

PL3000-16 大流量排水抢险车

PL3000-16 high-flow drainage rescue vehicle

技术规格书

Technical specifications

第一部分 系统概述

Part I System Overview

1、概述 Overview

1.1 功能 Function:

PL3000-16 大流量排水抢险车，具有高效、高速、轻便等特征，并能提供现场照明等多功能用途，具有国内领先水平。车载紧急排水设备一体化，设置简单（泵、发电机、控制柜、排水软管、照明灯）等，排水响应速度快，达到紧急排水目的。

PL3000-16 high-flow drainage rescue vehicle, with high efficiency, high speed, light and other characteristics, and can provide on-site lighting and other multi-functional uses, with the domestic leading level. The on-board emergency drainage equipment is integrated, the setting is simple (pump, generator, control cabinet, drainage hose, lighting), etc., and the drainage response speed is fast to achieve the purpose of emergency drainage.

1.2 适用场合 Applicable occasions:

市政、公路应急排水；突击防洪排涝，围堰抽水；抗旱抢险，农业灌溉；抽排清理污染水面；无固定泵站及无电源地区的抽排水等。特别适用于城市地下车库排涝、高速公路隧道、涵洞、地铁、厂矿及其它低矮环境、不适宜人员进入的排水场合，最大程度地保证了抢险救灾人员的生命安全。

Municipal and highway emergency drainage; Assault flood control and drainage, cofferdam pumping; drought resistance, agricultural irrigation; Pumping and cleaning up polluted water surfaces; There are no fixed pumping stations and pumping and drainage in areas without power supply. It is especially suitable for urban underground garage drainage, highway tunnels, culverts, subways, factories and mines and other drainage occasions in low environments and not suitable for personnel to enter, ensuring the life safety of rescue and disaster relief personnel to the greatest extent.



1.3 主要构成 Main composition:

大流量排水抢险车是一套独立的排水抢险系统。系统由主车、大流量履带式自行走排水车、液压控制系统、升降照明系统等构成，人性化的操作方式，实时提示当前运行情况及故障和处理措施让操作者能在最短时间内按提示排除故障。采用国际知名品牌液压元器件；

The high-flow drainage rescue vehicle is an independent drainage rescue system. The system is composed of the main vehicle, high-flow crawler self-propelled drainage vehicle, hydraulic control system, lifting lighting system, etc., humanized operation mode, real-time prompt of the current operation and fault and treatment measures, so that the operator can eliminate the fault in the shortest time according to the prompt. Using international well-known brand hydraulic components;

1.4 技术特点 Technical features:

☆ 全液压，小履带行走、水泵及辅助机构均由液压驱动，无用电安全隐患；

Full hydraulic, small crawler walking, water pump and auxiliary mechanism are driven by hydraulic pressure, no potential safety hazards of electricity use;

☆ 流量大，扬程高；

Large flow rate and high head;

☆ 水泵流道简单，具有很强的防堵塞性，可用于各种复杂排水工况；

The pump flow channel is simple, with strong anti-clogging, and can be used for various complex drainage conditions;

☆ 有线+无线遥控控制，无线遥控控制距离 150m；

Wired + wireless remote control, wireless remote control distance 150m;

☆履带车可长时间浸泡于水中正常作业。

The crawler can be immersed in water for a long time to work normally.

1.5 遵循标准 Follow the standards

☆整车满足《GB7258-机动车运行安全技术条件》及相关国家标准要求。

The vehicle meets the requirements of GB7258-Motor Vehicle Operation Safety Technical Conditions and related national standards.

☆车辆可适用于-30℃~+50℃的环境温度。各种仪表元部件在此环境温度中能保持良好的工作状态。

The vehicle can be suitable for the ambient temperature of -30° C~+50° C. Various instrument components can maintain good working condition at this ambient temperature.

☆所有仪表均符合《中华人民共和国计量法》要求。

All instruments comply with the requirements of the Metrology Law of the People's Republic of China

☆系统所选汕德卡底盘的生产厂通过了 ISO9001-2000 质量管理体系认证

The production plant of the selected Shandeka chassis has passed the ISO9001-2000 quality management system certification

☆所有外部接口均符合 GB12514-2006 消防接口标准。

All external interfaces comply with GB12514-2006 fire interface standard.

