

POWERSTAR Fuel Tanker Truck

User's Manual



POWERSTAR TRUCKS INDUSTRY CO., LIMITED

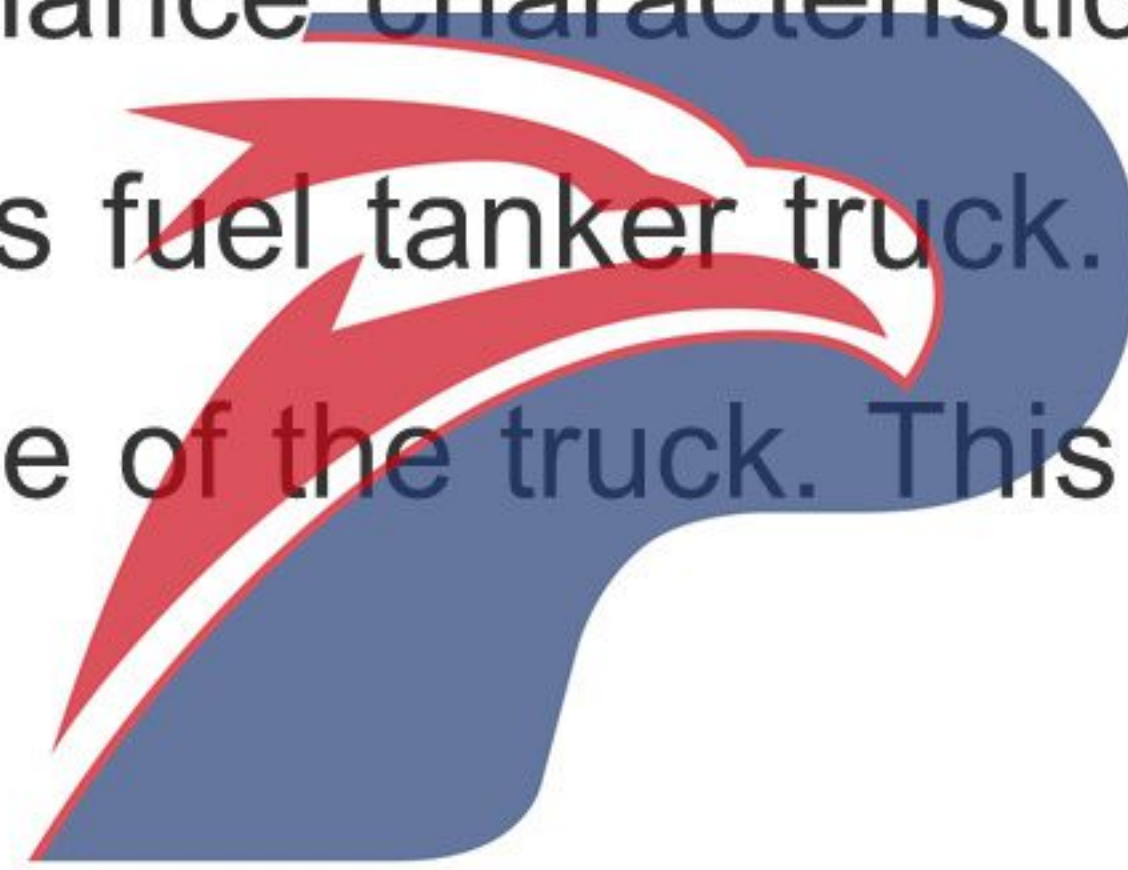
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Preface

Thank you for purchasing POWERSTAR products. For better using your ISUZU fuel tanker truck, get the best operating performance, we strongly suggest that before the operation process you could read this manual instructions carefully, and to manipulate the program handily.

The manual detailed describes the performance of fuel tanker truck, structure, usage, precautions and maintenance of such knowledge. While showing details of the truck, both pictures and description will together help you get better understanding of how to use truck. Before operation, the skilled operator should carefully read the contents of this manual.

After master the truck performance characteristics, methods of operation and precautions, then could start to operate this fuel tanker truck. In order to ensure the staff turnover after the operation, and properly use of the truck. This manual book must be properly kept, shall not be lost and damage.



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Chapter 1. General Description

*POWERSTAR TRUCKS Fuel Tanker Truck based on type II ISUZU 4*4 Left Hand Drive chassis, Fuel tanker capacity could up to 6,000liters, mainly used for Fuel storage, transportation and refueling, and the working aerial can be city street, factory, desert areas and other areas of need.*

The vehicle designed to fully rely on the advantages of the original of ISUZU brand, customized 4x4 driving model chassis, fully consider the product's convenience and reliability, also the chassis ISUZU technology features. The fuel tanker material is international standard carbon steel, both internal and external with anti-rust painting, which can effective to avoid rusting. As for tank capacity, this is strictly 6CBM and safety enough to transport & refueling oil based on customer requirement.

The ISUZU 4x4 Fuel Tanker Truck equipped with famous China brand fuel pump, front climbing ladder, Euro standard Manhole, top & side & rear guard plate, safety fuel inlet & outlet valves, 15m hose reel, digital display instrument and fuel level gauge, all to help better use of the trucks. Cab for the single-row Comfortable seat, nice driving feeling. Therefore, the vehicle is an ideal Fuel Tanker Truck mainly for oil transportation & refueling function.



(Preview for your ISUZU 6CBM Fuel Tanker Truck)

Chapter 2, Main Technical Data

Basic parameter:

Items		6CBM ISUZU Fuel Tanker Truck
S I Z E	Outer Dimension (L×W×H) (mm)	5800*2150*2450
	Wheelbase (mm)	3815
Kerb Weight (kg)		5100
G E A R	Gearbox brand	ISUZU MLD
	Model	6-shift gearbox
	Type	Manual
Cab capacity (includes driver)		2
E N G I N	Brand	ISUZU
	Model	4HK1-TC51
	Type	Four cylinder inline, four stroke, water-cool, turbocharged Inter-cooling, diesel
	Rating Power (kW/HP)	141 / 190

Note: 1. We keep the right to revise the parameters on the list above.

