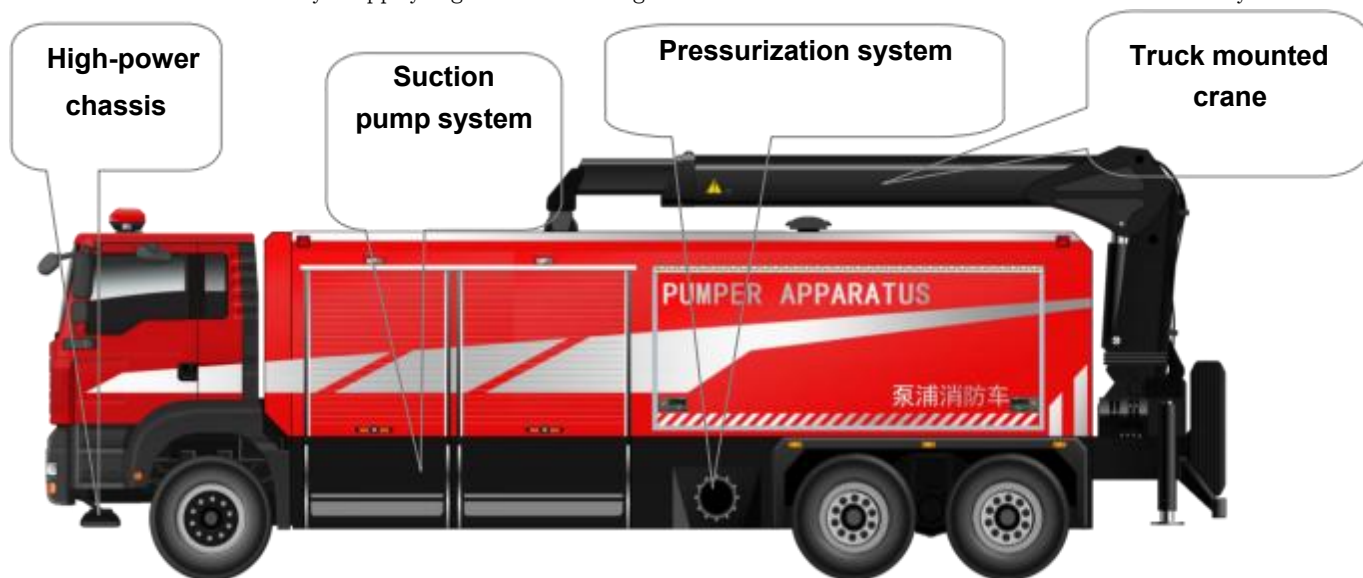


24000-DN300-2 Technical Specification for Water Supply System

1. System overview

1.1 System composition and function

The system consists of one pump fire truck and two hose laying fire trucks (each vehicle contains DN300 hose 2000m), which has the basic function of quickly drawing water from an open water source and remotely supplying and draining water from 2000 meters to 4000 meters away