第二部分 技术指标

Part II Technical indicators

1、 整车参数

1. Vehicle parameters

(1) 整车外形尺寸（长×宽×高）mm：约 9500×2496×3900

(1) Overall dimensions (length× width × height) mm: approx. 9500×2496×3900

(2) 车辆最大总质量：满足 GB1589-2016《汽车、挂车及汽车列车外廓尺寸、轴荷及质量限值》或 GB 7956.1-2014《消防车 第1部分：通用技术条件》相关规定；

(2) Maximum total mass of the vehicle: meet the relevant provisions of GB1589-2016 "Dimensions, axle load and mass limits of the outer contour of automobiles, trailers and automobile trains" or GB 7956.1-2014 "Fire Trucks Part 1: General Technical Conditions";

- (3) 排放标准：国六；
- (3) Emission standards: China VI;
- (4) 比功率 $\geq 15\text{kw/T}$;
- (4) Specific power $\geq 15\text{kw/t}$;

2、 底盘主要技术参数

2. Main technical parameters of the chassis

- (1) 选用德国 MAN 技术的重汽汕德卡 ZZ1256V524MF1 (国六排放) 型二类底盘；轴距：4300mm+1400mm。
- (1) Sinotruk Shandeka ZZ1256V524MF1 (China VI emissions) type II chassis using German MAN technology; Wheelbase: 4300mm+1400mm.
- (2) 驱动型式 6 \times 4。
- (2) Drive type 6 \times 4.
- (3) 驾驶室结构：2 门单排驾驶室，平头前翻，满足乘坐 3 人，驾驶室内设备为原底盘厂标配（含空调）。
- (3) Cab structure: 2-door single-row cab, flat head forward-flipped, to meet the seat of 3 people, cab equipment is the original chassis factory standard equipment (including air conditioning).
- (4) 发动机：
- (4) Engine:
 - ①额定功率：540HP；发动机型号：MC11.54-61
 - ① Rated power: 540HP; Engine model: MC11.54-61
 - ② 油箱容积 $\geq 380\text{L}$;
 - ② Fuel tank volume $\geq 380\text{L}$;
- (5) 变速箱：手动变速箱
- (5) Gearbox: manual gearbox
- (6) 底盘设置 EBS 系统，设置限速器，配置子午线钢丝胎、胎压监测系统，发动机及主要部件监测系统、制动冷却装置、导航仪等设备；
- (6) The chassis is equipped with EBS system, speed limiter, radial wire tire, tire pressure monitoring system, engine and main components monitoring system, brake cooling device, navigator and other equipment;

3、 驾乘室 Passenger room

(1) 布局结构：两门单排；

(1) Layout structure: two doors and single row;

(2) 座位设置：主座椅为气囊减震；

(2) Seat setting: the main seat is airbag shock absorber;

(3) 安全设置：座位设置预紧安全带。

(3) Safety settings: Seat pre-tensioned seat belts.



汕德卡底盘特点：

Features of Shandeka chassis:

☆高可靠性——国际一流的工艺技术：

☆High reliability - international first-class process technology:

国产化的德国 MAN 技术产品:原版引进德国 MAN TG 技术，采用相同的产品设计、相同的生产装配工艺，生产一致性管理、试验验证、一直到产品释放完全采用德国标准，发动机重要配套件采用 MAN 原供方，底盘大量采用国际顶级部件，是整车高可靠性的有力保证。

Localized German MAN technology products: the original introduction of German MAN TG technology, the same product design, the same production assembly process, production consistency management, test verification, until the product release completely adopts German standards, important engine accessories adopt MAN original suppliers, chassis uses a large number of international top components, is a strong guarantee for the high reliability of the whole vehicle.

☆高可靠性——关键部件先进性：

☆High reliability - advanced key components:

发动机：轻量化集成化设计、严苛的发动机管理系统、国际一流排气后处理系统、B10 寿命 150 万公里

Engine: lightweight integrated design, strict engine management system, world-class exhaust aftertreatment system, B10 life of 1.5 million kilometers

变速箱：档位合理，级差小；传动平稳，冲击小；多种取力方式

Gearbox: reasonable gear, small step difference; Stable transmission and small impact; Multiple power take-off methods

前后桥：承载力强，可靠性高；轻量化设计，优于竞品；密封加强，不惧涉水；制动力矩大，制动平稳舒适。

Front and rear axles: strong bearing capacity and high reliability; Lightweight design, better than competing products; Seal strengthened, not afraid to wade; The braking torque is large, and the braking is smooth and comfortable.