Water Tanker basic parameter list

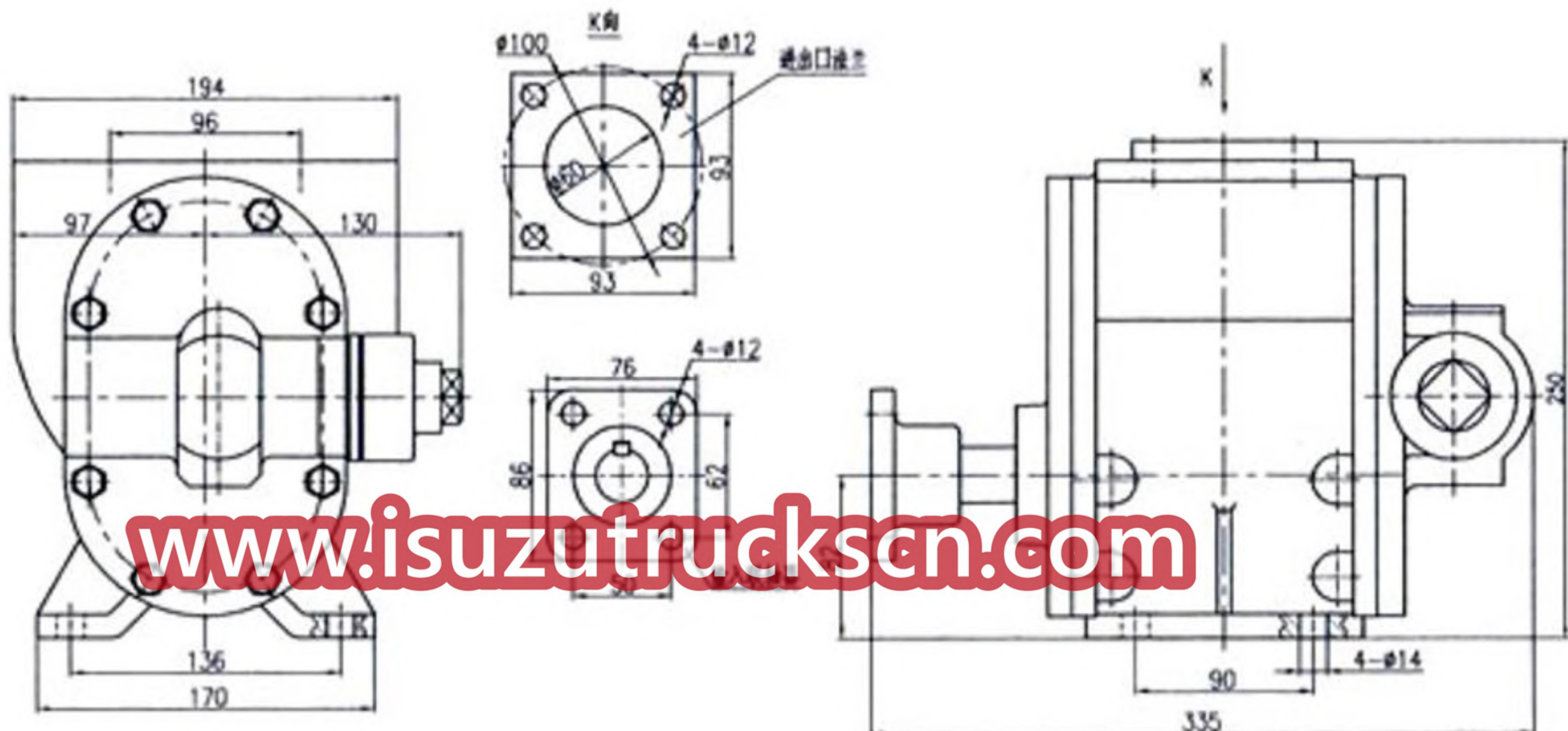
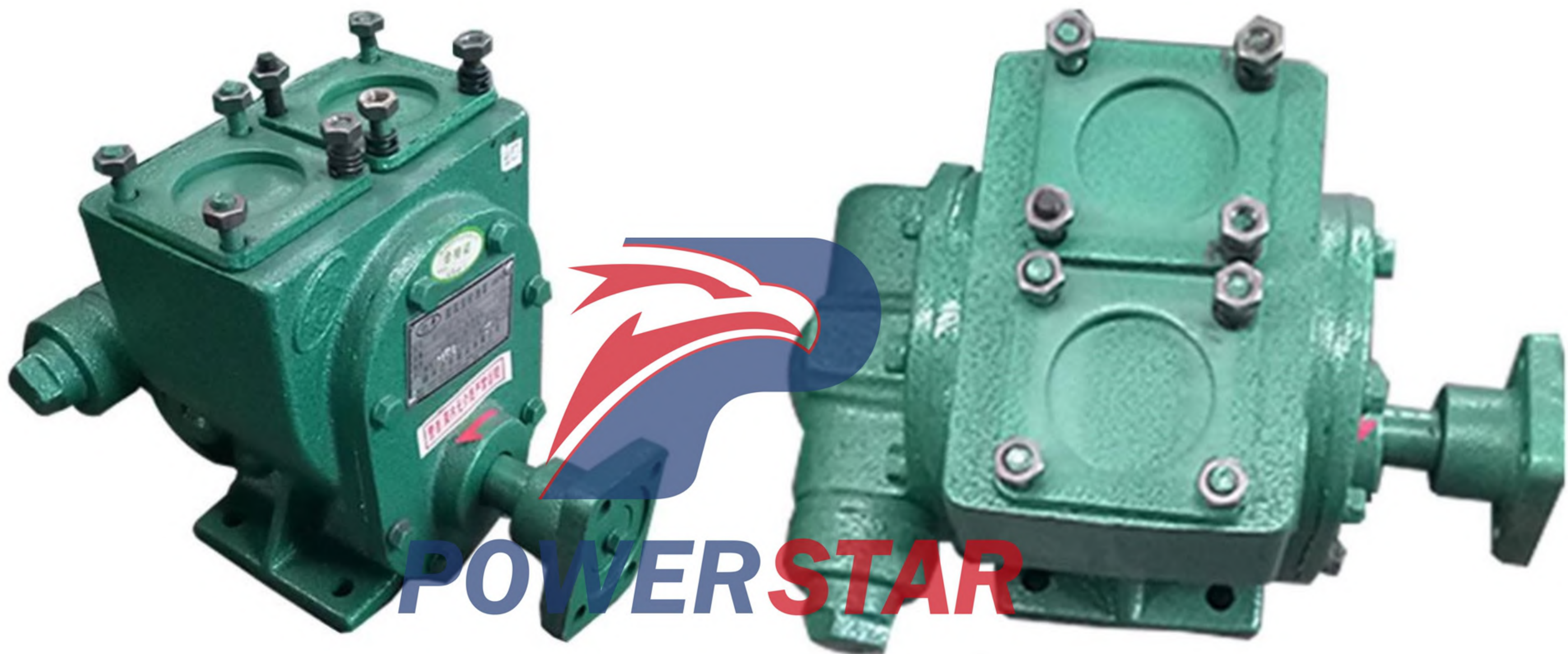
Items		Parameter	
Water tanker	Capacity (Liters)	6000	
	Material	Standard Carbon Steel	
	Painting	Internal	With anti-rust painting
		External	Silver painting
	Special Equipment	Fuel Level Gauge	Equipped on the tank, driver side
		Valves	Equipped on side of tank
		Climbing Ladder	Equipped at rear of tank
Safety Guard		Equipped on top of tank	
Fuel Pump	Model	60YHCB-30	
	Fuel Flow Rate (m ³ /h)	30	
	Working Pressure (MPa)	0.6	
	Revolving Speed (r/min)	970	
	Self-Suction Height (m)	6	
	Rated Power (kw)	6	

Chapter 3, YIFENG Fuel Pump

Brief introduction of 60YHCB-30 fuel pump:

ISUZU fuel tanker truck use TOP Chinese brand Fuel Pump and pump model is 60YHCB-30. The pump is newly produced National Patent Products which based on many years' independent developing & production of arc gear pump. Also the pumps comply with national standards JB/T6434-92. Advanced features for the pump showing as below: Simple Structure, Smooth Operation, High Efficiency and Reliable Operation.

Below is overview for 60YHCB-30 model fuel pump:



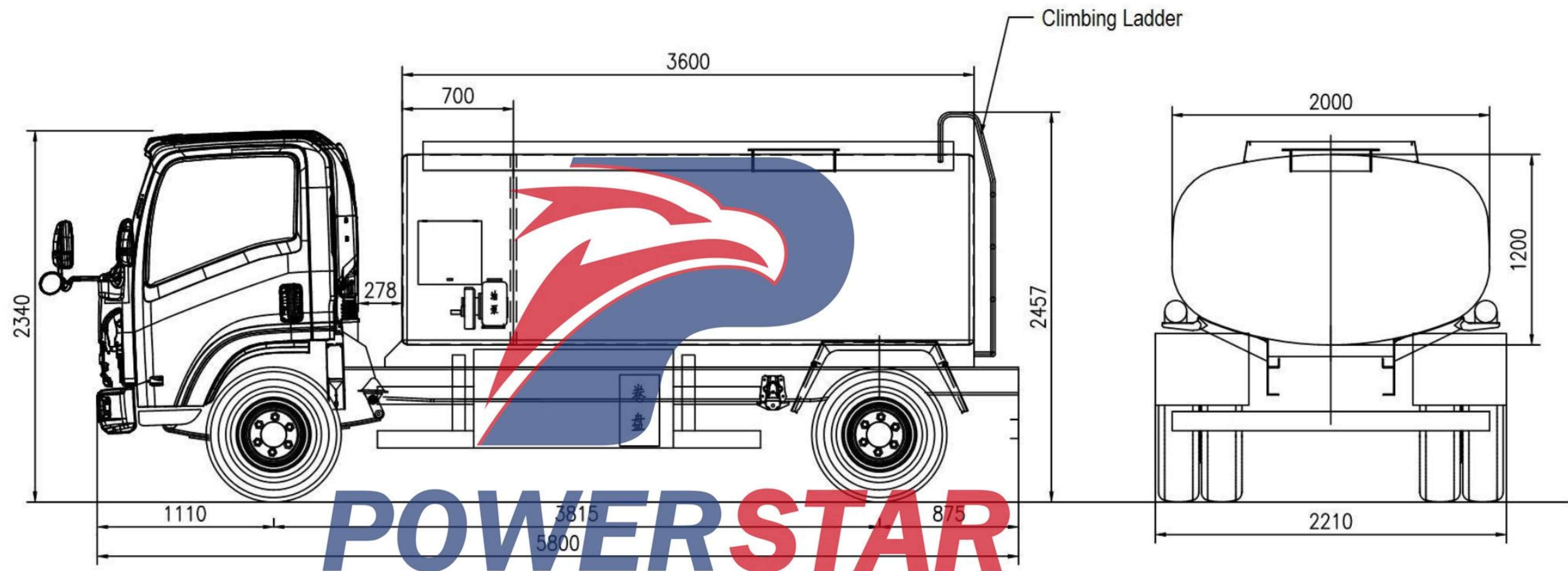
How to Installation & Maintenance 60YHCB-30 fuel pump:

Items	Notification	
1	Usage	<ol style="list-style-type: none"> 1. Installed on Fuel Tanker Truck 2. Installed on Fuel Storage House
2	What need to pay attention while installed on fuel tanker truck	<ol style="list-style-type: none"> 1. The pump get power from PTO 2. The pump is installed in hanging bracket under chassis frame 3. Pumping-In pipeline should match with pump hole, and max. suction height less than 7m 4. On working condition, the pressure gauge less than 0.5MPa, and vacuum gauge less than -0.08MPa
3	Before start working	<ol style="list-style-type: none"> 1. Test the shaft valve direction of rotation 2. Test the Fittings and Flange sealing 3. Test all valves
4	Cleaning suggestion	<ol style="list-style-type: none"> 1. Washing the filter have a month, so to avoid any block 2. Adjust the discharging pressure of safety valve
5	Pump revolution speed suggestion	The pump revolution speed should be from LOW to HIGH, and speed up slowly. Not allowed any over revolution speed or any instability speed
6	Watching pressure gauge & vacuum gauge while pump working	<ol style="list-style-type: none"> 1. When pressure gauge higher, means the lifting is over height or the pumping-out pipeline is blocked 2. When vacuum gauge high, means the suction is over distance or the pumping-in pipeline is blocked
7	Maintenance for cold weather and not working	Discharging all storage inside pump, which can avoid frost crack
8	Maintenance for long-term use	Treated with anti-rust processing and keeping properly
9	Maintenance for bearings	Filling calcium grease every half year
10	Pipeline installation suggestion	The pipeline should be installed at proper height and position
11	Stop working suggestion	When stop the truck, firstly disconnect the PTO handle, secondly close the inlet & outlet valve of the fuel pump
12	Start working suggestion	When no medium inside the fuel pump, strictly forbidden starting

Chapter 4, Fuel Tanker Truck Structure Components

i ,Fuel Tanker Structure Components

Overview for ISUZU fuel tanker truck technical drawing:



