD Series single-stage single-suction Pumps are provided stainless steel sleeve to avoid rusting, prolonging the pump's service life and reducing the running maintenance cost.
- Since the pump and the motor are located on a same shaft, intermediate driving structure is simplified, reducing the infrastructure cost by 20% versus other ordinary pumps.

XBD 系列多级消防泵组

XBD Series Multi-stage Fire-fighting Pump Unit



XBD 系列多级消防泵组是本公司根据国内市场对消防用泵的需求及其特殊使用要求，自行开发研制的新型产品，经国家消防装置设备监督检测中心检测，产品性能全部符合国家标准的要求，并达到国内同类产品先进水平。

XBD Series Multi-stage Fire-fighting Pump Unit is a new product independently developed by Liancheng according to the domestic market's demands and special use requirements for fire-fighting pumps. Through the test by the State Quality Supervision & Testing Center for Fire Equipment, its performance complies with the requirements of national standards, and takes the lead among domestic similar products.

适用领域

- 工业及民用建筑固定消防系统
- 消防栓灭火系统
- 自动喷淋灭火系统
- 水喷雾灭火系统

Applicable Fields

- Fixed fire-fighting systems of industrial and civil buildings
- Fire hydrant fire-fighting system
- Automatic sprinkler fire-fighting system
- Spraying fire-fighting system



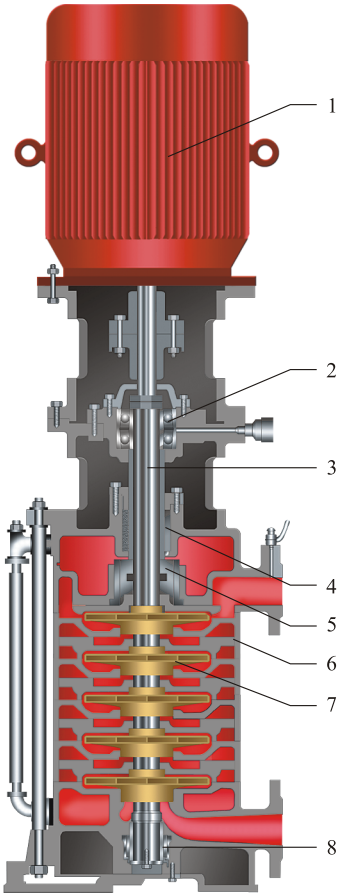
连成XBD-D卧式多级消防泵组有效地运行在工业企业的消防系统。
Liancheng XBD-D Horizontal Multi-stage Fire Pump Unit works effectively in the fire-fighting systems of industrial enterprises.



Dn	25~250mm
Q	1~125L/s 3.6~450m³/h
p	0.3~3.0Mpa
t	max 80℃
p ₀	max 3.4Mpa

XBD-DL 系列电动机消防泵组

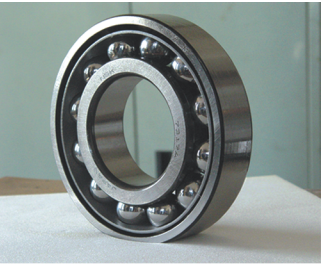
XBD-DL Series Motor Fire-fighting Pump Unit



1	电机	Motor
2	轴承	Bearing
3	轴	Shaft
4	轴封	Shaft seal
5	平衡鼓（套）	Balance drum (sleeve)
6	中段	Middle piece
7	叶轮	Impeller
8	水导轴承	Water guide bearing



进口机械密封 Imported mechanical seal



进口精密轴承 Imported precision bearing

产品结构特点及性能优势

- XBD-DL 泵转子部件均采用耐磨、耐腐蚀及等抗咬合的材料组合，以确保泵运行可靠、噪音低、同时避免产生锈水，堵塞喷淋消防器材，大大延长使用寿命和停机后生锈咬死现象。
- 根据运行实际工况及客户特殊要求，XBD-DL 轴封采用优质机械密封也可采用填料密封，安全无渗漏。采用国外进口轴承或国产优质轴承，精度高、噪声低、寿命长，泵轴承一端由滚动轴承支承，另一端由滑动轴承支承，用输送介质润滑。
- 轴承不锈钢制成，下端装有轴套，与水导轴承配合，延长轴及轴承使用寿命。
- 铸铜叶轮，防止停机后生锈或老化，保证消防专用的安全性。