☆高安全性——主被动安全装置

☆High safety - active and passive safety devices

1. 主动安全

1. Active safety

制动系统：前盘后鼓式，制动能力特别是热态制动性能较全鼓制动器提高 15%；

Braking system: front disc and rear drum type, braking ability, especially hot braking performance is 15% higher than that of full drum brake;

所有阀类为 WABCO，德国 VOSS 快插接头，卓越的密封性能保证了制动系统安全；

All valves are WABCO, German VOSS quick plug connector, superior sealing performance to ensure the safety of the braking system;

转向系统：BOSCH 转向系统（原 ZF）；可调式样吸能式转向操纵机构。

Steering system: BOSCH steering system (formerly ZF); Adjustable energy-absorbing steering control mechanism.

2. 被动安全

2. Passive safety

TG 驾驶室本体，顶盖、侧围、后围双层钢板整体焊接；MAN 专利技术高可靠铰链，车门变形时能正常开启；四点全浮，撞击时驾驶室可整体后移 200mm；本体刚度强度国际水平，满足世界最苛刻的欧洲 ECE R29

安全标准。

TG cab body, top cover, side circumference, rear double-layer steel plate welded integrally; MAN patented technology high-reliability hinge, the door can open normally when deformed; Four points full float, the cab can be moved back by 200mm in the event of impact; The international level of stiffness strength of the body meets the world's most demanding European ECE R29 safety standard.

☆高舒适性—舒适性

☆High comfort - comfort

☆高智能性—中国重汽智能通

☆High intelligence—Sinotruk Intelligent Communication

分析发动机转速、车速，帮助客户评估司机驾驶水平和操作技巧，从而降低油耗耗，具备司机高级教练功能。

Analyze engine speed and vehicle speed, help customers evaluate the driver's driving level and operation skills, so as to reduce fuel consumption, with driver advanced coaching function.

通过位置电子围栏设定、远程限速限扭、熄灭发动机操控，实现车辆的控制和管理，具备车辆管家功能。

Through the location electronic fence setting, remote speed limit and torque limiting, extinguishing engine control, the control and management of the vehicle is realized, and the vehicle butler function is achieved.

通过发动机运行数据，可以远程故障诊断，快速解决行车故障，具备车辆医生护航功能。

Through the engine operation data, remote fault diagnosis can be carried out, driving faults can be quickly solved, and vehicle doctor escort functions can be provided.

通过后台或手机数据实时监控车辆运行，具备 GPS 功能。

Real-time monitoring of vehicle operation through background or mobile phone data, with GPS function.

☆亲人服务—3 次免费保养检查

☆Loved ones service - 3 free maintenance inspections

中国重汽向客户提供 3 次免费定保服务；并提供发动机、变速箱和车桥首次换油的工时费、油料费。

Sinotruk provides customers with 3 free warranty services; And provide man-hour and fuel costs for the first oil change of engine, gearbox and axle.

☆亲人服务—强大的服务网络

☆Loved ones service - strong service network

1200 余家中国重汽济南商用车销售部资质认证的服务站，可提供中国重汽体系标准的技术服务，形成钢铁服务网络。53 家区域备品中心库+23 家 4S 点，为您提供及时有效的原厂配件确保“亲人”服务快速实现。全国 6000 余名高水平服务工程师随时随地竭诚为您服务。

More than 1,200 Sinotruk Jinan Commercial Vehicle Sales Department qualification certification service stations can provide technical services of Sinotruk system standards and form a steel service network. 53 regional spare parts center warehouse + 23 4S points, to provide you with timely and effective original parts to ensure the rapid realization of "loved ones" service. More than 6,000 high-level service engineers across the country will serve you wholeheartedly anytime, anywhere.

4、车厢 Carriage

材质：材质主体结构采用优质钢材制造，并采用防腐工艺处理，车身蒙皮使用铝合金材质。

Material: The main structure of the material is made of high-quality steel, and the anti-corrosion process is adopted, and the body skin is made of aluminum alloy.