Above drawing show that there are safety-guards at two sides & rear; at driver of tank installed the Pump in & Pump out valves, 15m hose reel and digital display instrument; on top of tank equipped one Euro standard Manhole, also aisle and handrail on two sides; at rear of the tank equipped climbing ladder. The whole fuel tank is **oval shape**:

Top of the Tank: safety fence, manhole and Euro standard manhole cover

Euro standard manhole covers with Key (Top of tank)

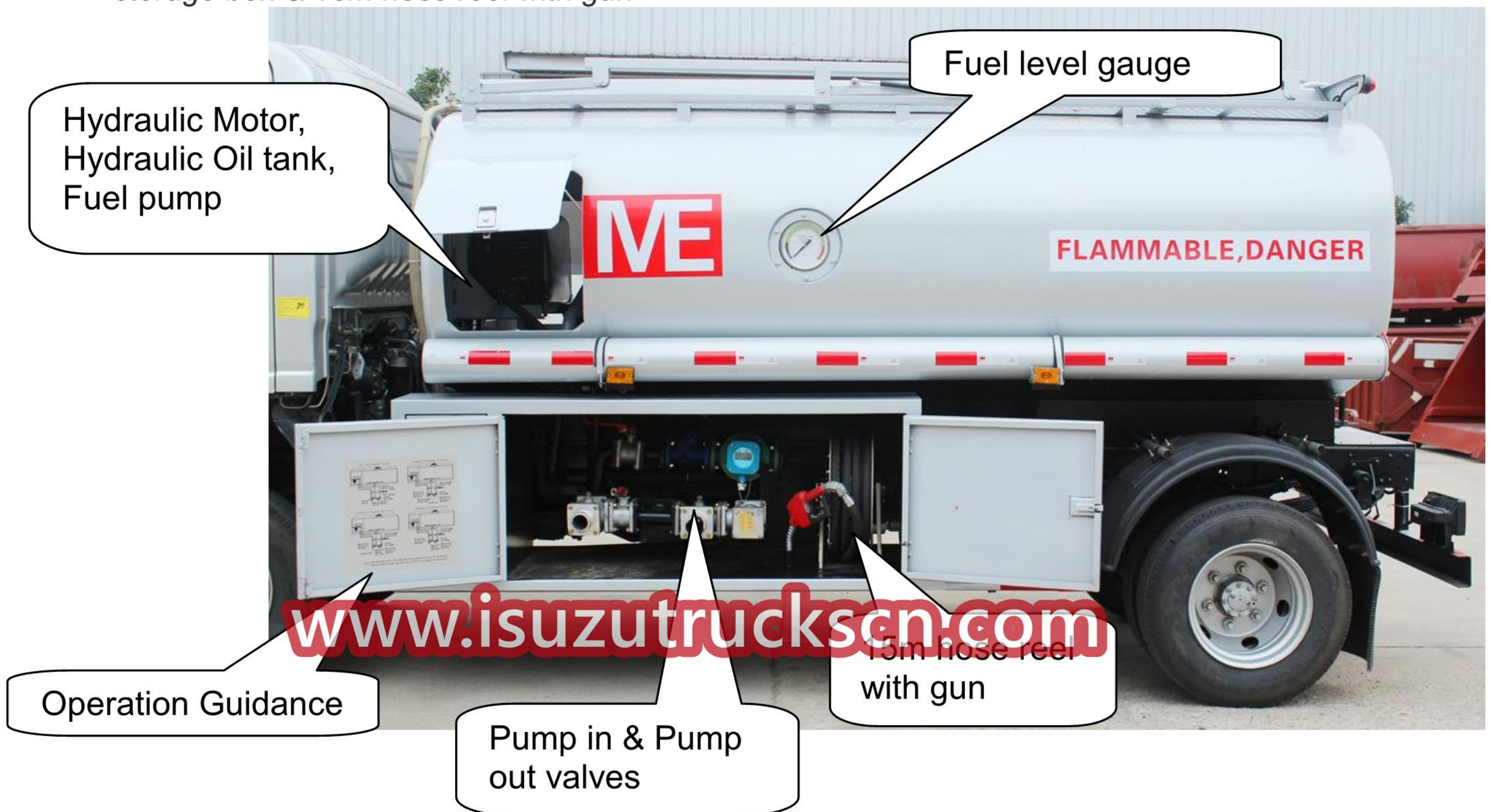


Anti-slip walkway for safety (Top of tank)

Rear of the Tank: Working Platform, Submarine Emergency Stop Button & Pipeline Container



Side of the Tank: Hydraulic motor and hydraulic oil tank system, Fuel pump system, Pipeline storage box & 15m hose reel with gun