Product Structural Features & Performance Advantages

- XBD-DL Pump's rotor parts are made of wearable, corrosion-proof and gripping-proof material so as to measure reliable and low-noise running of the pump and also avoid rust water from blocking sprinkler fire apparatuses, significantly prolonging the pump's service life and effectively preventing gripping due to rustiness after shutdown;
- According to the practical working conditions and customer's special requirements, XBD-DL shaft seal may be either high-quality mechanical seal or packing seal, and is safe and free of leakage. Exported bearing or domestically-produced high-quality bearing is used, and features high precision, low noise and long service life. One end of the pump bearing is supported by a rolling bearing, and the other is supported by a sliding one. Conveyance medium is used for lubrication;
- Bearing is made of stainless steal, and is equipped with a sleeve at the lower end. It works with water guide bearing to prolong the service life of both shaft and bearing;
- Cast copper impeller prevents rustiness or aging after shutdown, and ensures safe use for fire-fighting .

XBD-GDL 系列电动机消防泵组

XBD-GDL Series Motor Fire-fighting Pump Unit



XBD-GDL系列消防泵系立式、多级、单吸、筒式离心泵，该系列产品采用现代优秀水力模型经计算机优化设计而成。产品结构紧凑、合理、造型美观，其可靠性和效率指标均有大幅度提高。

XBD-GDL Series Fire-fighting Pump is a vertical, multi-stage, single-suction and cylindrical centrifugal pump. This series product adopts modern excellent hydraulic model through design optimization by computer. This series product features compact, rational and streamline structure. Its reliability and efficiency indexes all have been dramatically improved.



低噪音
Low noise



安装简便
Ease of installation



优质轴承
High-quality bearing



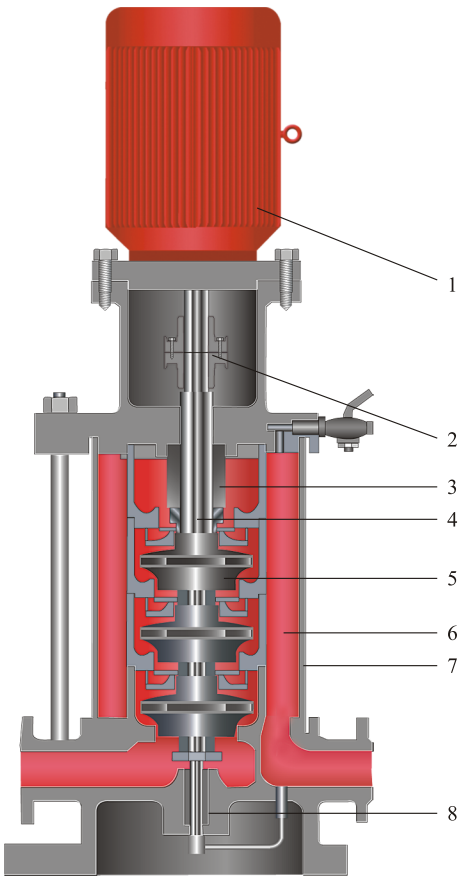
保持场地干净
Clean working site

产品结构特点及性能优势

- 无运转卡死现象。应用铜合金水导轴承与不锈钢泵轴，各微小间隙处避免了锈蚀咬死现象，这对消防系统而言是十分重要的。
- 无渗漏。采用优质机械密封，确保运行场所的干净。
- 低噪音平稳运行。低噪音轴承的采用，具有精确水力特征的水力零件的设计，各分段外围的充水屏蔽不仅降低了流动噪音而且运行极其平稳。
- 安装装配简单。泵进出口管径相同且在同一条直线上，可以像阀门一样直接安装在管路上。
- 应用壳式联轴器，泵与电机的联结不仅简便而且使传递效率有所提高。