详细描述：

Detailed description:

整车上装为整体式框架结构，框架采用优质材料焊接，外蒙皮为优质航空覆膜铝平板，厢体外廓采用专用铝型材包角，满足轻量化和整车强度要求。下裙边设计有专用杂物舱；车门采用专业定制铝型材门，可靠性高并具有良好的密封性。厢体内地板表面采用优质防滑铝花纹板，防滑防腐耐酸耐碱；防火阻燃等级符合 GB8624B1 标准。整车优质由漆工艺主色为消防红，可以根据用户需求设计外观车贴。

The whole vehicle body is an integral frame structure, the frame is welded with high-quality materials, the outer skin is high-quality aviation coated aluminum flat plate, and the outer contour of the box adopts special aluminum profile wrapping corners to meet the requirements of lightweight and vehicle strength. The lower skirt is designed with a special utility compartment; The door adopts professional customized aluminum profile door, which has high

reliability and good sealing. The surface of the floor in the box body is made of high-quality anti-slip aluminum pattern board, which is anti-slip, anti-corrosion, acid and alkali resistance; The fire retardant grade conforms to GB8624B1 standard. The main color of the whole vehicle is fire red, and the appearance of the car sticker can be designed according to the needs of users

厢体的结构强度主要是靠采用的材料及骨架设计确定和实现的。由于车辆运动中受到的各种力的冲击，使得淋浴车厢体要有很强的负荷，所以在车体机械性设计上充分考虑它的承受能力和抗疲劳强度。我公司在车体结构设计过程中，车体骨架都要经过受力计算，根据实际路况上行驶的受力状况，经过UG进行CAE分析，即对骨架的每一节点分析其最大受力状况和变形量，然后通过回归方程式分析车厢体最大受力状态、集中载荷状态、最大变形状态等，最后通过工程优化设计，完成厢体骨架最终设计。

The structural strength of the box body is mainly determined and achieved by the material and skeleton design used. Due to the impact of various forces in the movement of the vehicle, the shower body should have a strong load, so the mechanical design of the car body fully considers its bearing capacity and fatigue strength. In the process of designing the structure of the car body, the car body skeleton must go through force calculation, according to the actual road conditions, through UG CAE analysis, that is, analyze the maximum force condition and deformation of each node of the skeleton, and then analyze the maximum force state, concentrated load state, maximum deformation state, etc. of the car body through the regression equation, and finally complete the final design of the box skeleton through engineering optimization design.

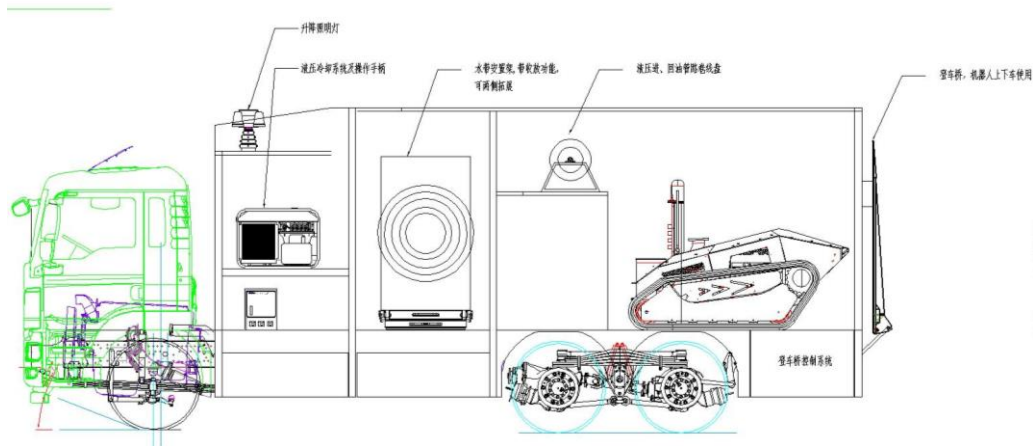
上装厢体龙架采用矩形钢管焊接，厢体外蒙皮用优质航空覆膜铝平板与厢体骨架加压粘接而成。箱体内部地板采用防滑花纹铝板，便于车内清洗消毒；厢体前侧板外部设置不锈钢净水箱，厢体前部为独立的设备区，内部布置燃油锅炉和供水系统，设备间设计有专用检修门和有隐藏式抽拉梯，便于设备开启和检修作业；厢体中部淋浴区与更衣区及厕所区互联互通，箱体左右两侧下部为杂物舱，采用上翻式结构，配有专用锁具、密封胶条，可以存放、携带各类器材、杂物等。

The dragon frame of the upper body is welded by rectangular steel pipe, and the outer skin of the box is bonded with high-quality aviation coated aluminum plate and the skeleton of the box body under pressure. The internal floor of the box is made of non-slip pattern aluminum plate, which is convenient for cleaning and disinfection in the car; The front side plate of the box body is equipped with stainless steel water purification tank outside, the front of the box body

is an independent equipment area, the internal arrangement of oil boiler and water supply system, the equipment room is designed with a special access door and a hidden pull-out ladder, which is convenient for equipment opening and maintenance operations; The shower area in the middle of the box is interconnected with the changing area and toilet area, and the lower part of the left and right sides of the box is a gmy compartment, which adopts a flip-up structure, equipped with special locks and sealing strips, which can store and carry all kinds of equipment and sundries.