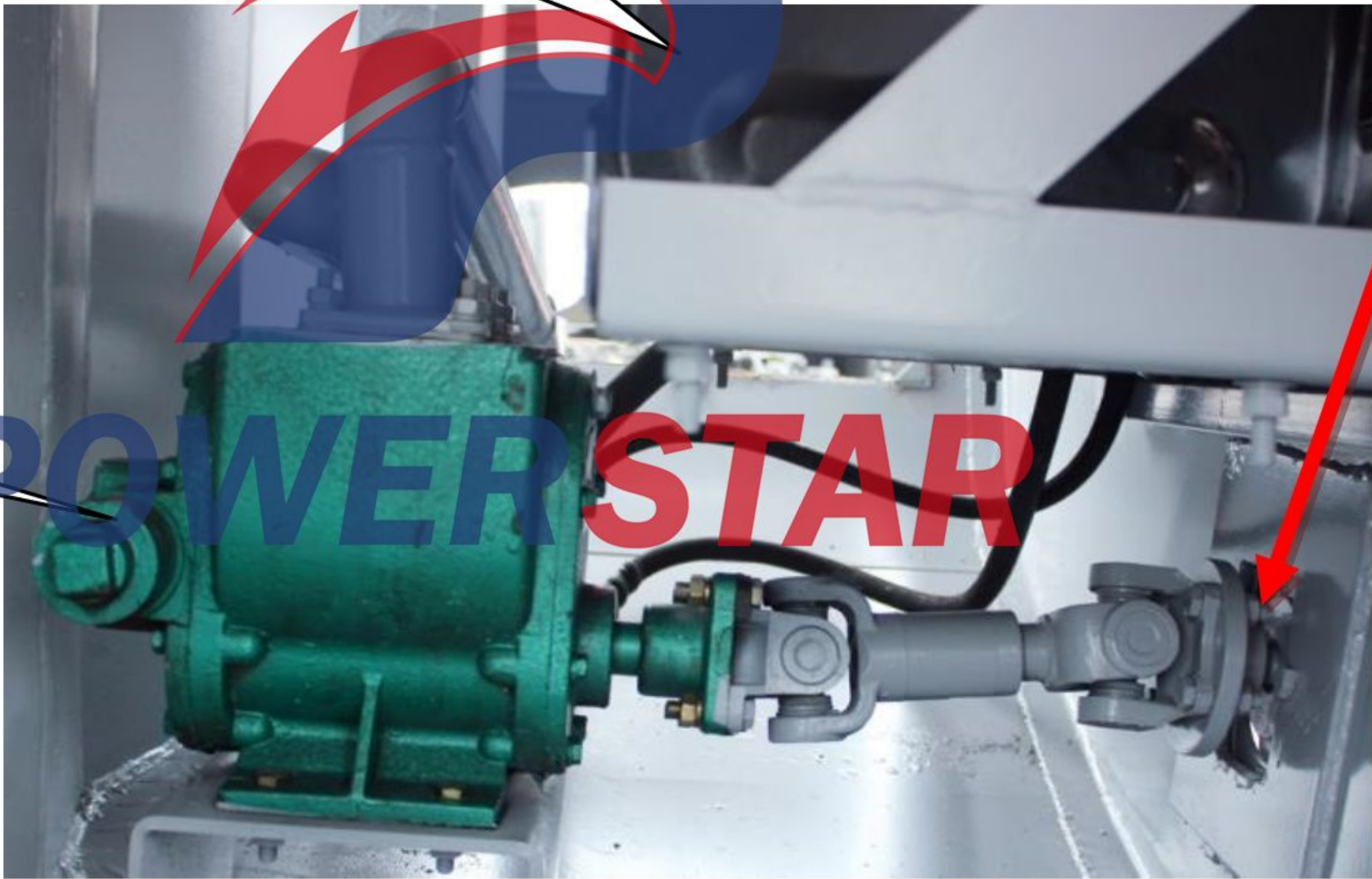


Hydraulic Motor, equipped in front of the tank

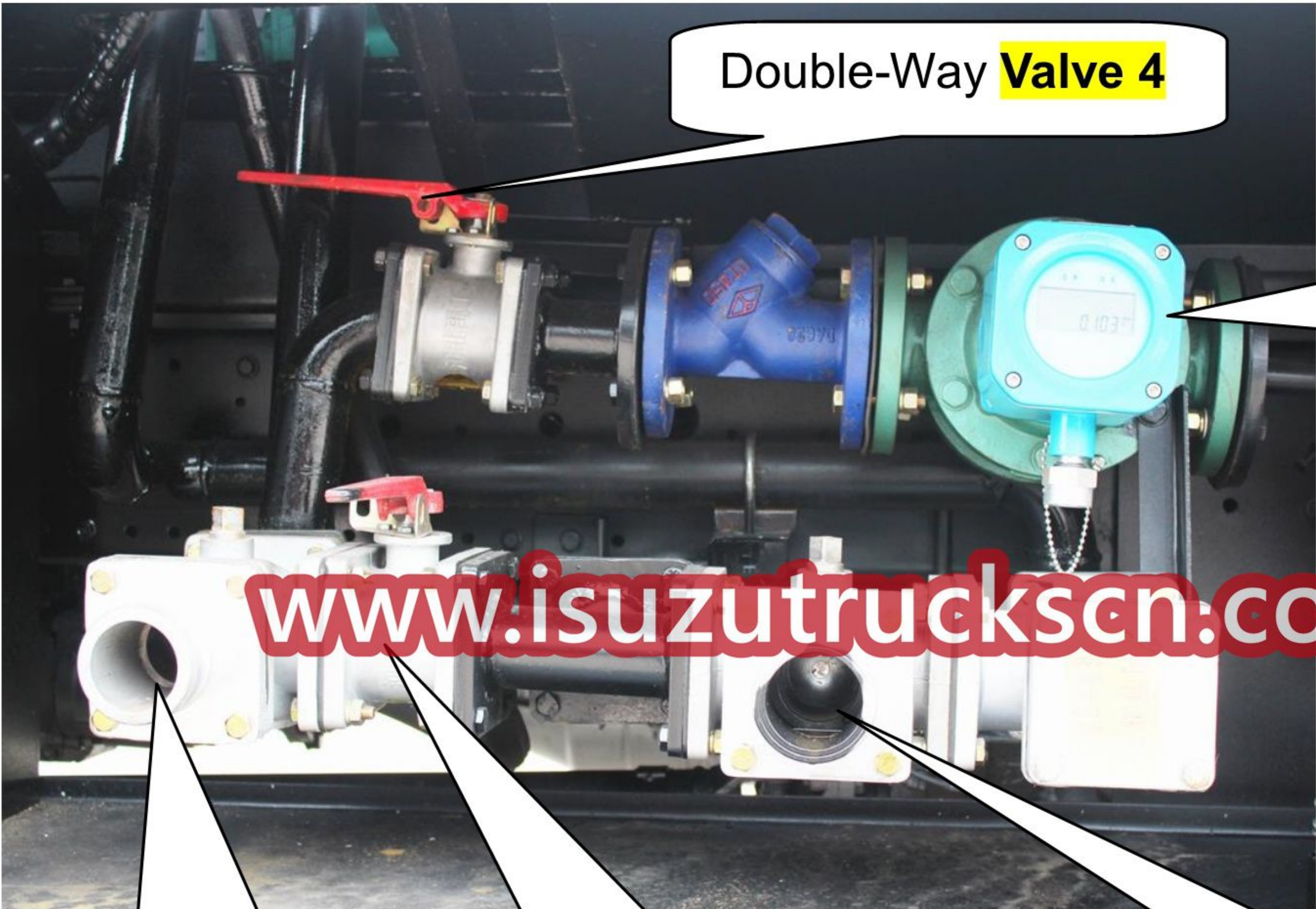


Hydraulic Oil Tank

Fuel pump 60YHCB-30



Driver's side of the Tank: Tool Box & Fuel Valves



Double-Way Valve 4

Digital display instrument: Use the magnet on the chain to adjust parameter

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Fuel Outlet Valve 1

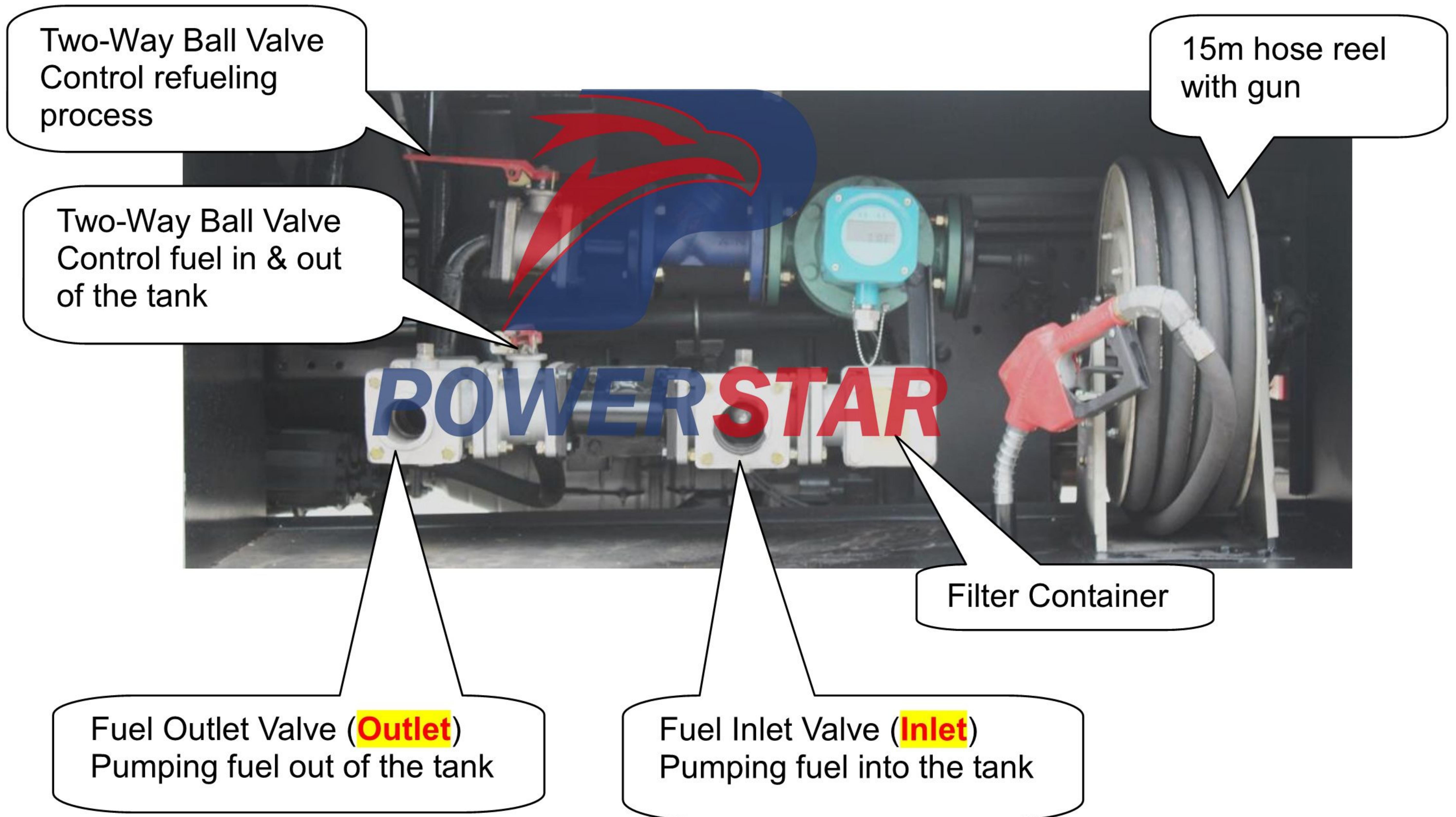
Double-Way Valve 3

Fuel Inlet Valve 2

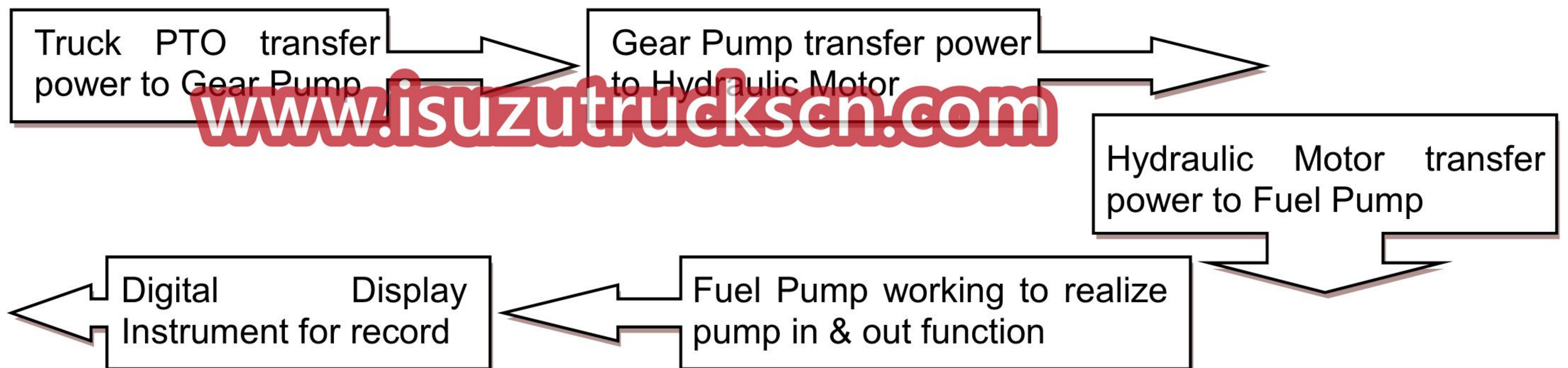
ii ,Fuel Pipeline Structure Components

Pipeline is to fuel truck what blood vessel is to human body! The fuel tanker trucks pipeline system is simple but very practical. One main pipeline connect with fuel tank and fuel pump, which means there are two ways to collection fuel: firstly is pumping fuel directly through Fuel pump; secondly is collection fuel from top Euro Manhole.

In the front of the tanker which installed Hydraulic Motor and Fuel pump, and on driver side of the tanker equipped Fuel inlet & outlet valves (Pipeline system as below):



Simple working principle guidance:



iii, **Fuel Tanker Truck Off-Road Function Notice (Important)**

Truck with Off-road functions mainly used in bad road conditions, with recommend speed not too high.