Product Structural Features & Performance Advantages

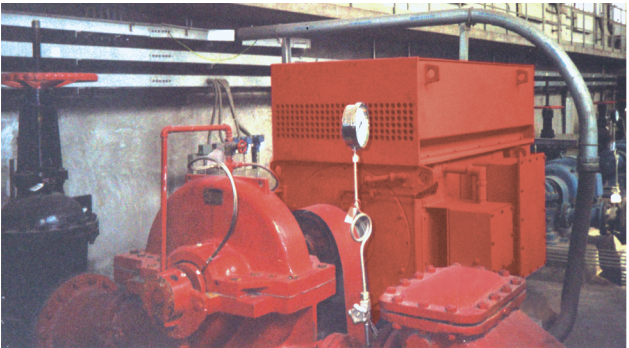
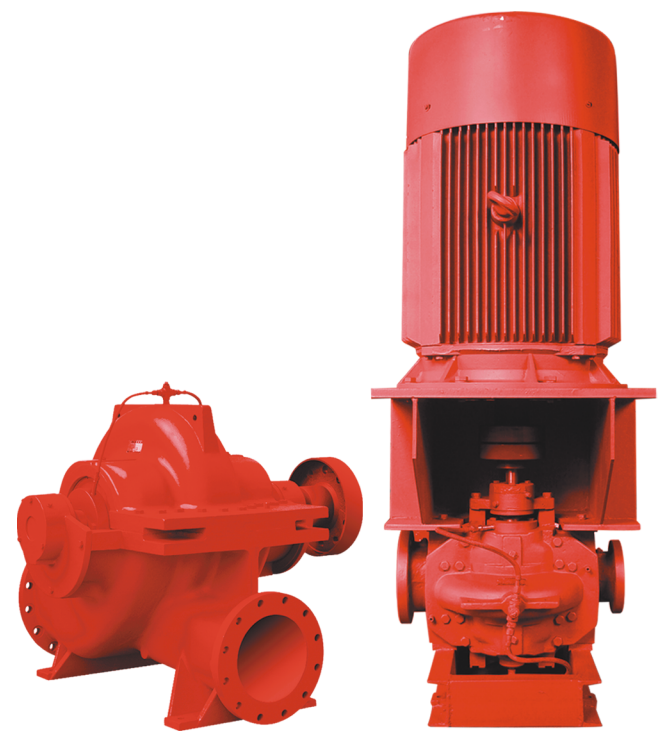
- No blocking during operation. The use of copper alloy water guide bearing and stainless steel pump shaft avoids rusty gripping at each tiny clearance, which is very important to fire-fighting system;
- No leakage. The adoption of high-quality mechanical seal ensures a clean working site;
- Low-noise and steady operation. The low-noise bearing is designed to come with precise hydraulic parts. The water-filled shield outside each subsection not only lowers flow noise, but also ensures steady operation;
- Easy installation and assembly. The pump's inlet and outlet diameters are same, and located on a straight line. Like valves, they may be directly mounted on the pipeline;
- The use of shell-type coupler not only simplifies the connection between pump and motor, but also enhances transmission efficiency.



1	电机	Motor
2	联轴器	Coupler
3	轴封	Shaft seal
4	轴	Shaft
5	叶轮	Impeller
6	管道	Pipeline
7	不锈钢出水筒	Stainless steel outlet cylinder
8	轴瓦	Bush

XBD-SLO(W) 系列电动机消防泵组

XBD-SLO (W) Series Motor Fire-fighting Pump Unit



SLO(W)系列电动机消防泵组是在引进德国多项具有先进水平技术基础上，在我公司多名科研人员共同努力下研制成功的，经测试各项性能指标均达到国外同类产品先进水平。

SLO (W) Series Motor Fire-fighting Pump Unit is developed under the joint efforts of many scientific researchers of Liancheng and on the basis of introduced German advanced technologies. Through test, all performance indexes take the lead among foreign similar products.