车内布局图参考:

Interior layout drawing reference:

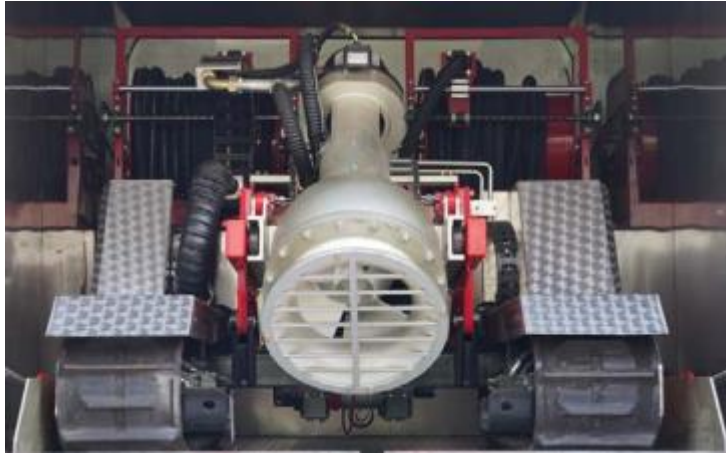


排水软管放置室: 车厢中段为排水软管放置室，用于放置的 50m×4=200 m 排水水管，两边各设置 2 副排水软管卷盘，用于收放排水软管。

Drainage hose placement room: The middle section of the carriage is the drainage hose placement room, which is used to place 50m×4=200 m drainage pipe, and 2 sets of drainage hose reels are set on each side for retracting and releasing drainage hoses.

移动排水泵站及绞盘放置室: 车厢后段用于停放移动排水泵站子车及放置油管绞盘。车厢后门为下开式，行车时作为后门，保护车内设施，当子车下车时，可作为其阶梯，使子车平稳上下车。

Mobile drainage pump station and winch placement room: The rear section of the carriage is used to park the mobile drainage pump station sub-car and place the oil pipe winch. The rear door of the carriage is a downward opening type, which is used as a rear door when driving to protect the facilities in the car, and when the sub-car gets off, it can be used as its ladder to make the sub-car get on and off smoothly.



5、电、气路、控制系统

5. Electricity, gas circuit, control system

(1) 电路系统: 电气设备, 符合国家相关标准, 车门带蜂鸣器; 无线警灯、爆闪灯为红色, 带倒车影像(含雷达), 360° 行车记录仪, 车载台; 所有操作开关、仪表、器材架及车辆均有符合标准、规范的铭牌标志, 显示值采用中国通用图标符号和计量标准, 各类标牌牢固、清晰;

(1) Circuit system: electrical equipment, in line with relevant national standards, door with buzzer; Wireless police lights, flashing lights are red, with reversing image (including radar), 360° dashcam, vehicle station; All operation switches, instruments, equipment racks and vehicles have nameplate signs that meet the standards and specifications, and the display values adopt Chinese general icon symbols and measurement standards, and all kinds of signs are firm and clear;

(2) 控制系统: 采用全液压机构控制, 采用遥控控制+有线控制, 并配有应急操作手柄, 能使用无线遥控操作, 无线遥控半径 $\geq 100\text{m}$; 操作控制系统应能清晰体现汽车发动机转速、水泵转速以及对各个系统的控制有明确标识等。

(2) Control system: full hydraulic mechanism control, remote control + wired control, and equipped with emergency operation handle, can use wireless remote control, wireless remote control radius $\geq 100\text{m}$; The operation control system should clearly reflect the speed of the automobile engine, the speed of the water pump, and the control of each system with clear identification.

(3) 升降遥控探照灯：两个 180W 24V DC 以上灯头，可左右 360 度、上下 360° 旋转；可进行 7m 升降；单灯亮度 $\geq 20000\text{Lux}$ 。

(3) Lifting remote control searchlight: two 180W 24V DC or above lamp heads, can be rotated 360 degrees left and right, up and down 360° ; 7m lifting can be carried out; Single lamp brightness $\geq 20000\text{Lux}$.