Pump fire truck



【Water hose laying fire truck】

1.2 System main performance

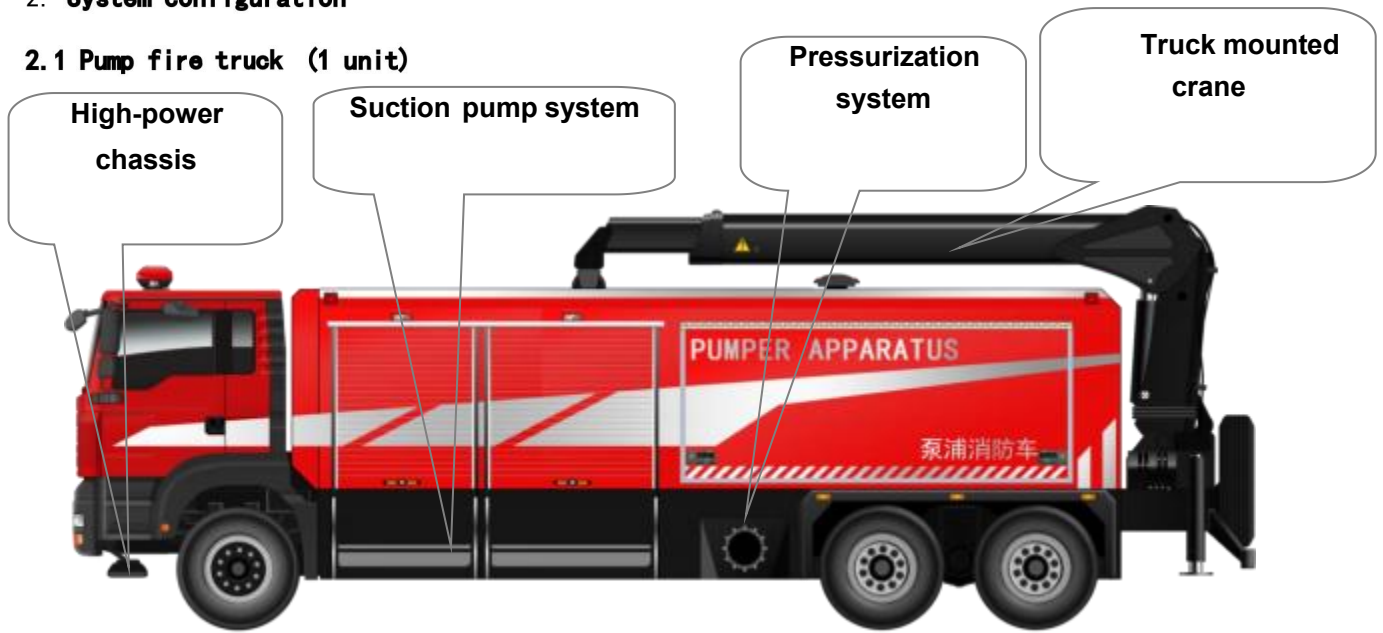
1. It has the functions of fire water supply, fire fighting operation and flood drainage and rescue.
2. When taking water vertically, the suction pump of the system can draw water from a ≥ 20 -meter deep water source with a rated flow rate of ≥ 400 liters per second;
3. When the double trunk line is supplied horizontally, the system can be transported to the fire scene 2000 meters away with a flow rate of ≥ 400 liters / second, and the terminal water supply pressure ≥ 0.6 MPa;
4. It can meet the continuous water supply time of not less than 168 hours;

1.3 Schematic diagram of the system water supply



2. System configuration

2.1 Pump fire truck (1 unit)



The pump fire truck is mainly composed of chassis, water absorption system, pressurization system, truck mounted crane and vehicle carriage.

There are two suction systems, one of which is driven by a chassis engine and the other is driven by an independent engine. Each suction system is powered by an engine to the hydraulic float pump through a hydraulic system and hydraulic reel.

2.1.1 chassis

The pump fire truck adopts Shandeka chassis.

Power: 540HP

Emission standard: China VI

Drive mode: 6×4

Maximum speed: ≥90km/h (fully loaded)

Full load mass: 33 tons

Wheelbase: 5800mm +1400mm

Approach angle: ≥14°

Departure angle: ≥14°

Wheel tires: original steel wire tires of the chassis (including 1 spare tire).

Cab

Structure: Original cab

Passengers: 2 people

Additional equipment: In addition to the original equipment, 100W siren, police light switch, radio power cord pile head, LCD display reversing are installed System, in-cab reserved on-board radio power interface and installation location.

2.1.2 Automatic disengagement from the charging system

1) Product model: RICHIEN-240015A-0

2) Main composition

The system includes automatic disengagement controller (including power supply plug, special electromagnet, stroke switch, etc.), charging system (smart charger, charging status indicator), cab audible and visual alarm and standard input and output soft multi-layer rubber protection cables, each with a length of 3 meters.

3) Performance parameters

Automatically disengage from the controller

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

Charging system

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

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

4) Key features

When the vehicle is parked in the garage, the charger can intelligently compensate and Charge the battery to ensure that the vehicle can be alerted at any time.

Start the vehicle and "beep" to get rid of the reminder; If it is not disengaged, sound and light alarm, manual disengagement can be selected.

The product has multiple protection functions: unseparated alarm, charging status indication, IP55 protection level, multi-layer protection strong current cable.