1. Off-road truck not allowed driving with speed over **50km/h**. If speed at 50km/h, truck should stop for one hour after 3~4 hours continue driving, which can dissipate heat from the gearbox. Carefully checking gearbox air hole after long time driving, if have oil overflow, which means the gearbox temperature too high.
2. Strictly avoid misoperation, Four Drive model can be only used at Low Speed. High Speed & Low Speed change, Two Drive & Four Drive can be only operated when truck stopped. Because misoperation during driving will damage the axle.



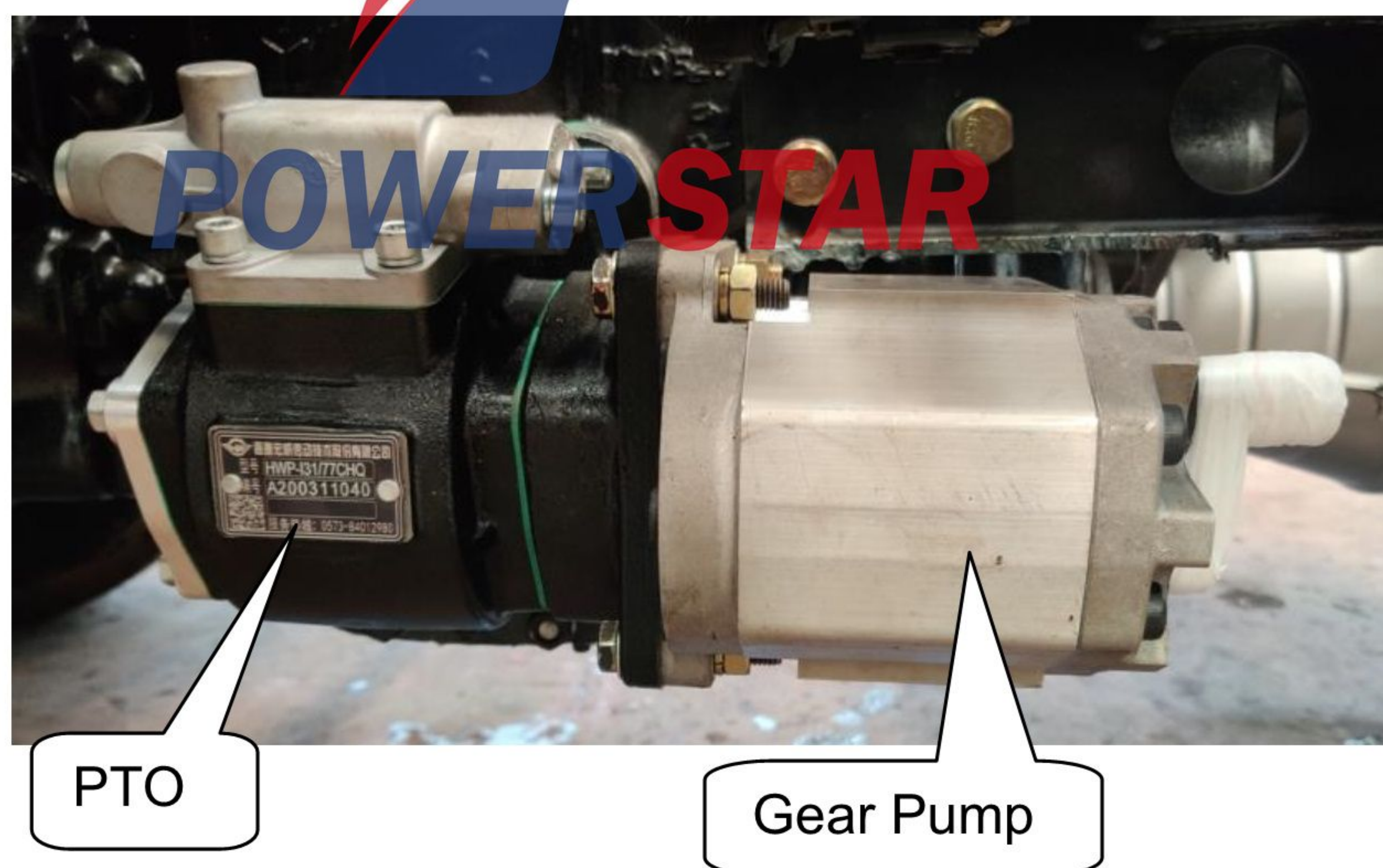
3. **Front Axle Maintenance:** Add grease every week; Change new axle oil every 1500km / 3 months; Change new gearbox oil every 2000km(Oil volume approx. 4500ml)
4. **No Overloading Operation:** Strictly forbidden overloading.

Chapter 5, Fuel Tanker Truck Working Principles

The operator should fully understand Whole Structure and Working Principle for ISUZU Fuel Tanker Truck before any operation. Only trained person can operate this vehicle properly and to prevent unnecessary accidents and equipment damage.

i ,How are the fuel trucks working?

The ISUZU Fuel Tanker Truck makes use of the special power take off (PTO) to get power from the engine, and then transfer the power to the Gear Pump, the Gear Pump driving hydraulic oil to make Hydraulic Motor working, then drive Fuel Pump via axle so to rotate the pump. The fuel pump, pipelines, valves, joints and 15m hose reel with gun consist of the pipeline system. Turn on / off valves through the regulated program, the pump can absorb fuel into the tank, also can pumping-out the fuel. As for the 15m hose reel, this can be used refueling all trucks through the special gun. And then come to all function.



ii ,What is the main component for truck?

The fuel tanker truck is refitted based on the customized ISUZU 4x4 LHD chassis. The refit part includes fuel carrying assembly, actuator device, pipeline system, operation system and refueling

machine.

- *Fuel carrying assembly: A carbon steel container shaped ellipse, with anti-rust painting, which is used to store and transport oil.*
- *Actuator device: includes power take off, Gear Pump, Hydraulic oil tank, Hydraulic Motor, drive line, etc., which can pass the power from the chassis to the fuel pump.*
- *Pipeline system helps come to all special functions.*
- *Operation system: helps come to all special functions' convert.*
- *Refueling machine: helps to refuel all kinds of trucks*

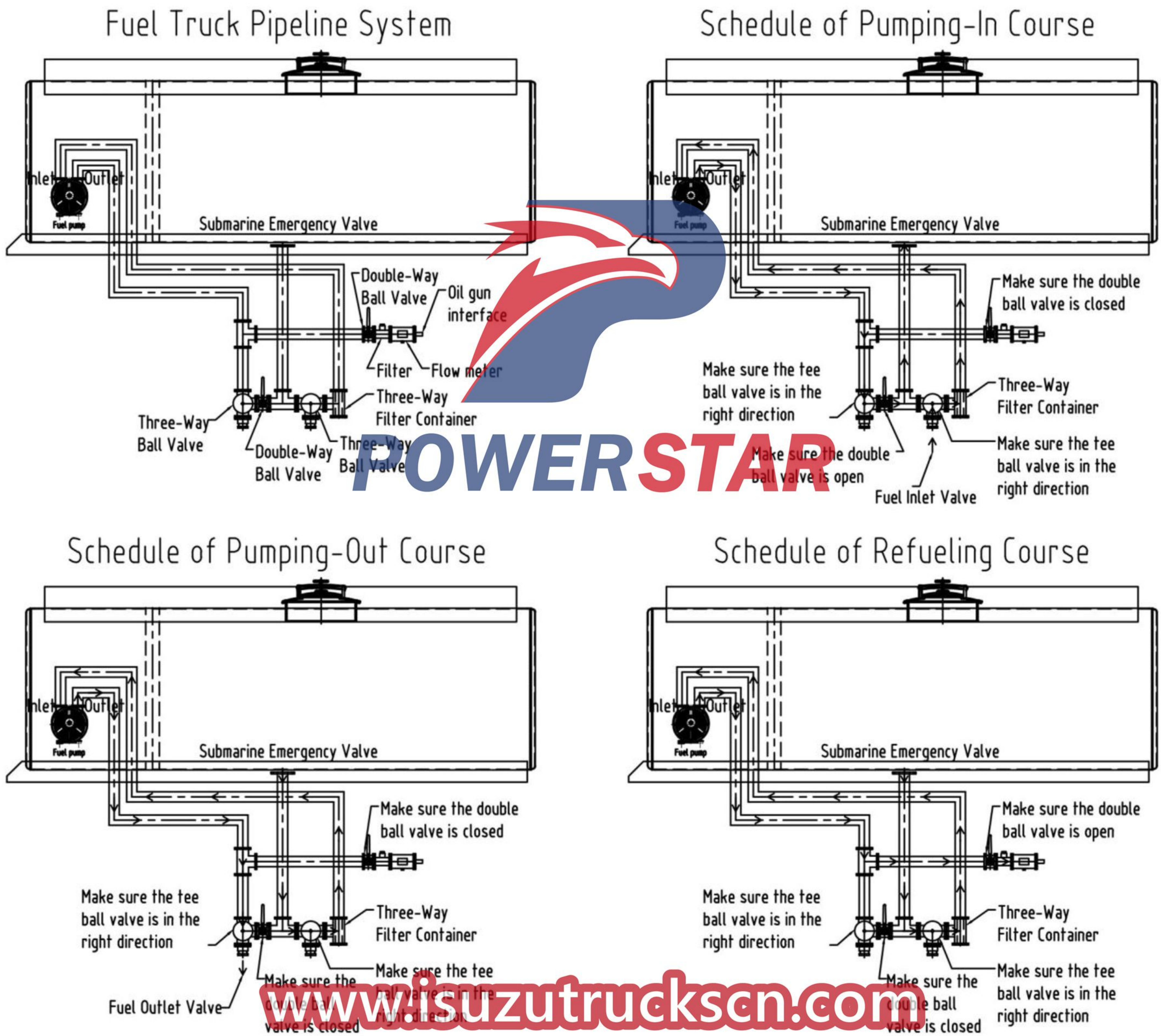
iii, How to operate fuel tanker trucks? **(Very Important)**

