

Vacuum Suction Truck Instruction Manual

Foreword

Thank you for using the vacuum suction truck produced by Hubei Chengli Special Purpose Vehicle. Vacuum suction truck is a product designed by our factory, which is especially suitable for sewage sludge suction, cleaning, loading and unloading.

This car is modified with Dongfeng series

chassis, which has the following

advantages: 1. Sufficient suction

vacuum;

2. Set secondary protection for the vacuum pump to prevent pollution from entering the pump body;

3. The vacuum pump is driven by manual operation, and the clutch is convenient;

4. The hydraulic oil pump and vacuum pump move synchronously and work reliably;

5. Take oil pressure to turn the tank and unload mud completely;

6. Beautiful appearance, easy operation, and good performance. In order to fully meet the various requirements of users as much as possible, the structure of the sewage suction car continues to be modified.

Progress and improvement, so there may be cases where the description of the description differs from the actual structure, please understand without notice.

One, Overview

The car is in a state of high vacuum for suctioning mud and sewage.

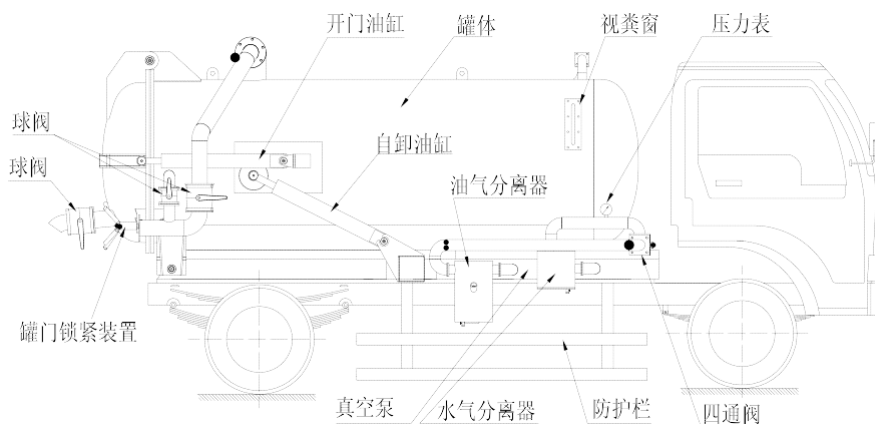
Special attention should be paid to its operation. The car is

composed of the chassis, power take-off, transmission shaft,

vacuum suction pump, pressure tank, hydraulic part

It consists of a pipe network system, a vacuum pressure gauge, a manure window, and a hand-washing device. It is equipped with a high-power vacuum suction pump and a high-quality hydraulic system with the vehicle. It has the characteristics of high vacuum, large tonnage, high efficiency, and wider use. It can be widely used in the collection and transportation of sludge, sewage or petrochemical sewage pond sediments in urban rainwater wells, inspection wells and various ditches. The dirt in the tank can be dumped directly through the back cover, and is used in large, medium and small town environmental sanitation, municipal, agricultural, chemical, factory and mining enterprises, property communities and other departments.

two, structure diagram



three, Operation method

1. Inhalation method:

准备 Prepare before inhalation

- a. Close the back door; b. Observe whether the lubricant of the vacuum pump oil separator is correct.

顺序 Operation sequence

- A、 Depress the clutch pedal, push the power take-off lever, and make the vacuum pump of the dirt suction car run, then

- Slowly release the clutch pedal;
- B、 Turn on the alarm switch (in the cab);
 - C、 Pull the hand throttle handle to the maximum position and observe the tachometer to 500-600 rpm (it has been adjusted at the factory);
 - D、 Set the four-way valve conversion handle lever to the suction position, and check whether the air exhausted from the air pipe is correct, whether there is any abnormal sound during the operation of the vacuum pump, whether the vacuum gauge is normal, etc .;
 - E、 Remove the suction hose from the car, put it in the mud well, and make the suction hose straight or freely bent. The parking position should be fully considered.

(3) Precautions for operation:

- A、 Stones, cotton yarn, leaves and other impurities larger than 50mm will block the straw, so do not inhale and remove it frequently;
- B、 When observing the vacuum gauge reading to 65-80 kPa, fully open the dirt suction ball valve, and the valve core may be damaged if it is half-open;
- C、 During the inhalation of sludge, the suction pipe should be moved frequently. When inhaling high viscosity sludge, occasionally inhaling air and water can improve efficiency.