2.1.3 Suction pump set (two sets)

1) Floating pump

The floating pump is powered by the chassis engine through a full-power power take-off, and the suction pump is driven, controlled and operated by the hydraulic system and control system.



BRAND: RICHIEEN

Water pump type: single-stage single-suction centrifugal pump

Components: large flow fire pump, hydraulic motor, floating box, filter, etc

Weight: ≤100kg

Export caliber: 250mm

Water inlet direction: bottom water inlet (pontoon pump works stably and better)

Standard working conditions: flow: 12000L/min, pressure 0.4MPa, with filter

Working temperature: -25° C ~ +50° C

Pump body material: The pump body and impeller are cast high-strength light alloy

Filter: The water inlet of the water pump is equipped with a filter, which can effectively prevent the inhalation of debris

Surface treatment: The pump body and impeller are treated by anti-corrosion process, which Has seawater corrosion resistance.

Floating box: The box body is made of lightweight material

Cleaning tool: The car is equipped with a special tool for cleaning debris on the surface of the filter, which can effectively clean up after the filter is blocked

2) Hydraulic system

System composition: The hydraulic system is composed of plunger pump, control valve, inlet and return hose reel ,hydraulic motor, etc.

Power Transmission:

The system provides hydraulic power through the engine driven hydraulic piston pump, and under the control of the hydraulic valve, the hydraulic motor is supplied through the hydraulic hose to drive the suction pump.

Two sets of hydraulic hose reels are installed on both sides of the boom, and the floating pump is placed on the roof.

During water intake operations, the operator operates the crane and hoist to lift the floating pump to the water intake point easily, smoothly and quickly.

3) water intake hose

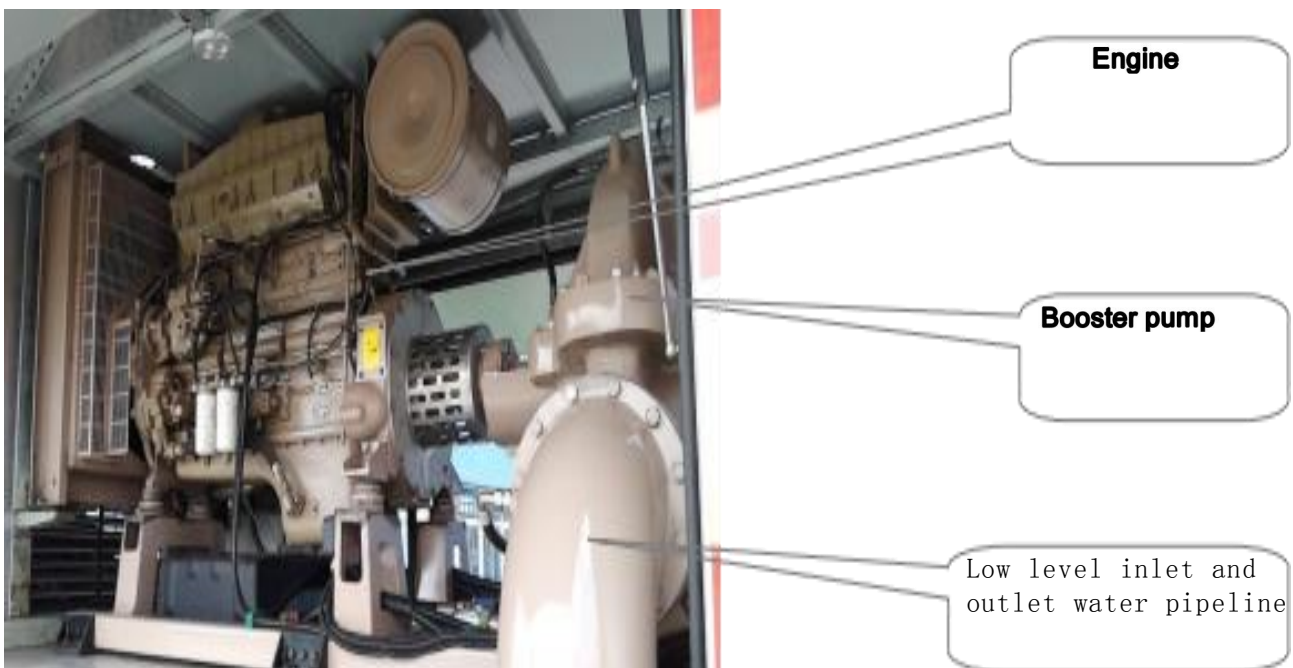
System configuration: DN250 hose 120m (four each of 20 meters and 10 meters)