型号： YZH6-4.83CFA型

Model: YZH6-4.83CFA type

功率： 4 \times 1500W

Power: 4 \times 1500W

最大工作高度： 8 m（离地高度）

Maximum working height: 8 m (ground clearance)

水平旋转： $\geq 360^\circ$

Horizontal rotation: $\geq 360^\circ$

垂直旋转： $\geq 60^\circ$

Vertical rotation: $\geq 60^\circ$

制造商： 上海紫书实业有限公司

Manufacturer: Shanghai Zishu Industrial Co., Ltd

安装位置： 器材箱前部中间位置

Installation position: middle position in the front of the equipment box



配电箱：设有功能控制键、仪表、各种操作全部集中于控制箱上，各操作键均标有明显的操作标识。并设有1个220V输入接口和2个220V输出接口，可通过发电机或通过市电为照明等器材供电。有过载保护系统和监视仪表。

Distribution box: there are function control keys, instruments, and various operations are all concentrated on the control box, and each operation key is marked with obvious operation marks. It is equipped with one 220V input interface and two 220V output interfaces, which can supply power to lighting and other equipment through a generator or through mains. There are overload protection systems and monitoring instruments.



(4) 快速充电充气装置：可对车辆底盘进行充电充气，充电充气插口配有盖板，当车辆启动时插头自动脱落，具有设备故障声光报警功能。

(4) Fast charging inflatable device: can charge and inflate the vehicle chassis, the charging inflatable socket is equipped with a cover plate, the plug automatically falls off when the vehicle starts, and it has the function of sound and light alarm for equipment failure.

1) 产品型号: ZISHU-240015B-0

1) Product model: ZISHU-240015B-0

2) 主要组成

2) Main composition

系统包括自动脱离控制器（包括供电插头、特制电磁铁、行程开关等）、充电系统（智能充电器、充电状态指示灯）、驾驶室声光报警器及标配输入、输出软质多层橡胶保护线缆，长度各 5 米。

The system includes automatic disengagement controller (including power supply plug, special electromagnet, stroke switch, etc.), charging system (smart charger, charging status indicator), cab sound and light alarm and standard input and output soft multi-layer rubber protection cable, each with a length of 5 meters.

3) 性能参数 Performance parameters

自动脱离控制器

Automatically disengage from the controller

额定电流：20 A；脱离时间：1S-2S。

Rated current: 20 A; Disengagement time: 1S-2S.

充电系统 Charging system

供电：AC 180 V-240 V[~]0.5-2.1 A 50/60Hz 效率>97%

Power supply: AC 180 V-240 V[~]0.5-2.1 A 50/60Hz Efficiency>97%

充电：DC 27.6 V/2-15 A(智能调节)

Charging: DC 27.6 V/2-15 A (intelligent adjustment)



6、移动排水泵站 Mobile drainage pump station

(1) 将水泵等排水专用装备集成在橡胶履带底盘上，采用底盘取力；

(1) Integrate special drainage equipment such as water pumps on the rubber track chassis, and adopt chassis power take-off;

(2) 水泵：水泵驱动方式：液压直接驱动；单个水泵额定流量 3000m³ / h；单个水泵

(2) Water pump: water pump drive mode: hydraulic direct drive; The rated flow rate of a single pump is 3000m³ / h; Single water pump

额定扬程 16m; 水泵吸水口高度可调，泵口离水面作业最小深度≤0.3m；泵口安装拦污罩，拦污罩过滤物直径≥50mm，最大吸水深度≥500mm；

Rated head 16m; The height of the water suction port of the pump is adjustable, the minimum depth of the pump port from the water surface operation is ≤0.3m; the pump port is installed with a dirt arresting cover, the diameter of the filter of the dirt arrester hood is ≥ 50mm, and the maximum water absorption depth is ≥ 500mm;

泵站外形尺寸长×宽×高≤2500×1800×1700mm；泵站质量：≤2300kg。

The overall dimensions of the pump station are long× wide× and the height ≤ 2500×1800×1700mm; Pump station mass: ≤2300kg.

橡胶履带式排水泵站，主要由橡胶履带底盘、液压驱动水泵及泵站液压系统及液压管路、控制系统等组成。

Rubber crawler drainage pump station is mainly composed of rubber track chassis, hydraulic drive water pump and hydraulic system of pump station, hydraulic pipeline, control system, etc.