排出 Sewage discharge method: After the mud and water are separated, open the drain ball valve, and then repeatedly suck the mud after the sewage is discharged.

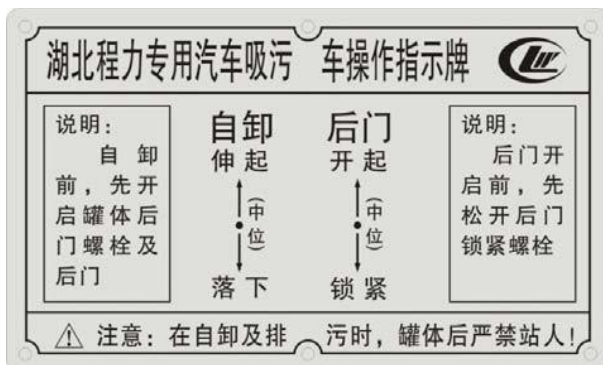
The operation method is as follows:

- (1) Put the four-way valve conversion lever to the "neutral" position, and then set the drain ball valve to the "open" position, and the sewage will be discharged by gravity;
- (2) Set the four-way valve to the discharge position and the vacuum pump continues to work, and the compressed air sewage flowing into the tank will be quickly discharged;
- (3) When draining under pressure, the discharge ball valve should be opened before the four-way valve can be moved to the discharge position, so as to prevent the internal pressure of the tank from being too high, causing an accident and affecting the tank door seal.

3. Sludge discharge method:

- (1) Depress the clutch, toggle the pneumatic reversing valve to the "open" position (liberation) or push the power box control lever (Dongfeng) Run the oil pump;
- (2) Open the ball valve of the tank door, discharge part of the sewage, and reduce the pressure in the tank to communicate with the

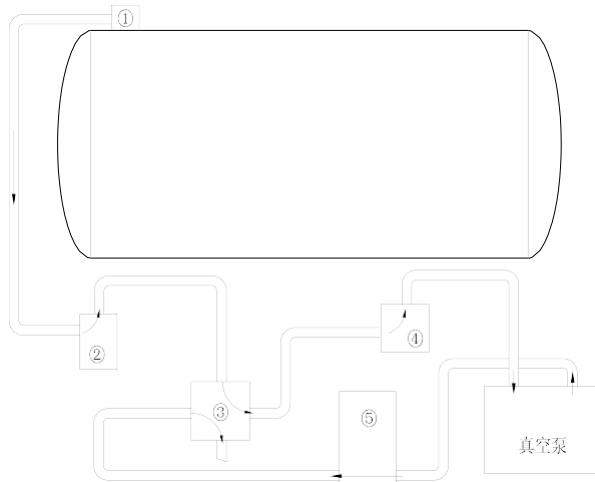
- atmosphere;
- (3) Loosen the tank door locking device, loosen the handle and pull out the screw completely;
 - (4) Set the door opening and closing lever of the manual reversing valve to "open". Before opening, make sure that the pressure in the tank is equal to atmospheric pressure. If the tank door is opened under negative pressure, the tank sealing ring and oil cylinder will be damaged;
 - (5) Put the turning valve stem of the manual reversing valve into the "open" position (see the operation instruction plate);



- 复原 Recovery operation after the sludge is discharged: Put the lever of the rear door oil cylinder in the "locked" position, and check the following after it is safely lowered:
- a. Check whether the door flange and sealing ring are soiled, and clean it with a brush

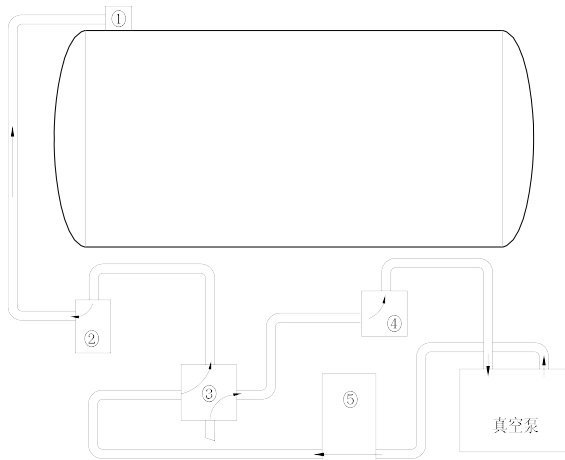
b. Put the opening and closing lever of the tank door to "close" and close the door safely; c. Insert the screw of the clamping device into the screw hole on the side of the tank and turn the handle until the rear tank door is compressed. 4. Working principle Figure