1. *Start the truck engine, Press the clutch and Pull Out the PTO button, the fuel truck start working*



**Please Note: When wrench is PARALLEL with pipeline, the pipe flow;
When wrench is VERTICAL with pipeline, the pipe closed.**

2. Read the below Operation Chart carefully before any operation:



Note: When the Round Spot of Three-Way Ball Valve is pointing to one way, the way Blocked
 When the Handle of Double-Way Ball Valve is VERTICAL with pipeline, the fuel Blocked

- a) Before operating valves you should operating the power take off (PTO), the truck transmission gearbox should be in neutral, when the engine is idle, step on the clutch pedal and pull out the PTO button, and then release the clutch pedal slowly. The fuel pump will start operating.
 - b) Before any other operation, the most important thing is opening the **Emergency Stop Valve** controller, then the pump pipeline and the fuel tank is unblocked, and the oil can be pumping-in & pumping-out of tank.
 - c) Special function operation showing as below, which mainly has following four functions:
- **Fuel Truck Pipeline System:** There are mainly below 4 parts for fuel truck pipeline system. (Rear system based on truck component)

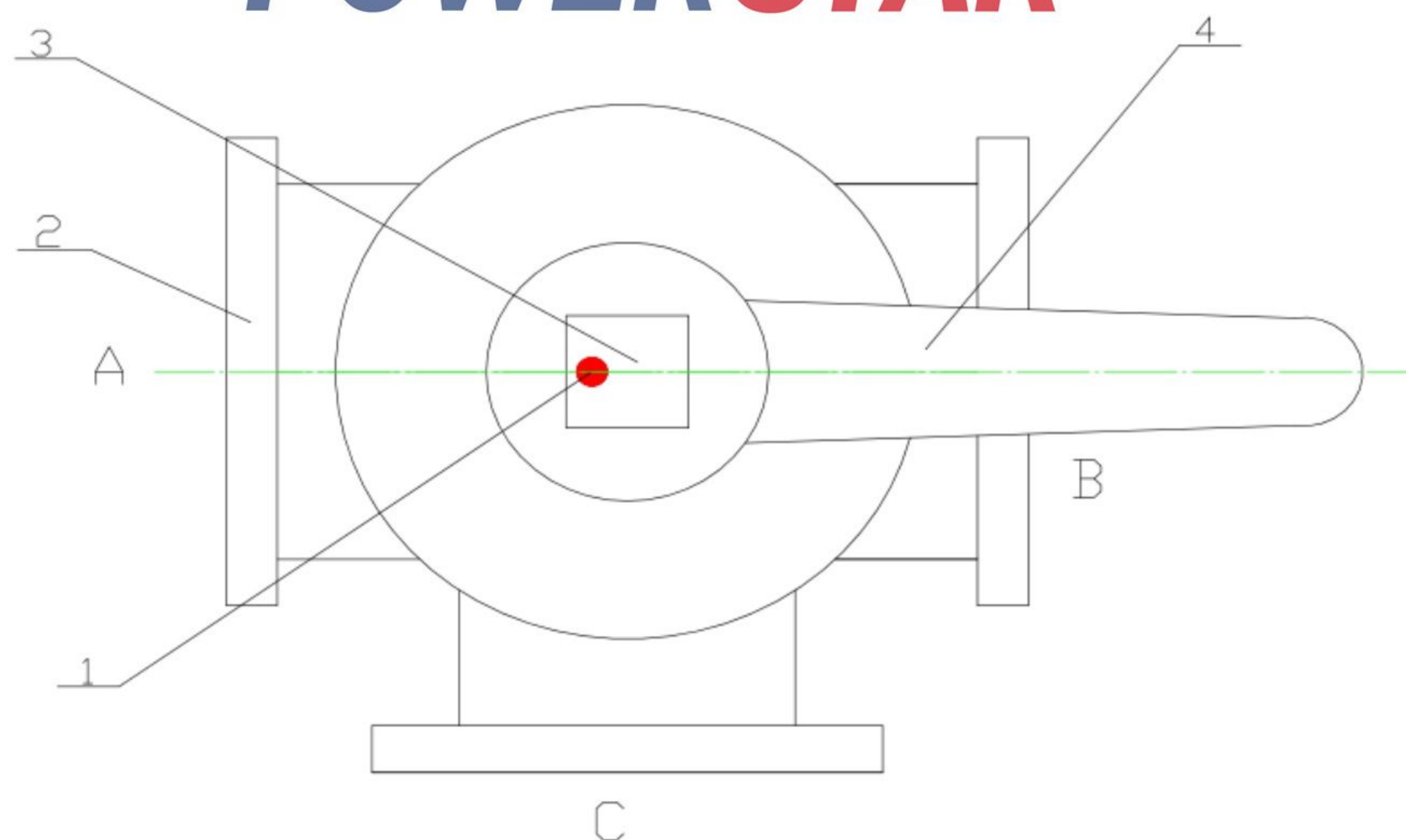
Fuel hose and gun: Consists of Fuel inlet & out valve and Fuel gun

Fuel Pump: 60YHCB-30 fuel pump, provide power for fuel inlet & outlet of tank

Multi-Function Valves: Fuel Inlet Valve, Fuel Outlet Valve & Three-Way Ball Valve

Fuel Pipeline: Multipliy fuel pipeline service for fuel transportation

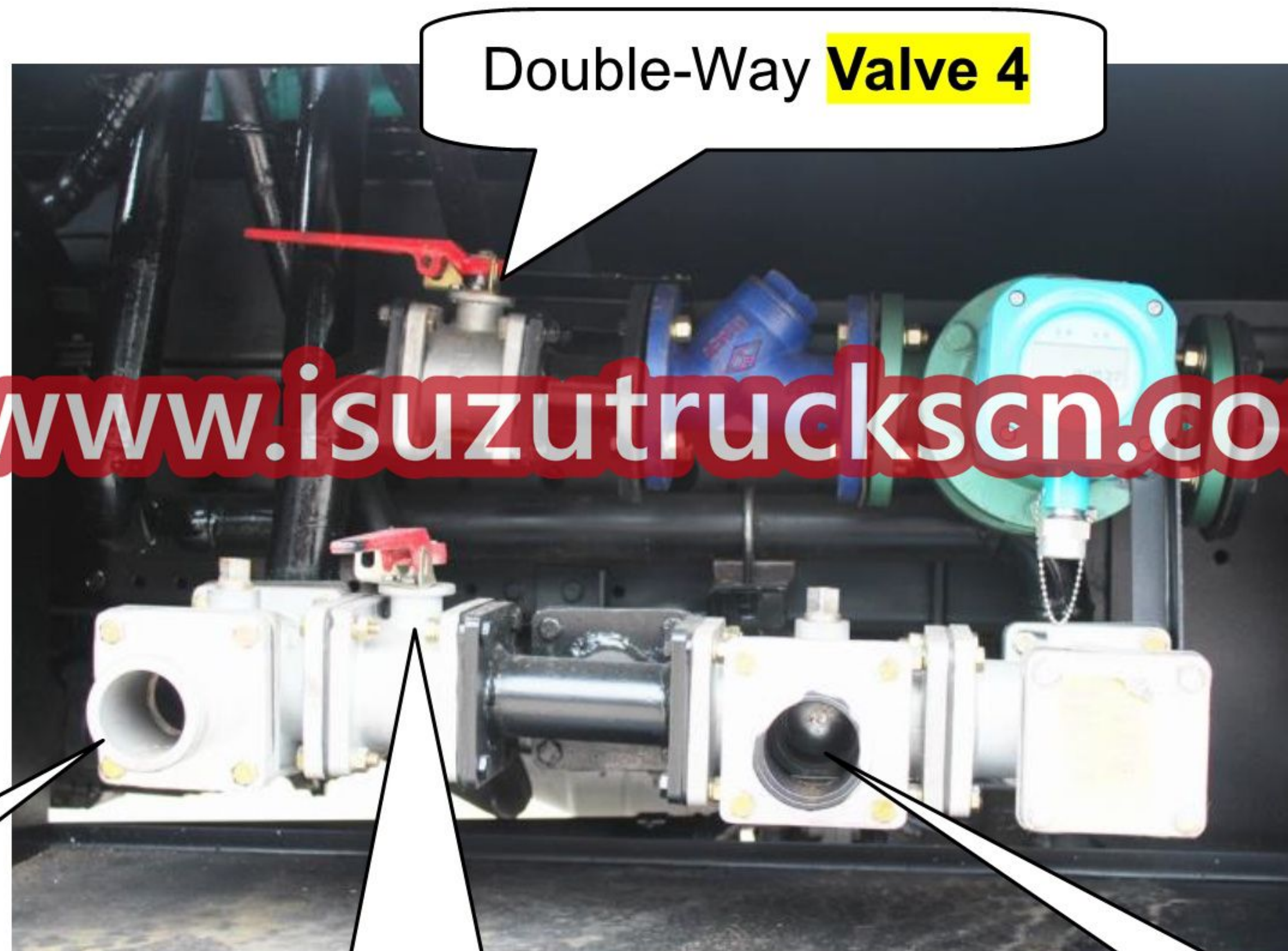
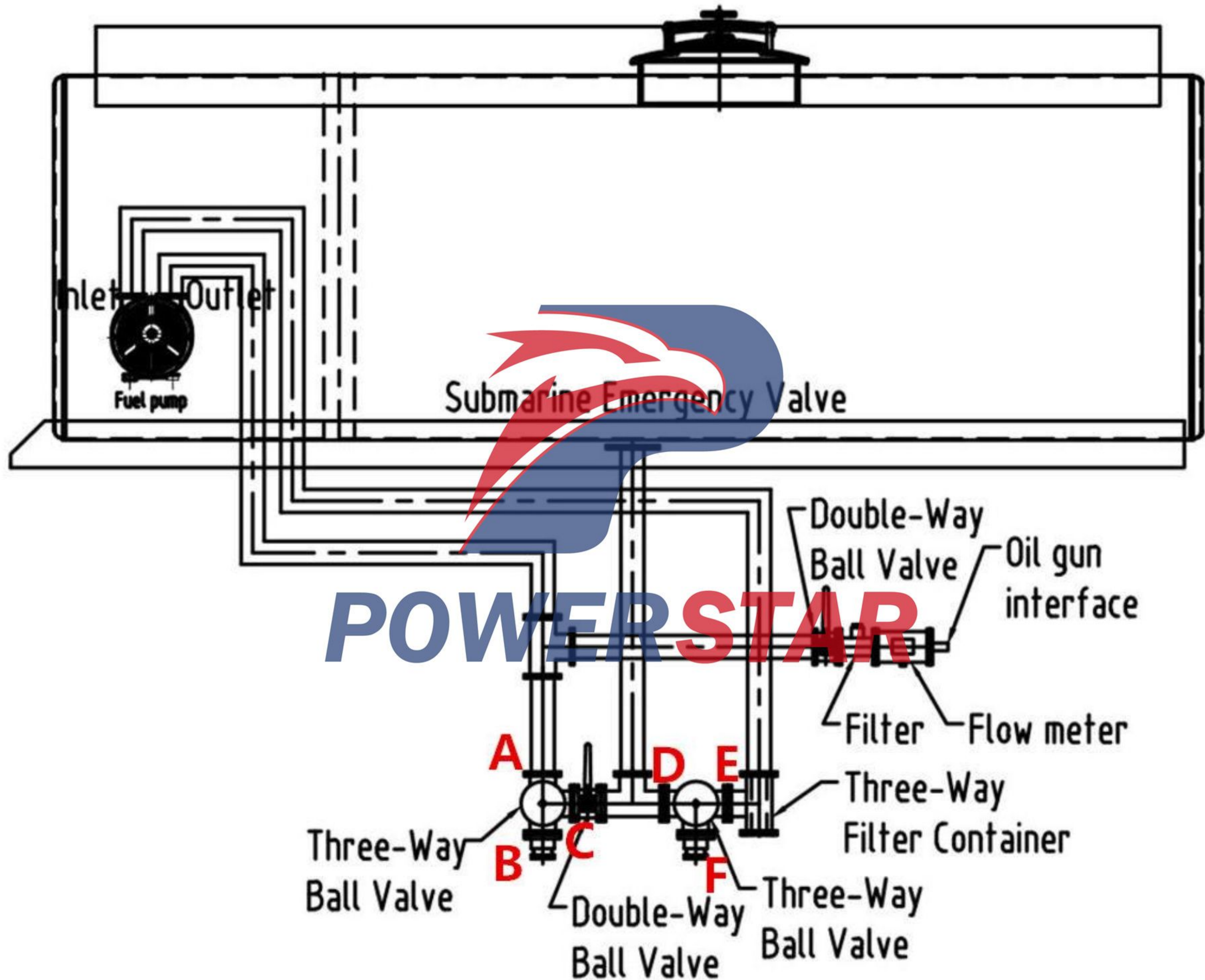
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(1-Red Point 2-Valve 3-Valve Rod 4-Joystick)