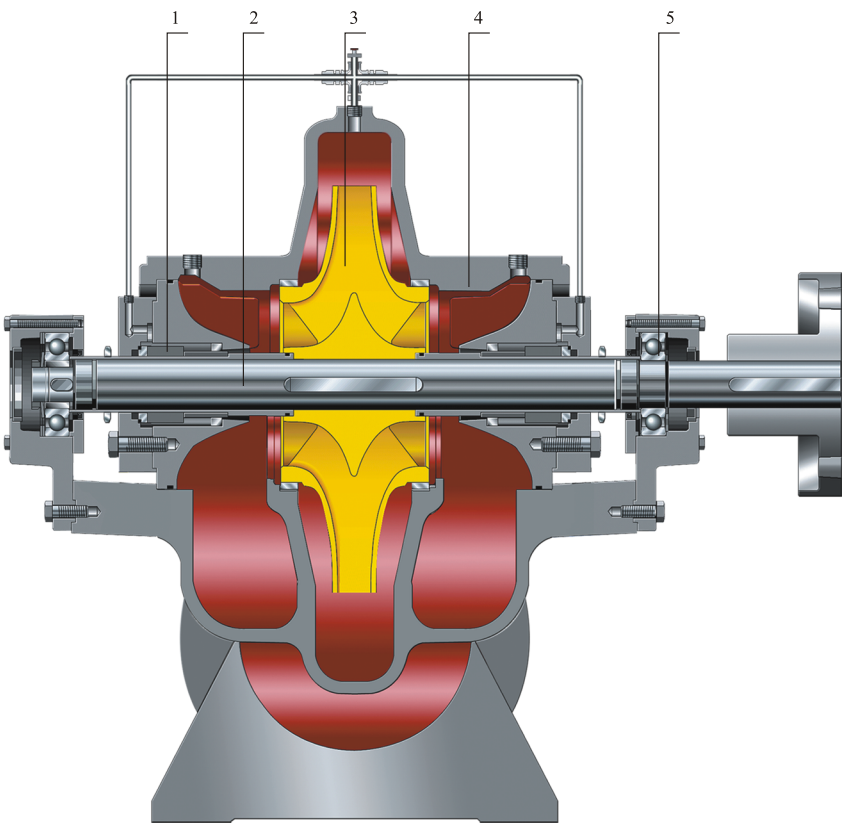
Dn	80~250mm
Q	18~1152m³/h
p	0.3~2.0Mpa
t	max 80℃
p ₀	max 2.5Mpa

适用领域

- 工业及民用建筑固定消防系统
- 消防栓灭火系统
- 自动喷淋灭火系统
- 水喷雾灭火系统

Applicable Fields

- Fixed fire-fighting systems of industrial and civil buildings
- Fire hydrant fire-fighting system
- Automatic sprinkler fire-fighting system
- Spraying fire-fighting system



编号 No.	名称 Name	备注 Remarks
1	轴封 Shaft seal	进口博格曼机械密封或国产优质密封。 Imported Burgmann mechanical seal or domestically-produced high-quality seal are used;
2	轴 Shaft	优质碳钢，刚性好，强度高，使用寿命长。 It is made of high-quality carbon steel, and features satisfactory rigidity, high strength and long service life;
3	叶轮 Impeller	优化设计的双吸叶轮，具备显著的抗气蚀性能和高效率。 The double-suction impeller with optimized design features distinct cavitation resistance performance and high efficiency;
4	泵壳 Pump casing	双蜗壳造型，降低轴承受力，延长轴承寿命。 The double-volute-type model reduces bearing's load and prolongs bearing's service life;
5	轴承 Bearing	进口SKF、NTN、或国产优质轴承，使用寿命长，维护方便。 Imported SKF, NTN, or domestically-produced high-quality bearings feature long service life and ease maintenance.

产品结构特点及性能优势

- 专业的设计软件及开发系统，先进的CFD三元分析。
- 结构紧凑，外形美观，稳定性好，便于安装。
- 运行平稳，显著的抗气蚀性能和高效率。
- 国内首创的无轴套专利技术，保证泵的可靠性，并用户使用维修、保养得到最大限度的便利。

Product Structural Features & Performance Advantages

- Professional design software and development system, and advanced CFD three-mode analysis;
- Compact structure, streamline appearance, good stability and ease of installation;
- Steady operation, great cavitation resistance performance and high efficiency;
- Domestically-pioneering sleeve-less patented technology ensures the pump's reliability, and maximizes the ease of maintenance and care for users.