a. When sucking dirt: vacuum, forming negative pressure



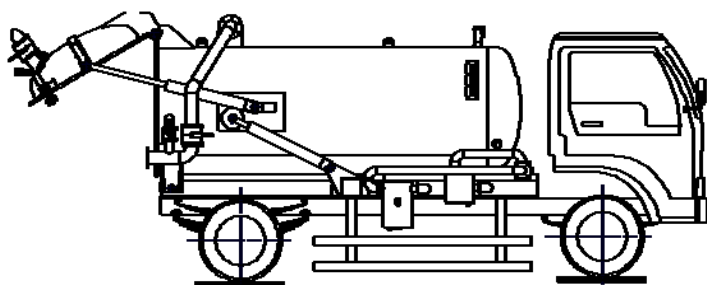
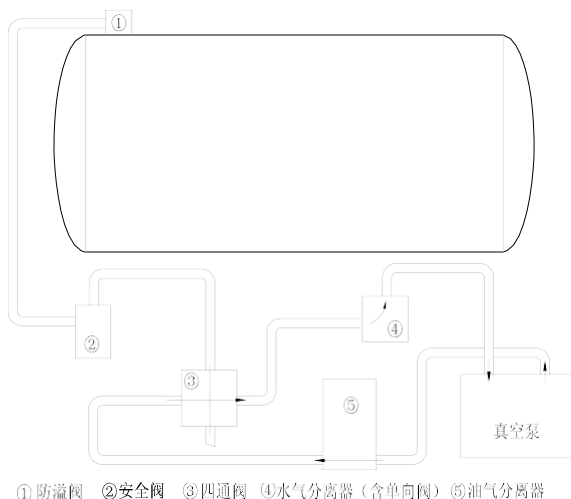
① 防溢阀 ② 安全阀 ③ 四通阀 ④ 水气分离器 (含单向阀) ⑤ 油气分离器

b. During blowdown: draw in air to form positive pressure

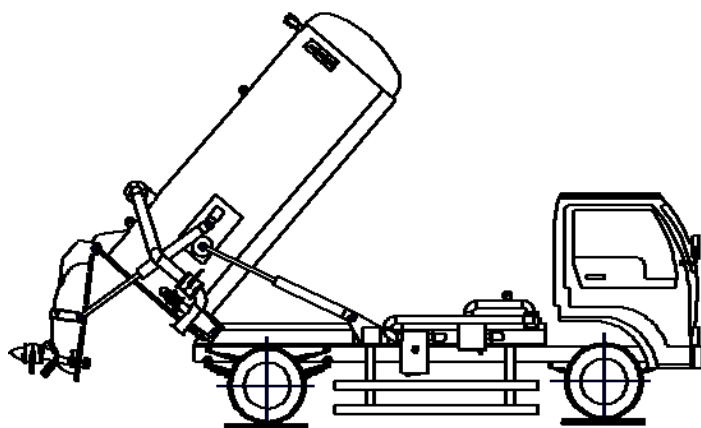


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c. In standby mode:



When the back door of the tank is opened, as shown in the figure



When the tank is unloaded, as shown in the figure

4. Notes

适宜 Keep the appropriate number of revolutions of the vacuum pump: The speed of the vacuum pump is too high, and the rotor heats up; if the speed is too low, it will cause engine knock and components.