泵吸入口为四周进水结构，底面可直接着地。

The pump suction port is a peripheral water inlet structure, and the bottom surface can directly touch the ground.

(3) 排水软管：排水管为具有抗老化的聚氨酯软管；

(3) Drainage hose: drainage pipe is polyurethane hose with anti-aging;

尺寸：软管内径：300±3mm，管壁厚度尺寸：2.3±0.3mm；

Size: Hose inner diameter: 300±3mm, pipe wall thickness size: 2.3±0.3mm;

长度：200m，分4段；

Length: 200m, divided into 4 sections;

承压：工作压力0.3MPa，爆破压力≥1.0MPa；

Pressure: working pressure 0.3MPa, bursting pressure ≥ 1.0MPa;

管口切口应平齐，单条水管管径应保持一致，需要和相应的快速接头配套使用。

The nozzle incision should be flush, and the diameter of a single water pipe should be consistent, which needs to be used with the corresponding quick connector.

收放排水软管绞盘：用于收放排水软管，每个绞盘可收放50m的排水管。

Retract drainage hose winch: used to retract drainage hose, each winch can retract 50m drainage pipe.

水带型号：中裕 05-300-50

Water hose model: Zhongyu 05-300-50

水带口径：DN300

Water hose caliber: DN300

水带长度：50m/根

Hose length: 50m/root

工作压力：0.5MPa

Working pressure: 0.5MPa

爆破压力：1.5 MPa

Burst pressure: 1.5 MPa

工作温度：-10℃ ~ +50℃

Working temperature: -10° C ~ +50° C

柔软性：水带具备良好的柔软性，能轻易弯曲、对折

Softness: The hose has good softness and can be easily bent and folded in half

(4) 快速接头：铝合金制，300mm 口径，共 4 套，每段水管配备一套。安装在排水软管两端，方便水管与水管之间的连接。

(4) Quick connector: aluminum alloy, 300mm caliber, a total of 4 sets, each section of water pipe is equipped with one set. Installed at both ends of the drain hose for easy connection between water pipes.

3 齿内扣式铝合金材质，DN300 口径，共 4 套，每段水管配备一套。安装在排水软管两端，方便水管与水管之间的连接。

3-tooth internal buckle aluminum alloy material, DN300 caliber, a total of 4 sets, each section of water pipe is equipped with one set. Installed at both ends of the drain hose for easy connection between water pipes.

(5) 行走性能Walking performance:

1、液压控制，自行式，可爬坡道或楼梯 ≥ 35 度；

1. Hydraulic control, self-propelled, can climb ramp or stairs ≥ 35 degrees;

2、行走速度0—5km/h（步行速度）；

(6) 性能 Performance:

1、可根据现场实际积水工况遥控调节水泵抽水位置。

1. The pumping position of the pump can be adjusted remotely according to the actual water accumulation conditions on site.



2、可实现遥控操作移动泵站远离厢体车排水作业的最远排水距离 ≥ 60 m。

2. The maximum drainage distance of the mobile pump station away from the van drainage operation can be ≥ 60 m for remote operation.

(7) 油管：采用液压快换接头与厢体车连接，油管材质抗老化。油管绞盘：当移动排水泵站驶离厢体车时，可通过移动排水泵站自身拉力拖动绞盘随转。

(7) Oil pipe: hydraulic quick coupling is used to connect with the box car, and the oil pipe material is anti-aging. Tubing winch: When the mobile drainage pump station drives away from the van, the winch can be dragged to follow the rotation by the mobile drainage pump station's own pull.

系统配备自动液压胶管卷盘

The system is equipped with an automatic hydraulic hose reel

液压胶管卷盘由卷盘主体(高硬度粉末喷涂)、60米进回油抗老化胶管、回卷机构等组成。

The hydraulic hose reel is composed of a reel body (high hardness powder coating), a 60-meter oil inlet and return anti-aging hose, and a rewinding mechanism.

液压胶管卷盘回收时可自动收卷。

Automatic winding of hydraulic hose reels during reeling.

当移动泵站收放时，液压胶管卷盘可通过控制适应性收卷或释放。

When the mobile pumping station is retracted, the hydraulic hose reel can be rewinded or released adaptively by control.

采用液压快换接头与车上液压模块连接。

It adopts hydraulic quick coupling to connect with the hydraulic module on the vehicle.



(8) 系统防水性能等级 \geq IP66。

(8) System waterproof performance level \geq IP66.