4) Control system

Fully automatic or manual control and display system, can display engine speed in real time, etc., when the system is abnormal, automatic sound and light alarm, all control handles, switches, indicator lights are equipped with stainless steel corrosion process Chinese identification.

2.1.4 Booster pump set

The booster pump system is composed of engine, booster pump, low-level inlet and outlet pipelines, control system, etc.



1) Engine (German MAN Technology)

Brand: VMAN

Model: FDE22B1000

Rated power: 1000HP

2) Booster pump

Model: TBC10/400G

Structural type: single-stage double suction type

Rated flow: 400L/s

Rated pressure: 1.0MPa

Inlet pipe diameter: 2×250mm (matching the suction pump outlet line)

Outlet pipe diameter: 2×300mm (matching the diameter of the water supply main)

Working temperature: -25° C ~ +50° C

Control system: with working condition monitoring, alarm, overload protection and timing, emergency stop and other functions.

2.1.5 Truck mounted crane

1) function

The truck-mounted crane is installed at the rear of the vehicle and can rotate 90 degrees left and right;

When taking water vertically, the crane is used to cast and hang the suction pump and the large-diameter water hose that sucks water;

When the ramp draws water, the crane's hoist is used to cast and recover the suction pump.

2) Performance parameters

Lifting capacity: 18t.m

Maximum working radius: 17m

Swing angle: 360°

Winch one: 0.8T/60m

Winch two: 4T/20m

2.1.6 Body

The skeleton adopts high-strength porous steel welded structure, and the surface is bonded with aluminum alloy plate to ensure the overall strength and rigidity, and the door is opened flexibly and tightly closed; Set the foot pedal in the right position for easy operation.

2.1.7 Pump fire truck equipment

No	Name	Specifications/ Model Numbers	Unit	Quantity	Remark
1	Water hose assembly	DN250-10-20	strip	4	
2	Water hose assembly	DN250-10-10	strip	4	
3	Hose interface wrench	DN250	deputy	2	
4	Hose interface wrench	DN300	deputy	2	
5	Tow rope	30m	root	4	
6	Vertical water supply bend	DN250	cover	2	
7	Filter cleaning tool	Universal type	cover	1	
8	Floating pump spreader	Double pump type	cover	1	
9	Float pump pusher	3m	root	2	
10	Wheel stop block	Universal type	cover	1	
11	intercom		platform	1	
12	Chassis vehicle tools		cover	1	

2.2 Fire trucks for hose laying (2 units)

The hose laying fire truck is composed of a carrying chassis, a tape receiver, a cleaning system, and a water hose tank that can store a 2000 meter DN300 large-diameter water hose, and its main function is the storage, transportation, laying, and recycling of the water hose.



2.2.1 Bottom plate

The hose laying fire truck adopts the chassis of Sinotruk Shandeka.

Power: 400HP

Emission standard: China VI

Drive mode: 6×4

Maximum speed: ≥90km/h (fully loaded)

Full load mass: 33 tons

Wheelbase: 5800mm +1400mm

Approach angle: ≥14°

Departure angle: ≥14°

Wheel tires: original steel wire tires of the chassis (including 1 spare tire).

Cab

Structure: Original cab

Passengers: 2 people

Additional equipment: In addition to the original equipment, 100W siren, police light switch, radio power cord pile head, LCD display reversing are installed system, in-cab reserved on board radio power interface and installation location.

2.2.2 Automatic disengagement from the charging system

1) RICHIEN-240015A-0

Product model: RICHIEN-240015A-0

2) Main composition

The system includes automatic disengagement controller (including power supply plug, special electromagnet, stroke switch, etc.), charging system (smart charger, charging status indicator), cab audible and visual alarm and standard input and output soft multi-layer rubber protection cables, each with a length of 3 meters.