Additional impact, affecting life, suitable working speed, adjust the maximum adjustment position of the hand throttle in advance. Pump type xd-63 type

Appropriate number of revolutions 500-600 rpm

翻 It is strictly forbidden to dump and dump the truck on a flat

ground for hydraulic lifting and dumping on an inclined road. The uneven road surface causes the weight of the vehicle body to lean to one place, causing distortion and deformation of the components at that place, and easily causing a rollover accident;

- (3) When turning over the tank, open the back door and window before turning the cylinder and unloading the mud. The back door should be opened. Do not close the door and turn over the tank.
- 时 When the clutch oil pump power box and vacuum pump power box are idle, the engine is idling, and the clutch pedal is fully depressed, and the clutch pedal should be slowly raised during the clutch;
- 特别 Pay special attention when the car is driving: the power box joystick is placed in the middle position;
- (6) Do not use this vehicle to suck in and transport waste oil and dangerous materials;
- 进入 When entering the bottom of the tank or maintaining it with the sludge tank raised, support rods and safety stops must be used;
- (8) When transporting sewage, you must use the rear door housing clamping device. Because there is no wave shield in the tank and the center of gravity is high, the vehicle must drive at medium and slow speeds without heavy turns and brakes.

Fourth, maintenance overhaul

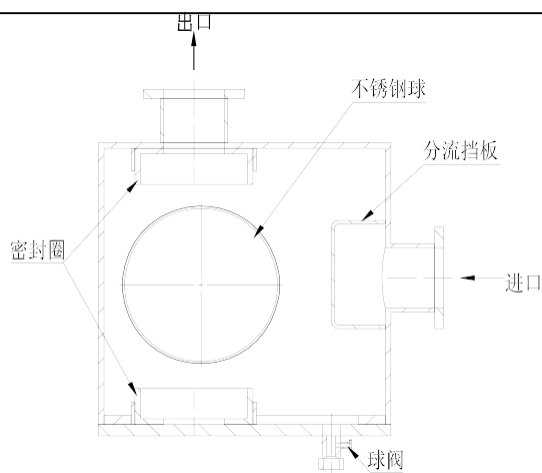
1. Cautions of the conveyor: Check the drive shaft, directional coupling, etc. for abnormal shaking and slack before operation. If you continue to run without repairing the defective parts, it will bring bad results to the main devices such as pumps and power take-offs.

2. Isolated oil and gas separator (for vacuum pump lubrication) This product is a cylinder with multiple layers of separators in the body.

The plate flows, and the specific gravity of the gas and the lubricating oil is different. During the flow, the oil is separated by centrifugation and falls into the tank, and the gas flows into the air outlet along the channel.

The separated oil is re-used as the vacuum pump lubricant, but the separated water will be stored on the bottom of the tank, so the water must be drained after the operation. If you forget to drain the water, it will be sucked into the pump and cause sintering and other failures. The long time of the oil will reduce the lubricity. Therefore, the interior should be cleaned regularly, and the oil should be replaced. The oil volume should be added to the middle engraved line under the dipstick when the vacuum is about 93 kPa. Use ht-40 # mechanical oil to clean the interior once a month.

3. Water and gas separator with check valve (see the figure below)



This water separator is a cylinder, and a split baffle is installed in the inlet. A sealing ring and a stainless steel ball are installed. When the water-gas mixture enters the water-gas separator from the tank, due to the difference in the specific gravity of water and gas, the gas is removed from the separator. The top of the board passes through smoothly and then is discharged to the air outlet. The specific gravity of the water is heavy. When the air flows rapidly through the splitter baffle, the water is dropped into the lower part of the water and gas separator. A ball valve is installed at the lower part. When the tank is filled, water enters the water-gas separator, stainless steel balls float in the water-gas separator, and the outlet of the water-gas separator is sealed to prevent water from entering the vacuum pump and damaging the pump body. For this purpose, it should be opened for 50-100 hours The drain valve removes standing water.

4. Rear tank door clamping device

After long-term use, internal dirt is generated, and the handwheel must not be tightened, so the interior should be disassembled and cleaned every 6 months. At this time, appropriate grease should be replenished.

5. Add grease:

20 # mechanical oil for hydraulic working oil and 30 # mechanical oil for summer

1. The suction truck does not suck or discharge: When the vacuum pump of the suction truck does not rotate, please check whether the power take-off gear is not working. Or the transmission shaft does not rotate and the rotor spindle of the pump is broken.
2. When the vacuum pump of the sewage suction truck is rotating, the suction sewage truck will not be sucked in or discharged, and it should be checked:
 - ①, the exhaust truck exhausts air from the exhaust pipe (it can not improve the vacuum). The reasons are: the joint system of the rear tank door is not strict, the ball valve or the flange gasket is not closed.
 - ② If the suction truck does not discharge air from the exhaust pipe (the vacuum cannot be increased), it should be checked whether there are foreign objects trapped in the four-way valve and the seal ring in the handle is damaged.
 - ③ When the maximum temperature of the vacuum pump of the sewage suction truck reaches the maximum temperature, check whether water is trapped in the water-gas separator of the check valve, or whether the suction pipe of the pump is blocked.
 - ④ The sewage suction truck can only drain water and cannot be sucked in. Check whether the volume in the tank is full and whether the buried suction pipe is de-glued. If the buried suction pipe is de-glued, the steel wire inside the suction pipe is blocked. At this time, the suction pipe must be replaced. Check whether water is trapped in the valve water-air separator. Whether the head of the suction pipe is clogged.