(9) 防触电功能：系统为全液压驱动，完全规避电动系统的安全隐患。

(9) Anti-electric shock function: the system is fully hydraulic driven, which completely avoids the safety hazards of the electric system

(10) 系统持续稳定运转时间 \geq 12h。

The continuous and stable operation time of the system \geq 12h.

液压系统采用强制风冷+强制水冷，可长时间工作稳定；

The hydraulic system adopts forced air cooling + forced water cooling, which can work stably for a long time;

液压系统经1.5倍压力试验，可保证长时间稳定运行。

The hydraulic system has been tested with 1.5 times pressure, which can ensure long-term stable operation.

第三部分 系统特点

Part III System Features

1、系统排涝泵为双出口设计，与双排涝干线相适应，可以减小排涝压损；

1. The system drainage pump is designed with double outlets, which is compatible with the double drainage trunk line and can reduce the drainage pressure loss;

2、系统采用DN300双干线排涝水带，排涝压损小；

2. The system adopts DN300 double trunk drainage belt, and the drainage pressure loss is small;

3、系统配置排涝水带200米，双干线可以排涝距离100米；

3. The system is equipped with a drainage belt of 200 meters, and the double trunk line can drain 100 meters away;

4、系统液压胶管卷盘配备进回油管各60米，使排涝模块距主车60米。

4. The hydraulic hose reel of the system is equipped with 60 meters of inlet and return pipes, so that the drainage module is 60 meters away from the main vehicle.

第四部分 行车安全辅助

Part IV Driving Safety Assistance

安全辅助设施：CQ-HX-360QJ-H 360全景导航一体机

Safety auxiliary facilities: CQ-HX-360QJ-H 360 panoramic navigation all-in-one machine

车身周围4个摄像头360度全景拼接，32G硬盘储存，驾驶室内屏幕为10寸彩色显示屏，支持分屏和单屏显示，支持倒车雷达以及前左右四方位的雷达；具有远程监控功能！

4 cameras around the body 360-degree panoramic stitching, 32G hard disk storage, in-cab screen for 10-inch color display, support split-screen and single-screen display, support reversing radar and front left and right four-way radar; With remote monitoring function!



产品特点 Product features:

1. 主控处理器：高通 SDM450 八核 1.8G 主频（单核 1.8G，八核可达 2.4G）
1. Main control processor: Qualcomm SDM450 octa-core 1.8G main frequency (single-core 1.8G, octa-core up to 2.4G)
2. 内存 LPDDR3 和 EMMC FLASH 配置：4G+64G/2G+32G
2. Memory LPDDR3 and EMMC FLASH configuration: 4G+64G/2G+32G
3. 嵌入式微处理器：STM32F072R8T6
3. Embedded microprocessor: STM32F072R8T6
4. 软件操作系统：Android9.0/Android 10.0
4. Software operating system: Android 9.0/Android 10.0
5. 全球全网通，支持网络频段：支持 LTE Cat 6 和 2x20MHz 载波聚合，最大下行速率可达 300Mbps，支持 GSM(2G)、WCDMA(联通 3G)、TDD-LTE(4G)、FDD-LTE(4G)、CDMA2000 1X/EVDO Rev. A(电信 3G) 共六模。
5. Global full Netcom, support network frequency band: support LTE Cat 6 and 2x20MHz carrier aggregation, the maximum downlink rate can reach 300Mbps, support GSM (2G), WCDMA (Unicom 3G), TDD-LTE (4G), FDD-LTE (4G), CDMA2000 1X/EVDO Rev.A (Telecom 3G) total six modes.
6. 视频输入：八路高清 AHD 视频输入，支持 360 全景(四路)+ AUX in +DVB-T +普通倒车 +ADAS ;CVBS 兼容设计；支持 HDMI IN 输入（选配）。
6. Video input: eight high-definition AHD video input, support 360 panoramic (four-way) + AUX in + DVB-T + ordinary reversing + ADAS; CVBS compatible design; Support HDMI IN input (optional).
7. 视频输出：MIPI 屏兼容性设计，可支持到 1080P 显示屏。
7. Video output: MIPI screen compatibility design, can support up to 1080P display.
8. 内置 360 全景：高通在全行业 GPU 性能最强，实现 3D 全景效果最好。
8. Built-in 360 panorama: Qualcomm has the strongest GPU performance in the whole industry and achieves the best 3D panorama.