Red Point: Means this way closed (Picture showing is A-way closed, B & C way open)

Fuel Truck Pipeline System



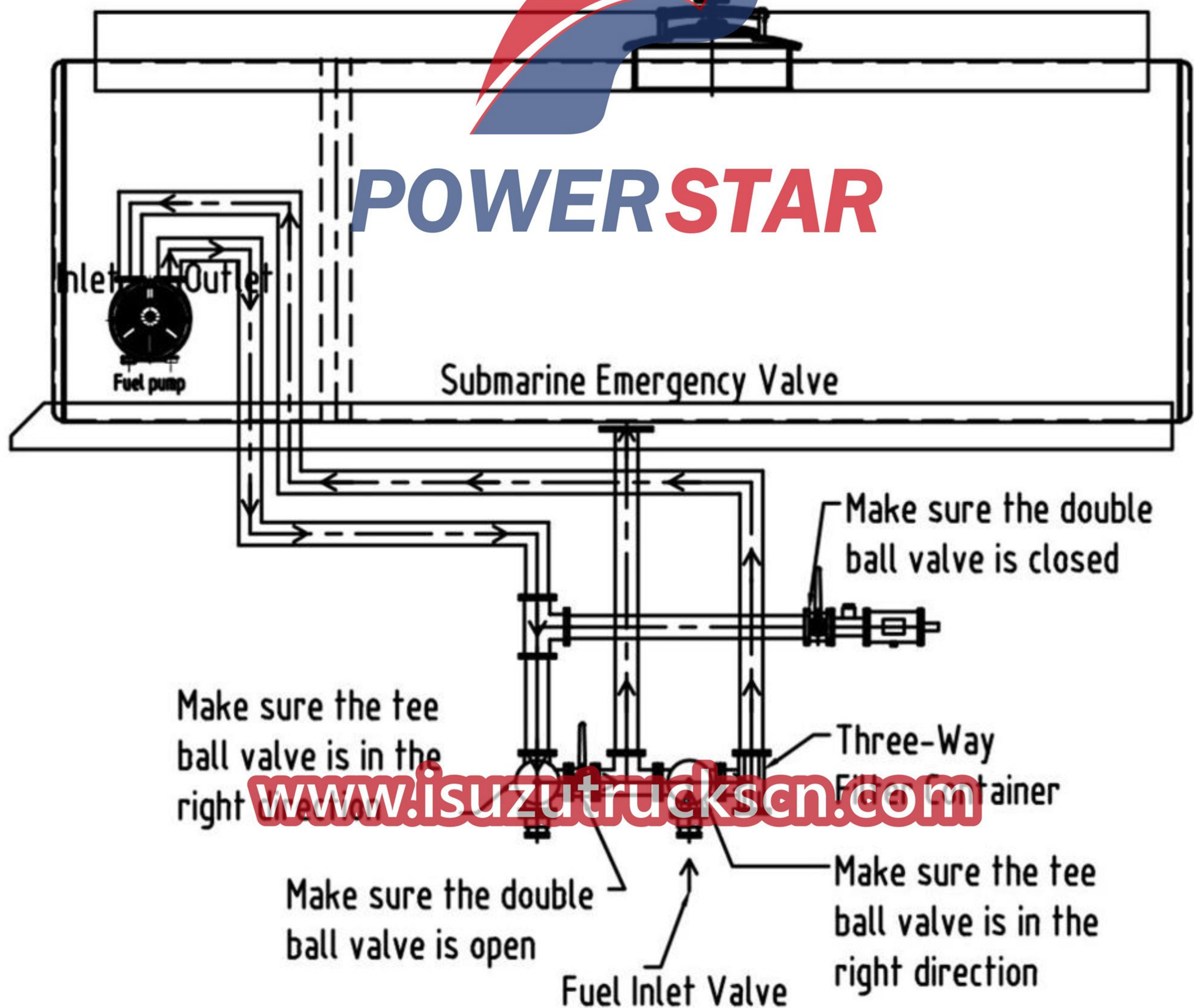
Outlet **Valve 1**

Double-Way **Valve 3**

Inlet **Valve 2**

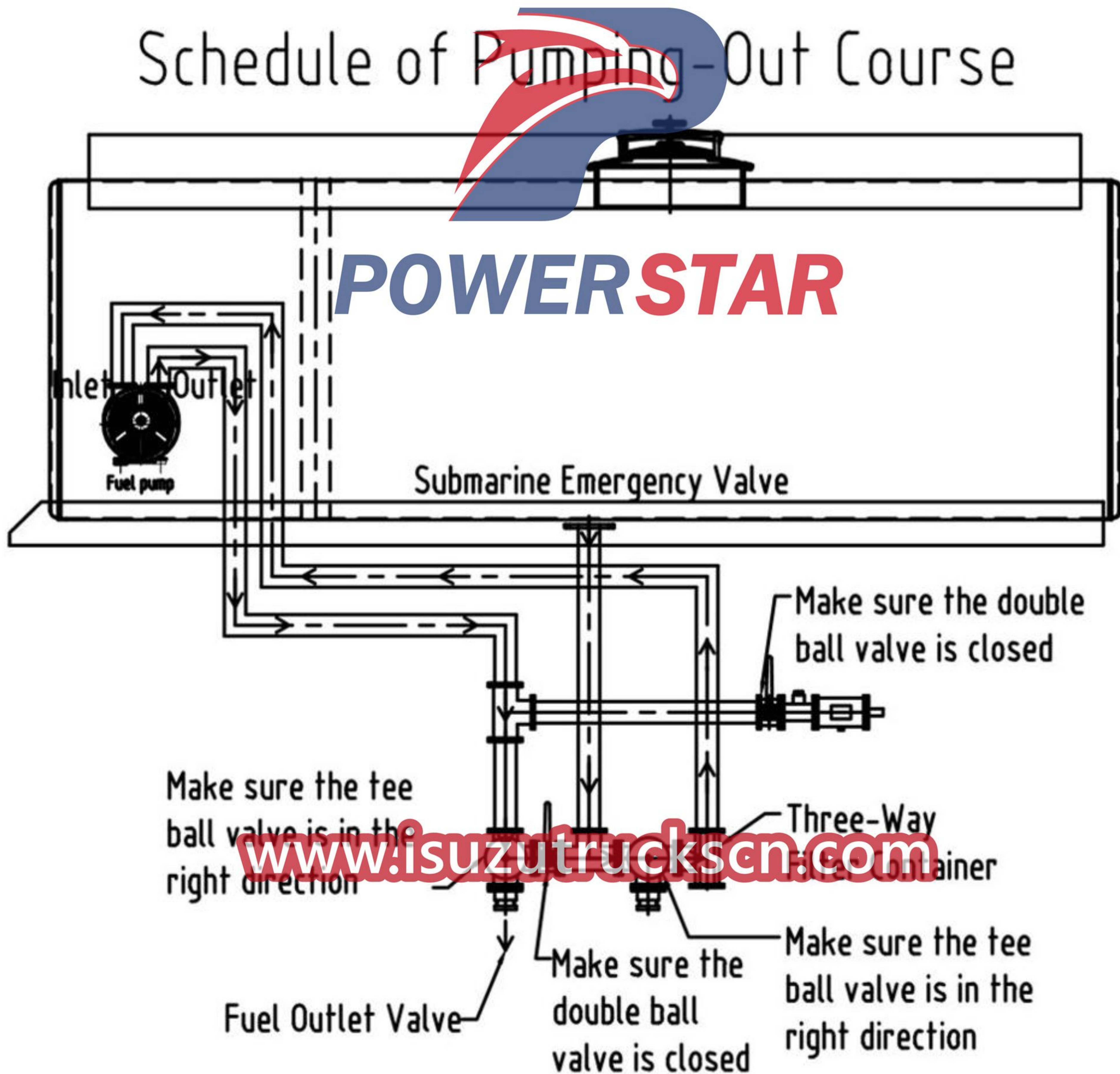
- **The Schedule of Pumping-In Course:** make sure the **Fuel Outlet Valve 1 A-Way & C-Way** open and **B-Way** close; **Fuel Inlet Valve 2 E-Way & F-Way** open and **D-Way** close, open the **Double-Way Valve 3**, close the **Double-Way Valve 4** (which connect the Fuel Hose & Gun), make sure the **Submarine Emergency Valve** open. Then oil sucked into the pump through **Fuel Inlet Valve 2** under negative pressure of fuel pump, then into the fuel tank. Details showing as below chart.

Schedule of Pumping-In Course



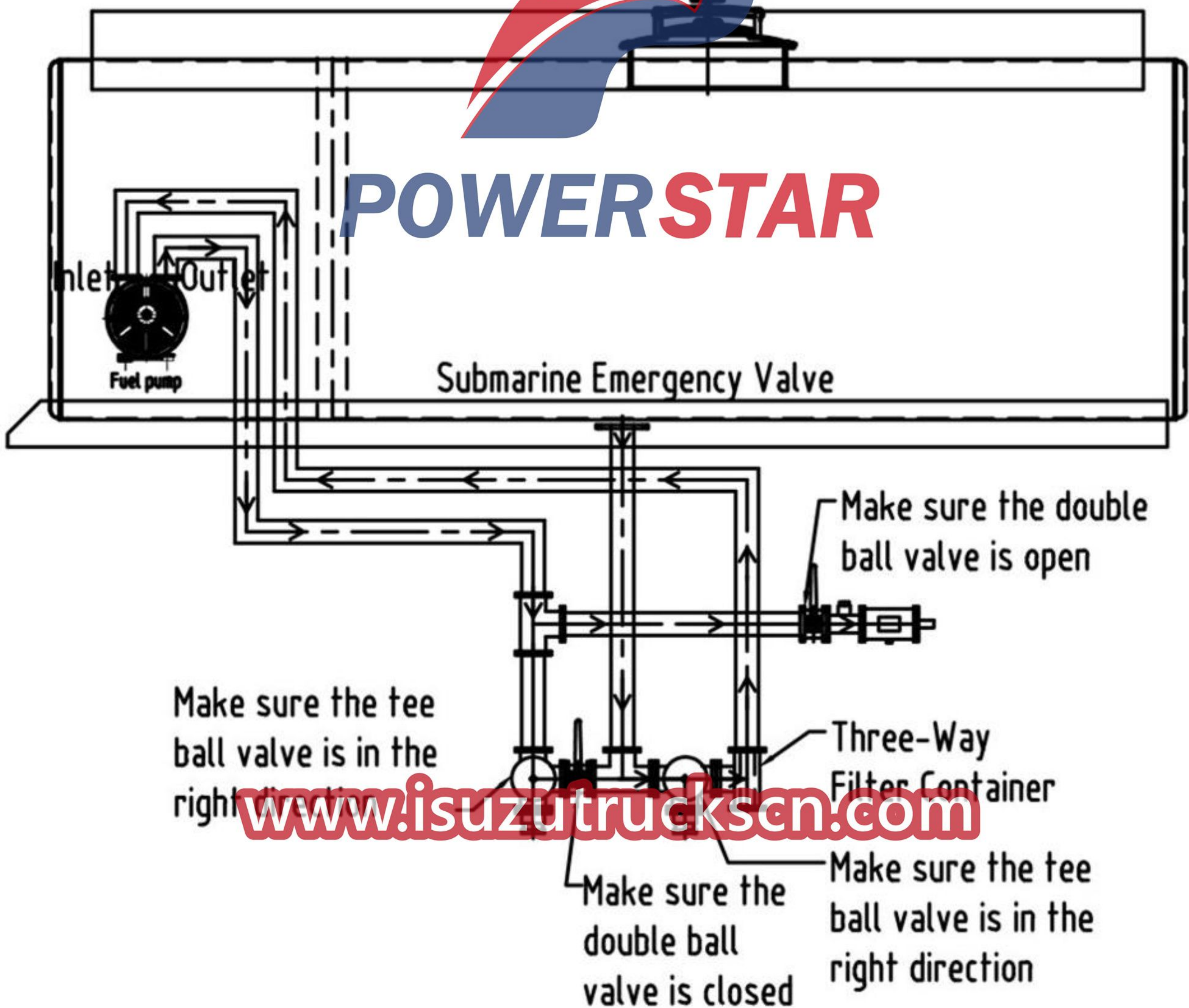
- **The Schedule of Pumping-Out Course:** make sure the **Fuel Outlet Valve 1 A-Way & B-Way** open and **C-Way** close; **Fuel Inlet Valve 2 D-Way & E-Way** open and **F-Way** close, close the **Double-Way Valve 3**, close the **Double-Way Valve 4** (which connect the Fuel Hose & Gun), open the **Submarine Emergency Valve**. Then oil pumping-out the fuel pump through **Submarine Emergency Valve** under negative pressure of fuel pump, then out of the fuel tank through **Fuel Outlet Valve 1**. Details showing as below chart.

Schedule of Pumping-Out Course



- **The Schedule of Refueling Course:** make sure the **Fuel Outlet Valve 1 A-Way & B-Way & C-Way** close; **Fuel Inlet Valve 2 D-Way & E-Way** open and **F-Way** close, close the **Double-Way Valve 3**, open the **Double-Way Valve 4** (which connect the Fuel Hose & Gun), open the **Submarine Emergency Valve**. Then oil can be pumping-into the 15m hose reel through **Double-Way Valve 4** under pressure of fuel pump. Then you can operate the Fuel Dispenser to refuel all trucks. Details showing as below chart.

Schedule of Refueling Course





Digital Display Instrument

15m hose reel with fuel gun for easy operation.

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Make sure use this Magnet to adjust button **Optional** and **Reset**



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Optional: Model one → Total flow capacity, which can not be reset.