Instructions for use of the liquid level control alarm system of the sewage suction car: The liquid level control alarm is an updated product of our company. It has a delicate design, beautiful appearance and excellent performance.

Easy installation, simple operation, long service life, etc. Operate according to the following methods:

1. Turn on the power switch of the hydraulic controller. The control power indicator lights up red. When the liquid in the tank is pumped to the set position, the liquid full indicator lights up green, an alarm is issued and the engine is automatically stopped at the same time.
2. The operator switches the four-way valve to the middle position

in time to clear the vacuum in the tank to prevent the remaining vacuum from causing the liquid to fill the tank.

3. Turn off the controller's power switch, restart the engine and switch to other working states.
7. Vacuum pump for sewage suction truck:

Rotary vane all-steel series vacuum pumps are the heart parts of vacuum sewage suction trucks and manure suction trucks, which are widely used in municipal, environmental sanitation, various tank machinery and loading trucks. Xd-63 vacuum pumps have reached the domestic advanced level. It has a leading position and high quality. After more than 30 years of research and transformation, it has a compact structure and excellent performance, and it is the only choice for sewage suction trucks and manure suction trucks.

a. Technical parameters

model	Rotating speed	<i>Pumping rate</i>	Shaft power	Degree of vacuum
XD-16	1000	16	3	-0.08
XD-25A	1000	25	5	-0.09
XD-40/40A	900	40	8	-0.09
XD-63/63A	900	63	12	-0.09
XD-100	800	100	18	-0.09

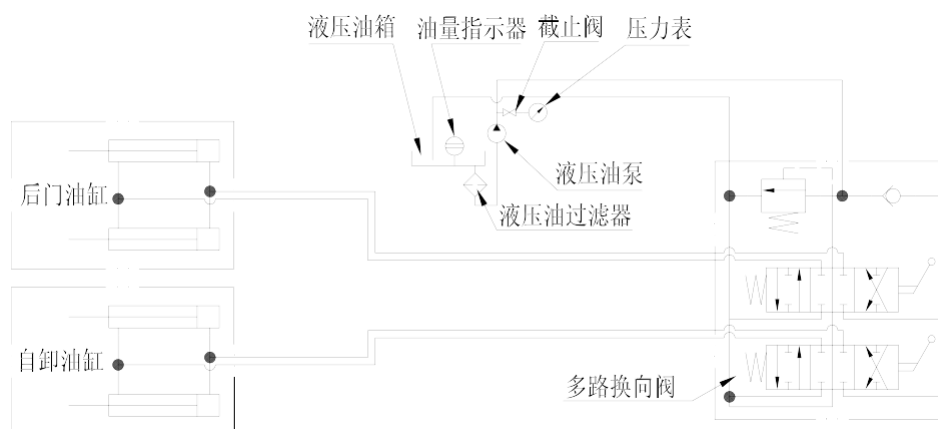
b. matters needing attention

1. Handle with care during installation, do not allow beating or knocking;
2. Add 200ml of oil to the pump before use to clean the vacuum pump oil;
3. Select the flange installation according to the rotation direction indicated by the red arrow. If the rotation direction is incorrect, it will not play the role of vacuum, and it will also damage the pump to some extent.