成套消防给水设备

Complete Fire-fighting Water Supply Equipment



消防稳压给水设备可选用两路电源接口，可选用有双电源自动切换功能；具有先进的多功能编程控制、消防主泵定时巡检等功能。

隔膜式气压罐，结构简单、效率高、一次充气可长期使用。

可配备结构简单、运行平稳的SLS型单级离心泵，也可配高扬程高效率的GDL型多级离心泵。

Fire can choose two way power supply voltage stabilizing water supply equipments, can choose a double power supply automatic switching function; With advanced multi-functional programming timing control, main fire pump Inspection, and other functions.

Diaphragm pressure tank, simple structure, high efficiency and a gas can be use for a long time.

Can be equipped with simple structure, smooth operation of SLS type single-stage centrifugal pump, also can match multistage centrifugal pump lift efficiency of GDL type.

产品结构特点及性能优势

- 消防稳压给水设备由气压罐、稳压泵、电控柜及仪表、阀门、管路、基座等组成，适用于消防系统不便设高位水箱或有高位水箱而不能满足管网最不利点静水压力的场合。
- 产品体积小，结构紧凑，不受供水场合限制，可设置在一定高度向消防管网供水。
- 产品关键零部件经过众多厂家的筛选，均采用国际国内的品牌产品，具有可靠的产品质量保证。

Product Structural Features & Performance Advantages

- Fire control voltage stabilizing water supply equipment by air pressure tank, pump, electric control cabinet of stabilizing voltage and instrumentation, valves, piping, and is applicable to fire control system of inconvenience set high or has a high water tank on and cannot meet the most unfavorable point of the hydrostatic pressure of networks occasion.
- This equipment features small volume and compact structure, and is not subject to the restriction of water supply occasions. It can be positioned at any altitude to supply water to fire piping.
- Through selection among a number of manufacturers, international and domestic famous products are used as its key parts, and so ensure reliable product quality.



消防气压给水设备

在消防水泵启、停状态均能向消防管网自动按设定压力，持续给水，广泛用于稳高压消防给水系统中。

Air-pressure Fire Water Supply Equipment

It may supply water to the fire piping continuously at the pre-set pressure no matter the fire pump is ON or OFF, and is extensively used for stabilized HP water supply systems.



消防稳压给水设备

通常用于为消防管网末端增压的给水设备，适用于稳高压消防系统的局部稳压。

Stabilized-pressure Fire Water Supply Equipment

It is usually used as the water supply equipment for pressurizing the end of the fire piping, and is suitable for partial pressure stabilization of stabilized HP fire system.



DLC 气体顶压消防给水设备

DLC 气体顶压消防给水设备属于应急消防给水设备，满足消防初期10min时间的灭火，是较理想的大型应急消防气压给水设备。

DLC Gas Pressure Fire Water Supply Equipment

DLC top gas pressure fire water supply equipment belong to emergency fire water supply equipment, meet the 10 min time in the early years of the fire extinguishing, is the ideal large emergency fire pressure water supply equipment.

XBC 系列柴油机消防泵组

XBC Series Diesel Engine Fire-fighting Pump Unit

设备所配柴油机均采用国产或进口优质产品，具有启动特性好、过载能力强、结构紧凑、维修方便、使用简单、自动化程度高等特点，是一种先进、性能可靠的消防设备。

The equipment equipped with domestically-produced or imported high-quality diesel engine features satisfactory start-up performance, great overload ability, compact structure, convenient maintenance, easy use and high degree of automation, and is advanced and reliable fire-fighting equipment.