Model two → This time working flow rate and flow capacity, which can be reset

Reset: Reset above model two.

Chapter 6, Others for Attention

After carefully reading the above information, you must be well known how to use the ISUZU 4x4 Fuel Tanker Truck; below show some parts you need to pay attention while using the truck.

i ,Precautions for Use

- Please abide strictly by the following manual:
 1. **Fuel Tanker Truck Owner's Manual**

- Carefully examination the fuel truck:
 1. Examine all parts, especially steering device, braking device, Suspension, tires and other joints, etc.
 2. Examine Exhaust Braking System, maintenance if have any leakage.
 3. Examine the tire pressure.
 4. Examine all lights on the truck, including Head Light, Fog Light, Turning Light, and Tail Light.
 5. Examine the rear Anti-Static tape, replace it if not tough the ground
 6. Examine the off-road system

- It is strictly forbidden to operate the Power Take Off (PTO) under the condition of the clutch not separation (Not step the clutch pedal). When release the clutch, you should slowly. The operation of the PTO must only on the condition of neutral for clutch.

- It is better not to do Half-Load transportation, especially for long-distance transport.

- When operating all the Valves, it is not good to overexert, for overexert will influence the valve ball's leakproofness. The open & close for Three-Way Valves should completely, and strictly forbidden working when valves not operated completely.




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ii ,Maintenance

- *The maintenance of the chassis including clutch and transmission gearbox should be properly.*
- *The Maintenance of the pipeline systems and fuel pump refers to the **“Fuel Tanker Truck Owner’s Manual”**.*
- *It should be checked all coupling and lubrication at fixed period to exclude the tight parts, and make sure all parts in good lubrication condition.*
- *The Fuel Pump, PTO, Gear Pump, Hydraulic Motor, Transmission Gearbox should be carefully washed, checked and maintenance every year.*
- *The strainer inside filter should be washed frequently. Exchange it if necessary.*

iii, Spare Parts List



Item	Products Name	Quantity
1	3.5m long Fuel Pipeline	2 units
2	Standard Tools for chassis	1 set
3	Three-Way Valve Wrence	1 unit