4. When using the vacuum pump for the first time, please run it at a low speed ≤ 300 for 2 minutes, and check the pump body for leakage and temperature rise;
5. In the initial stage of the new pump being put into use, the oil must be completely replaced after 10 hours of operation.
Once, after every 50-100 hours of work, change the oil. If the vacuum pump is flooded, water or the oil deteriorates, the oil should be changed immediately;
6. Carefully check the dredging of the vacuum pump oil pipe at any time, and eliminate blockages and other faults in time;
7. In the suction and discharge operation, strictly follow the procedures. During the suction operation, the suction pipe should be put into the sludge to make the tank communicate with the atmosphere, so as to avoid the negative pressure in the tank after the shutdown due to the negative pressure in the oil separator. Suction into the tank. Before ending the sewage in the tank, the handle of the four-way valve should be set to the "φ" position to allow the air in the tank to pass through to the atmosphere, otherwise oil discharge will occur.
8. When the vacuum degree in the tank fails to meet the requirements, first check whether the tank, pipe joints, and valves are sealed (especially in cold areas, the valve is frozen when the valve is opened and the liquid is discharged, resulting in inadequate closing). Non-sealing will directly affect the vacuum. degree.
9. If there is any problem with the vacuum pump, please report it to our department in time. Do not disassemble it by yourself, or you will not bear the responsibility of "three guarantees".

Attached:

Hydraulic system schematic diagram:



The main accessories are as follows:

Serial	name	specification	Quan	Remark
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1	Dump cylinder	XWZX-80/45-940×640	4	
2	Vacuum pump	5t vacuum pump	1	
3	Check valve		1	
4	Vacuum gauge		1	
5	Water vapor		1	
6	Big four-way		1	
7	Suction car		1	
8	Oil and gas		1	
9	Safety valve	A27H-10	1	
10	Ball valve	Φ100 aluminum	2	
		Φ65 aluminum	1	
11	PTO		1	

12	The	Solenoid valve	1	
13	Multi-way	2-way valve	1	
14	Iron case	550 iron casing	1	

Eight, after-sales service 1. When you need political party consultation or maintenance, please contact our factory after-sales service department, and send the car purchase certificate

Keep it properly to confirm that the car is within the warranty period.

2. Chassis car manufacturers are responsible for the after-sales service of the chassis car; the factory only modifies the vehicle's dedicated modification department

The "Three Guarantees" is implemented separately. In the process of use, if there is a problem or problem, please call or write to us. We will analyze it within 24 hours of receiving the information and give a clear reply and treatment.

3. The new car should be operated in accordance with regulations to enjoy the "three guarantees"

(1) Three Guarantees content and time limit: a. The vehicle will be within one year and the driving mileage within 3,000 kilometers (two

(All conditions must be met at the same time) to enjoy the "three guarantees"; b. The vehicle is fully inclusive within ten days from the date of sale (the date filled in by the after-sales service card is

Standard), that is, if all parts are damaged due to manufacturing quality or cannot meet the requirements for the performance of the whole machine, our factory implements "three guarantees";

c. During the "Three Guarantees" period, failures due to quality reasons will be repaired by our company; d. During the "Three Guarantees" period, the assembly parts will have quality problems. After the company and supporting units and maintenance service outlets

Two or more consecutive repairs (referring to the same fault) still fail to reach the technical performance and cannot be used, the assembly or component should be replaced;

e. The vulnerable parts of the car are entitled to three guarantees for half a year.

(2) The following items do not fall into the scope of the "three guarantees": a. Vehicles that do not comply with the provisions of this vehicle and have not undergone mandatory run-in maintenance; b. Vehicles that have been malfunctioned due to abnormal use and vehicle structure changes; Traffic-causing vehicles (including unlicensed driving and illegal vehicles); d. Disassembly or adjustment of vehicles that cause malfunctions without the

company's consent; e. Disassembly of the assembly or component into parts without the company's consent, and Unable to identify origin and uncertainty

Recognize vehicles with responsibility and cause analysis; f.

Accidental vehicles handled without the company's consent or identification; g. Vehicles that cause malfunction due to improper adjustments or without inspection adjustments;

h, low value consumable and wearing parts (such as electrical appliances, glass, rubber, plastic products, etc.); various standard parts, bearings.

4. For vehicles that do not fall into the scope of the "three guarantees", our company is responsible for the users and provides convenient maintenance services, but it should charge fees appropriately.

5. If you have suggestions for the rationalization of this or other products in our factory, please submit them to my future service department so that we can adopt them in a timely manner. All our employees express their most sincere thanks!

Nine, on-board tools, accessories and technical documents

2. Operation manual of sewage suction truck;

3. Chassis certificate;

4. Chassis manual;

5. On-board tools.

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