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4) Key features

When the vehicle is parked in the garage, the charger can intelligently compensate and charge the battery to ensure that the vehicle can be alerted at any time.

Start the vehicle and "beep" to get rid of the reminder; If it is not disengaged, sound and light alarm, manual disengagement can be selected.

The product has multiple protection functions: unseparated alarm, charging status indication, IP55 protection level, multi-layer protection strong current cable.

2.2.3 Automatic retraction/automatic placement system

Main components: hose winding system includes automatic guide belt mechanism, automatic winding mechanism, automatic placement system, hose cleaning device, hydraulic power and automatic control system.

Main functions: automatic recovery of water hose, automatic placement of water hose, and local cleaning of water hose in real time as needed.

The speed of the recovery hose is 0~3km/h, and the speed of the casting hose is 0~15km/h.

Key Features:

- 1) The automatic conduction belt mechanism can rewind the water hose in the direction of the front of the car to ensure the smooth recovery of the ground water belt;
- 2) The automatic winding mechanism has a double pressing mechanism to ensure that it continues to have sufficient winding force, and has the function of automatic sensing of the interface;
- 3) The hose cleaning device composed of hydraulic power unit, high-pressure washer, water tank, high-pressure nozzle, etc. can be used when needed

Clean the upper and lower surfaces of the hose to ensure that the hose is stored cleanly.

4) The system is powered by the hydraulic system, and the operation is light and fast.

5) The receiving speed of the hose is adjustable, and the speed of the recycling hose is 0~3km/h.

3、 Firehose storage box

Function: used to carry DN300mm large diameter fire hose 2000m and various interfaces and other equipment.

Material: The main skeleton of the body is welded by high-strength section steel, and the equipment frame is made of aluminum alloy profile.

Structure: all-steel welded one-piece frame structure, firm and reliable, ensuring strength and rigidity; The mask is made of high-strength viscose bonded aluminum plate.

Warning sign: each car box is equipped with reflective tape; Red and blue strobe lights are installed around the perimeter above the cabinet.

4、 Large caliber hose

Brand: ZY—FIRE

Model number: DN300-10-100

Water hose caliber: DN300

Hose length: 100m/root

Working pressure: 1.0MPa

Burst pressure: 3.0 MPa

Working temperature: -10° C ~ +50° C

Water hose material: one-time molding double-sided polyurethane water hose

Elongation: ≥3%

Expansion rate: ≥4%

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

Interface type: connected by DN300 high-strength forged aluminum alloy joint (interface type is consistent with international standards and fully interchangeable).

5、On-board equipment (per vehicle configuration)

No	Name	Specifications/Model Numbers	unit	quantity	remark
1	Water hose assembly	DN300-10-100	strip	20	
2	Retracting guide	DN150-10m/DN30			
3	Hose interface wrench	DN300	deputy	2	
4	Multifunctional water divider	DN300/DN150-2+8-DN80	cover	2	
5	Water divider	DN150/DN80*4	cover	4	
6	Hose plugging tool	Large-caliber universal type	cover	2	
7	Wheel stop block	Universal type	cover	1	
8	Chassis vehicle tools		cover	1	

3、Other technical requirements of the system vehicle

1. Vehicle requirements

- 1). The vehicle performance complies with the provisions of GB7956.1-2014 "Fire Trucks Part 1: General Technical Conditions".
- 2). The appearance of the whole vehicle is kept flat, smooth and beautiful, and all welding is firm and reliable.
- 3). The operation of the hose box, equipment box and belt receiver all have lighting that meets the requirements of use.
- 4). The whole vehicle coating is fire-fighting red baking paint, and the appearance spraying shape and related logos are made according to user requirements.
- 5). Police lights, alarms and communication devices: relevant communication interfaces are reserved in the cab and equipped with digital on-board stations; Installation of electronic sirens and police light switches in the passenger seat; The roof is equipped with a long row of police lights, sirens and PA devices $\geq 200W$, and flashing warning signs are installed on the sides and rear of the body.