适用领域

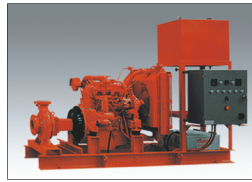
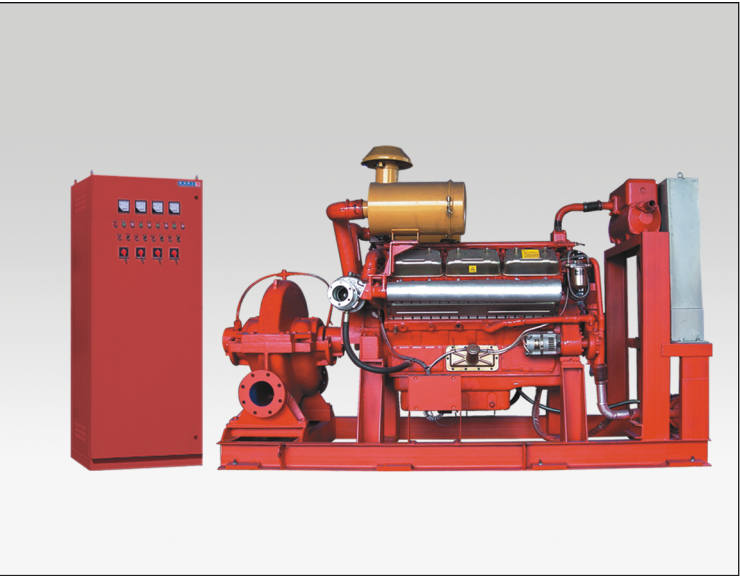
适用于仓库、码头、机场、石化、电厂、液化气、纺织、船舶、油田等各种场合的应急消防给水。

Applicable Fields

It is applicable to emergency fire-fighting water supplies in warehouses, docks, airports, petrochemical plants, LPG plants, textile enterprises, shipyards, oil fields, etc.

产品结构特点及性能优势

- 动力强劲。柴油机组整体曲轴，刚度大，高强度，传递扭矩效率高。
- 技术先进。采用国际先进技术和龙门式机体，滑动轴承，板翅式机冷器，上置式热交换器，旋装式油滤器及双重冷却系统。
- 性能优越。振动、噪声指标优于国家标准。
- 自动化程度高。具有自动、手动及故障自检功能，全过程监控工作状态，故障启动失败自动重启功能，自动预润滑、预加热，令设备启动更为安全可靠；具有中央控制室遥控及远传控制功能，还可具有现场总线监控（可选功能）。蓄电池采用全自动浮充(恒流、恒压、涓流式充电)电方式，保证蓄电池随时处于备用状态。
- 使用方便。配备可远传仪器仪表，根据需要可接至控制中心，安装使用，维护保养方便。



XBC-IS系列
XBC-IS Series



XBC-SLD系列
XBC-SLD Series



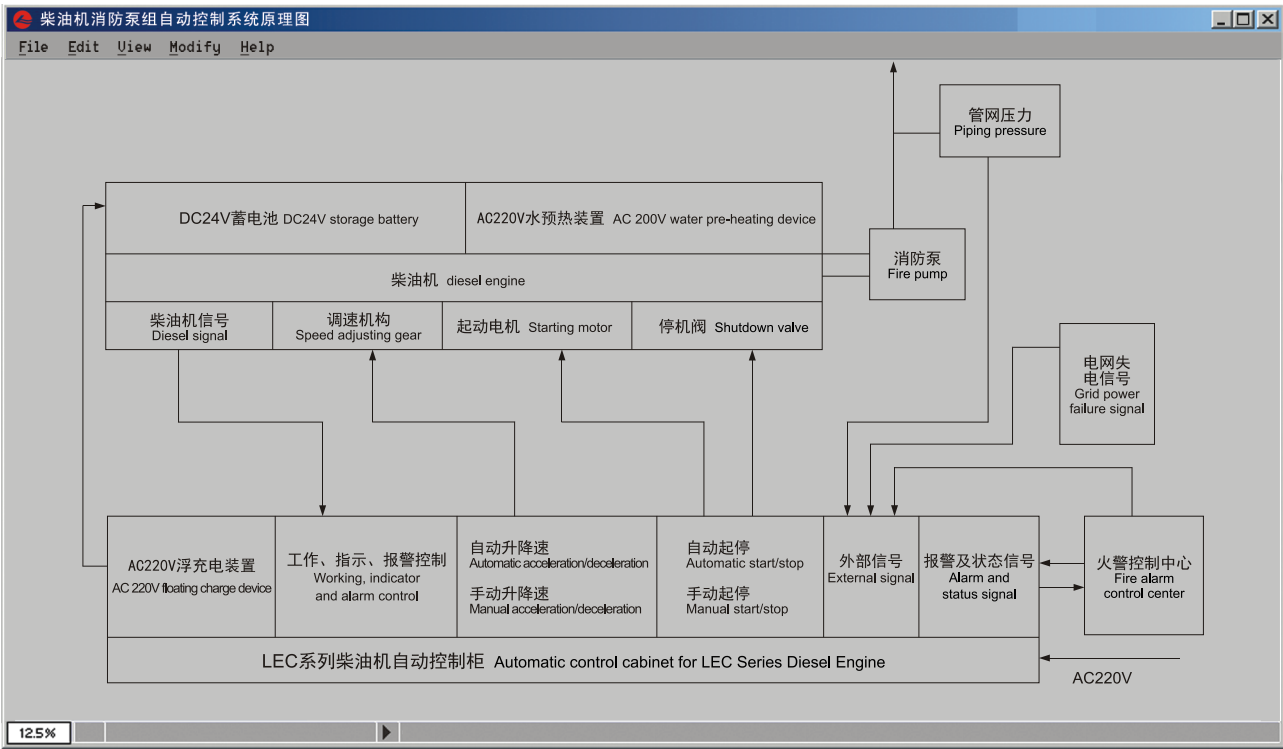
XBC-SLOW系列
XBC-SLOW Series

Product Structural Features & Performance Advantages

- Strong dynamic power. The diesel engine features overall curve shaft, great rigidity, high strength and high efficiency of transmission torque;
- State-of-the-art technologies. It employs international advanced technologies, as well as portal-type body, sliding bearing, board-wing-type machine cooler, overhead heat exchanger, revolving oil filter and double cooling system;
- Superior performance. Vibration and noise indexes are superior to national standards.
- High degree of automation. It comes with automatic, manual and failure self-check functions. It may monitor working conditions throughout the process, and get restarted in case of a starting failure. Automatic pre-lubrication and pre-heating make the equipment start more safely and reliably. It also has a central control room for remote control and remote transmission control, as well as onsite bus monitoring (optional function). The battery in the form of full-automatic floating charge (constant-current, constant-voltage and trickle charge) so as to remain in the standby state at anytime.
- Ease of use. It is equipped with the instruments and meters with remote transmission function, and may be connected to the control center as needed. It features convenient installation, use and maintenance.

柴油机消防泵组自动控制系统原理图

Schematic Diagram of Automatic Control System for Diesel Engine Fire-fighting Pump Unit



自动消防供水系统由稳压泵、电动泵（主泵）、自动柴油机泵（备泵）组成，工作原理为：

平常管网压力在P1（低压）~P2（高压）之间，低于P1稳压泵启动，压力升至P2停泵，由于管网泄漏P2慢慢下降至P1稳压泵又启动，如此往复保持压力在P1~P2之间，当用水量大增，稳压泵无法维持P1很快又下降至P3，电动泵启动，压力上升至PW并满足消防用水，如停电或电动泵有故障，压力由P3继续下降至P4则自动启动柴油机泵，压力上升至PW并供水，电动泵或柴油机泵停泵须人工判断后手动停泵，如估计管网泄漏较多，则需增加稳压罐或将稳压泵常开，以免启动频繁。

The automatic fire water supply system consists of stabilized-pressure pump, electric pump (main) and automatic diesel engine pump (standby), and its work-ing principle is described as follows:

The normal piping pressure is within P1 (low pressure) ~ P2 (high pressure). When the pressure is lower than P1, the stabilized-pressure pump will be started, and then be stopped when the pressure is raised to P2. Due to leakage, the pressure will slowly decline from P2 to P1, and the stabilized-pressure pump will be started again; this way, the pressure will be maintained between P1 and P2. When water consumption rises, the stabilized-pressure pump cannot maintain the pressure at P1, and it will drop to P3 rapidly; the electric pump will be started, and the pressure will rise to PW to supply water for fire protection. In case of power cut or electric pump's failure, the pressure will continuously drop from P3 to P4, and then the diesel engine pump will be started automatically; the pressure will rise to PW to supply water. The electric pump or diesel engine pump will need stopping manually. If it is estimated that there are many leakages in the piping, the quantity of stabilized-pressure tanks will be increased or the stabilized-pressure pump will remain ON so as to prevent frequent ON and OFF.